

SEGA

Out Runners

OWNER'S MANUAL



SEGA ENTERPRISES, INC. USA

MANUAL NO. 4201-6079-01

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SPECIFICATIONS

Installation space	: 1,710 mm (67.3 in.) (D) × 1,254 mm (49.4 in.) (W)
Height	: 1,960 mm (77.2 in.)
Weight	: Approx. 329 kg. (724 lbs.)
Power, Maximum current	: 450W 3.99A (AC 120V 60 Hz AREA)
CRT	: TWO 26 INCH MONITORS

NOTE: Descriptions in this manual are subject to change without prior notice.

INTRODUCTION OF THE OWNER'S MANUAL

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIs, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This Owner's Manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards OutRunners, a new SEGA product.

This manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read this manual to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system. Should such a case arise, contact our Customer Service Office at the following location:

SEGA ENTERPRISES, INC. (U.S.A.)/CUSTOMER SERVICE
275 Shoreline Drive, Suite 201, Redwood City, CA 94605 USA
Phone : (415) 802-1750
Fax : (415) 802-1754

1. HANDLING PRECAUTIONS

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

- Be sure to turn the power off before working on the machine.
- To insert or pull out the plug quickly is dangerous.
- It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.
- Do not use any fuse that does not meet specified rating.
- Make complete connections for the IC board and other connectors. Insufficient insertion is very dangerous.
- The operating (ambient) temperature range is from 5°C to 40°C.
- When cleaning the CRT surfaces, use a soft, dry cloth. Do not apply chemicals such as thinner, benzine, etc.

Also, for the IC board circuit inspections, only the logic tester is allowed. The use of a tester is not permitted, so be careful in this regard.

After confirming that there are no irregularities, turn the power ON.

2. PREVENTION OF COUNTERFEITING AND CONVERSION

☐ LABELLING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

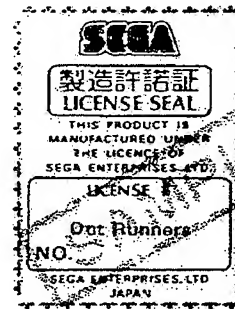
ORIGINAL SEAL

The following seal is put on the machines manufactured by SEGA.



LICENSE SEAL

The following seal is put on all SEGA kits, such as the printed circuit boards.



☐ COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1992

This signifies that this work was disclosed in 1992 and is the property of SEGA ENTERPRISES, LTD.

3. PRECAUTIONS CONCERNING INSTALLATION LOCATION

The OutRunners is an indoor game machine. Absolutely do not install it outside. Even indoors, avoid installing in places mentioned below so as to ensure proper usage:

- Places subject to rain or water leakage, or condensation due to humidity.
- In the proximity of an indoor swimming pool and/or shower.
- Places subject to direct sunlight.
- Places subject to heat sources from heating units, etc., or hot air.
- Vicinity of highly inflammable/volatile chemicals or hazardous matter.
- Sloped surfaces.
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- Places subject to any type of violent impact.
- Dusty places.

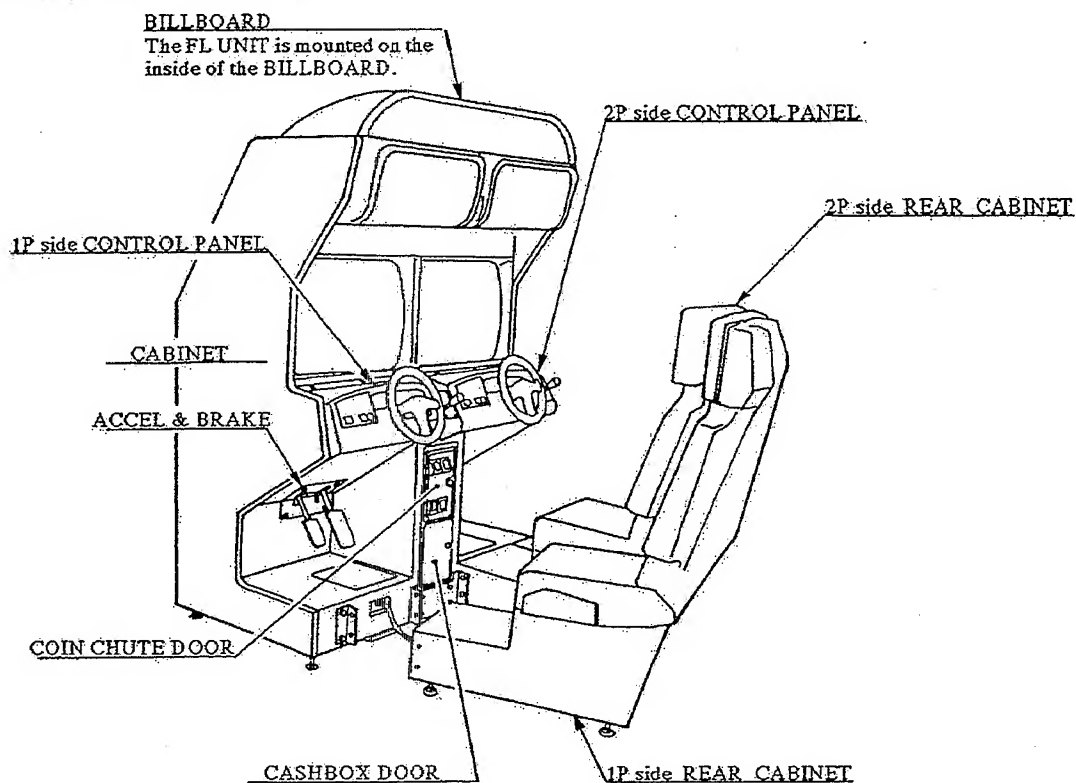
INSTALLATION PRECAUTIONS

- 1) Do not insert more than one electrical plug into the power plug socket.
- 2) The per unit standard voltage/ampereage is 100~120V/10A and 200~240V/5A.
- 3) If an extension cord is to be used, use a cord of 10A or higher rating.

Electric Current Consumption

MAX. 3.99A (AC 120V 60 Hz)

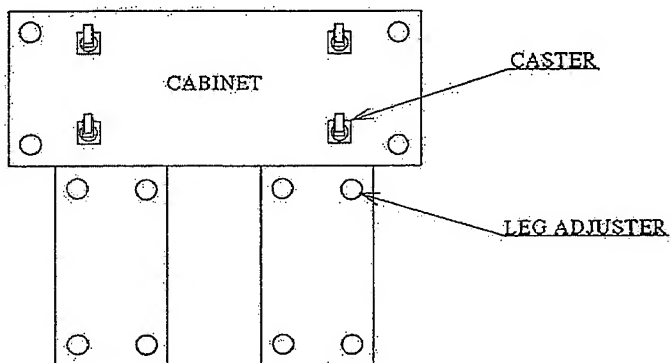
4. NAME OF PARTS



Note: The ACCELERATOR is hereinafter referred to as "ACCEL."

Dimensions and Weight

	WIDTH	DEPTH	HEIGHT (mm)	Weight (k g)
CABINET	1, 254 ×	910 ×	1, 820	Approx 265
REAR CABINET (one side only)	404 ×	1, 010 ×	1, 280	Approx 28
FL UNIT	1, 212 ×	120 ×	195	Approx 4
BILLBOARD	1, 222 ×	233 ×	458	Approx 4
COMPLETE CABINET	1, 254 ×	1, 710 ×	1, 960	Approx 329



BOTTOM VIEW

5. ACCESSORIES

PART No.	Qty.	DESCRIPTION	REMARKS
999-0176		STICKER SEAT ZEICHEN NO.1,2	Refer to Section 6.
"		STICKER SEAT ZEICHEN NO.3,4	For communications play, refer to Section 16.
"		STICKER SEAT ZEICHEN NO.5,6	
"		STICKER SEAT ZEICHEN NO.7,8	
"		STICKER CONT ZEICHEN	Refer to Section 6.
INST NO. 592-01		INSTAL INSTR. OUTRUNNERS ENG	
220-5130		VOL CONT B-5K OHM	For spare, refer to Section 9,10.
220-5381		MASTER KEY	For opening/closing the doors
		KEY	For the CASHBOX DOOR
280-5132		TUBE HOLDER	For communications play, refer to Section 16.
280-5224		PROTECT TUBE 1200	
390-5346		LAMP WEDGE BASE	For spare, refer to Section 11.
4201-6079-01		OWNERS MANUAL OUTRUNNERS ENG	OUTRUNNERS OWNER'S MANUAL, ENG.
514-5037-6000		FUSE 6.4 ϕ X30 5A 250V	AC 120V AREA
540-0006-01		WRENCH FOR TAMP PRF SCR DUAL TYPE M4	Tool
540-0007-01		WRENCH FOR TAMP PRF SCR DUAL TYPE M5	
540-0015-01		WRENCH FOR TAMP PRF SCR DUAL TYPE $\frac{5}{16}$ "	
600-6047-07		ASSY FIBER CABLE 07 MB	For communications play.

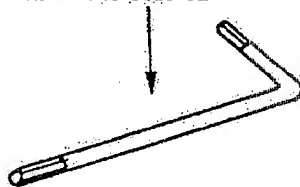
TOOL

(TAMPERPROOF WRENCH)

M4 540-0006-01

M5 540-0007-01

$\frac{5}{16}$ " 540-0015-01

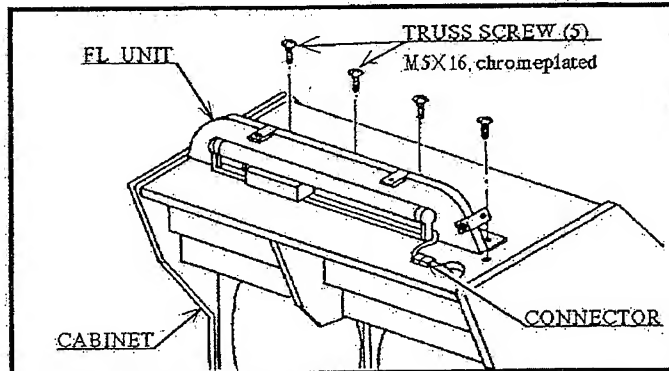


6. METHOD OF INSTALLATION AND ASSEMBLY

- Until the assembly work is finished, do not insert the power plug into the plug socket.
- Normally, work up to the following two items is finished. In the case where the machine is transported by removing the BILLBOARD and FL UNIT when the height of the entrance leading to the installation place is too low for the machine to pass, follow the procedure below starting from Item 1.

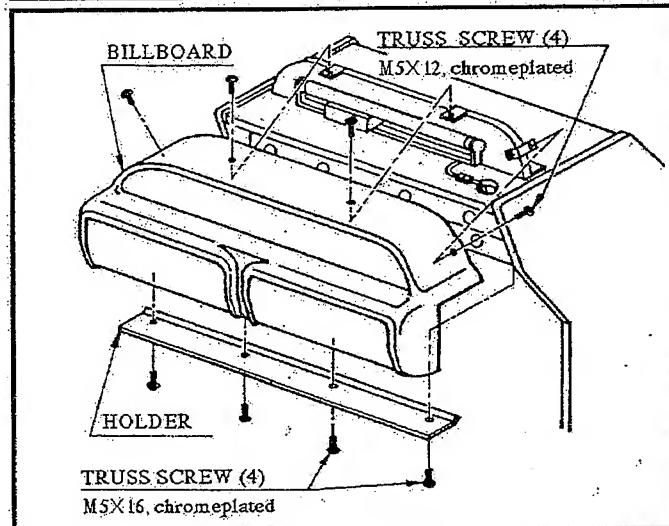
① FL UNIT

Mount the FL UNIT onto the CABINET and secure it with 5 screws. Then, connect the CONNECTOR.



② BILLBOARD

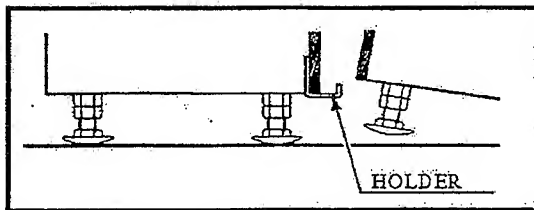
Install the BILLBOARD from over the FL UNIT by securing it with a total of 8 screws. The upper and lower screws are different in length. Therefore, pay attention to this point. Make sure that the HOLDER is installed in the direction as shown.



③ REAR CABINET 1P/2P

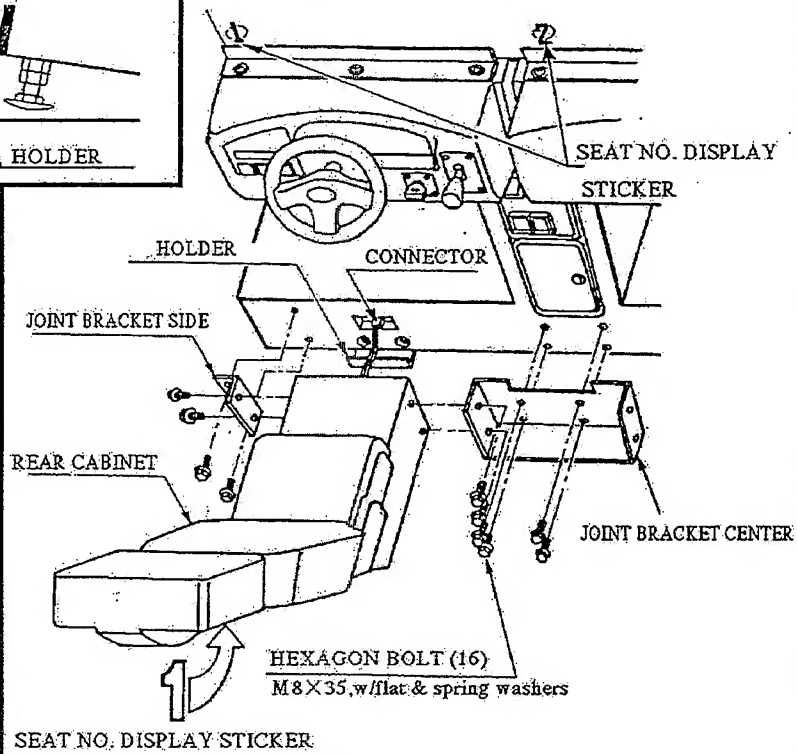
When performing the work as per 4 below, be careful not to catch your hand or fingers.

- I Place the CABINET in an appropriate position. At this time, moving the machine may be difficult if the REAR CABINET is attached to the CABINET.
- II Cause the REAR CABINET to come close to the CABINET at a position approx. 15 cm. to it. REAR CABINET 1P (red) should be on the left-hand side and REAR CABINET 2P (blue) should be on the right-hand side.
- III Insert the CONNECTOR into the corresponding one (secured) on the CABINET front part. Push the cords' extra portions into the CABINET.



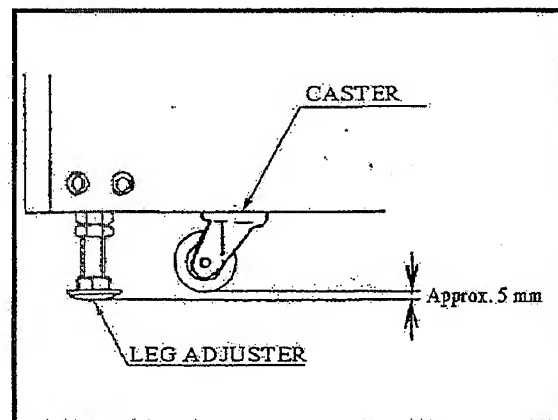
- ☞ Mount the REAR CABINET's front side wooden board onto the HOLDER below the CONNECTOR.

- £ By using a total of 16 HEXAGON BOLTS, secure the JOINT BRACKET CENTER and the two BRACKET SIDES.



- ④ **STICKER**
Apply the SEAT NO. DISPLAY STICKER to the FRONT GLASS and REAR CABINET.

- ⑤ **ADJUSTING THE LEG ADJUSTER**
The OUTFITTERS has four CASTERS and twelve LEG ADJUSTERS. Cause the LEG ADJUSTERS to come into contact with the floor, and secure the machine in place. Make adjustments in the height of the LEG ADJUSTERS in a manner so that the CASTERS will be raised approximately 5 mm. from the floor level, and secure the ADJUSTERS' height by fastening the NUTS. (If the gap is less than 5 mm, the machine may move while the game is being played and become dangerous.)

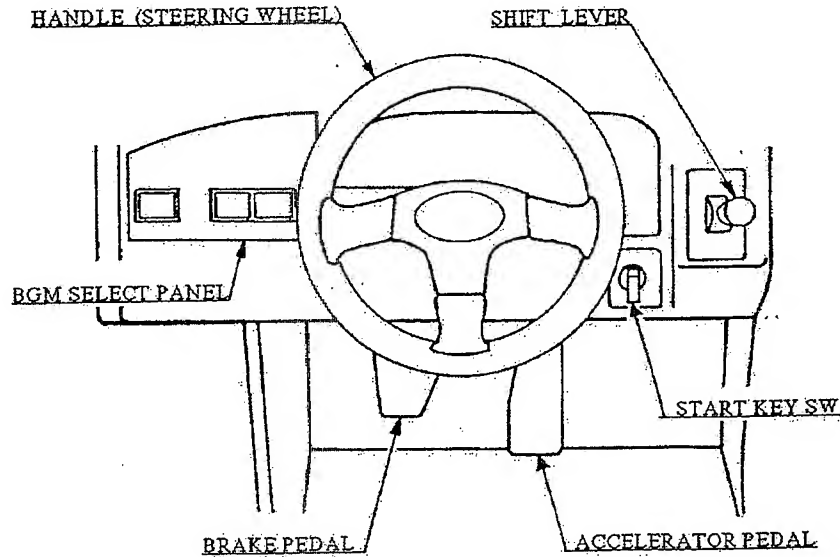


- After the above work, refer to Section 8 to check each part.

WHEN TRANSPORTING THE MACHINE:

When moving the machine, be sure to separate the CABINET and the REAR CABINET. Transporting the machine without separating them may cause the joint portion to be damaged. When moving the CABINET, retract the LEG ADJUSTERS to cause the CASTERS to make contact with the floor. Also, in the case where there are differences in floor levels, transport the CABINET by holding the catches on both sides of the CABINET and lifting it up.

7. HOW TO PLAY



Insert a coin(s) and turn the START KEY SW to the right.

Select the desired car out of the 8 different types by turning the HANDLE and make the selection effective by stepping on the ACCELERATOR.

For each car, select the desired SHIFT TYPE (AUTO or MANUAL) by turning the HANDLE and make the selection effective by stepping on the ACCELERATOR.

Now, you are ready for GAME START. In the case of COMMUNICATIONS PLAY, those players who turned the START KEY SW within a limited time are allowed to participate in the same race.

A CHECK POINT sign board appears in between stages. Passing this point within the limited time allows the game time to be extended, enabling you to continue playing.

At the CHECK POINT, you can choose the next course by passing either left or right side of the personnel standing in the middle of the road under the sign board. In the case of COMMUNICATIONS PLAY, the leading car determines the next course and all other cars are required to take the same course chosen by the leading car.

While driving on the course, when the time is up, the game is over.

Reaching the finishing line within the limited time, you are successful. There are 10 finishing lines in total, each having a different ending scene.

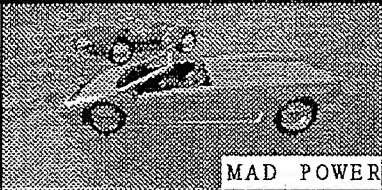
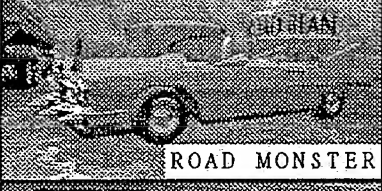
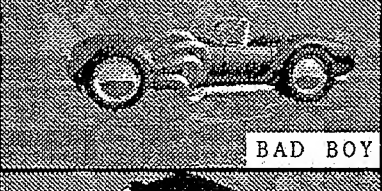
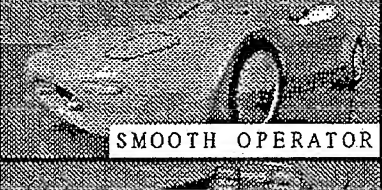
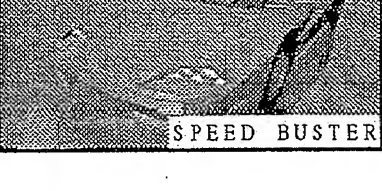
The best time player per finishing line is allowed to enter his name as OutRunner of OutRunners.

⑩ The map display enables the player to recognize his final destination and his course.

During game play, by operating the BGM SELECT PANEL SWes, various background music can be selected.

○ KNACK OF HOW-TO-PLAY

To win a race, you should thoroughly understand the characteristics of each car. Furthermore, to make sure that you win, choose a course in a manner so as to fully utilize the car's characteristics.

COLOR AND NAME OF CAR		ADVANTAGES	DISADVANTAGES	AUTOMATIC / MANUAL
YELLOW	 MAD POWER	Its max speed is of top class. Being large-sized, it is quite resistible against shock.	At a curve, it goes off outward and keeps slipping.	AUTOMATIC / 6 SHIFTS
BLUE	 EASY HANDLING	No special advantages and disadvantages (the easiest one to handle).		AUTOMATIC / 5 SHIFTS
PINK	 ROAD MONSTER	Being the largest of all, it is most resistible against shock.	Its speed is quite slow. Its acceleration and maneuverability are poor.	AUTOMATIC / 3 SHIFTS
GREEN	 WILD CHASER	It is suitable for off road run and is not much affected by the road condition, maintaining its speed even when it is off road.	Its speed is slow. The max. speed is low.	AUTOMATIC / 3 SHIFTS
BLACK	 BAD BOY	In acceleration, it's best of all. Also, its brake is quite effective.	Steering operability is poor.	AUTOMATIC / 2 SHIFTS
ORANGE	 QUICK REACTOR	It's capable of making a small turn at the corner. Its maneuverability is best of all.	It is most susceptible to shock.	AUTOMATIC / 4 SHIFTS
SILVER	 SMOOTH OPERATOR	No special advantages and disadvantages (the easiest one to handle).		AUTOMATIC / 2 SHIFTS
RED	 SPEED BUSTER	Its max speed is of top class. Being large-sized, it is quite resistible against shock.	At the curve, it goes outward off the way.	AUTOMATIC / 2 SHIFTS

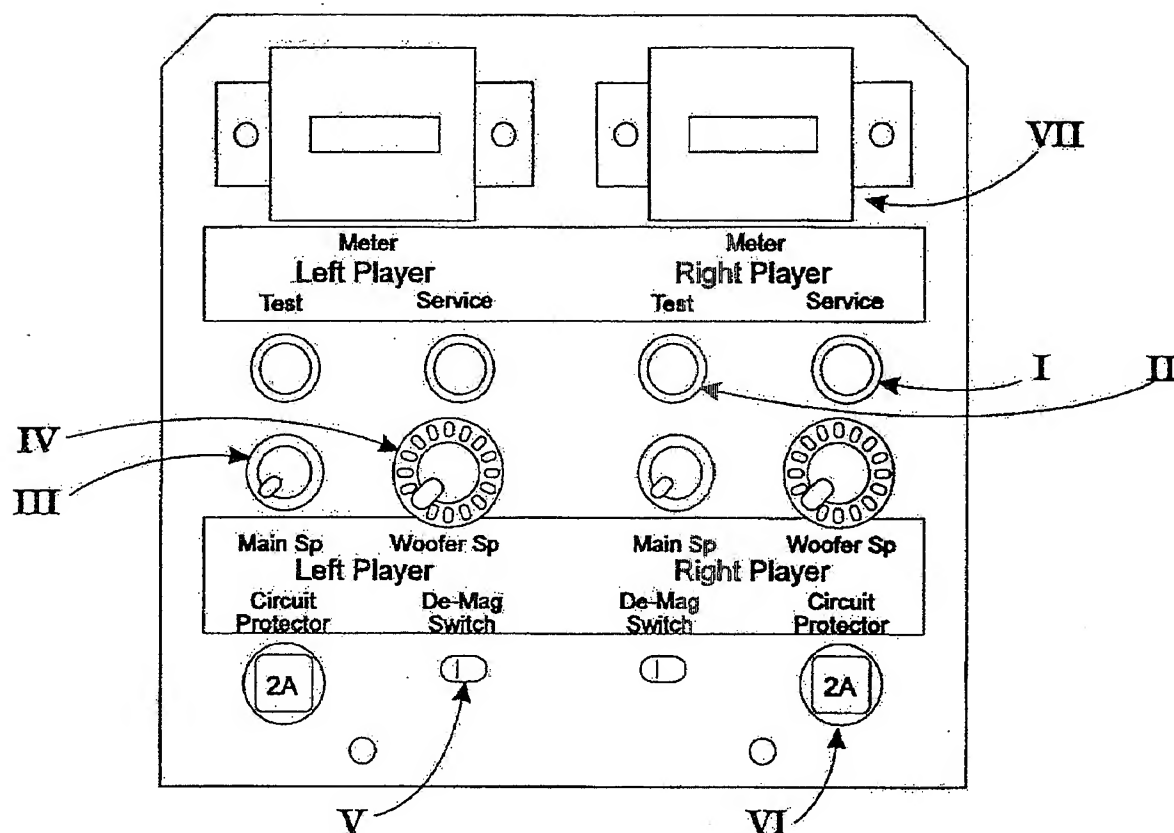
8. EXPLANATION OF TEST AND DATA DISPLAY

By operating the switch unit, periodically perform the tests and data check. When installing the machine initially or collecting cash, or when the machine does not function correctly, perform checking in accordance with the explanations given in this section.

The following shows tests and modes that should be utilized as applicable.

ITEMS	DESCRIPTION	REFERENCE SECTIONS
INSTALLATION OF MACHINE	When the machine is installed, perform the following: 1. Check to see that each setting is as per standard setting made at the time of shipment. 2. In the INPUT TEST mode, check each SW and VR. 3. In the OUTPUT TEST mode, check each lamp, motor, etc.. 4. In the SELF-TEST mode, check ICs on the IC Board.	8-9 8-4, 8-5 8-6 8-3
SELF-TEST	Choose MEMORY TEST in the MENU mode to allow the SELF-TEST to be performed. In this test, PROGRAM RAMs, ROMs, and ICs on the IC Board are checked.	8-3
PERIODIC SERVICING	Periodically perform the following: 1. SELF-TEST 2. Ascertain each setting. 3. In the INPUT TEST mode, test the CONTROL device 4. In the OUTPUT TEST mode, check each lamp, motor, etc..	8-3 8-9 8-4, 8-5 8-6
CONTROL SYSTEM	1. In the INPUT TEST mode, check each SW and VR. 2. Adjust or replace each SW and VR. 3. If the problem can not be solved yet, check the CONTROL's moves.	8-4, 8-5 9, 10
MONITOR	In the MONITOR ADJUSTMENT mode, check to see if the MONITOR adjustment is appropriately made.	8-8
IC BOARD	1. SELF-TEST 2. In the SOUND CHECK mode, check the sound related ROMs.	8-3 8-7
DATA CHECK	Check such data as game play time and histogram to adjust the difficulty level, etc..	8-12 8-9

8-1 SWITCH UNIT



Open the coin chute door and the switch unit shown will appear. The functioning of each switch is as follows:

- | | |
|------------------------|--|
| I - SERVICE BUTTON: | Gives credits without registering on the coin meter. |
| II - TEST BUTTON: | For the handling of the test button, refer to the following pages. |
| III - MAIN SP: | Adjusts the sound volume of the MAIN SPEAKER (located at the position of the back of the player's head). |
| IV - WOOFER SP: | Adjusts the sound volume of the WOOFER. |
| V - DEMAG. SW: | Eliminates the unevenness of the on-screen color of the MONITOR. |
| VI - CIRCUIT PROTECTOR | When the steering wheel motor is subjected to an overload, the circuit breaks to protect the motor. At this time, fully pushing this button allows the circuit to be restored to its original condition. |
| VII - COIN METER | Registers coins accepted for play. |

8-2 TEST MODE

The Test Mode allows the functioning of each part of the Cabinet to be checked, the monitor to be adjusted, and the coins and game-related various settings to be performed.

Press the TEST BUTTON to cause the following Test Item Menu to be displayed on the 1P and 2P side monitors.

In the case where more than 2 machine units are linked, the units other than the master unit should also enter the test mode at the same time the master unit does..

