1 ST PRINTING - SP

# SEGA



# **OWNER'S MANUAL**





- Before using this product, be sure to read this manual.
- As far as you are using this product, keep this manual available.

SEGA ENTERPRISES, LTD.

MANUAL NO. 420 - 6184 - 03

# BEFORE USING THE PRODUCT, BE SURE TO READ THE FOLLOWING:

To ensure the safe usage of the product, be sure to read the following before using the product. The following instructions are intended for the owners, operators and the personnel in charge of the operation of the product. After carefully reading and sufficiently understanding the instructions, handle the product appropriately.

Herein, explanations which require special attention are enclosed with dual lines. Depending on the potentially hazardous degrees, terms of WARNING!, CAUTION! and IMPORTANT! are used. SEGA is not liable whatsoever, even during the Liability period, for any injury or damage caused by the usage in the manner counter to the instructions herein stated. In order to prevent accidents, warning stickers and printed instructions are applied to the places where a potentially hazardous situation relating to the product can occur. For safety cause, be sure to comply with such warnings.



indicates that mishandling the product by disregarding this warning will cause a potentially hazardous situation which can result in death or serious injury.



Indicates that mishandling the product by disregarding this caution will cause a potentially hazardous situation which can result in personal injury and or material damage.



This is cautionary information which should be complied with when handling the product. Indicates that mishandling the product by disregarding this will cause a potentially hazardous situation which might not result in personal injury but can damage the equipment, etc.

O Be sure to turn off power before working on the machine.

To prevent electric shock, be sure to turn off power before starting the work in which the worker touches the interior of the product. If the work is to be performed in the power on status, the linear touches the interior of the product of the work is to be performed in the power on status, the

Be sure to ground the Earth Terminal (this, however, is not required in the case where a power cord with earth is used).

This product is equipped with the Earth Terminal. When installing the product, Connect the Earth Terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to electric shock. After performing repair, etc. for the Control equipment, be sure to firmly connect the Earth Wire to the Control equipment.

Ensure that the Power Supply used is equipped with a Circuit Protector.

This product does not incorporate the Circuit Protector. Using a power supply which is not equipped with the Circuit Protector can cause a fire when short circuit occurs.

- O Be sure to use fuses which meet the specified rating.
- Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.

The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product. SEGA is not liable whatsoever for any injury and or damage caused by Specification changes (using other firm's parts, or by conversion) not designated by SEGA.

O Ensure that the product is of appropriate Electrical Specifications.

Before installing the product, check for Electrical Specifications. SEGA products have a nameplate on which Electrical Specifications are described. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location.

Install and operate the product in places where appropriate lighting is available, allowing warning labels to be clearly read.

To ensure safety for the customers, labels and printed instructions describing potentially hazardous situation are applied to places where accidents can be caused. Ensure that where the product is operated has sufficient lighting allowing the warnings to be read. If any label is peeled off, apply it again immediately.

O When handling the Monitor, be very careful. (Applies only to the product w/ monitor).

Some of the monitor (TV) parts are subject to high tension voltage. Even after turning off power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.

In the case where commercially available monitors and printers are used in this product, only the contents relating to this product are explained herein. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual together with the specific Instruction Manual of such equipment.

- Descriptions herein contained may be subject to improvement changes without notice.
- The contents described herein are fully prepared with due care. However, should any question arise or errors be found, please contact SEGA.

# INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION.

Normally, at the time of shipment, SEGA products are in a status allowing for usage immediately after transporting to the location. Nevertheless, an irregular situation may occur during transportation. Before turning on power, check the following points to ensure that the product has been transported in a satisfactory status.

	·
	Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
	Are Casters and Leg Adjusters damaged?
□	Do the power supply voltage and frequency requirements meet with those of the location?
0	Are all wiring connectors correctly and securely connected? Unless connected in the correct direction, connector connections can not be made accurately. Do not insert connectors forcibly.
o	Are all IC's of each IC BD firmly inserted?
	Do power cords have cuts and dents?
	Do the fuses used meet specified rating? Is the Circuit Protector in an energized status?
	Are such units as Monitors, Control equipment, IC BD, etc. firmly secured? Are all Earth Wires connected?
	Are all accessories available?
◻	Can all Doors and Lids be opened with the Accessory keys? Can Doors and Lids be firmly closed?

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#### : 1,632 mm (W) $\times$ 1,750 mm (D) $(64.3 in. \times 68.9 in.)$ : 1,916 mm (75.4 in.) : Approx. 513 kg. (1,131 lbs.) : 739W 8.5A (AC 110V 50 Hz AREA) Power, maximum current 715W 8.2A (AC 110V 60 Hz AREA)

735W 7.7A (AC 120V 60 Hz AREA) 772W 4.4A (AC 220V 50 Hz AREA) 752W 4.2A (AC 220V 60 Hz AREA) 767W 4.OA (AC 240V 50 Hz AREA)

753W 3.9A (AC 240V 60 Hz AREA)

For TAIWAN : 790W 8.8A(MAX.) Power, current 510W 5.6A(MIN.)

: 29 INCH COLOR MONITOR  $\times$  2 MONITOR

SPECIFICATIONS

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

# INTRODUCTION TO 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 INDY 500 TWIN TYPE, 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 Main Office or the closest branch office listed as follows:

SEGA ENTERPRISES, INC. (U.S.A.)/CUSTOMER SERVICE 45133 Industrial Drive, Fremont, California 94538, U.S.A.

Phone: (415) 802-3100 (415) 802-1754 Fax

Installation space

Height

Weight

SEGA AMUSEMENTS EUROPE LIMITED/AMUSEMENT MACHINE SALES DIVISION Unit 2 Industrial Estate, Leigh Close, New Malden, Surrey KT3 3NL, England

Phone: (081) 336-2256 : (081) 336-1715 Fax

SEGA SOUTHERN EUROPE LIAISON OFFICE

Calle Vallellano, 19-23, 1° A, 37008-Salamanca, Spain

Phone: (923) 265893 Fax : (923) 265913

# 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.

- O Be sure to turn the power off before working on the machine.
- O To insert or pull out the plug quickly is dangerous.
- O It is necessary to make sure that the power cord or the grounding wire is not exposed on the surface (floor, ground, etc.) in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.
- O Do not use any fuse that does not meet specified rating.
- Make complete connections for the IC board and other connectors.
   Incomplete insertion is very dangerous.
- $\circ$  The operating (ambient) temperature range is from 5°C to 40°C.
- O 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 a 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.

# CONCERNING THE STICKER DISPLAY

SEGA product has Stickers describing the product manufacture No. (Serial No.) and Electrical Specifications. Also it has a Sticker describing where to contact for repair and for purchasing parts.

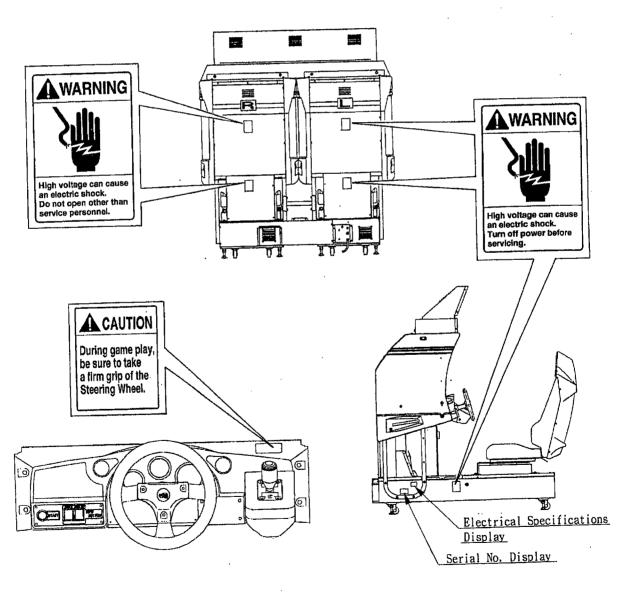
When inquiring about or asking for repair, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial No. indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this Manual. In order to meet the above situations, mention the Serial No. when contacting the applicable places.

# CONCERNING WARNING DISPLAYS

SEGA product has warning displays on Stickers, Labels and or printed instructions adhered / attached to or incorporated in the places where a potentially hazardous situation can arise. The warning displays are intended for avoiding hazardous situation relating to maintenance and servicing work, and for the prevention of accidents for the customers.

There are some portions in the Cabinet, which are subject to high tension voltage, etc. where accidents can be caused only by touching. When performing the servicing work, be very careful of the warning displays. Especially, repair and replacement work not mentioned herein, should be performed by those technical personnel who have knowledge of electricity and technical expertise.

For the prevention of accidents, caution any customer whose act runs counter to the warnings, as to the effect that he must stop the act.



# 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.



### ◆ COPYRIGHT NOTICE ◆

This SEGA product has the copyright notice as follows:

© SEGA 1995

This signifies that this work was disclosed in 1995 and is the property of SEGA ENTERPRISES, LTD.

# 3. PRECAUTIONS CONCERNING INSTALLATION LOCATION

The INDY 500 TWIN TYPE is an indoor game machine. Under no circumstances 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

- O not insert more than one electrical plug into the power plug socket which is equipped with a Circuit Protector. This product does not incorporate the Circuit Protector. Be sure to prepare it to prevent outbreak of fire caused by generation of heat when short circuit occurs.
- The per unit standard voltage/amperage is 100~120V/10A and 200~ 240V/5A.
- O The location facility need to have the Circuit Breaker and Earth Mechanism for this product.
- O Use of extension cables should be avoided. If you must use, ensure the extension cables are rated at 15A or higher for 100~120 volt areas or 7A or higher for 200~240 volt areas.
- O Note that for transporting the machine into the location's building, the minimum necessary dimensions of the opening (of doors, etc.) are 0.85m (W) and 1.55m (H).
- O For the operation of this machine, secure a minimum area of 2.2m (W) X 2.3m (D). Provide an approximately 20cm. ventilation clearance between the rear side of the Front Cabinet and the wall.

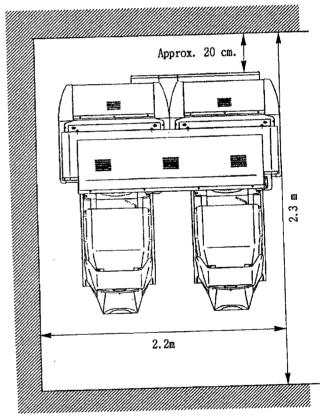


FIG. 3

Electric current consumption

MAX. MAX. MAX. MAX. MAX. MAX. MAX.	8.2A 7.7A 4.4A 4.2A 4.0A 3.9A	(AC 110V 50 Hz) (AC 110V 60 Hz) (AC 120V 60 Hz) (AC 220V 50 Hz) (AC 220V 60 Hz) (AC 240V 50 Hz) (AC 240V 60 Hz) (AC 240V 60 Hz) (For TAIWAN)
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# 4. NAME OF PARTS

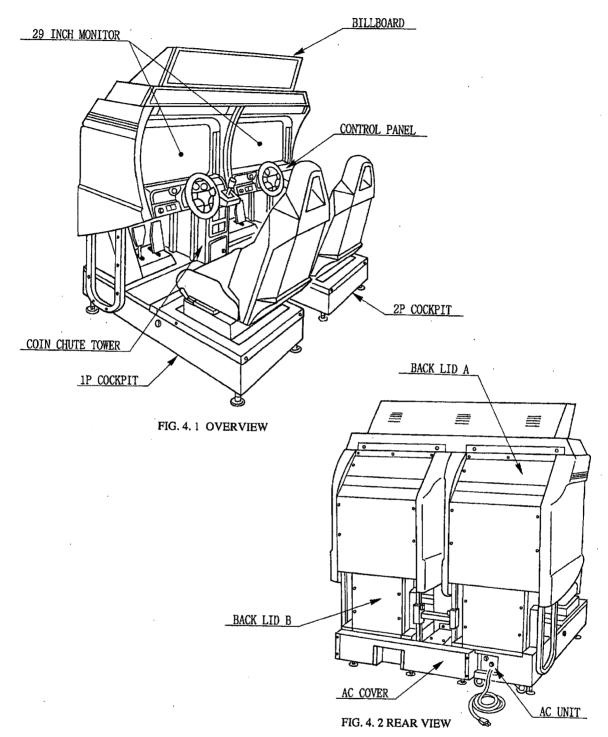


TABLE 4

	Width		Length		Height (mm.)	Weight (kg.)
COCKPIT (per seat)	820	×	1,695	×	1,520	231.0
COIN CHUTE TOWER	305	×	330	X	570	13.5
BILLBOARD	1,600	×	460	×	405	30. 0
When assembled	1,632	×	1,750	X	1,920	513.0

# 5. ACCESSORIES

When transporting the machine, make sure that the following parts are supplied.

art No.	Oty.	Part name	Note
90-0074	1	STATICIDE (300ml)	Refer to the note below.
220-5373		VOL CONT B-5K OHM	For spare, refer to Section 9, 10.
220-5484	1	VOL CONT B-5K OHM	·
220-5381	2	KEY MASTER FOR 220-5380	For opening/closing the doors
	2	KEY	For CASHBOX DOOR
420-6184-03	1	OWNERS MANUAL INDY 500 TWIN TYPE ENG	
509-5704	1	SW MICRO TYPE	For spare, refer to Section 11.
514-5036-7000	2	FUSE 6.4 ∮ ×30 7000mA 125V	For spare, refer to Section 16.
540-0007-01	1	WRENCH FOR TAMP PRF SCR DUAL TYPE M5	Tool
540-0009-01	1	WRENCH FOR TAMP PRF SCR DUAL TYPE M8	Tool
310-5050-220090	1	FLEX TUBE 22-0090CM	
310-5051-22	2	CONN 22	For communications play, refer to Section 19.
421-8935	1	STICKER CAR NO TWIN	Total to because 27.
421-8794		STICKER BILLBOARD TWIN	

Periodically once every two months as standard, apply the "STATICIDE" (an antistatic spray agent) to the SEATs and wipe with a dry cloth.

TOOL

(TAMPERPROOF WRENCH) M5 540-0007-01 M8 540-0009-01

FIG. 5 TAMPERPROOF WRENCH

# 6. PRECAUTIONS TO BE HEEDED WHEN ASSEMBLING AND MOVING THE MACHINE



- Perform the assembly work by following the procedure herein stated. Failing to comply with the instructions, for example, inserting the plug into an outlet at the stage not mentioned in this manual can cause an electric shock.
- Assembling should be performed as per this manual. Since this is a complex machine, erroneous assembling can cause damage to the machine, or malfunctioning to occur.
- When assembling, be sure to perform the work by plural persons.

When carrying out the assembly work, follow the procedure in the following 7-item sequence:

1 ASSEMBLING THE COCKPIT
2 SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)
3 INSTALLING THE BILLBOARD
4 INSTALLING THE AC COVERS (WIRING CONNECTION)
5 POWER SUPPLY, AND EARTH CONNECTION
6 TURNING THE POWER ON
7 ASSEMBLY CHECK

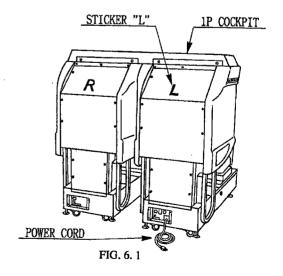
Note that the master key and the cashbox door key (accessories) in addition to the tools such as a plus screwdriver, wrench for M16 hexagon bolt and socket wrench are required for the assembly work.



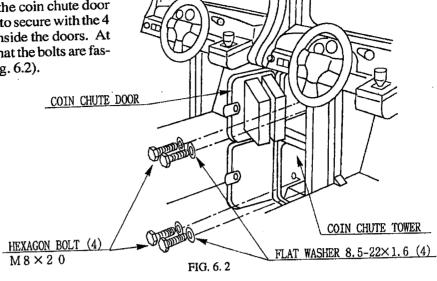
Perform the tightening of hexagon bolts described in 1 above after adjusting the leg adjusters as per 2. Make sure that until the leg adjuster adjustments are made, keep the hexagon bolts tightened temporarily.

# 1 ASSEMBLING THE COCKPIT

1 Place the two cockpits side by side. Position the 1P cabinet which has the power cord at the left-hand side as viewed facing the monitor. STICKER "L" is attached on the back of 1P cabinet, and STICKER "R" on the back of 2P cabinet (Fig. 6.1).



2 Install the coin chute tower in between both cabinets. Open the coin chute door and the cashbox door to secure with the 4 hexagon bolts from inside the doors. At this time, make sure that the bolts are fastened temporarily (Fig. 6.2).



3 Install the joint pipe on to the backside of both cabinets by securing with 4 hexagon bolts (at this time, temporarily) (Fig.  $\bar{6}.3$ )

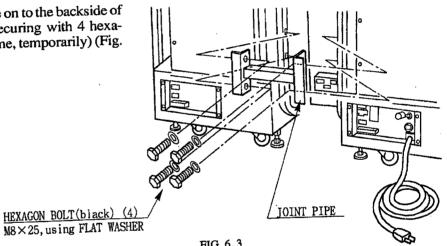


FIG. 6. 3

4 Attach the blind cap to the head of each hexagon bolt (6 bolts on each side of the monitor ... a total of 12) by pressing it in.

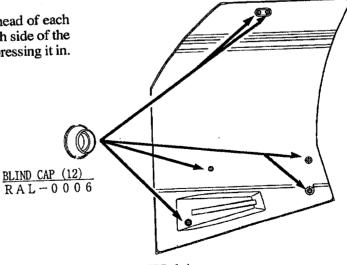


FIG. 6. 4

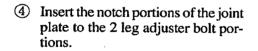
#### SECURING TO THE INSTALLATION POSITION (LEG ADJUSTER ADJUSTMENT)



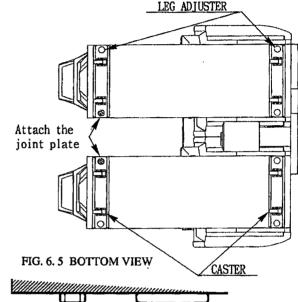
Make sure that all of the leg adjusters are in contact with the floor. If they are not, the cabinet can move causing an accident.

This machine has eight casters and eight leg adjusters (Fig. 6.5). When the installation position is determined, cause the leg adjusters to come into contact with the floor directly. make adjustments in a manner so that the casters will be raised approximately 5 mm. from the floor and make sure that the machine position is level.

- (1) Move the machine to the installation position. When installing the machine against or close to a wall, be sure to secure a passage space to enable the player to take a ride in the machine.
- 2 Attach the joint plate for the 2 internal leg adjusters shown. First, cause the other 6 leg adjusters to come into contact with the floor. Make leg adjuster adjustments with a wrench in a manner to ensure the machine's position is level (Fig. 6.6).
- 3 After making adjustments, fasten the leg adjuster nut upward and secure the height of the leg adjuster (Fig. 6.6).



5 Lower the leg adjuster and fasten the nut upward. Secure the joint plate with the nuts and the bottoms of the leg adjuster (Fig. 6.7).



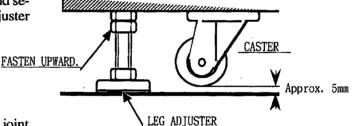


FIG. 6.6 LEG ADJUSTER

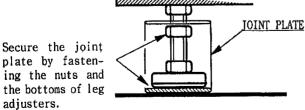


FIG. 6. 7 JOINT PLATE

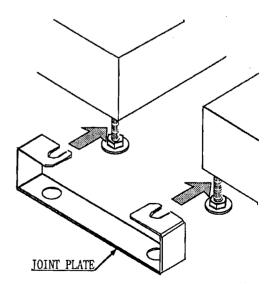


plate by fastening the nuts and the bottoms of leg adjusters.

After securing the height of the adjusters, tighten all of the hexagon bolts which were fastened temporarily as per  $\boxed{1}$  above.

3

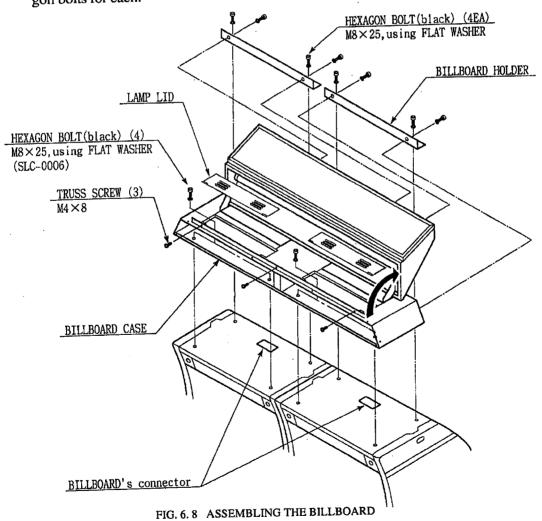
#### INSTALLING THE BILLBOARD



It is difficult for one person to perform the billboard installation. Make sure that the work is carried out by plural persons. Performing the work by one person alone can cause an accident.

When the billboard plate is transported as is attached to the billboard case, first take out the upper holder to remove the billboard plate from the billboard case. When installing the billboard plate, perform the work after making leg adjuster adjustments.

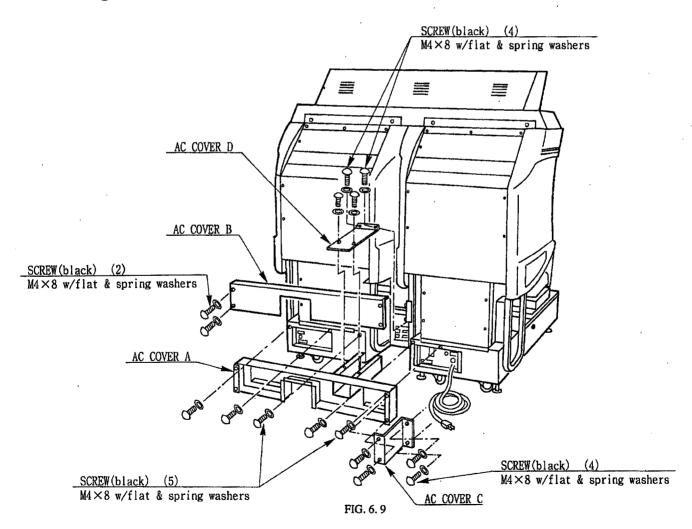
- ① Take out the 3 truss screws, open Billboard Upper and remove the 2 Lamp Lids.
- ② Mount the Billboard over the 2 Cabinets and secure with the 4 Hexagon Bolts. When fastening the Bolts, be careful of the lamp position. If it is difficult to carry out the work with the lamps in place, perform the work by temporarily removing the lamps.
- 3 Connect a total of 3 connectors which are inside the billboard case.
- 4 Attach the two billboard holders to the backside of the billboard case by securing with 4 hexagon bolts for each.



