

RIDGE RACER 1  
Upgrade Kit Manual

RAVE RACER

**namco**® America Inc.

4.1 LIBRARY

4.2 SUGGESTION

4.3 HOW TO

APPENDIX A

APPENDIX B



**RIDGE RACER 1™  
UPGRADE KIT MANUAL**

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namco®  
RAVE RACER™

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## 1.0 SPECIFICATIONS

### 1.1 Conversion Game Specifications

Power Supply:	Switching Power Supply, 200W
Power Consumption:	300 W
Monitor:	1 Standard 33" color monitor

### 1.2 Kit Specifications

PCB Kit	1
Harness	1
Marquee	1
Decals, Signs, Labels	3

### 1.3 Game Conversion Overview

The Rave Racer upgrade kit consists of the Rave Racer PCB kit, a new wire harness and assorted decals/signs/labels. The kit can be installed in the original RR1 cabinet.

## 2.0 INTRODUCTION

This manual provides installation instructions for the Rave Racer upgrade kit. Inspect the kit contents, compare against the parts list and notify the distributor about any damaged/missing parts.

## 3.0 INSTALLATION

### 3.1 Precautions

1. Before replacing any parts, turn the AC power OFF and unplug the game.
2. The game power supply includes areas of HIGH VOLTAGE. Take care at all times to avoid electrical shock when working on the game.

### 3.2 Game Installation

1. Verify power has been removed from the game.
2. Open the (lower) rear service door to gain access to the I/O PCB (on top of the card cage).



3. Remove the 50-pin connector at J402 (on the I/O PCB) and insert the Molex pins (from new cable harness RV50-04365-00) into A5 and A6 (of the 50-pin connector). The WHITE wire going to A5 and the BLACK wire going to A6. Refer to drawing RV50-04400-00.
4. Reconnect the 50-pin connector to J402.
5. Drill a 7/8" hole for mounting the View Change button. Suggested location is in the Dash-board instruction panel, to the left of the steering wheel. This requires removal of the dashboard panel (see Section 7, Maintenance, in the Ridge Racer Operator's manual for procedures).
6. Install View Change button. Secure with the nut BEFORE snapping lamp assembly in place.
7. Connect Molex quick disconnect lug from WHITE wire (of new harness, RV50-04364-00) to the gold pin designated NO (pin 4, Normally Open) of the lamp assembly.
8. Connect the other Molex quick disconnect lug from the BLACK wire to the silver pin designated COM of the lamp assembly.
9. Mount the Link PCB in a dedicated location (bottom right) of cabinet.
10. Using the link harness already existing in game (with 6-pin, EI connector attached), verify polarity (pin 1 harness to pin 1 of connector on Link PCB) and join connectors.
11. Replace the Ridge Racer ROM PCB with the new Rave Racer ROM PCB.
12. Remove the original marquee plastic panel and replace with the new acrylic Rave Racer marquee.
13. Perform game initialization per Section 3.5, SET UP and TEST procedure.

### 3.3 Cabinet Graphics

1. Install the cabinet graphics provided. Float the graphics on by applying a spray of ammonia cleaner to each surface. Smooth out the bubbles and liquid with a paint squeegee. Wipe the decal dry with a soft cloth.

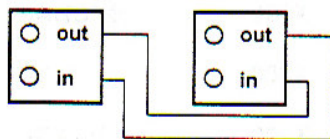


### 3.4 Linked Game Operation

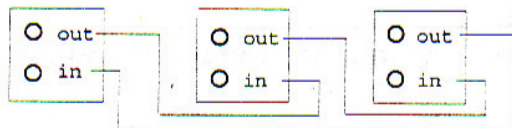
It is possible to link up to eight (8) RAVE RACER game cabinets together.

To link the games, perform the following:

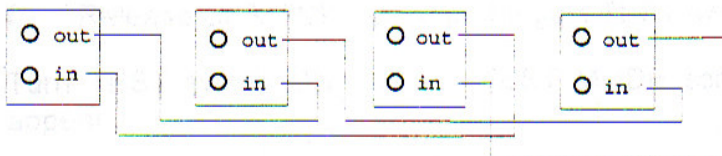
1. Turn OFF the main AC power to the game.
2. For each game to be linked, remove the link cables from the kit in the cash box.
3. Using the link cables, connect the cabinets as shown in Figure 1.
4. Be careful not to pull on the cables while working around the rear of the cabinet.
5. Re-connect the main AC power.
6. Refer to section TEST MODE, Game Options, for instructions on how to set up the "CPU Number" and car type/color for each of the linked drive positions.



