

LASER GRAND PRIX™



**SERVICE INSTRUCTIONS
AND PARTS CATALOG**



TAITO CORPORATION

PREFACE

When setting up this "Laser Grand Prix", never fail to read the Section 2 (Notes for Setting Place) and the Section 3 (Notes for Handling) of this manual.

The setting work includes the connection of the Cabinets, the setting of the Player, the setting of the Disc, and the attaching of the Display Panel.

Again, when setting up this game, carefully read the handling explanation and the stickers attached on the Cabinet.

Specifications:

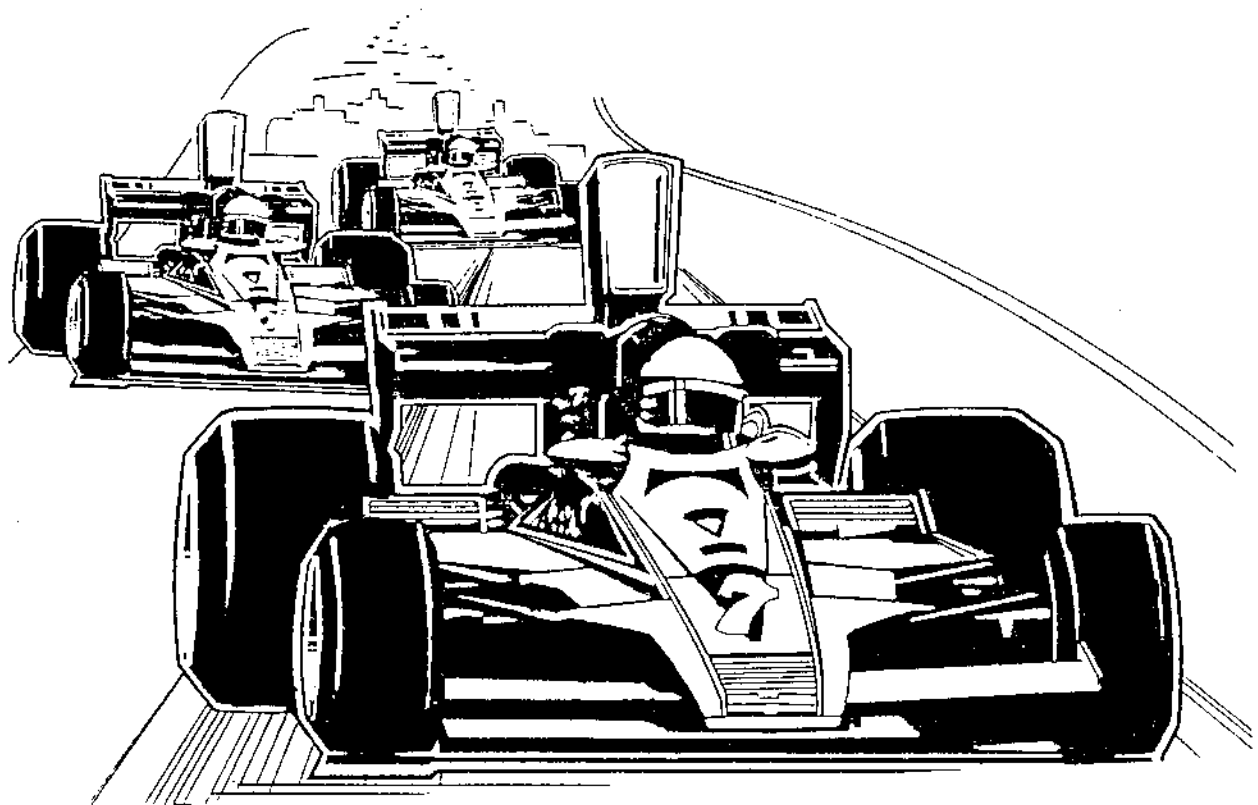
- 1) Power Source
100 VAC (50/60 Hs)
- 2) Power Consumption
230 W
- 3) Play Pricing
1 coin - 1 play (adjustable)
- 4) Dimensions of the Cabinet Assy
750 Width x 2,306 Depth x 1,813 Height (mm)
- 5) Weight
Main Cabinet 126 Kg
Seat Cabinet 77.4 Kg
Player 24.3 Kg
Monitor 22.5 Kg

(The Player and the Monitor are included in the Cabinet.)

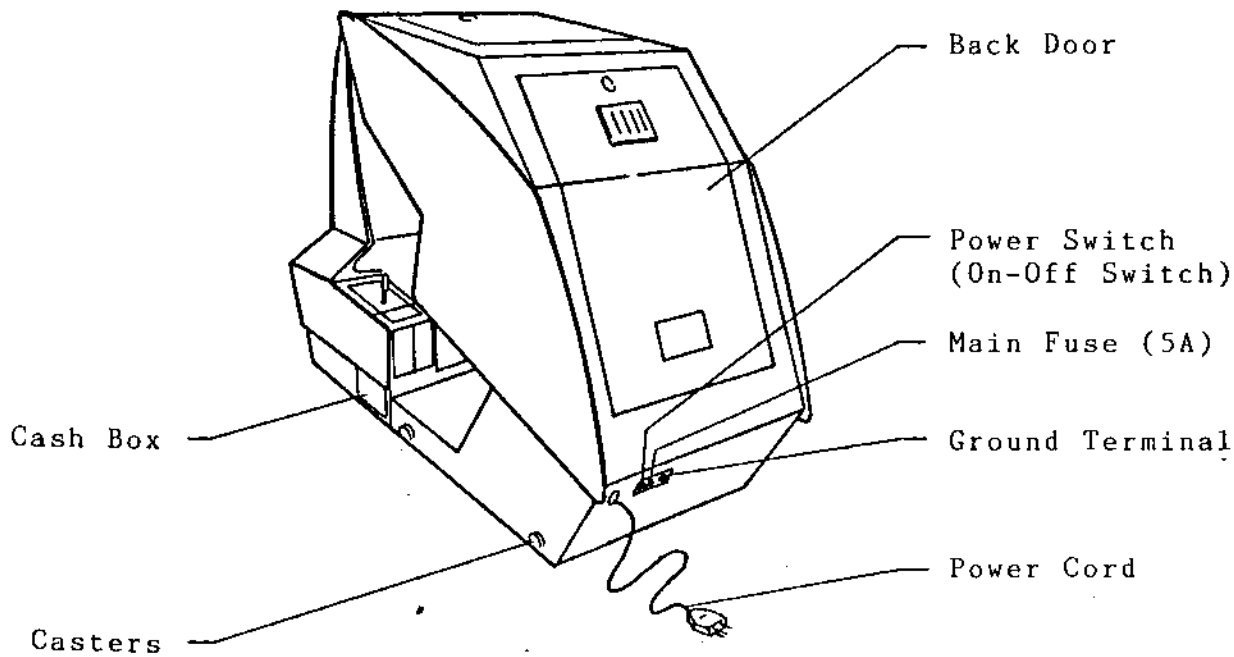
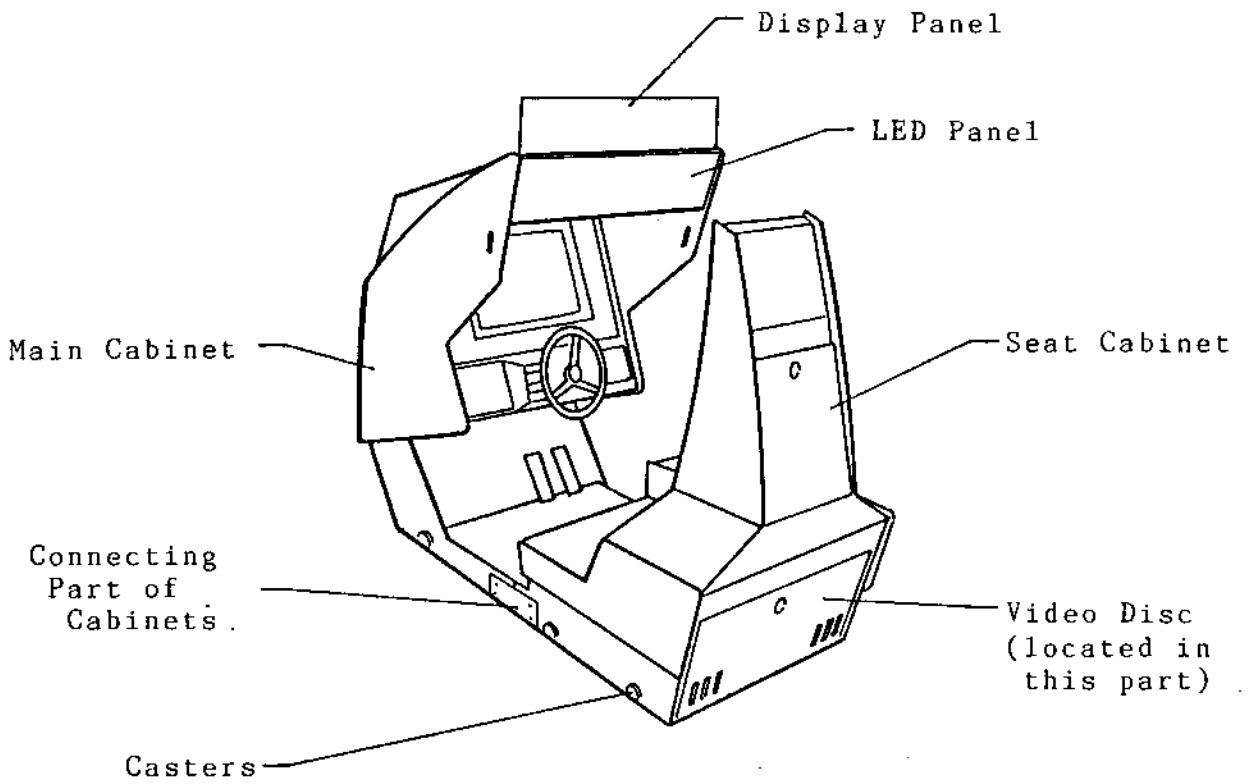
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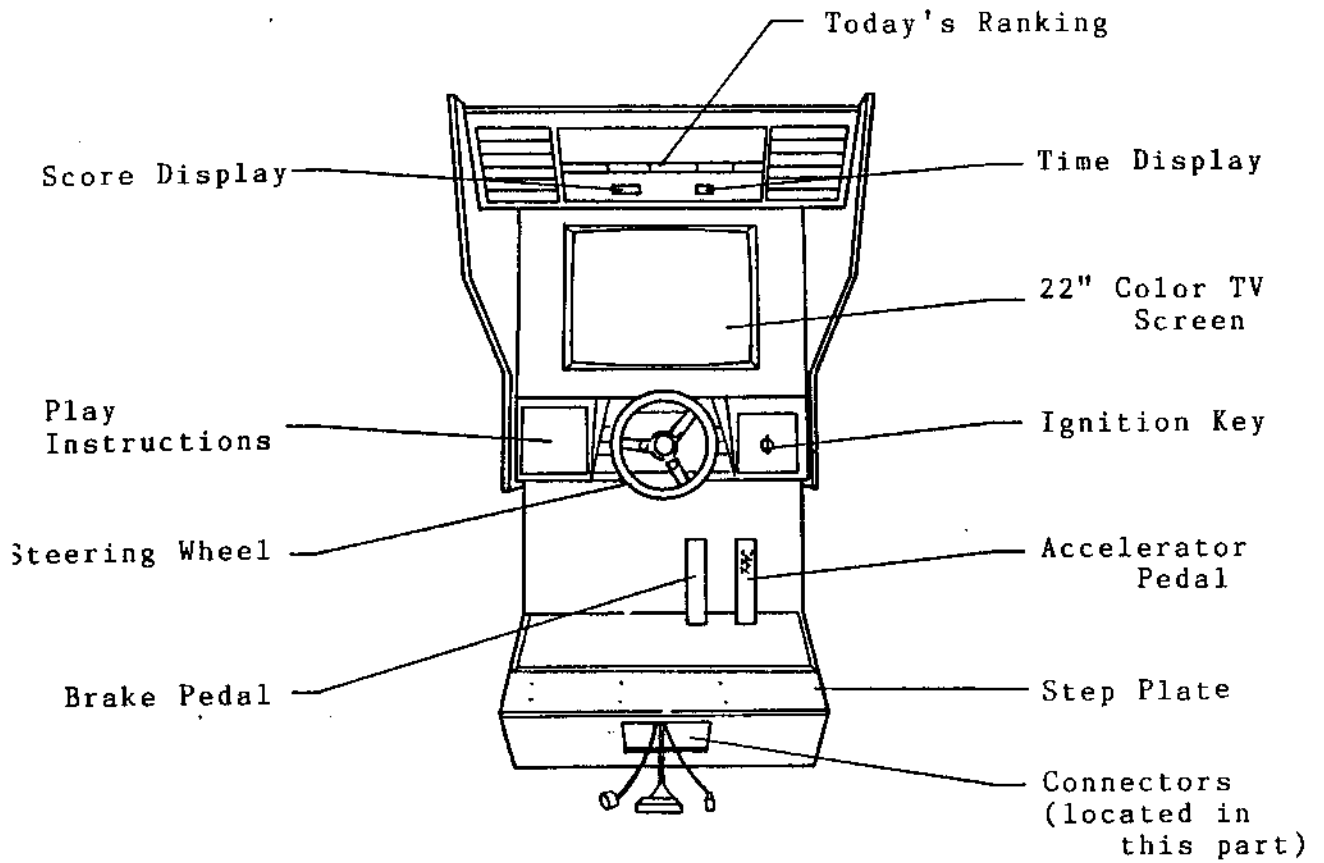
SERVICE INSTRUCTIONS



