★ ROAD FIGHTER CONVERSION KIT ★
INSTRUCTION MANUAL
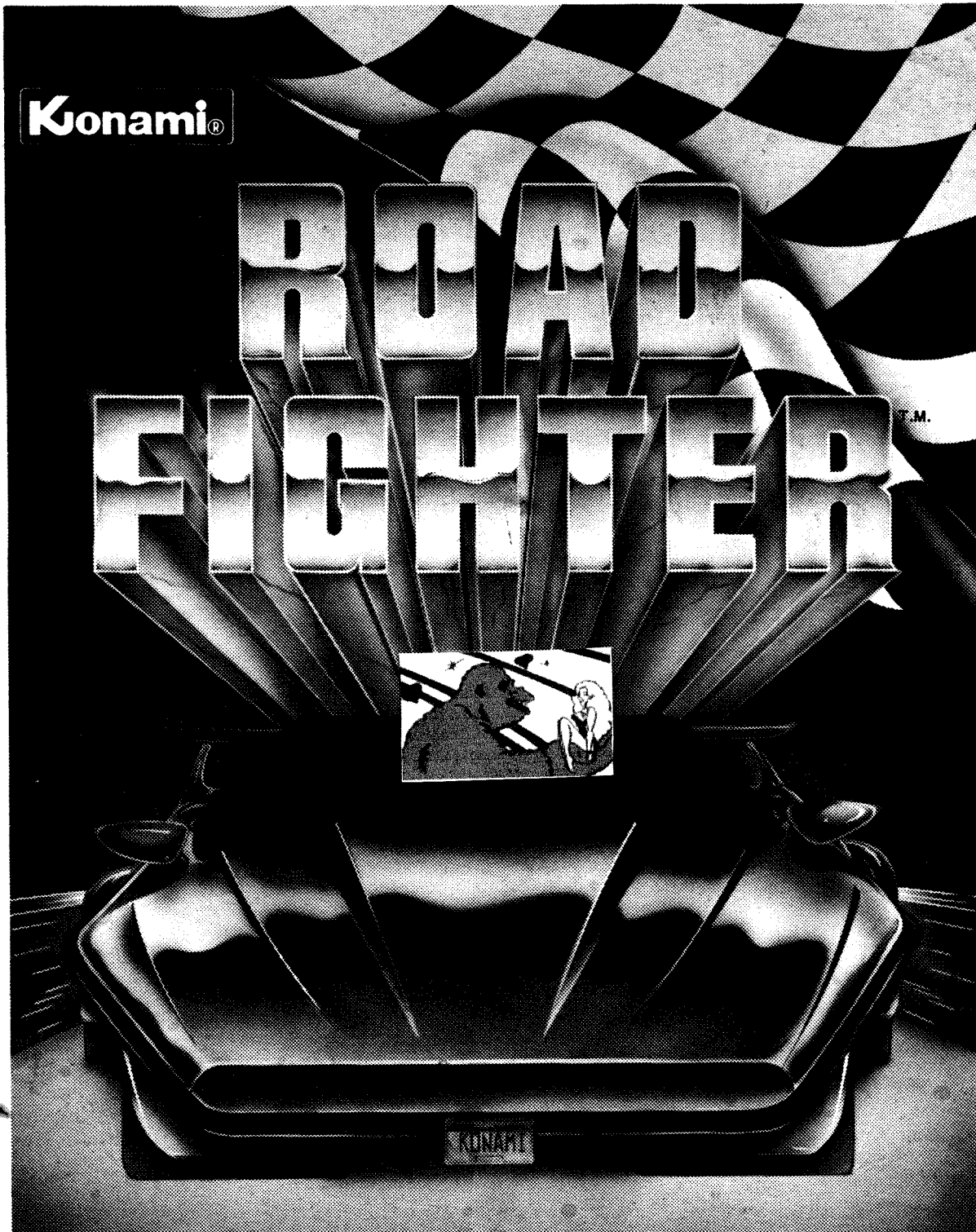
CONVERSION KIT CONTENTS:

- **MAIN PRINTED CIRCUIT BOARD**
- **P.C.B. CAGE (FCC REQUIRED)**
- **CONNECTING WIRING HARNESS**
- **4 SETS — BUTTON ASSEMBLIES**
- **2-WAY JOYSTICK**
- **MARQUEE (HEADER)**
  (1/8" acrylic sheet)
- **ONE SET SIDE PANEL GRAPHICS** (left & right)
- **CONTROL PANEL OVERLAY**
- **CONTROL PANEL DECALS**
  instruction decals/2 sets button decals
- **MANUAL**
- **REGISTRATION CARD**

REPLACEMENT ACCESSORIES ARE AVAILABLE THROUGH YOUR DISTRIBUTOR.