Connecting Two 1P Games



Connecting Three 1P Games



Connecting four 1P Games

Figure 1: Linked Game Diagrams

### 3.5 Set Up and Test

**IMPORTANT:**

Perform this procedure in the sequence indicated

1. System initialization is performed as follows:
  - a. Open the COIN door to gain access to the Service Panel.
  - b. Center the steering wheel and remove hands/feet from the controls.
  - c. While pressing the SERVICE button, toggle TEST switch ON.
  - d. The ADJUSTMENT screen will appear as shown in Figure 2.

ADJUSTMENT	
HANDLE	000X
GAS	000X
BRAKE	000X

Figure 2: Adjustment (Initialization) Screen

- e. Controls are properly biased when values are as close to '0000' as possible.
  - f. Release SERVICE button and toggle TEST switch OFF.
2. Turn TEST switch ON and the TEST MODE screen, as in Figure 3, will appear.



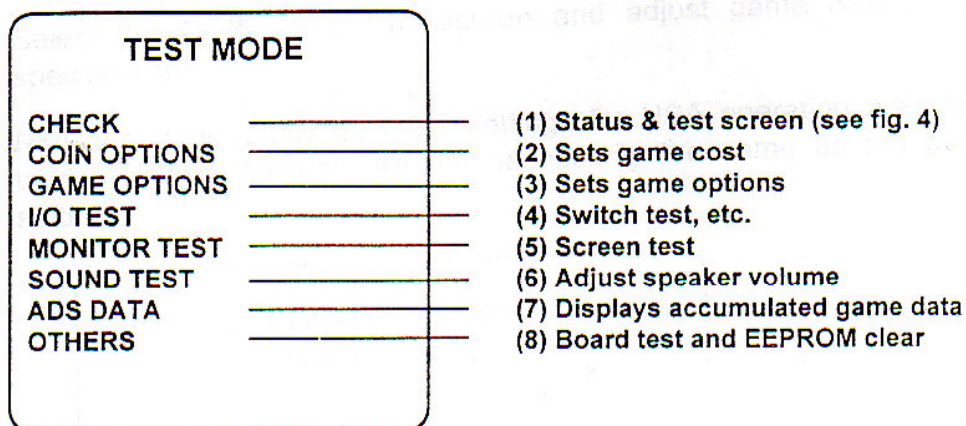


Figure 3: Test Mode Screen

- A. Select CHECK mode by turning steering wheel, then call up the CHECK screen by stepping on the accelerator.

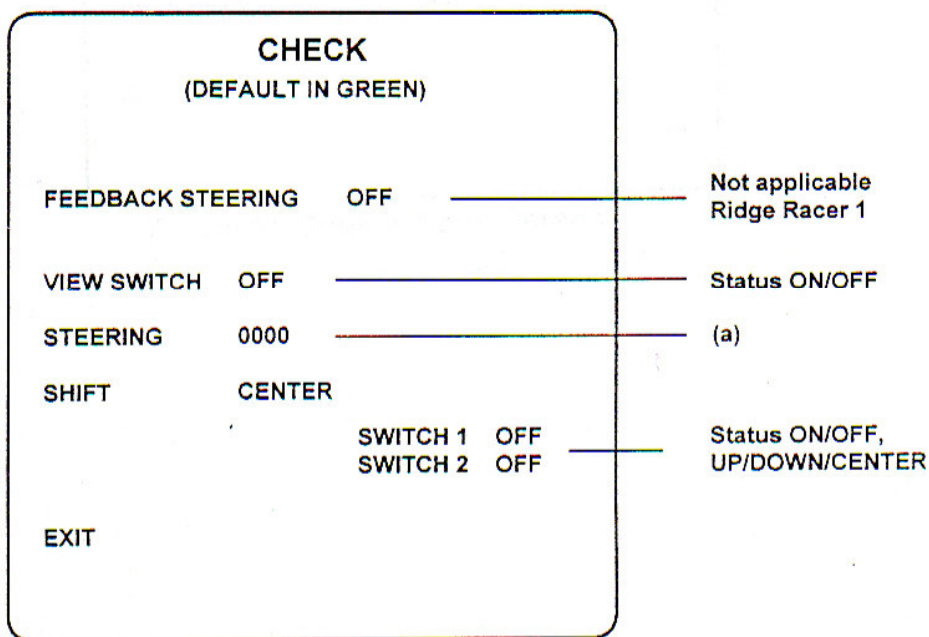


Figure 4: Check Screen,  
RIDGE RACER 1 Conversion

- (a) Note: Steering status will show full scale reading +FFFF in the CW direction and -FFFF in the CCW direction, and "OK" if steering passes the displacement test.