TEST MODE

INDIVIDUAL

MEMORY TEST
VOLUME ADJUSTMENT
INPUT TEST
OUTPUT TEST
SOUND TEST
C. R. T. TEST
GAME ASSIGNMENTS
COIN ASSIGNMENTS
NETWORK ASSIGNMENTS
BOOKKEEPING
BACKUP DATA CLEAR
→ EXIT

SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON

Press the SERVICE BUTTON until the pointer "→" is moved to the desired item. Then press the TEST BUTTON.

After the test is complete, move "→" to "EXIT" and press the TEST BUTTON to return to the Game Mode.

In the case where more than 2 machine units are linked, the units other than the master unit should also exit at the same time the master unit does.

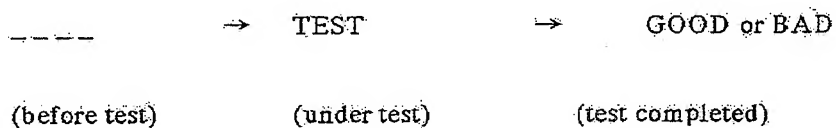
You may position the pointer to "INDIVIDUAL" and press the TEST BUTTON. The word "INDIVIDUAL" toggles to "CONTINUE". In the "CONTINUE" mode, each push of the TEST BUTTON causes transition to the next item. In the "INDIVIDUAL" mode, only the item indicated by the pointer is tested.

8-3 MEMORY TEST

The MEMORY TEST mode is for checking the memory IC operations on the board. "GOOD" is displayed for normal ICs and "BAD" is displayed for abnormal ICs.

MEMORY TEST					
837-8890 <ROM>					
IC36	GOOD	IC37	GOOD	IC39	GOOD
IC40	GOOD				
837-8676 <RAM>					
IC1	GOOD	IC2	GOOD	IC3	GOOD
IC4	GOOD	IC21	GOOD	IC54	GOOD
IC57	GOOD	IC58	GOOD	IC60	GOOD
IC61	GOOD	IC67	GOOD	IC68	GOOD
IC70	GOOD	IC115	GOOD	IC116	GOOD
IC117	GOOD	IC118	GOOD	IC120	GOOD
IC121	GOOD	IC122	GOOD	IC123	GOOD
PUSH TEST BUTTON TO EXIT					

The right-hand side of each IC displays the following in the sequential order shown.



During the test, NOW TESTING flashes at the above portion of PUSH TEST BUTTON TO EXIT.

When the test is completed, if the results are shown as above, it is satisfactory.

It takes approximately one minute to complete the test. If the period exceeds one minute, this may have been caused by board malfunctioning.

After finishing the test, pressing the TEST button allows the MENU mode to return on to the screen.

8-4 VOLUME ADJUSTMENT

Select VOLUME ADJUSTMENT to cause the following to appear on the screen so that volume adjustment can be performed for each control device.

VOLUME ADJUSTMENT

ADJUST

→ CANCEL

MONITOR A

STEERING WHEEL

ACCELERATOR

BRAKE

MONITOR B

STEERING WHEEL

ACCELERATOR

BRAKE

SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON

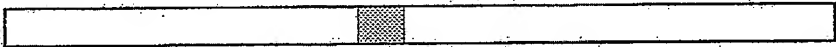
- Bring the cursor to CANCEL and press the TEST button to allow the MENU mode to return on to the screen.
- Bring the cursor to ADJUST and press the TEST button to cause the screen to change to ADJUST mode (in the following page), which allows VOLUME ADJUSTMENT to be performed.
- MONITOR A shows the control devices of the left-hand side seat and MONITOR B, those of the right-hand side seat.
- * If the red cursor moves fully within the range shown in the green color, it is satisfactory (move the Steering Wheel, Accel., and Brake fully within the mobile range). If the results are not satisfactory, make adjustment in the ADJUST mode.
- * When the Game Bd. or V. R. is replaced, be sure to perform VOLUME ADJUSTMENT by using the ADJUST mode.

VOLUME ADJUSTMENT

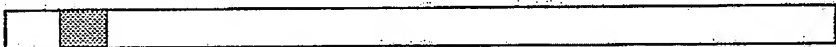
ADJUSTING

MONITOR A

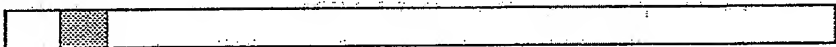
STEERING WHEEL



ACCELERATOR



BRAKE

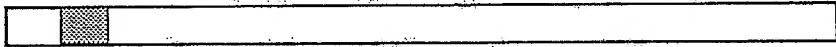


MONITOR B

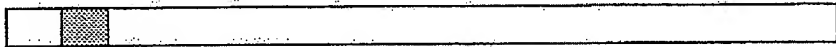
STEERING WHEEL



ACCELERATOR



BRAKE

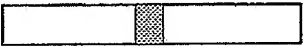
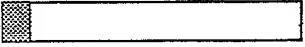


PUSH TEST BUTTON TO EXIT

- By entering this mode, move the Steering Wheel, Accl. and Brake for each of the right and left seats fully within the mobile range.
- The mobile range for adjustment is shown in the green color.
- Pressing the TEST button causes the VOLUME ADJUSTMENT setting to be registered, allowing the MENU mode to return on to the screen.
- * The mobile range for the adjustment will not cover the entire bar space, and also, it varies depending on the Steering Wheel, Accl. and Brake for each of the right and left seats. Therefore, be careful of this point.

8-5 INPUT TEST

This mode displays the status of each switch and VR. Monitor A displays the 1P side player's data, and Monitor B, the 2P side player's data.

INPUT TEST		
MONITOR A		MONITOR B
80	STEERING WHEEL	80
		
0	ACCELERATOR	0
		
0	BRAKE	0
		
Off	SHIFT UP	Off
Off	SHIFT DOWN	Off
Off	START	Off
Off	DJ/MUSIC	Off
Off	< <	Off
Off	> >	Off
Off	COIN	Off
Off	SERVICE	Off
TEST Off		
PUSH TEST BUTTON TO EXIT		

- The V.R. system allows the present V.R. value to be displayed. The following shows the correct values:

STEERING WHEEL	: Under 7H	← 78H~87H →	Over F8H
		(Centering position)	
ACCELERATOR	: Under 7H	←-----→	Over F8H
BRAKE	(Pedal OFF)		(Pedal ON)

- The VR value can be roughly checked by watching the cursor position in the respective gauges under the STEERING WHEEL, ACCELERATOR and BRAKE items.
- The value shown in the respective items of STEERING WHEEL, ACCELERATOR and BRAKE is a standard for the status in which said items are not subject to force.
- Pressing the TEST button causes the MENU mode to return on to the screen.

* In this mode, periodically check the status of each SW and VR.

8-6 OUTPUT TEST

This mode is for checking the motor and lamp status.

OUTPUT TEST			
MONITOR A		MONITOR B	
CHECK POINT	Off	CHECK POINT	Off
RACE LEADER	Off	RACE LEADER	Off
DJ/MUSIC	Off	DJ/MUSIC	Off
<< >>	Off	<< >>	Off
STEERING WHEEL	Off	STEERING WHEEL	Off
→ EXIT			
SELECT BY SERVICE BUTTON AND PUSH TEST BUTTON			

MONITOR A, Lamps and Steering Wheel Motor listed on the left-hand side of the above OUTPUT TEST page are those for the left-hand side seat, and MONITOR B, Lamps and Steering Wheel Motor listed on the right-hand side of said page are for the right-hand side seat.

By bringing the cursor to the test item and pressing the TEST button, if the on-screen display becomes On and the lighting up of the lamps and the vibration of steering wheels are ascertained, it is satisfactory.

Bring the "→" to "EXIT" and press the TEST BUTTON to return to the Menu mode.

8-7 SOUND TEST

Choose SOUND TEST to cause the following mode to appear on the monitor so that SOUND MEMORY check can be performed.

SOUND TEST	
MONITOR A No.	0
MONITOR B No.	0
→ EXIT	
SELECT BY SERVICE BUTTON AND PUSH TEST BUTTON	

The sound is emitted from the SPEAKER of the left-hand side seat when the arrow points MONITOR A, and from the SPEAKER of the right-hand side seat when the arrow points MONITOR B (the sound can not be emitted from both SPEAKERS at the same time).

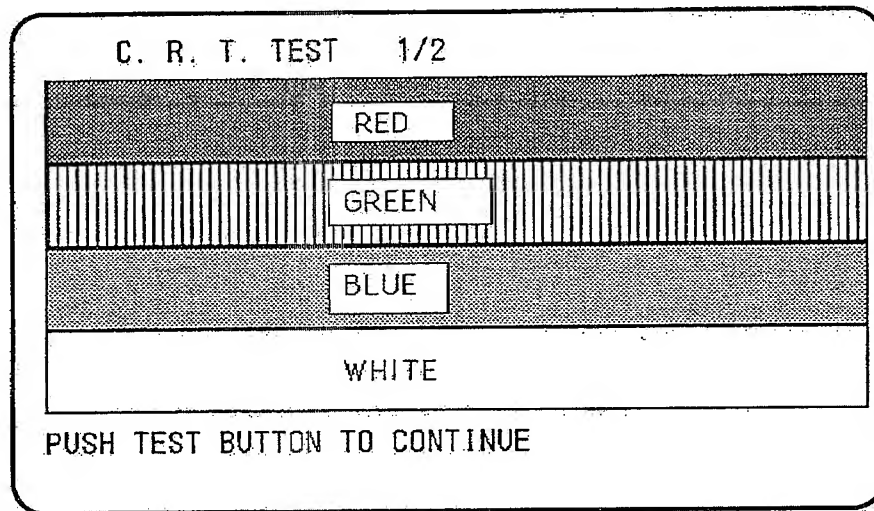
At No. 0, however, sound will not be emitted.

Bring the "→" to "EXIT" and press the TEST BUTTON to return to the Menu mode.

8-8 C.R.T. TEST

(1) RGB color adjusting screen (1/2)

This page is adjusting the monitor color.



Red, green, and blue are darkest on the leftmost scale and get brighter by 31 gradations to the right.

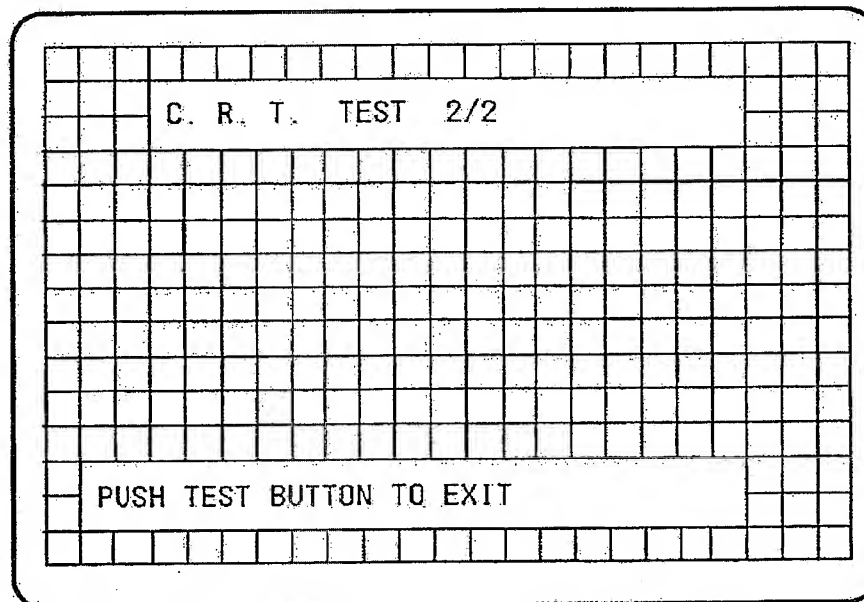
The contrast of the monitor is normal, if the white color bar is black in the leftmost position and is white in the rightmost position.

Press the TEST BUTTON to turn a page.

(2) Monitor size adjusting screen (2/2)

This page is for checking the monitor size.

When adjusting the monitor size, be careful that grids do not go off of the screen.



Press the TEST BUTTON to return to the Menu.

8-9 GAME ASSIGNMENTS

In this mode, the present game setting is displayed and also, the game setting changes can be made.

GAME ASSIGNMENTS

GAME DIFFICULTY

4

EASY

HARD

TIME DIFFICULTY

PRE-STAGE	NORMAL
STAGE 1	NORMAL
STAGE 2	NORMAL
STAGE 3	NORMAL
STAGE 4	NORMAL
FINAL STAGE	NORMAL

STEERING REACTION

On

ADVERTISE SOUND

Off

→

EXIT

SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON

- **GAME DIFFICULTY** The number of the cars which obstruct the player car can be changed (1: minimum; 8: maximum). At the time of shipment, the number is set to 4 as a standard.
 - **TIME DIFFICULTY** Time that can be increased or decreased at the beginning of each stage can be changed. (NORMAL±5 seconds). At the time of shipment, it is set to NORMAL.
 - **STEERING REACTION** Whether Steering Wheel's vibration is available or not can be set. At the time of shipment, it is set to Yes.
 - **ADVERTISE SOUND** ADVERTISE SOUND Yes or No can be set. At the time of shipment, it is set to No.
- * When more than 2 units are linked, once the above setting is made for the MASTER unit, the same setting applies to all of the SLAVE units (however, even if changes are made for the SLAVE units only, such changes will not be reflected in the game), (refer to 8-11).
- Select an item to be changed using the SERVICE BUTTON, then press the TEST BUTTON to make changes.
 - Bring the arrow mark(→) to EXIT and press the TEST BUTTON to return to the Menu.

8-10 COIN ASSIGNMENTS

The "COIN ASSIGNMENTS" mode permits you to set the start number of credits, as well as the basic numbers of coins and credits. This mode expresses "how many coins correspond to how many credits."

COIN ASSIGNMENTS

COIN / CREDIT SETTING #1
1 COIN 1 CREDIT

MANUAL SETTING

→ EXIT

SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON

- The COIN/CREDIT SETTING is classified into #1, #6, #8, #9, #10, #11, #12, #15, #17, #18, #19, #21, #22, #24, and #26.
- Choosing the MANUAL SETTING allows a finer classification settings to be made.
- Bring the arrow mark(→) to EXIT and press the TEST BUTTON to return to the Menu.

COIN/CREDIT SETTING

NAME OF SETTING	EACH SEAT'S COIN CHUTE
SETTING #1	1 COIN 1 CREDIT
SETTING #6	1 COIN 2 CREDITS
SETTING #8	1 COIN 3 CREDITS
SETTING #9	1 COIN 4 CREDITS
SETTING #10	1 COIN 5 CREDITS
SETTING #11	1 COIN 6 CREDITS
SETTING #12	2 COINS 1 CREDIT
SETTING #15	1 COIN 1 CREDIT 2 COINS 3 CREDITS
SETTING #17	3 COINS 1 CREDIT
SETTING #18	4 COINS 1 CREDIT
SETTING #19	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 5 CREDITS
SETTING #21	3 COINS 1 CREDIT 5 COINS 2 CREDITS
SETTING #22	2 COINS 1 CREDIT 4 COINS 2 CREDITS 5 COINS 3 CREDITS
SETTING #24	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 4 CREDITS 5 COINS 6 CREDITS
SETTING #26	FREE PLAY

○MANUAL SETTING

COIN ASSIGNMENTS										
MANUAL SETTING										
COIN TO CREDIT 1 COIN 1 CREDIT.....										①
BONUS ADDER NO BONUS ADDER.....										②
COIN CHUTE MULTIPLIER.										
COIN 1 COIN COUNTS AS 1 COIN.....										③
1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9		
CREDIT										
→ EXIT										
SELECT BY SERVICE BUTTON AND PUSH TEST BUTTON										

- ① Determines COIN/CREDIT setting.
- ② This sets how many COINS should be inserted to obtain one SERVICE COIN.
- ③ This sets how many tokens one COIN represents.

MANUAL SETTING

COIN TO CREDIT	1 COIN	1 CREDIT
	2 COINS	1 CREDIT
	3 COINS	1 CREDIT
	4 COINS	1 CREDIT
	5 COINS	1 CREDIT
	6 COINS	1 CREDIT
	7 COINS	1 CREDIT
	8 COINS	1 CREDIT
	9 COINS	1 CREDIT

BONUS ADDER	NO BONUS ADDER	
	2 COINS	GIVE 1 EXTRA COIN
	3 COINS	GIVE 1 EXTRA COIN
	4 COINS	GIVE 1 EXTRA COIN
	5 COINS	GIVE 1 EXTRA COIN
	6 COINS	GIVE 1 EXTRA COIN
	7 COINS	GIVE 1 EXTRA COIN
	8 COINS	GIVE 1 EXTRA COIN
	9 COINS	GIVE 1 EXTRA COIN

COIN CHUTE MULTIPLIER	1 COIN	COUNTS AS 1 COIN
	1 COIN	COUNTS AS 2 COINS
	1 COIN	COUNTS AS 3 COINS
	1 COIN	COUNTS AS 4 COINS
	1 COIN	COUNTS AS 5 COINS
	1 COIN	COUNTS AS 6 COINS
	1 COIN	COUNTS AS 7 COINS
	1 COIN	COUNTS AS 8 COINS
	1 COIN	COUNTS AS 9 COINS

8-11 NETWORK ASSIGNMENTS

NETWORK ASSIGNMENTS	
COMMUNICATION	NETWORK
PRIVILEGE MODE	MASTER
CABINET ID#	1
→ EXIT	
SELECT BY SERVICE BUTTON AND PUSH TEST BUTTON	

The PRIVILEGE MODE and CABINET ID# will not be displayed on the screen if STAND ALONE is selected by bringing cursor to COMMUNICATION.

Bringing the arrow mark to COMMUNICATION and pressing the TEST button allows the following 2 items to be alternately displayed.

STAND ALONE (when not to be linked with other unit)

NETWORK (when more than 2 units are linked)

Bringing the arrow mark to PRIVILEGE MODE and pressing TEST button allows the following 2 items to be displayed alternately.

MASTER When more than 2 units are linked, one of them should be made the MASTER unit and the settings made (game, coin, etc.) for the MASTER cabinet also apply to the SLAVE cabinets.

SLAVE When more than 2 units are linked, all cabinets except for the MASTER cabinet are SLAVE cabinets. Changing the settings for the SLAVE cabinets only will not be effective.

CABINET ID# When more than 2 cabinets are linked, the ID Nos. 1, 2, 3, and 4 are set starting from the extreme left (facing the front portions of the MONITORS). Setting the same No. for 2 or more cabinets, or using the sequential order in a confused manner may cause some problems to the display during game play, therefore, pay careful attention to this point.

8-12 BOOKKEEPING

This mode allows each of the CREDIT/TIME/GAME data to be ascertained.

BOOKKEEPING 1/2				
COIN CHUTE A	Ø			
COIN CHUTE B	Ø			
TOTAL COINS	Ø			
COIN CREDITS	Ø			
SERVICE CREDITS	Ø			
TOTAL CREDITS	Ø			
NUMBER OF GAMES A	Ø			
NUMBER OF GAMES B	Ø			
TOTAL TIME	ØD	ØH	ØM	ØS
GAME PLAY TIME A	ØD	ØH	ØM	ØS
GAME PLAY TIME B	ØD	ØH	ØM	ØS
AVERAGE GAME TIME	—	M	—	S
LONGEST GAME TIME	—	M	—	S
SHORTEST GAME TIME	—	M	—	S
PUSH TEST BUTTON TO CONTINUE				

A shows the 1P side (left-side) player's data and B, the 2P side(right-side) player's data.

- COIN CHUTE: Number of activations of coin chute
- TOTAL COINS: Total number of activations of coin chutes
- COIN CREDITS: Number of CREDITS registered by COIN insertion
- SERVICE CREDITS: Number of times the SERVICE BUTTON is used
- TOTAL CREDITS: Total number of credits (COIN CREDITS + SERVICE CREDITS)
- NUMBER OF GAMES: Each seat's total games
- GAME PLAY TIME: Each seat's total game time

When more than 2 figures are displayed, an alphabetical letter "S" signifying plural quantity is shown at the end of each item.

Pressing the TEST BUTTON displays Page 2/2.

BOOKKEEPING 2/2

TIME HISTOGRAM

STAGE 1	Ø
STAGE 2	Ø
STAGE 3	Ø
STAGE 4	Ø
STAGE 5	Ø
COMPLETE	Ø

OutRunner of OutRunners

AUSTRALIA	---	---	---	---	---	---	---	---	---
HONGKONG	---	---	---	---	---	---	---	---	---
JAPAN	---	---	---	---	---	---	---	---	---
CHINA	---	---	---	---	---	---	---	---	---
RUSSIA	---	---	---	---	---	---	---	---	---
NORTHERN EUROPE	---	---	---	---	---	---	---	---	---
SWITZERLAND	---	---	---	---	---	---	---	---	---
ATLANTIC OCEAN	---	---	---	---	---	---	---	---	---
SPAIN	---	---	---	---	---	---	---	---	---
KENYA	---	---	---	---	---	---	---	---	---

PUSH TEST BUTTON TO EXIT

TIME HISTOGRAM:

Number of players whose play became "GAME OVER" at each stage. (COMPLETE refers to the number of players who finished the game.)

OutRunner of OutRunners:

Registering the best-time players who reached the finishing line at each finishing point (color of car, 3 initial letters and

Pressing the TEST BUTTON restores the Menu screen.

8-13 BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING.

BACKUP DATA CLEAR

YES (CLEAR)

→ NO (CANCEL)

SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON

When clearing, bring "→" to "YES" and when not clearing, to "NO", by using the SERVICE BUTTON, and then push the TEST BUTTON.

Bring "→" to "NO" and press the TEST BUTTON to cause the Menu mode to return on to the screen.

When the data has been cleared, "COMPLETED" will be displayed and the Menu mode returns on to the screen.

9. ACCEL. & BRAKE

In the TEST mode, if ACCEL. & BRAKE VR value variation adjustment can not be made within the allowable range, the adjustment of VR position or VR replacement is required.

Also, apply grease to the mechanism part once every 6 months as a standard.

To perform the above work, take out ACCEL. & BRAKE from the cabinet.

9-1 TAKING OUT THE ACCEL & BRAKE

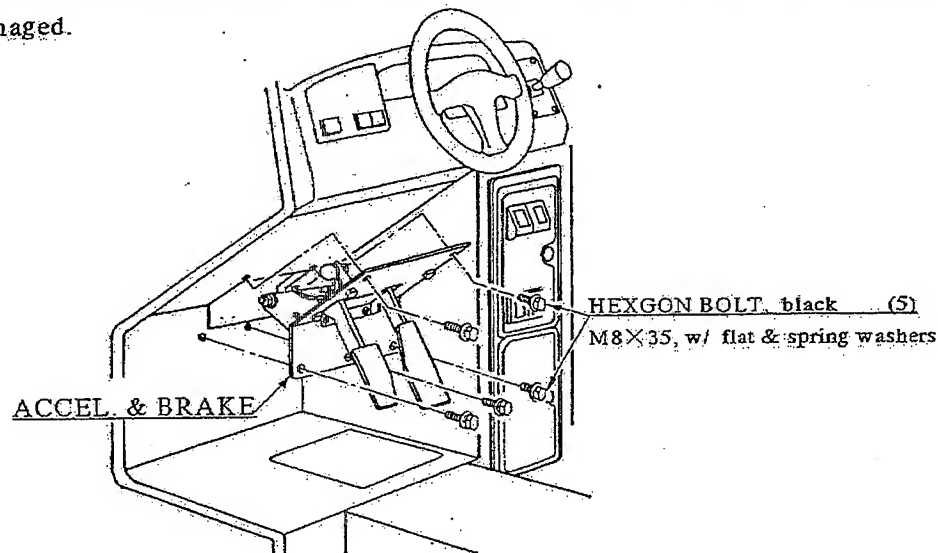
Take off the 5 hexagon bolts.

Take out the ACCEL. & BRAKE from the cabinet.

i Disconnecting the 2 connectors allows ACCEL. & BRAKE to be removed from the cabinet.

When adjusting the VR, perform the work by watching the test mode screen with the connectors being as is connected.

When installing ACCEL. & BRAKE, pay attention so that the connectors are not caused to be damaged.



9-2 ADJUSTMENT AND REPLACEMENT OF VOLUME

Choose VOLUME ADJUSTMENT in the TEST mode. Move the ACCEL. pedal and BRAKE pedal to the maximum of the mobile range and ascertain the VR value variation displayed on the screen. If the VR value is out of the range displayed on the screen, an adjustment of the VR position or a replacement of the VR is required. If the VR value stays within the range shown on the screen, no adjustment is required.

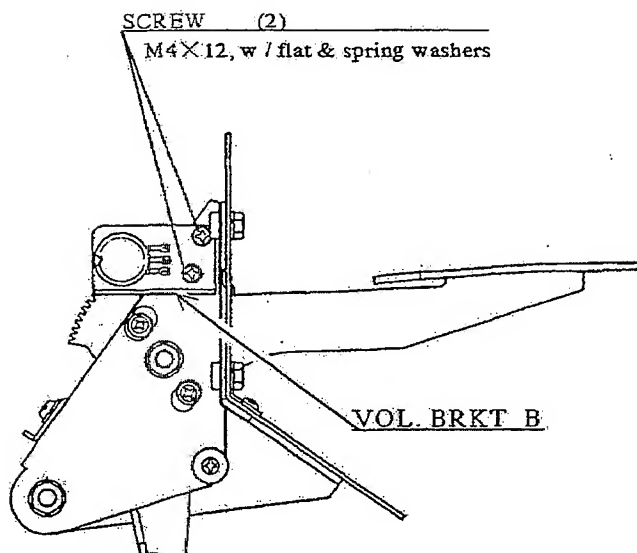
Note that the following procedure apply to both ACCEL. and BRAKE.

VOLUME ADJUSTMENT

Cause the VOLUME ADJUSTMENT mode to appear on the screen. (Refer to 8-4.)

Loosen the 2 screws shown.

- i Turn the gear which is attached to the VR and make adjustment in a manner so that the VR value will stay within the specified range.
- ç Fasten the 2 screws by paying attention to gear engagement and backlash.
- £ After making adjustments, newly perform the setting of VR value in the VOLUME ADJUSTMENT mode.



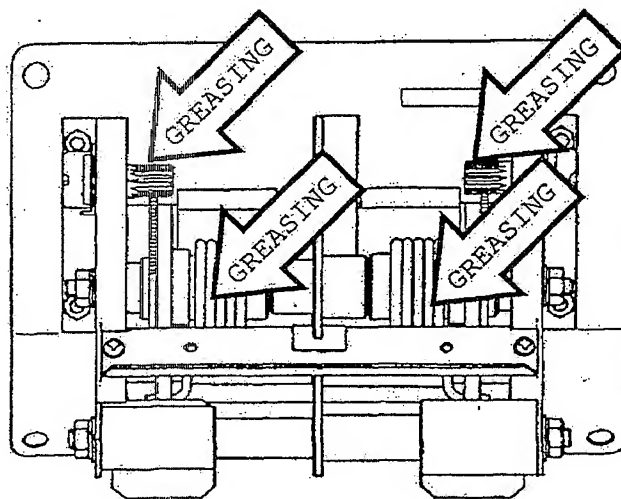
REPLACEMENT OF VOLUME (220-5130 VOL CONT B - 5K OHM)

Take off the 2 screws which secure the VOL. BRKT and remove the VR with the gear and bracket as is attached. After the replacement, ascertain the VR value variation in the VOLUME ADJUSTMENT mode.

9-3 GREASING

Once every 6 months as a standard, apply grease to the portions where the springs and gears are engaged.

Also, be very careful so that grease will not attach to the stopper's rubber part.



10. CONTROL PANEL

In the TEST mode, if adjustment can not be made in a manner so that the VR value variations are within the allowable range, an adjustment of VR position or a replacement of VR is required. Also, apply grease to the steering wheel mechanism's shaft or sliding portions once every 6 months as a standard.