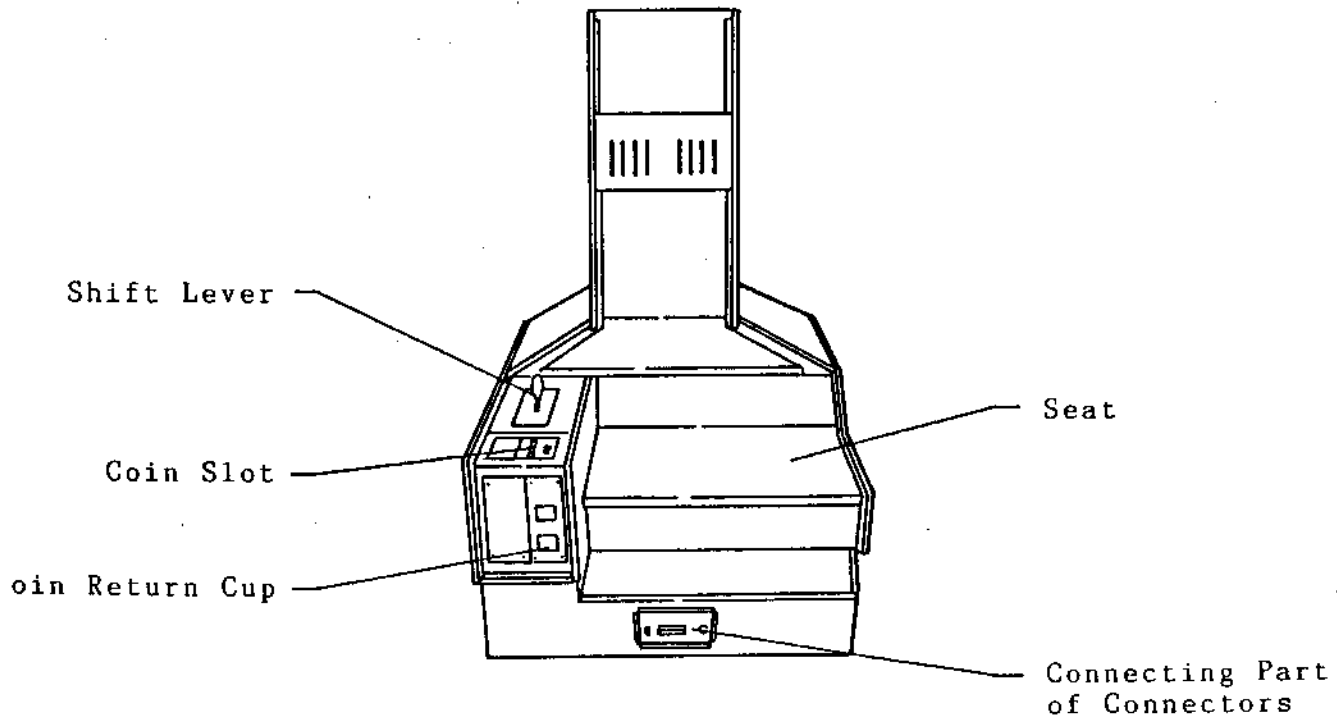
. Name of Part



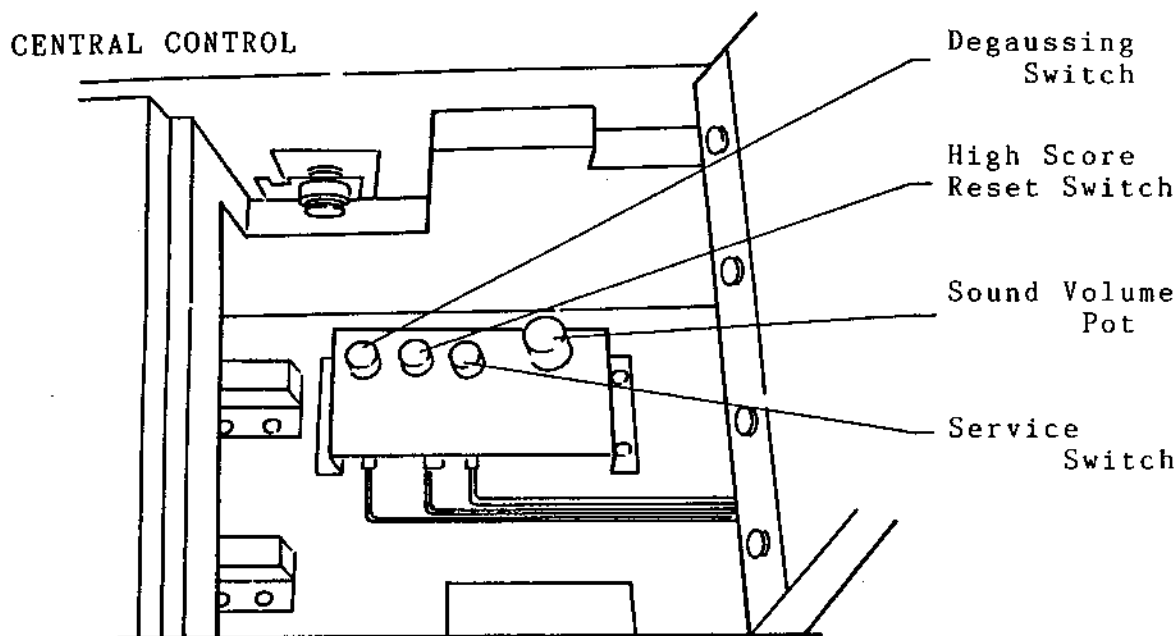
(Part of Main Cabinet)



(Part of Seat Cabinet)



(Switches in the Shift Lever)



* Central Control

o Degaussing Switch

As this game uses the color Video Monitor, when the machine is set up or transported, color distortion may happen.

In such a case, push the Degaussing Switch. In case of using this Switch continuously, use it at 10-minute intervals.

o High Score Reset Switch

When this Switch is pushed, the today's ranking and high score display are reset to "0".

o Sound Volume Pot

As a rotary switch is used, the sound volume can be controlled in 4 steps. Adjust it according to the location.

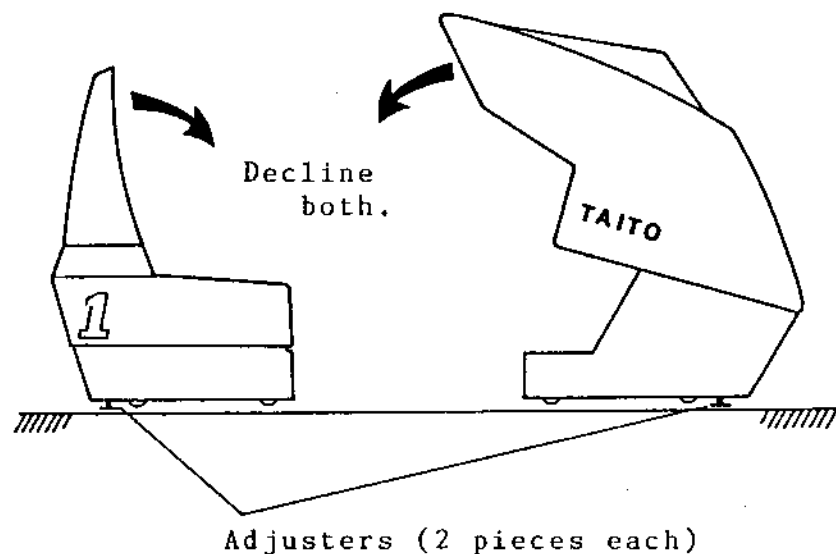
If further adjustments are needed, refer to the section for the adjustment of the PCB's.

o Service Switch

By pushing this Switch, the number of credits can be increased without working the Counter.