#### INSTALLING THE AC COVERS (WIRING CONNECTION)

The AC cover is used for protecting the wiring and optic fiber cables. When performing the work, be very careful so as not to cause damage by catching them. Pay due attention to handling optic fiber cables in particular. Ensure not to cause breakage to the cables due to excessive bending.

- 1 Attach AC COVER A to the back of the cabinet (Fig. 6.9) by securing with 5 screws.
- 2 Make wiring connections between both cabinets & the coin chute tower. Insert the supplied wiring connectors to the corresponding ones which have an identical color and the same number of pins.
- ③ Insert the optic fiber cables to the optic fiber connectors in a manner as applicable. There are "TX" and "RX" connectors. Make sure to connect the "TX" connector of one cabinet to the "RX" connector of the other cabinet (Fig. 19).
- 4 Secure the wiring and optic fiber cable with cord clamps in AC COVER A.
- (5) Insert AC COVER B to AC COVER A from above and secure with 2 screws.
- 6 Secure AC COVER C and AC COVER D with 4 screws each.



#### POWER SUPPLY, AND EARTH CONNECTION

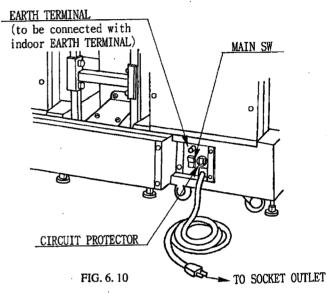


Be sure to ground the Earth Terminal. Unless it is appropriately grounded, an electric shock can be caused to the customers.

Ensure that the power cord and Earth Wire are not exposed. If exposed, they are susceptible to damage and if damaged, they can cause electric shock or a short circuit.

 Ensure that the power supply is equipped with a Circuit Protector. Using the power supply which is not equipped with the Circuit Protector can cause a fire resulting from a short circuit.

The AC UNIT is located on the back of the 1P cockpit (cabinet). By using an earth wire, connect the AC UNIT EARTH TERMINAL and the securely grounded indoor EARTH TERMINAL.



6 TURNING THE POWER ON

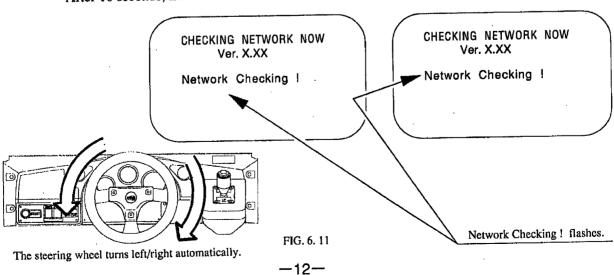
Turning the AC UNIT's MAIN SW on will cause the machine to start the POWER ON check and NETWORK check automatically.

In the POWER ON check, the steering wheel turns left and right, then returns to the centering position and stops. In this check, the values of V. R. inside the control panel are corrected. Until the check is finished (the steering wheel stops automatically), do not touch the steering wheel or play the game.

If you do, the steering wheel reaction during the game (reaction at the time of a course-out or crashing) can not be obtained correctly.

In a case of a abnormal reaction during the game, turn the power on again from the beginning and complete the power-on check.

During network checking, "NETWORK CHECKING" flashes on the screen. When NETWORK CHECKING is finished, the DEMO mode will appear on the monitor screen. After 10 seconds, if the network check is not finished, check connections for Communication.



# 7 ASSEMBLY CHECK

In the TEST MODE, ensure that the assembly has been made correctly and IC BD. is satisfactory (refer to Section 8).
In the test mode, perform the following test:

### (1) MEMORY TEST

		Par	EMORY	TES	T		
<rom></rom>							
TC15	GOOD	XC16	GOOD				
TC11	GOOD	1012	GOOD				
IC9	COOD	IC10	GOOD				
IC7	GOOD	IC8	GOOD				
<ram< td=""><td></td><td></td><td></td><td></td><td></td><td>1017</td><td>GOOI</td></ram<>						1017	GOOI
IC14	GOOD	IC15	GOOD	IC16	GOOD	1617	900
IC18	GOOD	IC19	GOOD				
IC98	GOOD	IC150					
IC79	GOOD	ICSO	GOOD			1084	GOOI
IC61	GOOD	IC83	GOOD	IC82	GOOD	1004	900
ICOS	GOOD	IC89	GOOD				
IC91	GOOD	1C92	GOOD	1093	GOOD	1030	GOO
1027	GOOD	IC2 9	GOOD	1028	GOOD	1030	GOO

Selecting the MEMORY TEST on the test mode menu screen causes the on-board memory to be tested automatically. The game board is satisfactory if the display beside each IC No. shows GOOD.

#### (2) INPUT TEST

INPUT TEST	
STEERING WHEEL GAS PEDAL BRAKE PEDAL	30H 30H
SHIFT UP SHIFT DOWN VIEW1 (ZOOM IN) VIEW2 (ZOOM OUT) START COIN CHUTE #1 COIN CHUTE #2 SERVICE	OFF OFF OFF OFF OFF OFF OFF
PRESS TEST BUTTON	TO EXIT

Selecting the INPUT TEST on the test mode menu screen causes the screen (on which each switch and V. R. are tested) to be displayed. Press each switch. For the coin switch test, insert a coin from the coin inlet with the coin chute door being open. If the display beside each switch indicates "ON," the switch and wiring connections are satisfactory.

Check the display of V. R. value for the steering wheel and accelerator & brake. If the V. R. values are not satisfactory, refer to Sections 9 & 10.

#### (3) OUTPUT TEST

OUTPUT TEST	
CENTERING LEVEL	0
START LAMP VIEW1 LAMP (ZOOM IN) VIEW2 LAMP (ZOOM OUT)	off off off
->EXIT	
SELECT WITH SERVICE B	

In the output test mode, carry out lamp test to ensure that each lamp lights up satisfactorily.

#### (4) SOUND TEST

SOUND TEST

No. 0

SELECT WITH SERVICE BUTTON PRESS TEST BUTTON TO EXIT

In the TEST mode, selecting SOUND TEST causes the screen (on which sound related BD and wiring connections are tested) to be displayed.

Be sure to check if the sound is satisfactorily emitted from each speaker and the sound volume is appropriate.

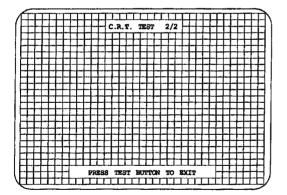
#### (5) C.R.T. TEST

C.R.T. TEST 1/2

RED
GREEN
BLUE
WHITE

PRESS TEST BUTTON TO CONTINUE

In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the monitor is tested) to be displayed. Although the monitor adjustments have been made at the time of shipment from the factory, make judgment as to whether an adjustment is needed by watching the test mode screen. If it is necessary, adjust the monitor by referring to Section 13. Use the DEMAGNETIZER SW for the color deviation caused by the monitor's magnetization (refer to Section 8).



Perform the above inspections also at the time of monthly inspections.

#### Machine movement

Since this machine is a heavy structure of approximately 513kg., its leg adjusters should be retracted when moving the machine over the floor.

Where the floor has step-like differences, be sure to separate the 1P COCKPIT and 2P COCKPIT from each other. Lifting the cabinet with 1P and 2P cockpits being still connected may cause damage to the cabinet.

# 7. HOW TO PLAY

- 1 First choose one from among the 3 Courses (the explanations of the 3 courses are given later). Turn the Steering Wheel to choose the desired course and make the selection effective by stepping on the Accelerator (Gas Pedal) or pressing the Start Button.
- ② When plural machines are interacting, wait for the other player's entry in this screen mode. After all of the players choose their desired courses, a course is determined by a majority decision. In case of a tie, the course will be determined sequentially in priority order of INDY 500, HIGH-LAND RACEWAY, and BAY SIDE STREET.
- (3) Next, select either of the 2 transmissions, AT (auto) or MT (6-shift manual) in the same manner as in Course selection (turn the steering wheel to choose and step on the Accelerator or press the Start Button to make the selection effective.
- 4 After the above 2 steps are determined, the game proceeds with a rolling start applicable for all the 3 courses.
- (5) There are 1~3 checkpoints (varies depending on courses). Passing a checkpoint within the limited time gives the player a time extension.
  - The SECTION time between checkpoints is displayed on the upper right-hand side of the screen. The upper part indicates the best lap time up to date, and the lower part shows the player's lap time.
- (6) If the player fails to pass the checkpoint within the time limit or if he finishes running the specified number of laps of each course, the game is over.
- ① During the race, 4 types of perspectives can be shifted by using the View Button.
- 8 Pressing the Start Button during the race allows the position of on-screen cars to be indicated above that particular car. Press the Start Button again to return to the previous status.
- If the player finishes up to the last and if the total time is satisfactory, name entry up to 10th position per course is allowed.
- Pressing the Start Button while pressing the VIEW CHANGE Button's ZOOM OUT allows for game play without steering wheel reaction.

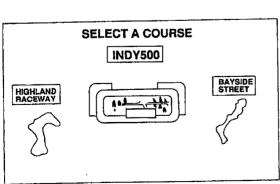
#### Features of each course

#### **INDY 500**

#### **■ HIGHLAND RACEWAY**

#### **BAY SIDE STREET**

\*The number of Laps are initialized and can be changed in the test mode.



Course Selection Screen

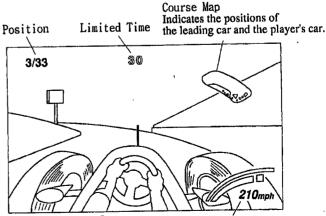


FIG. 7 During-the-game Screen

Tachometer, Speed Meter

### 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.



#### CAUTION TO BE HEEDED WHEN THE TEST MODE IS USED:

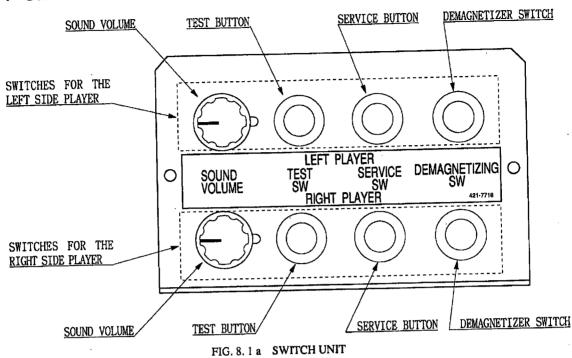
In the case where multiple units are linked for communication play, exiting from the test mode causes the unit to perform the network check automatically. During this time, all of the linked units will not allow the game to be played in normal status.

Therefore, be sure not to enter the test mode if any one of the units is in play. On the other hand, if even one unit is in the test mode, make sure that other machines are not in play.

TABLE 8 EXPLANATION OF TEST MODE

TABLE 8 EXPLANATION 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.	8-9,8-10
	2. In the INPUT TEST mode, check each SW and VR.	8-5
	<ul><li>3. In the OUTPUT TEST mode, check each of lamps.</li><li>4. In the SELF-TEST mode, check ICs on the IC Board.</li></ul>	8 — 6 8 — 3
MEMORY	On the Menu screen, choosing the MEMORY TEST or T.G.P. TEST allows self-test to be performed. In this test, RAM & Program ROM, and the IC board are tested.	8-3,8-4
PERIODIC SERVICING	Periodically perform the following:  1. MEMORY TEST  2. Ascertain each setting.  3. In the INPUT TEST mode, test the CONTROL device  4. In the OUTPUT TEST mode, check each of lamps.	8-3 8-9,8-10 8-5 8-6
CONTROL SYSTEM	<ol> <li>In the INPUT TEST mode, check each SW and VR.</li> <li>Adjust or replace each SW and VR.</li> <li>If the problem can not be solved yet, check the CONTROL's moves.</li> </ol>	8-5 9,10,11
MONITOR	In the MONITOR ADJUSTMENT mode, check to see if the MONITOR adjustment is appropriately made.	8 – 8 1 3
IC BOARD	MEMORY TEST     In the SOUND TEST mode, check the sound related ROMs.	8-3,8-4 8-7
DATA CHECK	Check such data as game play time and histogram to adjust the difficulty level, etc	8-12

#### 8-1 SWITCH UNIT



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

**TEST BUTTON:** 

For the handling of the test button, refer to the following

**TEST SW** 

pages.

SERVICE BUTTON:

SERVICE SW

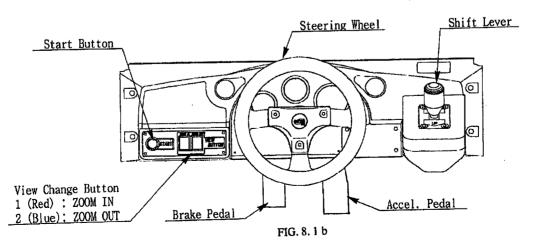
Gives credits without registering on the coin meter.

SOUND VOLUME:

Adjusts the volume of the monitor's right-hand side and left-hand side speakers, the control panel's right/left tweeters and the superwoofer under the seat.

DEMAGNETIZER SWITCH: Eliminates color unevenness from the screen. DEMAGNETIZER SWITCH

The control panel switches are also used in the test mode. For each functioning, refer to the following page and onward.



#### 8-2 TEST MODE

The Test Menu 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 Menu to be displayed on the monitor. (FIG. 8.2)
- Press the SERVICE BUTTON or VIEW CHANGE BUTTON until the pointer "->" is moved to the desired item to make a selection.
- Bring the pointer "->" to the desired item and press either the TEST BUTTON or START BUTTON to enter the selected item's test.

#### TEST MENU

MEMORY TEST
T.G.P. TEST
INPUT TEST
OUTPUT TEST
SOUND TEST
C.R.T. TEST
GAME ASSIGNMENTS
COIN ASSIGNMENTS
VOLUME SETTING
BOOKKEEPING
BACKUP DATA CLEAR
-> EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8.2 TEST MENU

• After the test is complete, move "->" to "EXIT" and press the TEST BUTTON or START BUTTON to return to the Game Mode.



When changes are made in the settings of GAME ASSIGNMENTS, COIN ASSIGNMENTS and VOLUME SETTING, be sure to exit from the Test Mode to return to the Game Mode. (If the power is turned OFF in the Test Mode, the settings can not be rewritten.)

#### 8-3 MEMORY TEST

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

				Y TES	_		
<rom></rom>							
IC15	GOOD	IC16	GOOD				
IC11	GOOD	IC12	GOOD				
IC9	GOOD	IC10	GOOD				
IC7	GOOD	IC8	GOOD				
<ramd< td=""><td></td><td></td><td></td><td></td><td></td><td>•</td><td></td></ramd<>						•	
IC14	GOOD	IC15	GOOD	IC16	GOOD	IC17	GOOD
IC18	GOOD	IC19	GOOD				
IC98	GOOD	IC150					
	GOOD	IC80	GOOD				
IC81	GOOD		GOOD	IC82	GOOD	IC84	GOOD
IC88	GOOD	IC89	GOOD				
IC91	GOOD	IC92	GOOD	IC93	GOOD		
IC27	GOOD	IC29	GOOD	IC28	GOOD	IC30	GOOD
1027	GOOD	1029	GOOD	1020	GOOD	1030	5002
		SS TE					

FIG. 8.3 MEMORY TEST

- When the test is completed, if the results are shown as above, it is satisfactory.
- It takes approximately seventy-five seconds to complete the test. If the TEST exceeds seventy-five seconds, the board may have malfunctioned.
- After finishing the test, pressing the TEST BUTTON or START BUTTON to return to MENU mode.

#### 8 - 4 T.G.P. TEST

Selecting T.G.P. TEST causes the functioning of the on-IC-BD T.G.P. (screen display related IC's) to be checked automatically. If the IC is satisfactory, "GOOD" will be indicated and if the IC is not satisfactory, "BAD" will be displayed.

T.G.P. TEST

IC31 GOOD IC37 GOOD

PRESS TEST BUTTON TO EXIT

FIG. 8. 4 T.G.P. TEST

- After the test is finished, if the above are indicated, it is satisfactory.
- After finishing the test, press the Test button or Start button to return to the Menu screen.

#### 8-5 INPUT TEST

When INPUT TEST is selected, the monitor will show the following, allowing you to watch the status of each switch and the value of each V. R. of the CONTROL PANEL. On this screen, periodically check the status of each switch & V. R.

- By pressing each switch, if the display on the right-hand side of the name of each switch changes to ON from OFF, the SW and the wiring connections are satisfactory.
- To check Coin Chute Coin SW, open the Coin Chute Door and insert a coin(s) in the slot.
- To return to the Menu mode, press the Test Button or simultaneously press the Start Button & View Change Button 1 & View Change Button 2.

INPUT TEST	
INPUT IEST	
STEERING WHEEL	80Н
GAS PEDAL	30H
BRAKE PEDAL	30H
SHIFT UP	OFF
SHIFT DOWN	OFF
VIEW1 (ZOOM IN)	off
VIEW2 (ZOOM OUT)	off
START	off
COIN CHUTE #1	OFF
COIN CHUTE #2	off
SERVICE	OFF
TEST	OFF
PRESS TEST BUTTON	TO EXIT

FIG. 8. 5 INPUT TEST

The appropriate values of each V. R. are as follows:

STEERING WHEEL: Under 2DH ← 7D~83H → Over D3H left (Centering position) right

GAS PEDAL: Under 30H → Over C0H Over C0H (the pedal released) (the pedal stepped)

#### 8-6 OUTPUT TEST

This test allows the Steering Wheel 's centering strength and the status of each lamp to be checked.

#### OUTPUT TEST

CENTERING LEVEL

0

START LAMP

OFF

VIEW1 LAMP (ZOOM IN) VIEW2 LAMP (ZOOM OUT) OFF OFF

->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8. 6 OUTPUT TEST

#### TEST PROCEDURE

- ① Press either of the Service Button or the View Change Button to move the arrow -> to the desired test item.
- 2 To perform the test, press either the Test Button or the Start Button.

Each time the Test Button is pressed, the CENTERING LEVEL varies from (0 ... Naught to 8 ... strongest) in 9 steps. Check the Steering Wheel's centering strength by changing the centering level.

To check each lamp, bring the arrow to the desired item and press the Test Button . The on-screen display will indicate "ON" and the corresponding lamp attached to the Cabinet lights up.

Press the Test Button again to cause the on-screen display to indicate "OFF" and the lamp to go off.

3 Move the arrow to EXIT and press either the Test Button or Start Button to return to the Menu screen.

#### 8-7 SOUND TEST

This test mode allows each sound related board and speaker to be checked.

SOUND TEST

No. 0

SELECT WITH SERVICE BUTTON PRESS TEST BUTTON TO EXIT

FIG. 8.7 SOUND TEST

- Press either the Service Button or the View Change Button to change the sound.
- Press either the Test Button or the Start Button to return to the Menu mode.

#### 8-8 C. R. T. TEST

Choose C. R. T. TEST to have the following screen for monitor adjustment appear.

RED	
GREEN	
BLUE	
WHITE	

FIG. 8. 8 a C. R. T. TEST

The C.R.T. TEST as shown in FIG. 8.8a allows for monitor color checking. Each of the 4 colors, i. e., R (red), G (green), B (blue), and white is darkest at the left-hand end and becomes brighter towards the right-hand end.

In the FIG. 8.8b, adjust the monitor to make sure that the crosshatch lines do not go be-

yond the screen size and crosshatch distortion does not occur.

Press either the Test Button or the Start Button to have the following crosshatch screen appear.

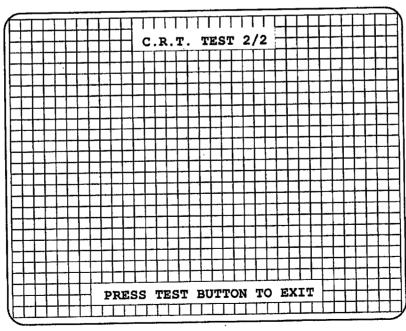


FIG. 8.8 b C. R. T. TEST

Press either the Test Button or the Start Button to return to the Menu mode.

# 8-9 GAME ASSIGNMENTS

Selecting the GAME ASSIGNMENTS in the menu mode causes the following to appear allowing for setting the game difficulty level, etc. Each item displays the following content.

#### GAME ASSIGNMENTS

NORMAL GAME DIFFICULTY NORMAL RACE MODE HANDICAP ON ADVERTISE SOUND ON EXPORT COUNTRY DELUXE CABINET TYPE STAND ALONE NETWORK TYPE CABINET ID 2 ENGINE VOLUME DEFAULT VIEW 4

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8. 9 GAME ASSIGNMENTS

#### GAME DIFFICULTY

The game difficulty can be varied by changing the time allowed at the time of race start and the additional time allowed when passing the checkpoints. Choose from among the following 5 categories. (Standard difficulty is NORMAL.)

- 1. VERY EASY
- 3. NORMAL
- 4. HARD
- 5. HARDEST

#### RACE MODE

The Race Mode has 2 types, NORMAL and LONG. Number of Laps can be changed. (Standard setting is NORMAL.)

	INDY 500	HIGHLAND	BAY SIDE
NORMAL	4 Laps	3 Laps	3 Laps
LONG	20 Laps	17 Laps	15 Laps

HANDICAP
 Set to ON when using this setting to

Set to ON when using this setting to make correction for speeding up the cars whose position is No. 2 or lower in the vs. interactive competition. If not using this feature, set to OFF. (Normally, this is get to ON)

mally, this is set to ON.)

ADVERTISE SOUND Set this to ON to have sound produced during Demo mode and

to OFF for not producing sound.

COUNTRY
 Message Language (select USA for the U.S.A., and EXPORT

for other countries.)

CABINET TYPE Set to TWIN.

● NETWORK TYPE There are 3 types, i. e., STAND ALONE, MASTER and

SLAVE. Choose STAND ALONE for a single player. For interactive play, choose MASTER for one unit and SLAVE for

the remaining units.

CABINET ID
 When cabinets are linked for interactive play, use the ID num-

ber sequentially in order starting from the leftmost cabinet. Otherwise, on-screen display in the ADVERTISE mode will

not be consistent in continuity between units.

● ENGINE VOLUME The during-game balance between Engine Sound and Back-

ground Music can be adjusted. There are 3 levels in which 1 refers to Low Engine Sound and Louder Background Music, 3 refers to Louder Engine Sound (normally, 2 is set as a stan-

dard).

DEFAULT VIEW
 Determines the position of perspectives at the time of starting

the race. There are 4 perspectives. 1: Lower View Point~4:

Upper View Point (normally 4 is set as a standard).