Use the EXIT option (or press the accelerator and brake simultaneously) to return to the TEST MODE menu.

- B. Select the COIN OPTIONS screen and adjust game cost to your specifications.

Recommended COIN OPTION settings for USA operation are shown below. These settings are not necessarily the same as the default settings.

COIN OPTIONS			
(Default in Green)			
GAME COST	3 COIN	AS	1 CREDIT
COIN 1 MECH. VALUE	1 COIN	AS	1 COIN
COIN 2 MECH. VALUE	1 COIN		1 COIN
FREE PLAY	OFF		
EXIT			

Figure 5: Coin Options Screen



C. Select Game Options screen and set the game characteristics.

Recommended settings for USA operation are shown below.

**GAME OPTIONS (1/2)**  
(Default in Green)

CPU NUMBER	1		
LINK OFF			(a)
CAR TYPE	1 BLUE		(b)
DIFFICULTY			(c)
LINKED PLAY	D		(d)
SOLO PLAY	D		
TIME TRIALS	D		
LAPS			
LINKED PLAY		SOLO PLAY	(e)
RR SHORT	3	NOVICE	3
CITY	3	INTERMEDIATE	3
MOUNTAIN	3	ADVANCED	3
MOUNTAIN X	3	PROFESSIONAL	3
NEXT PAGE			
EXIT			

Figure 6: Game Options Screen (1/2)

**GAME OPTIONS (2/2)**  
(Default in Green)

SPEED	MPH		
SOUND IN ATTRACT	ON		(f)
ATTRACT DISPLAY			(g)
EXTRA LAPS	OFF		(h)
EASY SETTING	OFF		
HI-SCORE INIT	NO		(i)
FEEDBACK STEERING	OFF		(j)
EXTRA MODE	OFF		(k)
NEXT PAGE			
EXIT			

Figure 7: Game Options Screen (2/2)



**Notes on multiple-game linked operation**

- The difficulty level and number of laps must be set the same for the connected games.
- The CPU number of the seat on the farthest left (when facing the game) should be set to 1, the next seat to the right should be set to 2, and so on.
- Settings other than those described will cause linking difficulties.
- When properly linked, the LINK STATUS will switch from OFF to ON.

**Game Options**

Item	Description	
(a) CPU number	The CPU number should be set so that none of the connected seats have the same number.	
(b) Link Status	OFF for single game operation. ON if 2 or more games are successfully linked.	
(c) Car type/number	Blue	1
		5
	Yellow	2
		6
	Red	3
		7
	Green	4
	8	
(d) Game Difficulty	A (easiest) to H (hardest). Default is D.	
Linked Play	A (easiest) to H (hardest). Default is D.	
Solo Play	A (easiest) to H (hardest). Default is D.	
Time Trials	A (easiest) to H (hardest). Default is D.	
(e) Laps	Linked Play	Solo Play
	[All courses]	[All skill levels]
	Range from 3 (shortest) to 6 (longest). Default is 3 laps.	Range from 3 (shortest) to 6 (longest). Default is 3 laps.
(f) Speed	Display units selectable, either mph or km/h. (Default is km/h).	
(g) Sound Attract	Selectable ON/OFF. (Default is OFF.)	
(h) Attract Display	Selectable YES/NO on both EXTRA LAPS and EASY SETTING modes. (Default is OFF).	
(I) Hi Score Init	Selectable YES/NO. When ON, allows Hi Scoring player to insert initials. (Default is NO).	
(j) Feedback Steering	Not applicable to Ridge Racer 1 conversion.	
(k) Extra Mode	Selectable ON/OFF. (Default is OFF).	