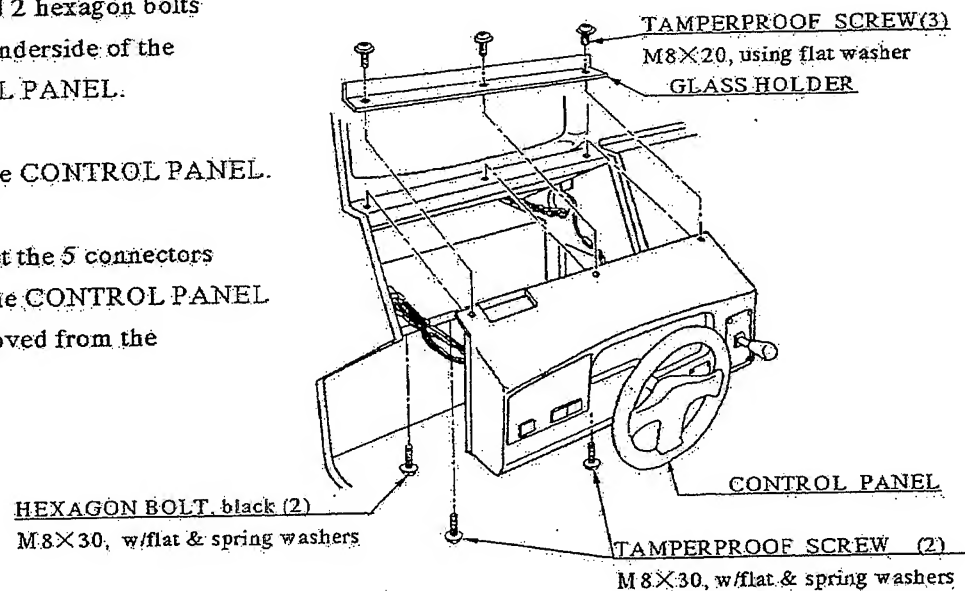
When performing the above work, remove the CONTROL PANEL from the cabinet.

10-1 REMOVING THE CONTROL PANEL

Take off the 3 tamperproof screws and remove the glass holder.

Take off the 2 tamperproof screws and 2 hexagon bolts from the underside of the CONTROL PANEL.

- i Pull out the CONTROL PANEL.
- ¢ Disconnect the 5 connectors to allow the CONTROL PANEL to be removed from the cabinet.

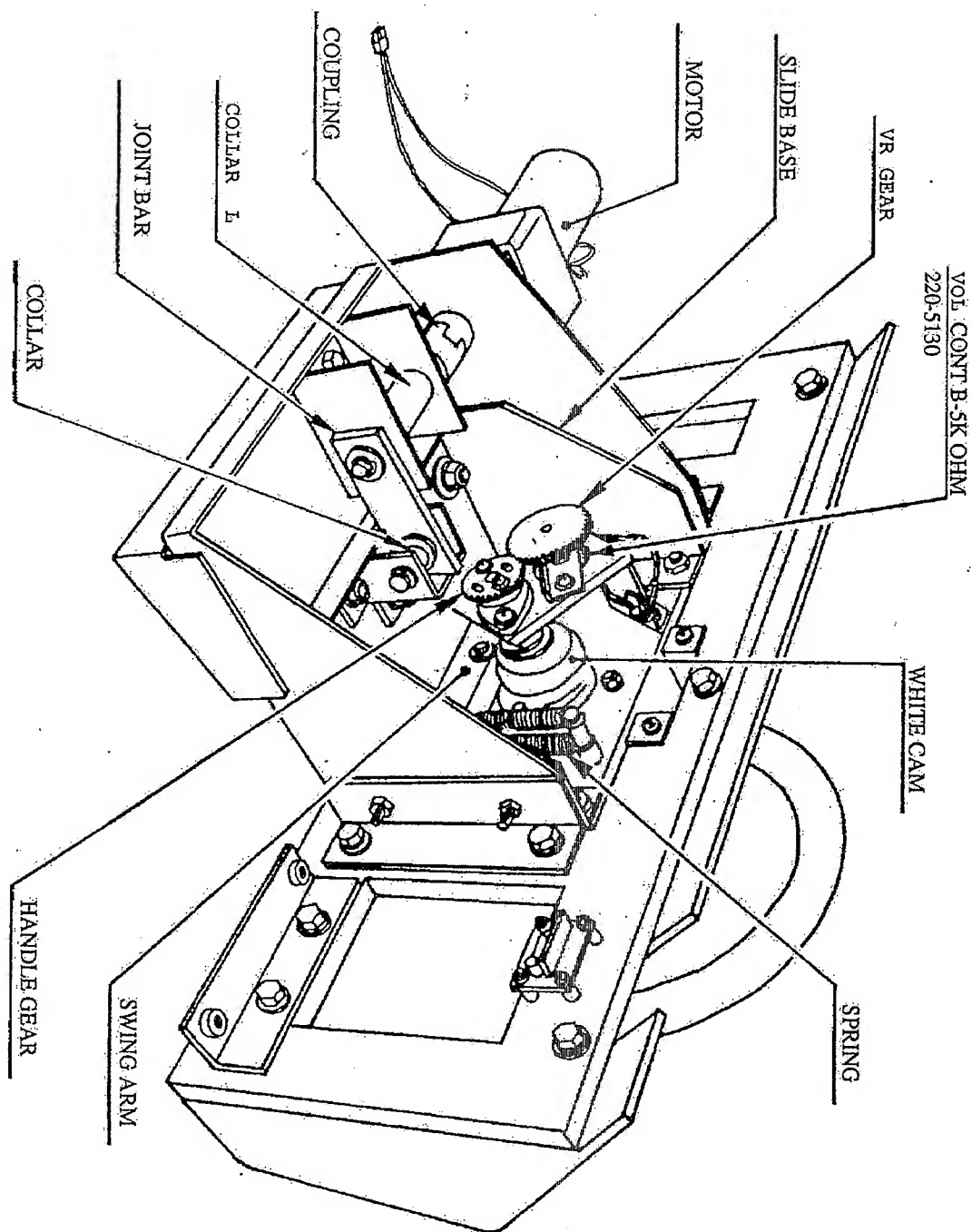


When making the VR adjustment, perform the work with the connectors as is connected, by watching the VOLUME ADJUSTMENT mode on the screen.

When installing the CONTROL PANEL, pay attention so that the connectors are not caused to be damaged.

When the CONTROL PANEL is removed, the monitor adjustment knobs appear. For the adjustment, refer to the following section.

10-2 NAME OF THE CONTROL PANEL PARTS



10-3 ADJUSTMENT AND REPLACEMENT OF VOLUME

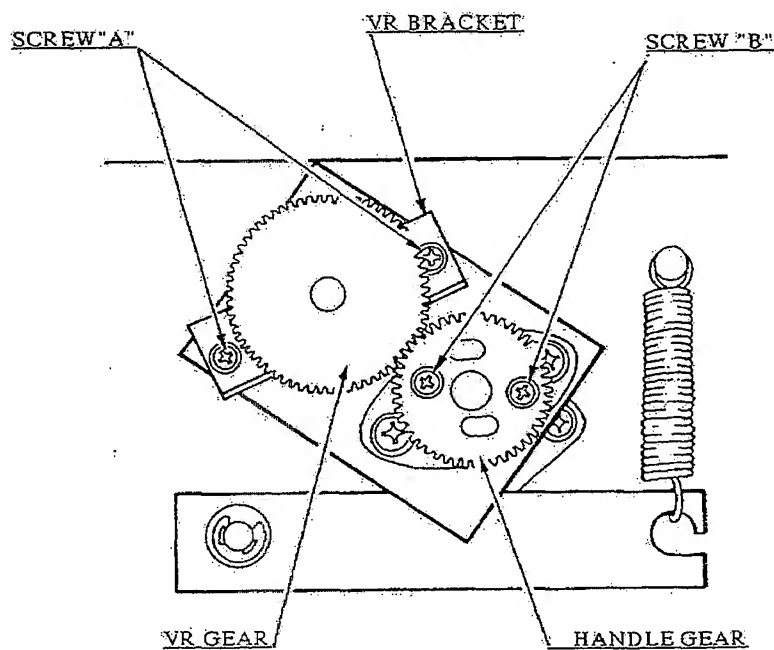
Cause the VOLUME ADJUSTMENT mode to appear on the screen. Move the steering wheel to its maximum mobile range and ascertain the VR value variation shown on the screen. If the VR value is out of the displayed range, an adjustment of the VR position or a replacement of VR is required.

Adjusting the VR

Make the VR BRACKET movable by loosening its SCREWS "A".

Move the VR BRACKET until the VR GEAR is disengaged from the HANDLE GEAR. Rotate the VR shaft so that the value displayed on screen is within the tolerance.

- i Tighten SCREWS "A." Backlash should be adjusted at this moment.
- φ If fine adjustment is necessary, loosen the SCREWS "B" and rotate the HANDLE GEAR until the desired value is attained.
- £ After making adjustments, newly set the VR value in the VOLUME ADJUSTMENT mode.



REPLACEMENT OF VOLUME (220-5130 VOL CONT B - 5K OHM)

Remove the SCREWS "A" that fasten the VR BRACKET. The VR BRACKET becomes unfastened and the VR GEAR disengaged from the HANDLE GEAR.

Remove the VR GEAR from the VR. Now replace the VR.

After the replacement of the VR, newly set the VR value in the VOLUME ADJUSTMENT mode.

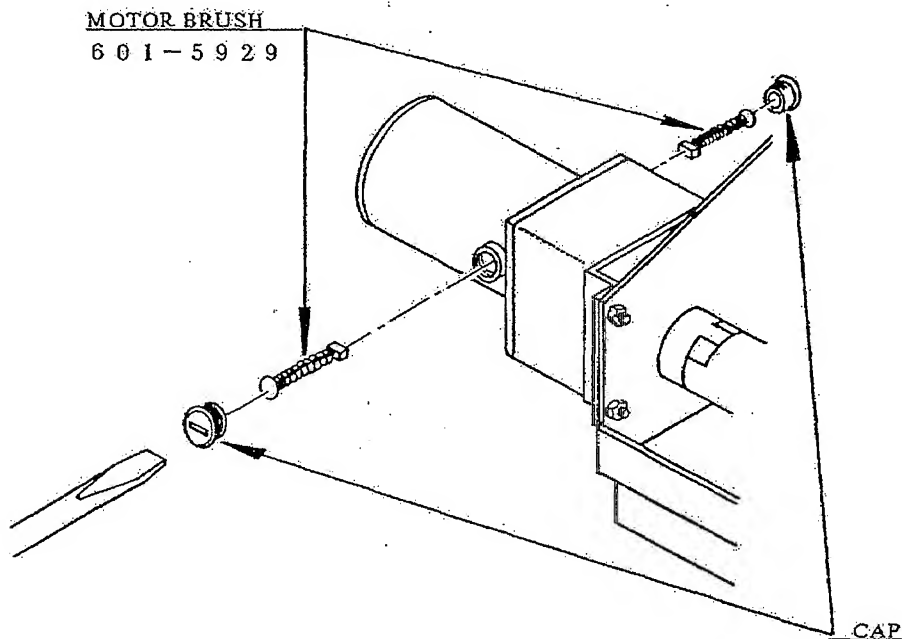
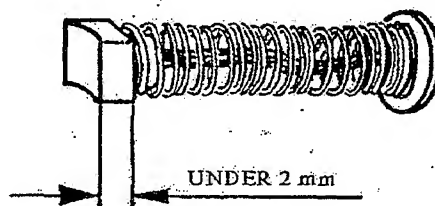
10-4 REPLACEMENT MOTOR BRUSH

In the OUTPUT TEST mode, when the display of STEERING WHEEL is ON, if the STEERING WHEEL does not vibrate, first check the circuit protector of the switch unit.

If the circuit protector is satisfactorily working, check the motor brushes.

Take the brushes out by turning the caps with a screwdriver. If the motor brushes are worn out as shown, replace them.

Be sure to replace both of the brushes at the same time.



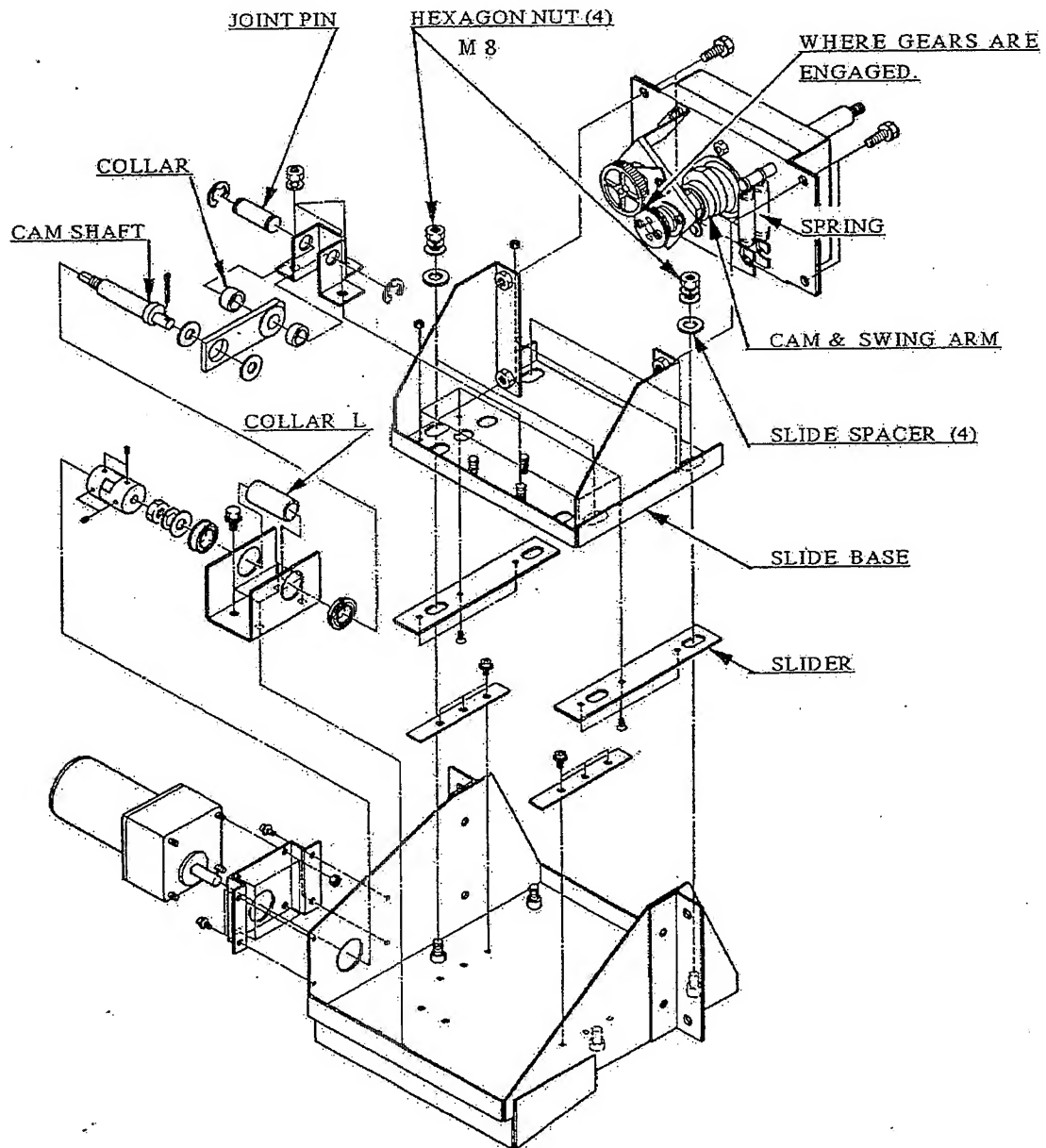
10-5 GREASING

Apply grease to the parts and portions mentioned below, once every 6 months as a standard.

Note that for the purpose of greasing, disassembly as shown below is NOT required.

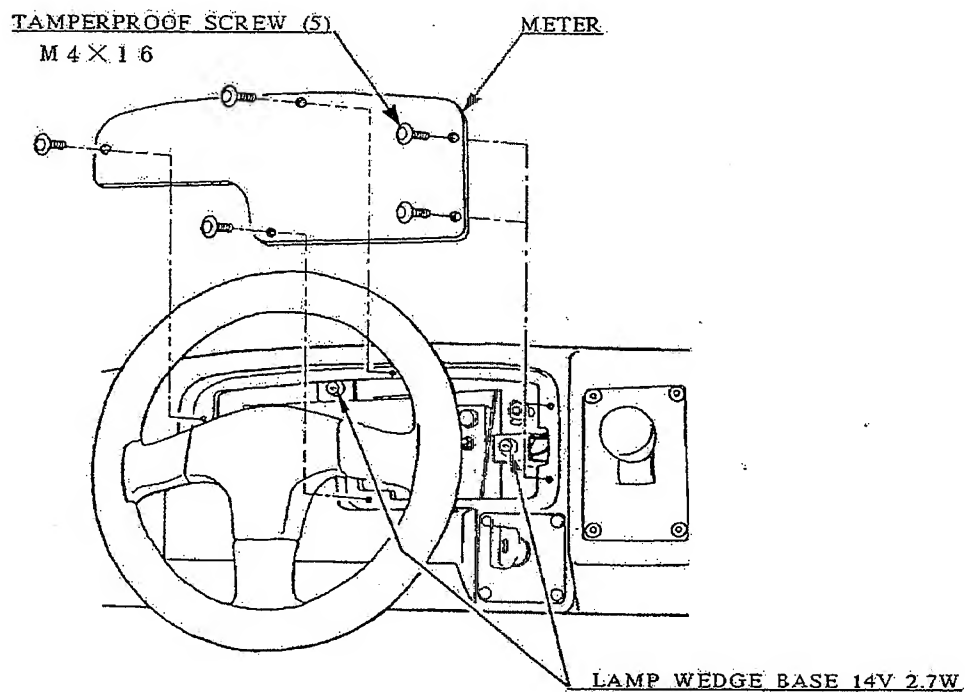
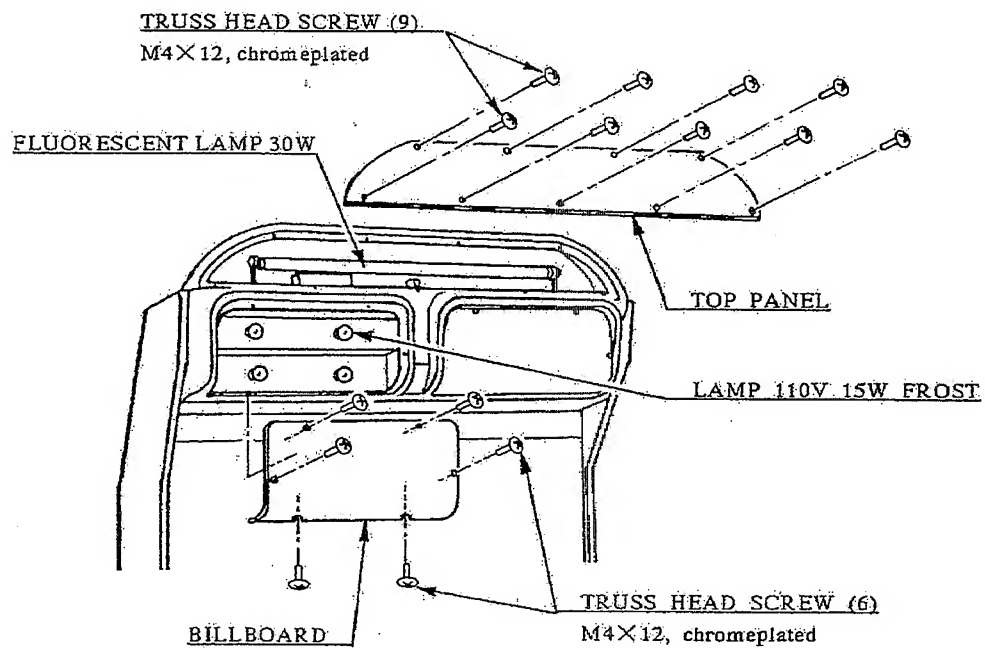
Also, do not apply grease to the coupling.

When applying grease to the SLIDE BASE and the SLIDER, perform the work from the 4 elongating holes of the slide base, by removing the 4 each of hexagon nuts and slide spacers.



11. REPLACEMENT OF FLUORESCENT LAMP, AND LAMPS

In a manner as shown below, remove the parts and replace the Fluorescent lamp and Lamps.



12. EXPLANATION OF COIN SELECTOR

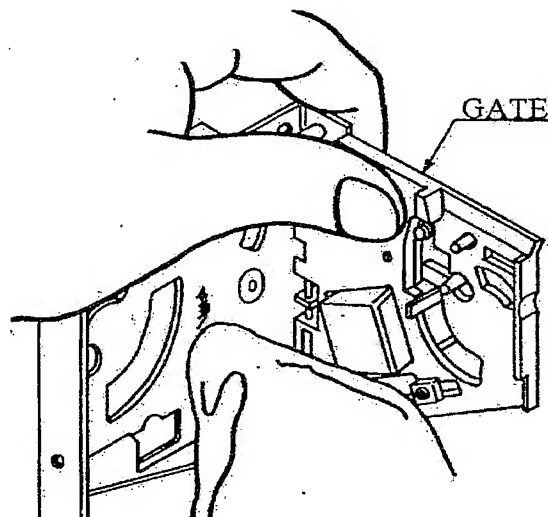
HANDLING THE COIN JAM

Even when the REJECT button is pressed, if the coin is not rejected, open the coin chute door and open the selector gate. After removing the jammed coin, put a normal coin in and check to see that the selector correctly functions.

CLEANING THE COIN SELECTOR

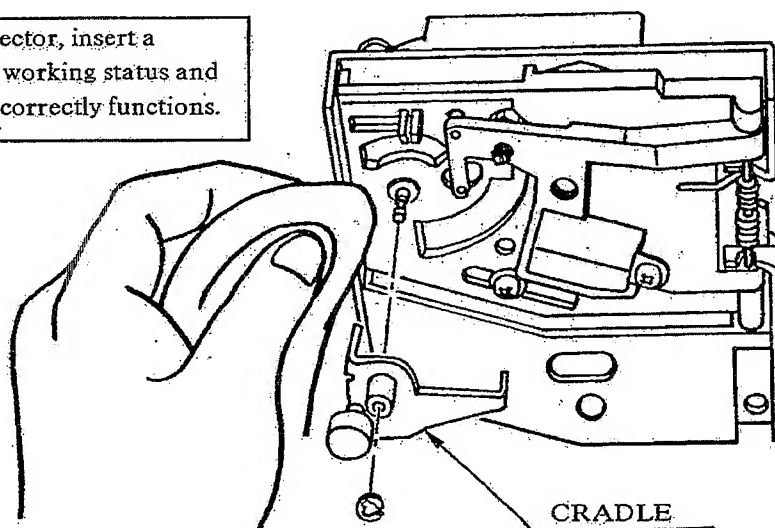
The coin selector should be cleaned once every 3 months. When cleaning, follow the procedure below:

- I Turn the power for the machine OFF.
Open the coin chute door.
- II Open the gate and dust off by using a soft brush (made of wool, etc.).
- III Remove stain by wiping with a soft cloth which contains water or chemical detergent.
- IV Remove the CRADLE.
When removing the retaining ring (E ring), be very careful so as not to bend the shaft.
- V Remove stain from the shaft and pillow portions by wiping off with a soft cloth, etc.
- VI After wiping off as per 5 above, further apply a dry cloth, etc. to cause the coin selector to dry completely.



Absolutely do not apply machine oil, etc. to the coin selector.

After cleaning the coin selector, insert a regular coin in the normal working status and ascertain that the selector correctly functions.

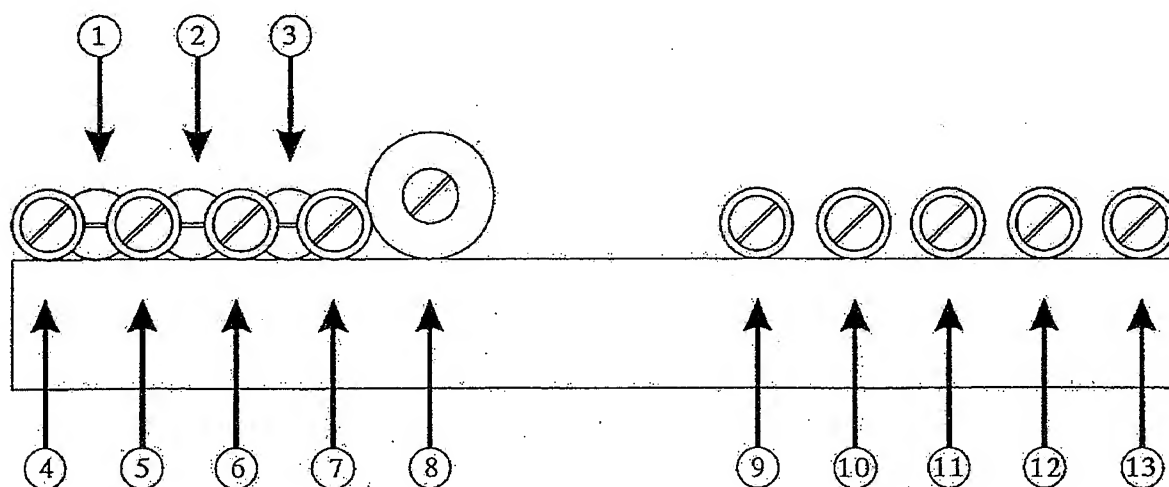


13. MONITOR ADJUSTMENTS

- Do not operate the ADJUSTMENT knobs without good reason.
- A certain portion of the monitor is subject to a high voltage and therefore be very careful of this point.
- When making adjustment, use a resinous Alignment Screwdriver.

Remove the CONTROL PANEL to make the monitor adjustments (refer to 10-1).

OutRunners uses a 26 inch monitor manufactured by NANA O (part no. 200-5187-15) in the 15K mode. The following adjustments are specific to this monitor.



- ① R-BIAS / BLK
- ② G-BIAS / BLK
- ③ B-BIAS / BLK
- ④ R-GAIN
- ⑤ G-GAIN
- ⑥ B-GAIN

- ⑦ BRIGHT
- ⑧ H-SIZE
- ⑨ H. HOLD
- ⑩ H. PHASE
- ⑪ V. SIZE
- ⑫ V. HOLD

- ⑬ V. POSITION

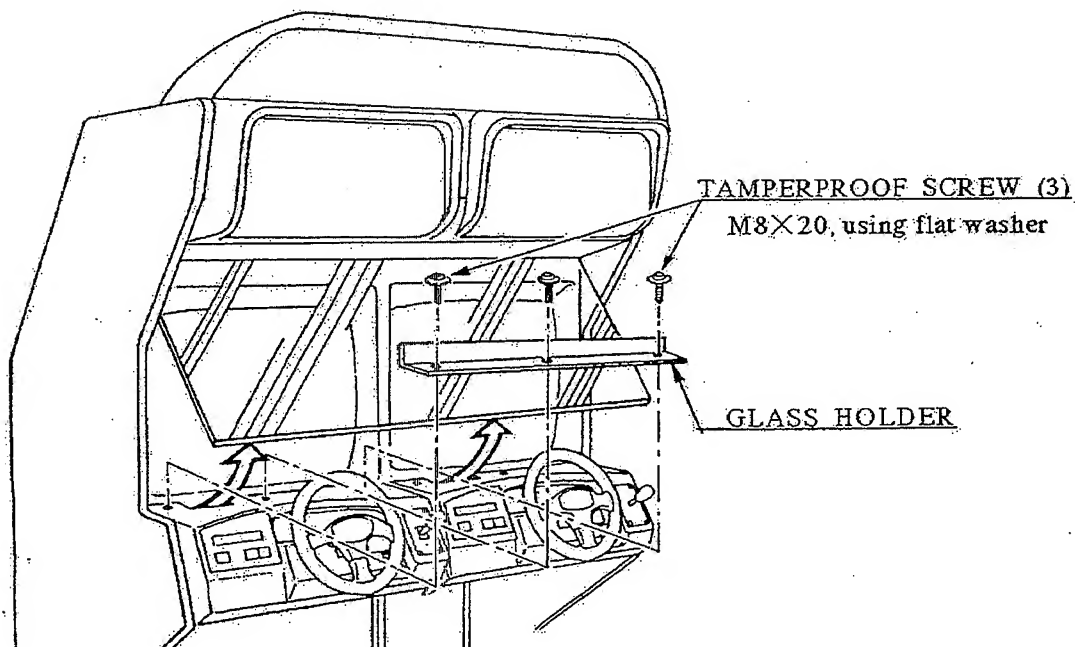
14. PERIODIC INSPECTION TABLE

The items listed below require periodic check and maintenance to retain the performance of this machine.