For Communication play, refer to 19. COMMUNICATION PLAY.

#### **SETTING CHANGE PROCEDURE**

- ① Press the SERVICE button or VIEW CHANGE button to move the arrow (->) to the desired setting change item.
- ② Press the TEST button or START button to make a setting change selection.
- 3 Move the arrow to EXIT and press TEST button or START button to return to the MENU mode.

#### 8-10 COIN ASSIGNMENT

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
COIN CHUTE #1
1 COIN 1 CREDIT

COIN CHUTE #2 1 COIN 1 CREDIT

MANUAL SETTING ->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8. 10 a COIN ASSIGNMENTS

• COIN/CREDIT SETTING "How many coins correspond to how many credits."

In this machine, selection as per Table 8.10a is possible.

● MANUAL SETTING Allows for finer settings. (Table 8.10b)

#### **SETTING CHANGE PROCEDURE**

- ① Press the SERVICE button or VIEW CHANGE button to move the arrow (->) to the desired setting change item.
- ② Press the TEST button or START button to make a setting change selection.
- 3 Move the arrow to EXIT and press TEST button or START button to return to the MENU mode.

TABLE 8. 10 a COIN/CREDIT SETTING

NAME OF SETTING FUNCTIONING OF COIN CHUTE #1  SETTING #1 1 COIN 1 CREDIT 1 COIN 1 CREDIT  SETTING #2 1 COIN 2 CREDITS 1 COIN 1 CREDIT  SETTING #3 1 COIN 3 CREDITS 1 COIN 1 CREDIT  SETTING #4 1 COIN 4 CREDIT S 1 COIN 1 CREDIT  SETTING #5 1 COIN 5 CREDITS 1 COIN 1 CREDIT  SETTING #6 1 COIN 2 CREDITS 1 COIN 2 CREDITS  SETTING #7 1 COIN 5 CREDITS 1 COIN 2 CREDITS  SETTING #8 1 COIN 3 CREDITS 1 COIN 3 CREDITS  SETTING #9 1 COIN 4 CREDITS 1 COIN 3 CREDITS  SETTING #10 1 COIN 5 CREDITS 1 COIN 5 CREDITS  SETTING #11 1 COIN 6 CREDITS 1 COIN 6 CREDITS  SETTING #12 2 COINS 1 CREDIT 2 COINS 1 CREDIT  SETTING #13 1 COIN 1 CREDIT 2 COINS 1 CREDIT  SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
SETTING #2 1 COIN 2 CREDITS 1 COIN 1 CREDIT  SETTING #3 1 COIN 3 CREDITS 1 COIN 1 CREDIT  SETTING #4 1 COIN 4 CREDIT S 1 COIN 1 CREDIT  SETTING #5 1 COIN 5 CREDITS 1 COIN 1 CREDIT  SETTING #6 1 COIN 2 CREDITS 1 COIN 2 CREDITS  SETTING #7 1 COIN 5 CREDITS 1 COIN 2 CREDITS  SETTING #8 1 COIN 3 CREDITS 1 COIN 2 CREDITS  SETTING #9 1 COIN 4 CREDITS 1 COIN 3 CREDITS  SETTING #10 1 COIN 5 CREDITS 1 COIN 4 CREDITS  SETTING #11 1 COIN 6 CREDITS 1 COIN 5 CREDITS  SETTING #12 2 COINS 1 CREDIT 2 COINS 1 CREDIT  SETTING #13 1 COIN 1 CREDIT 2 COINS 1 CREDIT  SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
SETTING #3 1 COIN 3 CREDITS 1 COIN 1 CREDIT  SETTING #4 1 COIN 4 CREDIT S 1 COIN 1 CREDIT  SETTING #5 1 COIN 5 CREDITS 1 COIN 1 CREDIT  SETTING #6 1 COIN 2 CREDITS 1 COIN 2 CREDITS  SETTING #7 1 COIN 5 CREDITS 1 COIN 2 CREDITS  SETTING #8 1 COIN 3 CREDITS 1 COIN 3 CREDITS  SETTING #9 1 COIN 4 CREDITS 1 COIN 4 CREDITS  SETTING #10 1 COIN 5 CREDITS 1 COIN 5 CREDITS  SETTING #11 1 COIN 6 CREDITS 1 COIN 6 CREDITS  SETTING #12 2 COINS 1 CREDIT 2 COINS 1 CREDIT  SETTING #13 1 COIN 1 CREDIT 2 COINS 1 CREDIT  SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
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SETTING #5 1 COIN 5 CREDITS 1 COIN 1 CREDIT  SETTING #6 1 COIN 2 CREDITS 1 COIN 2 CREDITS  SETTING #7 1 COIN 5 CREDITS 1 COIN 2 CREDITS  SETTING #8 1 COIN 3 CREDITS 1 COIN 3 CREDITS  SETTING #9 1 COIN 4 CREDITS 1 COIN 4 CREDITS  SETTING #10 1 COIN 5 CREDITS 1 COIN 5 CREDITS  SETTING #11 1 COIN 6 CREDITS 1 COIN 6 CREDITS  SETTING #12 2 COINS 1 CREDIT 2 COINS 1 CREDIT  SETTING #13 1 COIN 1 CREDIT 2 COINS 1 CREDIT  SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
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SETTING #8         1 COIN         3 CREDITS         1 COIN         3 CREDITS           SETTING #9         1 COIN         4 CREDITS         1 COIN         4 CREDITS           SETTING #10         1 COIN         5 CREDITS         1 COIN         5 CREDITS           SETTING #11         1 COIN         6 CREDITS         1 COIN         6 CREDITS           SETTING #12         2 COINS         1 CREDIT         2 COINS         1 CREDIT           SETTING #13         1 COIN         1 CREDIT         2 COINS         1 CREDIT           SETTING #14         1 COIN         2 CREDITS         2 COINS         1 CREDIT
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SETTING #13 1 COIN 1 CREDIT 2 COINS 1 CREDIT SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
SETTING #14 1 COIN 2 CREDITS 2 COINS 1 CREDIT
- Comb 1 Citabil
SETTING #15   1 COIN 1 CREDIT   1 COIN 1 CREDIT
2 COINS 3 CREDITS 2 COINS 3 CREDITS
SETTING #16 1 COIN 3 CREDITS 1 COIN 1 CREDITS
2 COINS 3 CREDITS
SETTING #17 3 COINS 1 CREDIT 3 COINS 1 CREDIT
SETTING #18 4 COINS 1 CREDIT 4 COINS 1 CREDIT
SETTING #19 1 COIN 1 CREDIT 1 COIN 1 CREDIT
2 COINS 2 CREDITS 2 COINS 2 CREDITS
3 COINS 3 CREDITS 3 COINS 3 CREDITS
4 COINS 5 CREDITS 4 COINS 5 CREDITS
SETTING #20 1 COIN 5 CREDITS 1 COIN 1 CREDIT
2 COINS 2 CREDITS
3 COINS 3 CREDITS
4 COINS 5 CREDITS
SETTING #21 5 COINS 1 CREDIT 5 COINS 1 CREDIT
SETTING #22 1 COIN 2 CREDITS 3 COINS 1 CREDIT
5 COINS 2 CREDITS
SETTING #23 2 COINS 1 CREDIT 2 COINS 1 CREDIT
4 COINS 2 CREDITS 4 COINS 2 CREDITS
5 COINS 3 CREDITS 5 COINS 3 CREDITS
SETTING #24 1 COIN 3 CREDIT 2 COINS 1 CREDIT
4 COINS 2 CREDITS
5 COINS 3 CREDITS
SETTING #25 1 COIN 1 CREDIT 1 COIN 1 CREDIT
2 COINS 2 CREDITS 2 COINS 2 CREDITS
3 COINS 3 CREDITS 3 COINS 3 CREDITS
4 COINS 4 CREDITS 4 COINS 4 CREDITS
5 COINS 6 CREDITS 5 COINS 6 CREDITS
SETTING #26 1 COIN 1 CREDIT 1 COIN 1 CREDIT
2 COINS 2 CREDITS
3 COINS 3 CREDITS
4 COINS 4 CREDITS
5 COINS 6 CREDITS
SETTING #27 FREE PLAY FREE PLAY

#### MANUAL SETTING

#### MANUAL SETTING

COIN TO CREDIT 1 COIN 1CREDIT BONUS ADDER NO BONUS ADDER

COIN CHUTE #1 MULTIPLIER
1 COIN COUNTS AS 1 COIN
COIN CHUTE #2 MULTIPLIER
1 COIN COUNTS AS 1 COIN

->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8. 10 b COIN ASSIGNMENTS

COIN TO CREDIT

Determines conversion coins/credit.

BONUS ADDER

This sets how many conversion coins should be inserted to obtain one Service Coin.

● COIN CHUTE #X MULTIPLIER

This sets how many inserted tokens one conversion coin represents.

TABLE 8. 10 b 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 VOLUME SETTING

This setting mode allows V.R. value for each of Steering Wheel and Pedal to be set.

#### VOLUME SETTING

SETTING WHEEL MAX 93 (DF) MIN 93 (26) NEW 93 (93)
GAS PEDAL MAX 78 (CO) MIN 78 (78)
BRAKE PEDAL MAX 3E (C5) MIN 3E (3E)

-> CANCEL & EXIT SET & EXIT

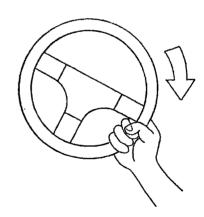
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8, 11 VOLUME SETTING

#### V. R. VALUE SETTING PROCEDURE

- ① Step on the GAS PEDAL fully and then release it.
- ② Step on the BRAKE PEDAL fully and then release it.
- ③ Turn the Steering Wheel fully to the left & right, and maintain the centering position by referring to the level line shown.
- Press either the Service Button or the View Change Button to bring the arrow (->) to SET & EXIT.
- (5) While maintaining the Steering Wheel's centering position, press either the Test Button or Start Button to set V.R. value set, returning to the Menu mode.

Bringing the arrow to CANCEL & EXIT and Pressing either the Test Button or Start Button causes the Menu mode to return on the screen without setting the V. R. value.



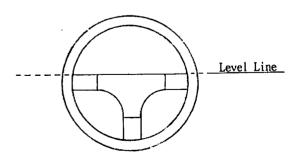


FIG. 8. 11

### 8-12 BOOKKEEPING

The BOOKKEEPING mode consisting of 2 pages allows each data relating to credits and play time to be checked.

Press the TEST button again to proceed to the next page.

BOOKKEEPIN	G 1/2			
COIN CHUTE #1	0			
COIN CHUTE #2	0			
TOTAL COINS	0			
COIN CREDITS	0			
SERVICE CREDITS	0			
TOTAL CREDITS	0			
NUMBER OF GAMES	0			
TOTAL TIME	OD	OH	OM	0s
PLAY TIME	OD	OH	OM	0s
AVERAGE PLAY TIME		OH	OM	05
LONGEST PLAY TIME		ОН	ОМ	0S
SHORTEST PLAY TIME		ОН	OM	08
PRESS TEST BUTTON	TO C	ONT	INU	E

FIG. 8. 12 a BOOKKEEPING (1/2)

BOOKKEEPING	2/2	
TIME HISTOGRAM		
0M00S~0M29S	0	
0M30S~0M59S	0	
1M00S~1M29S	0	
1M30S~1M59S	0	
2M00S~2M29S	Ö	
2M30S~2M59S	0	
3M005~3M29S	Ō	
3M30S~3M59S	0	
4M00S~4M29S	0	
4M30S~4M59S	Ö	
OVER 5M00S	<b>o</b> .	
PRESS TEST BUTTO	N TO EXIT	

FIG. 8. 12 b BOOKKEEPING (2/2)

● COIN CHUTE#*	Number of coins put in. As seen from the front of the cabinet, the right-hand side is #1 and the left- hand side is #2.
<ul> <li>TOTAL COINS</li> <li>COIN CREDITS</li> <li>SERVICE CREDITS</li> <li>TOTAL CREDITS</li> <li>TOTAL TIME</li> <li>TIME HISTOGRAM</li> </ul>	Total coins inserted in each coin chute.  Number of credits registered by inserting coins  Credits registered by the SERVICE button  Total number of credits (COIN CREDITS + SERVICE CREDITS)  The total energized time.  By-playtime play frequency.

### 8-13 BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING. When clearing, use the Service Button or View Change Button to bring the arrow (->) to "YES (CLEAR)" and press either the Test Button or the Start Button. When the data has been cleared, "COMPLETED" will be displayed. Press the Test Button or the Start Button to return to the Menu mode.

Bring the arrow to "NO (CANCEL)" and press either the Test Button or Start Button to return to the Menu mode without clearing the data.

Also, note that the game setting contents are not affected by BACKUP DATA CLEAR operation.

BACKUP DATA CLEAR

YES (CLEAR)
->NO (CANCEL)

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 8. 13 BACKUP DATA CLEAR

## 9. CONTROL PANEL (HANDLE MECHA)



- Be sure to turn power off before performing the work.
- This unit is a heavy item weighing approximately 22.5kg. and therefore, be very careful when performing the work.
- Immediately after the game is finished, the motor may still be very hot. When performing the removal work, wait until the motor cools off.

On the Test mode, if the Steering Wheel's V. R. variations are not within the allowable range, the V. R. installation position adjustments or V. R. replacement are needed. Also, be sure to apply greasing to the V.R. Gear portion once every 3 months.

#### 9-1 REMOVING THE CONTROL PANEL

- ① Remove a total of 4 Tamperproof Screws from both sides of the Control Panel's front part.
- 2 Remove the 2 Tamperproof Screws from the underside of the Control Panel.
- (3) Wiring Connectors are connected inside the Control Panel. Carefully draw the Control Panel in the manner not to damage the wiring.

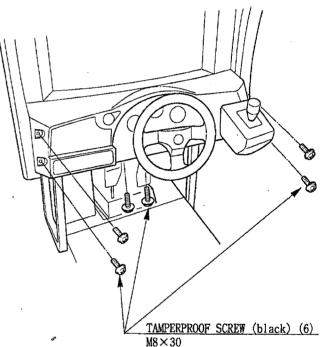


FIG. 9. 1

4 Disconnect the wiring connector.

# 9 - 2 REPLACING AND ADJUSTING THE HANDLE'S (STEERING WHEEL'S) V. R.



After the replacement or adjustment of the V. R., be sure to set the variable value of the V. R. in the Test Mode's VOLUME SETTING (refer to 8-11).

The Steering Wheel's right-hand side V.R. is for the Game Board & Drive Control, and the left-hand side V.R. is for the Motor Drive BD. Check the V.R. value on the Test mode screen.

Normally, the V.R. value for the Game BD & Drive Control is shown on the Test mode screen. To check the V.R. value for the Motor Drive BD, follow the procedure below. The following shows each V.R. value.

(1) Remove the Control Panel.

Disconnect the connectors (3P yellow, 3P red) of both Variable Resistors.

(3) Connect the Wiring Connector (3P yellow) which comes from the V.R. for the Motor Drive and the Connector connected to the V.R. for the Game BD & Drive Control.

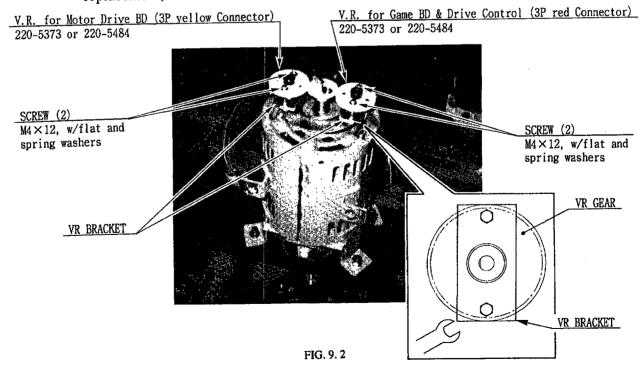
4 The Steering Wheel value on the INPUT TEST mode screen in the Test mode will be the V.R. value for the Motor Drive BD.

(5) After making V.R. adjustments, connect connectors.

© 711101 1111111111	<del> </del>				Diaht
	Left		Centering position		Right
For Game BD & Drive Control:	2DH or lower	-	7DH∼83H	$\rightarrow$	D3H or higher
V.R. for Motor Drive BD:	2DH or lower		7DH~83H	->	D3H or higher

#### REPLACING THE V. R.

After disconnecting the V. R. to be replaced, take off the 2 screws which secure the V.R. Bracket by using the Spanner, and then remove the V.R. with the gear as is attached. After replacement, check V.R. value variations in the Test mode.



### **ADJUSTING THE V. R.**

- ① By using the Spanner, loosen the 2 Hexagon bolts which secure the V.R. Bracket, move the V.R. Bracket and disengage the gear mesh.
- ② Ensure that the V. R. value is within the range of the centering position.
- (3) Mesh the gears to secure the V. R. Bracket. At this time, ensure that an appropriate backlash is obtained.
- 4 When the Steering Wheel is in the centering position, if the V.R. value is not appropriate, make fine adjustments by loosening the 2 screws which secure the V.R. gear, turning the gear holder and making sure that the V.R. value is appropriate.
- (5) Turn the Steering Wheel to check V. R. value variations.

#### 9-3 GREASING

Apply greasing to gear portions once every 3 months. Use Part No. 090-0044 GREASE NET 300g (Shell Auto Grease).

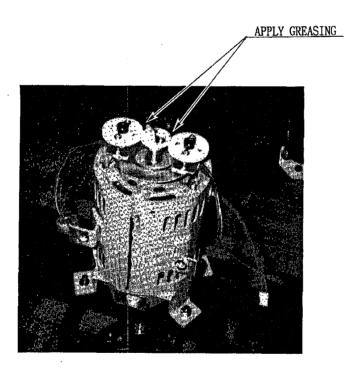
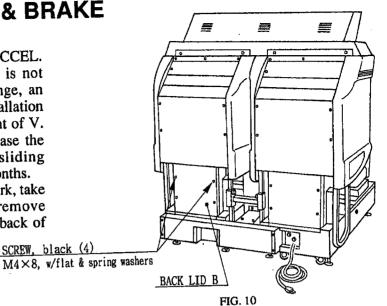


FIG. 9. 3

# 10. ACCELERATOR & BRAKE

In the test mode, if the ACCEL. & BRAKE V. R. value is not within the allowable range, an adjustment of V. R. installation position, or a replacement of V. R. is needed. Also, grease the MECHA's shafts and sliding portions once every 3 months. To perform the above work, take off the 4 screws and remove BACK LID B from the back of the cockpit.



## 10 - 1 ADJUSTING AND REPLACING THE V.R.



After the replacement or adjustment of the V. R., be sure to set the variable value of the V. R. in the Test Mode's VOLUME SETTING (refer to 8-11).

The ACCEL. & BRAKE MECHA can be seen by removing the BACK LID B. The ACCEL. V. R. is on the left-hand side and the BRAKE V. R. is on the right-hand side of the MECHA. Check the V. R. value in the test mode. The appropriate value of each V. R. is as follows:

	When released:	←>	When stepped on: Over C0H	
ACCEL.: BRAKE:	Under 30 H Under 30 H	<del>&lt; &gt;</del>	Over C0H	_

### Method of V. R. replacement

To replace the V. R., after taking off the connector from the V. R. to be replaced, take out the 2 screws which secure the V. R. Bracket, and remove the V. R. together with the bracket and gear. After the replacement, check the V. R. value variations in the test mode.

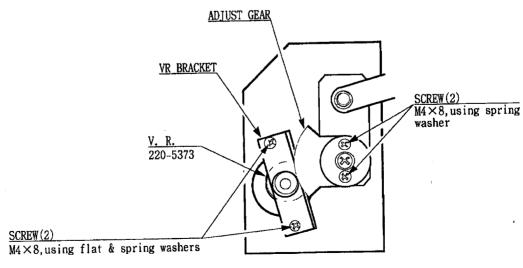


FIG. 10. 1

### Method of V. R. adjustment

① Loosen the 2 screws which secure the V. R. Bracket and move the V. R. Bracket to disengage the gears.

2 Have the V. R. value match with the value obtained when the pedal is released.

- 3 Mesh the gears to secure the V. R. Bracket. At this time, be sure to obtain an appropriate backlash.
- 4 Step on the pedal and check V. R. value variations. If the value is not within the above appropriate range, loosen the 2 screws which secure the ADJUST GEAR to make an adjustment.

#### 10-2 GREASING

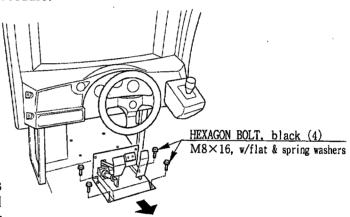
Apply greasing to the gear and shaft portions once every 3 months. Use PART No. 090-0083 GREASE NET 300g (SHELL AUTO).

Apply greasing in the following procedure:

① Take off the 4 Hexagon Bolts (black) to pull out the unit. At this time, be very careful so as not to damage the wiring.

② Disconnect the wiring connector and move the unit, the weight of which is 6 kg., to a spacious place in which the work can easily be performed.

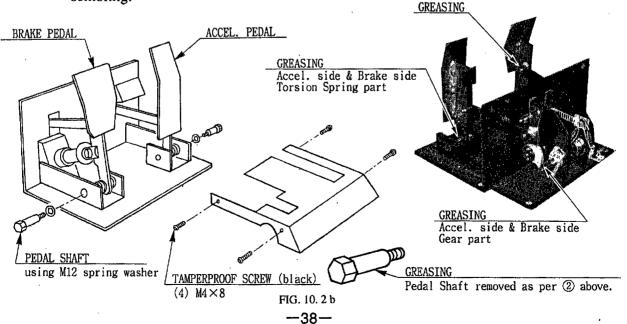
③ Remove the 4 Tamperproof Screws (black) which secure the Pedal Cover and remove the Pedal Cover by moving it forward.



FIG, 10. 2 a

4 Remove the Pedal Shaft from the lower portions of ACCEL. pedal and BRAKE pedal. At this time, ensure that the ACCEL pedal and BRAKE pedal are firmly secured as they are subjected to torsion spring force.

(5) After applying greasing to each part, assemble in the procedure opposite as when disassembling.



## 11. SHIFT LEVER

In the Test mode, if the SHIFT LEVER's SW can not be inputted satisfactorily, replace the Switch. Apply greasing to the Mechanism's sliding portion once every 3 months. When performing the above work, remove the Shift Lever Unit.