D. Select the I/O Test and perform the MOTOR and SWITCH tests.

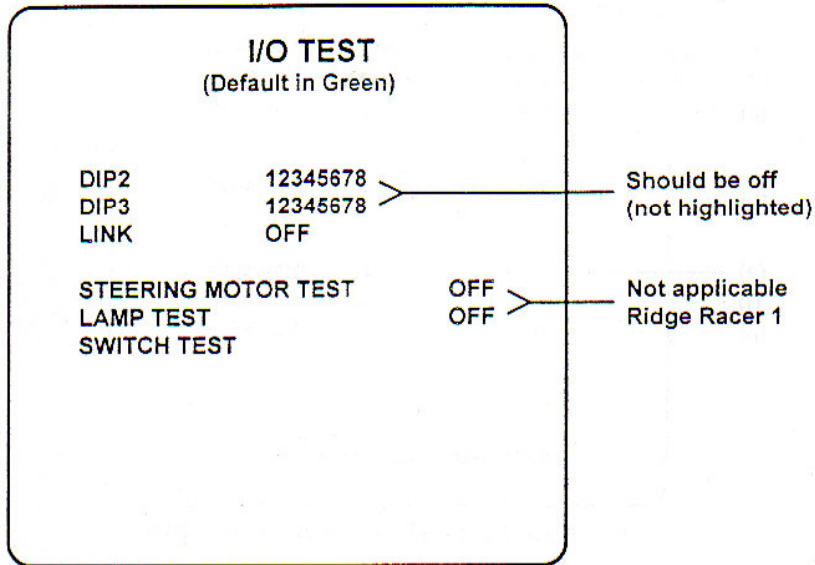


Figure 8: I/O Test Screen

Use steering wheel to select option, accelerator to select value (on/off) and steering wheel to change that value.

NOTE: LAMP TEST is an option included for future upgrades and is inoperable for this set-up.

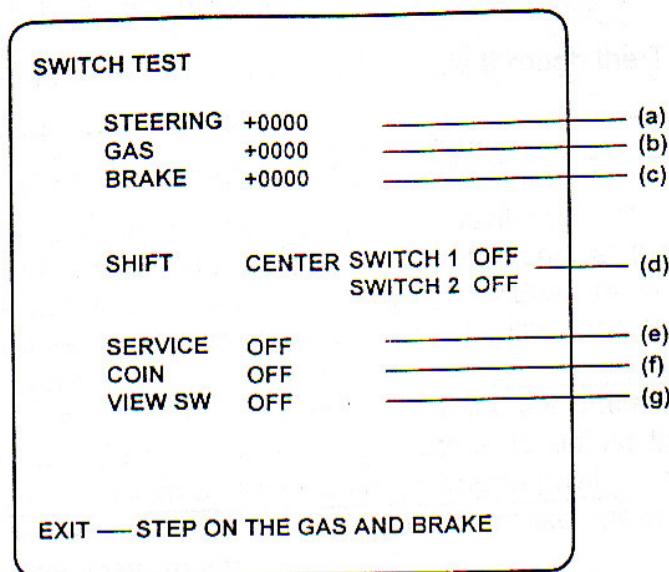


Figure 9: Switch Test Screen

- (a) Verify +, - full-scale readings and "OK" status in both CW (right) and CCW (left) directions.
- (b) Verify + full-scale reading and "OK" status for full deflection of gas pedal.
- (c) Verify +full-scale reading and "OK" status for full deflection of brake pedal.
- (d) Verify ON/OFF and CENTER/UP/DOWN status.
- (e) Verify ON/OFF status.
- (f) Verify ON/OFF status.
- (g) Verify ON/OFF status.



D. MONITOR TEST SCREENS

Use shifter, steering and / or gas pedal to toggle through the TEST screens.

	Explanation
Color Bars	Four (4) bars (Grn, Red, Blue, Wht from top to bottom) with 16 segments each will be displayed. Verify that the <b>Blk level</b> and <b>contrast</b> controls are properly adjusted such that the color segment on the farthest left is sufficiently bright without overdriving, and that the farthest right segments are just slightly brighter than the black background.
Crosshatch, Green	Verify that the screen is centered and that the entire screen is visible. If not, use <b>V-POS</b> , and <b>H-POS</b> controls to adjust the size, vertical (up/down) position and horizontal (left/right) position, respectively.
Crosshatch, White	This screen is used at the factory to make measurements using automated instruments.
White (high) Window	Note on white high window: Used at <b>Namco</b> to calibrate the contrast and brightness settings. Normal values are 32 +/- 5 ft-L (white) and 0.15 ft-L in the black area.
White (med) Window	Not used.
White (low) Window	Not used.
Interlace Test	Verify that the monitor interlace is adjusted properly. Locate the center pair of line blocks. Use the <b>V-HOLD</b> to adjust the video such that the top line of the right block of lines is aligned with the space between the first and second lines of the left block. This adjustment must be performed whenever the vertical size, position, or hold controls are adjusted.
Green Cross Bar	This screen is used at the factory to make color purity measurements using automated measurements.
White Cross Bar	This screen is used to correctly adjust the vertical and horizontal alignment.
White Screen	This screen is used at the factory to measure color uniformity and purity.