THIS KIT USABLE FOR
COCKTAIL AND UPRIGHT VIDEO GAMES

Konami®

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ROAD FIGHTER STARTING LINE

KONAMI CONVERSION KITS are the most complete conversion kits available today. Every detail has been carefully considered, designed and packaged to provide you the means of easily producing a professional conversion.

This kits has all the accessories to easily convert your UPRIGHT or COCKTAIL video game.

We strongly urge you to FULLY STUDY this instruction manual BEFORE you begin your conversion. It contains step-by-step instructions, schematic diagrams and suggestions on how to install your Konami Conversion Kit and maximize your profits.

ROAD FIGHTER can be installed in any vertically mounted rastar scan monitor game.

Everything you will need to construct your new game is provided in this kit. All accessory parts — wiring harness, joystick, etc. are custom made for ROAD FIGHTER by top engineers experienced in the coin-op industry. A 2-way joystick (as provided) MUST be used.

The Player Instruction and Button Control decals are made of a non-destructible acrylic material specifically to keep the player from peeling them off. Should you convert a cocktail table game, ROAD FIGHTER is supplied with 2 sets of button decals.

GAME PLAY

- Pass other vehicles to reach the check point by using the 2-way JOYSTICK for steering and the GEAR BUTTONS for speed control.
- You must reach the check point before your car is out of fuel in order to continue to the next stage. If you car is out of fuel you may continue to play by adding more coins and pushing the LOW GEAR BUTTON immediately. (Option: DIP SWITCH No. 2)
- ROAD FIGHTER has six stages: Town (START), Forest, Bridge, Coastal Road, Mountainous Area, and Countryside (GOAL).
- There are many obstacles in route to your goal: Cars, Tractor-Trailers (which drop oil drums), Tankers, Oil Slicks, Road Blocks, and other driving hazards. Hitting cars causes skid and possible spin-out which must be skillfully controlled by counter-steering and braking or you will hit crash barrier and explode.
- Complete course and proceed to more difficult levels.
- Smash bonus cars for extra points and fuel.

SAVE YOURSELF TIME AND MONEY

The following P.C.B.'s are interchangeable with ROADFIGHTER P.C.B.'s

Super Cobra • Scramble • Pooyan • Locomotion • Circus Charlie

L'il Hustler • Juno First • Time Pilot • Gyruss • Tutankham • Turtles

Super Basketball • Mega Zone • Pandora's Palace • Time Pilot '84 • Track 'n' Field • Hypersports

Frogger (60% — check pin print-out) • Amidar • Roc 'N Rope • The End

In other words, your ROAD FIGHTER will plug right into existing edge connectors of the games listed above — be sure to check your pin print-out.

PUTTING YOUR BEST GAME FORWARD

PREPARATION:

For best results, all old graphics should be removed completely from the cabinet. "Stick-on" graphics can be removed by using a hairdryer or hot air device. The heat from the dryer will loosen the adhesive, allowing you to easily peel them off — any adhesive residue can be cleaned off with acetone and a soft dry cloth. (DO NOT USE ACETONE ON SURFACES PAINTED WITH FLAT PAINT).

TOOLS YOU NEED:

1. Foaming Aerosol (such as "Windex").
2. Soft Squeegee.
3. X-Acto Knife.

SIDE PANEL DECALS

1. Spray area of cabinet where Side Panel decals are to be applied with foaming aerosol or a mild soap solution.
2. Remove protective backing from decals.
3. Position decals into place.

4. With a soft squeegee, beginning from the center of the decal, slowly and evenly press out excess foam until you achieve a smooth finish.
5. Allow to set approximately 2 to 3 hours before handling. Maximum adherence is achieved in 48 to 72 hours.
6. Trim side decal to fit your cabinet.

CONTROL PANEL OVERLAY:

1. Pre-position the overlay prior to removing the backing.
2. Slowly apply the overlay — inch by inch on the control panel, removing the backing as you apply it to the surface.
3. Once it's in place, by using an X-Acto knife, cut around the button and joystick placements.