	Item	Interval	Reference
PERIODIC CHECK	SELF TEST, MEMORY CHECK	Monthly	8-3, 8-7
	CHECK EACH SETTING		8-9, 8-10
ACCEL. & BRAKE	CHECK THE VOLUME VALUE	Monthly	8-4
	GREASING	Biannually	9-3
CONTROL PANEL	CHECK THE VOLUME VALUE	Monthly	8-4
	GREASING	Biannually	10-5
COIN SELECTOR	CLEANING	Trimonthly	12

● REMOVING THE FRONT GLASS

When cleaning the backside of the front glass, and the MONITORS, remove the front glass. To take off the front glass, first remove the glass holders from the left and right seats, then, put your hand through the square hole on the upper left-hand portion of each of the CONTROL PANELS and pull the lower part of the glass toward you.



15. TROUBLESHOOTING

PROBLEM	CAUSE	COUNTERMEASURES		
Main SW is turned ON but the machine is not functioning.	The power is not supplied.	Make sure that the plug is fully inserted into the plug socket.		
	The power supply voltage is not correct.	Make sure that the power supply voltage is correct.		
	Blowing off of fuse due to instantaneous overcurrent.	Replace AC unit fuse. <table><tr><td>FUSE 6.4φ X30.5A 250V SLO-BLO</td><td>AC 100~120V AREA</td></tr></table>	FUSE 6.4φ X30.5A 250V SLO-BLO	AC 100~120V AREA
	FUSE 6.4φ X30.5A 250V SLO-BLO	AC 100~120V AREA		
	COMMUNICATION mode setting is not made correctly.	Correctly set the NETWORK ASSIGNMENT in the TEST mode. When independently operating, set to STAND ALONE. When operating plural cabinets in COMMUNICATION mode, set one of them to MASTER and others to SLAVE (see 8-11).		
The Optical Fiber Cable connection is not correct.	Correctly connect the Optical Fiber Cable.			
Sound is not emitted.	VR setting is incorrect.	Adjust the SW unit and VOLUME ADJUSTMENT		
	The connector connection for Rear Cabinet Speaker is not correct.	Make sure that the connector for the Rear Cabinet Speaker is made correctly. (Refer to Section 6.)		

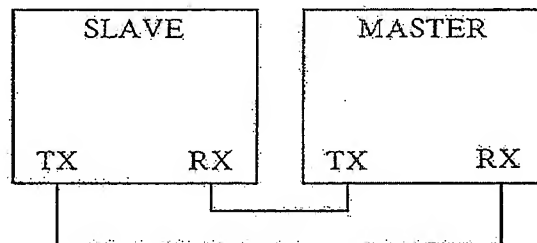
PROBLEM	CAUSE	COUNTERMEASURES
The Steering Wheel Motor does not function.	The protector functioned due to an instantaneous overcurrent.	Cause the functioning of the SW unit Circuit Protector to restore to its original condition.
	The Motor Brushes are worn out.	Replace the Motor Brushes.
The Fluorescent lamp does not light up.	The Fluorescent tube is burnt out.	Replace the Fluorescent tube with an FL 30W tube (refer to Section 11).
The Check Point Lamp and or Race Leader Lamp do not light up.	The bulb of the lamp is burnt out.	Replace the bulb with LAM P 110V 15W
	The SSR BD. is defective.	Replace the SSR BD (839-0048) of the Power Supply Unit.
The Steering Wheel operation during game play is not satisfactory.	VR adjustment is not correct.	Make adjustment correctly as per VOLUME ADJUSTMENT in the TEST mode (refer to 8-4).
The car speed does not increase even when you step on the Accelerator.	VR adjustment is not correct.	Make adjustment correctly as per VOLUME ADJUSTMENT in the TEST mode (refer to 8-4).
The on-screen image of the monitor sways and or shrinks.	The power source and voltage are not correct.	Make sure that the power supply and voltage are correct.

16. COMMUNICATIONS PLAY

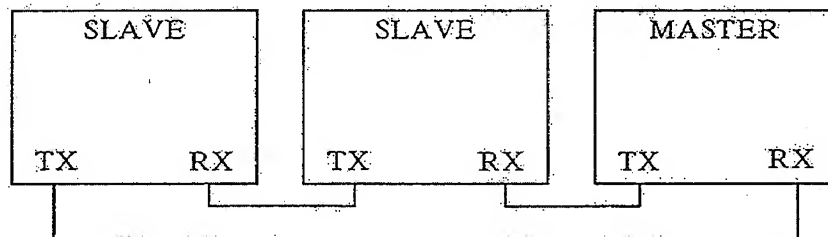
16-1 INSTALLATION PRECAUTIONS

- 1) When linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. The per unit standard voltage/amperage is 100~120V/10A and 200~240V/5A.
- 2) Due to the length of the communications cable, the distance in between the machines will be approximately 1.2 meters or less.

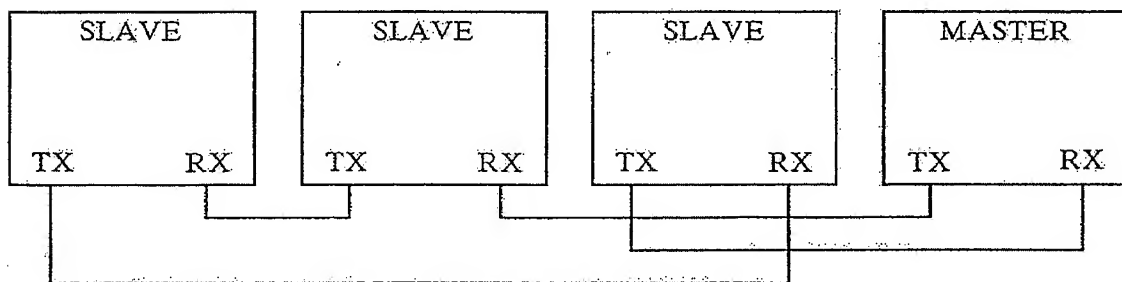
16-2 COMMUNICATIONS CABLE CONNECTION



4P LINK SYSTEM

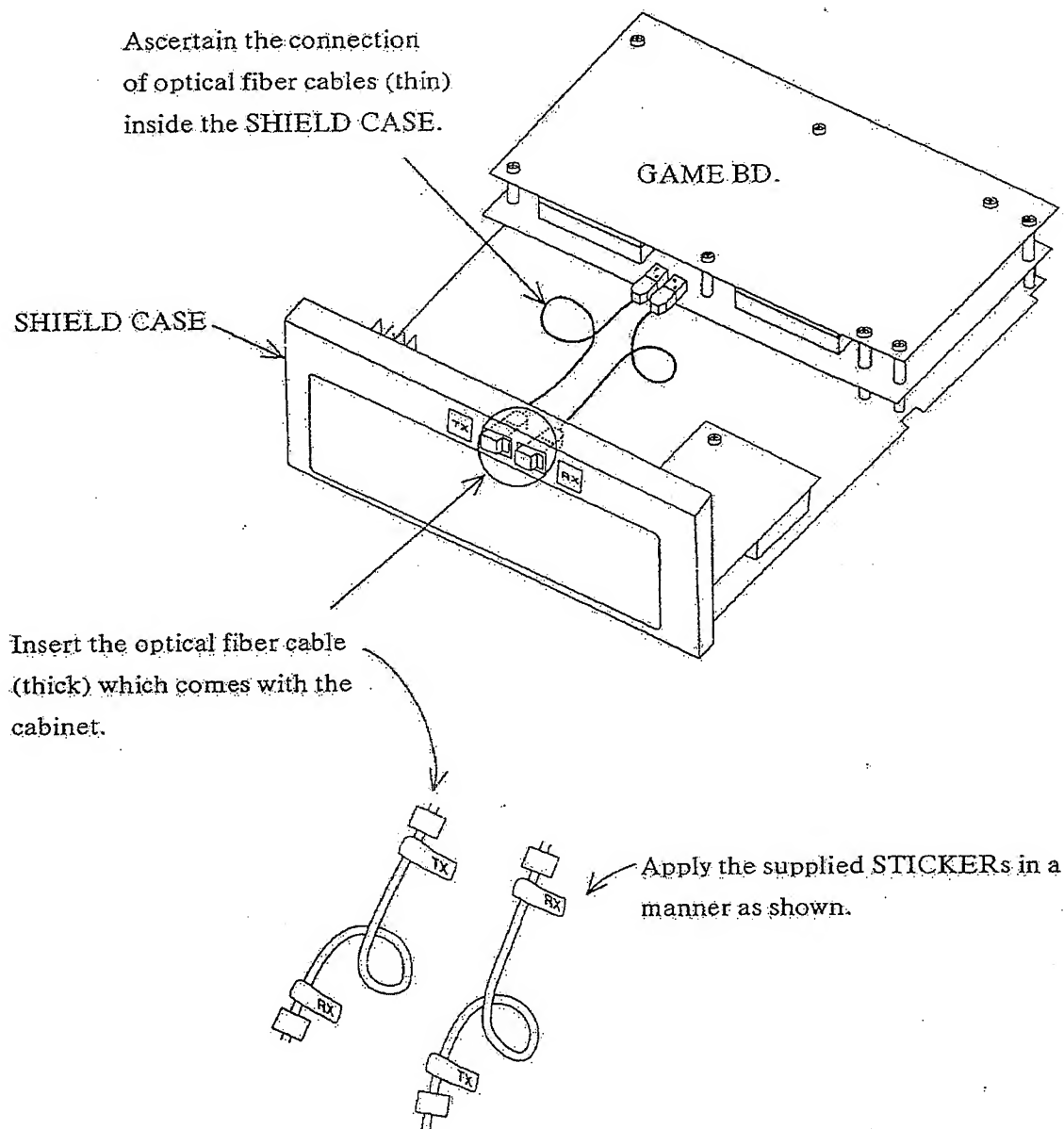


6P LINK SYSTEM

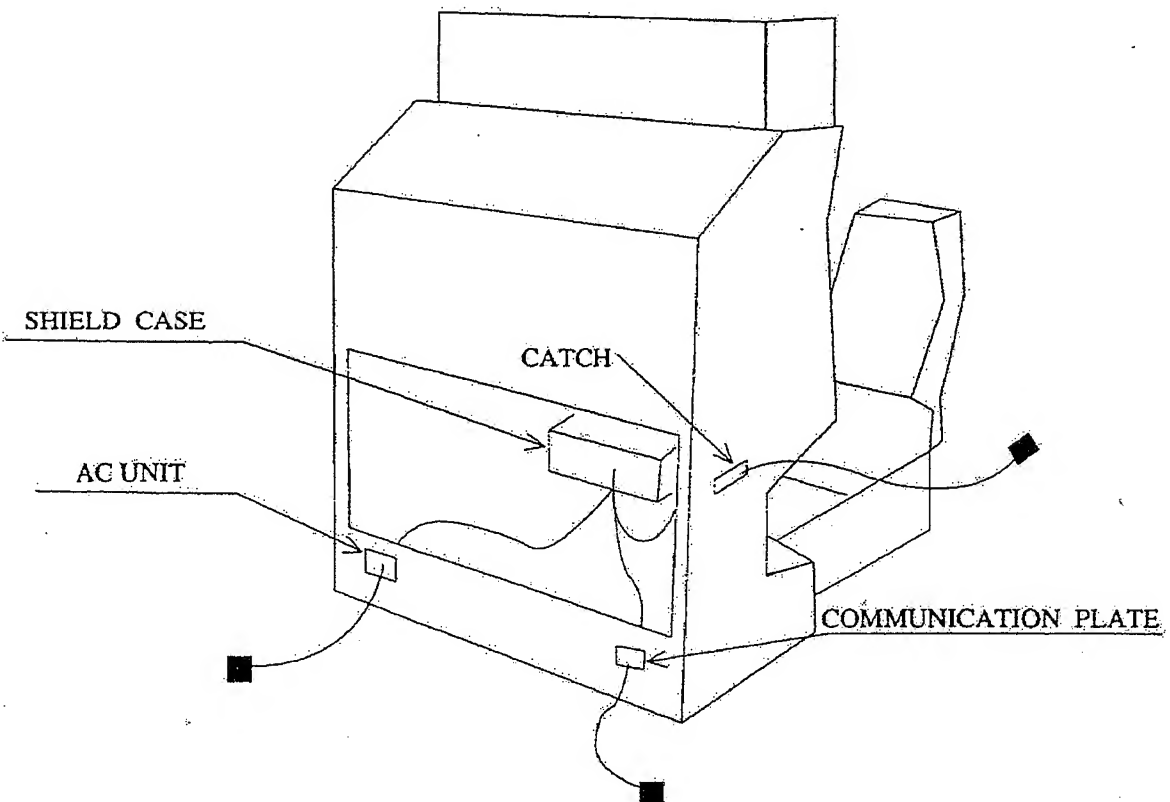


8P LINK SYSTEM

CONNECTION OF GAME BOARD AND FIBER CABLE



CONNECTION WITH OTHER CABINET



The COMMUNICATION CABLEs to be used for the connection with other units can be pulled out from the AC unit on the back of the cabinet or from the COMMUNICATION PLATE.

Also, when installing the machine units side by side, the COMMUNICATION CABLEs can be pulled out by taking off the backside wooden board from the catch.

When wiring the COMMUNICATION CABLEs, be careful so that the cables do not sharply bend.

16-3 SETTING FOR COMMUNICATIONS PLAY

- Cause all of the machines to enter the test mode and change the game setting for each seat in a manner so as to meet the communications play. When changing the setting, refer to the explanations mentioned in Section 8. TEST AND DATA DISPLAY.

- Press the TEST button to enter the TEST mode and choose "NETWORK ASSIGNMENTS."

Bring the arrow mark to "COMMUNICATION" and press the TEST button to select "NETWORK."

Move the arrow mark to "PRIVILEGE MODE" and press the TEST button to allow one of the cabinets to be set to "MASTER." Set all other cabinets to "SLAVE."

Bring the arrow mark to "CABINET ID#," press the TEST button, and set plural number of the machines sequentially to ID#1, 2, 3, and 4 as applicable starting from the extreme left facing the monitors' front side.

If the same number is set for 2 or more cabinets, or if the sequential order is incorrect, the game display, etc. will be confused. Therefore, be careful of this point.

16-4 SETTING THE GAME DIFFICULTY

In the case of COMMUNICATIONS play, the game difficulty setting is made by the MASTER cabinet. Even if the setting is changed by the SLAVE machines, the setting will not be effective for the game. Changing the setting by the MASTER cabinet causes all of the SLAVE machines also to change the setting by following the MASTER unit.

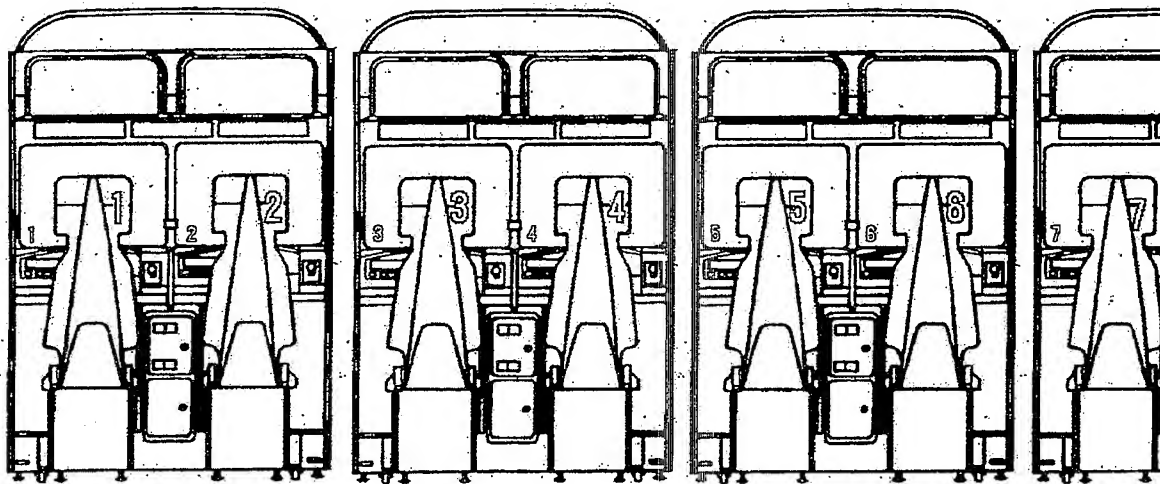
16-5 CAUTIONS TO BE HEEDED WHEN IN THE TEST MODE

The machines connected for the communications play perform the NETWORK check at the time the power is turned on and when exiting the test mode. The communications play by all of the machines is not possible unless all of the machines which were connected for the communications play simultaneously perform the NETWORK CHECK. Should the testing become necessary for even one machine, all of the remaining machines are required to enter the test mode. When the test is finished for the unit which required the test, all of the machines are to exit from the test mode at the same time.

16-6 APPLICATION OF SEAT NO. DISPLAY STICKERS

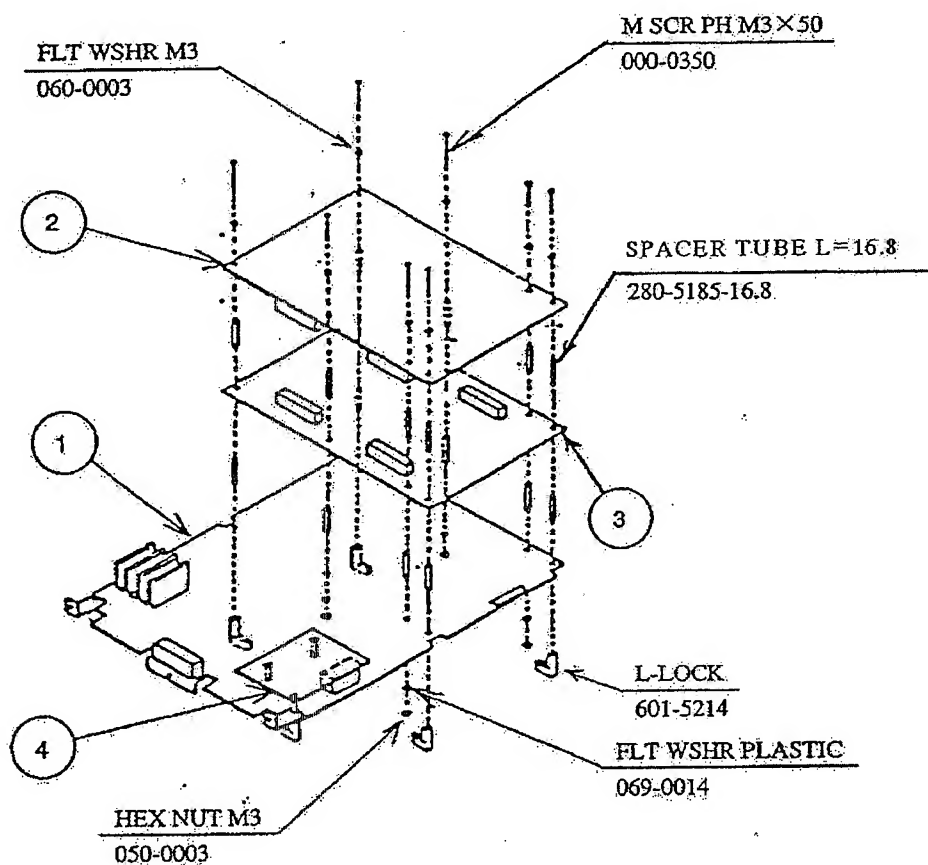
Apply the Seat No. display stickers in a manner so that they will line up in the sequential order of No. 1, No. 2, No. 3 and so on starting from the left side of the unit which was connected to the other unit(s).

Apply STICKER OUT1-0004~0007 to the rear cabinet and OUT1-0008 to the front glass.



17. GAME BOARD

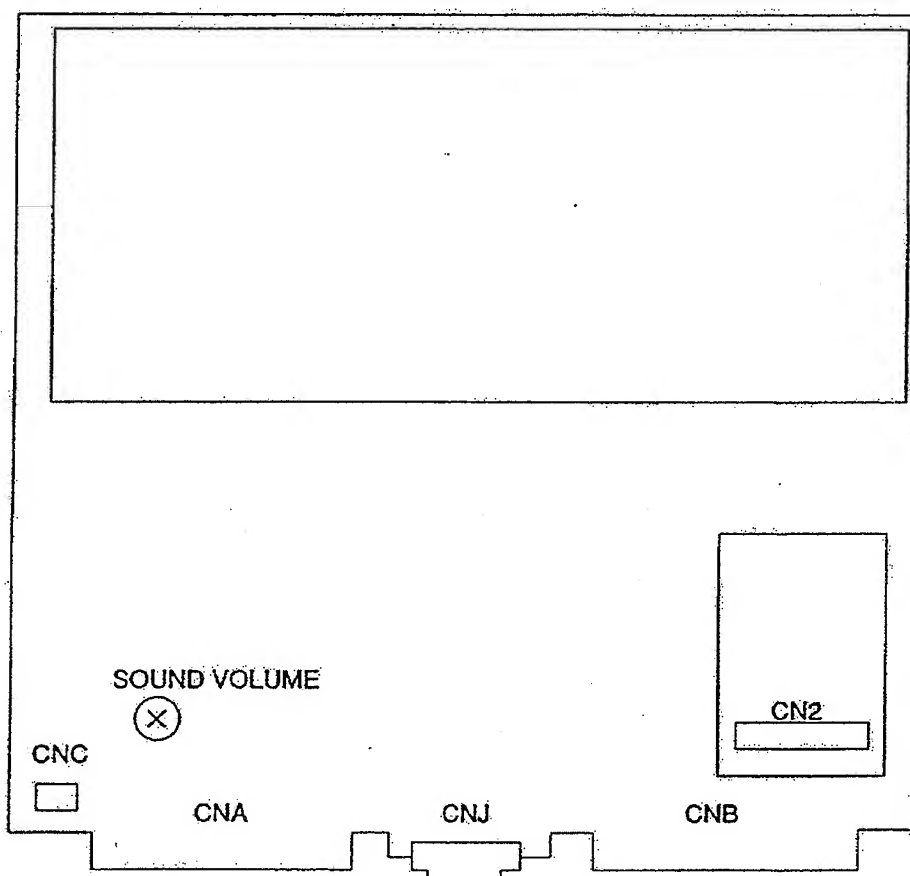
17-1 COMPOSITION OF GAME BOARD



	U.S.A.	OTHERS
GAME BD NO.	834-9559-01	834-9559-02
1-MAIN BD (SYSTEM MULTI)	837-8676	
2-ROM BD OUTRUNNERS	837-9560-01	837-9560-02
3-COMMUNICATION BD	837-8792	
4-A/D BD SYSTEM 18 32	837-7536	

17-2 INPUT AND OUTPUT

GAME BD OUTRUNNERS (834-9559-XX)



CNA: Signal INPUT/OUTPUT for LEFT PLAYER

CNB: Signal INPUT/OUTPUT for RIGHT PLAYER

CNJ: Signal OUTPUT for LEFT/RIGHT PLAYERS

CNC: Sound OUTPUT for LEFT/RIGHT PLAYER

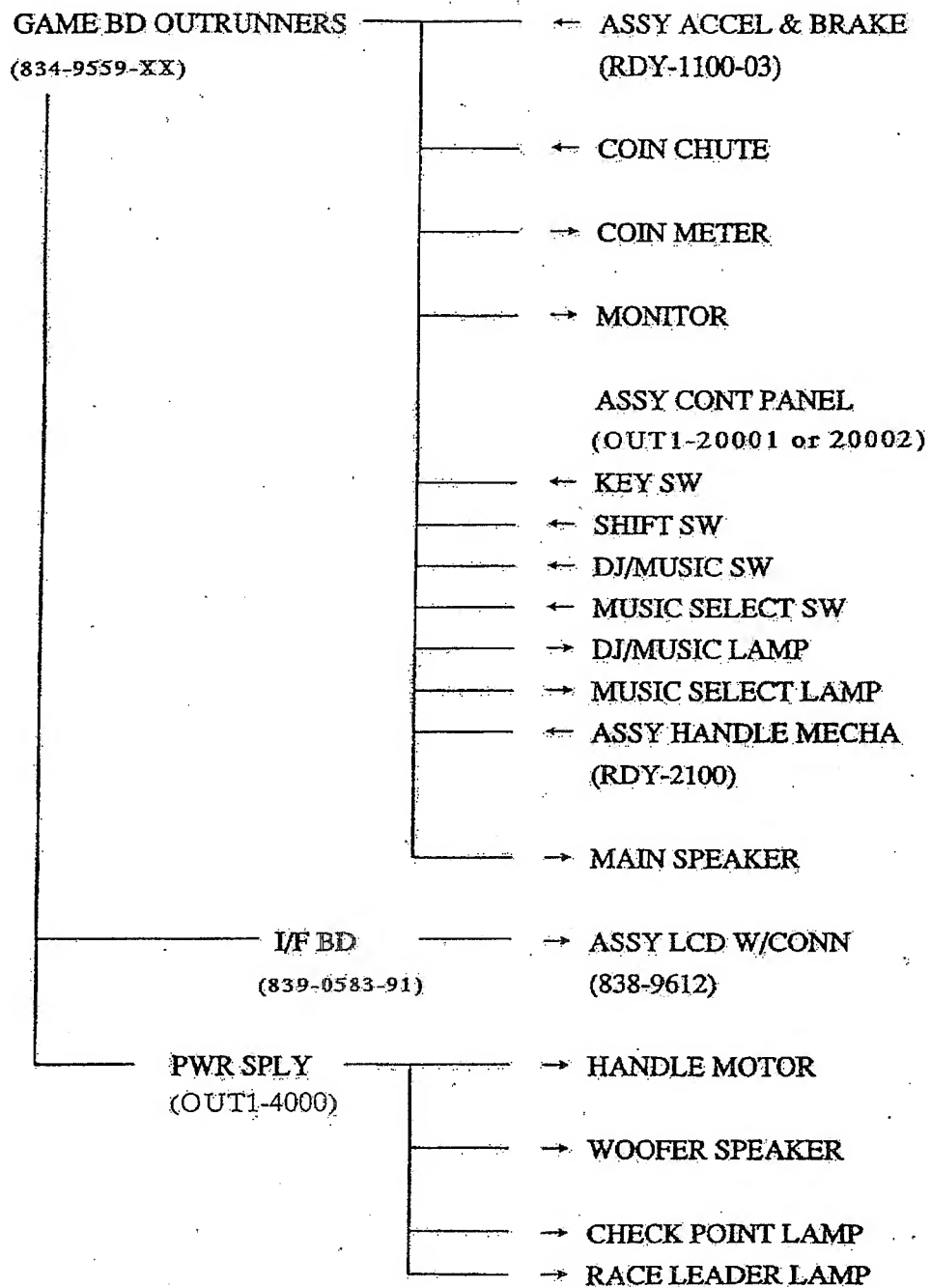
CN2: For LEFT/RIGHT PLAYERS: Signal INPUT as regards the STEERING WHEEL.

Signal INPUT as regards the ACCEL.