Notes for Setting Place .

- o " Laser Grand Prix " is for indoor use.
Install the machine indoors only.
 - o Install the machine on a flat-surfaced floor and provide suitable space around the machine.
 - o Do not install the machine in location without vibrations.
 - o Do not install the machine in location with exposure to direct sunlight or excessive heat in order to prevent the unit from rising internal temperature. Also, do not install the machine in humid dusty places.
(The location room temperature should be less than 30 degree C.)
 - o Do not install the machine in dangerous places viewed from the angle of disaster prevention (such as emergency exit and fire alarm).
-
- * When the setting place is decided, adjust the feight of the both Cabinets by declining them and by using each 2 pieces of the adjusters as shown below.
 - * The connection between the Main Cabinet and the Seat Cabinet should be done after doing the above adjustment.

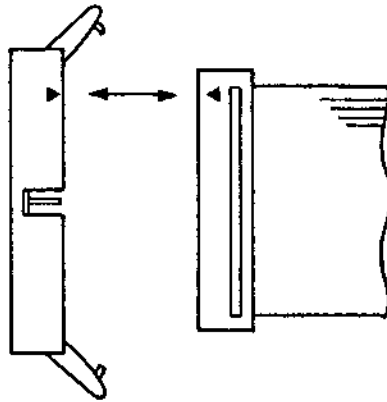


Notes for Handling

- o As this game uses the color Video Monitor and the Video Disc Player, avoid rough handling in transportation.
- o When the Disc is set into the Player, do it in the location.

- o After Setting the Disc, if the machine is moved, screw the Shipping Screws without fail. Otherwise, the Disc may be damaged or the Player may become defective.
- o When the Player itself is moved, never fail to do the shipping for it.
- o The Ground Terminal of the machine should be connected to the ground.
- o The parts of the machine may be loosened during transportation. Therefore, check whether all of the PCB's are correctly mounted and the Connectors are perfectly connected.
- o There are parts with high-voltage in the TV Monitor unit. Attention must be paid so as not to touch them. Also, do not touch the white-paint-locked preadjusted parts.
- o Even if the PCB's are evidently defective, do not attempt to service with ordinary testing equipment, since the internal voltage of the testing equipment may cause damages to the circuitry of the PCB's.
- o Do not disclose the Video Disc Player. There are very dangerous parts in the Player, such as the parts having high-voltages or emitting laser beams.
Also, do not inspect the inside of the Player, which may cause damages to the parts.
- o If any foreign metal pieces happen to be in the Player, stop operating the Player. Otherwise, they may cause damage to the Player.
- o Never connect or disconnect any of the Connectors for the PCB's while the power is on.

- o When connecting the Flat Cables, pay attention to the connecting direction.



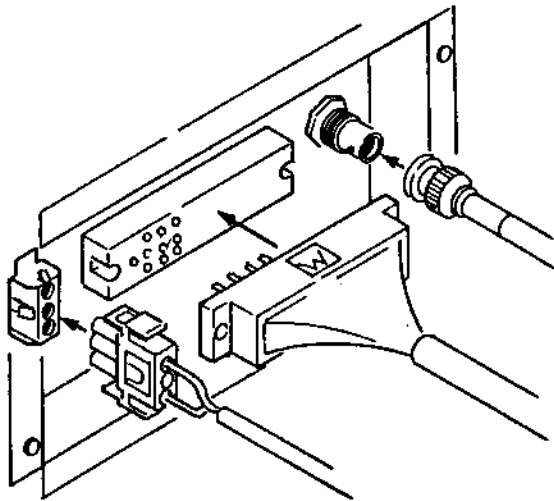
* After putting the both marks together, connect the Connectors.

- o Only use the specified fuse. If the specified fuse is cut off, turn off the power and stop operating the game.
- o When checking the output voltages, refer to the Wiring Diagram and the adjustment of the Switching Regulator in this manual. If the line voltages are set higher than the specified voltages, it may cause damages to the IC's.
- o If the voltages drop during playing, the screen may stop displaying. In such a case, turn the power off and on again.
- o Do the cleaning of the Disc and the Filter twice a month. Attach them so that no gap exists.

. Daily Safety

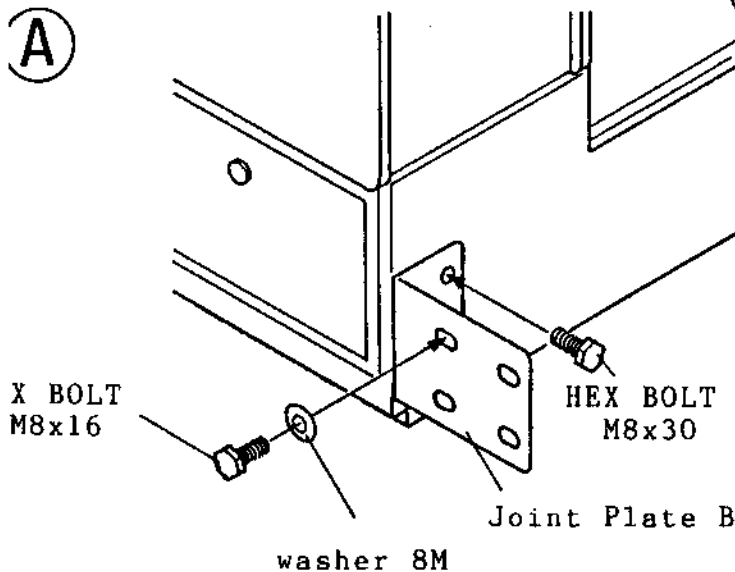
- o Although this game is designed based on our safety standard, any abnormal things may happen in a long period of time. Therefore, it is necessary to take measures to insure it is daily safety.

. Connection of the Main Cabinet and the Seat Cabinet
 (Do this connection after adjusting the adjusters.)

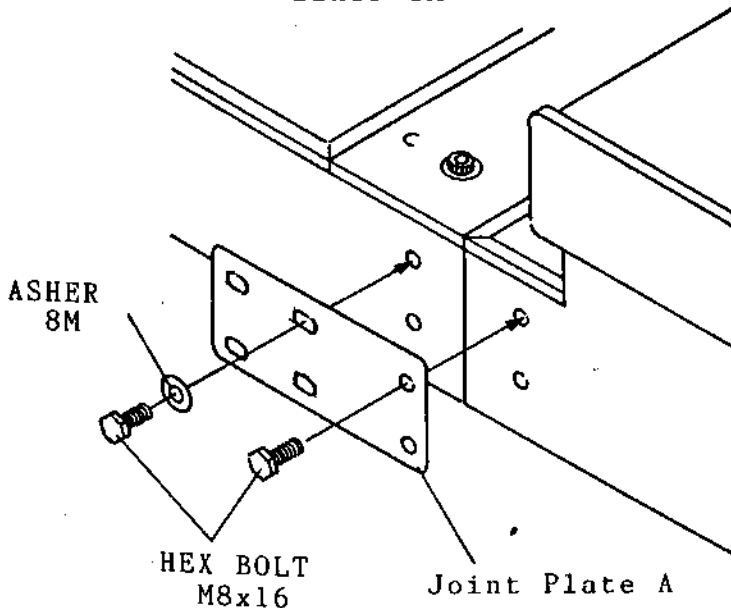


- o Pull out the three connectors from the Main Cabinet.
- o Completely connect the three Connectors into the Seat Cabinet.
- * There are two kinds of connecting methods. Connect the Connectors according to the seat position.

Ⓐ



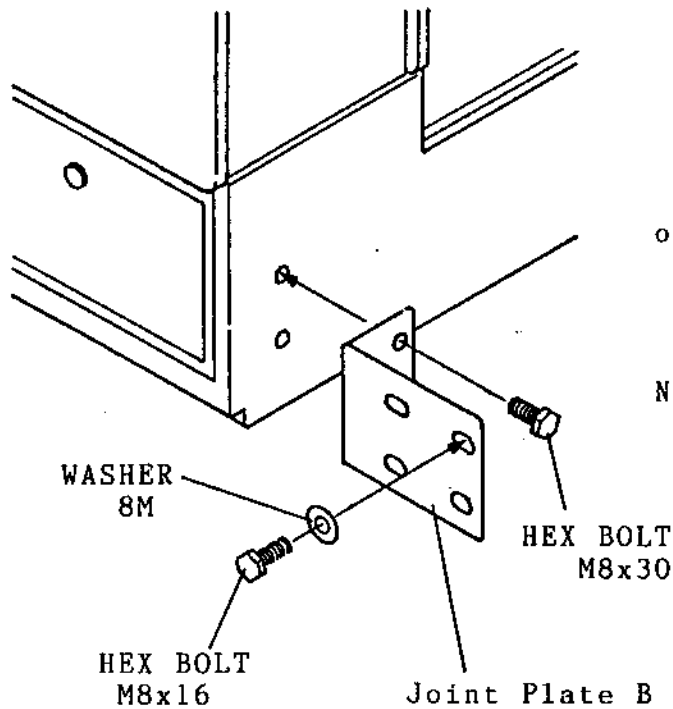
- Ⓐ : Seat Position
 (for 160-cm height person)
- o Detach the Joint Plates (A and B) which are temporarily attached to the both sides of the Main Cabinet, and connect the both Cabinets by using those Joint Plates and the Bolts (M8x16 and M8x30).
 - o First, attach the two kinds of the Joint Plates to the Seat Cabinet by using the Bolts.



- o The Joint Plate (B) is to be attached to the side of the Cash Box of Seat Cabinet.
- Note: The oval hole side of the Joint Plate (A) is to be placed on the Main Cabinet side.
- o Use the Washers for screwing the Bolts on the Main Cabinet side.

