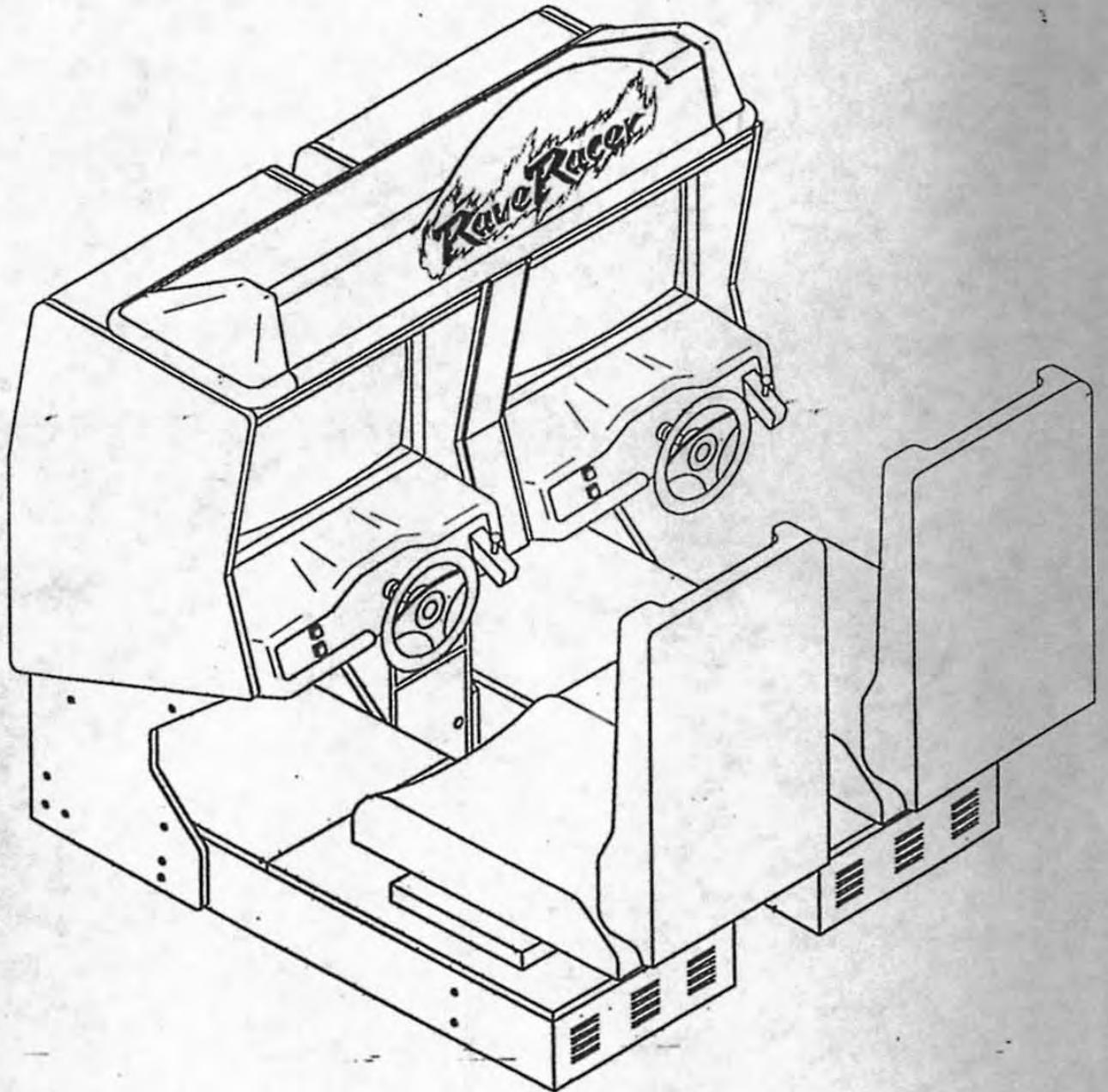# Rave Racer

INTRODUCTION

Thank you for purchasing our RAVE RACER.

This operation manual describes how to safely carry out operation, installation, transportation, and maintenance of the RAVE RACER.

To operate the RAVE RACER correctly and safely, be sure to read the operation manual carefully before starting installation and operation.

The operation manual is intended for the use by the operator at an amusement arcade. In the operation manual however, the procedural items where —ALLOWED FOR QUALIFIED TECHNICIAN ONLY— appears shall be carried out by a qualified technician only.

The qualified technician in the operation manual means:

- The technician who graduated from university, collage, or finished senior high school, and qualified of mechanics or electronics, or who are equivalent to those persons in knowledge and experience, and who does daily maintenance, operation controls, and repairs of amusement machines.

If the owner of this machine is to ask a third party to operate, install, transport, handle, and/or maintain the machine, it is owner's responsibility for the third party that they shall read the operation manual thoroughly and strictly observe the safety precautions stated in the operation manual.

Keep the operation manual close to the machine and retain it for future reference so that it can be referred to whenever necessary.

- If you resale the machine, be sure to include the operation manual in the package.

  For information on the machine itself, reparation of the machine, or associated parts including consumables: contact the dealer from whom you have purchased the machine.

CONTENTS

1. SAFETY PRECAUTIONS

1.1 EXPLANATION OF THE CAUTION SYMBOL ⚠

The meaning of the caution symbol ⚠ used for   the operation manual is described below.

- Caution symbol ⚠   : This symbol is used to indicate potential danger, and is a specific, general caution, warning, or danger notification

1.2 EXPLANATION OF SIGNAL WORDS
(⚠ DANGER, ⚠ WARNING, ⚠ CAUTION)

The signal words (⚠ DANGER, ⚠ WARNING, ⚠ CAUTION) used for   the operation manual indicate the possibility that the danger will result i bodily harm or damage to property.

The risk level for each is as described below:

- ⚠ DANGER   : This indicates that if mistakes are made in handling, a dan ous condition will result that could cause death or serious injury to the operator, and that the urgency of the warning very high.

- ⚠ WARNING   : This indicates that if mistakes are made in handling, a dan ous condition will result that could cause death or serious injury to the operator.

- ⚠ CAUTION   : This indicates that if mistakes are made in handling, a con tions will result that could cause minor injury to the operat or light damage to the machine.

NOTE : Classification of Injury or Damage

Serious Injury   : Injuries such as loss of sight, scars, burns (high-temperature, lo temperature), electric shock, broken bones, poisoning that have lasting effects, and which require hospitalization or long-term doctor visits.

Minor Injury   : Injuries that do not require hospitalization or long-term doctor visits. (Injuries not listed above.)

Property Damage : Large damage to buildings, property, or pets.

1.3 SAFETY PRECAUTIONS FOR OPERATION

1.3.1 Prohibition of play games

The following persons are prohibited to play the game with the machine. The manager or the attendant of the machine shall be responsible for the machine not to be played by the persons those specified below.

- Who are not in good health
- Who are injured and cannot play the game with ease
- Who are drunken

1.3.2 Notes on operation

⚠ WARNING

- Use the parts specified by NAMCO as consumables and repair parts (including bolts and nuts).
- Start operating the machine after you have checked for sure that the machine is installed correctly (all conditions described under 4. "INSTALLATION" shall meet the specifications).
- Use the machine with the rated power supply voltage as closely as possible for better operating conditions though the machine can tolerate a power voltage within a range of ±10% of the rated value.
- Connect the machine to the ground to avoid electric leakage when the machine breaks down.

⚠ CAUTION

- Stop using the machine immediately if the machine fails to operate or has received a damage.
- Hold the plug, not the power cord to pull out the cord plug from the outlet.

1.4 SAFETY PRECAUTIONS FOR INSTALLATION
—ALLOWED FOR QUALIFIED TECHNICIAN ONLY—

⚠ WARNING

- Never turn on the main power switch of the machine until the machine has been installed correctly and completely (until all conditions described under 4. "INSTALLATION" meet the specifications).

- Connect the machine to the ground to avoid electric leakage when the machine breaks down.

NOTES:

- Allow a space of 30 cm or more between the machine and other surrounding object such as walls or other equipment.

  When you install two machines closely together, you don't need to make a space between them.
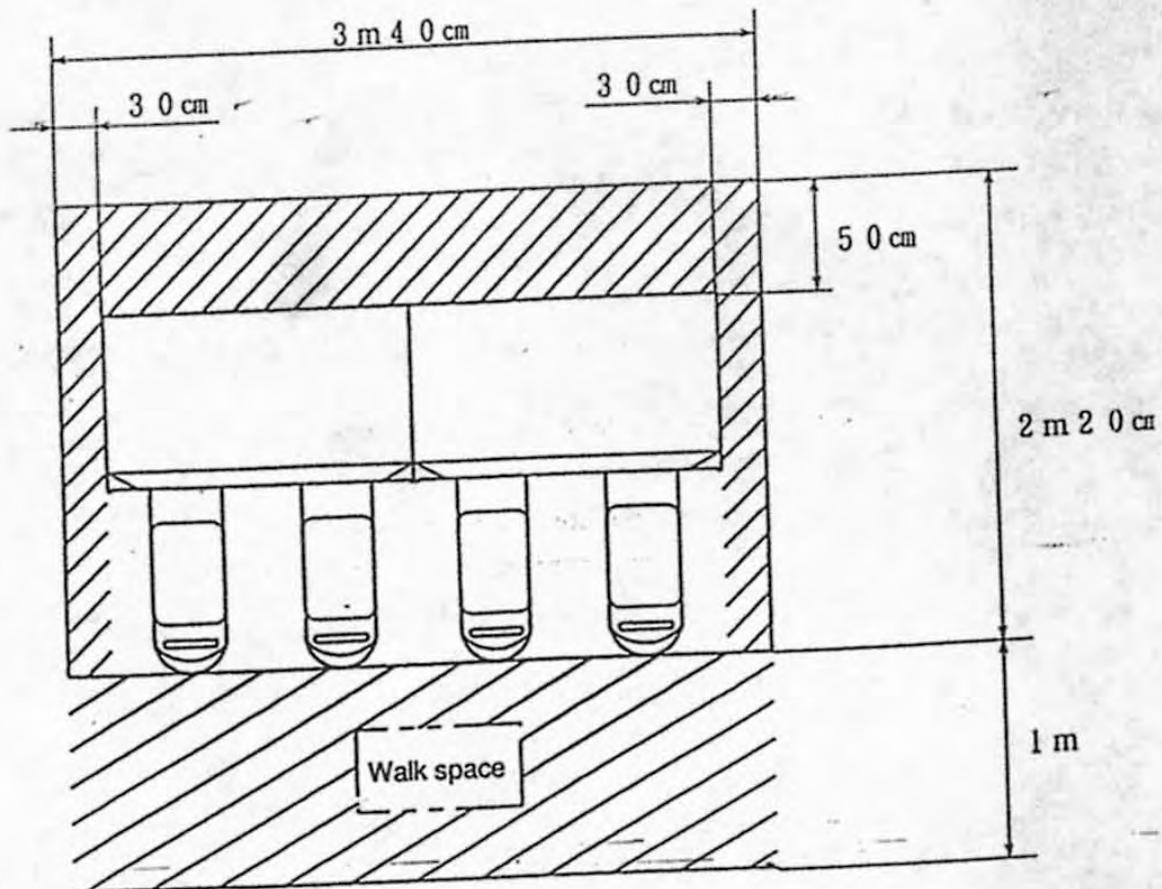
1.5 SAFETY PRECAUTIONS FOR MOVING AND TRANSPORTATION
—ALLOWED FOR QUALIFIED TECHNICIAN ONLY—

⚠ WARNING

- The RAVE RACER has casters. Move the machine with extreme care when it is on a slope.

- Firmly hold the machine when loaded on a truck for transportation so that it will not move by acceleration or deceleration.

1.6 SAFETY PRECAUTIONS FOR MAINTENANCE
(TROUBLESHOOTING AND REPAIR)
—ALLOWED FOR QUALIFIED TECHNICIAN ONLY—

⚠ WARNING

- Never modify the machine without authorization. There can be unexpectable danger with the machine if modified.

- Use the parts specified by NAMCO as consumables and repair parts (including volts and nuts).

- Cut off the main power supply for maintenance (troubleshooting and repair) to avoid electric shock hazard to the technician or any other persons.

- Contact the dealer for further operations when you do any other work on the machine than it is described in the operation manual.

- A high voltage exists in the power supply board and the inside of the monitor, and such parts can remain at high temperatures even when the main power switch is turned off. To avoid electric shock hazard or a burn, be careful not to touch them accidentally.

- Be sure to turn off the main power switch for parts replacement, and connection and disconnection of connectors.

⚠ CAUTION

- Hold the plug, not the power cord to pull out the cord plug from the outlet.