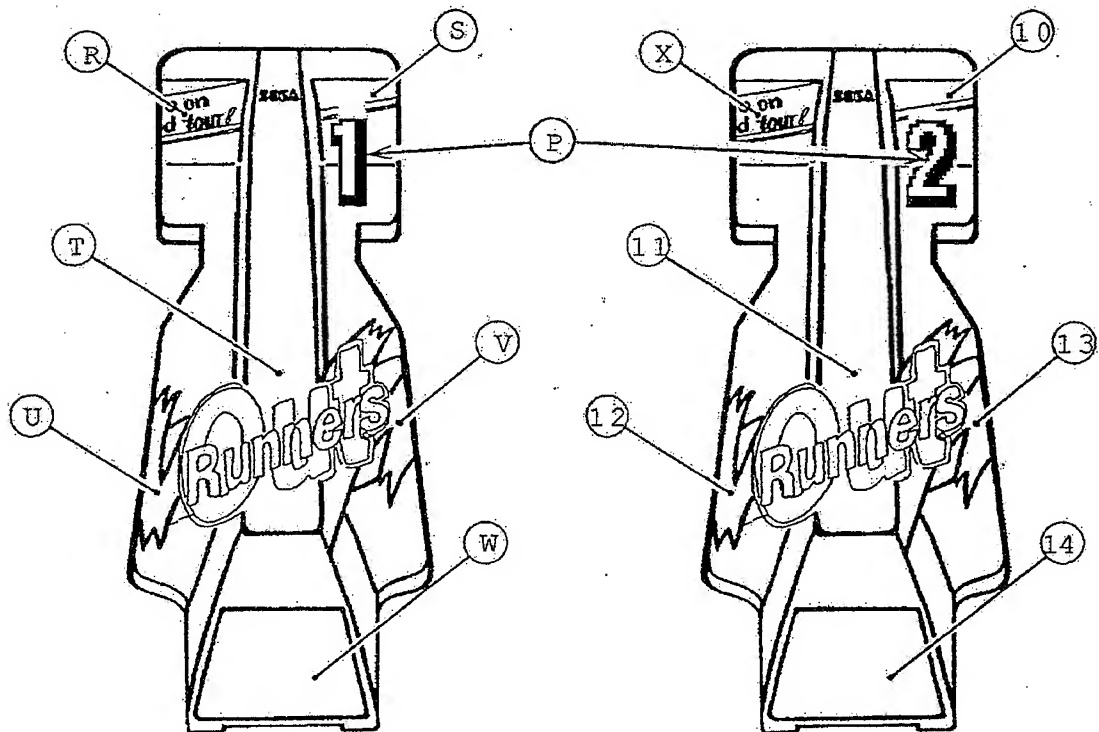
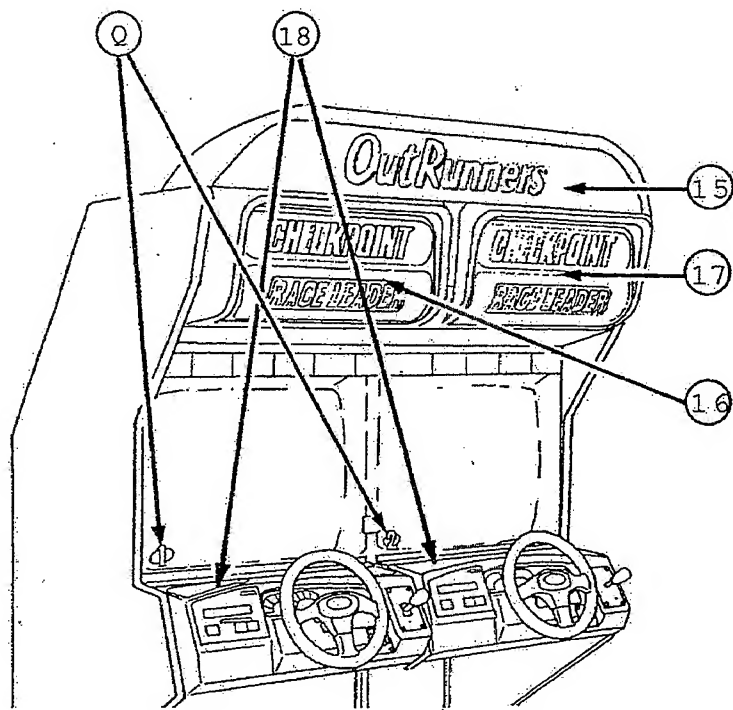
Signal INPUT as regards the BRAKE.

SOUND VOLUME: SOUND VOLUME adjustment VR.

INPUT AND OUTPUT RELATIONS



18. DESIGN RELATED PARTS



LEFT-SIDE(RED)

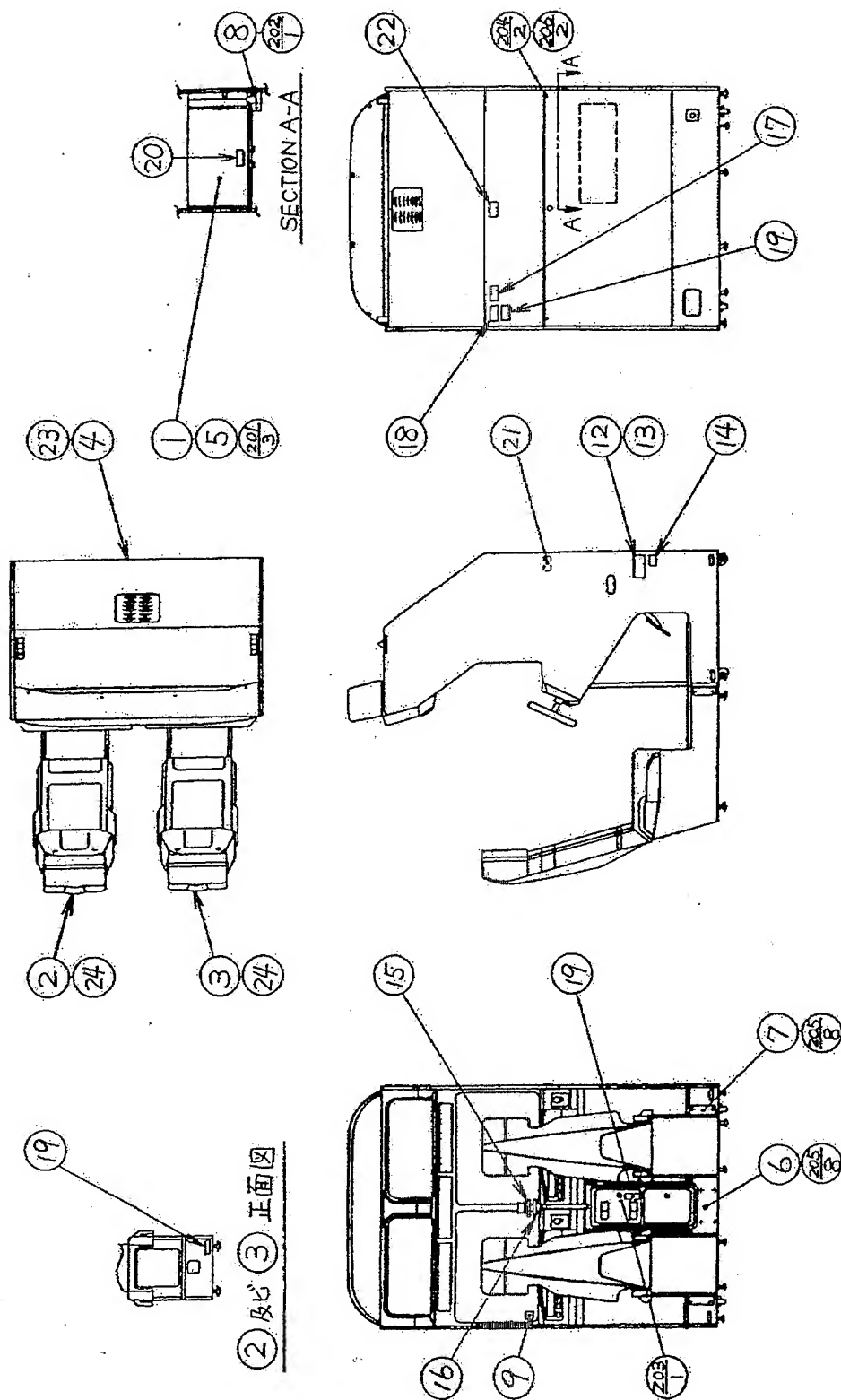
RIGHT-SIDE(BLUE)

NO.	PART NO.	DESCRIPTION
1	999-0175	STICKER SEAT ZEICHEN NO.1, 2
	"	STICKER SEAT ZEICHEN NO.3, 4
	"	STICKER SEAT ZEICHEN NO.5, 6
	"	STICKER SEAT ZEICHEN NO.7, 8
2	OUT1-0008	STICKER CONT ZEICHEN
3	999-0177	STICKER UPPER RL
4	"	STICKER UPPER RR
5	999-0179	STICKER MIDDLE RED
6	999-0180	STICKER BRASH RL
7	"	STICKER BRASH RR
8	OUT1-0505-G	STICKER LOWER RED
9	999-0178	STICKER UPPER BL
10	"	STICKER UPPER BR
11	999-0179	STICKER MIDDLE BLUE
12	999-0180	STICKER BRASH BL
13	"	STICKER BRASH BR
14	"	STICKER LOWER BLUE
15	OUT1-1034	TOP PANEL OUTRUNNERS
16	OUT1-1035X	BILLBOARD RED
17	OUT1-1036X	BILLBOARD BLUE
18	OUT1-2022-01	GUARD PLATE INSTR ENG

19. PARTS LIST

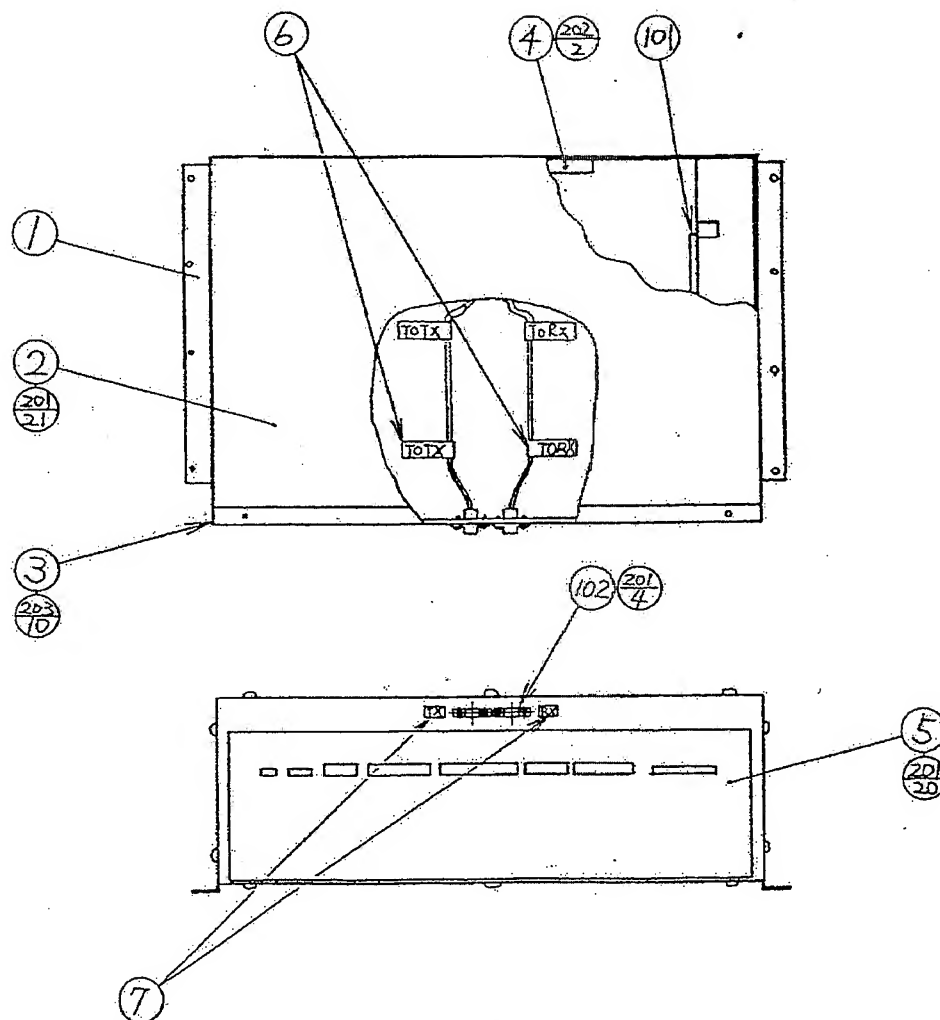
1 TOP ASSY OUTFITTERS (OUT1-0000)

(D-1/2)



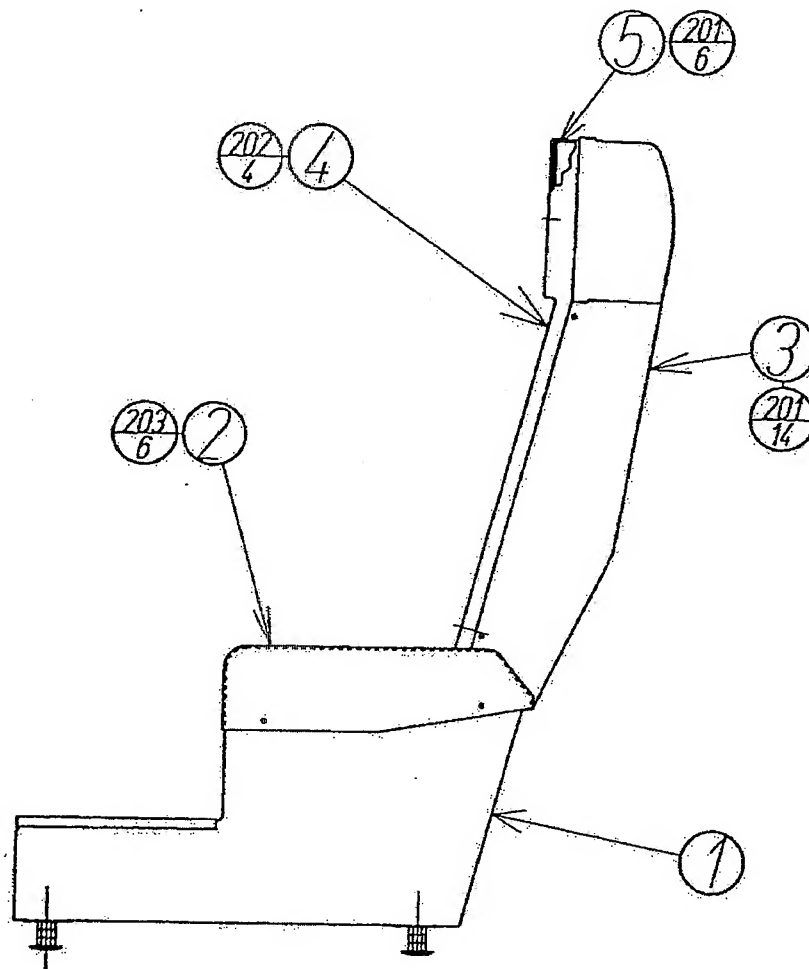
ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-0100	ASSY SHIELD CASE
2	OUT1-0500	ASSY REAR CABINET 1P
3	OUT1-0600	ASSY REAR CABINET 2P
4	OUT1-1000	ASSY CABINET
5	834-9559-01	GAME BD OUTFUNNERS USA
	834-9559-02	GAME BD OUTFUNNERS EXP
6	OUT1-0001	JOINT BRKT CENTER
7	OUT1-0002	JOINT BRKT SIDE
8	OUT1-0003	SHIELD CASE STOPPER
9	421-5800-202	ORIGINAL SEAL OUTFUNNERS
10	421-6594	STICKER SERIAL NO. INFO
18	421-7987	STICKER ELEC. SPEC.
19	421-7988	STICER SERIAL NUMBER
20	421-6709	STICKER SERVICE INSTR. ENG.
21	421-6671	STICKER DNAGER HIGH VOLTAGE
23	SGM-3784	POLYETHYLENE COVER 950 x 1500 x 1900
24	SGM-3844	POLYETHYLENE COVER 600 x 700 x 1250
201	000-0308-FS	M SCR PH W/FS M3 x 8
202	000-0520-FS	M SCR PH W/FS M5 x 20
204	029-0415	M SCR TH CRM F4 x 30
205	039-0157	HEX BLT CRM W/FS M8 x 35
206	069-0110	FLT WSHR CRM 4.4-16 x 1.6
401	601-6604-70	CARTON BOX 70
402	SGM-2675	POLYETHYLENE BAG 240 x 370
403	4201-6079-01	OWNERS MANUAL OUTFUNNERS ENG.
404	220-5381	KEY MASTER FOR 220-5380
405	SGM-4111	KEY BAG
407	540-0006-01	WRENCH FOR TAMP SCR DUAL TYPE M4
408	540-0007-01	WRENCH FOR TAMP SCR DUAL TYPE M5
409	540-0015-01	WRENCH FOR TAMP SCR DUAL-T30
410	999-0176	STICKER SHEET, SEAT ZEICHEN NO 1-8
414	OUT1-0008	STICKER CONT ZEICHEN
418	600-6047-07	ASSY FIBER CABLE 07 MB
419	220-5130	VOL CONT B-5K OHM
420	3901-5257-01	LAMP 110V 15W FROST
421	3901-5346	LAMP WEDGE BASE
422	INST NO. 592-01	INSTAL INSTR OUTFUNNERS ENG.
423	421-7378	STICER FIBER CABLE
424	280-5132	TUBE HOLDER
425	280-5224	PROTECT TUBE 1200
427	5141-5037-5000	FUSE 6.4 ϕ x 30 5A 250V SLO-BLO
428	600-5929	MOTOR BRUSH
/	421-6690-	STICKER - V (NOT SHOWN)

2 ASSY SHIELD CASE (OUT1-0100)

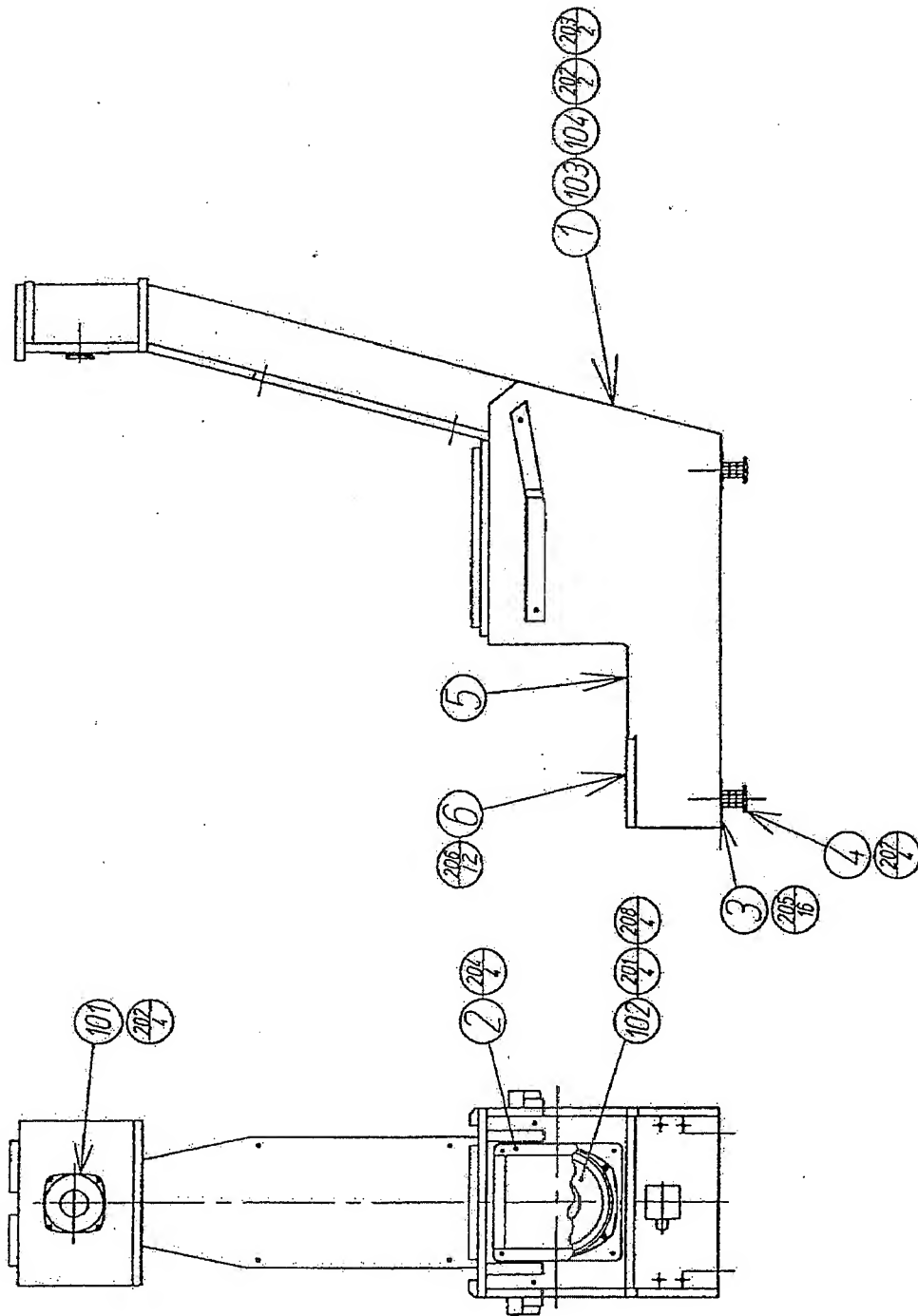


ITEM NO.	PART NO.	DESCRIPTION
1	SCR1-0501-01	SHIELD CASE
2	SCR1-0502-01	UPPER COVER
3	SCR1-0503-01	SHIELD COVER
4	SCR1-0504	HOLDER
5	839-0538-01	SYSTEM MULTI FLT BD OUT
6	421-7378	STICKER FIBER CABLE
7	421-7515	STICKER FIBER CABLE TX/RX
101	2801-5232	GUIDE RAIL
102	211-5479	CONN OPT JOINT
201	010-0308-F	S-TITE SCR PH W/F M3 x 8
202	012-0308	TAP SCR PH 3 x 8
203	000-0410-FS	M SCR PH W/FS M4 x 10
301	600-6182-50	ASSY SINGLE CAP L=50CM
302	600-6180-70	WIRE HARN LINE OUT SHIELD
303	600-6253-61	WIRE HARN A/D SHLD CASE

3 ASSY REAR CABINET 1P (OUT1-0500)

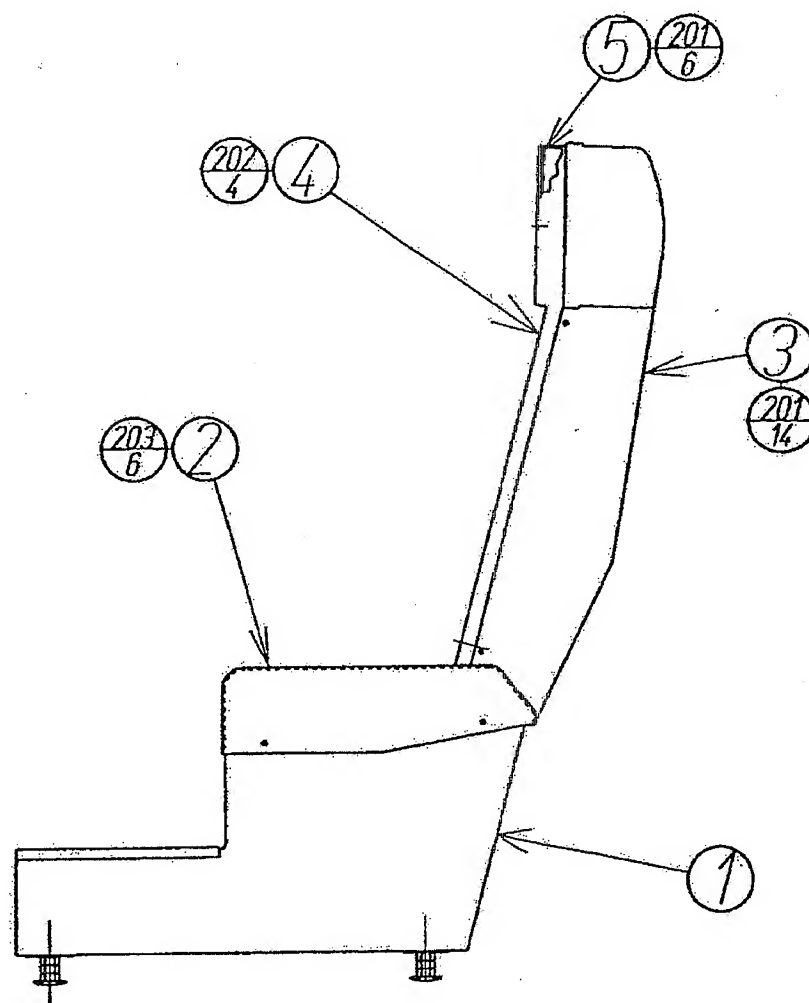


ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-0501	ASSY SUB-CABINET REAR 1P
2	OUT1-0504	SEAT
3	OUT1-0505	SEAT REAR 1P
4	EXT1-0506	SEAT FRONT
5	EXT1-0507	SPKR GUARD PLATE
201	029-0119	TMP PRF SCR TH CHROME M4 x 12
202	029-0192	TMP PRF SCR TH CHROME M5 x 20
203	029-0382	TMP PRF SCR TH CHROME M5 x 25

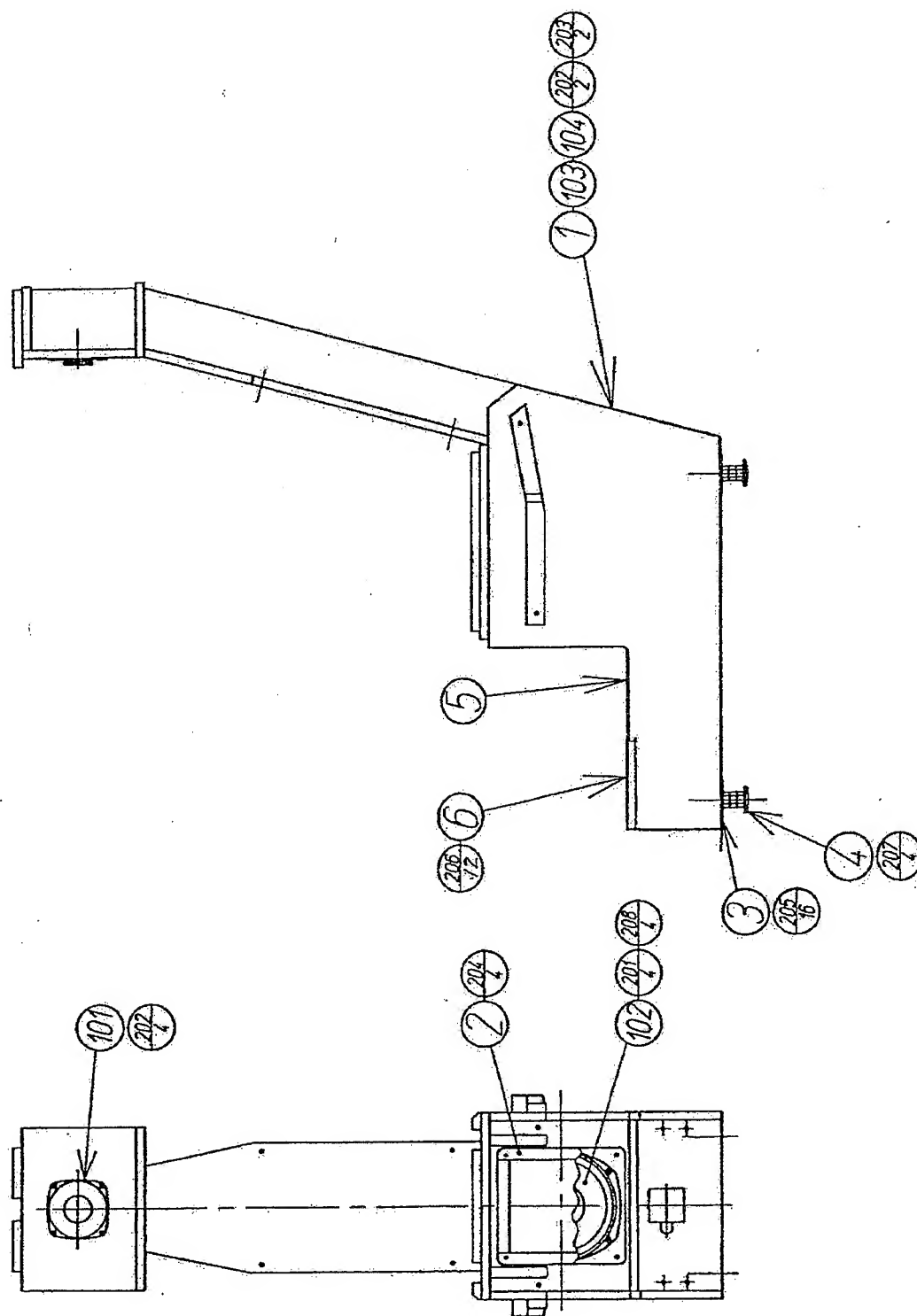


ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-0502	WOODEN CABINET 1P
2	OUT1-0503	SPEAKER NET
3	BVG1-2061	LEG ADJUSTER PLATE
4	601-5699	LEG ADJUSTER BOLT M16 x 75
5	OUT1-0506	MAT
6	OUT1-0507	SASH
101	1301-5075	SPEAKER 8 OHM 10W ø100 2WAY ASSY
102	1301-5093	SPEAKER 4 OHM 60W ø200
103	280-0419	HARNESS LUG
104	280-5225	CORD CLAMP 21
201	000-0420-S	M SCR PH W/S M4 x 20
202	005-3513-F	W SCR RH W/F 3.5 x 13
203	006-3113	W SCR FH 3.1 x 13
204	008-0416	TMP PRF SCR TH M4 x 16
205	039-0126	HEX BLT W/FS M6 x 35
206	046-0001	SCR NAIL THH STNLS 1.5 x 16
207	059-0022	HEX NUT M16
208	069-0007	FLT WSHR 4.4 -16 x 1.6
301	600-6253-40	WIRE HARN SPEAKER