Ⓑ : Seat Position (for 170-cm height person)

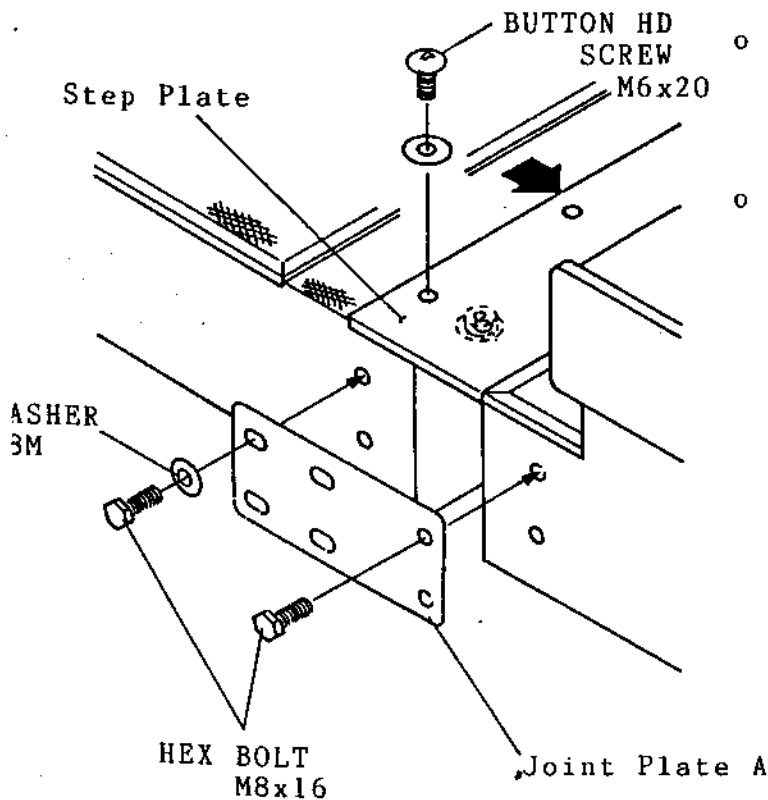
Ⓑ



o Detach the Joint Plates (A and B) which are temporarily attached to the both sides of the Main Cabinet, and connect the both Cabinets by using those Joint Plates and the Bolts.

o First, attach the two kinds of the Joint Plats to the Seat Cabinet.

Note: The oval holes of the Joint Plates (A) is to be placed on the Main Cabinet side.

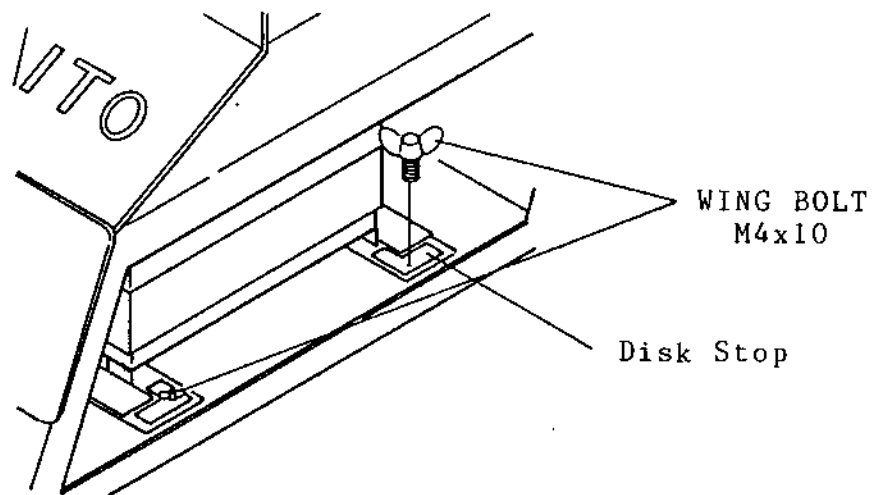


o Use the Washers for screwing the Bolts on the Main Cabinet side.

o Detach 4 pieces of the Button Hd Screw (M6x20) which fix the Step Plate. Then, slide the Step Plate to the Seat side, and fix it again by using the same Bolts.

How to set the Player and the Disc

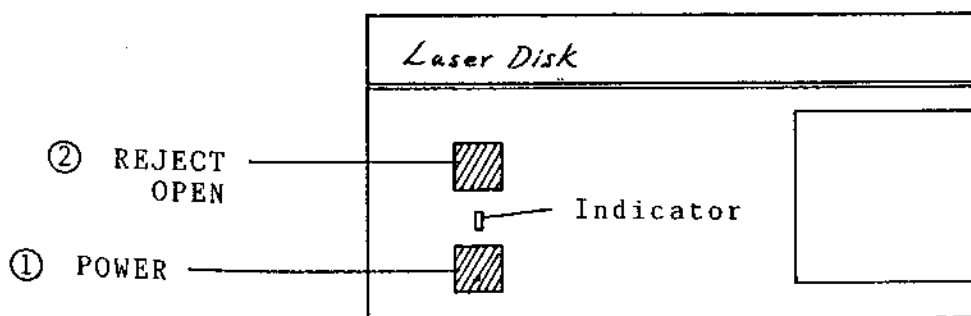
- o The Player and the Disc are attached to the inside of the Back Door of the Seat Cabinet. Open the Back Door, and remove 2 pieces of the Wing Bolts (M4x10) which fix the Player, then pull out the Player and the Disc from the inside of the Cabinet.



6-1. Opening and Closing of the Dust Cover

- o Plug the Power Plug of the Player into the AC-Socket located of the Seat Cabinet, and turn the Power Switch on.
- o Push the Power Switch ① ("POWER") of the Player.
(The Indicator located above the Switch is lit.)
- o After pushing the Reject Open Button ② ("REJECT OPEN"), the Dust Cover can be open by your hand.

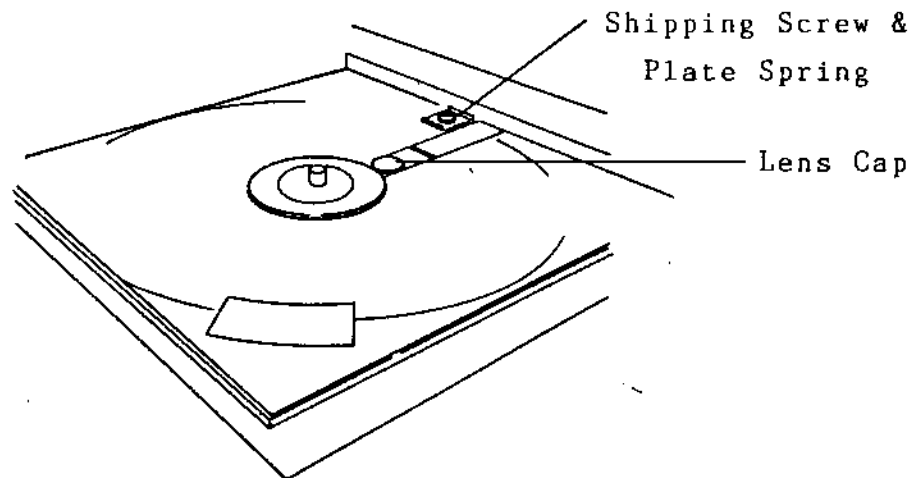
Caution: Do not use any other plugs than the Power Plug of the Player.



6-2. Shipping for the Player and the Lens Cap

- o In order to protect the inner parts during transportation, the shipping protection has been done on the Player itself and the Cap has been put on the Lens.
Before setting the Disc, never fail to remove the Shipping Screw, the Plate Spring and the Cap.
- o Keep the removed Shipping Screw, Plate Spring and Cap for retransportation.

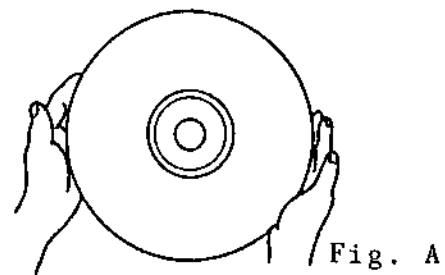
Note: In case that the Player is retransported, use the same Shipping Screw, Plate Spring and Lens Cap without fail.



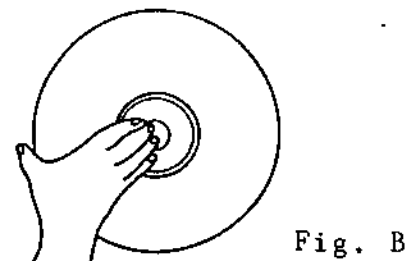
6-3. How to handle the Disc

- o When handling the Disc, handle it as the same manner as that for stereo record discs. When holding the Disc, do not touch the signal-recorded surface. Hold it as shown below.

In case of holding the Disc by both hands:



In case of holding the Disc by single hand:



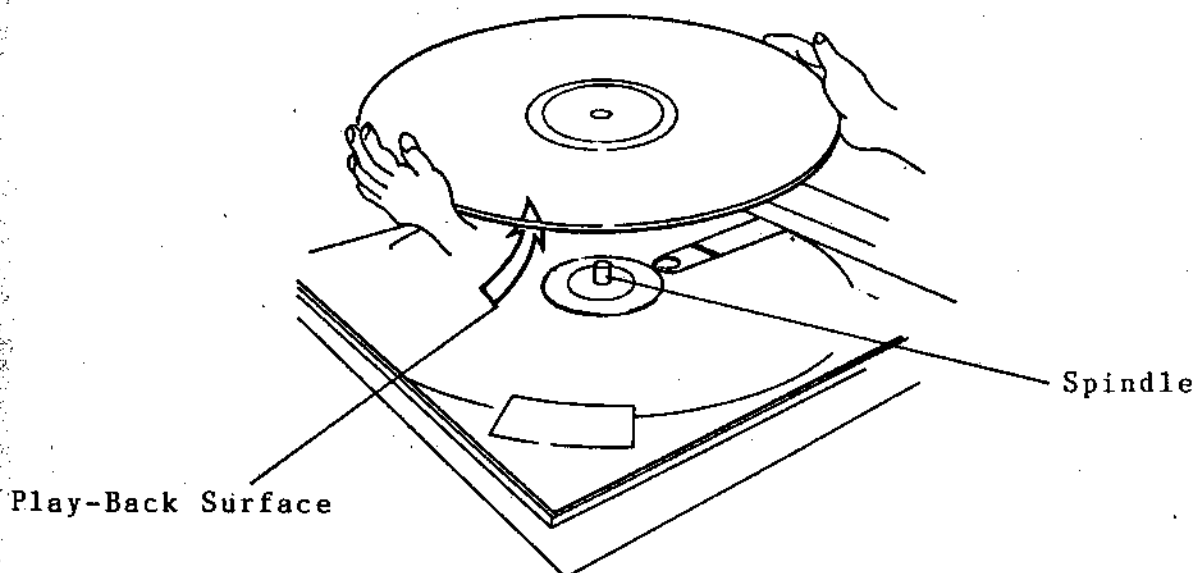
4. Attachment and Detachment of the Disc

When attaching the Disc, set it on the Spindle with facing the play-back surface (the recorded surface) up.