INSTRUCTION/BUTTON DECALS:

Apply the Player Instruction, Button and 1 Player/2 Player decals in their respective positions. Apply pressure liberally. Allow to set as long as possible before putting game on location.

NOTE: Maximum adherence is achieved in 48 to 72 hours.

MARQUEE
### (WEAR PROTECTIVE GLASSES WHILE TRIMMING MARQUEE)

1/8" Acrylic Marquee should be cut to fit your game. DO NOT remove protective mask until this is done.

One way of cutting your Marquee is as follows: (Be sure to protect painted side of Marquee from any surface which may scratch or mar finish).

CUTTING WITH A KNIFE OR SCRIBER

Acrylic sheet up to 3/16" thick may be cut by a method similar to that used for cutting window glass. Use a scriber of some kind — a scribing knife such as the one pictured, a metal scriber, an awl, or even a sturdy craft knife — to score the sheet. Draw the scriber several times (7 or 8 times for a 3/16" thick piece) along a straight edge held firmly in place. It is best not to remove the protective masking. Make the cuts carefully using firm, even pressure. For best results make each stroke cleanly off the edge of the sheet.

Then, clamp the acrylic sheet or hold it rigidly under a straight edge with the scribe mark hanging just over the edge of a table. Protect your hands with a cloth, and apply a sharp downward pressure to the other side of the sheet. It will break along the scratch. Scrape the edges to smooth any sharp corners. This method is not recommended for long breaks or thick material.
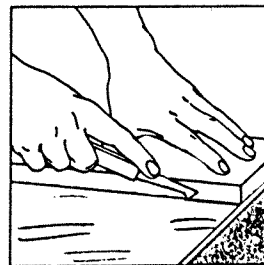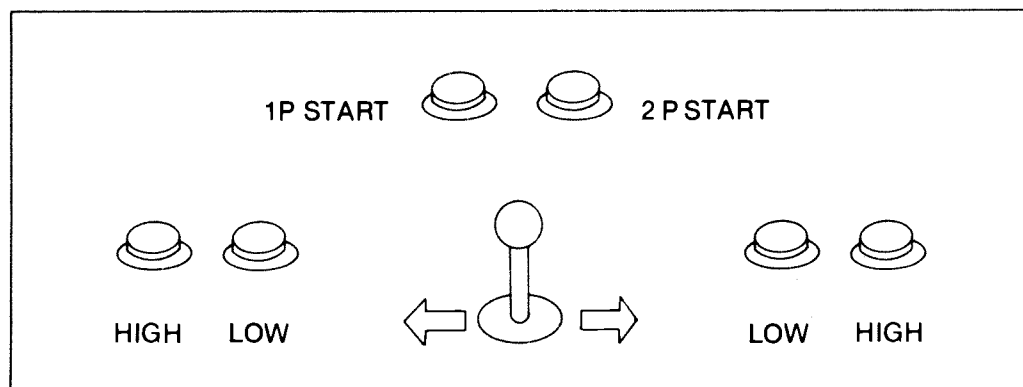

Always draw the scribing knife along a straight edge.
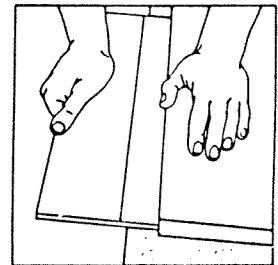
Break sheet over edge of table after scribing.

RECOMMENDED LAYOUT FOR ROAD FIGHTER CONTROL PANEL

1P START   2 P START

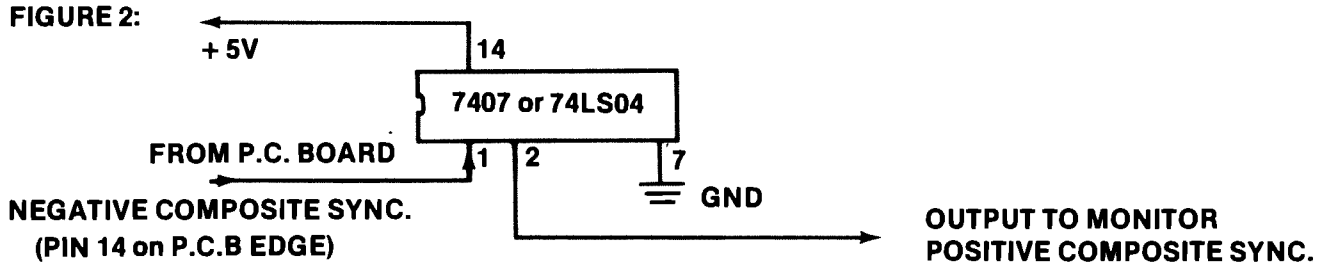HIGH   LOW   LOW   HIGH

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ROAD FIGHTER: MONITOR SPECIFICATIONS