### 11 - 1 REMOVING THE SHIFT LEVER

- ① Remove the 4 Tamperproof Screws to lift the Shift Lever Unit.
- (2) Disconnect the Connector to remove the Shift Lever Unit.
- When reinstalling, follow the procedure opposite as when removing. At this time, ensure that "DOWN" display appears on the upper part as shown.

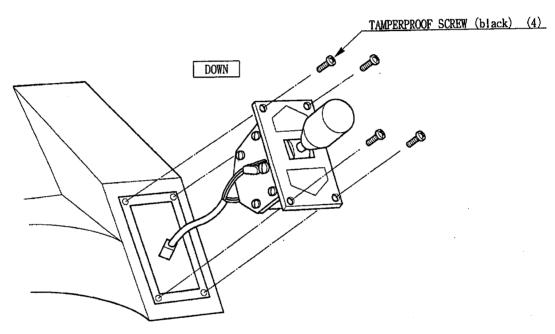


FIG. 11. 1

### 11 - 2 SWITCH REPLACEMENT

#### Method of replacement

- ① Disconnect the wiring Connector of the Switch to be replaced.
- ② Remove the 2 Tapping Screws (M3×16) to replace the Microswitch.

#### 11-3 GREASING

Apply greasing once in 3 months to the specified portions. For spray grease, use NOK KLUBER L 60 or Grease Mate (Part No. 090-0060).

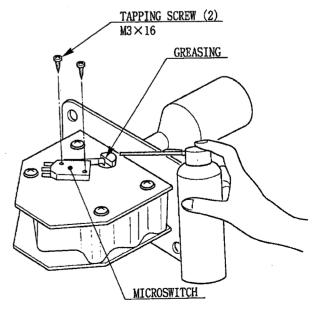


FIG. 11.2

### 12. COIN SELECTOR

#### HANDLING THE COIN JAM

If the coin is not rejected when the REJECT button is pressed, 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:

- ① Turn the power for the machine OFF. Open the coin chute door.
- ② Open the gate and dust off by using a soft brush (made of wool, etc.).
- Remove stain by wiping with a soft cloth which contains water or chemical detergent.
- Remove the CRADLE.
  When removing the retaining ring
  (E ring), be very careful so as not to bend the shaft.
- (5) Remove stain from the shaft and pillow portions by wiping off with a soft cloth, etc.
- 6 After wiping off as per 5 above, further apply a dry cloth, etc. to cause the coin selector to dry completely.



- Never apply machine oil, etc. to the Coin Selector.
- After cleaning the Coin Selector, insert a regular coin in the normal working status and ensure that the Selector correctly functions.

#### **COIN INSERTION TEST**

Once every month, when performing the Coin SW Test, simultaneously check the following:

- ☐ Does the Coin Meter count satisfactorily?
- Does the coin drop into the Cashbox correctly?
- Is the coin rejected when inserted while keeping the Reject Button pressed down?

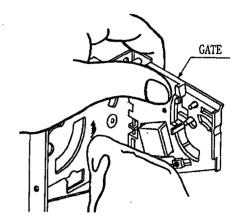


FIG. 12 a

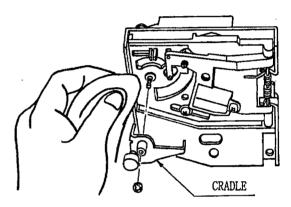


FIG. 12 b

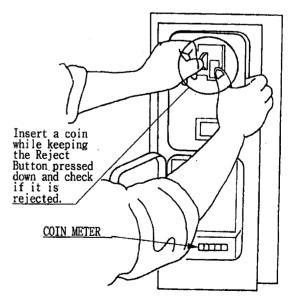


FIG. 12 c

# 13. MONITOR ADJUSTMENTS

# CAUTIONS AND WARNINGS CONCERNING THE SAFETY FOR HANDLING THE MONITORS

Before handling the monitors, be sure to read the following explanations and comply with the caution/ warning instructions given below. Note that the caution/warning symbol marks and letters are used in the instructions.



Indicates that handling the monitors erroneously by disregarding this warning may cause a potentially hazardous situation, which could result in death or serious injury.



Indicates that handling the monitors by disregarding this caution may cause a potentially hazardous situation, which could result in personal injury and or material damage.



Indicates that access to a specific part of the equipment is forbidden.



Indicates the instruction to disconnect a power connector or plug.

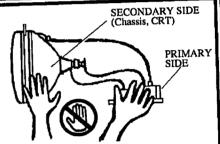


- When performing such work as installing and removing the monitor, inserting and disconnecting the external connectors to and from monitor interior and the monitor, be sure to disconnect the power connec tor (plug) before starting the work. Proceeding the work without following this instruction can cause shock or malfunctioning.
- Using the monitor by converting it without obtaining a prior permission is not allowed. SEGA shall not be liable for any malfunctioning and accident caused by said conversion.

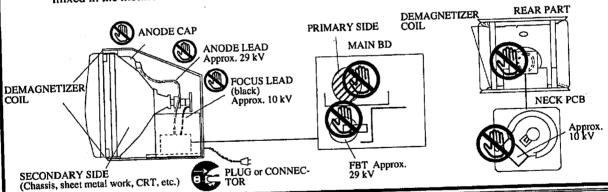


Primary side and Secondary side

The monitor's circuit which is divided into the Primary side and Secondary side, is insulated. Do not touch the primary side, or do not touch both the primary side and the secondary side simultaneously. Not following the instruction can cause shock and this is very dangerous. When making monitor adjustments, use a non-conductive driver and make adjustment without touching any part other than the Adjustment V. R. and knob. Also, be sure not to cause a short-circuit to the Primary side and Secondary side. If short-circuited, it may cause shock or malfunctioning, which is very dangerous.



Some of the parts inside monitor are subject to high-tension voltage in excess of 20,000 volts and very dangerous. Therefore, be sure not to touch the monitor interior. Should soldering & paper wastes, etc. be mixed in the monitor interior, turn the power off so as not to cause malfunctioning or fire hazard.





Connecting the CRT and PCB

For combining the CRT and PCB, use the specified part No. to maintain the status of adjustments made at the factory. The anode of the CRT itself will be accumulatively charged as time elapses, generating hightension voltage which is very dangerous. The monitor should be used with the Chassis, CRT and PCB assembled. When repair, etc. is required at the time of malfunctioning, be sure to send it in an "as is assembled" condition. If these are disassembled, what's charged to said high tension voltage can be discharged, causing a very hazardous situation. Therefore, under no circumstances should it be disassembled.

Touching the CRT surface sometimes causes you to slightly feel electricity. This is because the CRT surfaces are subject to static and will not adversely affect the human body.

Ensure that the Magnetizer Coil, FBT (Fly-Back Transformer), Anode Lead and Focus Lead are not posi- Installation and removal tioned close to the sheet metal work's sharp edges, etc. and avoid damaging the insulated portions so as not to cause shock and malfunctioning. (For the name of parts, refer to the above Figures).



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, utilize a resinous Alignment Screwdriver.

To make monitor adjustment, take off the 2 Truss Screws from CRT ADJUST PANEL portion. The Adjustment BD appears when the screws are removed.

There are 2 Monitor Manufacturers (NANAO and SANWA). The Adjustment Control Layout differs depending on the specific Maker. When performing the adjustment, check the Maker by referring to the following.

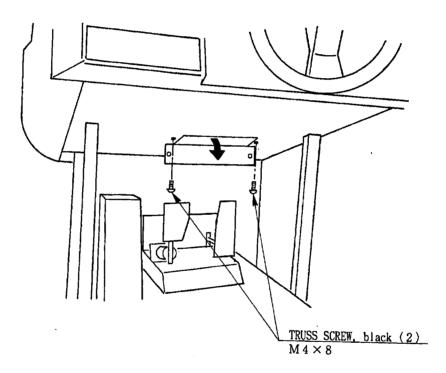
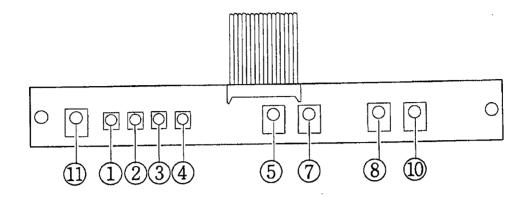


Fig. 13

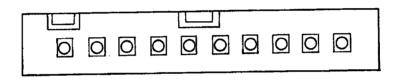
NANAO monitor:

2 0 0 - 5 2 4 2 - 2 4 - 0 4 (24K mode)



SANWA monitor:

 $2\ 0\ 0-5\ 2\ 4\ 3-2\ 4\ (24K\ mode)$ 



1	2	3	4	5	6	7	8	9	10	
R GAIN	G GAIN	B GAIN	BRIGHT	H SIZE	H HOLD	H POSI	V SIZE	V HOLD	V POSI	

- (1) R-GAIN
- (2) G-GAIN ......Controls colors.
- 3 b-gain
- 4 BRIGHT ...... Controls screen brightness.
- (5) H. SIZE ......Controls horizontal screen size.
- 6 H. HOLD...... Provides horizontal synchronization, i.e., controls right/left hold.
- H. POSI ............ Controls horizontal display position on screen.
- 8 V. SIZE ......Controls vertical screen size.
- 9 V. HOLD.......Provides vertical synchronization, i.e., controls up-down hold.
- V. POSI ......Controls vertical display position on screen.
- SS. SW ......Controls the visual quality. (Only applies to Nanao.)

A: Ordinary B: Super-sharpness

# 14. REPLACING THE FLUORESCENT LAMP, AND LAMPS



Immediately after lighting up, the lamp is very hot. Hot lamps can cause burns. Be very careful when replacing them.

Open the Billboard as shown to replace the Fluorescent Lamp and Lamps.

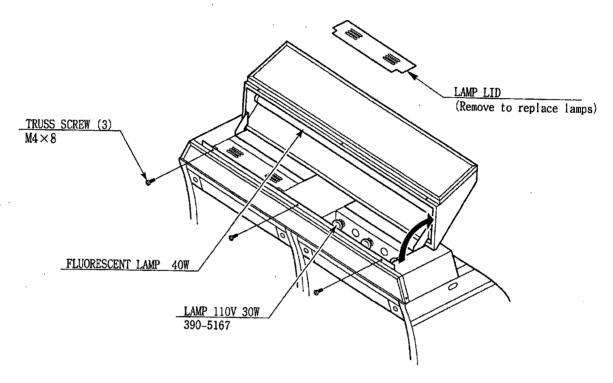


FIG. 14

# 15. PERIODIC CHECK

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

Note that for cleaning the CRT surfaces, a soft, dry cloth should be used. Do not apply chemicals such as thinner and benzine.



Be sure to clean the interior of the Cabinet and inspect & clean the Power Supply plug once a year. Using the Cabinet with dust as is accumulated can cause a fire and malfunctioning. Note that careless cleaning work can cause an accident and therefore, contact the place of contact herein stated or the distributor, etc. where the unit was purchased from. The interior cleaning service is available on a pay basis.

	Ta	Interval	Reference
	Item	Monthly	8
CONTROL PANEL	Check lamp.	Monthly	6,8
Ļ	Check VOLUME VALUE.	Trimonthly	9 - 1
<u> </u>	Check ADJUST GEAR engagement.	Trimonthly	9-3
	Greasing of GEAR.	Monthly	6,8
ACCEL. & BRAKE	Check VOLUME value.	Trimonthly	1 0 - 1
	Check ADJUST GEAR engagement.	Trimonthly	10-2
_	Greasing of GEAR and bearing.		6,8
SHIFT LEVER	Check SW.	Monthly	11-3
	Greasing	Trimonthly	8
COIN CHUTE TOWER	Check COIN SW.	Monthly	1 2
	Cleaning of COIN SELECTOR.	Trimonthly	
MONITOR	Check adjustments.	Monthly	6,8,13
SEAT	Antistatic measures	Bimonthly	5
GAME BD	MEMORY TEST.	Monthly	8
GAME BD	Check settings.	Monthly	8
INTERIOR	Cleaning	Annually	
POWER SUPPLY PLUG	Inspection and cleaning		
REAR CABINET	Applying grease to Seat Rail	Trimonthly	see below

## REAR CABINET (Greasing to Seat Rail Portion)

Move the Seat to the rearmost portion and apply spray greasing to the portion shown at the right once every 3 months by using NOK KLUBER L60 or GREASE MATE SEGA PART No. 090-0083.

After greasing, move the Seat a few times forward and backward so as to allow the grease to be applied all over uniformly. Be sure to wipe grease which attaches to the surfaces of the PROTECT RUBBER on the Seat Rail, or any excess grease.

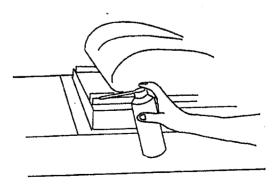


Fig. 15

# 16. TROUBLESHOOTING

In case a problem occurs, first check wiring connector connections.

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine	The power is not ON.	Firmly insert the plug into the outlet.
is not activated.	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	AC UNIT CIRCUIT PROTECTOR functioned due to instantaneous overcurrent.	First, remove the cause of overcurrent and reinstate the circuit protector to its original status (refer to Sec. 6).
The color of image on MONITOR screen is incorrect.	Incorrect monitor adjustment.	Make appropriate adjustments (see Sec. 13).
The on-screen image of the monitor sways and or shrinks.	i stage are not confect.	Make sure that the power supply and voltage are correct.
Sound is not emitted.	Sound volume adjustment is not correct.	Adjust the SWITCH UNIT's sound adjustment volume (control) (see Sec. 8).
	Malfunctioning BD. and Amp.	Perform Sound Test to check it. (see Sec. 8).
	Connector connection is incorrect.	Check connector connection from Base to Speaker.
Operation of Accel. and Brake Pedals are not	V.R. position deviated.	Adjust V.R. value in the test mode. (see Sec. 8)
satisfactory.	V.R. malfunctioning.	Replace the V.R. (see Sec. 10)
	ADJUST GEAR's engagement is not correct.	Adjust the engagement of ADJUST GEAR. (see Sec. 10)
SHIFT LEVER doesn't perate satisfactorily.	Switch malfunctioning.	Replace the Switch (see Sec. 11).
teering Wheel reaction trength is incorrect.	Power ON check not performed correctly.	Turn off power and then turn it back on again.  Complete the power on check.
	V.R. position deviated.	Adjust V. R. value in the test mode. (see Sec. 8)
	V.R. malfunctioning.	Replace V.R. (see Sec. 9)
renght is insufficient.	Reaction Mecha's secular change.	Change Drive Control BD DIP SW setting (see Sec. 17).
o Steering Wheel	Connector Connection is incorrect.	Check connector connection from Base to Handle.
1	The Motor Drive BD fuse is blown due to nomentary overload.	Replace the Motor Drive BD Fuse (see Sec. 17).

PROBLEMS	CAUSE	COUNTERMEASURES
Fluorescent lamp	Fluorescent lamp needs replacement.	Replace the fluorescent lamp (see Sec. 14).
doesn't light up.	The connector is disconnected.	Check connector connections in the billboard case (see Sec. 6)
The LEADER lamp	The lamp is burnt out.	Replace the lamp (see Sec. 14). Part No. 390-5167
does not light up.	The connector is disconnected.	Check connector connections in the billboard case (see Sec. 6).
Interactive play is not	Communication cable is disconnected.	Connect the cable.
possible.	Cable connections are not correct.	Connect the cable correctly (see Sec. 19).
	Settings for communication play are not correct.	Ensure that GAME ASSIGNMENTS settings are correct (see Sec. 8).



Functions due to the activation of bimetal.

To restore the function, wait for approximately one minute or longer until the bimetal cools off.

## 17. GAME BOARD

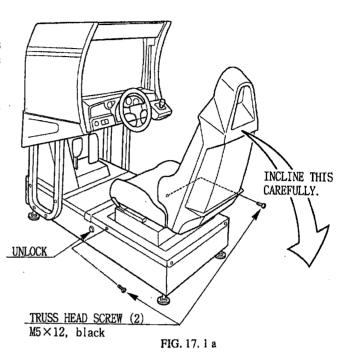
#### 17-1 REMOVING THE BOARD

To replace the IC BD (such as Game BD, Drive BD, etc.), or to change DIP SW settings, take out the IC BD by using the following procedure:

- ① Turn the MAIN SW off.
- ② Unlock and take off the 2 truss screws from the side of the base as shown.
- 3 Turn the knob to unlock. The seat can be inclined in the direction shown. When inclining the seat, be careful so as not to damage the seat parts. Carefully cause the backrest portion of the seat to come into contact with the floor.

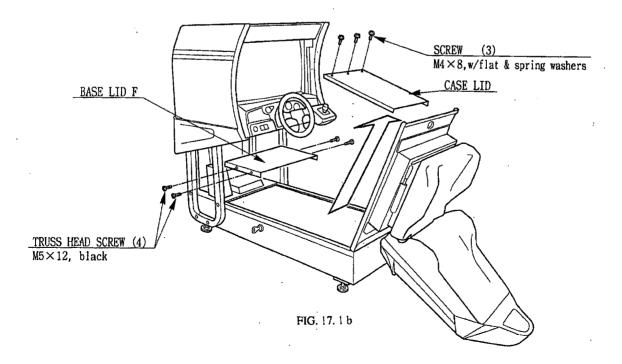
If the floor has hard surfaces, protect the seat from damage by using a cloth, etc. on the floor surfaces.

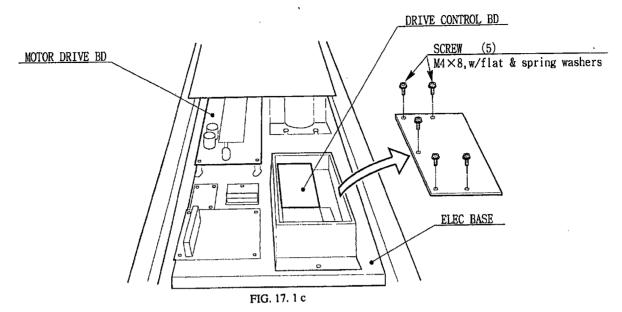
- 4 Take off the 3 screws to remove the case lid. The Game Board is contained in the Shield Case.
- Take off a total of 4 screws from both sides with the seat being in an inclined state and remove BASE LID F. Removing Base Lid F allows ELEC BASE to be viewed.



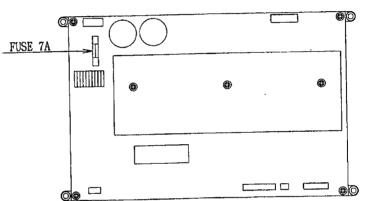


Be sure to turn off power before performing the work.



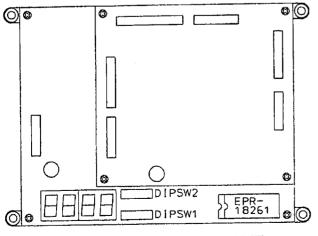


6 The fuse is provided on the Motor Drive BD. When replacing, be sure to use the specified fuse.



MOTOR DRIVE BD (838-11966)

The Drive Control BD is contained in the Shield Case. The Steering Wheel reaction strength is set by using the Drive Control BD DIP SW. Remove the 5 screws and open the Shield Case Lid to perform DIP SW setting. Use Drive Control Board's DIP SW Nos. 1∼3. Ensure that all other DIP SWes are OFF.



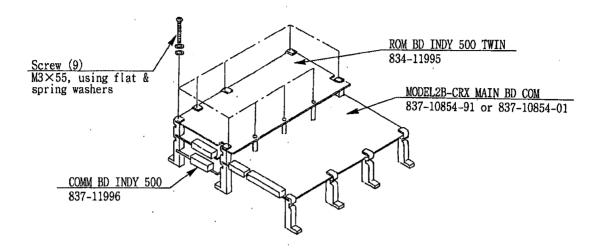
**DRIVE CONTROL BD (838-11967)** 

### **DIP SW SETTING**

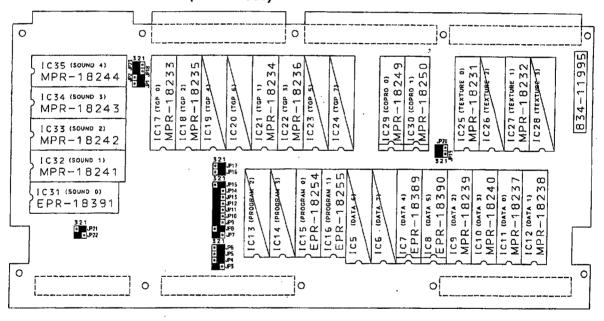
NOTE: The shaded portion refers to the setting at the time of shipment.