- F. Select the SOUND TEST screen and adjust the audio volume. Use the steering wheel to change the value of each item.

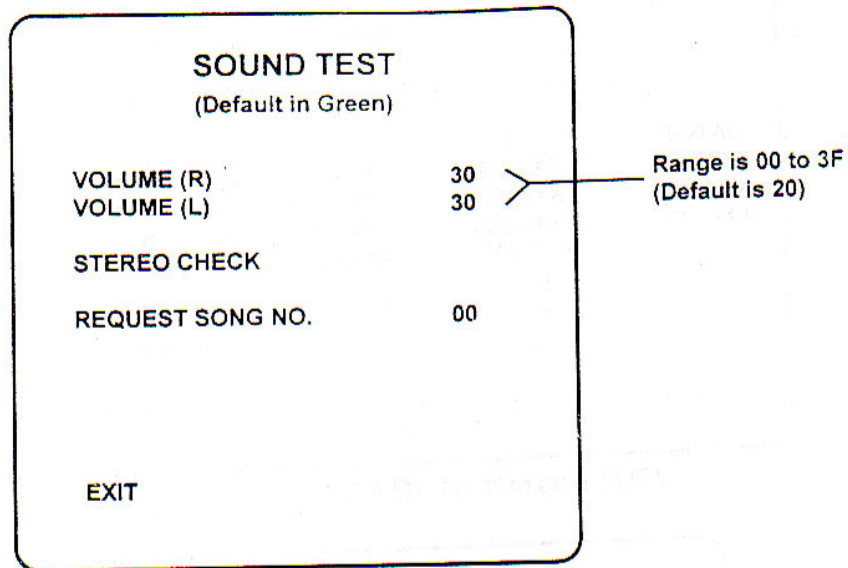


Figure 10: Sound Test Screen

- G. For collecting data on game playing time, player records and related information, select the ADS DATA screen.



ADS (1/2)					
ON TIME			XXXH	XXM	XXS
PLAY TIME					
1P	PLAY		XXXH	XXM	XXS
TT	PLAY		XXXH	XXM	XXS
LINK	PLAY		XXXH	XXM	XXS
TOTAL PLAY		XXXXXXXX			
AVERAGE TIME			XXM	XXS	
		AT	MT	TOTAL	
1P	PLAY	XXXXXX	XXXXXX	XXXXXX	
TT	PLAY	XXXXXX	XXXXXX	XXXXXX	
LINK	PLAY	XXXXXX	XXXXXX	XXXXXX	
TOTAL		XXXXXXXX	XXXXXXXX		
ADS CLEAR			NO		
ADS USE			NO		
NEXT PAGE					
			EXIT		

Figure 11: ADS DATA Screen (1/2)

ADS DATA (2/2)					
IP					
RECORD					
	LAP		TOTAL		
NO	XXM	XXS 765	XXM	XXS 765	
IN	XXM	XXS 765	XXM	XXS 765	
AD	XXM	XXS 765	XXM	XXS 765	
PR	XXM	XXS 765	XXM	XXS 765	
TIME TRIALS					
RECORD					
	LAP		TOTAL		
NO	XXM	XXS 765	XXM	XXS 765	
IN	XXM	XXS 765	XXM	XXS 765	
AD	XXM	XXS 765	XXM	XXS 765	
PR	XXM	XXS 765	XXM	XXS 765	
NEXT PAGE					
			EXIT		

Figure 12: ADS DATA Screen (2/2)

- H. Select the screen titled OTHERS for board test functions and EEPROM clearing.

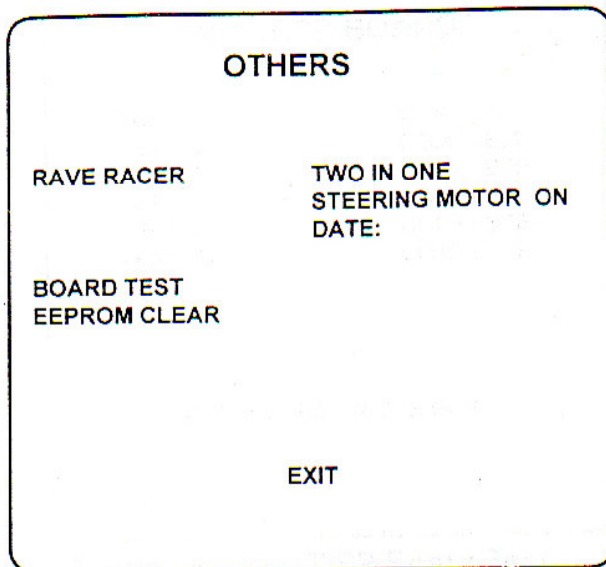


Figure 13: Other Screen

After selecting BOARD TEST, highlight and select the I/O BOARD option.