Road Fighter requires a vertically mounted monitor. It also generates composite negative sync. If your monitor is composite positive sync, you will have to change to composite negative sync.

(1)   To alternate composite positive sync to composite negative sync, use 7404 IC or 74LS04 IC. The signal on the output pin from the P.C.B. is a combination of H-sync and V-sync.

NOTE: Please refer to Figure 2.

FIGURE 2:

```
                    +5V                    |14
                                  _____
                                 )   7407 or 74LS04       |
            FROM P.C. BOARD      |__|1  |2         |7_____|
                                                        === GND
NEGATIVE COMPOSITE SYNC.                                          OUTPUT TO MONITOR
  (PIN 14 on P.C.B EDGE)                                          POSITIVE COMPOSITE SYNC.
```

(+ 5V and GND should be taken out of the P.C. Board.)

(2)   Separate Sync, modification for "Road Fighter" if your monitor has "Separate Sync" input. For example "Electro home brand" and Wells-Gardner brand."

Step 1
WIRING HARNESS

N	12
P	13
R	14
S	15

VIDEO SYNC

‒H ‒V   NEGATIVE SYNC INPUT

MONITOR BOARD
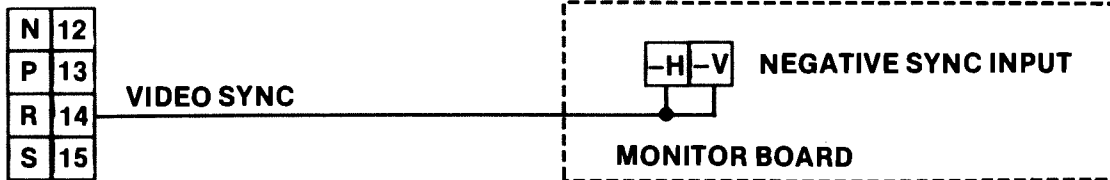
Still the picture is not stable . . .

Step 2
Prepare Hook-up wire. For example "Electro home brand"

WIRING HARNESS

N	12
P	13
R	14
S	15

VIDEO SYNC

‒H ‒V   NEGATIVE SYNC INPUT

MONTOR BOARD

```
          PIN |  470Ω
          16  |  100
              |
              74LS244
```

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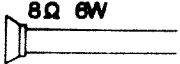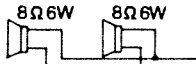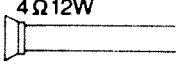
ROAD FIGHTER: TECHNICAL INFORMATION

(1) Required Power Capacity

+5V DC   7A or more.

+12V DC   See Figure 1 below

Figure 1:

SPEAKER	8Ω 6W	8Ω6W 8Ω6W	4Ω12W	4Ω12W 4Ω12W
Required Power Capacity	12V 1A	12V 2A	12V 2A	Not Applicable