2 SPECIFICATION

(1) Power requirements:

(2) Power consumption:

(3) Accessories:

220 VAC ± 10%

750 W (when operated at 220

Operation manual(this manua.
Projector manual............
Power plug.................
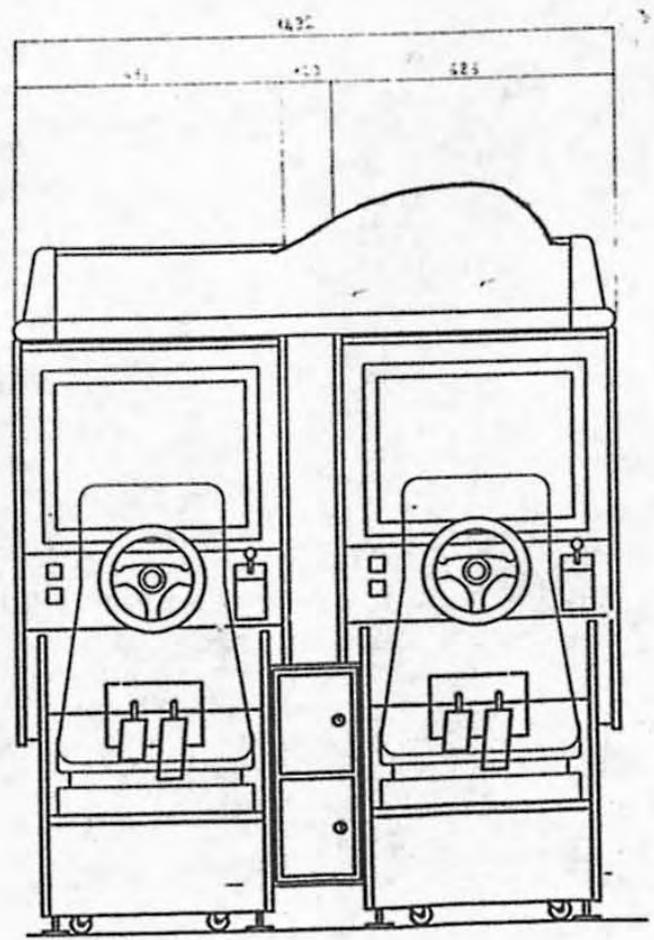
VISTA FRONTALE

VISTA LATERALI

-5-
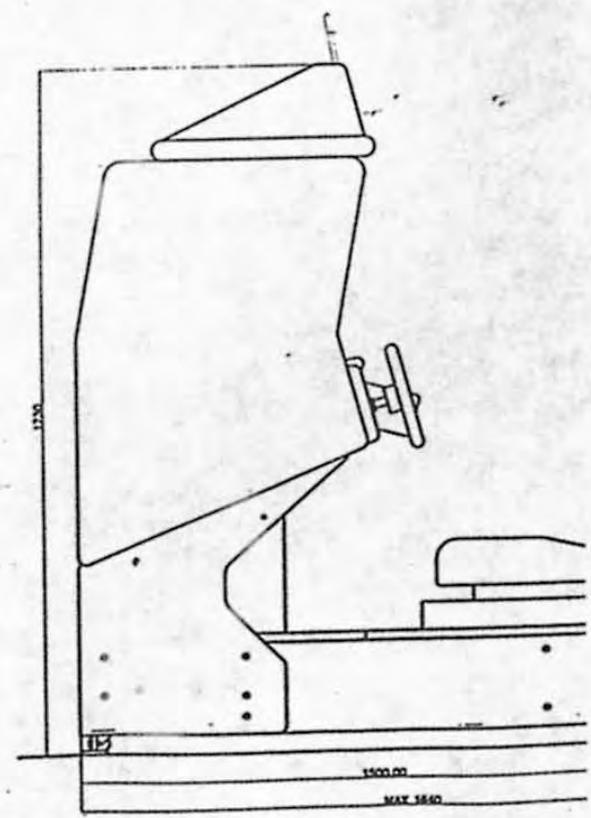
3 COMPONENTS (NAME OF PARTS)

Sing Assy

Steering wheel Assy

Projector Assy

Gear shift Assy

Seat Assy

Pedal Assy

Control Boar Assy

Rack Assy

Coin Assy

Base .Assy
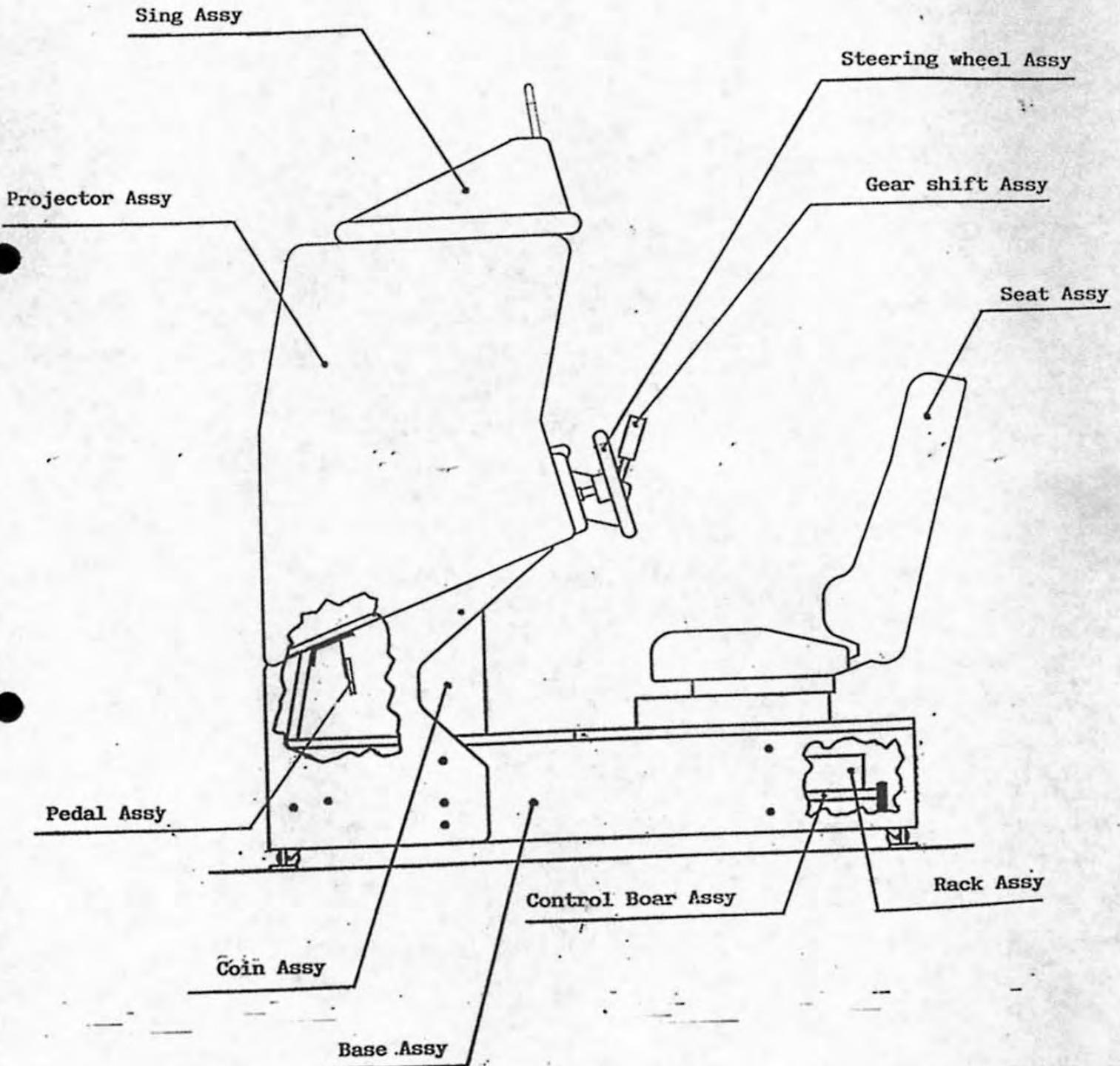
4. INSTALLATION —ALLOWED FOR QUALIFIED TECHNICIAN ONLY—

4.1 NOTES ON INSTALLATION

⚠ **WARNING**

- Do not turn on the power until you complete the installation of the machine.
- Connect the machine to the ground to avoid electric leakage when the machine breaks down.

⚠ **CAUTION**

- Assemble or disassemble the machine by the appropriate number of persons.

4.1.1 The place where installation is prohibited

The machine shall be used indoors. Do not install it in a place or under conditions liste below.

- Outdoors
- where subject to direct sunlight, high humidity, dust, or rain
  where close to a heating apparatus, or very hot or cold place
- where the machine can be an obstacle for the way to emergency exit or where a fire extinguishing equipment is installed.
- where subject to vibration or where the floor is not steady and rigid

4.1.2 Conditions of installation
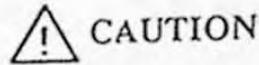
─────────── ⚠ CAUTION ───────────

• Make a play space below or more available. If the play space is too small, one player may touch the other when they are playing or when one gets up or gets down.

NOTE:

• Make a space of 50 cm or more between the rear of the machine and the wall or between the machine and the other equipment so that a technician can remove the back cover at the rear of the main unit (the main unit assembly and the signboard assembly) for maintenance purposes.
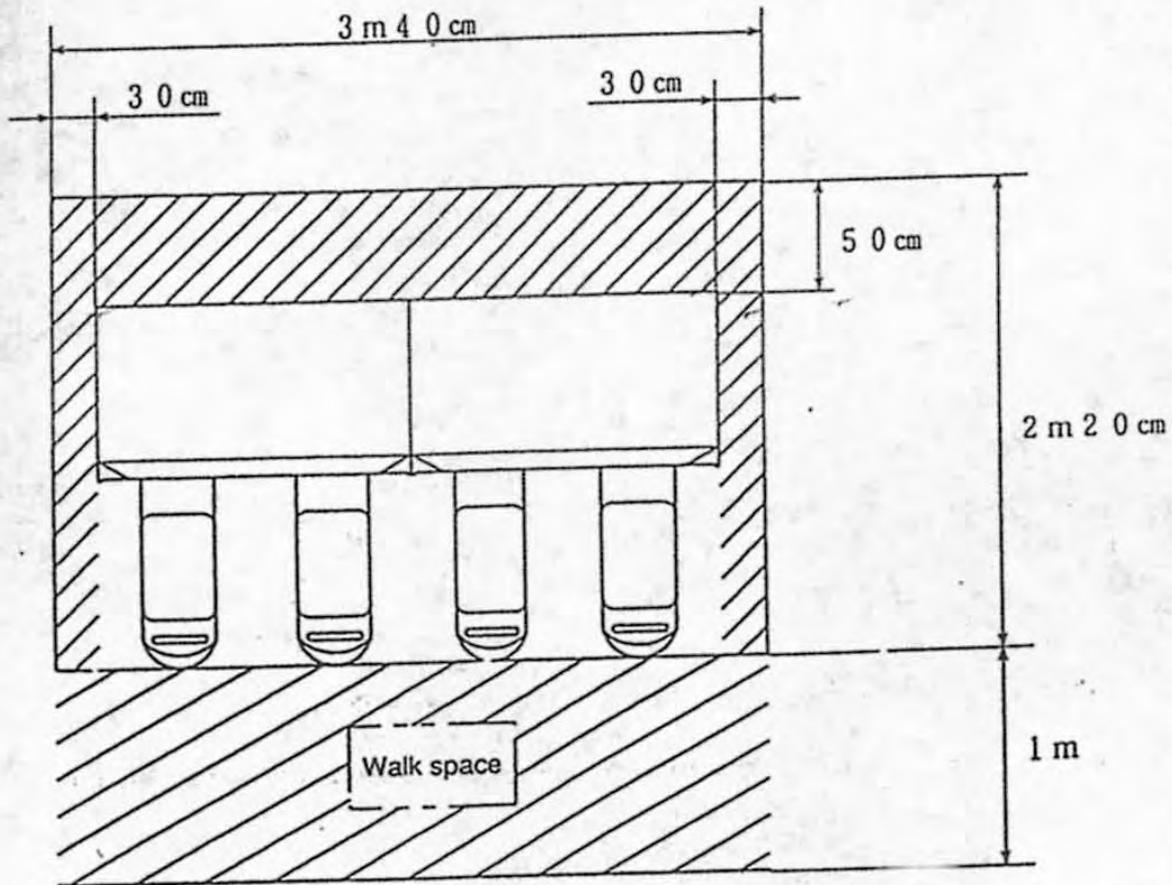
Figure 4

4.2 ASSEMBLY

4.2.1 COIN ASSEMBLY

STUD BOLT
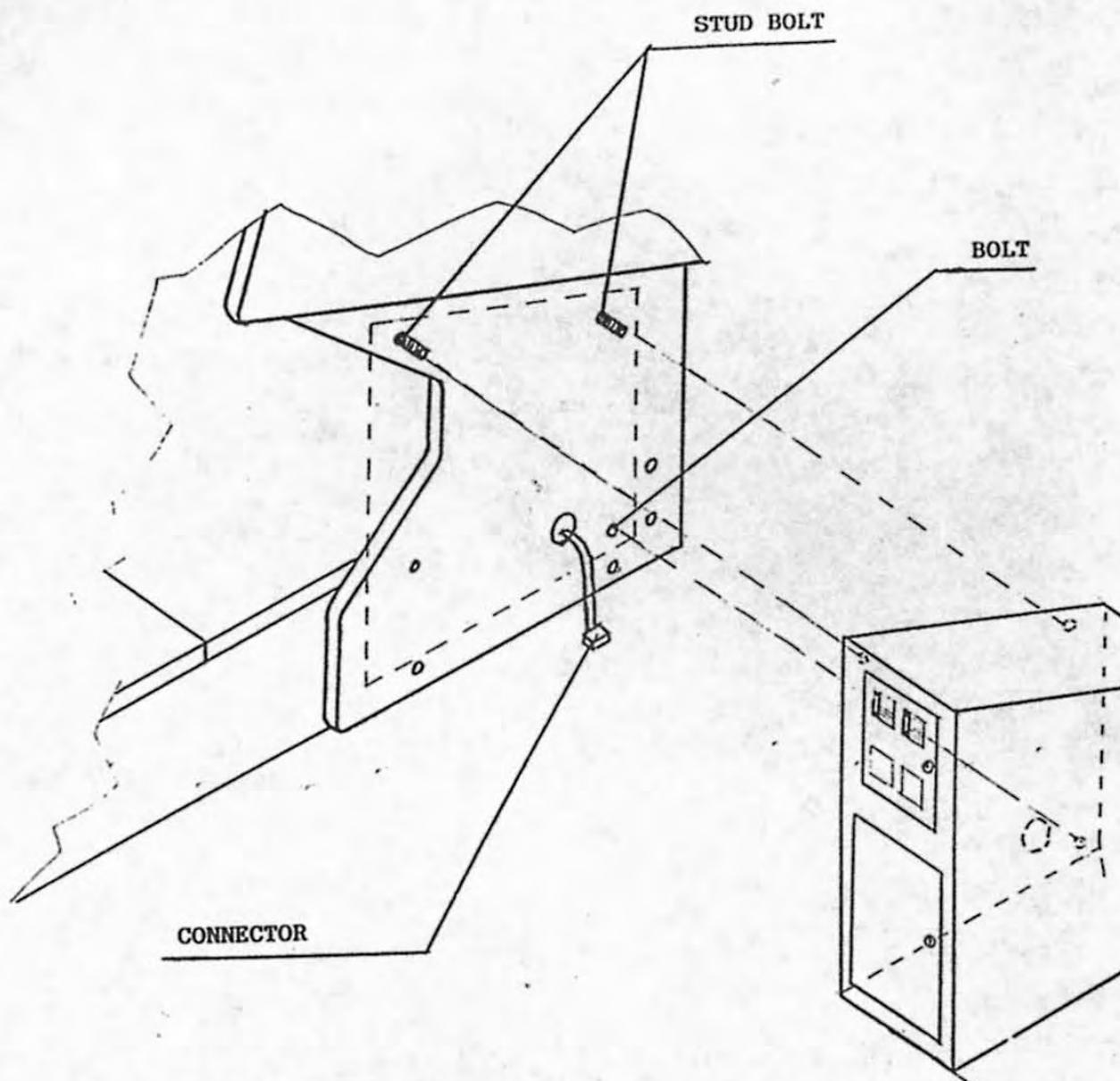
BOLT

CONNECTOR

- Pull out the connector and connet them to the coin assy

- To fix the coin box to the left cabinet through two stud bolt and the bolt

4.2.2 Bracket Assembly,

Fix the bracket (1) with 4 bolts (M8X20). Be sure that botton side of the bracket touches the floor.