2	setting at the time of simplificate					
١	1	2	3	FUNCTION		
	OFF	OFF	OFF	Light		
	ON	OFF	OFF	<b>A</b>		
	OFF	ON	OFF			
	ON	ON	OFF			
	OFF	OFF	ON			
	ON	OFF	ON	▼		
	ON	ON	ON	Heavy		

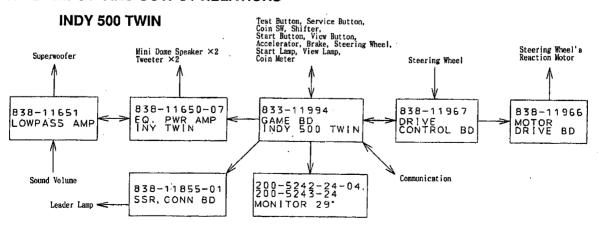
# 17 - 2 COMPOSITION OF GAME BOARD GAME BD INDY 500 TWIN (833 - 11994)



### **ROM BD INDY 500 TWIN (833 - 11995)**



#### 17 - 3 INPUT AND OUTPUT RELATIONS



# 18. DESIGN RELATED PARTS

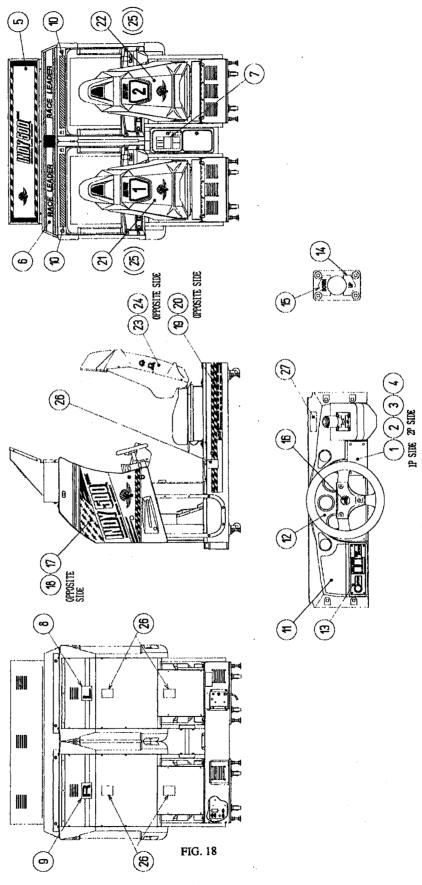


TABLE 18

No	. PART No.	DESCRIPTION
1	DYN-0010	DENOMI PLATE
2	DYN-0011	DENOMI PLATE W/O ORIGINAL
3	421-7308~	DENOMINATION SHEET 1GAME ~
4	421-7308~	DENOMINATION SHEET 1GAME ~
5	423-0250	BILLBOARD PLATE UPPER
6	423-0251	BILLBOARD PLATE LOWER
7	DYN-0303	STICKER COIN ENTRY
8	421-8543	STICKER CABINET L
9	421-8544	STICKER CABINET R
10	422-0537-01	SUB INSTR SH INY ENG
11	422-0540-01	PLAY INSTR SH INY TWIN ENG
12	421-8768	STICKER METER PANEL
13	INY-1251-B	SHEET VR SW
14	421-8890	DESIGN PLT SHIFT UP
15	421-8891	DESIGN PLT SHIFT DOWN
16	INY-1203-B	SHEET EMBLEM
17	INY-1031-A	STICKER SIDE 1P L
18	INY-1061-A	STICKER SIDE 2P R
19	INY-2001-B	STICKER BASE L
20	INY-2001-C	STICKER BASE R
21.	INY-1604-B	STICKER SEAT CENTER
22	INY-1607-A	STICKER SEAT CENTER 2P
23	INY-1604-C	STICKER SEAT L
24	INY-1604-D	STICKER SEAT R
25	421-8935	STICKER INY CAR No. 2~8
26	440-WS0002-EG	STICKER W POWER OFF ENG
27	440-CS0011-EG	STICKER C GRIP HANDLE ENG

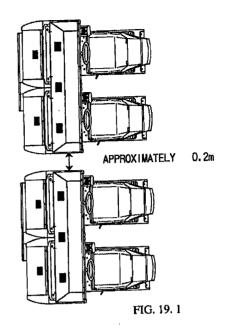
<sup>•</sup> The No. 25 Sticker is intended for interactive play with plural machines linked (refer to Section 19).

## 19. COMMUNICATION PLAY

For this game, 4 machines can be connected to allow up to 8 players to play simultaneously.

### 19-1 INSTALLATION PRECAUTIONS

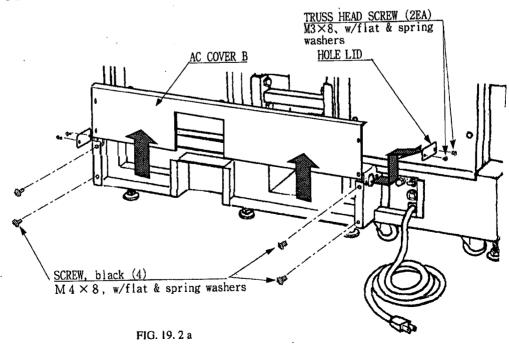
- 1) When linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. The per unit standard voltage/amperage is 100~120V/15A and 200~240V/10A.
- Due to the length of the communications cable, the distance in between the machines will be approximately 0.2 meters or less.



## 19-2 CONNECTING THE COMMUNICATION CABLES

The PROTECT TUBE is used to link plural machine units and the communication cables are caused to pass through the PROTECT TUBE. Depending on the number of machine units to be linked, connect the communication cables (optic fiber cables) in the manner shown in Figures 19. 2 f and 19. 2 g.

- ① Take off the 4 screws and remove AC COVER B (Fig. 19. 2 a).
- ② The HOLE LID is attached to the AC COVER HOLE into which the PROTECT TUBE is to be installed. By taking off 2 screws, remove the HOLE LID of the side where the PROTECT TUBE is to be installed.



- (3) Attach CONNECTOR 22 to the both ends of FLEX TUBE, and assemble the PROTECT TUBE. First, disassemble CONNECTOR 22 (Fig. 19. 2 b).
- 4 First pass the plastic nut through the flex tube. Otherwise, the following work can not be performed and therefore, be very careful of this point.
- (5) Install the holder and then the "insert" for both ends of the flex tube by turning them as in bolts and nuts (Fig. 19. 2 c).
- Tighten the plastic nut to the connector. At this time, pass the optic fiber cable through the flex tube ahead of time so as to allow the following work to be performed easily (Fig. 19. 2 d).
- 7 Install the PROTECT TUBE into the AC COVER HOLE. Insert the connector into the AC COVER HOLE, put the seal washer through and fasten the metal nut (Fig. 19. 2 e).

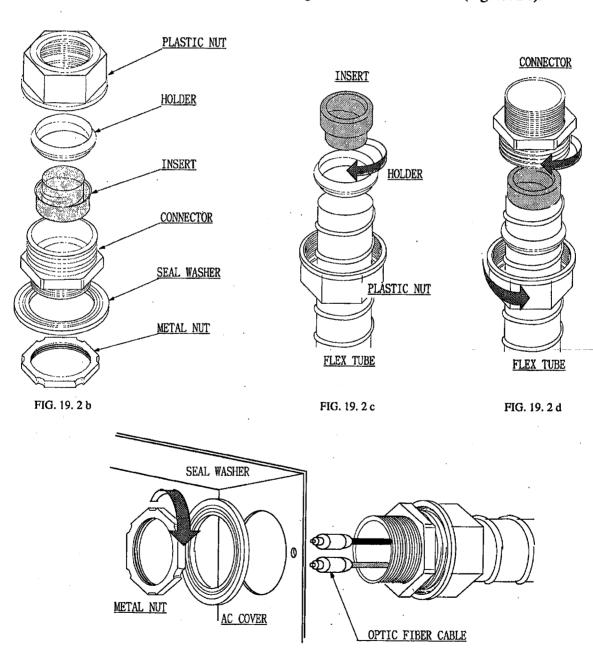


FIG. 19. 2 e

® Connect the communication cable. Redo the connection which is currently made for TWIN (for 2P LINK) to change it for usage by 4P or more. Depending on the number of units to be connected, communication connections are different. Make connection correctly as shown below.



The optic fiber cable is used for the communication linkage. Excessive bending may damage the communication cable. Be very careful in this regard.

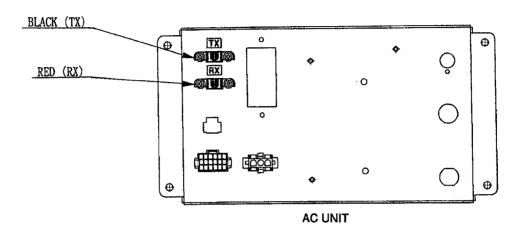
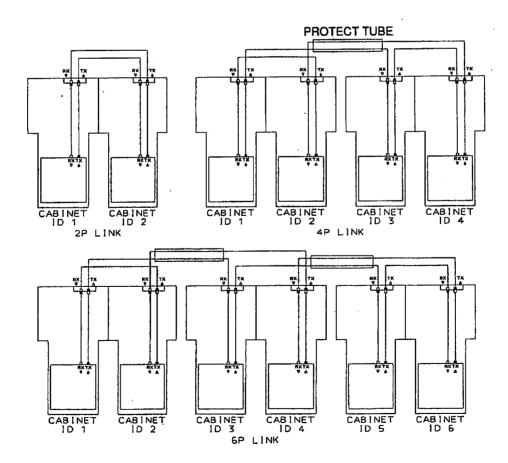


FIG. 19.2 f



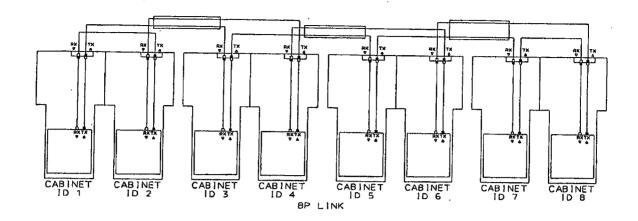


FIG. 19. 2 g

(9) Apply Seat No. Stickers in the manner corresponding to seats and billboards as applicable. The seats are numbered sequentially in order of 1, 2, 3, ... starting from the left facing the front of the Monitor (refer to Section 18).

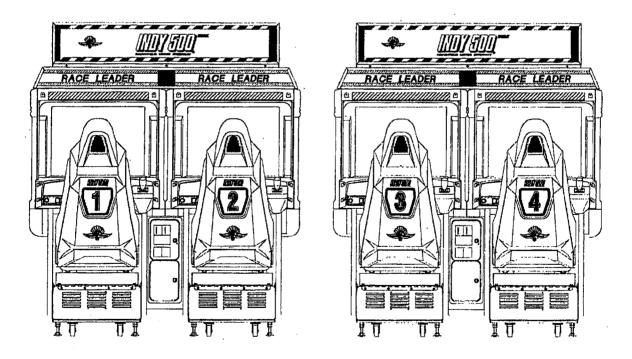


FIG. 19.2 h

## 19-3 SETTING FOR COMMUNICATION PLAY



During interactive play, if communication is interrupted due to some cause, the game will be interrupted, with the Network Check screen appearing.

For interactive play, the settings of GAME ASSIGNMENTS need to be changed. One of the units should be determined as the MASTER unit and the NETWORK TYPE should be set to MASTER. Thereafter, the other units' settings of GAME DIFFICULTY, RACE MODE, HANDICAP, ADVERTISE SOUND, COUNTRY and DEFAULT VIEW will compulsorily be made the same as the settings of the MASTER unit.

Next, CABINET ID is set to  $1 \cdot 2 \cdot 3 \cdot \cdots$  sequentially in order starting from the leftmost unit (facing to the machines).

#### GAME ASSIGNMENTS

GAME DIFFICULTY	NORMAL
RACE MODE	NORMAL
HANDICAP	ON
ADVERTISE SOUND	ON
COUNTRY	EXPORT
CABINET TYPE	TWIN
NETWORK TYPE	Master
CABINET ID	1
ENGINE VOLUME	2
DEFAULT VIEW	4

SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON

FIG. 19.3

All the machines exit from the Test Mode. Network check starts and after a while, the game mode appears.

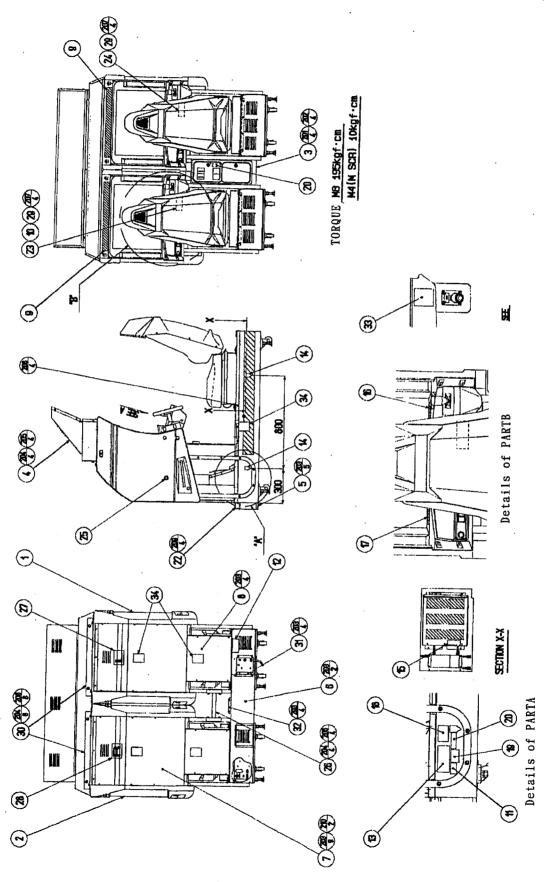
## 19-4 CAUTIONS TO BE HEEDED WHEN USING THE TEST MODE:

Exiting from the test mode causes the unit to perform the network check automatically. During this time, all of the linked units will not allow the game to be played in normal status. Therefore, be sure not to enter the test mode if any one of the units is in play. On the other hand, if even one unit is in the test mode, make sure that other machines are not in play.

## 20. PARTS LIST

1 TOP ASSY INDY 500 TWIN

(D-1/3)



# 1 TOP ASSY INDY 500 TWIN

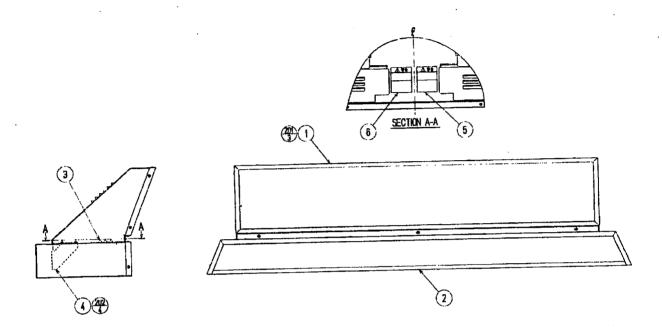
			MOMB
ITEM NO.	PART NO.	DESCRIPTION	NOTE
4	INY-10001	ASSY COCKPIT 1P	•
$egin{array}{cccccccccccccccccccccccccccccccccccc$	INY-11001	ASSY COCKPIT 2P	
	DYN-0300	ASSY COINCHUTE TOWER	
3	INY-0200	ASSY BILLBOARD	
4	DYN-0005	AC COVER A	
5	DYN-0006X	AC COVER B	
6	INY-0004	BACK LID INY	
7		BACK LID B	
8	D11, 0000	SUB INSTR SH INY ENG	
9	422-0537-01	STICKER CERTIFICATE	
11	121 000	STICKER CAUTION FORK	
14	421-7020	STICKER SERVICE INSTRUCTION ENG	
15	421-6709	STICKER BLEC SPEC FOR TAIWAN	TAIWAN
18	421-8408	STICKER BLEC SPEC	OTHERS
	421-7987	STICKER BEEC SI BO STICKER SERIAL NUMBER	•
20	421-7988-91	POLYETHYLENE COVER 1800×950×1700	
21	SGM-3863		
22	DYN-0009	HOLE LID	
23	DYN-0010	DENOMI PLATE DENOMI PLATE W/O ORIGINAL	
24	DIN OOT		
25	RAL-0006	BLIND CAP	
<b>26</b> ·	DYN-0013	JOINT PIPE	
27	421-8543	STICKER CABINET L	
28	421-8544	STICKER CABINET R	
29	421-7308- ~	DENOMINATION SHEET 1GAME ~	
30	DYN-0014	BILLBOARD HOLDER	
31	DYN-0018	AC COVER C	
32	DYN-0019	AC COVER D	
33	440-CS0011-EG	STICKER C GRIP HANDLE ENG	
34	440-WS0002-EG	STICKER W POWER OFF ENG	
101	600-6275-0500	ASSY FIBER CABLE \$\phi\$ 5 0500CM	
102	280-5009	CORD CLAMP $\phi$ 21	
103	601-0460	PLASTIC TIE BELT 100MM	
201	030-000820-\$	HEX BLT W/S M8×20	
202	068-852216	FLT WSHR 8.5-22×1.6	
203	000-P00408-WB	M SCR PH W/FS BLK M4×8	
204	030-000825-SB	HEX BLT W/S BLK M8×25	
205	SLC-0006	FLAT WASHRE 8.4-25 $ imes2$	
206	060-F00800-0B	FLT WSHR BLK M8	
207	000-T00416-0C	M SCR TH CRM M4×16	
208	000-T00512-0B	M SCR TH BLK M5 $ imes$ 12	
209	000-P00308-WB	M SCR PH W/FS BLK M3×8	
210	010-P00408-F	S-TITE SCR PH W/F M4×8	
004	600-6634-35	WIRE HARN EXT AC100V	
301		WIRE HARN EXT TOWER L	
302	600-6634-36	WIRE HARN EXT TOWER R	
303	600-6634-37		
401	601-6604-70	CARTON BOX 70	
402	420-6184-03	OWNERS MANUAL INDY 500 TWIN ENG	
403	SGM-2675	POLYETHYLENE BAG 240×370	

# 1 TOP ASSY INDY 500 TWIN

(D-3/3)

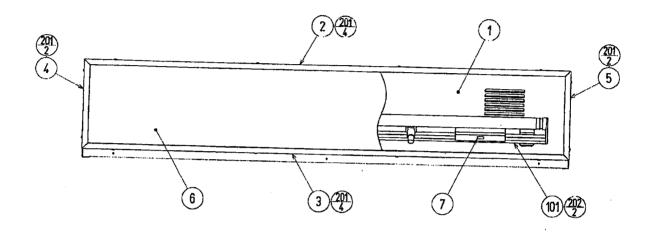
ITEM NO.	PART NO.	DESCRIPTION	NOTE
404	220-5381	KEY MASTER FOR 220-5380	
405	SGM-4111	KBY BAG	
407	540-0007-01	WRENCH FOR TAMP PRF SCR DUAL TYPE	ME
408	540-0009-01	WRENCH FOR TAMP PRF SCR DUAL TYPE	NO NO
409	220-5373	VOL CONT B-5K OHM	MO
	220-5484	VOL CONT B-5K OHM	
410	514-5036-7000	FUSE 6. $4\phi \times 30$ 7000mA 125V	
411	310-5050-220090	FLEX TUBE 22-0090CM	
412	310-5051-22	CONN 22	
413	090-0074	STATICIDE (300ml)	
414	421-8935	STICKER INY CAR NO2×8	
415	DYN-0020	JOINT PLATE	
416	509-5704	SW MICRO TYPE (OMRON K3L13)	
/	421-6690-03	STICKER 220V	AC 220V AREA
	421-6690-05	STICKER 240V	AC 240V ARBA
	421-6690-06	STICKER 110V	AC 110V ARBA
/	600-6618	AC CABLE CONNECT TYPE FOR EXP	AC 220~240V AREA

# 2 ASSY BILLBOARD (INY-0200)



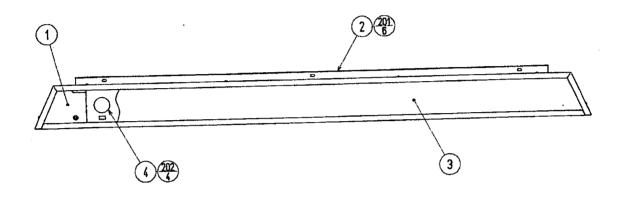
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5 6	INY-0210 INY-0220 RAL-0201 RAL-0202 440-WS0012-BG 440-WS0002-BG	ASSY BILLBOARD UPPER ASSY BILLBOARD LOWER LAMP LID STAY BRKT STICKER W HIGH TEMP ENG STICKER W POWER OFF ENG	
201 202	000-T00408-0C 050-F00400	M SCR TH CRM M4×8 FLG NUT M4	

# 3 ASSY BILLBOARD UPPER (INY-0210)



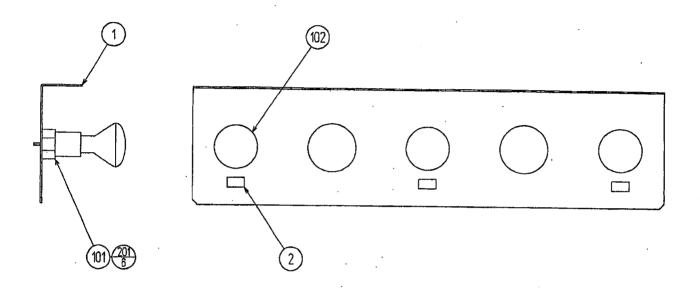
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	RAL-0211	BILLBOARD CASE UPPER	
2	RAL-0212	CORNER EDGE UPPER	
3	RAL-0213	CORNER EDGE LOWER	
4	RAL-0214	CORNER EDGE LEFT	
4 5 6 7	RAL-0215 423-0250 421-7501-10	CORNER EDGE RIGHT BILLBOARD PLATE UPPER STICKER FL 40W	
101	390-5538-40EX	ASSY FL 40W BX W/CONN HIGH	
102	280-5009	CORD CLAMP Ø21	
201	000-T00408-0C	M SCR TH CRM M4×8	
202	000-P00416-W	M SCR PH W/FS M4×16	
301	600-6555-06	WIRE HARN FL	

# 4 ASSY BILLBOARD LOWER (INY-0220)

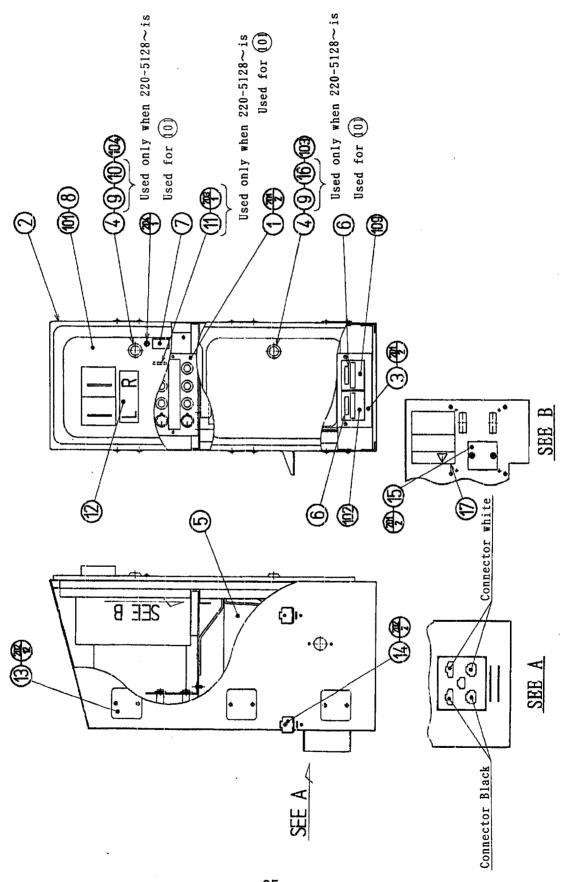


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	RAL-0221	BILLBOARD CASE LOWER	
2	RAL-0222	CORNER EDGE	
3	423-0251	BILLBOARD PLATE LOWER	
4	RAL-0230	LAMP UNIT	
101	280-5009	CORD CLAMP $\phi$ 21	
201	000-T00408-0C	M SCR TH CRM M4×8	
202	000-P00408-W	M SCR PH W/FS M4×8	