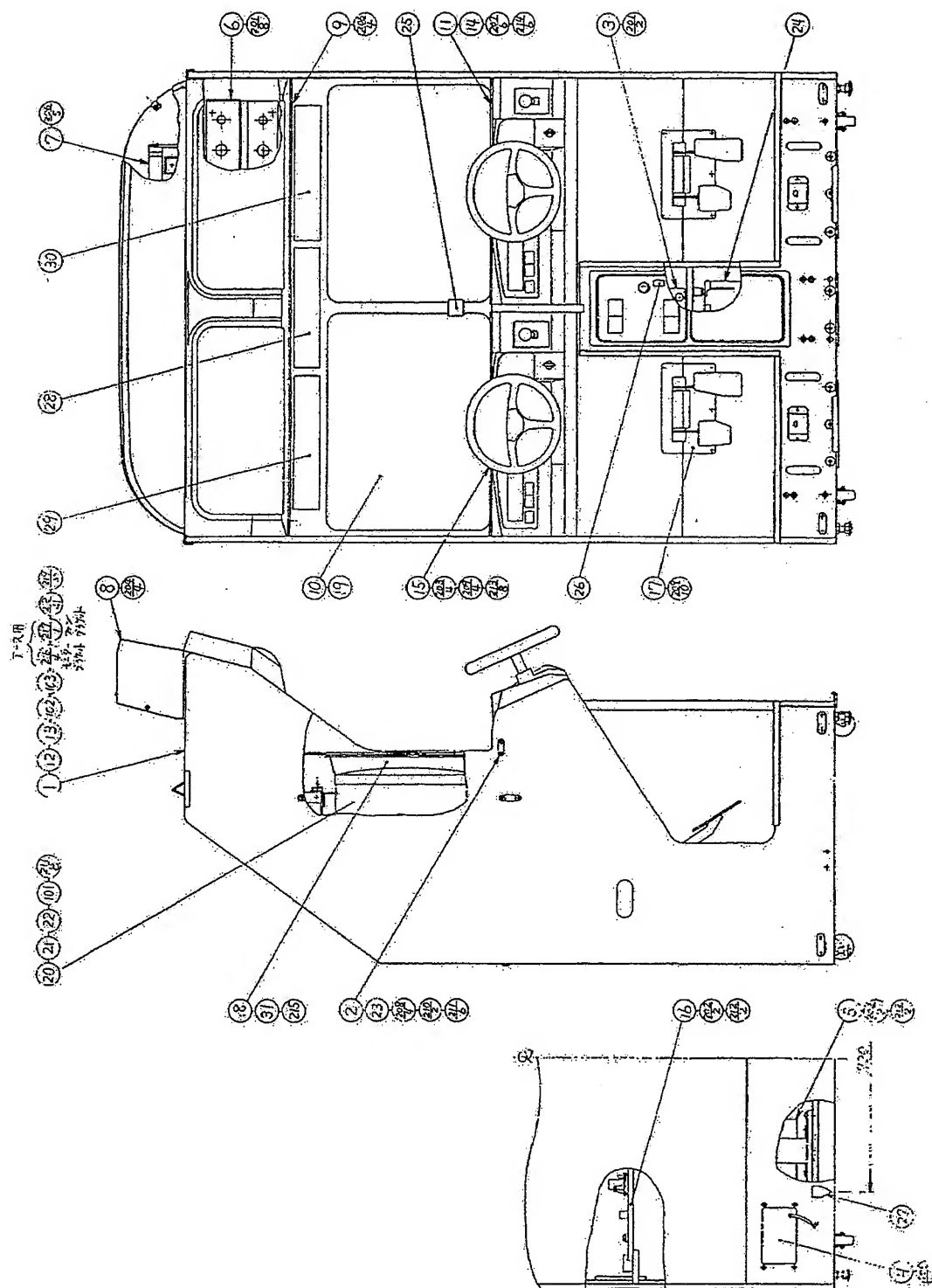
5 ASSY REAR CABINET 2P (OUT1-0600)



ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-0601	ASSY SUB-CABINET REAR 2P
2	OUT1-0504	SEAT
3	OUT1-0603	SEAT REAR 2P
4	EXT1-0506	SEAT FRONT
5	EXT1-0507	SPKR GUARD PLATE
201	029-0119	TMP PRF SCR TH CHROME M4 x 12
202	029-0192	TMP PRF SCR TH CHROME M5 x 20
203	029-0382	TMP PRF SCR TH CHROME M5 x 25

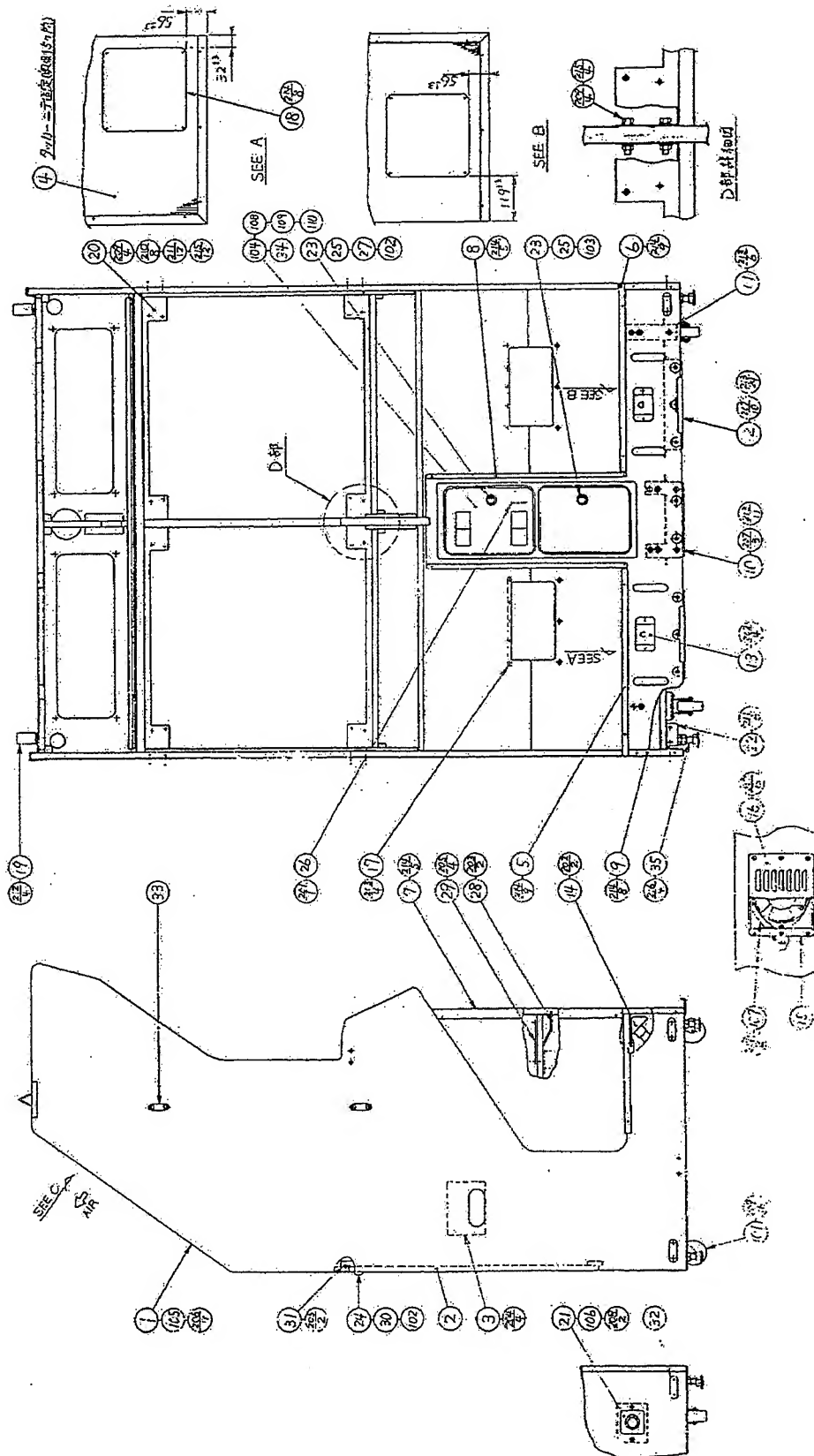


ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-0602	WOODEN CABINET 1P
2	OUT1-0503	SPEAKER NET
3	BVG1-2061	LEG ADJUSTER PLATE
4	601-5699	LEG ADJUSTER BOLT M16 x 75
5	OUT1-0506	MAT
6	OUT1-0507	SASH
101	1301-5075	SPEAKER 8 OHM 10W ø100 2WAY ASSY
102	1301-5093	SPEAKER 4 OHM 60W ø200
103	280-0419	HARNESS LUG
104	280-5225	CORD CLAMP 21
201	000-0420-S	M SCR PH W/S M4 x 20
202	005-3513-F	W SCR RH W/F 3.5 x 13
203	006-3113	W SCR FH 3.1 x 13
204	008-0416	TMP PRF SCR TH M4 x 16
205	039-0126	HEX BLT W/FS M6 x 35
206	046-0001	SCR NAIL THH STNLS 1.5 x 16
207	059-0022	HEX NUT M16
208	069-0007	FLT WSHR 4.4 -16 x 1.6
301	600-6253-40	WIRE HARN SPEAKER



ITEM NO.	PART NO.	DESCRIPTION	
1	OUT1-1001	ASSY SUB-CABINET	
2	OUT1-1018	PANEL MOUNT BRKT	
3	OUT1-1019	SW UNIT	
4	OUT1-1021	AC UNIT	
5	OUT1-1023	ASSY XFMR	
6	OUT1-1025	LAMP UNIT	
7	OUT1-1027	FL UNIT	
8	OUT1-1032	ASSY BILLBOARD	
9	OUT1-1037	HOLDER	
10	OUT1-1038	FRONT GLASS	
11	OUT1-1039	GLASS HOLDER	
12	OUT1-1041	ASSY WIRE DC	
13	OUT1-1042	ASSY WIRE AC	
14	OUT1-1043	PLASTIC SASH	
15	OUT1-20001	ASSY CONT PANEL EXP	OTHERS
	OUT1 20002	ASSY CONT PANEL MARS	MARS DOOR TYPE
16	OUT1-4000	ASSY PWR SPLY	
17	RDY-1100-03	ASSY ACCEL & BRAKE EXT	
18	RDY1-1028	TV MASK 26 TYPE	
19	RDY-1054	RUBBER PACKING	
20	280-5112	BUSH FOR TV	
21	280 5113	COLLAR FOR TV	
22	280-5114	SPACER 6.4-25X 2	
23	117-5235	PLATE 6-30	
24	2531-5366	CASH BOX	
25	4211-7308 ~	DENOMINATION SHEET 1 GAME ~	
27	4211-7020	STICKER CAUTION FORK	
28	4221-0447-01	PLAY INSTR SH OUT ENG	
29	4221-0448	SUB INSTR SH OUT A	
30	4221-0449	SUB INSTR SH OUT B	
31	OUT1-1044	CUSHION	
101	2001-5187-15	ASSY CLR DSPL 26 TYPE 15K 100V	
	2001-5195-15	ASSY CLR DSPL 26 TYPE 15K 100V	
102	280-0419	HARNESS LUG	
103	280-5225	CORD CLAMP 21	
104	280-5126	CORD CLAMP 25	
201	000-0420 FS	M SCR PH W/FS M4 x 20	
202	000-0530 S	M SCR PH W/S M5 x 30	
203	029-0050	TMP PRF SCR BH M8 x 30	
204	029-0062	M SCR TH CRM M5 x 12	
205	029-0337	TMP PRF SCR TH CRM M4 x 20	
206	029-0404	M SCR TH CRM M5 x 16	
207	029-0444	TMP PRF SCR BH CRM M8 x 20	
208	039-0087	CRG BLT CRM M6 x 30	
209	039-0154	HEX BLT BLK W/FS M8 x 30	
210	039-0126	HEX BLT W/FS M6 x 35	
211	051-0006	FLG NIT M6	
212	069-0001	FLT WSHR 5.5-20 x 1.6	
213	069-0048	FLT WSHR BLK 8.5-22 x 1.6	
214	069-0087	FLT WSHR CROME M8	

ITEM NO.	PART NO.	DESCRIPTION
215	090-0009	DOUBLE FACE TAPE 10mm X 50M/ROLL
216	000-0406-FS	M SCR PH W/FS M4X6
217	051-0004	FLG NUT M4
218	005-3510	W SCR RH 3.5X10
219	006-3113	W SCR FH 3.1X13
301	600-6253-60	WIRE HARN EARTH CABI



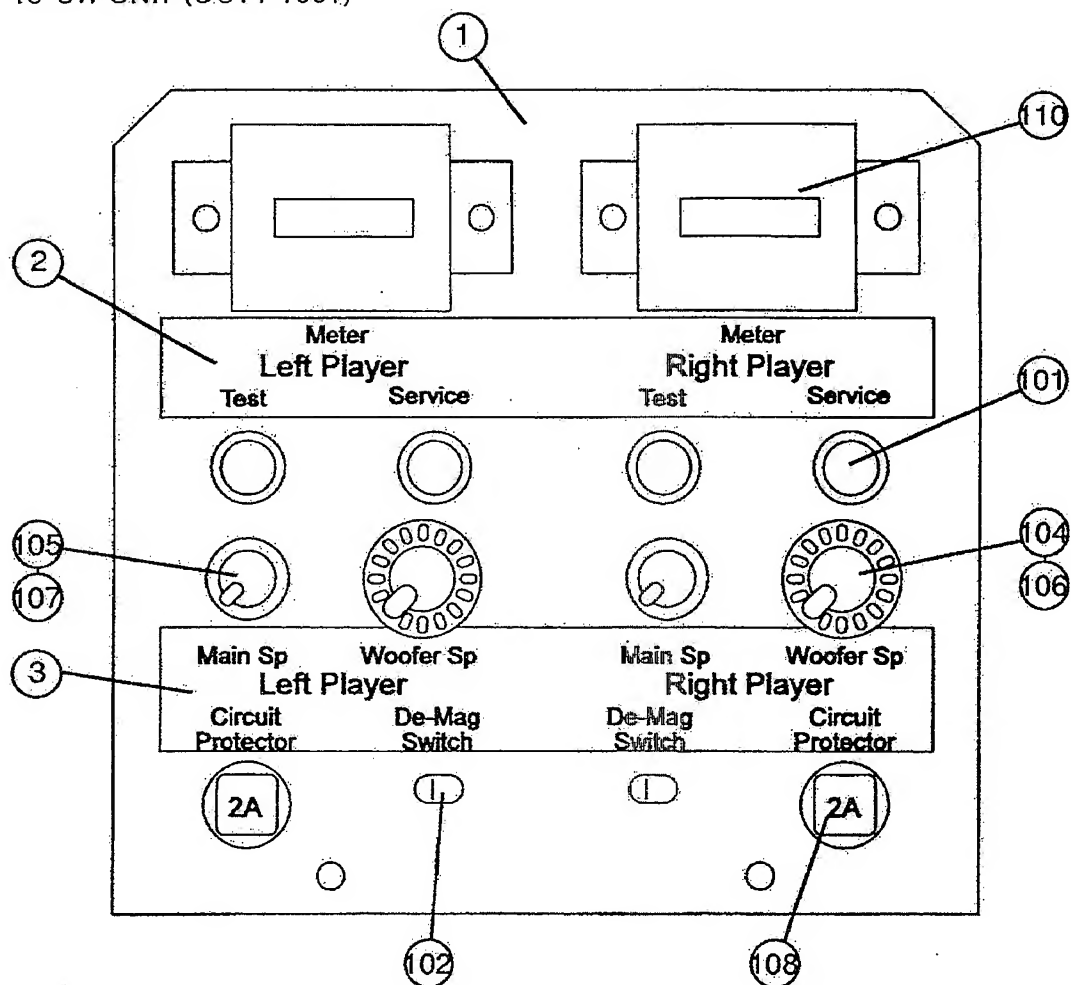
ITEM NO. PART NO. DESCRIPTION

1	OUT1-1002	WOODEN FRONT CABINET	
2	OUT1-1003	BACK DOOR	
3	OUT1-1004	COVER BOARD	
4	OUT1-1005	FLOOR MAT	
5	OUT1-1006	CORNER PROTECTOR-L	
6	OUT1-1007	CORNER PROTECTOR-R	
7	OUT1-1008	CENTER PROTECTOR-L	
8	OUT1-1009	CENTER PROTECTOR-R	
9	OUT1-1010	UNDER PROTECTOR	
10	OUT1-1011	NUT PLATE CENTER	
11	OUT1-1012	NUT PLATE SIDE	
12	OUT1-1013	HOOK BRKT	
13	OUT1-1014	CONN BRKT 4P	
15	OUT1-1016	FAN BRACKET	
16	OUT1-1017	AIR VENT	
17	RDY1-1047	NUT PLATE	
18	RDY1-1049X	HEEL PROTECTOR	
19	BVG1-0033	SHIPPING BRKT S	
20	BVG1-1503X	MONITOR BRKT	
21	BVG1-1025	COMMUNICATION PLATE	
22	ARC1-1006	LEG BRACKET	
24	DP1-1148X	LKG TNG	
28	1051-5169	LOCK BRACKET W	
29	1051-5173	CHUTE PLATE MARS	
30	1171-0062	PLATE LOCK RETAINER	
31	1171-0063	PLATE TONGUE RETAINER	
32	1171-5216	PLATE LEG BRACKET	
33	1171-5234	PLATE 6-40	
35	6011-5699	LEG ADJUSTER BOLT M16X 75	
101	6011-5471	CASTER	
102	220-5380	MAG LOCK MASTER W/O KEY	
104	220-5374	DBL DOOR FRAME W/CASH DOOR	MARS DOOR TYPE
	220-5128~	ASSY COIN CHUTE 2DOOR~	OTHERS
105	280-0419	HARNESS LUG	
106	280-5234	RUBBER GROMMETø 26 W/COVER	
107	2601-0035	FAN MOTOR DC 12V (2 per)	
108	280-0425	CORD CLAMP ø 10	
109	280-5008	CORD CLAMP ø 15	
110	601-0460	PLASTIC TIE BELT	
201	000-0308-FS	M SCR PH W/FS M3 x 8	
202	000-0412-FS	M SCR PH W/FS M4 x 12	
203	000-0420-FS	M SCR PH W/FS M4 X 20	
204	000-0430-FS	M SCR PH W/FS M4 X 30	
205	005-3113-F	W SCR RH W/F 3.1 x 13	
206	005-3510	W SCR RH 3.5 x 10	
207	005-3516-F	W SCR RH W/F 3.5 X 16	

ITEM NO.	PART NO.	DESCRIPTION
208	029-0337	TMP PRF SCR TH CRM M4 x 20
209	039-0126	HEX BLT W/FS M6 X 35
210	039-0127	CRG BLT CRM M6 X 40
211	039-0150	HEX BLT W/FS M6 X 25
212	039-0154	HEX BLT BLK W/FS M8 X 30
213	039-0159	HEX BLT W/FS M6 X 20
214	046-0001	SCR NAIL THH STNLS 1.5 x 16
215	051-0006	FLG NUT M6
216	059-0022	HEX NUT M16
217	008-T00425-OC	TMP PRF SCR TH CRM M4 X 25
301	600-6253-30	WIRE HARN EXT SPEAKER
303	600-6253-65	WIRE HARN DC BLE COIN
304	600-6253-66	WIRE HARN MARS COIN SW
305	600-6253-34	WIRE HARN FAN MOTOR
306	600-6253-35	WIRE HARN EARTH COIN FRAME
/	600-6253-67	WIRE HARN PLAYER SELECT (NOT SHOWN)

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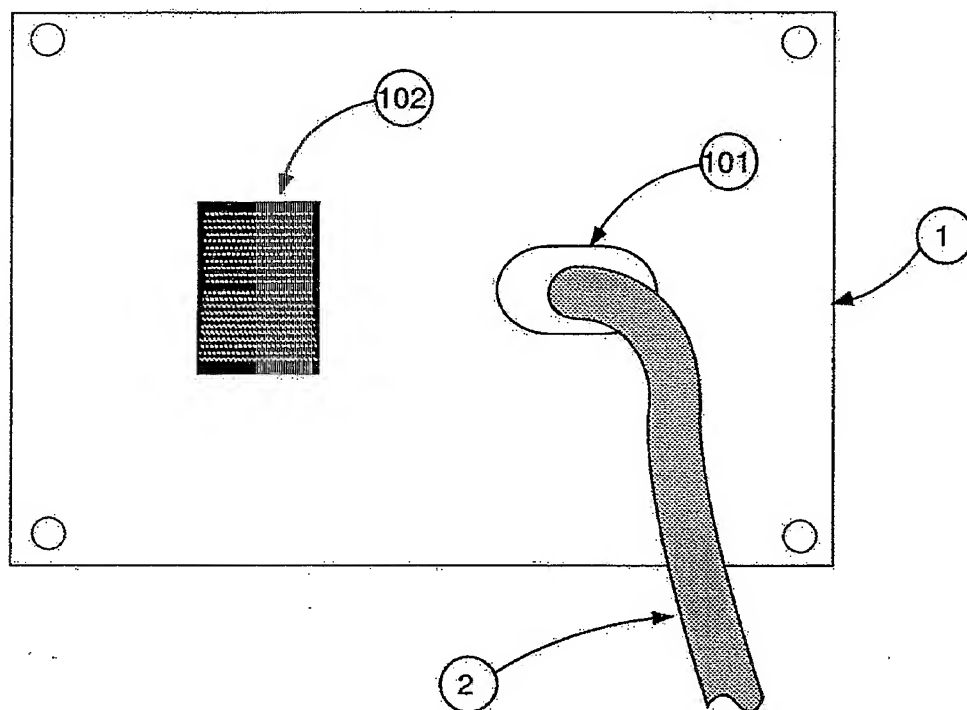
10 SW UNIT (OUT1-1001)



ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-1020	SW BRACKET
2	0003-033-000	STICKER UPPER SW UNIT
3	0003-034-000	STICKER LOWER SW UNIT
101	5091-5028	SW PB 1M
102	5091-5374	SW PB 1M 3A 125V
104	2201-5179	VOL CONT B-5K OHM
105	220-5420	RHEO STAT 100 OHM 10W
106	6011-0042	KNOB
107	6011-6999	KNOB W/ PLASTIC BUSHING
108	5121-5006	CIRCUIT PROTECTOR NRF110-2A
109	6011-0460	PLASTIC TIE BELT 100mm
110	2201-5064-01	MAG CNTR 6DIG DC5V W/L&DIO

(NOT SHOWN)

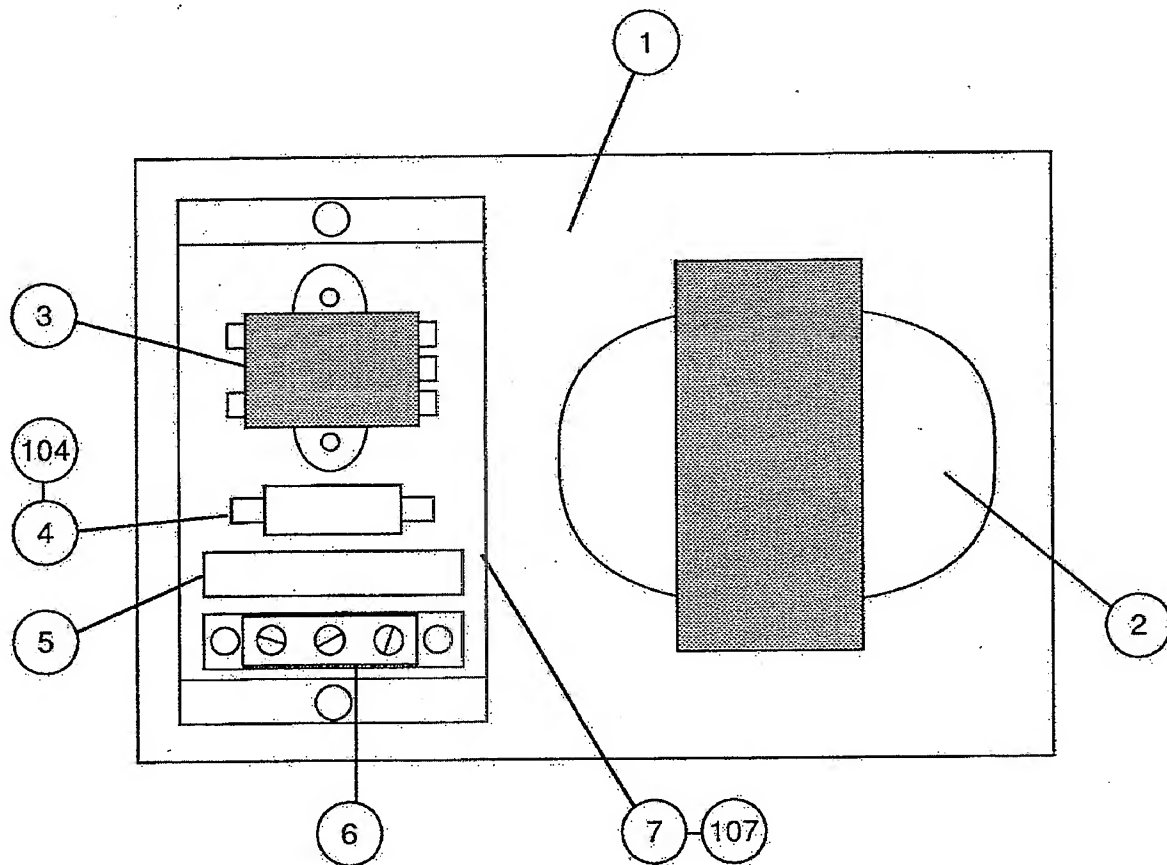
11 AC UNIT (OUT1-1021)



ITEM NO.	PART NO.	DESCRIPTION
1	6001-0110	AC LINE CORD
2	OUT1-1022	AC BRKET
101	2801-5134	BUSHING STRAIN RELIEF
102	509-5453-V-B	SW ROCKER J8 V-B (MATSUSHITA)

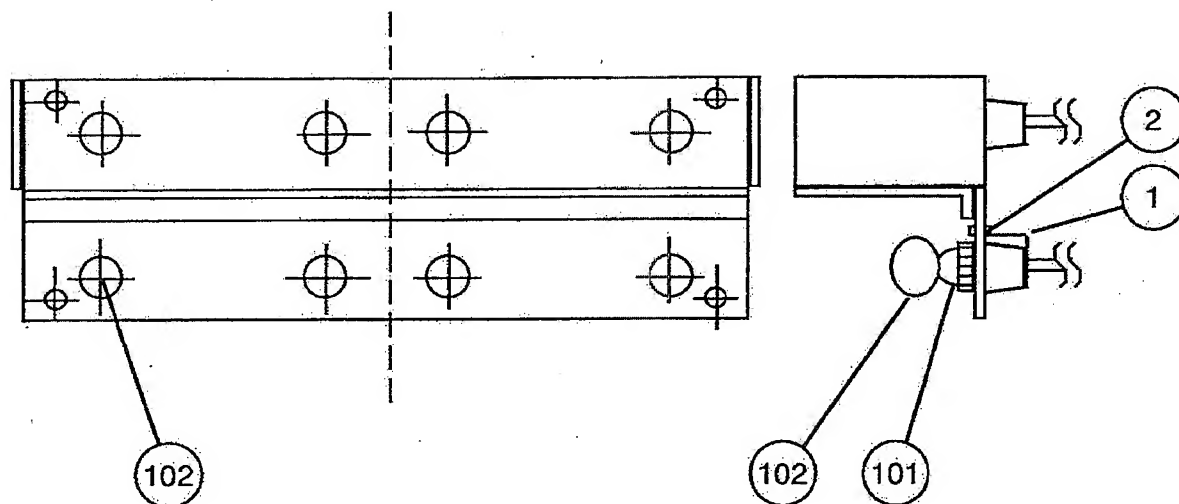
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12 AC XFMR (OUT1-1023)