Fix the brachet (2) with 6 bolts (M8X20).

SCREWS

NAMCO
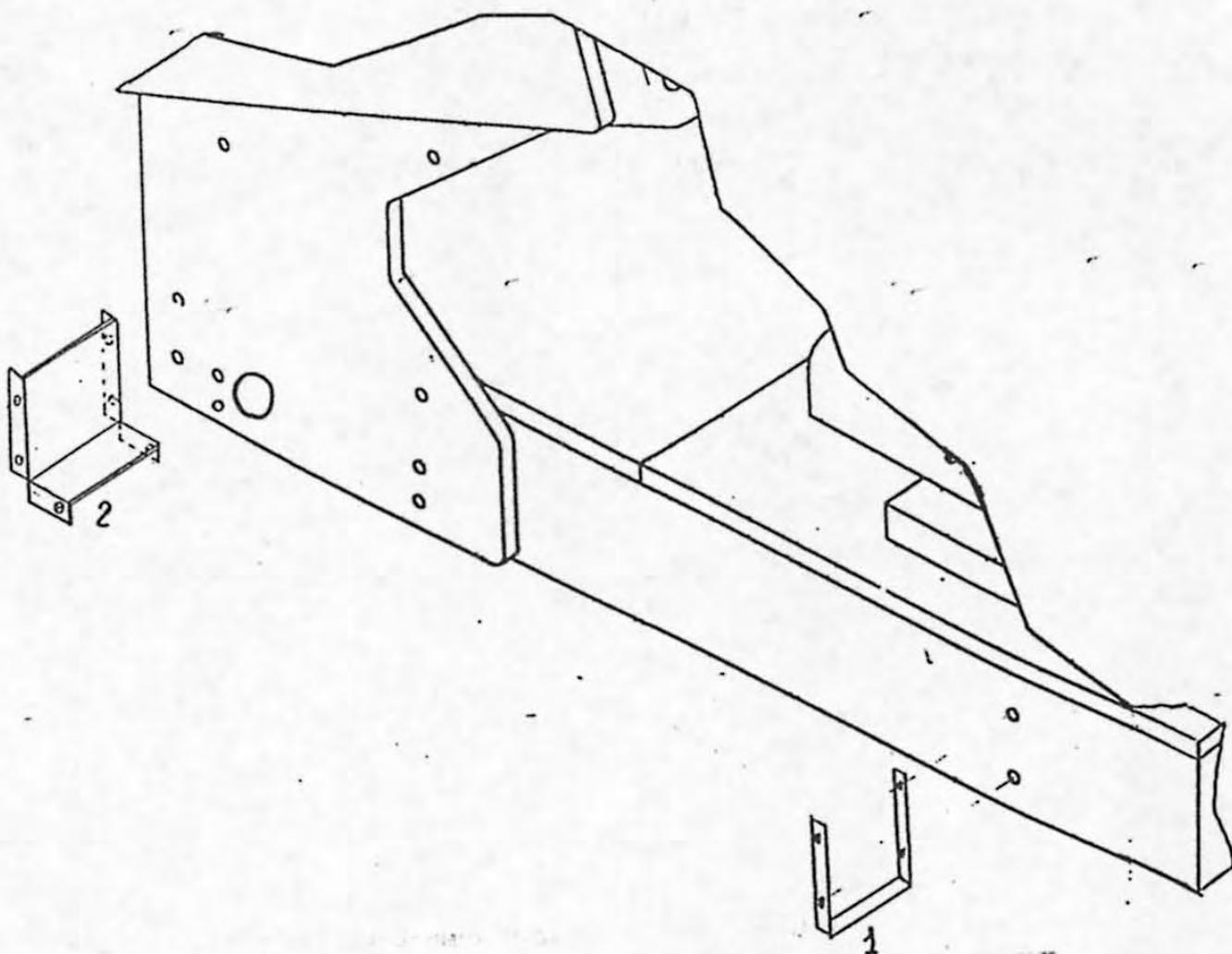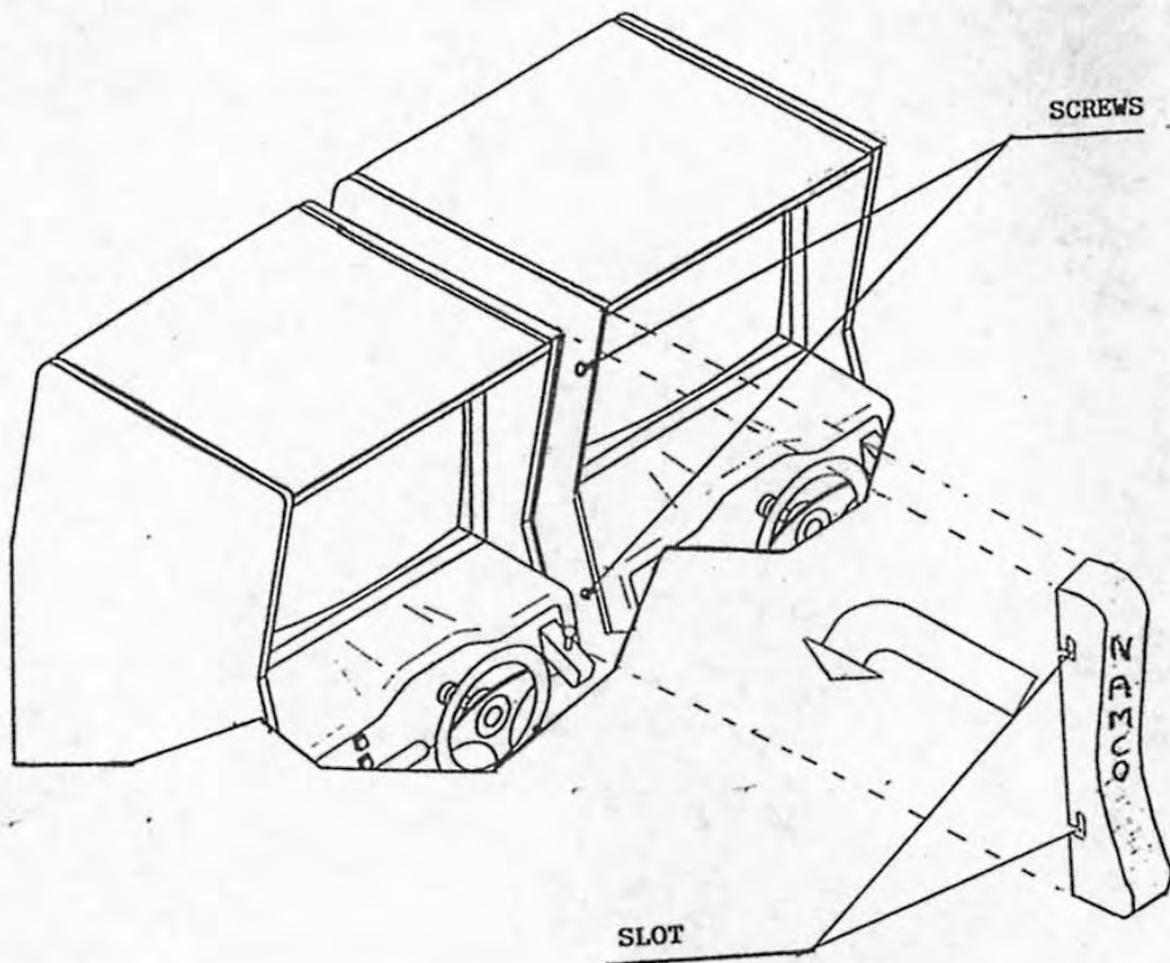
SLOT

Fix the plastic cover; to be assure to have insert the slot in the scr·
that you find on the cabinet

⚠️ _NOTE_:　　　The sign Assy weighs about 23 kg. The sign Assy is installed at a high location and is unstable, so this work should be performed by at least two people in order to prevent accidents.

(1) Place the sign Assy on top of the projector Assy.

(2) Lift up the right side of the sign Assy (when facing the sign) and connect the connector on the sign Assy to the projector Assy.

(3) Tighten the two Bolt.

Bolt (X 2)
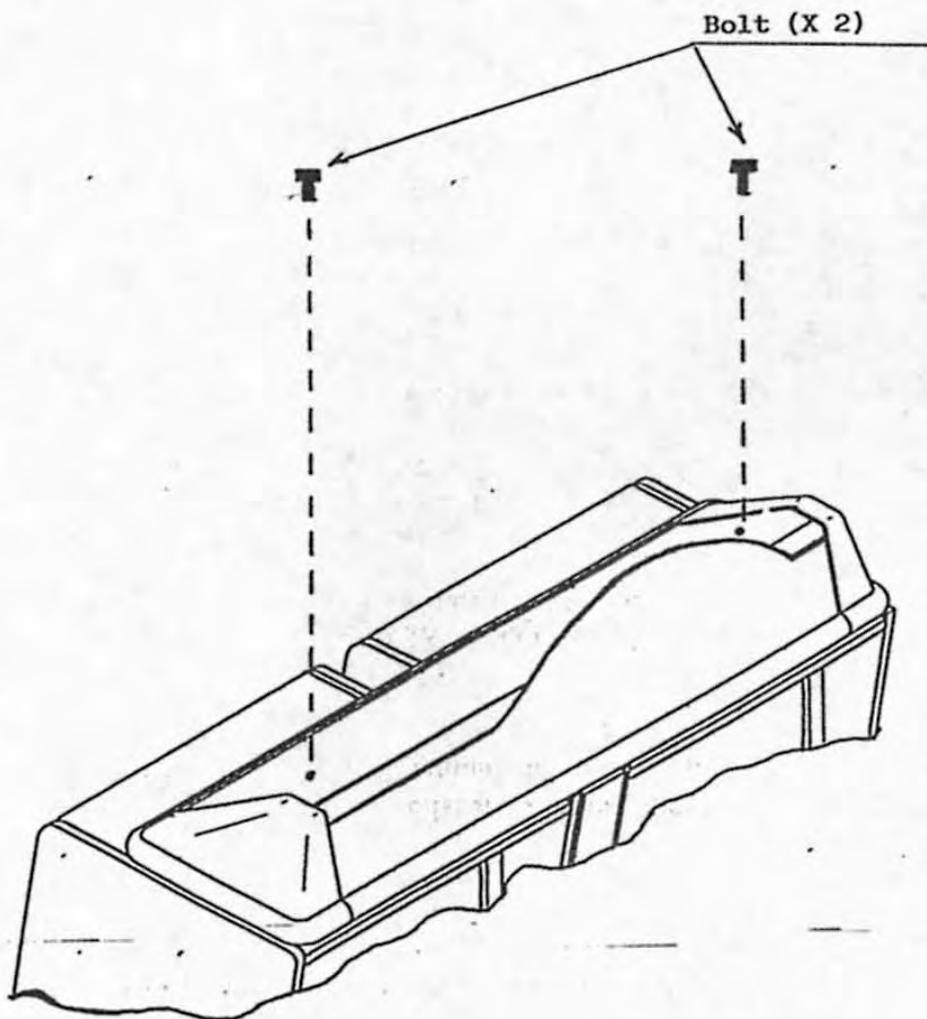
4.4 SETTING THE LINK SWITCH AND CONNECTING THE LINK CABLE

Up to 4 sets (8 seats) can be connected together.

NOTE:

- Each set must be connected to a separate AC outlet.

[Preparation]

(1) Turn off the power switch in the cord box at the rear of the main unit.

(2) Detach the jack cover

(3) Set the link switch to "external" (be sure to set it to "internal" when you don't connect this unit to another one).

(4) Using the supplied link cable, connect the [IN] connector of one unit to the [OUT] connector of another one.

Power Switch

Cord Box

(5) Attach the jack cover by tightening the two cup screws   Be careful with the cable not to be caught by the jack cover. As shown   · pass the link cable through the long hole at the bottom. The long hole at the top will not be used.

(6) Turn on the power to each unit, and check the link function on the GAME OPTIONS Screen in the test mode.