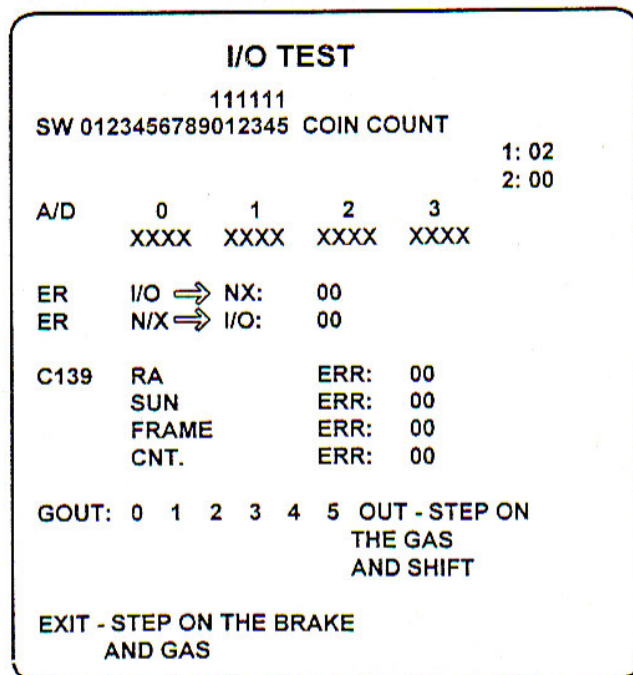


Figure 14: I/O Board Test Screen



Select the MPU/DSP BOARD option and the following should appear:

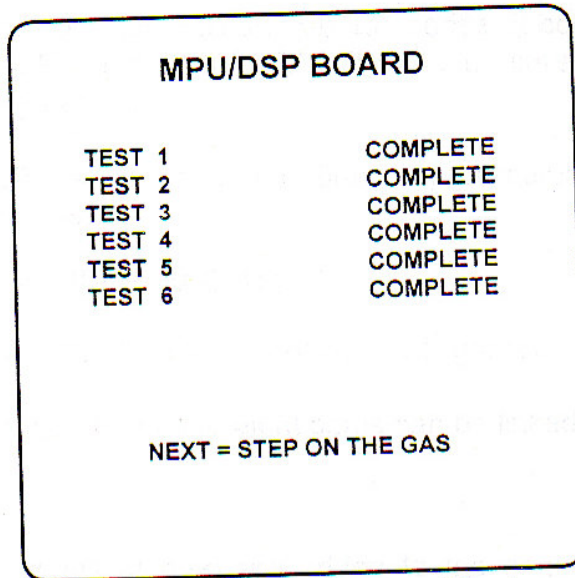


Figure 15: MPU/DSP Board Test

Select the VIDEO BOARD option and, using the accelerator, step through the various test patterns. These patterns can be used by qualified personnel to help troubleshoot possible problems with the Video board.

## 4.0 RAVE RACER GAME FEATURES

RAVE RACER is the latest game in the RIDGE RACER series. It combines all the fun of it's predecessors (RIDGE RACER and RIDGE RACER 2), plus several new features. It's available in the following configurations:

- \* 1-P DEDICATED - An optional marquee may be purchased for linking two 1-P dedicated games.
- \* 2-P KIT - Updates RIDGE RACER 2.
- \* 1-P KIT - Updates RIDGE RACER (original 1-P game).

Any combination or game configuration up to eight seats can be linked!

### 4.1 Linked Play

Two New Tracks (w/two variations of one) are added to the original RIDGE RACER - SHORT and RIDGE RACER - LONG courses.