(2) Signal output
R(red) analog, positive
G(green) analog, positive
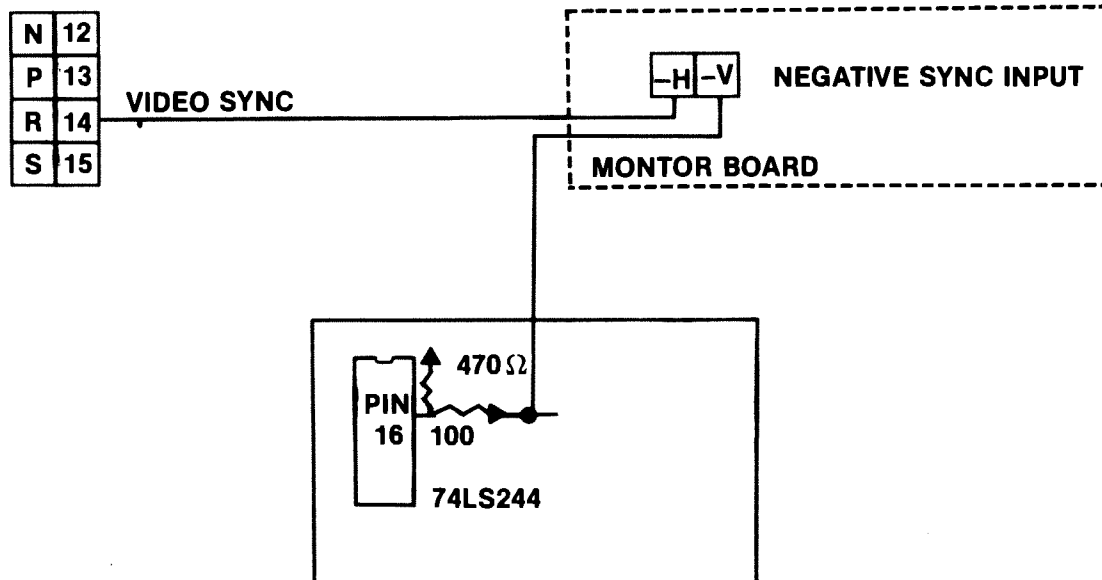B(blue) analog, positive
Sync. H-V composite negative

H   V
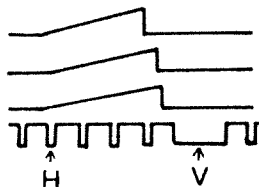
(3) A battery (button type) is installed on P.C. Board, BE CAREFUL NOT TO SHORT IT.

SELF-TESTING ROAD FIGHTER

A. Logic Board self-tests automatically during "POWER-ON."
B. If the board is "OK," the game will start.
C. If there is a problem, before contacting your distributor:
  1. Check that all chips on board and wiring connections are tight.
  2. Check output from power supply at the board. (Do not just check at the power supply as voltage drops may occur over the length of the wire.)

ROAD FIGHTER: WIRING HARNESS

C

WIRE COLOR KEY:

Wire Color (Unlettered Side / Solder Side)	Unlettered Side (Solder Side)	No.	Letter	Lettered Side (Parts Side)	Wire Color (Lettered Side / Parts Side)
RED/GREEN	(EMPTY)	1	A	+ 12V DC	ORANGE
RED/YELLOW	SPEAKER OUT	2	B	SPEAKER OUT	ORANGE/GREEN
BROWN/YELLOW	* 2P LOW	3	C	2P HIGH*	ORANGE/YELLOW
VIOLET/WHITE	* 2P LEFT	4	D	2P RIGHT*	BLUE/YELLOW
ORANGE/WHITE	1P START	5	E	2P START	VIOLET/YELLOW
RED/WHITE	1P HIGH	6	F	(NOT USED)	BLACK/YELLOW
BLUE/WHITE	1P LOW	7	H	SERVICE SW	ORANGE/GRAY
BLACK/WHITE	1P RIGHT	8	J	1P LEFT	BROWN/WHITE
RED/GRAY	(NOT USED)	9	K	(NOT USED)	GRAY/YELLOW
GRAY/WHITE	COIN 1	10	L	COIN 2	BLUE/GRAY
WHITE/PINK	(NOT USED)	11	M	COIN COUNTER 1	GREEN/GRAY
GREEN/BROWN	(NOT USED)	12	N	COIN COUNTER 2	YELLOW/GRAY
RED/BROWN	VIDEO GREEN	13	P	VIDEO BLUE	BLUE/BROWN
	VIDEO RED	14	R	VIDEO SYNC	WHITE/BROWN
	(EMPTY)	15	S	(NOT USED)	YELLOW/PINK
BLACK	GND	16	T	GND	BLACK
BLACK	GND	17	U	GND	BLACK
RED	+ 5V DC	18	V	+ 5VDC	RED

(BASE COLOR/LINE COLOR)

*Cocktail Table Only

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ROAD FIGHTER
WIRING DIAGRAM

PARTS SIDE	SOLDER SIDE		

B	A	
1	1	+12V
2	2	SPEAKER OUT / SPEAKER OUT
3	3	2P HIGH * / 2P LOW *
4	4	2P RIGHT * / 2P LEFT *
5	5	2P START / 1P START
6	6	1P HIGH / SERVICE
7	7	1P LOW / 1P LEFT
8	8	1P RIGHT
9	9	
10	10	COIN 2 / COIN 1
11	11	COIN COUNTER 1
12	12	COIN COUNTER 2
13	13	BLUE / GREEN
14	14	SYNC / RED
15	15	GND
16	16	GND
17	17	GND / GND
18	18	+5V / +5V