Note: The Shipping Screw, the Plate Spring and the Lens Cap should be removed.

After setting the Disc, close the Dust Cover, turn the power of the Cabinet off, and refer to the section for the connection of the Player Harness.

(The Power Switch "POWER" of the Player is continuously "ON" in this procedure.)



Note for detaching the Disc after setting

When the Disc is detached at the time of game-over for cleaning, turn the power of the Cabinet off without fail. Also, after removing the Harness connected to the Player, then pull out the Player from the Cabinet, and the Dust Cover.

5. How to connect the Player Harnesses

Note: When connecting the Harnesses ①, ② and ③, turn the power of the Cabinet off without fail.

The connection should be made after setting in the Guide.

For the above, the setting of the Player is completed.

By closing the Back Door and turning the power of the Cabinet on, the game can be played.

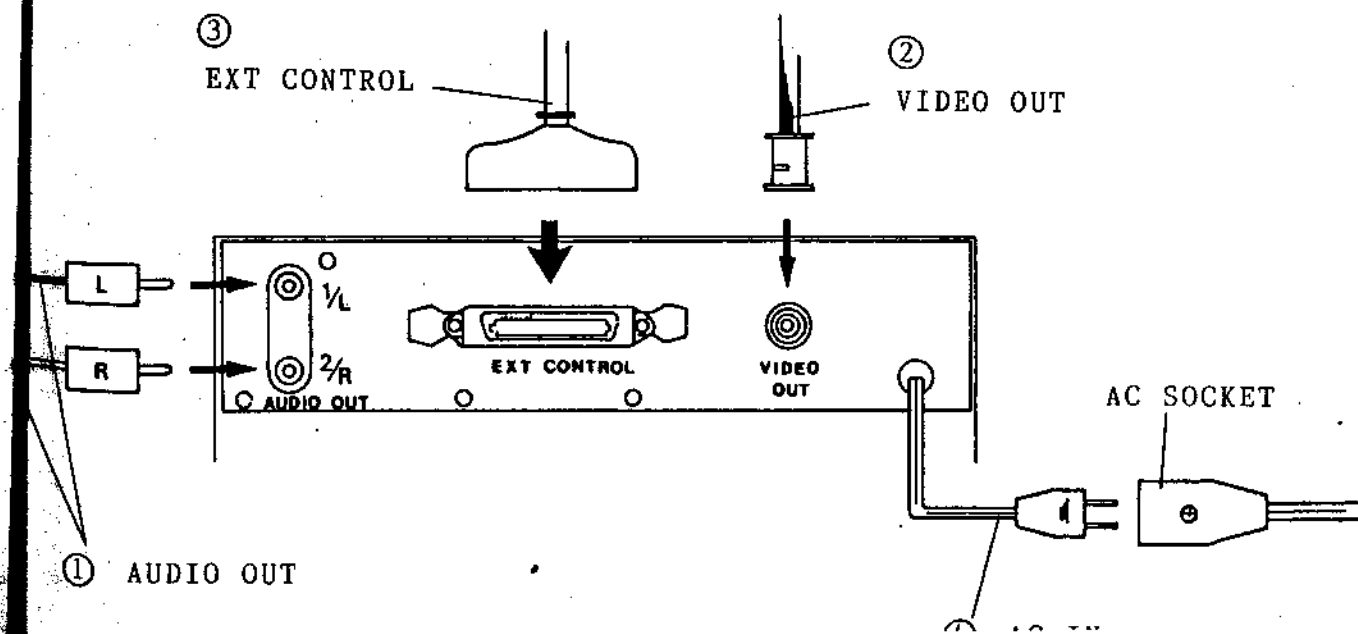
When detaching the Disc, turn the power of the cabinet off and unplug the harnesses ①, ② and ③.

1 : AUDIO OUT (Output Terminal of Audio Signals)

2 : VIDEO OUT (Output Terminal of Video Signals)

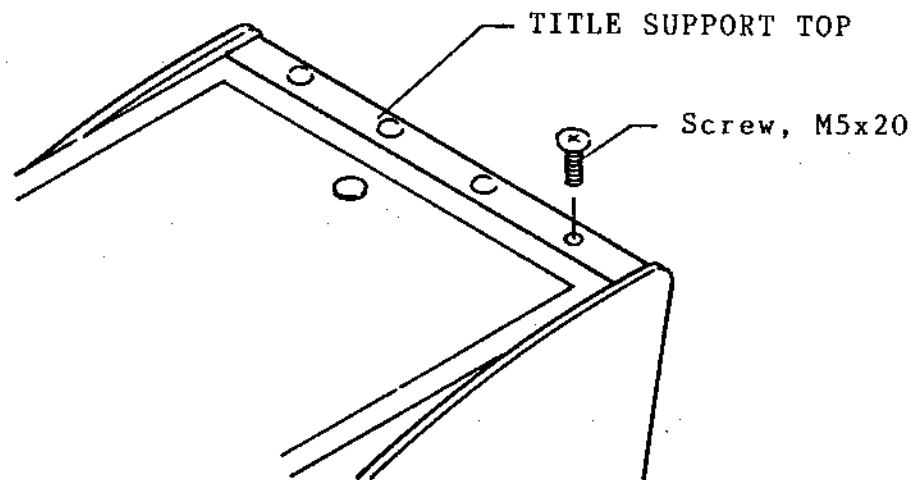
3 : EXT CONTROL (Connector used in case that the function of the Player is computer-controlled.)

4 : AC-IN (Power Input Plug of 100 VAC)

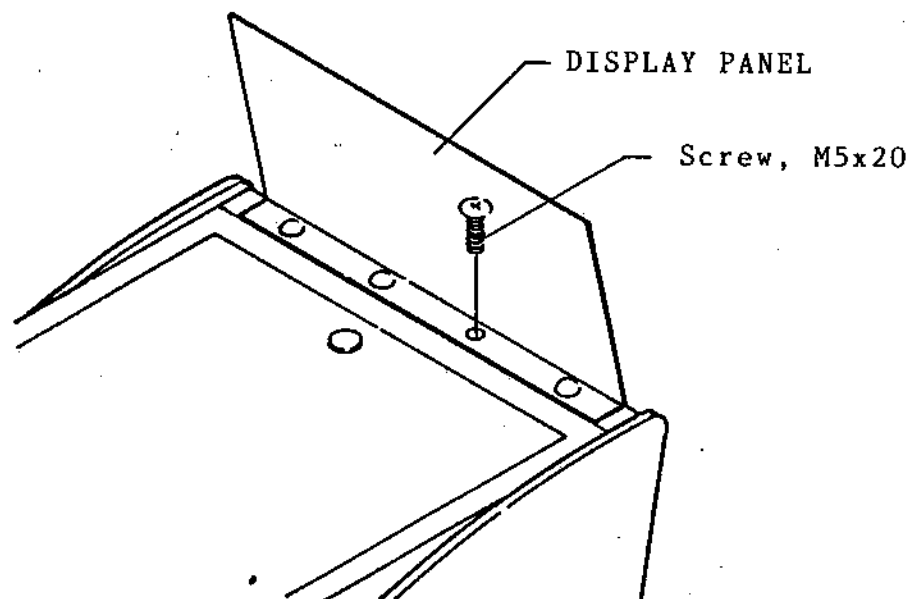


How to attach the Display Panel

- ① Remove 4 pieces of the screws (M5x20) which fix the Title Support Top for the LED Panel of the Main Cabinet.



- ② Put the Display Panel on the Title Support Top, and fix it by using the same screws (4 pieces of M5x20).



Playing Instructions

- * This game is the Grand Prix Race played on the Fuji Speed Way.
- o One - player game
- o 1 coin - 1 play (Adjustable)
- o Insert coin, and turn the Ignition Key.
- o Bring the engine to the maximum torque while in the "NEUTRAL".
- o When the sign says "GO", shift into the "LOW" gear and start racing.
(If you shift into the "LOW" gear before starting, a penalty is imposed on you.)

Drag Race: 400-meter Straight Course

- o Your starting position for the GP-Race is determined on your lap time.

GP-Race: If you complete driving within the set time you can challenge the next round. If you clear the fourth round, you can challenge the Spark Race.
(The set time is adjustable.)

Spark Race: If you complete 2 rounds of this race within the set time, you can go to the glory Fantastic Race.
(The set time is adjustable.)

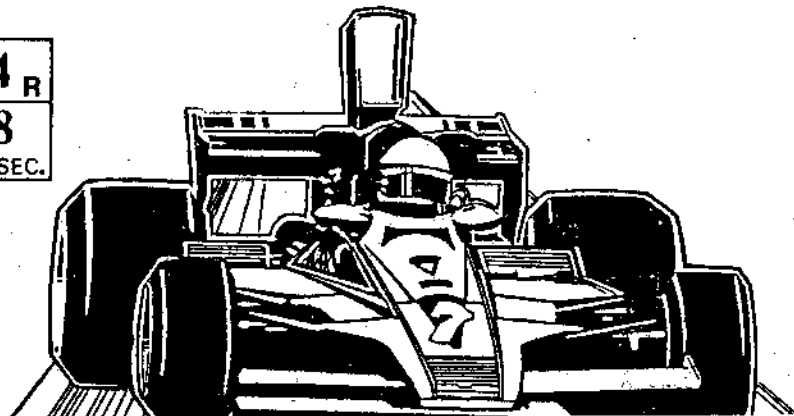
- o The game ends when the time reaches "00".