Link

(7) Set the game difficulty levels, the number of laps, the CPU number, and the car type as specified.
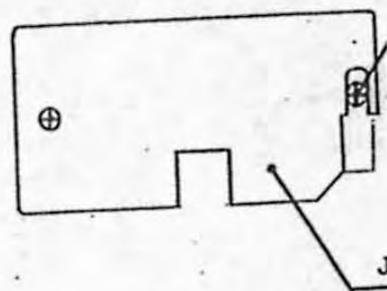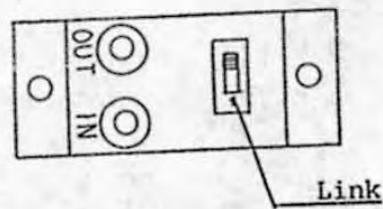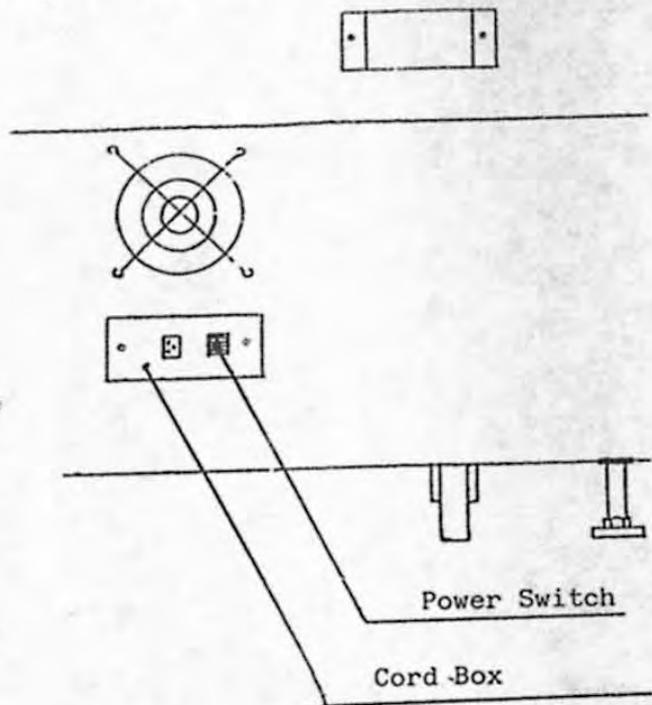
NOTE:

- If you have made the setting other than those specified, the game cannot be pla; normally.

[Connection examples between units]

① For 2 units

| OUT | IN | | OUT | IN |

② For 3 units

| OUT | IN | | OUT | IN | | OUT | IN |

③ For 4 units

| OUT | IN | | OUT | IN | | OUT | IN | | OUT | IN |
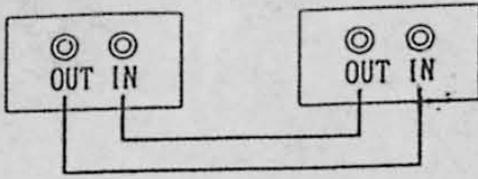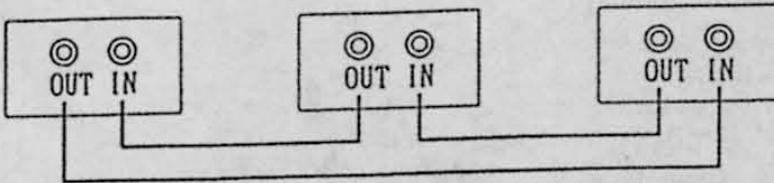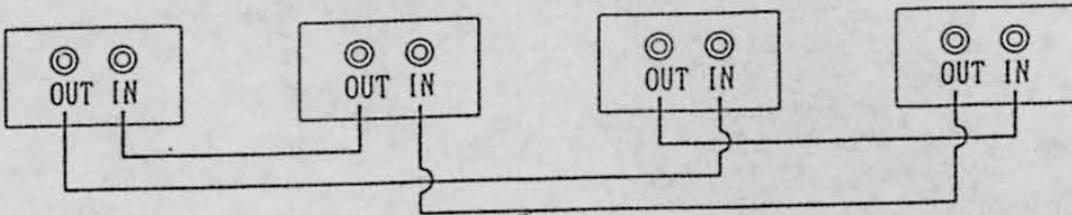
5.2 ADJUSTMENT

5.2.1 Turning on power

After completing the installation, turn on the machine by setting the power switch to "ON". The power switch is located in the cord box.

5.2.2 Adjustment switches

The adjustment switches are located behind the door of the coin assembly.

(1) Service switch

By pressing the service switch, the credit number can be incremented without activating the coin counter.

(2) Test switch

By turning the test switch to "ON" sets the machine in the test mode.

In the test mode, game cost setting can be changed and test for each function can be performed.

(3) Demagnetizing switch

By holding down the demagnetizing switch for about 10 seconds, the monitor can be demagnetized and color impurity if exists on the screen will be removed. Depending on the location of the machine or the conditions of the building, there may be color impurity on the monitor screen caused by terrestrial magnetism.
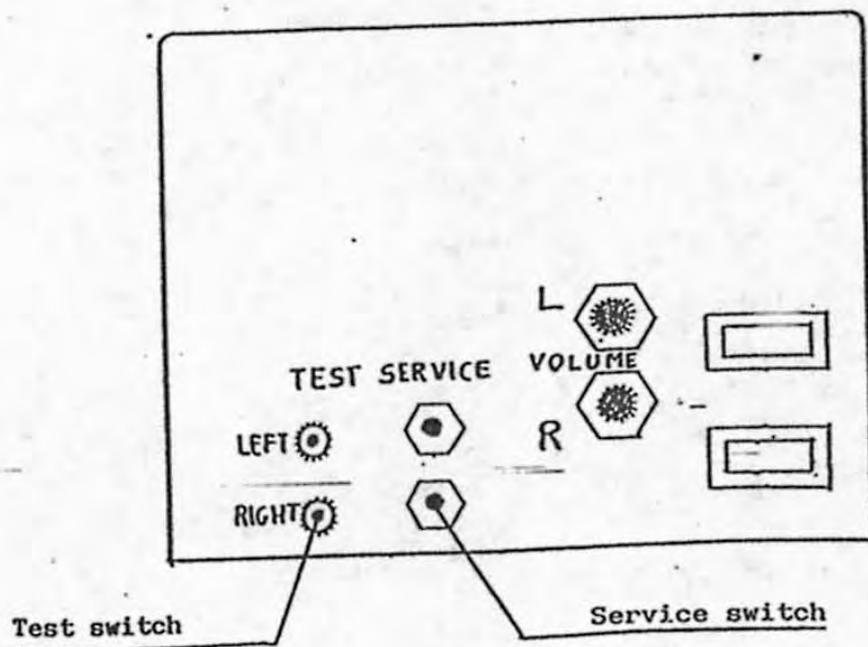
5.3 TEST MODE

(1) Set the test switch to "ON", and the "MENU Screen" appears on the monitor.

(2) Turn the steering wheel in either direction to select the desired test item. The color of selected item changes.

(3) Step on the accelerator pedal (right pedal) to enter the selected test item, and the following pages mentions how to adjust for each test item.

(4) Every time when completing the adjustment for a test item, select "EXIT" from the MENU, and step on the accelerator pedal. (If you are using the SWITCH TEST Screen on page 22, simultaneously step on both the accelerator and the brake pedals.

The MENU will appear again.

(5) After completing the adjustment of all test items, set the test switch to "OFF". The game screen will appear.

Note that the test switch shall be set to "OFF" normally.

```
┌─────────────────────────┐
│                         │
│   M E N U               │──── ① Used to test the control functions.
│                         │
│   CHECK                 │──── ② Used to set the game cost, etc.
│                         │
│   COIN OPTIONS          │──── ③ Used to set the game options,
│                         │
│   GAME OPTIONS          │──── ④ Used to test each switch.
│                         │
│   I/O  TEST             │──── ⑤ Used to adjust the monitor function.
│                         │
│   MONITOR TEST          │──── ⑥ Used to adjust the sound volume.
│                         │
│   SOUND TEST            │──── ⑦ Used to display the collected game data.
│                         │
│   ADS DATA              │──── ⑧ Used to test the game PC board, and also to reset the settings to initial
│                         │      status.
│   OTHERS                │
│                         │
│ IN = STEP ON THE GAS    │
│                         │
└─────────────────────────┘
```

MENU Screen

5.3.1 Testing control functions (CHECK Screen)

Select item (1) "CHECK" from the MENU Screen, and step on the accelerator pedal. The CHECK Screen below will appear.

```
┌─────────────────────────────────┐
│             CHECK               │
│                                 │
│  FEEDBACK STEERING  . ON  ───────── (a) Setting the feed back.
│  STEERING MOTER TEST  OFF ───────── (b) Testing the feed back.
│                                       (This will appear when (a) is set ON.)
│  VIEW SW        OFF       ───────── (c) Viewpoint change switch.
│  STEERING       ±0000     ───────── (d) Steering wheel
│  SHIFT          CENTER SWITCH1 OFF ── (e) Gear shift
│                        SWITCH2 OFF
│
│  EXIT
└─────────────────────────────────┘
```
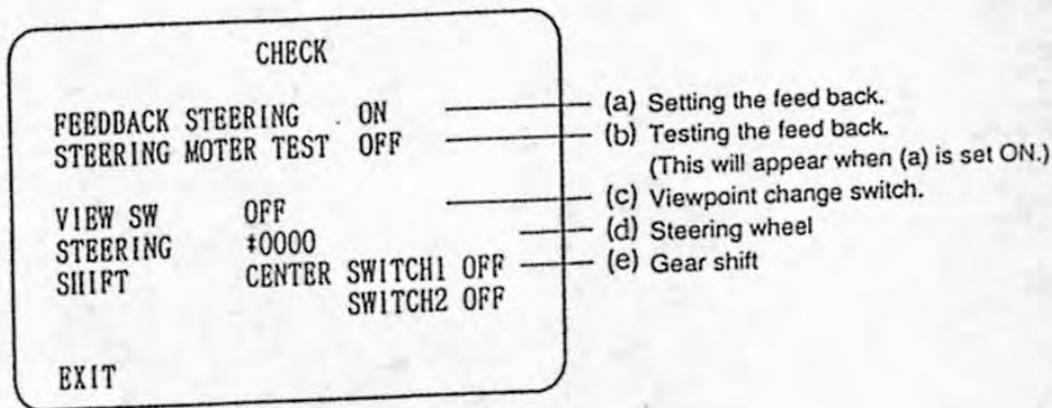
CHECK Screen

(a) This item sets the feed back.

Normally, set this item to "ON".

(b) This item tests the feed back, and it appears by setting item (a) to "ON".

The following describes the test procedure.

1. Turn the steering wheel to set item (a) to "ON", and release your hands from the steering wheel.

2. Step on the accelerator pedal once, and the feed back motor will turn in left or right direction.

3. Step on the accelerator pedal again. The steering wheel will be set in the center position, and the motor will stop.

NOTE:

- Do not touch the steering wheel until the motor stops completely.

(c) This item is to be set "ON" when pressing the viewpoint change button. It is to be "OFF" when release the viewpoint change button.

(d) This item is to be incremented to + when turning the steering wheel to the right. It is to be decremented to - when turning the steering wheel to the left.

(e) This item shows the position of the gear shift, and setting of the two switches.

By moving the gear shift far away from you, switch 1 will be set to "ON" and "DOWN" will appear.

By moving the gear shift toward you, switch 2 will be set to "ON" and "UP" will appear.

Select "EXIT" and step on the accelerator pedal, and the MENU Screen will appear

5.3.2 Setting game costs, etc. (COIN OPTIONS Screen)

Select item ② "COIN OPTIONS" from the MENU Screen, and game cost, etc. can be set. Select the desired item by turning the steering wheel, and step on the accelerator pedal. The color of selected item changes.

Setting of each item can be changed by turning the steering wheel. When the desired setting is made, step on the accelerator pedal again. (See Table 1.)

Upon completion of all the settings, select "EXIT" and step on the accelerator pedal.

The MENU Screen will appear.

```
┌─────────────────────────────┐
│        COIN OPTIONS       .  │
│                              │
│  GAME COST                   │
│     1 COINS 1 CREDIT ────────(a)
│                              │
│  COIN1 MECH VALUE            │
│     1 COIN AS 1 COIN ────────(b)
│  COIN2 MECH VALUE            │
│     1 COIN AS 1 COIN ────────(c)
│                              │
│  FREE PLAY                   │
│     OFF ─────────────────────(d)
│                              │
│                              │
│        EXIT                  │
│                              │
└─────────────────────────────┘
```
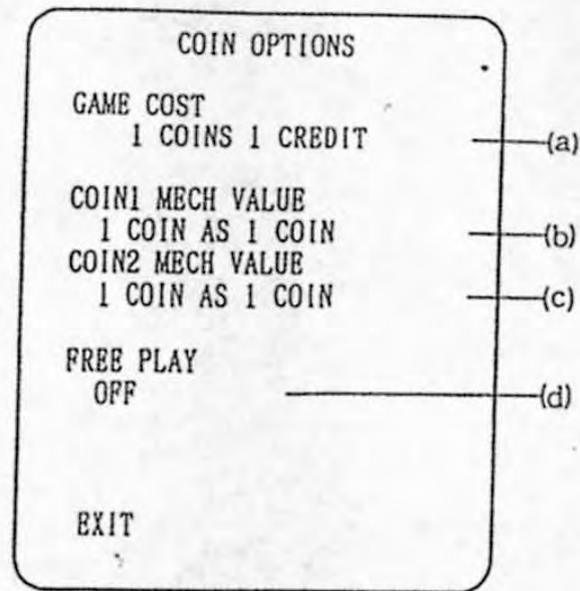
COIN OPTIONS Screen

Table 1   COIN OPTIONS Setting

[◁: standard setting]

Item	Description	
(a) Game cost setting	The number of coins required for 1 game (credit)	1 coin ◁ to 9 coins
(b) Setting for coin 1 Mech	The count number when inserting a coin	1 coin ◁ to 9 coins
(c) Setting for coin 2 Mech	Not used	Not used
(d) Free play	Free play for the game to start by stepping on the accelerator pedal	OFF (not available) ◁ ON (available)

5.3.3 Setting game options (GAME OPTIONS Screen)

Select item ③ "GAME OPTIONS" from the MENU Screen, and settings and difficulty levels of games can be set.