CONNECTOR contact pitch 5/32 inch (3.97mm)

REQUIRED POWER CAPACITY +12V

NOT APPLICABLE	2A	2A	1A
4Ω 12W 4Ω 12W	4Ω 12W	8Ω 6W 8Ω 6W	8Ω 6W

GAME START 1P   GAME START

2P

HIGH LOW LEFT RIGHT

CONTROLS for 1P

same as 1P CONTROLS
only for TABLE TYPE

CONTROLS for 2P

SERVICE SWITCH

COIN 2   COIN 1

COLOR MONITOR

POWER SUPPLY   +12V GND +5V

12V COIN COUNTER   12V COIN COUNTER

—NOTES—

(1) 1P:NO.1 player
    2P:NO.2 player

(2) surge killer diodes for COIN
    COUNTER installed on the P.C.B.

*Cocktail Table Only

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DIP SWITCH SETTINGS

DIP SW No. 1 Settings

1. Coin Switch No. 1 Settings

SW	1	2	3	4	Coin	Play
•	OFF	OFF	OFF	OFF	1	1
	ON				1	2
	OFF	ON			1	3
	ON				1	4
	OFF	OFF	ON		1	5
	ON				1	6
	OFF	ON			1	7
	ON				2	1
	OFF	OFF	OFF	ON	2	3
	ONE				2	5
	OFF	ON			3	1
	ON				3	2
	OFF	OFF	ON		3	4
	ON				4	1
	OFF	ON			4	3
	ON				Free Play	

2. Coin Switch No. 2 Settings

SW	1	2	3	4	Coin	Play
•	OFF	OFF	OFF	OFF	1	1
	ON				1	2
	OFF	ON			1	3
	ON				1	4
	OFF	OFF	ON		1	5
	ON				1	6
	OFF	ON			1	7
	ON				2	1
	OFF	OFF	OFF	ON	2	3
	ONE				2	5
	OFF	ON			3	1
	ON				3	2
	OFF	OFF	ON		3	4
	ON				4	1
	OFF	ON			4	3
	ON				Invalid	

DIP SW No. 2 Settings

1. Continuation after GAME OVER

SW	1	Continuation
	OFF	None
•	ON	One Time Only

2. Difficulty of the game
A. Number of opponents

SW	2	3	Number
•	OFF	OFF	Few (Easy)
	ON	OFF	Normal
	OFF	ON	Many
	ON	ON	Great many (Difficult)

B. Speed of opponents

SW	4	Speed
•	OFF	Fast (Easy)
	ON	Slow (Difficult)

C. Reduction of Fuel

SW	5	6	Reduction of Fuel
•	OFF	OFF	Slow (Easy)
	ON	OFF	Normal
	OFF	ON	Fast
	ON	ON	Very fast (Difficult)

3. Table or Upright

SW	7	Type
	OFF	Table
•	ON	Upright

4. Sound in attract mode

SW	8	Sound
	OFF	OFF
•	ON	ON

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•SHOWS NORMAL SETTING

USER INFORMATION

WARNING

F. C. C. REGULATION COMPLIANCE

THE P.C. BOARD CAGE* SUPPLIED WITH THIS CONVERSION KIT MUST BE UTILIZED AND TERMINATED TO GROUND AT THE TIME OF INSTALLATION.

THIS IS TO AVOID RADIO FREQUENCY RADIATION AND COMPLY WITH THE LIMITS FOR A CLASS "A" COMPUTING DEVICE PURSUANT TO SUB-PART "J" OF PART 15 OF F.C.C. RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE - IN WHICH CASE, THE USER AT HIS OWN EXPENSE, WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

After such installation in accordance with the instructions, the enclosed **NOTICE AFTER CONVERSION** should be applied to the back of the game cabinet so as to cover up any previous notice regarding FCC Rules.

*The P.C.B. Cage furnished with this kit has been designed by Konami to afford easy access to the board. Once installed, the cage can be opened by simply removing 2 screws.

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