# 5 LAMP UNIT (RAL-0230)

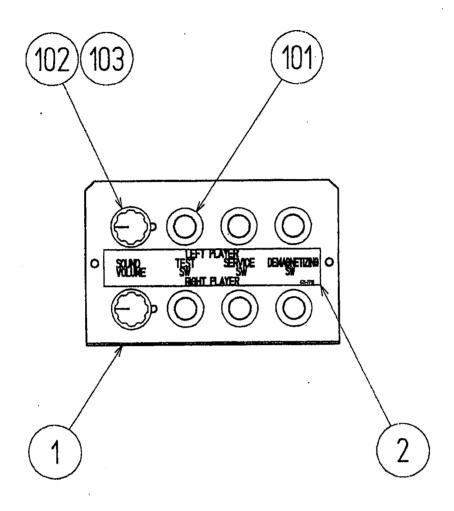


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2	RAL-0231 421-7501-16	LAMP PANEL STICKER 110V 30W	
101 102 103 104	214-0110 390-5167 601-0460 280-0425	BULB SOCKET LAMP 110V 30W PLASTIC TIE BELT 100MM CORD CLAMP Ø 10	
201	000-P00316	M SCR PH M3×16	
301	600-6555-07	WIRE HARN LAMP UNIT	

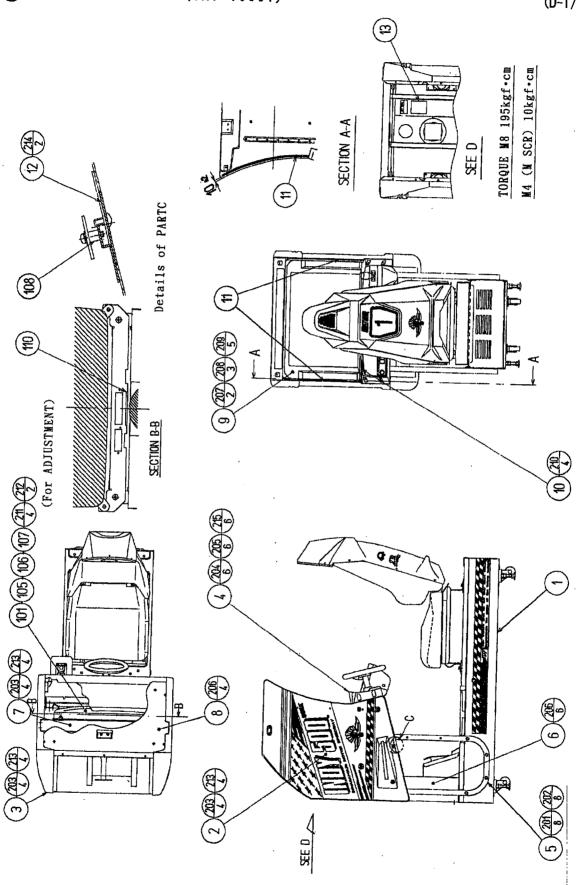


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	DYN-0350	SW UNIT	
2	DYN-0301X	COIN CHUTE TOWER	
3	DYN-0302Y	COIN METER BRKT	
4	DP-1167	TNG LKG	
5	253-5366	CASH BOX	
6	421-6591-01	STICKER COIN METER	
8	421-7501-02	STICKER 6. 3V 0. 15A	
9	HN-1050	SPACER RING	Used only when 220-
11	109-0045-91	KEY HOLDER	∫ 5128∼in used (101)
12	DYN-0303X	STICKER COIN ENTRY	·
13	DYN-0304	HOLE COVER	
14	DYN-0305	TOWER BRKT	
15 16	105-5202	HOLE COVER	T 1 1 1 000
10	105-5201	MAGNETIC LOCK BRKT FOR ASAHI	Used only when 220-
17	440-WS0002-EG	STICKER W POWER OFF ENG	5128~in used (101)
4.1	440 NG0002 DG	OTTONDA W TOWN OF DAG	
101	220-5128- ~	ASSY COIN CHUTE 2DOOR ~ TWIN	
102	220-5412	MAG CNTR W/CONN	
103	220-5046-91	MAGNETIC LOCK W/KEYS	
104	220-5380	MAG LOCK MASTER W/O KEY	
105	280-0425	CORD CLAMP $\phi$ 10	
106	280-5009	CORD CLAMP $\phi$ 21	-01 also acceptable
107	601-0460	PLASTIC TIE BELT 100mm	
108	310-5029-F20	SUMITUBE F F20MM	
109	220-5412-01	MAG CNTR W/CONN BLACK	
201	000-P00412-W	M SCR PH W/FS M4×12	
202	000-T00408-0B	M SCR TH BLK M4×8	
205	010-P00408-F	S-TITE SCR PH W/F M4×8	
200		5 1112 SON 111 11/1 1/121 10	
301	600-6373-48	WIRE HARN COIN METER LEFT	
302	600-6373-49	WIRE HARN COIN METER RIGHT	
303	600-6373-50	WIRE HARN COIN LEFT	
304	600-6373-51	WIRE HARN COIN RIGHT	
305	600-6373-52	WIRE HARN EXT SW UNIT LEFT	
306	600-6373-66	WIRE HARN EXT SW UNIT RIGHT	
307	600-6373-71	WIRE HARN EARTH COIN CHUTE	

## 7 SW UNIT (DYN-0350)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	UCQ-1035	SWITCH BRACKET	•
2	421-7718	STICKER SW INSTR 2P	
101	509-5028	SW PB 1M	
102	220-5179	VOL CONT B-5K OHM	
103	601-0042	KNOB 22mm	
104	601-0460	PLASTIC TIE BELT 100MM	
105	310-5029-F20	SUMITUBE F F20MM	
301	600-6373-53	WIRE HARN TEST&SERVICE LEFT	
302	600-6373-55	WIRE HARN VOL. LEFT	
303	600-6373-67	WIRE HARN TEST&SERVICE RIGHT	
304	600-6373-68	WIRE HARN VOL. RIGHT	

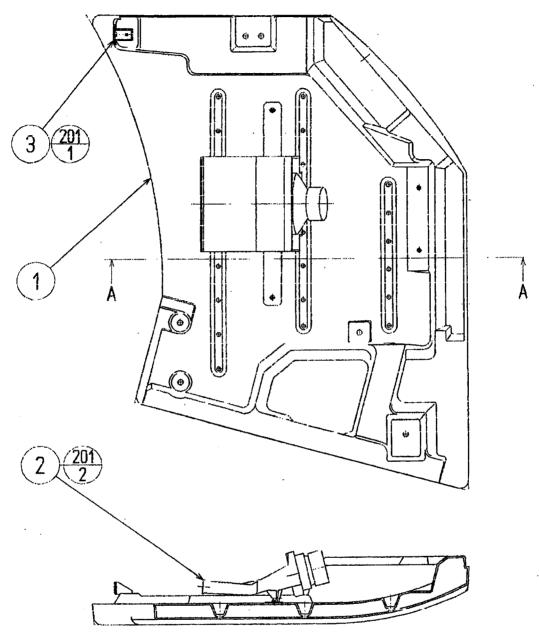


# (B) ASSY COCKPIT 1P (INY-10001)

		DECODED MICH.	NOTE
ITEM NO.	PART NO.	DESCRIPTION	,
•	THE 00001	ASSY MAIN BASE 1P	
1	INY-20001	ASSY MONITOR COVER L 1P	
2	INY-1030	ASSY MONITOR COVER R 1P	
3	INY-1040	ASSY CONTROL PANEL TWIN ENG	
4	INY-12002	MONITOR STAND	
5	INY-1014	WIRE COVER BOX	
6	DYN-1013	MONITOR SUPPORT	
7	INY-1016	ROOF LID	
8	DYN-1015X	MONITOR MASK	
9	DYN-1016	MASK HOLDER	
10	DYN-1017	RUBBER CUSHION	
11	DYN-1025	CRT ADJUST PANEL	
12	INY-1015	CKI ADJUSI FANDO	
13	440-DS0013-JP	STICKER D MONITOR	
	200 5040 04 04	ASSY CLR DSPL 29 TYPE 24K 100V	
101	200-5242-24-04	ASSY CLR DSPL 29 TYPE 24K 100V	
	200-5243-24	CORD CLAMP $\phi 21$	
102	280-5009	$\begin{array}{cccc} \text{CORD CLAMP} & \phi & 10 \end{array}$	
103	280-0425	PLASTIC TIE BELT 100MM	
104	601-0460	BUSH FOR TV	
105	280-5112	COLLAR FOR TV	
106	280-5113	SPACER 6. 4-25×2	
107	280-5114	SPACER TUBE L=6	
108	280-5185-6	EDGING NEW TYPE	
109	601-6231-C100	EDGING NEW TYPE	
110	601-6231-D100	EDGING MPA 111 P	
001	030-000850-SB	HEX BLT W/S BLK M8×50	
201	068-852216-0B	FLT WSHR BLK 8.5-22×1.6	
202	030-000840-SB	HEX BLT W/S BLK M8×40	
203	060-F00800-0B	FLT WSHR BLK M8	
204	008-B00830-0B	TMP PRF SCR BH BLK M8×30	
205	000-P00408-WB	M SCR PH W/FS BLK M4×8	
206	000-F00408 WB	M SCR TH BLK M5×30	
207	000-100535 OB	M SCR TH BLK M5 $ imes$ 12	
208	068-552016-0B	FLT WSHR BLK 5.5-20 $\times$ 1.6	
209	000-F00508	M SCR FH M5×8	
210	000-F00000 050 P00600	FLG NUT M6	
211	050-F00600	M SCR PH W/FS BLK M3×12	
212	000-P00312-WB	FLT WSHR M8	
213	DYN-1019 000-T00408-0B	M SCR TH BLK M4×8	
214	060-S00800-0B	SPR WS. BLK M8	
215	000-200800-08	Of R HOLL BOIL ME	
301	600-6634-21	WIRE HARN MONITOR	
302	600-6634-23	WIRE HARN EXT CONT PNL B	
302	600-6634-28	WIRE HARN EXT VOLUME B	
303 304	600-6634-29	WIRE HARN SHIBLD	
	600-6634-30	WIRE HARN SPEAKER	
305 206	600-6634-34	WIRE HARN EXT BILLBOARD	
306	000 000 0x		

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-21001	ASSY MAIN BASE 2P	
$\overset{\mathtt{1}}{2}$	INY-1050	ASSY MONITOR COVER L 2P	
3	INY-1060		
4	INY-12001	ASSY MONITOR COVER R 2P	
5		ASSY CONTROL PANEL TWIN	
6	INY-1014	MONITOR STAND	
7	DYN-1013	WIRE COVER BOX	
8	INY-1016	MONITOR SUPPORT	
9	DYN-1015X	ROOF LID	
	DYN-1016	MONITOR MASK	
10	DYN-1017	MASK HOLDER	
11	DYN-1025	RUBBER CUSHION	
12	INY-1015	CRT ADJUST PANEL	
13	440-DS0013-JP	STICKER D MONITOR	
101	200-5242-24-04	ASSY CLR DSPL 29 TYPE 24K 100V	
	200-5243-24	ASSY CLR DSPL 29 TYPE 24K 100V	
102	280-5009	CORD CLAMP \$\phi 21\$	
103	280-0425	CORD CLAMP \$\phi\$ 10	
104	601-0460	PLASTIC TIE BELT 100MM	
105	280-5112	BUSH FOR TV	
106	280-5113	COLLAR FOR TV	
107	280-5114	SPACER 6. 4-25×2	
108	280-5185-6	SPACER TUBE L=6	
109	601-6231-C100	EDGING NEW TYPE	
110	601-6231-D100	BDGING NEW TYPE	
201	030-000850-SB	HEX BLT W/S BLK M8×50	
202	068-852216-0B	FLT WSHR BLK 8.5-22×1.6	
203	030-000840-\$B	HEX BLT W/S BLK M8 $\times$ 40	
204	060-F00800-0B	FLT WSHR BLK M8	
205	008-B00830-0B	TMP PRF SCR BH BLK M8×30	
206	000-P00408-WB	M SCR PH W/FS BLK M4×8	
207	000-T00530-0B	M SCR TH BLK M5 $\times$ 30	
208	000-T00512-0B	M SCR TH BLK M5 $ imes$ 12	
209	068-552016-0B	FLT WSHR BLK 5.5-20×1.6	
210	000-F00508	M SCR FH M5×8	
211	050-F00600	FLG NUT M6	
212	000-P00312-WB	M SCR PH W/FS BLK M3×12	
213	DYN-1019	FLT WSHR M8	
214	000-T00408-0B	M SCR TH BLK M4 $\times$ 8	
215	060-S00800-0B	SPR WSHR BLK M8	
301	600-6634-21	WIRE HARN MONITOR	
302	600-6634-23	WIRE HARN EXT CONT PNL B	
303	600-6634-28	WIRE HARN EXT VOLUME B	
304	600-6634-29	WIRE HARN SHIELD	
305	600-6634-30	WIRE HARN SPEAKER	
306	600-6634-34	WIRE HARN EXT BILLBOARD	
•		" - " I MILL DIBLOUNT	

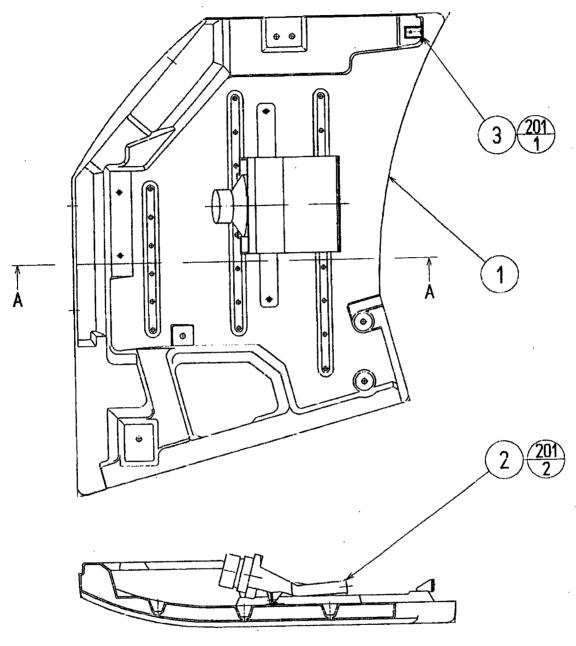
### 10 ASSY MONITOR COVER L 1P (INY-1030)



SECTION A-A

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3	INY-1031 INY-1700 DYN-1032	COVER PANEL L 1P ASSY SPEAKER MASK BRKT	
201	000-P00408-W	M SCR PH W/FS M4×8	

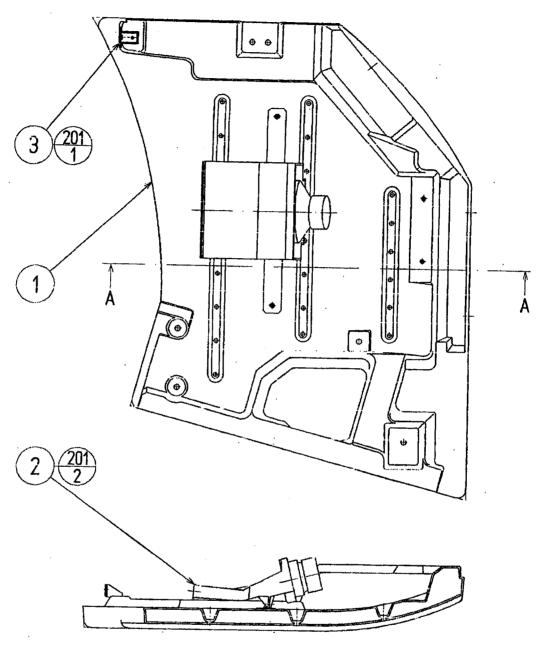
## 11) ASSY MONITOR COVER R 1P (INY-1040)



SECTION A-A

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3	RAL-1041-A INY-1700 DYN-1032	COVER PANEL R BLANK ASSY SPEAKER MASK BRKT	
201	000-P00408-W	M SCR PH W/FS M4×8	

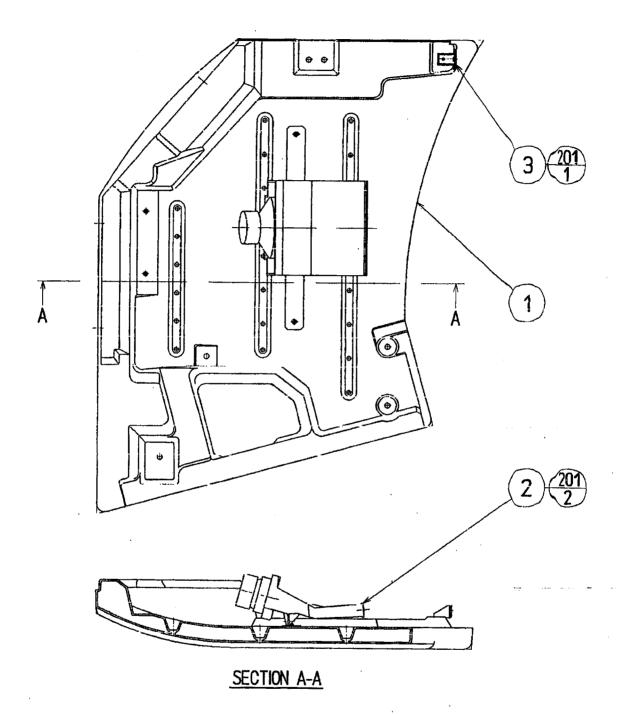
#### 12 ASSY MONITOR COVER L 2P (INY-1050)



SECTION A-A

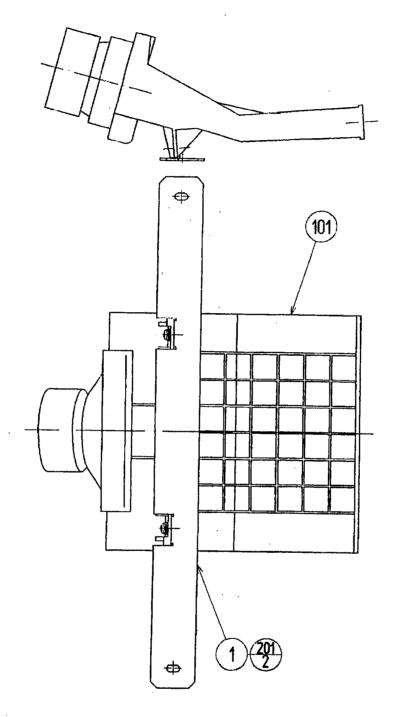
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3	RAL-1031-A INY-1700 DYN-1032	COVER PANEL L BLANK ASSY SPEAKER MASK BRKT	
201	000-P00408-W	M SCR PH W/FS M4×8	

#### (13) ASSY MONITOR COVER R 2P (INY-1060)



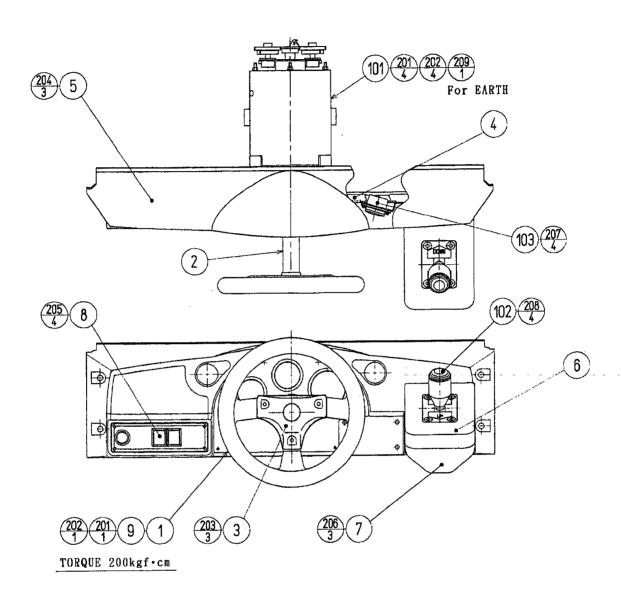
NOTE ITEM NO, PART NO. DESCRIPTION INY-1061 COVER PANEL R 2P 1 INY-1700 ASSY SPEAKER 2 MASK BRKT DYN-1032 3 M SCR PH W/FS M4×8 201 000-P00408-W

#### (14) ASSY SPEAKER (INY-1700)



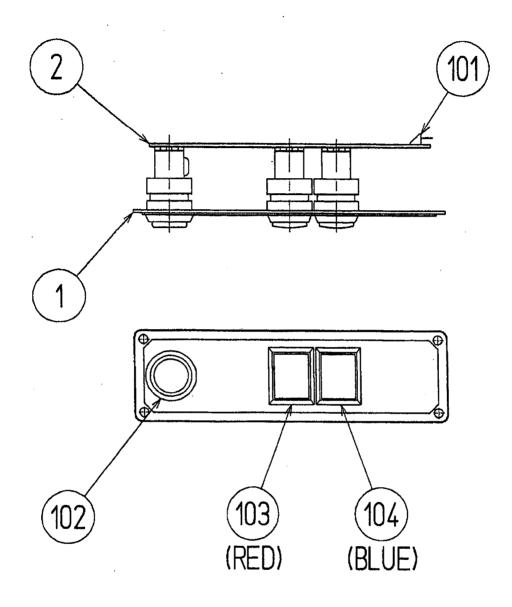
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-1701	SPEAKER BRKT	
101	130-5140	SPEAKER BOX MINI DOME	
201	000-P00412-W	M SCR PH W/FS M4 $ imes$ 12	