GP - RACE

| 1 _R | 2 _R | 3 _R | 4 _R |
|----------------|----------------|----------------|----------------|
| 8 | 60 | 58 | 58 |
| SEC. | SEC. | SEC. | SEC. |

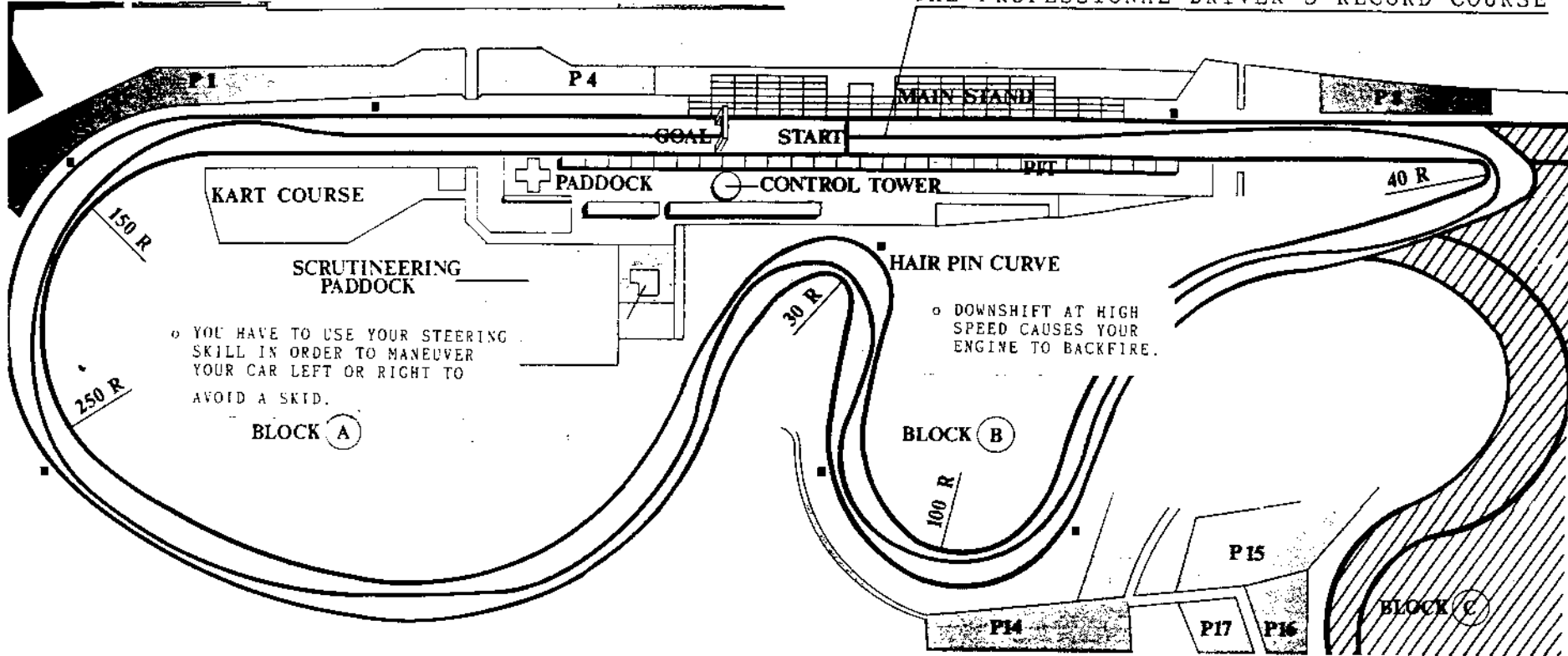
R: Round)

| SPARK RACE | |
|------------|------|
| 44 | SEC. |



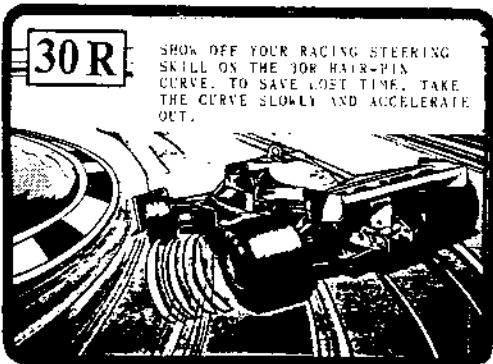
OVERALL VIEW OF THE COURSE AND DRIVING POINTS

THE PROFESSIONAL DRIVER'S RECORD COURSE



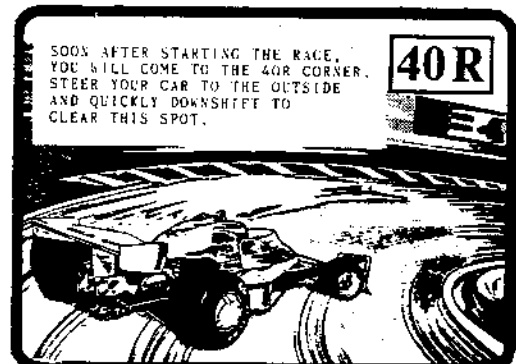
YOU HAVE TO USE YOUR STEERING SKILL IN ORDER TO MANEUVER YOUR CAR LEFT OR RIGHT TO AVOID A SKID.

DOWNSHIFT AT HIGH SPEED CAUSES YOUR ENGINE TO BACKFIRE.



30 R

SHOW OFF YOUR RACING STEERING SKILL ON THE 30R HAIR-PIN CURVE. TO SAVE LOST TIME, TAKE THE CURVE SLOWLY AND ACCELERATE OUT.



40 R

SOON AFTER STARTING THE RACE, YOU WILL COME TO THE 40R CORNER. STEER YOUR CAR TO THE OUTSIDE AND QUICKLY DOWNSHIFT TO CLEAR THIS SPOT.

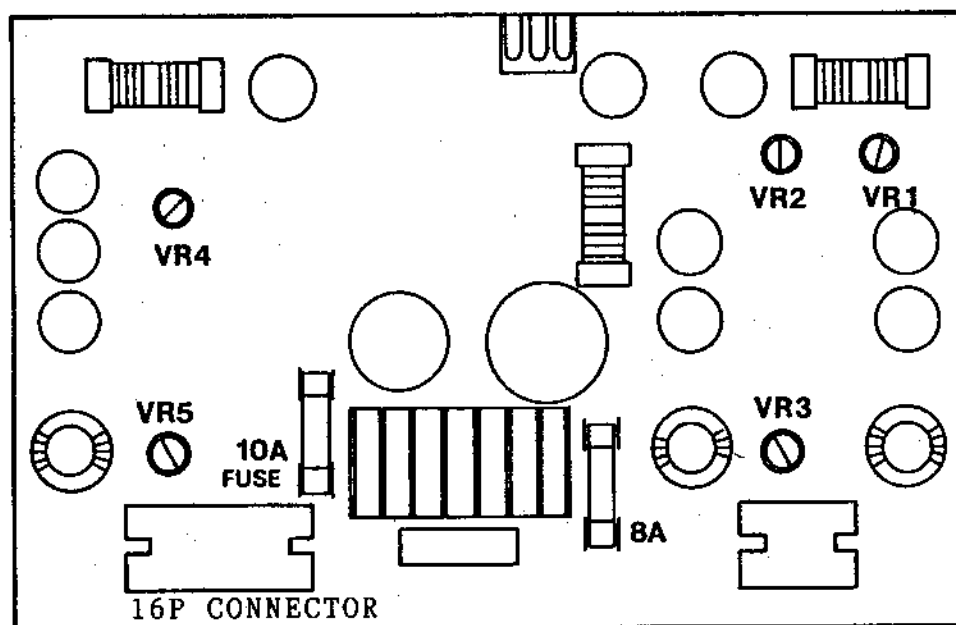
* MASTER THE PROFESSIONAL DRIVER'S COURSE TO OBTAIN HIGH SCORE.

Adjustment of the Switching Regulator

(The Switching Regulator is located in the Main Cabinet.)

To set the voltages higher than the standard values will cause damage to the IC's. (Refer to the section for the sensing function.)

When checking the output voltages, refer to the Wiring Diagram in this manual. Adjust the Pots by using a small (-)-type driver.



- VR3 The Pot for adjusting the 12 VDC line.
(adjustable $\pm 5\%$)
Set at 12V.
- VR5 The Pot for adjusting the 5 VDC line.
(adjustable $\pm 5\%$)
Set at 5V.

Note: The 13 VDC is fixed, and there is no pot for adjusting this line. Do not adjust VR1, VR2 and VR4. These Pots are for adjusting the logic circuitry. Careless adjustment on these Pots may cause damage to the circuitry.

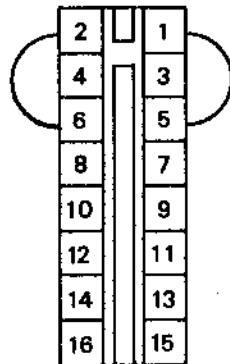
Sensing Function

(This function is to be used when the output voltages are checked in no load condition.)

The Switching Regulator used in this game has the sensing function.

This function is the function to keep the +5V constant even if the current on the load side (the Main PCB side) of the +5V fluctuates. For this, the sensing function will not work in no load condition (i.e. the Main PCB is removed), and the all circuitry will stop outputting voltages. Therefore, when the output voltages are checked in no load condition, the following work is needed.

< Switching 16-P Nylon Connector >



Jumper Wires:

Pin 1 — Pin 5

Pin 2 — Pin 6

(Jumper on the back side of the connector on the solder side.)

Note:

After checking the output voltages, remove the jumper wires without fail. Leaving the jumper wires there will cause malfunction of the circuitry because of the over-voltage prevention circuitry.

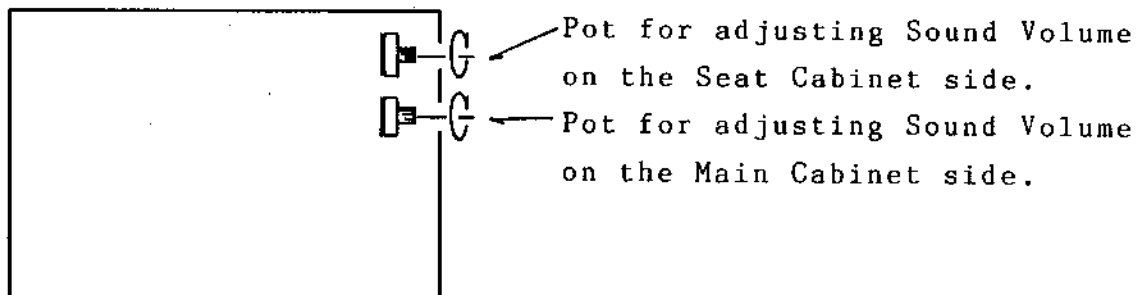
Do not turn the Power Switch on and off instantaneously.