Turn the steering wheel to select the desired item to change, and step on the accelerator pedal. Turn the steering wheel to change the setting of the selected item, and step on the accelerator pedal again to set the desired setting. (See Table 2.)

Selecting "NEXT PAGE" and stepping on the accelerator pedal will display page 2. Selecting "NEXT PAGE" and stepping on the accelerator pedal again will set the display back to page 1.

Upon completion of all the settings, select "EXIT" and step on the accelerator pedal. The MENU Screen will appear.

```
                  GAME OPTIONS [1/2]

      CPU NUMBER      3                    ————— (a)

      LINK ON   4                          ————— (b)

      CAR TYPE        3                    ————— (c)

      DIFFICULTY
        LINKED PLAY   D                    ————— (d)
        SOLO PLAY     D                    ————— (e)
        TIME TRIALS   D                    ————— (f)

      LAPS
        LINKED PLAY          SOLOPLAY
 (g) ——— RR SHORT      3      NOVICE       3 ——— (k)
 (h) ——— CITY          3      INTERMEDIATE 3 ——— (l)
 (i) ——— MOUNTAIN      3      ADVANCED     3 ——— (m)
 (j) ——— MOUNTAIN EX   3      PROFESSIONAL 3 ——— (n)

      NEXT PAGE

      EXIT
```

GAME OPTIONS Screen

Table 2   GAME OPTIONS Setting

Item	Description		
(a) CPU number	Do not assign the same number to two or more machines being connected. (Assign number 1, number 2, and so on from the left when you are facing to the screen.)		
(b) Link function test	The number of seats connected is displayed. When setting only 1 seat alone, "OFF" is displayed.		
(c) Car type	1 BLUE 2 YELLOW 3 RED 4 GREEN 5 BLUE 6 YELLOW 7 RED 8 GREEN	(Assign number 1, number 2, and so on from the left when you are facing to the screen.)	
(d) Game duration for linked play	A (long) to H (short)		[D: Standard setting]
(e) Game duration for one player-play.	A (long) to H (short)		[D: Standard setting]
(f) Game duration for one player/TT	A (long) to H (short)		[D: Standard setting]
(g) Specified number of laps for linked/RIDGE RACER SHORT	3 to 6		[3: Standard setting]
(h) Specified number of laps for linked/CITY	3 to 6		[3: Standard setting]
(i) Specified number of laps for linked/MOUNTAIN	3 to 6		[3: Standard setting]
(j) Specified number of laps for linked/MOUNTAIN EXPERT	3 to 6		[3: Standard setting]
(k) Specified number of laps for one player/beginners class	3 to 6		[3: Standard setting]
(l) Specified number of laps for one player/middle class	3 to 6		[3: Standard setting]
(m) Specified number of laps for one player/advanced class	3 to 6		[3: Standard setting]
(n) Specified number of laps for one player/most advanced class	3 to 6		[3: Standard setting]

NOTES:

- The rank and the number of laps shall be set the same for all machines being connected.

- Assign CPU number 1 to the far left seat when you are facing to the screen. Then, assign CPU numbers 2, 3, 4 and so on in order to the next seat on the right. The last CPU number shall be equal to the number of connected seats.

- Games cannot be played normally if any CPU number assignment other than this way has been made.

- If you made incorrect setting, reset the CPU numbers by referring to the CPU number setting status displayed on the screen.

```
┌─────────────────────────────────────┐
│          GAME OPTIONS [2/2]          │
│                                      │
│   SPEED            KM/H ──────── (o)  │
│                                      │
│   SOUND IN ATTRACT ON ─────────── (p) │
│                                      │
│   ATTRACT DISPLAY                    │
│     EXTRA LAPS     OFF ────────── (q) │
│     EASY SETTING   OFF ────────── (r) │
│                                      │
│   HI-SCORE INIT    NO ─────────── (s) │
│                                      │
│   FEEDBACK STEERING OFF ───────── (t) │
│                                      │
│   EXTRA MODE       OFF ────────── (u) │
│                                      │
│   NEXT PAGE                          │
│                                      │
│   EXIT                               │
└─────────────────────────────────────┘
```

GAME OPTIONS Screen

Table 3   GAME OPTIONS Setting

[◁: Standard setting]

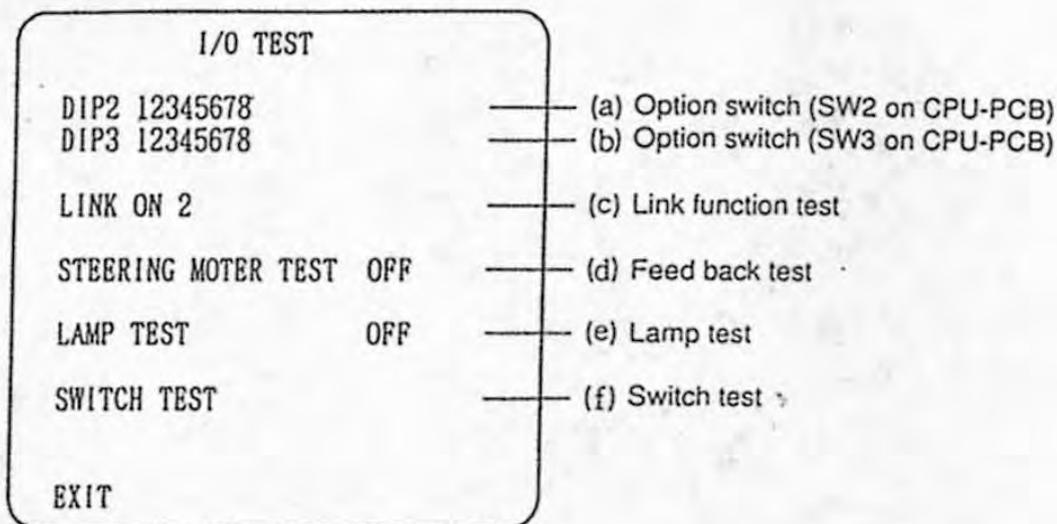| Item	Description	
(o) Unit of speed	km/h (kilometers) ◁ mph (miles)	(Do not change the setting. Display will not be normal if changed.)
(p) Sound for attraction	ON (Enabled) ◁ OFF (Disabled)	
(q) Display for attraction [Display for extended number of laps]	ON (Enabled) OFF (Disabled) ◁	(Even when you set this to "ON", there will be no display if the number of specific laps has not been increased.)
(r) Display for attraction [Display for EASY setting]	ON (Enabled) OFF (Disabled) ◁	(Even when you set this to "ON", there will be no display if the time duration of the game has not been increased.)
(s) Initialization for high scores	ON (Enabled) OFF (Disabled) ◁	(When setting this to "ON", the record time of all courses will be initialized.)
(t) Setting for the feed back	ON (Enabled) OFF (Disabled) ◁	(Do not change this setting when you have completed the setting on the CHECK page.)
(u) Extra lap mode (*)	ON (Enabled) OFF (Disabled) ◁	(When setting this to "ON", all the games will be set in extra lap mode.)

* Note on (u) Extra lap mode

When you set (u) Extra lap mode to "ON", the number of laps will be set 12.

In this case, the game time duration setting and the specified lap setting (items "d" to "n") will be fixed. When setting this item to "OFF", these settings will be reset to standard settings.

5.3.4 Testing switches (I/O TEST Screen)

Select item (4) "I/O TEST" from the MENU Screen, and the following I/O TEST Screen will appear.

```
 ┌─────────────────────────────┐
 │        I/O TEST             │      ──── (a) Option switch (SW2 on CPU-PCB)
 │   DIP2 12345678             │      ──── (b) Option switch (SW3 on CPU-PCB)
 │   DIP3 12345678             │
 │                             │      ──── (c) Link function test
 │   LINK ON 2                 │
 │                             │      ──── (d) Feed back test
 │   STEERING MOTER TEST  OFF  │
 │                             │      ──── (e) Lamp test
 │   LAMP TEST            OFF  │
 │                             │      ──── (f) Switch test
 │   SWITCH TEST              │
 │                             │
 │   EXIT                     │
 └─────────────────────────────┘
```

I/O TEST Screen

(a) This item shows the setting of option DIP switch 2 on the game PC board (SW2 on CPU-PCB). If the numbers appear in red, the corresponding switch elements are set to "ON". Setting is made normal when all switch elements are set to "OFF".

(b) This item shows the setting of option DIP switch 3 on the game PC board (SW3 on CPU-PCB). If the numbers appear in red, the corresponding switch elements are set to "ON". Setting is made normal when all switch elements are set to "OFF".

(c) This item shows the number of seats being installed.

When operating with one seat alone, "OFF" appears.

(d) This item is used to test the feed back. To test, perform the following steps.

1. Turn the steering wheel to set item (d) to "ON", and release your hands from the steering wheel.

2. Step on the accelerator pedal once, and the feed back motor will turn in left or right direction.

3. Step on the accelerator pedal again. The steering wheel will be set in the center position, and the motor will stop.

NOTE:

* Do not touch the steering wheel until the motor stops completely.

* This item does not appear if the feed back has not been set to "ON" the CHECK Screen or on the GAME OPTIONS Screen.

(e) This item is used to test the lamp. Turn the steering wheel to set this item to "ON", and the lamp lights up.

(f) This item is used to test the switches. (See the next page.)

Select "EXIT" and step on the accelerator pedal, and the MENU Screen will appear.

5.3.5 Testing switches (SWITCH TEST Screen)

Select (f) "SWITCH TEST" from the I/O TEST Screen, and the following screen will appear.

```
┌─────────────────────────────────────┐
│         I/O TEST                     │
│                                      │
│   SWITCH TEST                        │
│                                      │
│     STEERING   ‡0000         ──── (a) Steering wheel
│     GAS        ‡0000         ──── (b) Accelerator
│     BRAKE      ‡0000         ──── (c) Brake
│                                      │
│     SHIFT      CENTER   SWITCH1 OFF  ──── (d) Gear shift
│                         SWITCH2 OFF  │
│                                      │
│     SERVICE    OFF           ──── (e) Service switch
│     COIN       OFF           ·─── (f) Coin switch
│     VIEW       OFF           ──── (g) Viewpoint change switch
│                                      │
│   EXIT=STEP ON THE GAS AND BRAKE     │
└─────────────────────────────────────┘
```
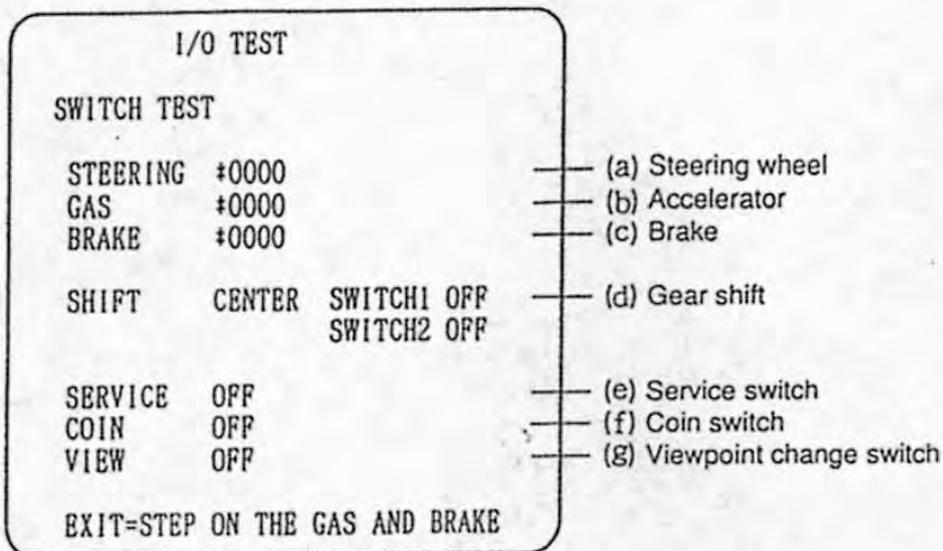
SWITCH TEST Screen

(a) This item is to be incremented to + when turning the steering wheel to the right. It is to be decremented to - when turning the steering wheel to the left. When the steering wheel is set at the center, the figure is about 0000 (it is normal that the lowest 1 digit changes). This setting is normal when "OK" appears to the right of the displayed figure just before the steering wheel is fully turned.

(b) Stepping on the accelerator pedal increases the number (+). When releasing the accelerator, the figure is about 0000 (it is normal that the lowest 1 digit changes). This setting is normal when "OK" appears to the right of the displayed figure just before the accelerator pedal is fully depressed.

(c) Stepping on the brake pedal increases the number (+). When releasing the brake, the figure is about 0000 (it is normal that the lowest 1 digit changes). This setting is normal when "OK" appears to the right of the displayed figure just before the brake pedal is fully depressed.

(d) This item shows the gear shift positions (CENTER, UP, and DOWN), and the statuses of two switches.

By moving the gear shift far away from you, switch 1 will be set to "ON" and "DOWN" will appear.

By moving the gear shift toward you, switch 2 will be set to "ON" and "UP" will appear.

(e) This item is set to "ON" when the service switch behind the coin door is pressed.

(f) This item is set to "ON" when the coin switch is set to "ON".

(g) This item is set to "ON" when the viewpoint change button is pressed.