## 15 ASSY CONTROL PANEL TWIN (INY-12002)

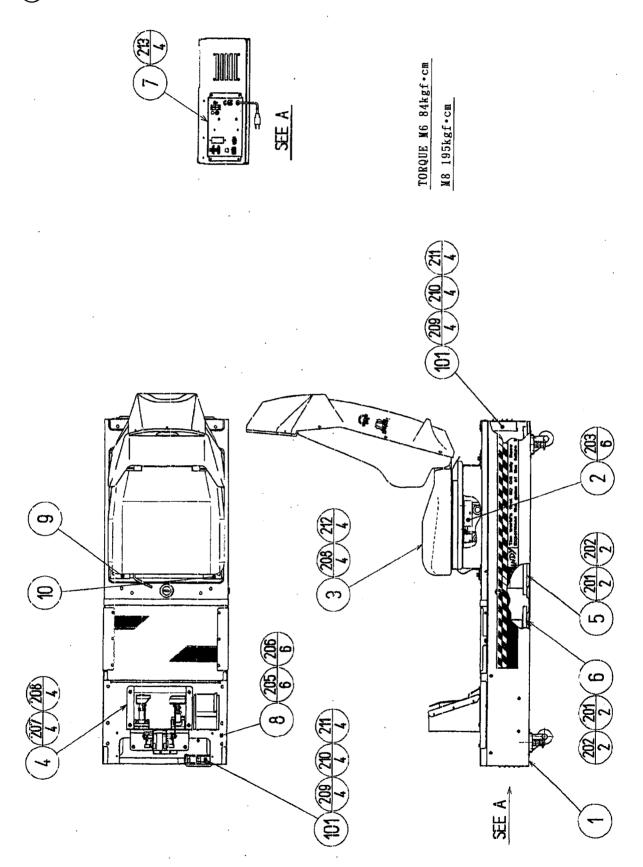


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5 6 7	DYN-1201 DYN-1209 INY-1203 INY-1205 INY-1206-01 INY-1204 DYN-1223 INY-1250	STEERING WHEEL HANDLE COLLAR STEERING EMBLEM CONTROL PANEL BRKT TWIN CONTROL PANEL COVER ENG SHIFT COVER INY SHIFT COVER B ASSY VIRTUAL BUTTON	
9 101 102 103 104 105	OUT-2026 610-0383 610-0384 130-5112 601-0460 280-5009	SPACER  ASSY HANDLE MECHA W/MOTOR  UP/DOWN SHIFTER  TWEBTER 80HM 2W \$\phi\$ 35  PLASTIC TIE BELT 100MM  CORD CLAMP \$\phi\$ 21	
201 202 203 204 205 206 207 208 209	060-S00800 050-H00800 008-T00512-0B 000-T00416-0B 000-T00416-0C 000-P00412-W 000-P00308-W 008-T00516-0B 050-F00400	SPR WSHR M8 HEX NUT M8 TMP PRF SCR TH BLK M5×12 M SCR TH BLK M4×16 M SCR TH CRM M4×16 M SCR PH W/FS M4×12 M SCR PH W/FS M3×8 TMP PRF SCR TH BLK M5×16 FLG NUT M4	
301 302 303 304 305	600-6634-24 600-6634-25 600-6634-31 600-6634-32 600-6634-33	WIRE HARN EXT SHIFTER WIRE HARN VR BUTTON WIRE HARN TWEETER WIRE HARN EXT MOTOR WIRE HARN EARTH MOTOR	

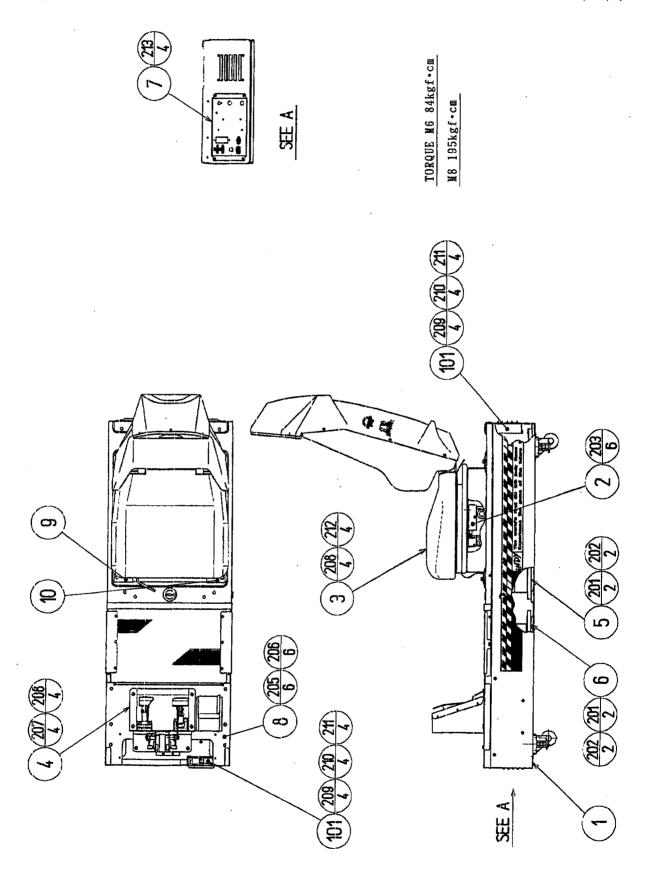
#### (16) ASSY VIRTUAL BUTTON (INY-1250)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2	INY-1251 171-6478B	VR SW BRKT PC BD LIGHTING SWX5	
101 102 103 104	212-5205-12 509-5560-Y 509-5561-R 509-5561-S	CONN JST M 12P RTA PB SW W/L 6V 1L Y PB SW W/L 6V 5L R PB SW W/L 6V 5L S	Shigter Japan - SES688

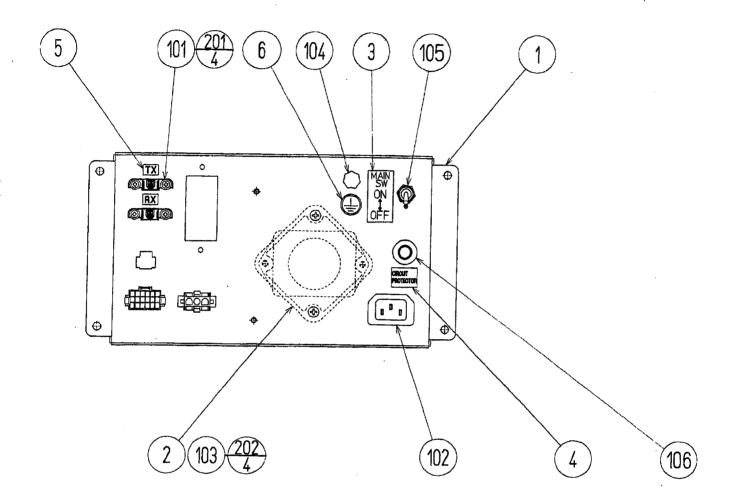


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5 6 7 8 9	INY-2000 DYN-2060 INY-2200 DYN-1300 INY-4400 INY-4500 DYN-0400 DYN-0400-01 DYN-2008X RAL-2007 RAL-2008	ASSY BASE BOX ASSY WOOFER ASSY SEAT TWIN 1P ASSY ACCEL & BRAKE ASSY MAIN BD BASE ASSY ELEC BASE AC UNIT MAIN AC UNIT MAIN EXP PEDAL BASE RUBBER HOLDER R TWIN RUBBER HOLDER L TWIN	TAIWAN OTHBRS
101 102 103 104 105 106	260-0011-02 600-6275-0150 601-0460 280-5009 280-0425 280-5169	AXIAL FLOW FAN AC100V 50-60Hz ASSY FIBER CABLE \$\phi 5\ 0150CM PLASTIC TIE BELT 100MM CORD CLAMP \$\phi 21 CORD CLAMP \$\phi 10 CORD CLAMP TL-20S	
201 202 203 204 205 206 207 208 209 210 211 212 213	000-P00425-W 068-441616 000-P00412-W 050-F00500 030-000616-SB 060-F00600-0B 030-000816-SB 060-F00800-0B 000-P00350 060-S00300 060-F00300 030-000825-SB 000-P00408-WB	M SCR PH W/FS M4×25 FLT WSHR 4.4-16×1.6 M SCR PH W/FS M4×12 FLG NUT M5 HEX BLT W/S BLK M6×16 FLT WSHR BLK M6 HEX BLT W/S BLK M8×16 FLT WSHR BLK M8 M SCR PH M3×50 SPR WSHR M3 FLT WSHR M3 HEX BLT W/S BLK M8×25 M SCR PH W/FS BLK M4×8	
301 302 303 304 305 306 307 308	600-6373-12-91 600-6373-35 600-6373-81 600-6559-19 600-6634-22 600-6634-26 600-6634-27 600-6634-38	WIRE HARN AC FAN RBAR WIRE HARN AC FAN WIRE HARN BARTH RBAR WIRE HARN WOOFER WIRE HARN EXT CONT PNL A WIRE HARN EXT TOWER WIRE HARN EXT VOLUME A WIRE HARN EXT RGB B	



#### (18) ASSY MAIN BASE 2P (INY-21001)

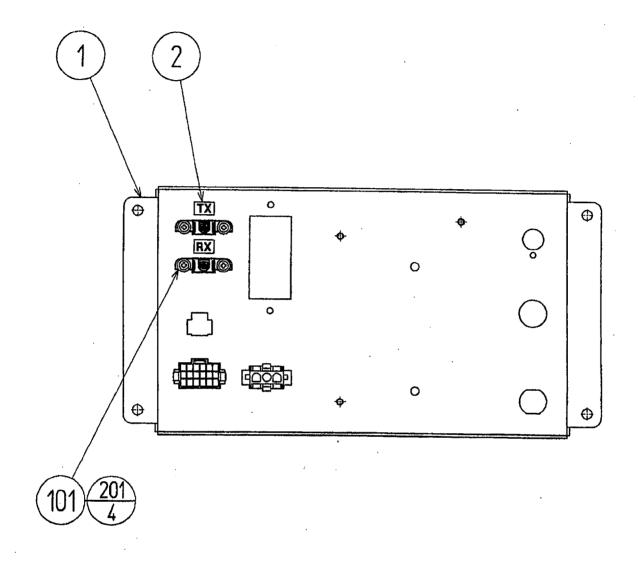
I TEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5 6 7 8 9	INY-2000 DYN-2060 INY-2300 DYN-1300 INY-4400 INY-4500 DYN-0700 DYN-2008X RAL-2007 RAL-2008	ASSY BASE BOX ASSY WOOFER ASSY SEAT TWIN 2P ASSY ACCEL & BRAKE ASSY MAIN BD BASE ASSY ELEC BASE AC UNIT SUB PEDAL BASE RUBBER HOLDER R TWIN RUBBER HOLDER L TWIN	
101 102 103 104 105 106	260-0011-02 600-6275-0150 601-0460 280-5009 280-0425 280-5169	AXIAL FLOW FAN AC100V 50-60Hz ASSY FIBER CABLE Ø 5 0150CM PLASTIC TIE BELT 100MM CORD CLAMP Ø 21 CORD CLAMP Ø 10 CORD CLAMP TL-20S	
201 202 203 204 205 206 207 208 209 210 211 212 213	000-P00425-W 068-441616 000-P00412-W 050-F00500 030-000616-SB 060-F00600-OB 030-000816-SB 060-F00800-OB 000-P00350 060-S00300 060-F00300 030-000825-SB 000-P00408-WB	M SCR PH W/FS M4×25 FLT WSHR 4, 4-16×1.6 M SCR PH W/FS M4×12 FLG NUT M5 HEX BLT W/S BLK M6×16 FLT WSHR BLK M6 HEX BLT W/S BLK M8×16 FLT WSHR BLK M8 M SCR PH M3×50 SPR WSHR M3 FLT WSHR M3 HEX BLT W/S BLK M8×25 M SCR PH W/FS BLK M4×8	
301 302 303 304 305 306 307 308	600-6373-12-91 600-6373-35 600-6373-81 600-6559-19 600-6634-22 600-6634-26 600-6634-27 600-6634-38	WIRE HARN AC FAN REAR WIRE HARN AC FAN WIRE HARN BARTH REAR WIRE HARN WOOFER WIRE HARN EXT CONT PNL A WIRE HARN EXT TOWER WIRE HARN EXT VOLUME A WIRE HARN EXT RGB B	



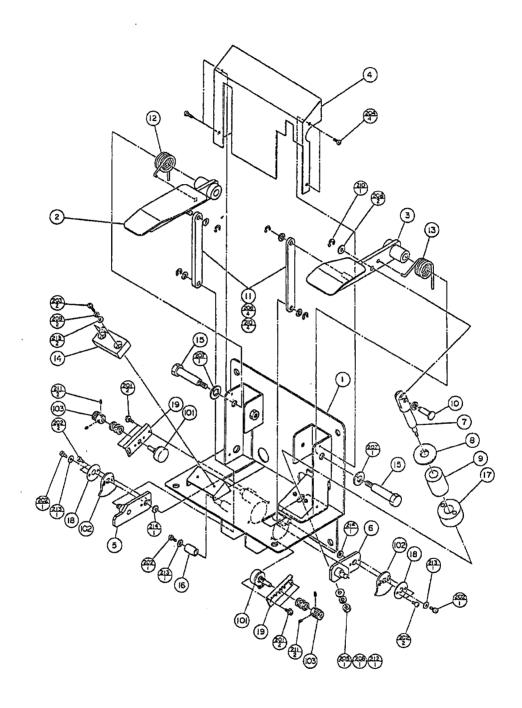
#### (19) AC UNIT MAIN EXP (DYN-0400-01)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	DYN-0403	AC BRKT EXP	
2	DYN-0402	NOISE FILTER BASE	
2 3	421-6526	STICKER ON OFF	
4	421-7468	STICKER C.P.	
5	421-7515	STICKER FIBER CABLE TX/RX	
6	421-8202	STICKER EARTH MARK	
101	211-5479	CONN OPT JOINT	
102	214-0202	AC INLET PANEL TYPE	
103	270-5026	NOISE FILTER 20A	
104	280-0417	TERMINAL BINDING POST BLACK	
105	509-5234	SW TOGGLE 25A	
106	512-5033-10000	CIRCUIT PROTECTOR 10000MA	
107	310-5029-F20	SUMITUBE F F20MM	$\phi$ 4
108	310-5029-J20	SUMITUBE F J20MM	<b>ø</b> 7
109	601-0460	PLASTIC TIE BELT 100MM	
201	000-P00312-W	M SCR PH W/FS M3×12	
202	012-P00408	TAP SCR PH 4×8	
301	600-6373-62	WIRE HARN EXT N. FILTER	
302	600-6373-63	WIRE HARN EXT SUB	
303	600-6373-64	WIRE HARN EXT MAIN	
304	600-6634-39	WIRE HARN AC UNIT EXP	

#### 20 AC UNIT SUB (DYN-0700)

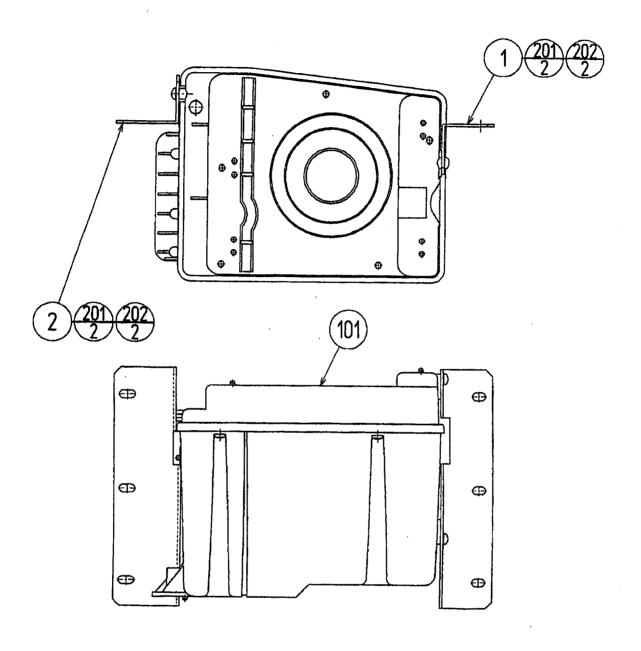


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2	DYN-0401 421-7515	AC BRKT STICKER FIBER CABLE TX/RX	
101	211-5479	CONN OPT JOINT	
201	000-P00312-W	M SCR PH W/FS M3×12	
301	600-6373-60	WIRE HARN AC100V SUB	



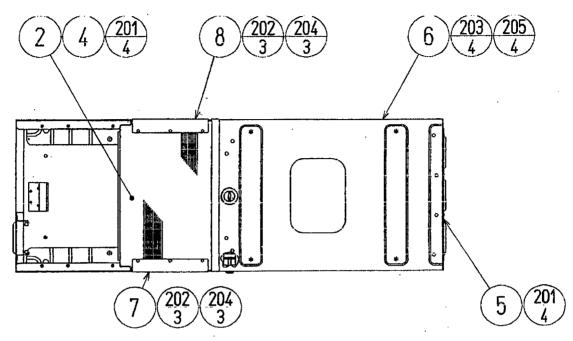
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 2 3 3 4 5 6	DYN-1301 BVG-1402 DYN-1306 BVG-1403 DYN-1307 BVG-1404 BVG-1405 BVG-1406 BVG-1407	PEDAL BASE ACCEL PEDAL ACCEL PEDAL AL BRAKE PEDAL BRAKE PEDAL AL PEDAL COVER SWING ARM A SWING ARM B PUSH ROD	
8 9 10 11 12 13 14 15 16 17	BVG-1408 DYN-1302 BVG-1410 BVG-1411 DYN-1303 BVG-1413 BVG-1414 BVG-1415 BVG-1416 BVG-1417 GLC-2122	PUSH PLATE RUBBER DUMPER PUSH ROD PIN LINK ROD TORSION SPRING ACCEL TORSION SPRING B RUBBER STOPPER PEDAL SHAFT SWING ARM STOPPER SPACER GEAR PLATE	
19 101 101 102 103 104 105 106	RDM-1210  220-5373 220-5484 601-6005 601-5943 310-5029-F20 601-0460 280-5009	VR BRACKET  VOL CONT B-5K OHM  VOL CONT B-5K OHM  ADJUST GEAR  GEAR 20 φ15  SUMITUBE F F20MM  PLASTIC TIE BELT 100mm  CORD CLAMP φ21	φ4 -01 also acceptable
201 202 203 204 205 206 207 208 209 210 211 212	000-P00408-W 000-P00408-S 000-P00416-0B 008-T00408-0B 050-H00600 060-F00800-0B 060-S01200-0B 060-S00600 060-S00400-0B 065-E00600 028-A00308-P 068-652016	M SCR PH W/FS M4×8 M SCR PH W/S M4×8 M SCR PH BLK M4×16 TMP PRF SCR TH BLK M4×8 HEX NUT M6 FLT WSHR BLK M8 SPR WSHR BLK M12 SPR WSHR M6 SPR WSHR BLK M4 E RING 6MM SET SCR HEX SKT CUP P M3×8 FLT WSHR 6, 5-20×1.6	
213 214 301 302	DYN-1304 DYN-1305 600-6178-54 600-6178-113	FLT WSHR BLK 4.4-12×1.6 FLT WSHR 12.2-22×0.5 WIRE HARN ACCEL & BRAKE WIRE HARN EARTH ACCEL & BRAKE	

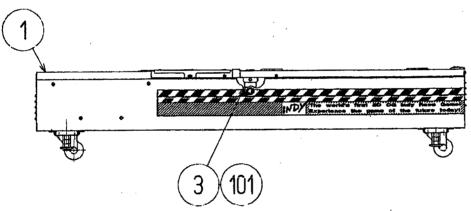
#### 22 ASSY WOOFER (DYN-2060)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	DYN-2061	WOOFER BRKT L	
2	DYN-2062	WOOFER BRKT R	
101 102	130-5114 280-0425	SPEAKER BOX SUB WOOFER CORD CLAMP $\phi$ 10	
201	012-P00412	TAP SCR PH $4 \times 12$	
202	060-F00400	FLT WSHR M4	

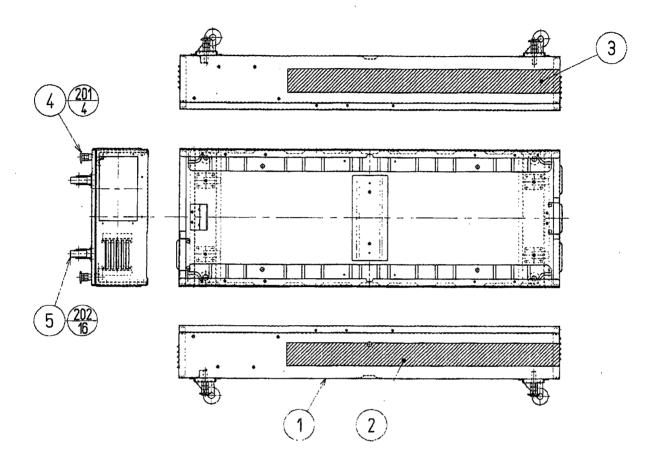
#### 23 ASSY BASE BOX (INY-2000)





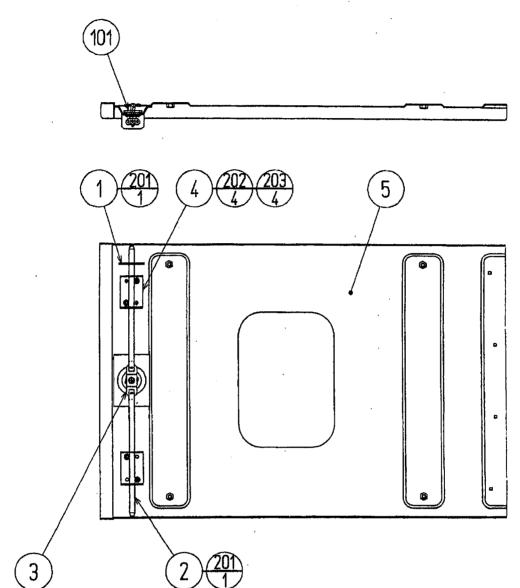
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5 6 7	INY-2001 DYN-2003 DYN-2004 DYN-2005X INY-2002 DYN-2010 DYN-2007 DYN-2009	MAIN BASE BASE LID F LOCK TNG FLOOR MAT HINGE 480 ASSY BASE LID R LID BDGE L LID BDGE R	
101	220-5380	MAG LOCK MASTER W/O KEY	
201 202 203 204 205	000-T00512-0B 031-000414-0C 031-000514-0B 050-F00400 050-F00500	M SCR TH BLK M5×12 CRG BLT CRM M4×14 CRG BLT BLK M5×14 FLG NUT M4 FLG NUT M5	

#### 24 MAIN BASE (INY-2001)

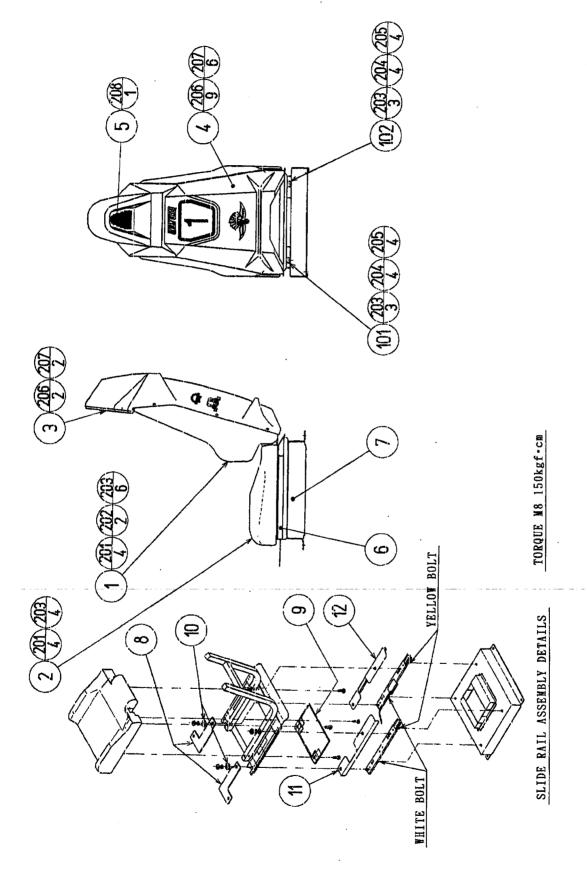


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2	INY-2001-A INY-2001-B	MAIN BASE BLANK INY TWIN STICKER BASE L	
$\frac{2}{3}$	INY-2001-C 601-5699X	STICKER BASE R LEG ADJUSTER BOLT M16×75	
5	601-5471	CASTER	
201 202	050-H01600-0B 030-000816-S	HEX NUT BLK M16 HEX BLT W/S M8×16	