- \* RIDGE RACER / SHORT - This is the one "Easy" course to select from. The passing areas are the hairpin curve along the seashore and the long sweeping curve before the final straight-away.
- \* **New!!** CITY Course - Rated "Average" in difficulty. The course winds it's way through a high speed multi-lane urban highway. There's plenty of room to pass competitors and enough turns to keep the race close.
- \* **New!!** MOUNTAIN Course- Full of turns and narrow mountainous roads, it is rated "Difficult". The best places to pass are during a chain of turns between the hotel and two bridges. At the second turn to the left, orange "cones" identify a corner with no shoulder on the road. Turning the corner too wide will cause the car to fall of a cliff and enter a mountain tunnel. Once the driver makes it through the tunnel and gets over the shock, the road eventually rejoins with the regular track.
- \* **New!!** MOUNTAIN EXPERT Course - This is the true test of a driver's skill. It is only selectable in a two-or more player linked game. The course layout is the same as the MOUNTAIN Course, but the maximum speed is increased to a more demanding level. The "rubber band" feature that is intended to keep all cars competitive (found in all other tracks) is turned OFF.



#### 4.2 Solo Play

- \* RIDGE RACER / SHORT Course - The same course as in the linked game.
- \* *New!!* CITY Course - Same course as in the linked game.
- \* RIDGE RACER / LONG Course - This is the extended version of the "SHORT Course". Until RAVE RACER, this section of the course appeared to be an area "under construction". Notice the graphic changes. Several tight turns through a single lane road make this the most demanding part of the track.
- \* *New!!* MOUNTAIN Course - It has the same course layout as the "MOUNTAIN Course" in the linked game.
- \* TIME TRIALS (T.T.) Mode - This is a race against a single, but fast computer car. Here the maximum top speed is elevated to 158 mph (normal top speed is 143 mph). It's selectable in all courses during solo play. To select "T.T", press and hold the "View Change" button during the "Course Select Screen". Turn the steering wheel to the desired course and press the gas pedal. The seven fastest times for each course will allow players to input their initials.

#### 4.3 New Features

##### *New!!* Selectable Viewpoint

New to the RIDGE RACER series is the ability to select one of two viewpoints!

- \* First Person - The driver's view from inside the car.
- \* Third Person - The view from outside and behind the car.

##### *New!!* Audio:

- \* New BGM - Select from one of 12 new songs! During the "Transmission Select Screen", use the shifter to select. Press the brake to select a song from Disc 2. Step on the gas pedal to confirm your selection. Don't forget to select AT or MT with the steering wheel.
  
- \* All New Voice Track - Totally new voice track keeps players in the action!



Tricks

1. **New!! MIRROR MODE** - This allows players to drive the course in a reversed fashion. For example, where a turn regularly goes left, now goes right, etc.

This trick is performed by inputting the code with the steering wheel, gas and brake pedal. When "3-2-1" appears at the beginning of the race, turn the steering wheel RIGHT, RIGHT, then press BOTH BRAKE AND GAS PEDALS. It's not easy to always execute, so don't get discouraged. It works in all courses and game modes.

2. **New!! MOUNTAIN - POWER START** - This trick only works on the MOUNTAIN Course during SOLO and TIME TRIAL (T.T.) Mode.

Just as soon as the race is started, turn around 180 degrees and drive into the wall behind the starting line. The car will crash through the wall and it's speed will increase to more than 185 mph! The speed will gradually decrease until the normal top speed is attained.

3. **New!! TRAMPLING** - This is effective during a linked game. On portions of both the CITY and MOUNTAIN Course are jumps. When jumping, try to land on the car ahead of you. By doing so, you will not only pass the car but get a momentary boost of speed.

4. **New!! DRAFTING** - Above the tachometer is a barmeter. This meter measures the amount of surplus power when drafting behind a car in front of you. If you are following closely behind the car ahead of you, this meter is lit from the left green bars to the right red bars. This indicates that you have surplus power. Then, make a power pass by leaving the slipstream of the car ahead. The meter's lights will disappear from right to left as you pass the car ahead. When all light in the barmeter is gone, your surplus power is gone.

5. **New!! ROCKET START** - Rev the engine at the starting line to the "perfect RPM's". When you find it and maintain it, the barmeter will light left to right. If the meter is fully lit, you will make a rocket start.



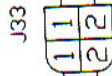


REVISION

REV	DESCRIPTION	DATE	APPROVAL
A	PRODUCTION RELEASE	8/24/95	

RV50-04364-00

RV50-04365-00



50.0 WHT  
50.0 BLK

15.0 WHT  
15.0 BLK

TO VIEW CHANGE NORMALLY OPEN  
TO VIEW CHANGE COM

TO 50 PIN CONNECTOR (A5)  
TO 50 PIN CONNECTOR (A6)