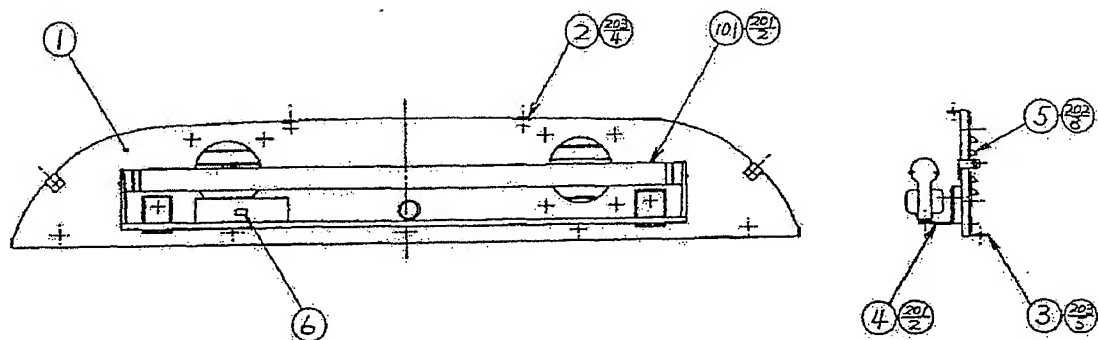
ITEM NO.	PART NO.	DESCRIPTION
1	S113-605-000	WOOD BASE
2	0053-073-000	TRANSFORMER
3	0053-010-200	LINE FILTER, 20A EMI20
4	0057-004-000	FUSE
5	0003-010-000	FUSE LABEL
6	6001-6253-64	GROUND BRACKET
7	S112-531-000	PROTECTIVE SHIELD
104	0057-010-000	FUSE HOLDER, O1 POS, U.L.
107	0003-05-000	"HIGH VOLTAGE" LABEL

13 LAMP UNIT (OUT1-1025)



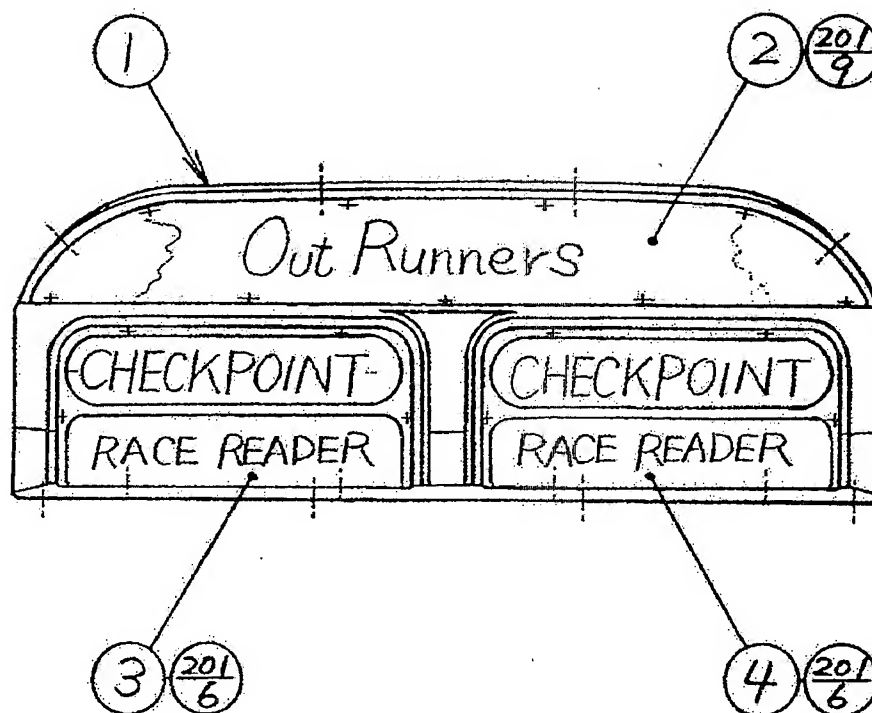
ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-1026	SOCKET BRACKET
2	012-0632ST	6 x 32 SELF TAPPING (FOR CHASSIS GROUND)
101	2141-0118	LAMP SOCKET
102	3901-5257-01	LAMP, 110V 15W FROST
301	600-6253-46	WIRE HARN LAMP UNIT

14 FL UNIT (OUT1-1027)



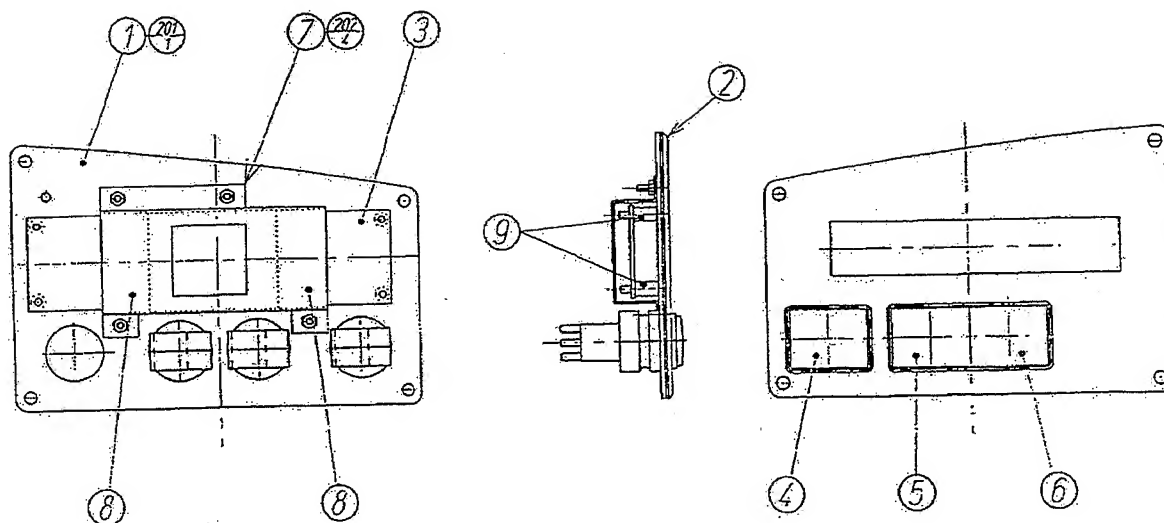
ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-1028	BASE
2	OUT1-1029	BILLBOARD BRACKET
3	OUT1-1030	STOPPER BRACKET
4	OUT1-1031	FL BRACKET
5	OUT1-1040	AIR VENT
101	3901-5276-32-01	ASSY FL UNIT 30W EX
102	601-0460	PLASTIC TIE BELT 100mm
201	000-0414-FS	M SCR PH W/FS M4x 14
202	029-0014	M SCR TH CRM M4 x 12
203	029-0404	M SCR TH CRM M5x 16
301	600-6253-47	WIRE HARN FL UNIT

15 ASSY BILLBOARD (OUT1-1032)



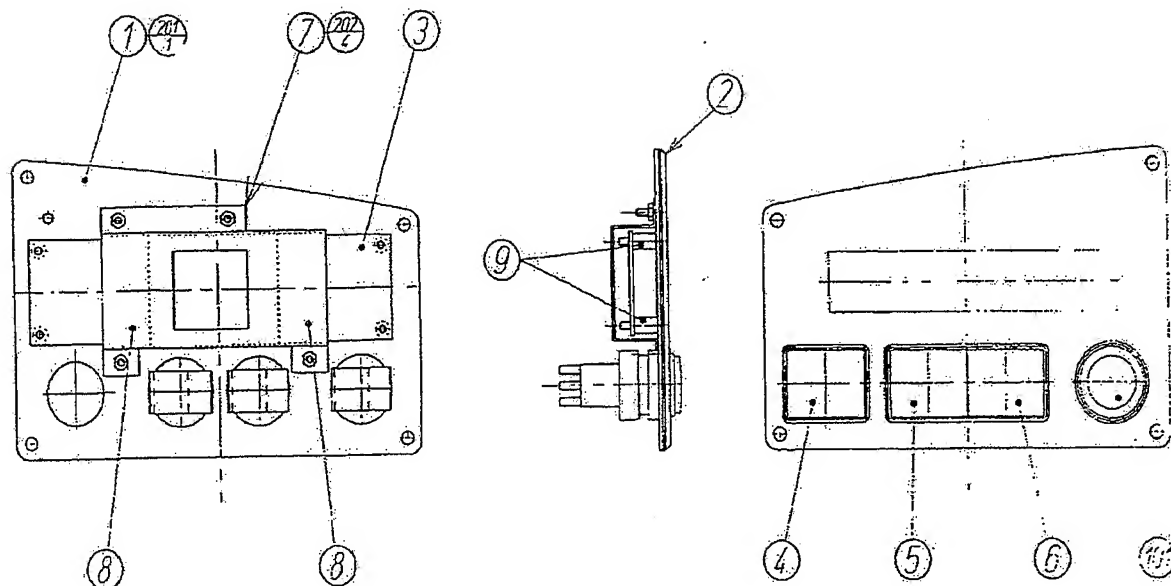
ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-1033	BILLBOARD COVER
2	OUT1-1034	TOP PANEL OUTRUNNERS
3	OUT1-1035.Y	BILLBOARD RED
4	OUT1-1036X	BILLBOARD BLUE
201	029-0014	M SCR TH CRM M4 X 12

16 ASSY RADIO (OUT-2008)



ITEM NO.	PART NO.	DESCRIPTION
1	OUT-2009	RADIO PLATE
2	OUT-2010	RADIO PANEL
3	838-9612	ASSY LCD W/CONN
4	509 5495 01	PUSH BUTTON DJ/MUSIC
5	509-5495-02	PUSH BUTTON MUSIC
6	509-5495-03	PUSH BUTTON SELECT
7	OUT-2020	LCD HOLDER
8	OUT-2021	CUSHION
9	280-5185-10	SPACER TUBE L=10
201	051-0004	FLC NUT M4
202	051.0003	FLC NUT M3
301	600-6253 57	WIRE HARN RADIO SW
302	600-6253-59	WIRE HARN LCD
303	600-6253-63	WIRE HARN EARTH RADIO

17 ASSY RADIO (OUT-2024)

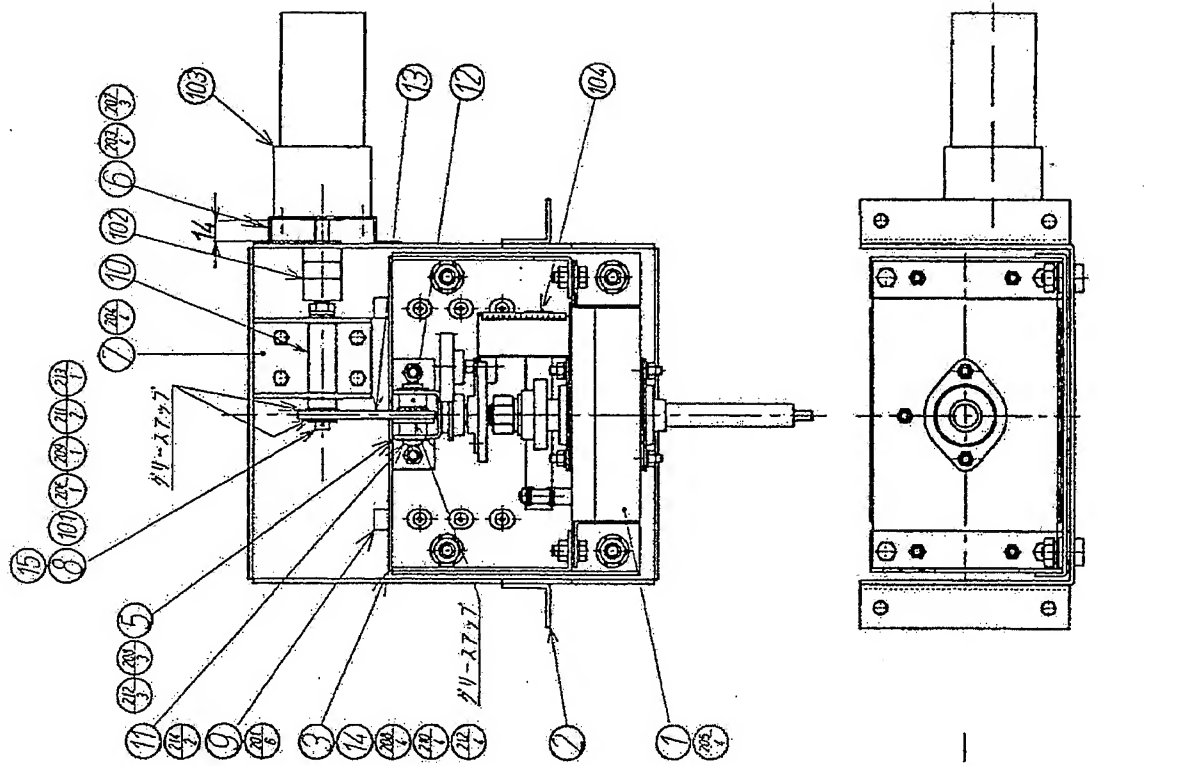


ITEM NO.	PART NO.	DESCRIPTION
1	OUT-2009	RADIO PLATE
2	OUT-2023	RADIO PANEL MARS
3	838-9612	ASSY LCD W/CONN
4	509-5495-01	PUSH BUTTON DJ/MUSIC
5	509-5495-02	PUSH BUTTON MUSIC
6	509-5495-03	PUSH BUTTON SELECT
7	OUT-2020	LCD HOLDER
8	OUT-2021	CUSHION
9	280 5185-10	SPACER TUBE L=10
101	509-5440	PUSH BTN SW IT GREEN W/L DCIIV
201	051-0004	FLG NUT M4
202	051-0003	FLG NUT M3
301	600-6253-57	WIRE HARN RADIO SW
302	600-6253-59	WIRE HARN LCD
303	600-6253-63	WIRE HARN EARTH RADIO
304	600-6253-71	WIRE HARN PLAYER SEL SW

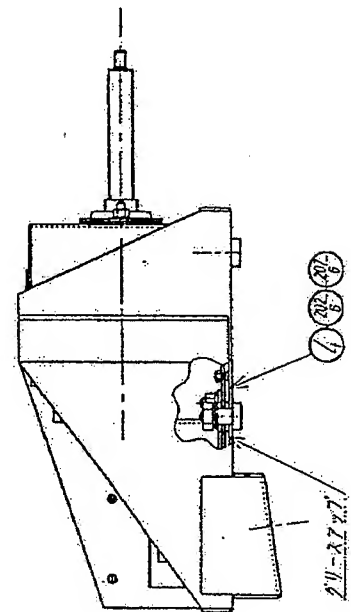
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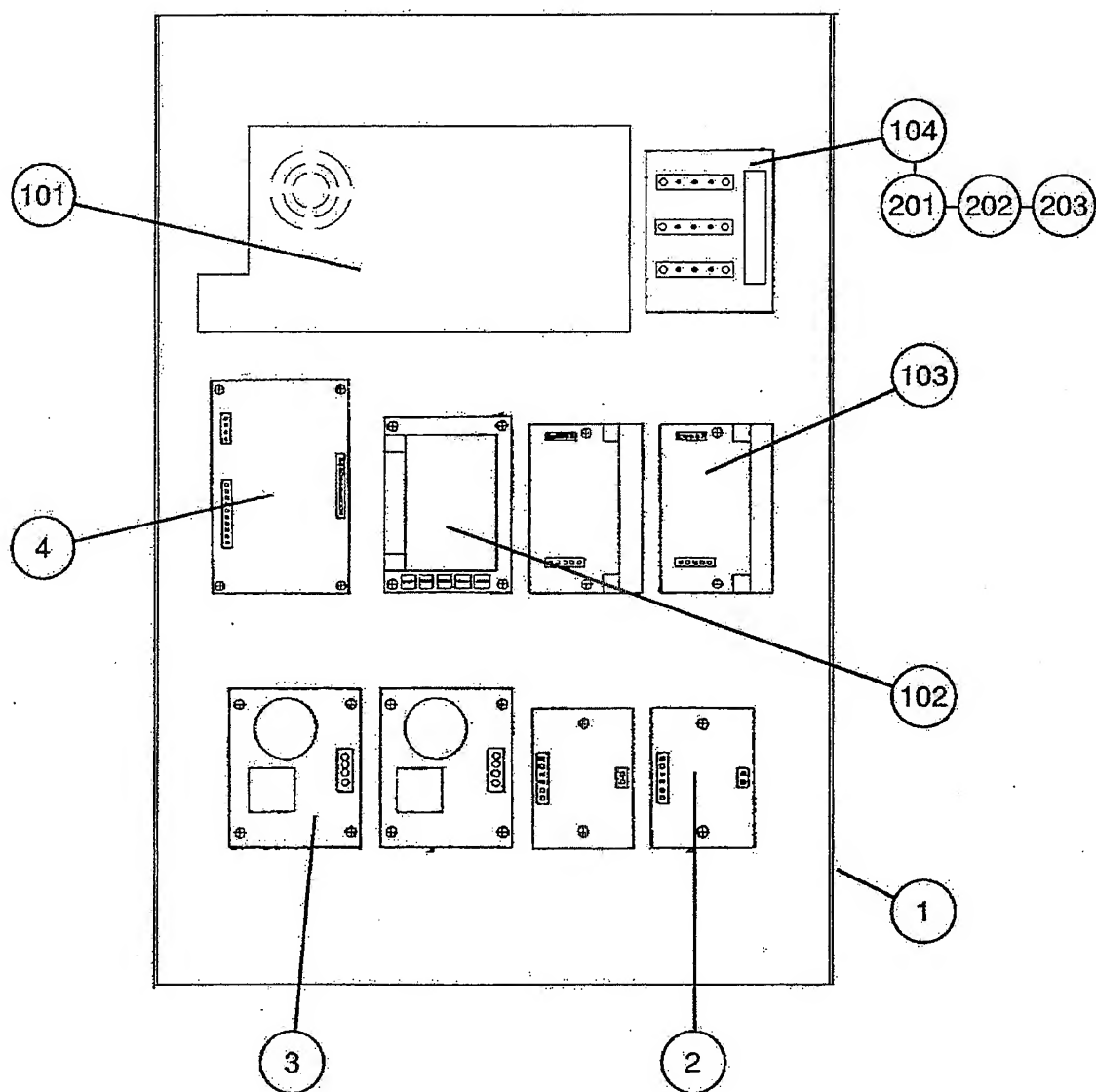
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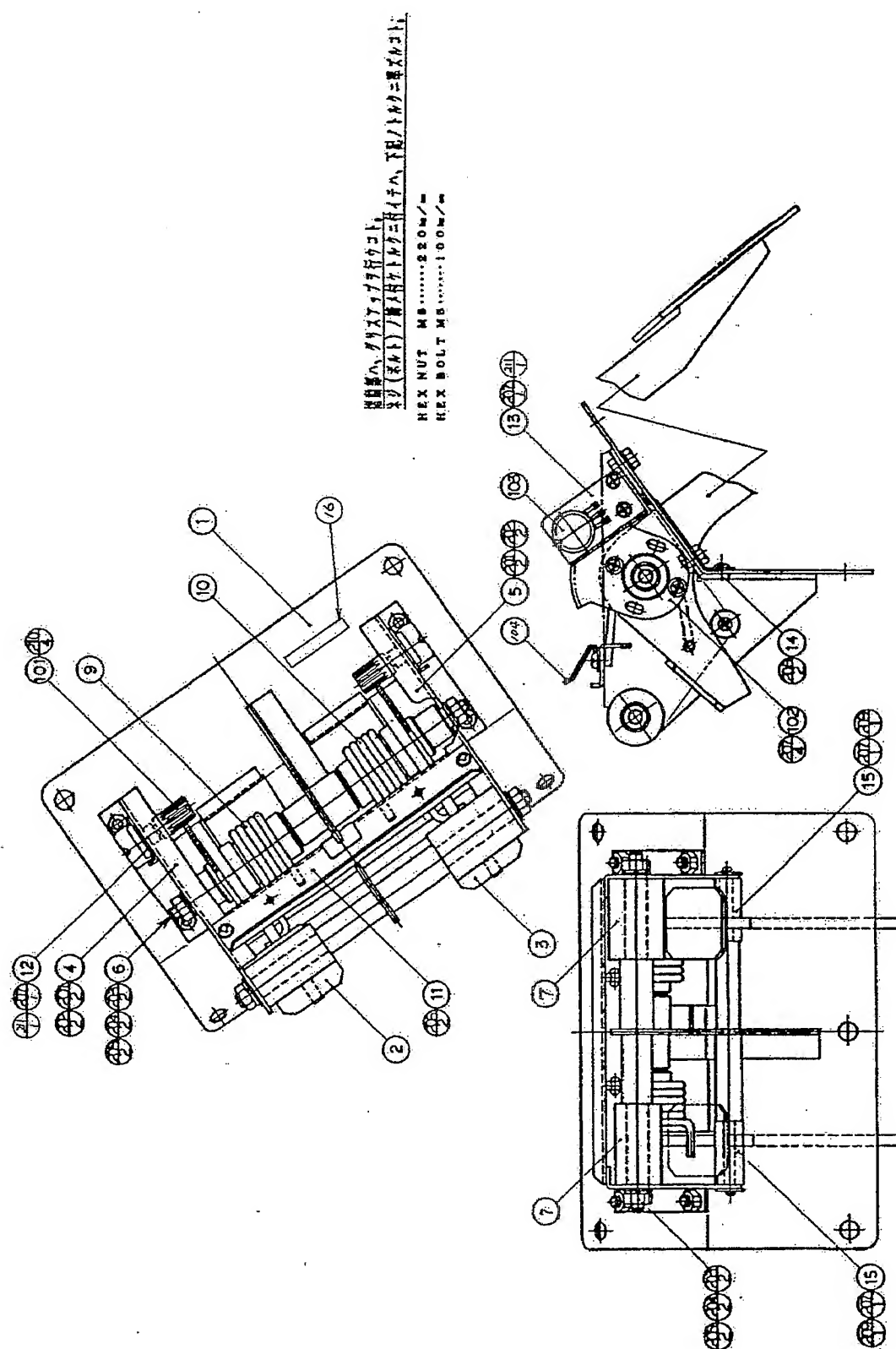
- 註 1. ネジ部ハ全テネジロック使用ノコト
 2. 摺動部及ギアノカミ合イ部ニハグリースアップノコト
 3. ネジ締メ付ケトルク
 M4 (SET SCR) 25kg/cm
 M6 80kg/cm
 M8 140kg/cm
 4. ①ノ取付ケハ上カニ押ツケテ固定ノコト



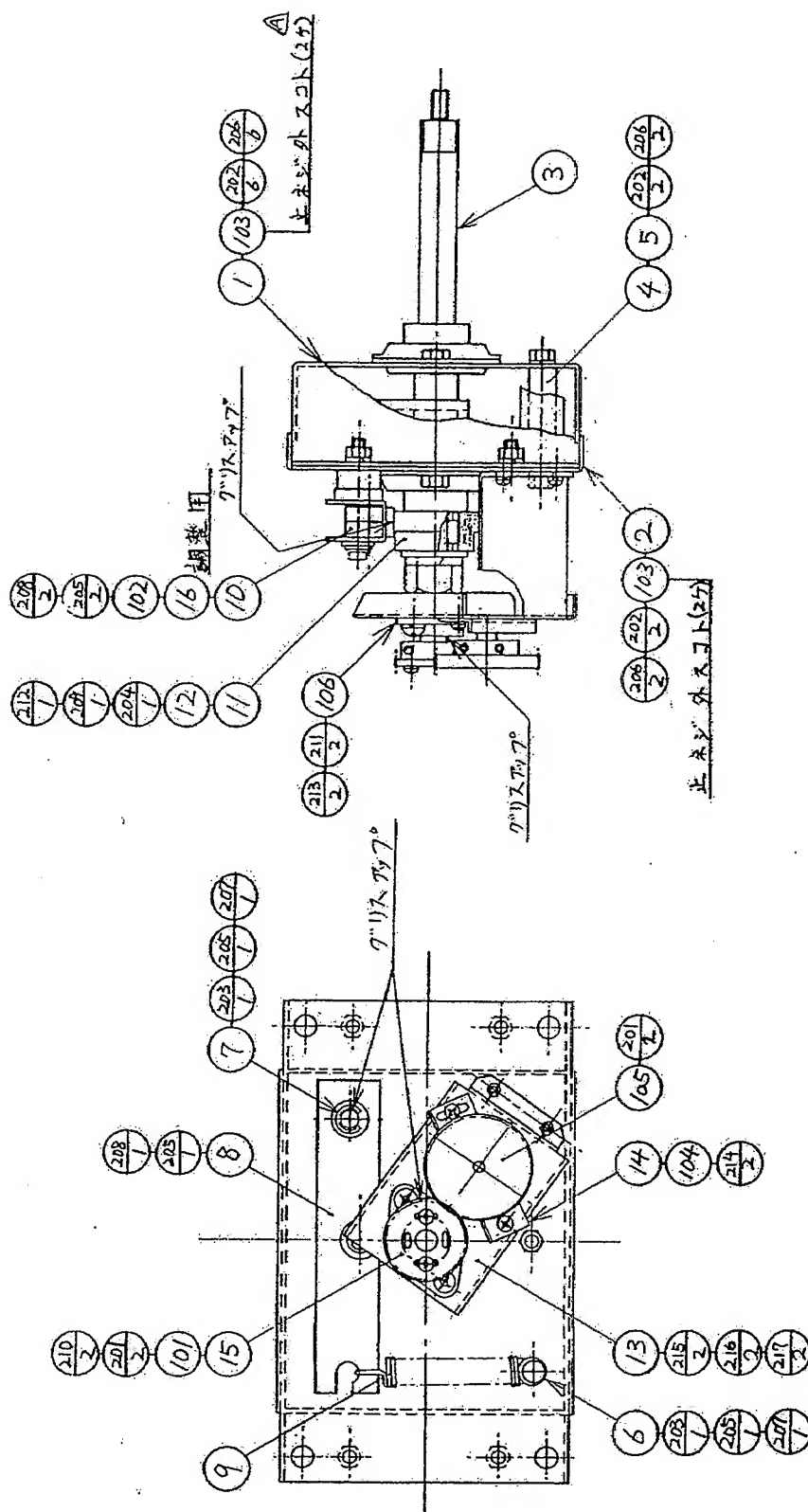
ITEM NO.	PART NO.	DESCRIPTION
1	RDY-2100	ASSY HANDLE MECHA
2	OUT-2101	BASE
3	OUT-2102	SLIDE BASE
4	OUT-2103	SLIDER
5	OUT-2104	JOINT BRACKET
6	OUT-2105	MOTOR BRACKET
7	OUT-2106	SHAFT BRACKET
8	OUT-2107	CAM SHAFT
9	OUT-2108	SLIDE GUIDE
10	OUT-2109	COLLAR L
11	OUT-2110	JOINT PIN
12	OUT-2111	COLLAR
13	OUT-2112X	JOINT BAR
14	OUT-2113	SLIDE SPACER
15	OUT-2114	SPACER
101	100-5165	BEARING ϕ 15 W/FLANGE
102	111-0036	COUPLING (MIKIJ-050-T5)
103	350-5142-01	MOTOR DC45V W/HOLE
104	601-5526-060	BUSH 1.6t
105	209-0023	CONN CLOSED END
201	000-0510-FS	M SCR PH W/FS M5X10
202	001-0410	M SCR FH M4X10
203	000-0410-FS	M SCR PH W/FS M4x10
204	039-0160	HEX BLT W/FS M6 x 16
205	039-0124	HEX BLT W/FS M8x20
206	045-0022	COT PIN 2.5X20
207	051-0004	FLG NUT M4
208	050-0008	HEX NUT M8
209	059-0038	HEX NUT M10
210	060 0008	FLT WSHR M8
211	060-0010	FLT WSHR M10
212	061-0008	SPR WSHR M8
213	061-0010	SPR WSHR M10
214	065-0012	E RING 12mm
301	600-6253-62	WIRE HARN DC MOTOR