## 25 ASSY BASE LID R (DYN-2010)

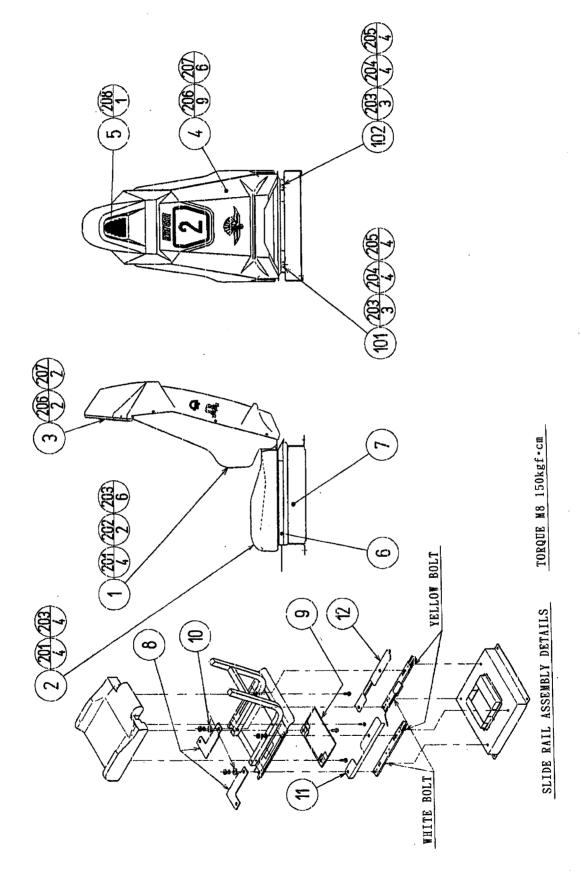


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 3 4 5	DYN-2011 DYN-2012 DYN-2013 DYN-2014 DYN-2015	LOCK ROD A LOCK ROD B LOCK ARM ROD HOLDER BASE LID R	
101	601-7551	LOCK HANDLE (TAKIGEN A-88)	
201 202 203	045-C02520 031-000510-0B 050-F00500	COT PIN 2.5×20 CRG BLT BLK M5×10 FLG NUT M5	



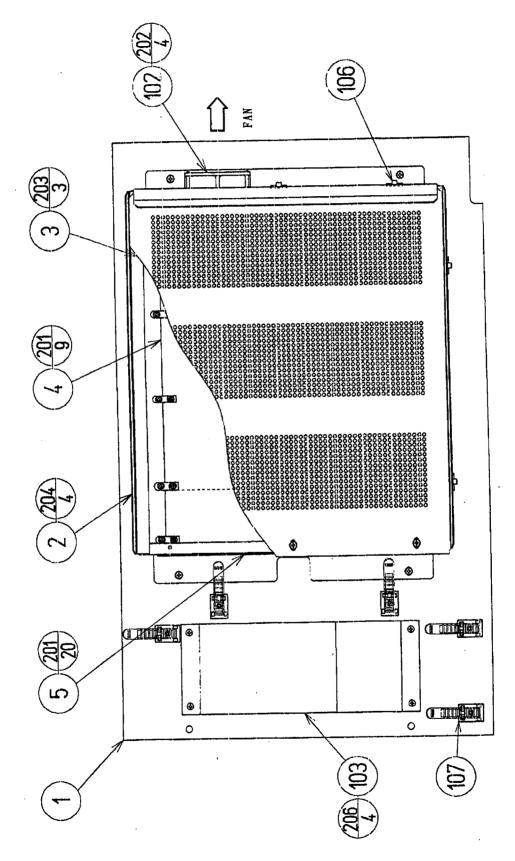
#### 26 ASSY SEAT TWIN 1P (INY-2200)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-1601	UPPER SEAT	
$\frac{1}{2}$	INY-1602	LOWER SEAT	
3	INY-1603	SEAT BACK COVER F	
4	INY-1604	SEAT BACK COVER R	
5	INY-1606	SEAT FRAME BRKT	
6	RAL-2081	SEAT FRAME TWIN	
7	RAL-2082	SEAT BASE	
8	RAL-2083	PROTECT RUBBER TWIN	
9	RAL-2085	COVER BRKT	•
10	OUT-2026	SPACER	
11	INY-1608	SEAT RAIL COVER L	
12	INY-1609	SEAT RAIL COVER R	
101	601-7942	SEAT RAIL AL L	
102	601-7981	SEAT RAIL AL R	•
201	030-000850-SB	HEX BLT W/S BLK M8×50	
202	030-000845-S	HEX BLT W/S M8×45	
203	060-F00800-0B	FLT WSHR BLK M8	
204	060-S00800-0B	SPR WSHR BLK M8	
205	050-H00800-0B	HEX NUT BLK M8	
206	000-T00412-0C	M SCR TH CRM M4×12	
207	068-441616-0C	FLT WSHR CRM 4.4-16 $\times$ 16	
208	000-P00412-W	M SCR PH W/FS M4×12	

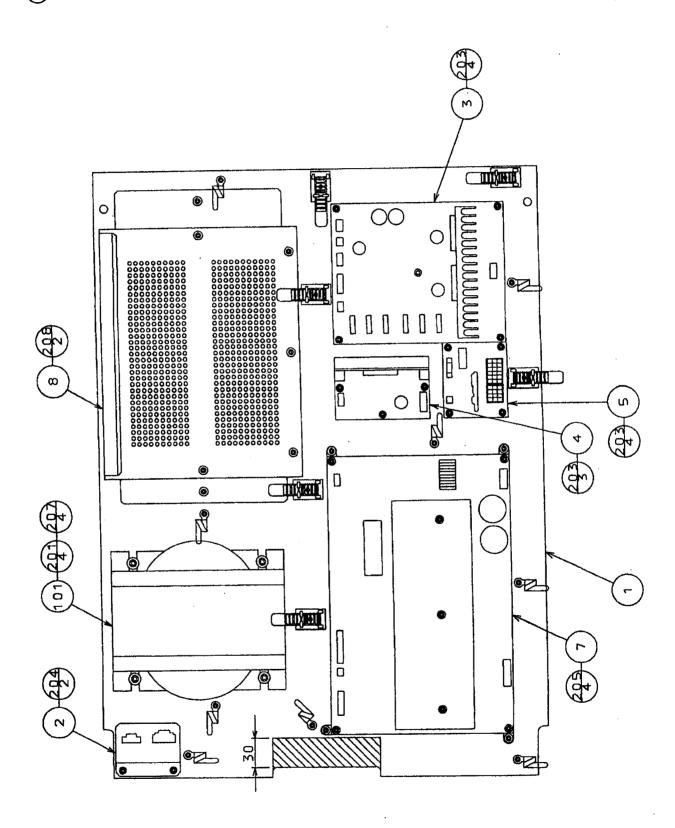


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-1601	UPPER SEAT	
2	INY-1602	LOWER SEAT	
2 3	INY-1603	SEAT BACK COVER F	
4	INY-1607	SEAT BACK COVER R 2P	
5	INY-1606	SEAT FRAME BRKT	
6	RAL-2081	SEAT FRAME TWIN	
7	RAL-2082	SEAT BASE	
5 6 7 8 9	RAL-2083	PROTECT RUBBER TWIN	
9	RAL-2085	COVER BRKT	
10	OUT-2026	SPACER	
11	INY-1608	SEAT RAIL COVER L	
12	INY-1609	SEAT RAIL COVER R	
101	601-7942	SEAT RAIL AL L	
102	601-7981	SEAT RAIL AL R	
201	030-000850-SB	HEX BLT W/S BLK M8×50	
202	030-000845-S	HEX BLT W/S M8×45	
203	060-F00800-0B	FLT WSHR BLK M8	
204	060-S00800-0B		
205	050-H00800-0B	HEX NUT BLK M8	
206	000-T00412-0C	M SCR TH CRM M4×12	
207	068-441616-0C	FLT WSHR CRM 4.4-16×16	
208	000-P00412-W	M SCR PH W/FS M4 $\times$ 12	

## 28 ASSY MAIN BD BASE (INY-4400)

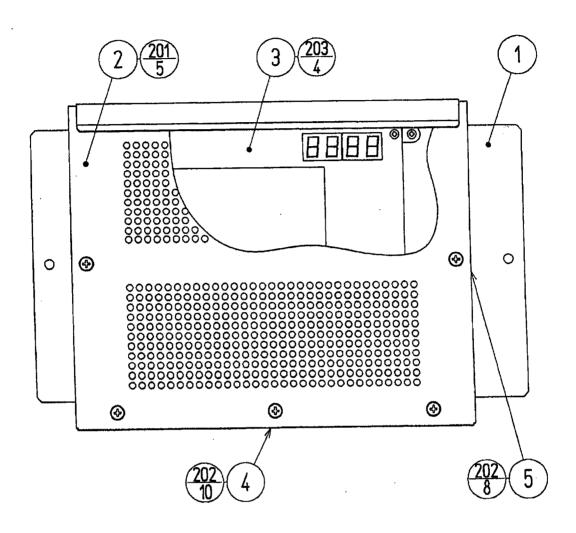


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-4401	WOODEN BASE	
2 3	105-5218	SHIBLD CASE	
3	105-5219-91	SHIELD CASE LID	
4 5	833-11994	GAME BD INDY 500 TWIN	
5	839-0818	FLT BD B-CRX INY	
101	209-0023	CONN CLOSED END	
102	260-0055	FAN MOTOR DC5V	
103	400-5264	SW REGU +5V12A, +12V1.5A, -5V.1A	
104	601-0460	PLASTIC TIE BELT 100MM	
105	280-0419	HARNESS LUG	
106	280-0425	CORD CLAMP $\phi$ 10	
107	280-5009	CORD CLAMP $\phi$ 21	
201	010-P00308-F	S-TITE SCR PH W/F M3×8	
202	000-P00330-W	M SCR PH W/FS M3×30	
203	000-P00408-W	M SCR PH W/FS M4×8	
204	000-P00414-W	M SCR PH W/FS M4 $\times$ 14	
205	011-F00310	TAP SCR FH 3×10	
206	011-T03512	TAP SCR TH 3.5×12	
301	600-6502-13	WIRE HARN DC FAN	
302	600-6634-16	WIRE HARN EXT AUDIO B	
303	600-6634-17	WIRE HARN RGB A	
304	600-6634-18	WIRE HARN SW REGU 12P	
305	600-6634-19	WIRE HARN SW REGU 18P	
306	600-6634-20	WIRE HARN MAIN BD BASE	



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2	INY-4501 DYN-4003	WOODEN BASE BLEC CONN BRKT	
3 4	838-11650-07	EQ. PWR AMP INY TWIN	
5	838-11651	LOWPASS AMP	
7	838-11855-01 838-11966	SSR, CONN BD	
8	INY-4600	MOTOR DRIVE BD ASSY MOTOR DRIVE BD	
		MOLOW DKIAT DD	
101	560-5260	PWR XFMR 100V6. 5A 12.5V6A	
100	560-5261	PWR XFMR 100V6.5A 12.5V6A	
102	601-0460	PLASTIC TIE BELT 100MM	
103	280-5009	CORD CLAMP $\phi 21$	
104	280-0419	HARNESS LUG	
105	270-5052-04	LINE FILTER D (ASTBL 0448-806402)	
201	000-P00416-S	M SCR PH W/S M4×16	
202	011-F00310	TAP SCR FH 3×10	
203	011-P00325	TAP SCR PH 3×25	
204	011-P03510	TAP SCR PH 3.5×10	
205	011-P03510 011-T00316 011-T03512	TAP SCR TH 3×16	
206	011-T03512	TAP SCR TH 3 5×12	
207	068-441616	FLT WSHR 4. 4-16×1. 6	
208		M SCR PH W/FS M4×16	
301	600-6634-01	WIRE HARN XFMR IN	
302	600-6634-02	WIRE HARN XFMR AC100V OUT	
303	600-6634-03	WIRE HARN XFMR AC12. 5V OUT	
304	600-6634-04	WIRE HARN CONN BD	
305	600-6634-04 600-6634-05	WIRE HARN EXT SPEAKER	
306	600-6634-06	WIRE HARN LOWPASS AMP	
307	600-6634-07	WIRE HARN AMP TO AMP	
308	600-6634-08	WIRE HARN EXT AUDIO A	
309	600-6634-09	WIRE HARN LEADER SIGNAL	
310	600-6634-10	WIRE HARN ELEC TO TOWER	
311	600-6634-11	WIRE HARN MOTOR DRIVE RD OUT	
312	600-6634-12 600-6634-13 600-6634-14	WIRE HARN EXT DRIVE BD	
313	600-6634-13	WIRE HARN DRIVE BD VOLUME	
314			
315	600-6634-15	WIRE HARN DRIVE CONTROL BD RX	

#### 30 ASSY DRIVE CONTROL (INY-4600)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1 2 × 3 ~ 4 5	INY-4601 INY-4602 838-11967 839-0829 839-0830	SHIELD CASE SHIELD CASE LID DRIVE CONTROL BD ELT BD DRIVE CONTROL BD A ELT BD DRIVE CONTROL BD B	
201 202 203	000-P00408-W 010-P00308-F 010-P00310-F	M SCR PH W/FS M4×8 S-TITE SCR PH W/F M3×8 S-TITE SCR PH W/F M3×10	
301 302 303 304 305	600-6609-64 600-6609-65 600-6609-66 600-6609-67 600-6609-68	WIRE HARN SHIELD CASE 8P WIRE HARN SHIELD CASE 10P WIRE HARN SHIELD CASE 11P WIRE HARN SHIELD CASE 12P WIRE HARN SHIELD CASE 18P	

#### 21. WIRE COLOR CODE TABLE

THE WIRE COLOR CODE is as follow:

- 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.

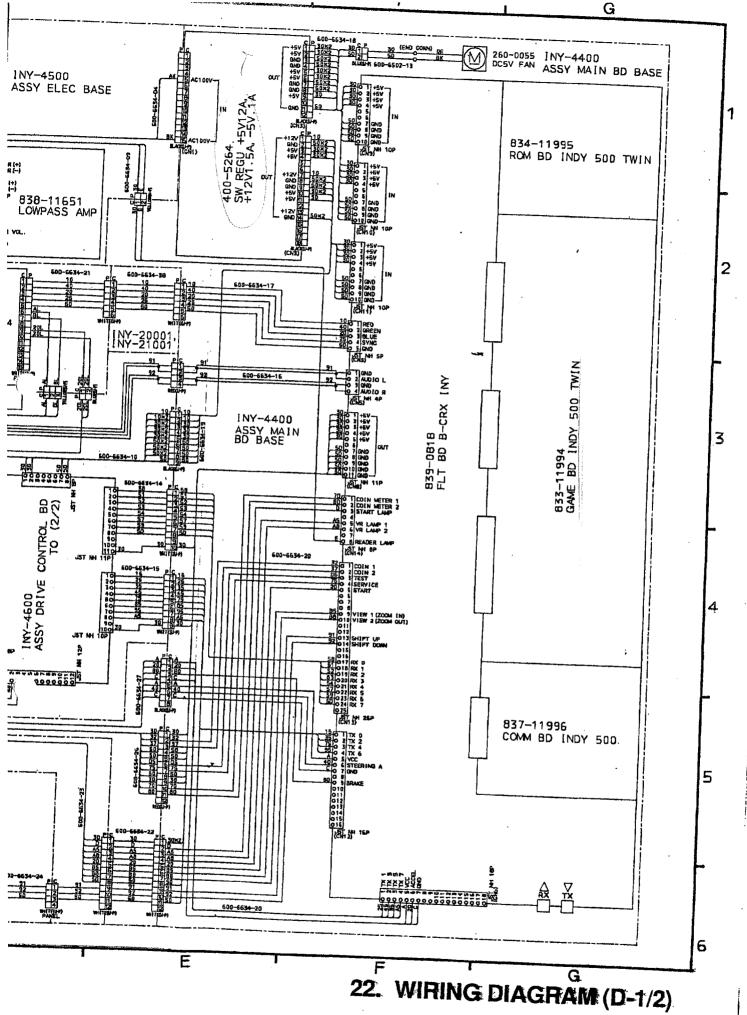
<Example> 51 ..... WHITE / RED RED WHITE

Note 2: The character following the wire color code indicates the size of the wire.

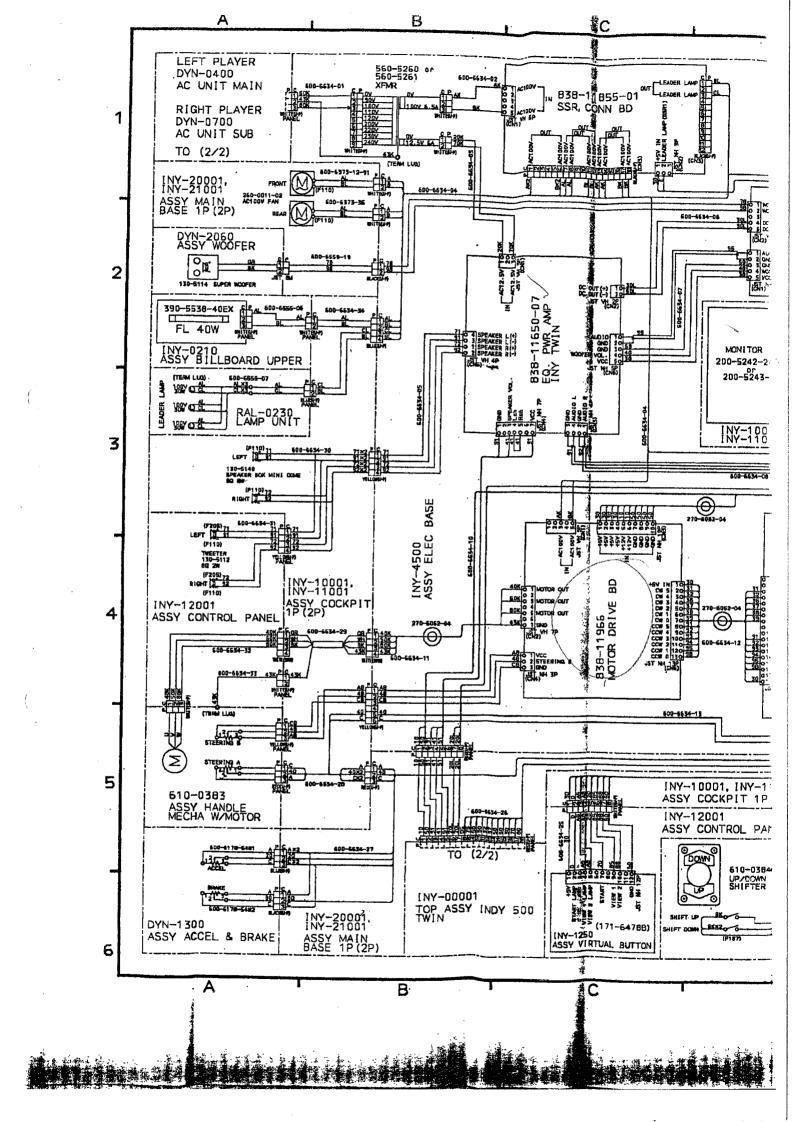
K: AWG18, UL1015

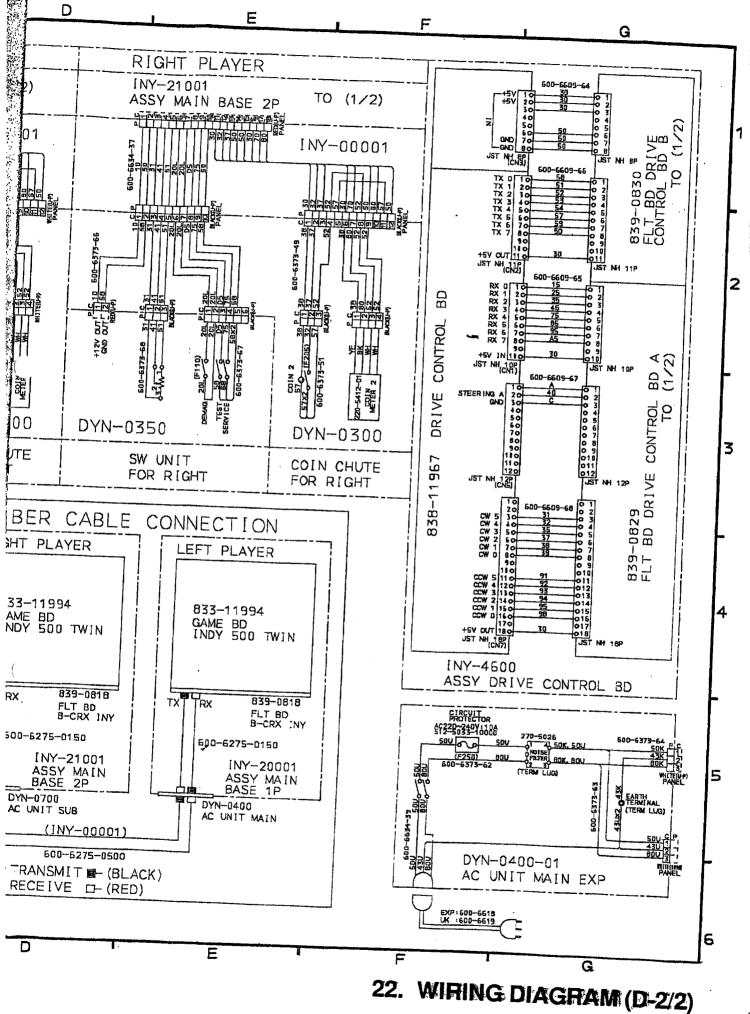
L: AWG20, UL1007

None: AWG22, UL1007



--105-





106-