**namco**  
150 Charcot Avenue  
San Jose, CA 95131

TITLE  
**HARNES, KIT FOR RR1 & 2**

SIZE **B** DRAWING NO. **RV50-04400-00** REV **A**

DO NOT SCALE SHEET 1 OF 1

DRAWN BY **TONY ONG**

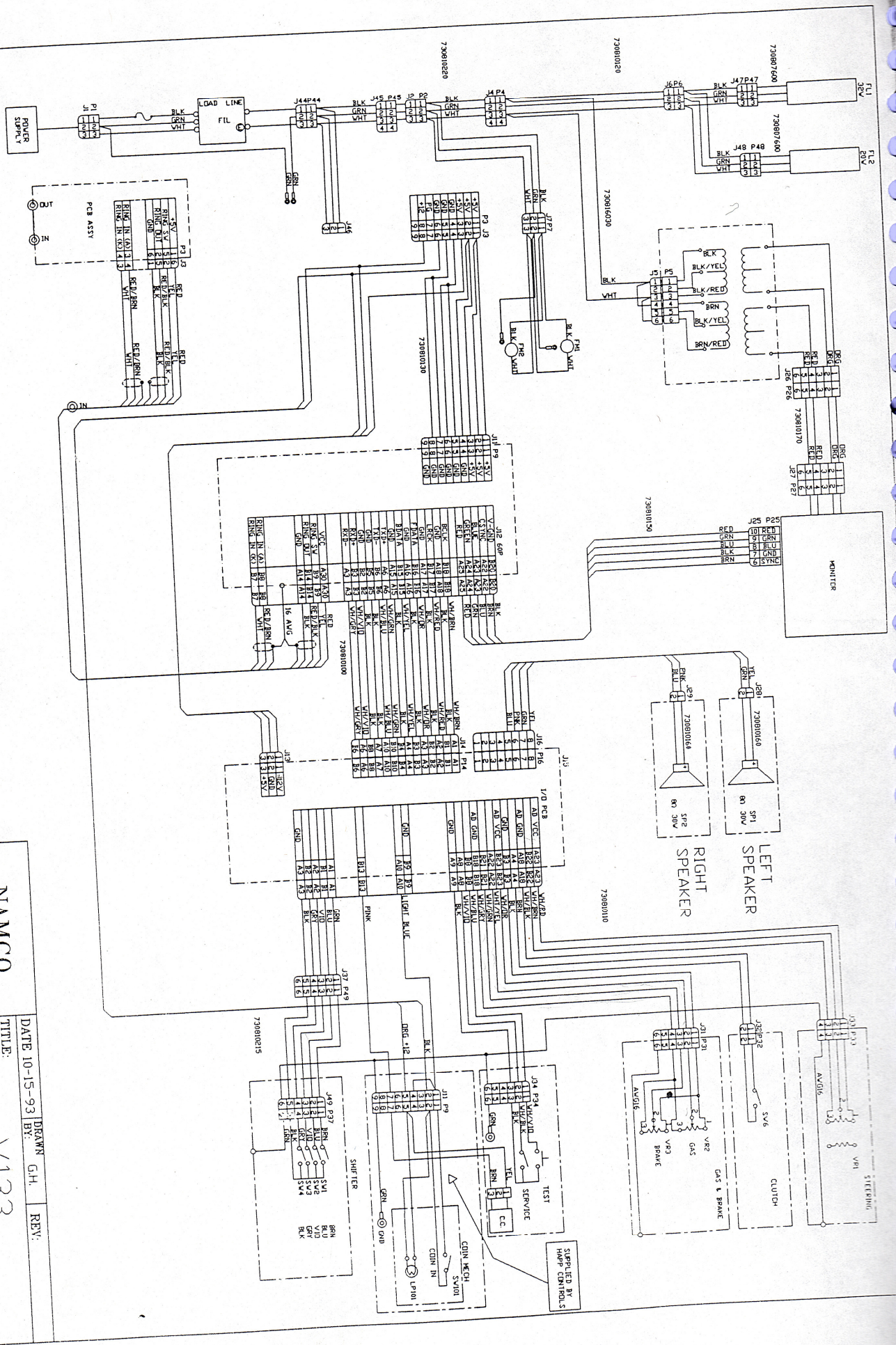
APPROVED

CHECKED DATE **8/24/95**

TOLERANCES UNLESS OTHERWISE SPECIFIED:  
X.XX ± 0.01 ANGLES ± 1°  
X.XXX ± 0.005

USED ON **RAVE RACER**





NAMCO  
LIMITED

DATE 10-15-93  
DRAWN G.H.  
REV.  
TITLE: V133  
MATERIAL: PART # 24019101