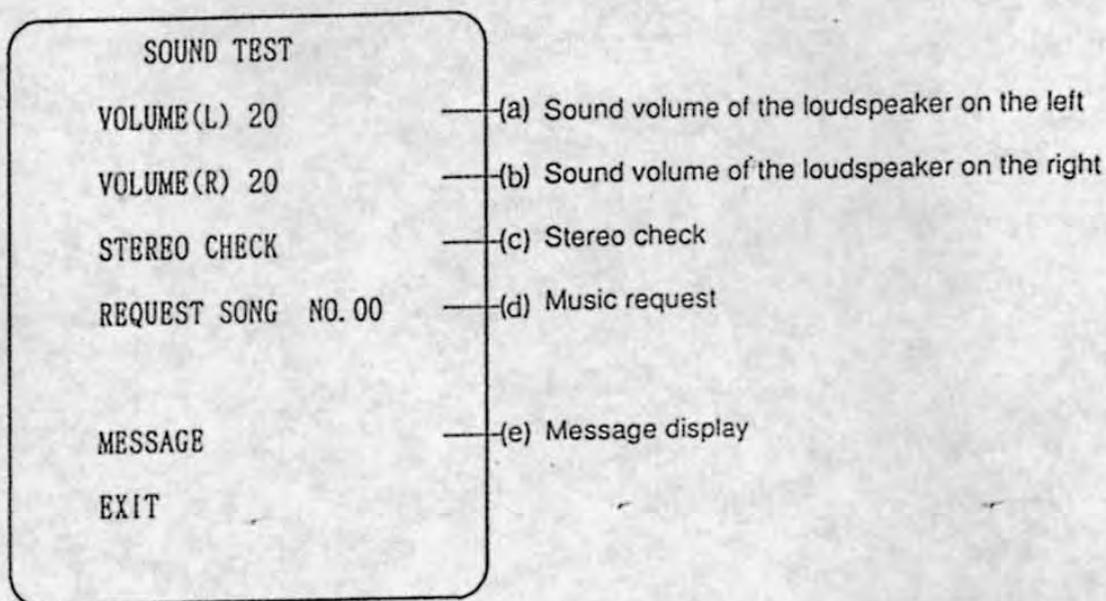Upon completion of the switch test, simultaneously depress the accelerator and brake pedals. Then, the I/O TEST Screen will appear.

5.3.6 Adjusting monitor (MONITOR TEST Screen)

Select item (5) "MONITOR TEST" from the MENU Screen, and the items for monitor adjustment will appear. Stepping on the accelerator pedal changes the display from one item to another. Step on the brake pedal to go back to the MENU Screen.

5.3.7 Sound volume adjustment, etc. (SOUND TEST Screen)

Select item (6) "SOUND TEST" from the MENU Screen to adjust the sound volume. The following SOUND TEST Screen will appear on the monitor.

```
SOUND TEST

VOLUME (L) 20        ─(a) Sound volume of the loudspeaker on the left

VOLUME (R) 20        ─(b) Sound volume of the loudspeaker on the right

STEREO CHECK         ─(c) Stereo check

REQUEST SONG  NO. 00 ─(d) Music request


MESSAGE              ─(e) Message display

EXIT
```

SOUND TEST Screen

(1) Turn the steering wheel and step on the accelerator pedal while item (a) or (b) is blinking in red. Then, the figure on the right will start to blink. Turn the steering wheel to the right, and the number increases. Turn the steering wheel to the left, and the number decreases. Sound volume can be set in 64 steps from "00" (at minimum) to "3F" (at maximum). It is factory-set to "20". When you reach the desired sound volume level, step on the accelerator pedal.

(2) Select item (c) and step on the accelerator pedal. Sound can be heard from the left loud speaker, the right loudspeaker, and then both the left and right loudspeakers in that order. At the same time, item (e) for the message display shows "LEFT", "RIGHT", and then "CENTER", respectively.

(3) Select item (d) and step on the accelerator pedal. A music or an effect sound will be output however, the sound stops automatically in 4 seconds. Then, step on the brake pedal.

Select "EXIT" and step on the accelerator pedal. Then, the MENU Screen will appear.

5.3.8 Displaying game data (ADS DATA Screen)

Select item (7) "ADS DATA" from the MENU Screen, and the following ADS data screen will appear. (See Table 4.)

Select "EXIT" and step on the accelerator pedal. Then, the MENU Screen will appear.

```
          ADS DATA  [1/2]
 ON TIME      000H00M00S ────(a)
 PLAY TIME    000H00M00S ────(b)
  1P   PLAY 000H00M00S  ────(c)
  TT   PLAY 000H00M00S  ────(d)
  LINK PLAY 000H00M00S  ────(e)
 TOTAL PLAY  0000000    ────(f)
 AVARAGE TIME   00M00S  ────(g)

              AT     MT     TOTAL
  1P   PLAY  000000 000000 0000000 ──(h)
  TT   PLAY  000000 000000 0000000
  LINK PLAY  000000 000000 0000000
  TOTAL      0000000 0000000

 ADS CLEAR   NO              ──(i)
 ADS USE     NO              ──(j)

 NEXT PAGE

 EXIT
```

ADS DATA Screen

Table 4   ADS DATA

Item	Description
(a) Total power-on time duration	Shows the total power-on time duration from power-on to now.
(b) Total play time duration	Shows the accumulated play time duration.
(c) Play time duration for one player play	Shows the accumulated play time duration for one player play (except for TT).
(d) Game time duration for TT	Shows the accumulated play time duration for TT.
(e) Play time duration for linked play	Shows the accumulated play time duration for linked play.
(f) Total number of times of play	Shows the total number of times of play.
(g) Play time duration average	Shows the average play time duration per play.
(h) Number of plays per game type	Shows the play times per game type (one player/TT/linked) and per selected gear shift type (AT/MT), separately.
(i) Initialization of data	YES (Initialize) (When set to "YES", NO (Not initialize) ◁ the collected game data will be reset.)
(j) Use of ADS	YES (Enabled) (When set to "YES", NO (Disabled) ◁ the game data will be collected.)

```
                 ADS DATA [2/2]
      1P
                  LAP TIME       TOTAL TIME
      NOVICE       00M00S0000     00M00S0000     ──(k)
      INTERMEDIATE 00M00S0000     00M00S0000     ──(l)
      ADVANCED     00M00S0000     00M00S0000     ──(m)
      PROFESSIONAL 00M00S0000     00M00S0000     ──(n)


      TT
                  LAP TIME       TOTAL TIME
      NOVICE       00M00S0000     00M00S0000     ──(o)
      INTERMEDIATE 00M00S0000     00M00S0000     ──(p)
      ADVANCED     00M00S0000     00M00S0000     ──(q)
      PROFESSIONAL 00M00S0000     00M00S0000     ──(r)




      NEXT PAGE

      EXIT
```
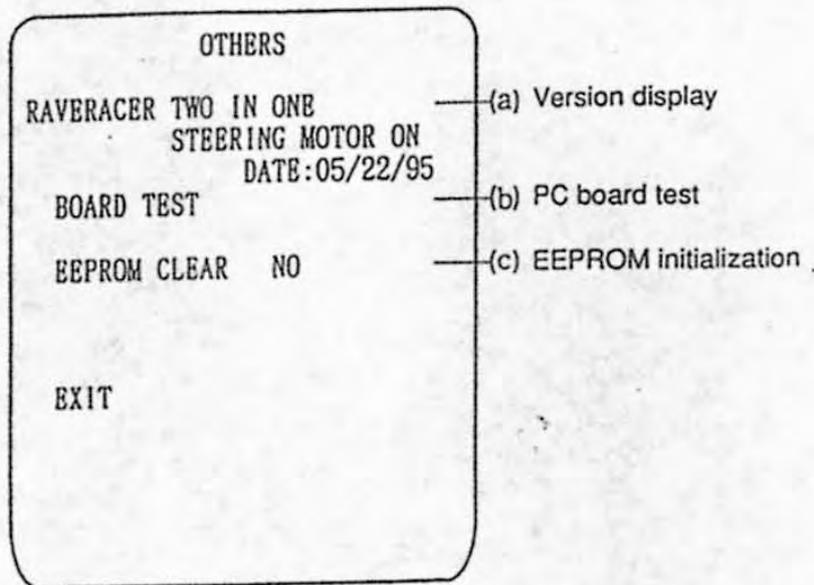
ADS DATA Screen

Table 5   ADS DATA

Item	Description
) Record time for one player/beginners' class	Shows the record of the lap time and the total time.
) Record time for one player/middle class	Shows the record of the lap time and the total time.
) Record time for one player/advanced class	Shows the record of the lap time and the total time.
) Record time for one player/most advanced class	Shows the record of the lap time and the total time.
) Record time for TT/beginners' class	Shows the record of the lap time and the total time.
) Record time for TT/middle class	Shows the record of the lap time and the total time.
) Record time for TT/advanced class	Shows the record of the lap time and the total time.
Record time for TT/most advanced class	Shows the record of the lap time and the total time.

Select "EXIT" and step on the accelerator pedal. Then, the MENU Screen will appear.

5.3.9 Others (OTHERS Screen)

Select item (8) "OTHERS" from the MENU Screen, and the following OTHERS Screen will appear.

```
┌──────────────────────────────┐
│           OTHERS             │
│                              │
│ RAVERACER TWO IN ONE    ────(a) Version display
│       STEERING MOTOR ON      │
│          DATE:05/22/95       │
│ BOARD  TEST             ────(b) PC board test
│                              │
│ EEPROM CLEAR    NO      ────(c) EEPROM initialization
│                              │
│                              │
│                              │
│ EXIT                         │
│                              │
│                              │
│                              │
└──────────────────────────────┘
```

OTHERS Screen

(a) Version display

This item shows the game name, the cabinet name, setting status of the feed back, and the manufacturing date.

(b) PC board test

This item is used to test the PC board.

(c) EEPROM initialization

This item resets all settings, record times, etc. to their initial values when set to "YES" and step on the accelerator pedal.

Select "EXIT" and step on the accelerator pedal. Then, the MENU Screen will appear.

5.4 ADJUSTMENT ON PARTS REPLACEMENT (INITIALIZATION)

NOTE:

The following steps of adjustments are required when the game PC board, the ROM, the steering wheel assembly, the pedal assembly, and/or the volume controls are replaced. Otherwise, the game cannot be played normally.

(1) Release your foot from either the accelerator or the brake.

(2) Position the steering wheel at its center (be straight when viewed from the front), and release your hands.

(3) Open the coin door.

(4) While holding down the service switch behind the coin door, set the test switch to "ON". Then, the following ADJUST Screen will appear on the monitor.

```
ADJUST

STEERING    0000

GAS         0000

BRAKE       0000
```

ADJUST Screen

(5) Press again the service switch.

Initialization is successfully complete when the figures next to "STEERING", "GAS", and "BRAKE" are set about "0000".

(6) Set the test switch to "OFF", and the game screen will be restored.

5.5 CHECK

· Check items before starting operation

(1) Installation check

   ① Are the level adjusters fixed firmly?

   ② Are the screws   securely hold the main unit assem-
   bly and the seat assembly?

(2) Operation check (Set the power switch to "ON" and perform the checks with the
   machine being powered.)

   ① Is the sound output normal?

   ② Are the fluorescent lamps and other lamps lit?

   ③ Is the video screen normal?

   ④ Does the car swing when turning the steering wheel?

   ⑤ Does the accelerator function normally?

   ⑥ Does the brake function normally?

   ⑦ Does the gear shift mechanism function normally?

Be sure to check all the items above.

⚠ *DANGER*: When performing daily maintenance, make sure that the power plug to this game has been removed and that the power has been turned OFF, so that the person performing the maintenance or other persons are not injured or receive electric shock.

⚠ *DANGER*: When performing work that is not described in this manual, contact the service center listed on the back cover of this manual, and receive instructions or answers to questions from the service center.