Doing so will cause repeated rush current occurred and will cause damage to the switching transistors.

Adjustment of Game PCB

(The PCBs are located in the Main Cabinet.)

o Adjustment of Sounds



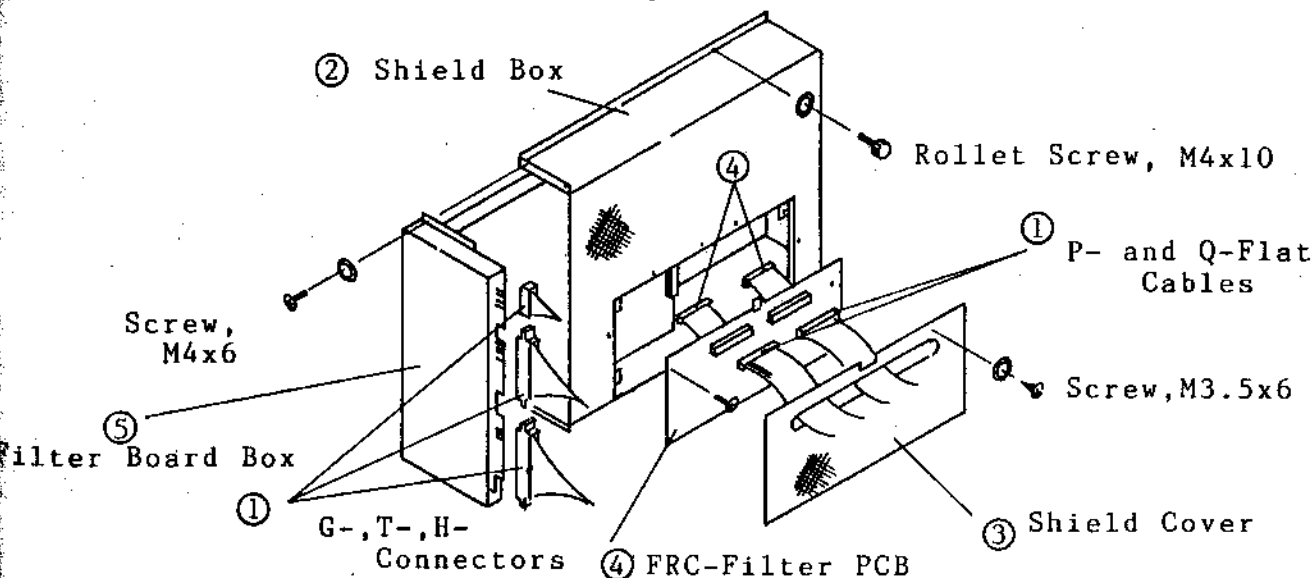
o Change-over of DIP Switch Settings

The DIP Switches are mounted on the PCBs located in the Shield Case. When changing-over the settings of the DIP Switches, turn the Power Switch off, and take out the Shield Case from the Cabinet.

Procedure:

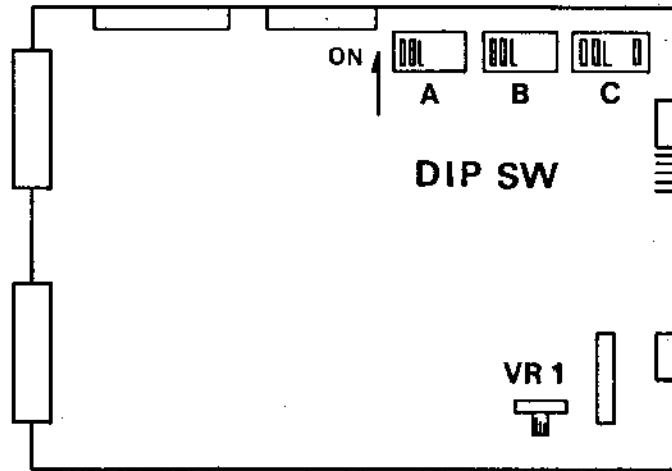
- ① Unplug the G-, T-, and H-Connectors and the P- and Q-Flat Cables.
- ② Take out the Shield Box from the Cabinet.
- ③ Open the Shield Cover.
- ④ Detach the FRC-Filter PCB, and Unplug the P- and Q-Flat Cables connected to the Game PCB.
- ⑤ After removing the Filter Board Box, the Game PCB can be detached from the Shield Case.

When attaching do the above procedure in the reverse order.



The DIP Switches are mounted on the PCBs located in the Shield Case.

(The settings of the DIP Switch can be done only after removing the Shield Case.)



Note: Do not turn the Pot, VR1.

This Pot is for adjusting the synchronization, and preset at the factory. Caseless turning this Pot will cause defect to video images.

o Settings of DIP Switch A: Change-over of Time Settings

| Setting | Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
| GP-Race (1st Round) | * 68 Sec. | ON | ON | | | | | | |
| | 66 Sec. | OFF | ON | | | | | | |
| | 64 Sec. | ON | OFF | | | | | | |
| | 62 Sec. | OFF | OFF | | | | | | |
| GP-Race (2nd Round) | 62 Sec. | | | ON | ON | | | | |
| | * 60 Sec. | | | OFF | ON | | | | |
| | 58 Sec. | | | ON | OFF | | | | |
| | 56 Sec. | | | OFF | OFF | | | | |
| GP-Race (3rd and 4th Rounds) | 60 Sec. | | | | | ON | ON | | |
| | * 58 Sec. | | | | | OFF | ON | | |
| | 56 Sec. | | | | | ON | OFF | | |
| | 54 Sec. | | | | | OFF | OFF | | |
| Spark Race | * 44 Sec. | | | | | | | ON | ON |
| | 42 Sec. | | | | | | | OFF | ON |
| | 40 Sec. | | | | | | | ON | OFF |
| | 38 Sec. | | | | | | | OFF | OFF |

(*): Factory Settings

o Settings of DIP Switch -B: Change-over of Play Pricing

| Setting \ Position | 1 Way (Left) | | | | 2 Ways (Right) | | | | |
|--------------------|--------------|-----|-----|-----|----------------|-----|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| *1 coin -1 play | ON | ON | ON | ON | ON | ON | ON | ON | |
| 1 coin -2 plays | OFF | | | | OFF | | | | |
| 1 coin -3 plays | ON | OFF | | | ON | ON | | | OFF |
| 1 coin -4 plays | OFF | | | | OFF | | | | |
| 1 coin -5 plays | ON | ON | OFF | | OFF | ON | ON | | OFF |
| 1 coin -6 plays | OFF | | | | | OFF | | | |
| 1 coin -7 plays | ON | OFF | OFF | | | ON | OFF | | |
| 1 coin -8 plays | OFF | | | | | OFF | | | |
| 2 coins-1 play | ON | ON | ON | OFF | | ON | ON | ON | |
| 3 coins-1 play | OFF | | | | | OFF | | | OFF |
| 4 coins-1 play | ON | OFF | | | | OFF | ON | | OFF |
| 5 coins-1 play | OFF | | | | | | OFF | | |
| 6 coins-1 play | ON | ON | OFF | | ON | ON | OFF | | |
| 7 coins-1 play | OFF | | | | OFF | | | OFF | |
| 8 coins-1 play | ON | OFF | OFF | | ON | OFF | | | |
| 9 coins-1 play | OFF | | | | OFF | | | | |

(*): Factory Setting

In case of the 2 ways, the coin inputs of the both coin slots will increase credits independently.

(For example: When setting "2 coins - 1 play", if each one coin is dropped into the both coin slots, no credit is increased.)

o Settings of DIP Switch C

| Setting | | Position | 1 | 4 | 5 | 6 | 8 |
|------------------|---------------|----------|-----|-----|-----|-----|-----|
| Free Play | Free Play | | ON | | | | |
| | * Normal Game | | OFF | | | | |
| Coinage Display | Without | | | ON | | | |
| | * With | | | OFF | | | |
| Year Display | Without | | | | ON | | |
| | * With | | | | OFF | | |
| No Hit Detection | No Hit | | | | | ON | |
| | * Normal Game | | | | | OFF | |
| Coin Slot | 2 Ways | | | | | | ON |
| | * 1 Way | | | | | | OFF |

(*): Factory Settings

Note: The positions 2, 3 and 7 are not used in this game, and these positions should be set at "OFF".

§ Free Play

The game can be played without inserting coins.