ITEM NO.	PART NO.	DESCRIPTION
1	OUT1-4001	WOODEN BASE
2	839-0048	SSR BD DC MOTOR
3	839-0217-91	RECTIFICATION BD DC48V
4	839-0585	SSR BD
101	400-5149	SW REGU AC110V +5V16A +12V6A
102	400-5164	SW REGU AC 18.5V +12V 2.5A
103	601-6228	PWR AMP FOR SUPER WOOFER
104	S113-035-000	COMMUTATION BOARD
201	S113-611-000	WOOD BASE
202	S109-049-100	TERMINAL CONNECT BRACKET
203	0000-037-000	LABEL

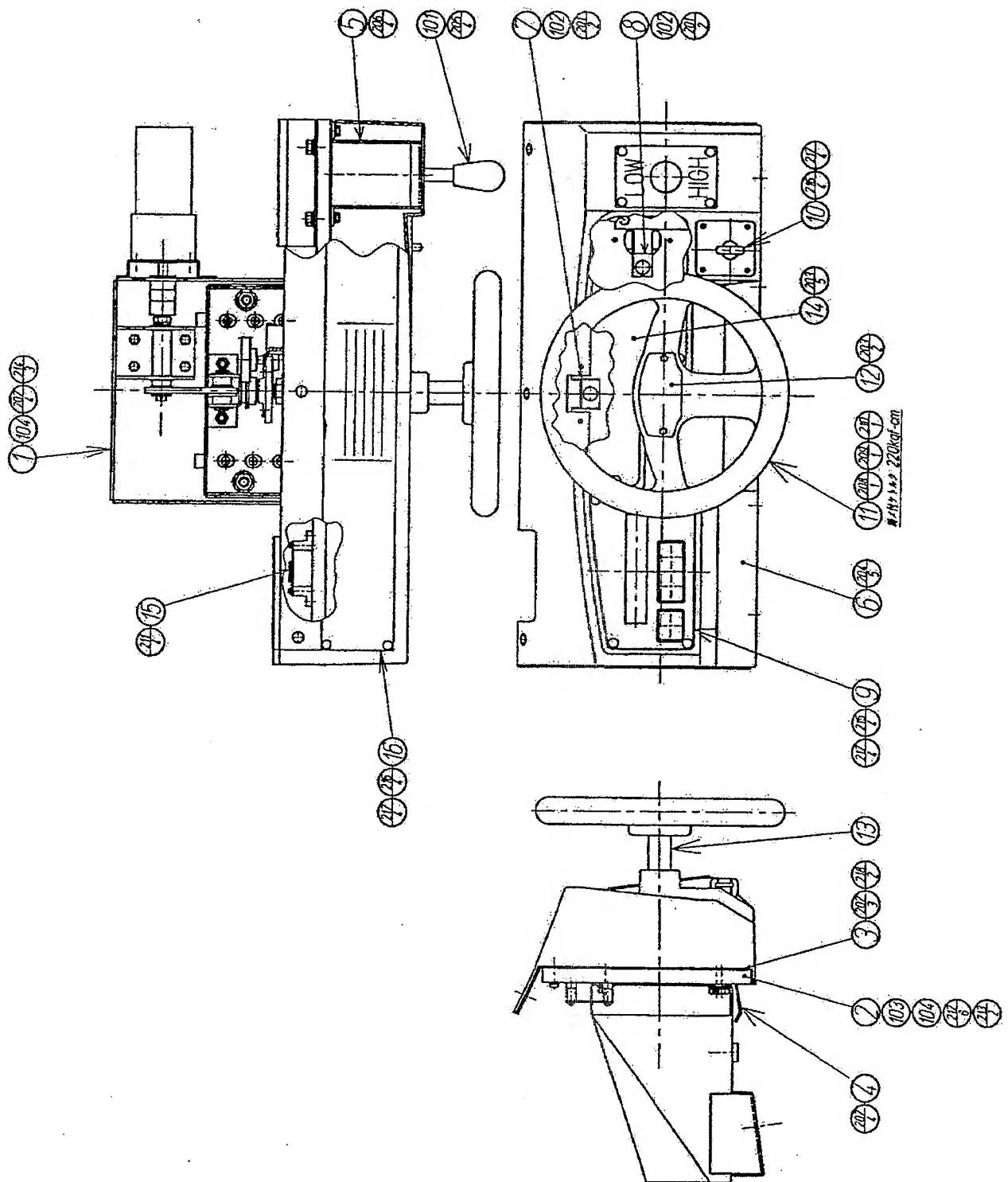


ITEM NO.	PART NO.	DESCRIPTION
1	RDY-1101	PEDAL BASE
2	RDY-1102	ACCEL PEDAL
3	RDY-1103	BRAKE PEDAL
4	RDY-1104	SIDE PLATE A
5	RDY-1105	SIDE PLATE B
6	RDY-1106	PEDAL AXLE
7	RDY-1107	STOPPER A
9	RDY-1109	TORSION SPRING A
10	RDY-1110	TORSION SPRING B
11	RDY-1111	SPRING HOOK
12	RDY-1112	VOL. BRKT A
13	RDY-1113	VOL. BRKT B
14	RDY-1114	PEDAL BANDAGE
15	RDY-1115	RETURN STOPPER
16	421-8100-03	STICKER RDY-1100 03
101	601-5410	GEAR 15, ϕ 6
102	601-6450	GEAR 110
103	220-5130	VOL CONT B-5K OHM
104	280-0425	CORD CLAMP 10 ϕ
201	039-0128	HEX BLT BLK M6 x 12
202	069-0023	SPR WSHR BLK M6
203	050-0008	HEX NUT M8
204	060-0008	FLT WSHR M8
205	061-0008	SPR WSHR M8
206	000-0510-S	M SCR PH W/FS M5 x 10
207	000-0412-FS	M SCR PH W/FS M4 x 12
208	008-0408	TMP PRF SCR TH M4 x 8
209	069-0007	FLT WSHR 4-4-16 x 1.6
210	028-0001	SET SCR HEX SKT CP UNBR M3 x 4
211	000-0412-S	M SCR PH W/S M4 x 12
301	SGB-4112 7	WIRE HARN ACCEL & BRAKE

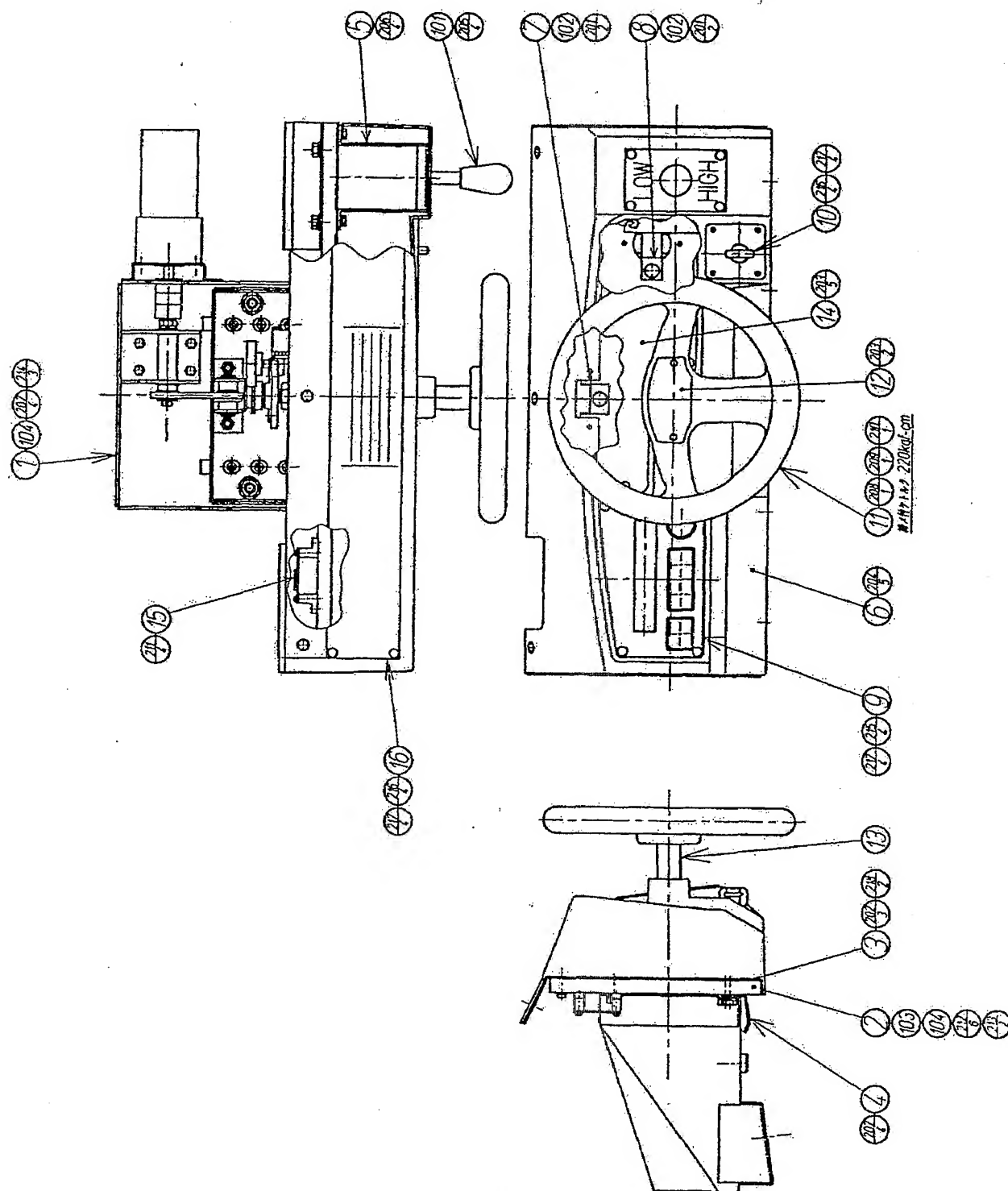


註1. 示す標準規格ニ 対応シテ 使用可能
 2. 指示部 7° スロット 1.5mm
 3. 材料 トルク M18 : 220 kgf・cm
 M16 : 100 kgf・cm

ITEM NO.	PART NO.	DESCRIPTION
1	RDY-2101	HANDLE BASE
2	RDY-2102	LID HANDLE BASE
3	RDY-2103	STEERING SHAFT
4	RDY-2104	STOPPER SHAFT
5	SLC-1120	STOPPER RUBBER
6	SLC 1122X	HOOK SPRINC
7	SLC-1123	SWING ARM SHAFT
8	SLC-1124	SWING ARM
9	SLC-1137X	EXT SPRING L
10	SOR-2112	BEARING SHAFT
11	SLC-1141X	WHITE CAM
12	SOR-2115	KEY 5x10
13	RDY-2105	VR BASE
14	RDY 2106	VR BRACKET
15	RDY-2107	ADJUST RING
16	SDR-2113	SPACER
101	601-6172	GEAR 48
102	100-5018	BALL BEARING ϕ 8
103	100-5096	BEARING ϕ 17 (FYH SBPEL 203)
104	220-5130	VOL CONT B iKOHM
105	601-7088	GEAR 64
106	100 5138	BEARING ϕ 12 (80FL-12)
201	028-0019	SET SCR HEX SKT CP UNBR M4 x 8
202	050 0006	HEX NUT M6
203	050 0008	HEX NUT M8
204	059 0022	HEX NUT M16
205	060 0008	FLT WSHR M8
206	061-0006	SPR WSHR M6
207	061-0008	SPR WSHR M8
208	065-0007	E RING 7mm
209	069 0060	SPR WSHR M16
210	000 0412-FS	M SCR PH W/FS M4 x 12
211	054 0006	U NUT M6
212	069 0012	FLT WSHR M16
213	029 0372	M SCR PH W/FS M6 x 16
214	000-0408 FS	M SCR PH W/FS M4 x 8
215	050-0004	HEX NUT M4
216	061-0004	SPR WSHR M4
217	060 0004	FLT WSHR M4
301	SGB-4112-16	WIRE HARN HANDLE VR



ITEM NO.	PART NO.	DESCRIPTION
1	OUT-2100	ASSY SLIDE MECHA
2	OUT-2001	WOOD BASE
3	OUT-2002X	SUPPORT BRACKET
4	OUT-2003	REAR BRACKET
5	OUT-2004	SHIFT BRACKET
6	OUT1-2005	CONT PANEL COVER
7	OUT-2006	LAMP BRACKET A
8	OUT-2007	LAMP BRACKET B
9	OUT-2008	ASSY RADIO
10	OUT-2011	ASSY KEY
11	RDM-2001	STEERING WHEEL ~ 270
12	RDM-2012	STEERING EMBLEM
13	OUT-2017	HANDLE COLLAR
14	OUT-2018X	METER
15	839-0583-91	I/F BD
16	OUT-2022-01	GUARD PLATE INSTR ENG
17	OUT-2025	BRACKET
101	6101-0316	UP/DOWN SHIFT
102	390-5346	LAMP WEDGE BASE TYPE 14V 2.7W
103	280-0419	HARNES LUG
104	280-5225	CORD CLAMP 21
105	209-0023	CONN CLOSED END
106	601-0460	PLASTIC TIE BELT 100mm
201	000-0425-FS	M SCR PH W/FS M4 x 25
202	000-0525-FS	M SCR PH W/FS M5 x 25
203	008-0416	TMP PRF SCR TH M4 x 16
204	029-0169	TMP PRF SCR TH CHROME M4 x 16
205	008-0512	TMP PRF SCR TH M5X 12
206	039-0160	HEX BLT W/FS M6 x 16
207	069-0162	HEX BLT W/S M8 x 30
208	050-0008	HEX NUT M8
209	061-0008	SPR WSHR M8
210	069-0048	FLT WSHR BLK 8.5-22 x 1.6
211	005-3125	W SCR RH 3.1 x 25
212	005-3510	W SCR RH 3.5 x 10
213	006-3113	W SCR FH 3.1 x 13
214	010-0406-F	S-TITE SCR PH W/F M4 x 6
215	031-0414-B	CRG BLT BLK M4 x 14
216	039-0131	CRG BLT CRM M4 x 14
217	051-0004	FLG NUT M4
218	000-0416-FS	M SCR PH W/FS M4 x 16
301	600-6253-51	WIRE HARN EXT HANDLE
302	600-6253-52	WIRE HARN EXT CNTR PNL
303	600-6253-53	WIRE HARN SHIFT SW
304	600-6253-54	WIRE HARN EXT MOTOR
305	600-6253-55	WIRE HARN EARTH CNTR PNL



ITEM NO.	PART NO.	DESCRIPTION
1	OUT-2100	ASSY SLIDE MECHA
2	OUT-2001	WOOD BASE
3	OUT-2002X	SUPPORT BRACKET
4	OUT-2003	REAR BRACKET
5	OUT-2004	SHIFT BRACKET
6	OUT1-2005	CONT PANEL COVER
7	OUT-2006	LAMP BRACKET A
8	OUT-2007	LAMP BRACKET B
9	OUT-2024	ASSY RADIO MARS
10	OUT-2011	ASSY KEY
11	RDM-2001	STEERING WHEEL ~ 270
12	RDM-2012	STEERING EMBLEM
13	OUT-2017	HANDLE COLLAR
14	OUT-2018X	METER
15	839-0583-91	I/F BD
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17	OUT-2025	BRACKET
101	6101-0316	UP/DOWN SHIFT
102	390-5346	LAMP WEDGE BASE TYPE 14V 2.7W
103	280-0419	HARNESS LUG
104	280-5225	CORD CLAMP 21
105	209-0023	CONN CLOSED END
106	601-0460	PLASTIC TIE BELT 100mm
201	000-0425-FS	M SCR PH W/FS M4 x 25
202	000-0525-FS	M SCR PH W/FS M5 x 25
203	008-0416	TMP PRF SCR TH M4 x 16
204	029-0169	TMP PRF SCR TH CHROME M4 x 16
205	008-0512	TMP PRF SCR TH M5 x 12
206	039-0160	HEX BLT W/FS M6 x 16
207	069-0162	HEX BLT W/S M8 x 30
208	050-0008	HEX NUT M8
209	061-0008	SPR WSHR M8
210	069-0048	FLT WSHR BLK 8.5-22 x 1.6
211	005-3125	W SCR RH 3.1 x 25
212	005-3510	W SCR RH 3.5 x 10
213	006-3113	W SCR FH 3.1 x 13
214	010-0406-F	S-TITE SCR PH W/F M4 x 6
215	031-0414-B	CRG BLT BLK M4 x 14
216	039-0131	CRG BLT CRM M4 x 14
217	051-0004	FLG NUT M4
218	000-0416-FS	M SCR PH W/FS M4 x 16
301	600-6253-51	WIRE HARN EXT HANDLE
302	600-6253-52	WIRE HARN EXT CNTR PNL
303	600-6253-53	WIRE HARN SHIFT SW
304	600-6253-54	WIRE HARN EXT MOTOR
305	600-6253-55	WIRE HARN EARTH CNTR PNL
306	600-6253-70	WIRE HARN EXT PLAYER SEL SW

20. WIRE COLOR CODE TABLE

THE WIRE COLOR CODE is as follows:

- A PINK
- B SKY BLUE
- C BROWN
- D PURPLE
- E LIGHT GREEN

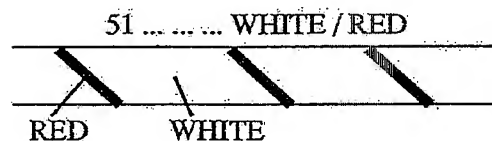
Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

- 1 RED
- 2 BLUE
- 3 YELLOW
- 4 GREEN
- 5 WHITE
- 7 ORANGE
- 8 BLACK
- 9 GRAY

If the right-hand side numeral of the code is 0, then the wire will be of a single color shown by the left-hand side numeral (see the above).

Note 1 : If the right-hand side alphanumeric is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

< Example >

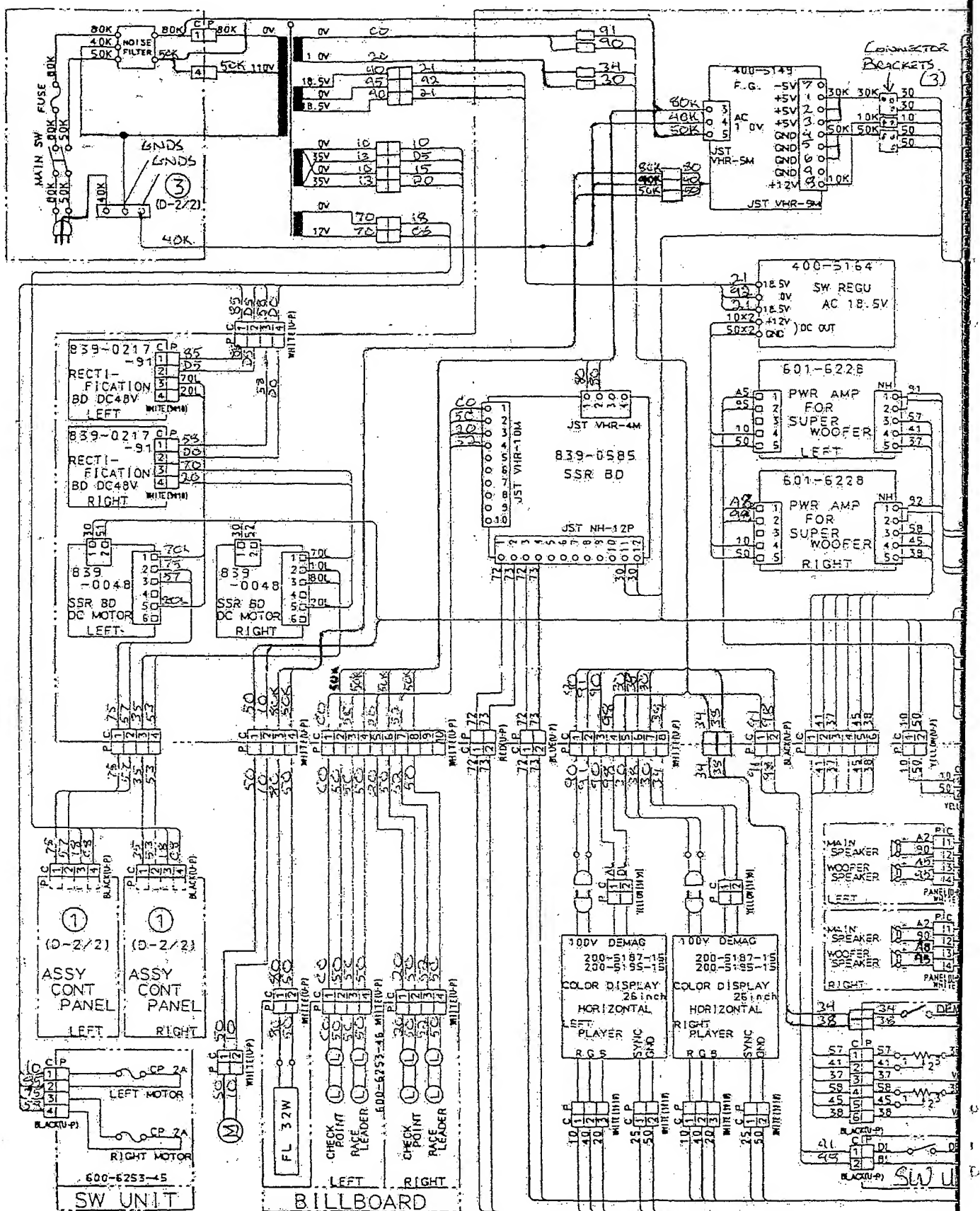


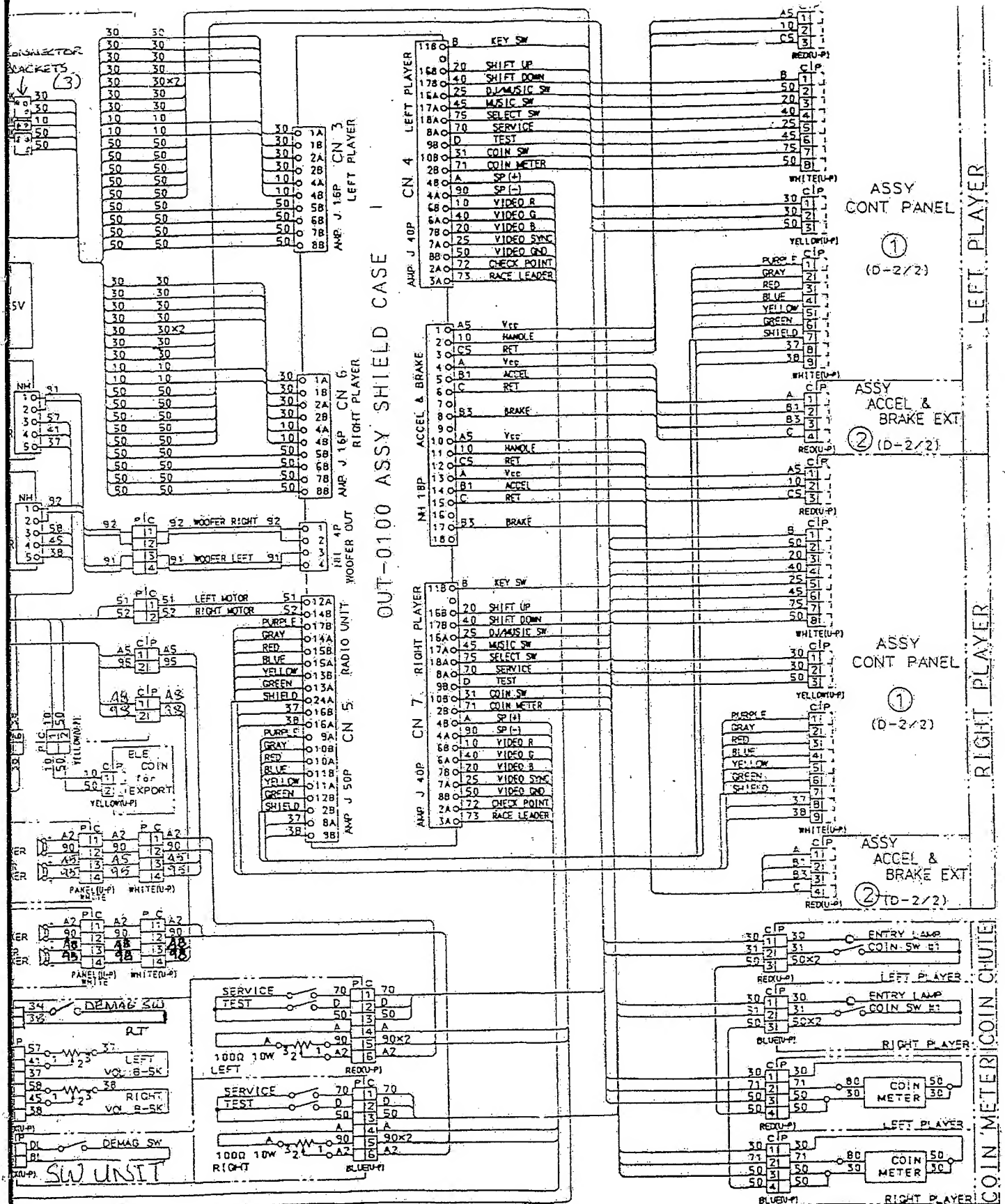
Note 1 : The character following the wire color code indicates the size of the wire.

K: AWG 18, UL 1015

L: AWG 20, UL 1007

None: AWG 22, UL 1007





21. WIRING DIAGRAM (D-1/2)

837-9560
ROM BD OUTRUNNERS

837-8792
COMMUNICATION BD (SYSTEM MULTI)

837-8676
MAIN BD (SYSTEM MULTI)

837-7536
A/D BD
SYSTEM 18 32

56P EDGE CONN

DIN 48P

56P EDGE CONN

839-0538-01
SYSTEM MULTI FLT BD OUT

LEFT PLAYER

RADIO & MOTOR

RIGHT PLAYER

WOOFER
OUT

ACCEL & BRAKE

AMP J16P
CN 3

AMP J40P
CN 4

AMP J50P
CN 5

AMP J16P
CN 6

AMP J40P
CN 7

JST NH4
CN 1

JST NH18
CN 8

834-9559 GAME BD OUTRUNNERS (SYSTEM MULTI)

OPT-FIBER
600-6182-50

TX

RX

TX

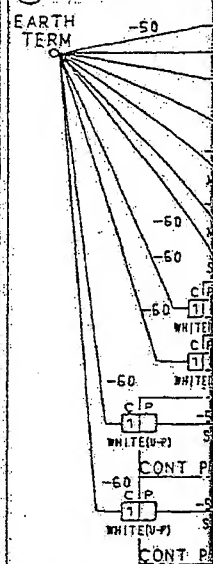
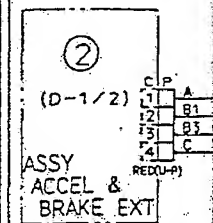
RX

NH4

JST NH18

600-6180-70

600-6251-63

[illegible][illegible]

[illegible]

4 CHANNEL QUATTRO BD

SW 1 00000000
12345678

SW 2 0000
1234

PLAYER START LAMPS

PLAYER START LAMPS

COIN METER +V8

COIN METER -V8

COIN ENTRY LAMP

COIN ENTRY LAMP

PL4 COIN SW N/C

PL4 COIN SW N/C

PL3 COIN SW N/C

PL3 COIN SW N/C

PL2 COIN SW N/C

PL2 COIN SW N/C

PL1 COIN SW N/C

PL1 COIN SW N/C

COIN SW COMMONS (ALL 4 OUTPUT)

SWITCH ENABLE

PL1 SW RET

PL2 SW RET

PL3 SW RET

PL4 SW RET

DC +12V

DC -8V

CN-1

CN-3

CN-5

CN-4

CN-3

CN-7

CN-6

CN-2

CN-10

CONT PANEL

LEFT

(D-2/2)

CONT PANEL

RIGHT

(D-2/2)

COIN METER

(D-1/2)

POS. G6

RED(U-P)

BLUE(U-P)

600-6253-60

600-6253-72

TO MARS OR SENTINEL INTERFACE CABLE

—91—

OutRunners

Manual No. 4201-6079-01

Q 11 6

Q 11 6

SEGA ENTERPRISES, INC. USA

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