6..1 REPLACING THE FUSE

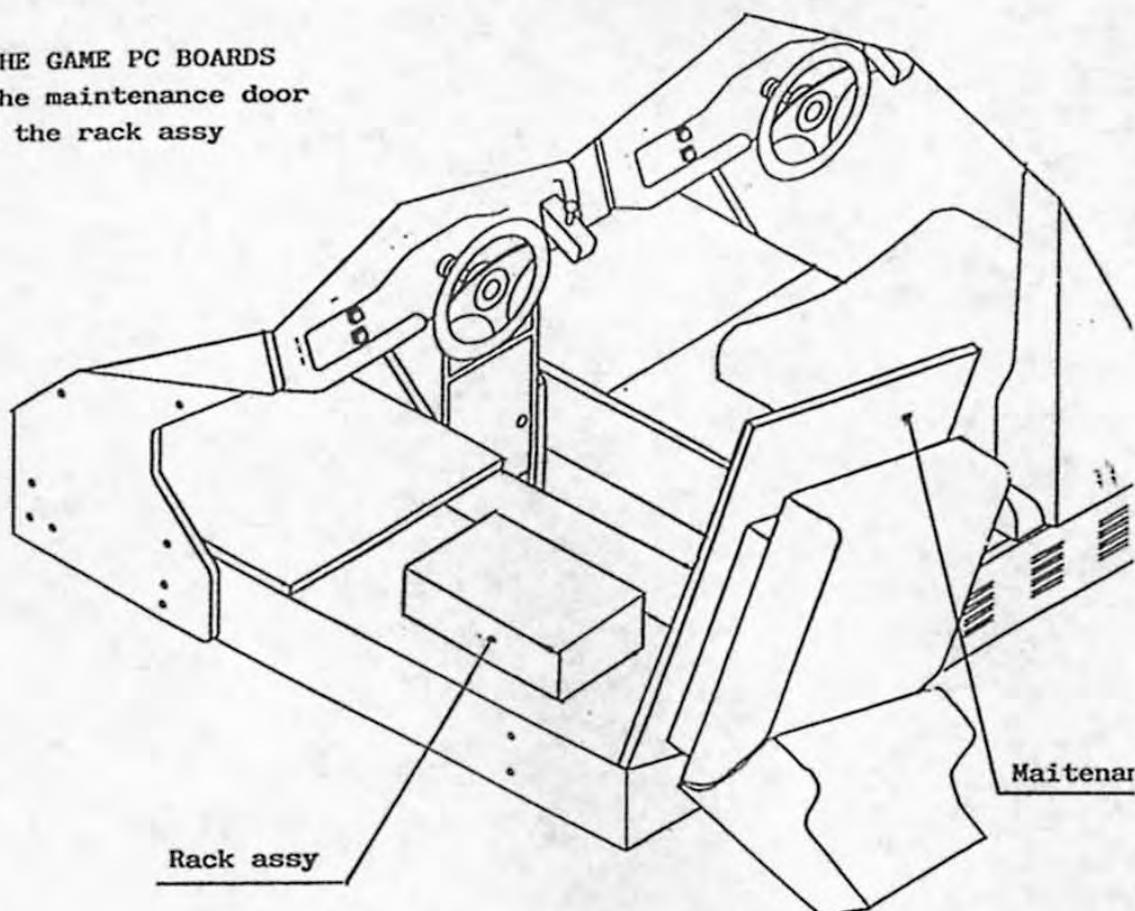The fuse is located in the rear panel of the projector assy.
Replace the fuse with specified fuse:
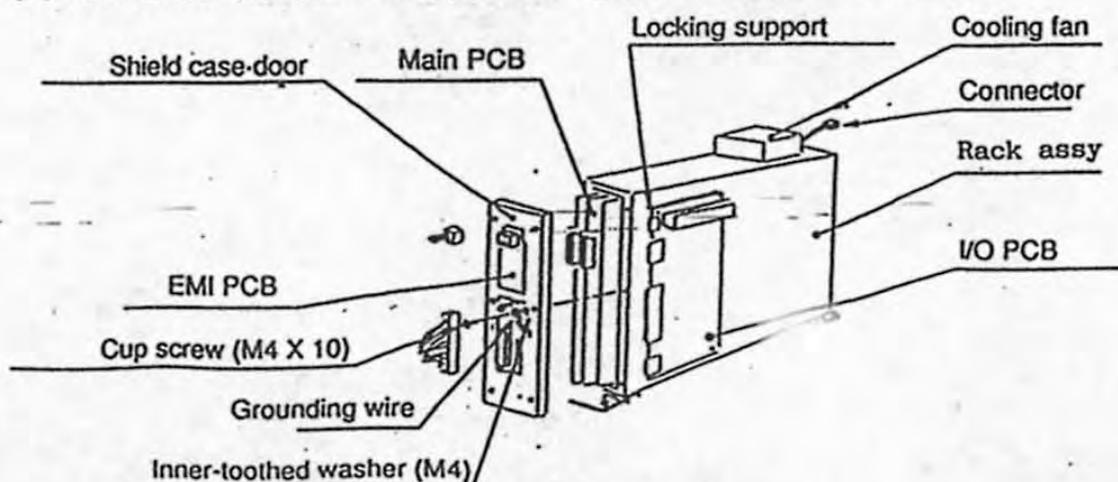
For 220 V power supply: Glass-tube fuse 250 V,5 A

Fuse holder
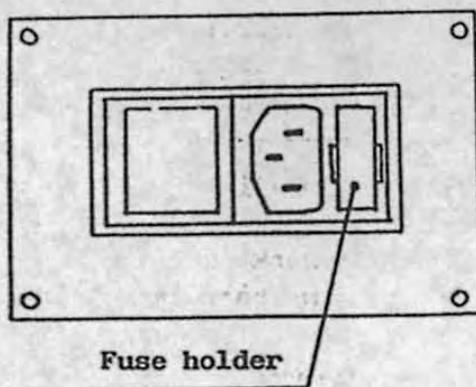
6.2 REMOVING THE GAME PC BOARDS
(1) Open the maintenance door
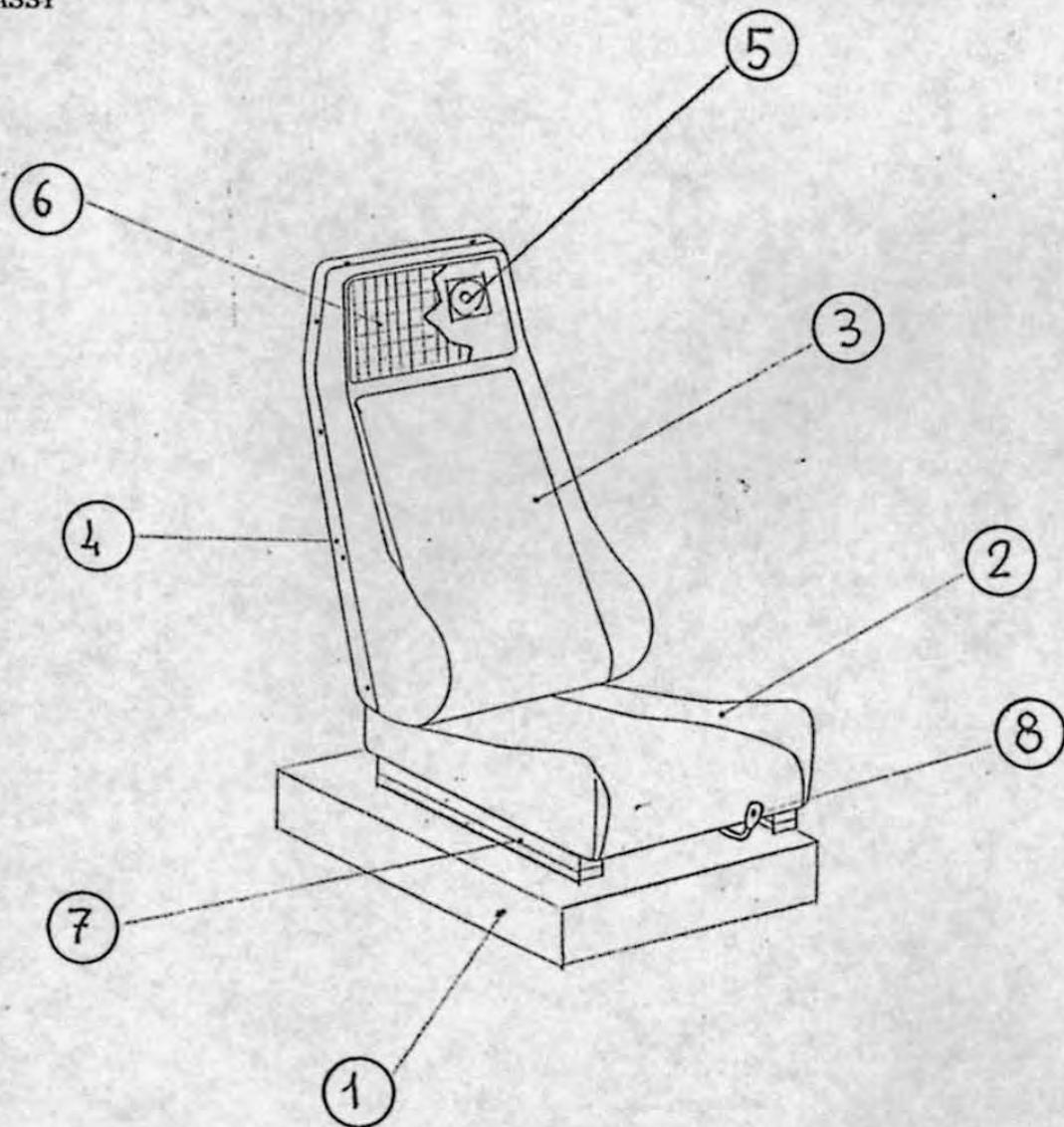(2) Remove the rack assy

Rack assy

Maitenar

6.3 DETACHING THE RACK ASSY

(1) Detach the rear cover
(2) Remove the screw used to hold the rack assy with control board assy.
(3) Remove the connector (one connector) from the cooling fan.
(4) Slightly pull out rack assy towords you.
(5) Disconnect the EMI PCB connector (two connector), and remove the cup screw (M4 X 10) used to hold the grounding wire at the door of the rack assy. (Be careful not to lose the inner-toothed washer.)
(6) Disconnect the I/O PCB connectors (four connectors).
(7) Detach the rack assy.
(8) To attach the rack assy, reversely perfom the above steps.

Locking support   Cooling fan

Shield case-door   Main PCB   Connector

Rack assy

EMI PCB   I/O PCB

Cup screw (M4 X 10)

Grounding wire

Inner-toothed washer (M4)

7 PART LIST

7.1 SEAT ASSY

N.	PART NAME	Q.TY	PART NUMBER
1	SEAT WOOD BASE	1	450–410
2	SEAT PLASTIC	1	450–411
3	BACK PLASTIC	1	450–412
4	COVER PLASTIC	1	450–413
5	SPEAKER	2	450–414
6	SPEAKER GRILL	1	450–415
7	MOVING BAR	2	450–416
8	BAR KNOB	1	450–417
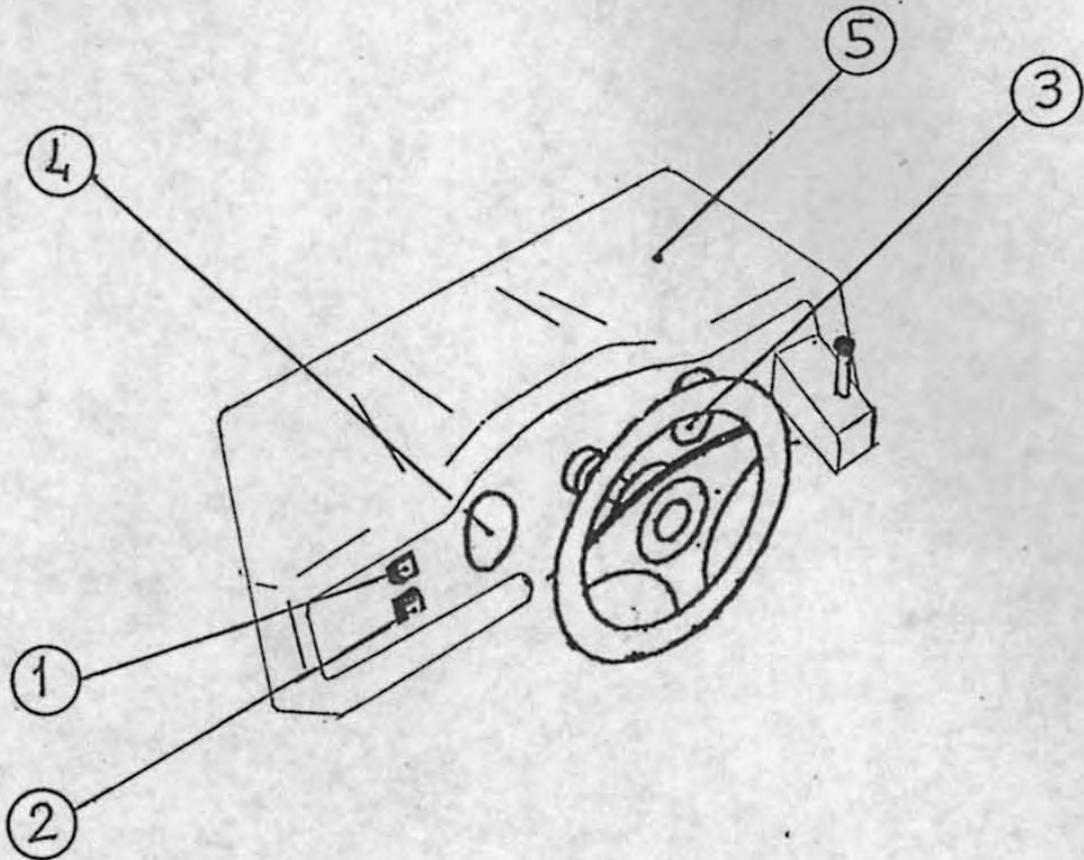
N.	PART NAME	Q.TY	PART NUMBER
1	START PUSH BUTTON	1	450–420
2	CH.VIEW PUSH BUTTON	1	450–421
3	STICKER 1	1	450–422
4	STICKER 2	1	450–423
5	PANER COVER	1	450–424

N.	PART NAME	Q.TY	PART NUMBER
1	MAIN SHAFT	1	463-711E
2	MOTOR BRACKET	1	463-713E
3	PILLOW BLOCK	2	463-028E
4	STEERING PULLEY P130-15	1	463-407E
5	TIMING BELT 513-15	1	463-408E
6	MOTOR PULLEY P26-15	1	463-409E
7	MOTOR	1	463-410E
8	COLLAR	2	463-411E
9	STOPPER BLOCK	1	463-412E
10	RUBBER STOP CILINDER	1	463-413E
11	CENTER CAP	1	463-414E
12	NAMCO LOGO STICKER	1	295-011
13	STEERING WHEEL	1	463-415E

①
③
④
②
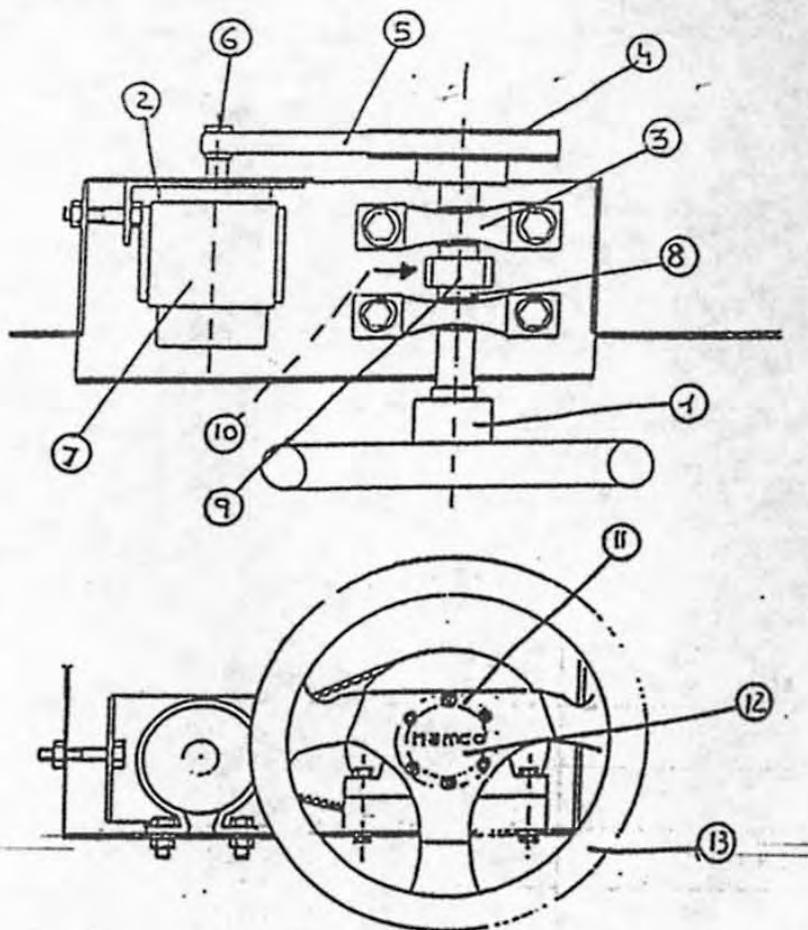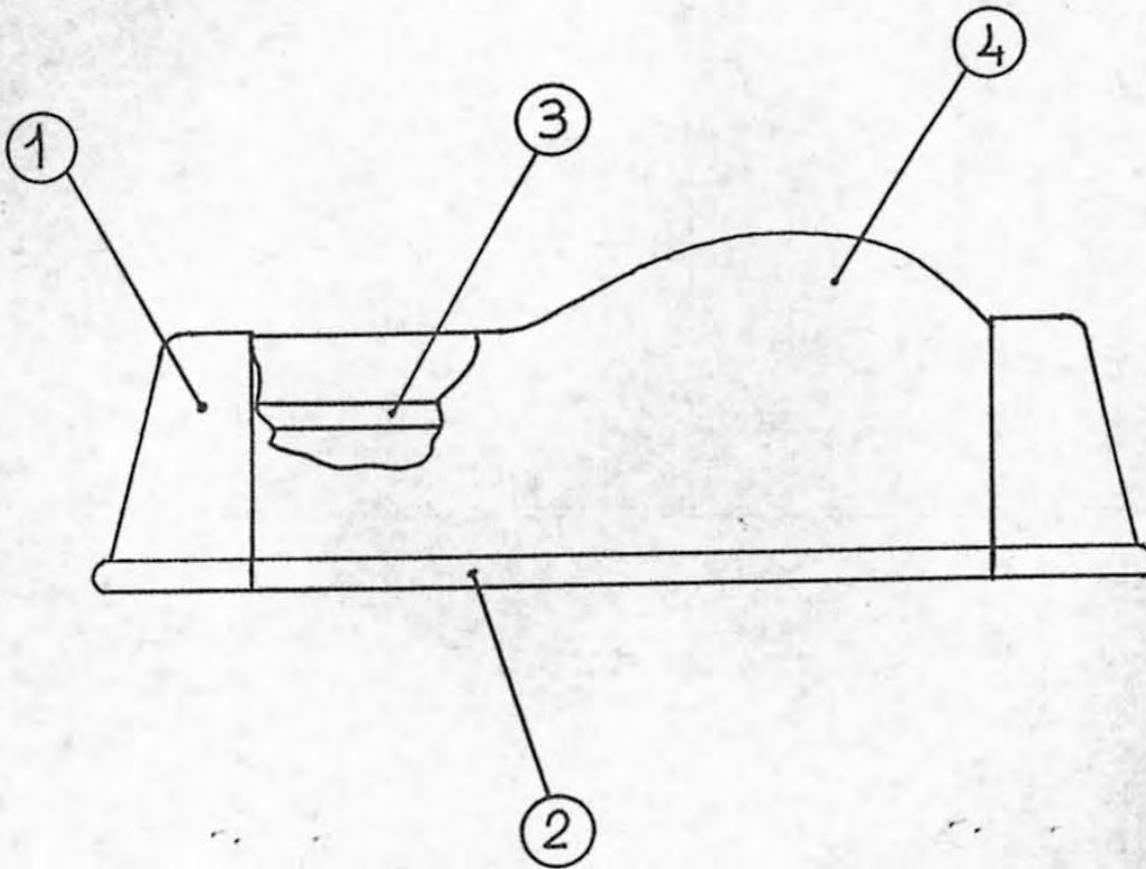
N.	PART NAME	Q.TY	PART NUMBER
1	SIDE COVER	2	450–430
2	SIGN	1	450–431
3	FLUORESCENT LAMP	1	450–432
4	SIGN PANEL	1	450–433
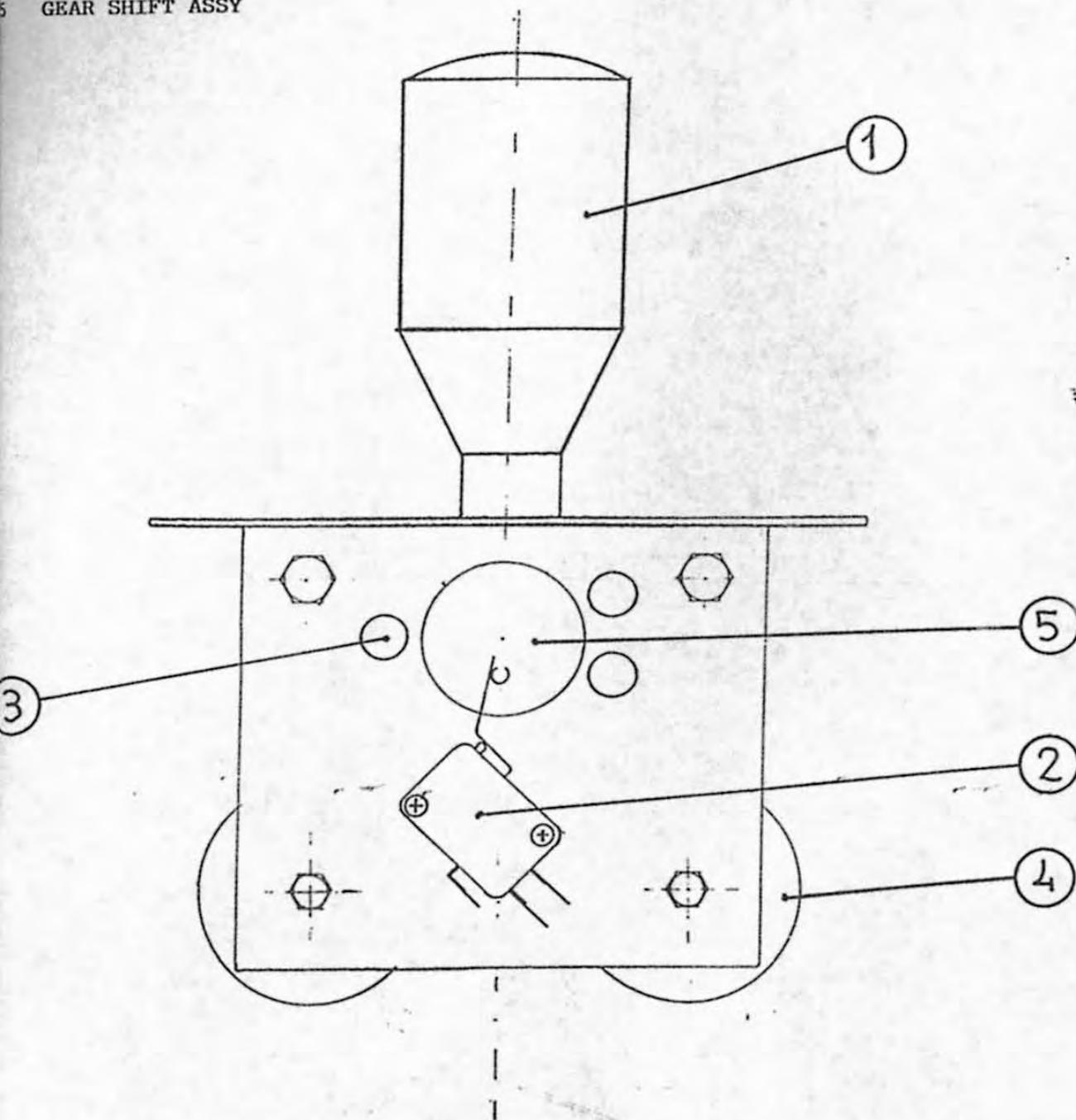
N.	PART NAME	Q.TY	PART NUMBER
1	SIDE LEVER	1	450–440
2	MICROSWITCH	1	450–441
3	STOP RING + LEVER	1	450–442
4	STOPPER RUBBER	2	450–443
5	CENTER BOSS	1	450–444
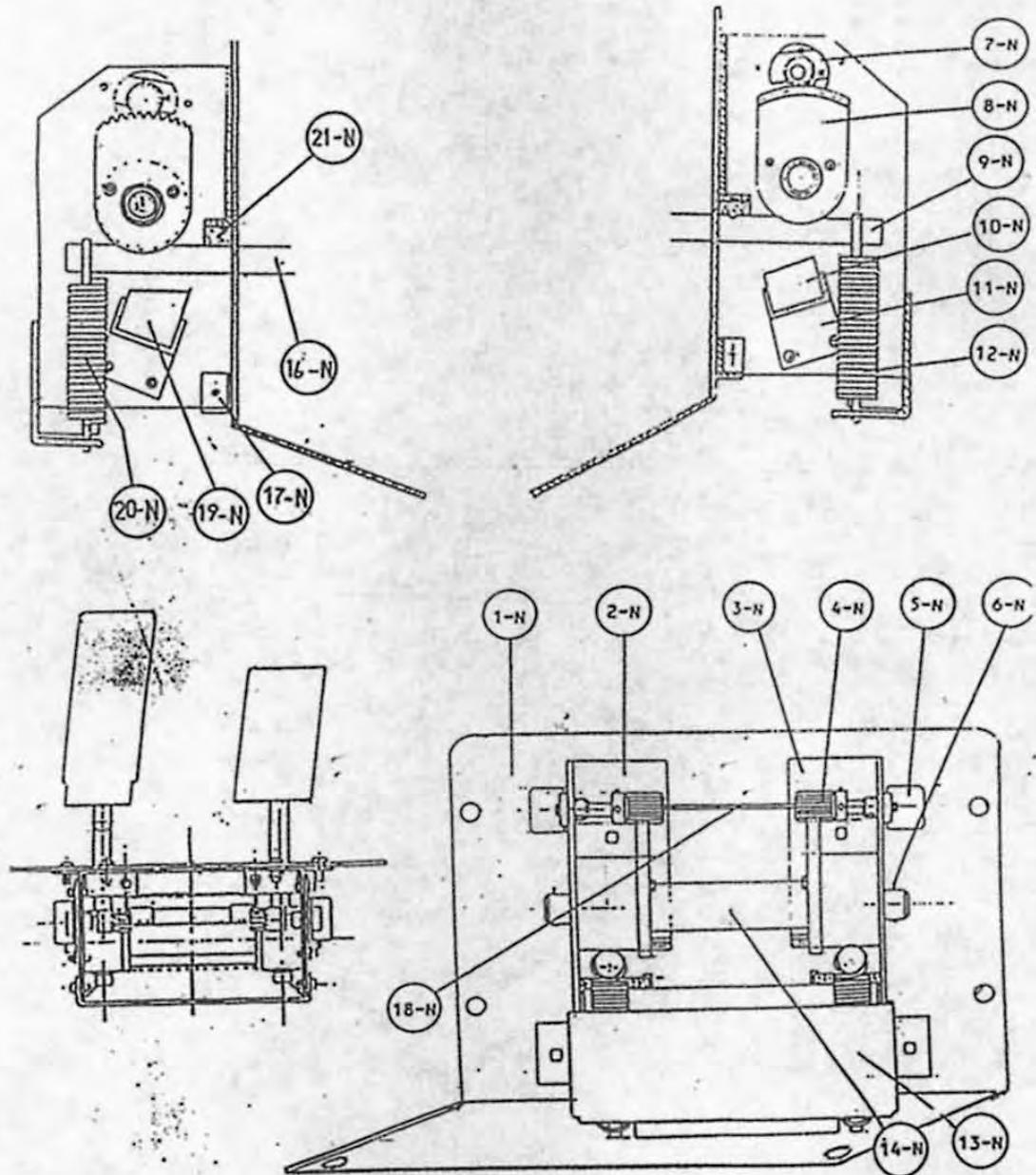
No.	Names of Parts	Q'ty	Parts No.	No.	Names of Parts	Q'ty	Parts No.
1	Foot plate 50-8372-00	1	350-001	12	Brake spring	1	350.0122
2	Left Side	1	350-002	13	Spring-plate	1	350.013
3	Right Side	1	350-003	14	Spacer	1	350.014
4	Toothed pignon-gear	2	350-004	15	Not used		
5	Potentiometer	2	350-005	16	Accelerator pedal	1	350.016
6	Pedal Axis	1	350-006	17	Connecting plate	1	350.017
7	Potentiometer plate	2	350-007	18	Brass axil	1	350.018
8	plastic tooth gear	2	350.008	19	Accelerator rubber	1	350.019
9	brake pedal	1	350.009	20	Accelerator spring	1	350.020
10	brake rabbet	1	350.010	21	Rest rubber	1	350.021
11	support rabber	1	350.011				

O. WIRING DIAGRAM

.Overall wiring diagram

Main unit assembly

FLUORESCENT LAMP

Monitor assembly (L) (R)
29 inch monitor

FILTER

10 AMP

220v AC
MAINS
IN

IN OUT

Relay PCB assembly

Lamp driver PCB assy

Switch assy
(L) (R)

Pedal assembly (L) (R)

Steering drive PCBAssy

steering

Coin assembly

Service bracket assembly

Coin door

Coin switch (L)
Coin counter assembly

Coin switch (R)
Coin counter assembly

Seat assembly (L) (R)
Seat base harness assembly (L) (R)
Seat speaker assembly (L) (R)

Cabinet assembly (L) (R)