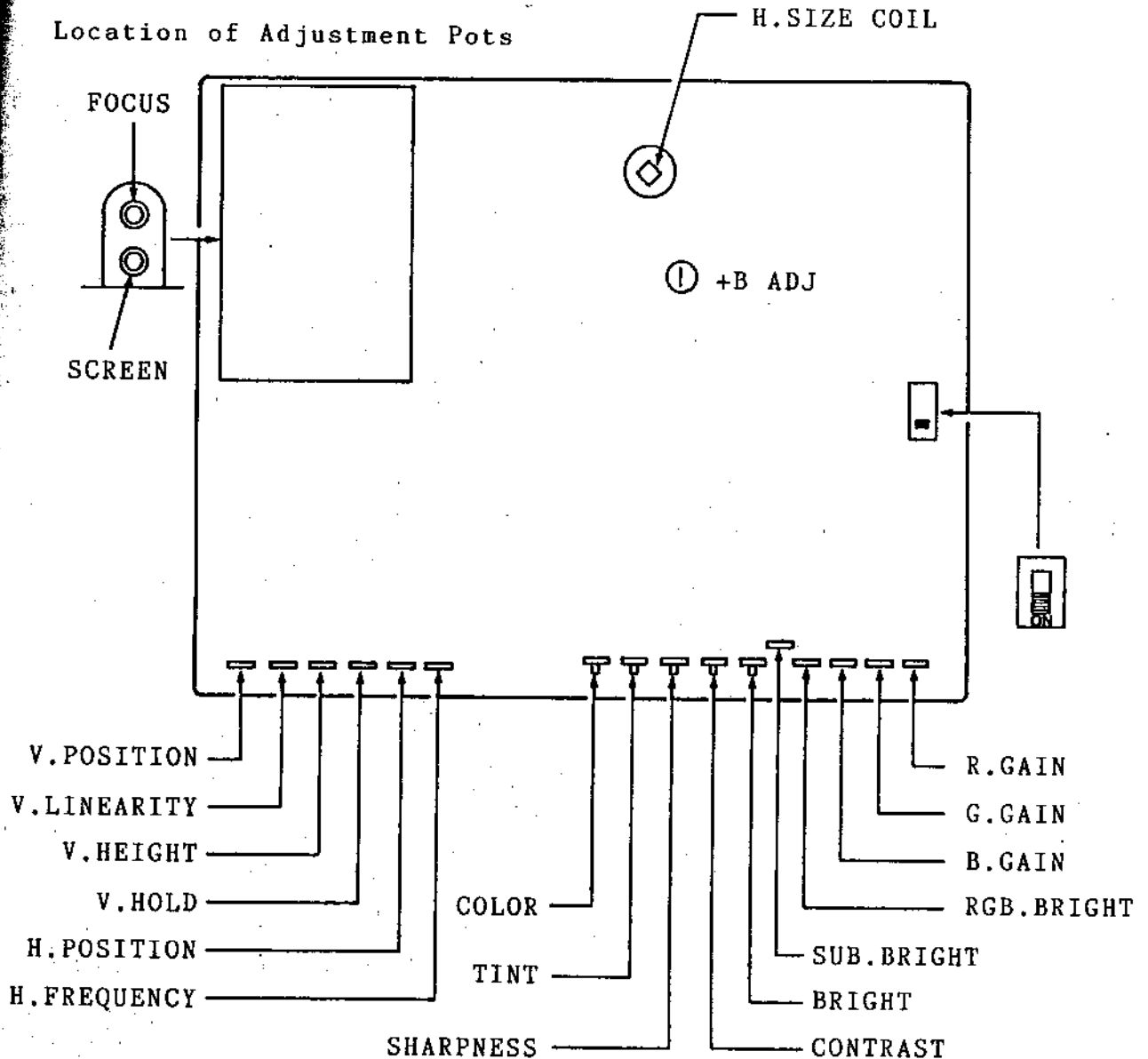
§ No Hit

If the player's car touches the shoulder of the course, the speed of the car is decreased, but if the player's car crashes rival cars, no explosion happens and can proceed to the final game. The time has no relation to this mode.

Adjustment of Color Display Monitor

This game has the circuitry, in which the NTSC Color images and the RGB input signals are composed by the control signals. This Monitor is a special NTSC color display Monitor.

Location of Adjustment Pots



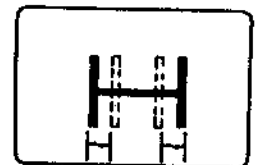
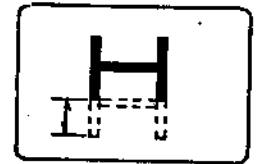
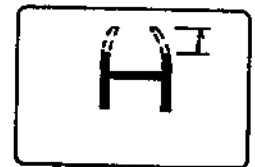
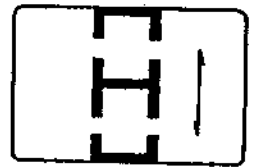
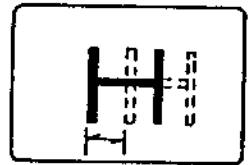
The adjustments have been done at the factory for the best performance, but if necessary, adjust the above Pots by referring the explanation for each adjustment.

Note: Careless adjustment will cause malfunction to the Monitor. Do not touch the white-paint-locked Pots. Also, as the high-voltages exist in the TV Monitor unit, attention must be paid when handling it.

Explanation for Adjustments

The location of the Adjustment Pots is shown on the previous page.

- o H.FREQUENCY (Horizontal Frequency Adjustment)
Adjust this Pot, if the horizontal stripes appear on the screen or the screen rolls from left to right.
- o H.POSITION (Horizontal Position Adjustment)
Adjust this Pot to move the screen left or right for desired positioning.
- o V.HOLD (Vertical Hold Adjustment)
Adjust this Pot if the screen rolls up or down.
- o V.HEIGHT (Vertical Amplitude Adjustment)
Adjust this Pot to change the vertical screen size.
- o V.LINEARITY (Vertical Linearity Adjustment)
Adjust this Pot, if the upper or the lower part of the screen is shrunken.
- o V.POSITION (Vertical Position Adjustment)
Adjust this Pot to move the screen up or down for desired positioning.
- o H.SIZE COLIL (Horizontal Amplitude Adjustment)
Adjust this pot to change the horizontal screen size.
- o RGB-GAIN (Logic Screen Image Adjustment)
 - R.GAIN ... for changing red color
 - G.GAIN ... for changing green color
 - B.GAIN ... for changing blue color



o CONTRAST (Player Screen Image Adjustment)

Adjust this Pot to change the contrast of the screen image.

o SHARPNESS (Player Screen Image Adjustment)

Adjust this Pot to control the sharpness of the screen image.

o COLOR (Player Screen Image Adjustment)

Adjust this Pot to control the darkness of the screen image color.

o TINT (Player Screen Image Adjustment)

Adjust this Pot to control the hue of the screen image color.

* In some cases of setting conditions, the screen color may be distorted. In such a case, use the Degaussing Switch located in the shift lever or a degaussing device.

o +B ADJ

The +B line voltage is set at 106 VDC \pm 1 VDC.

Normally, Do not adjust this +B line voltage.

o Impedance Switch

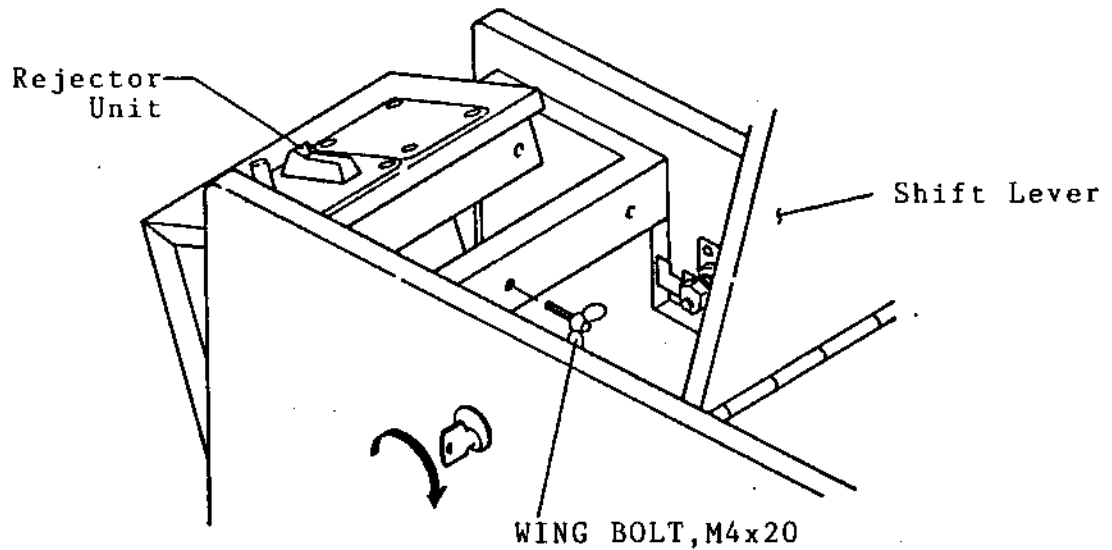
The Impedance Switch is set at 75 Ohm.

Normally, this Switch is set at "ON" position.

12. Daily Maintenance

12-1. Opening of the Shift Lever Unit and the Rejector Unit

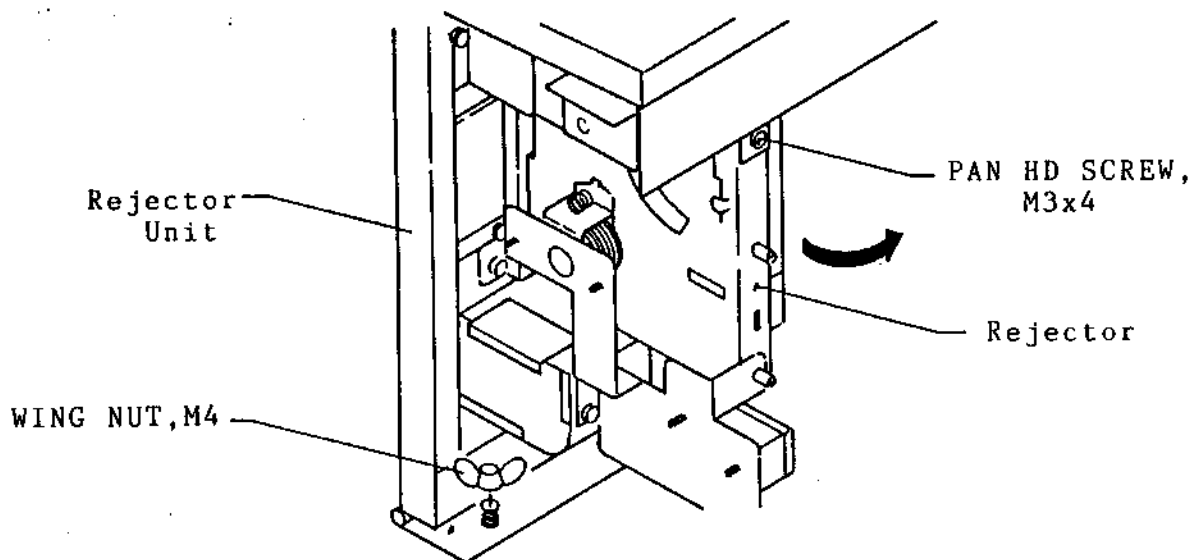
By releasing the both Service Locks, the Shift Lever Unit can be opened. The Rejector Unit can be released by removing 2 pieces of the Wing Bolts (M4x20).



12-2. Detachment of the Rejector Unit and the Rejector

By removing 3 pieces of the Wing Nuts (M4), the Rejector Unit can be detached.

The Rejector can be detached by removing the Pan Head Screw (M3x4) and pulling it to the direction shown with the arrow in the following sketch.



12-3. Exchange and Adjustment of Coin Switch

* In case that the Coin Switch does not work (because of the malfunction of the Micro Switch and the Actuator), refer to the following procedure.

① Exchange of the Coin Switch

Remove the Pan Head Screw (M3x25) which fixes the Micro Switch, and detach the Switch from the Holder. And, attach the Switch with the already-properly-adjust Actuator.

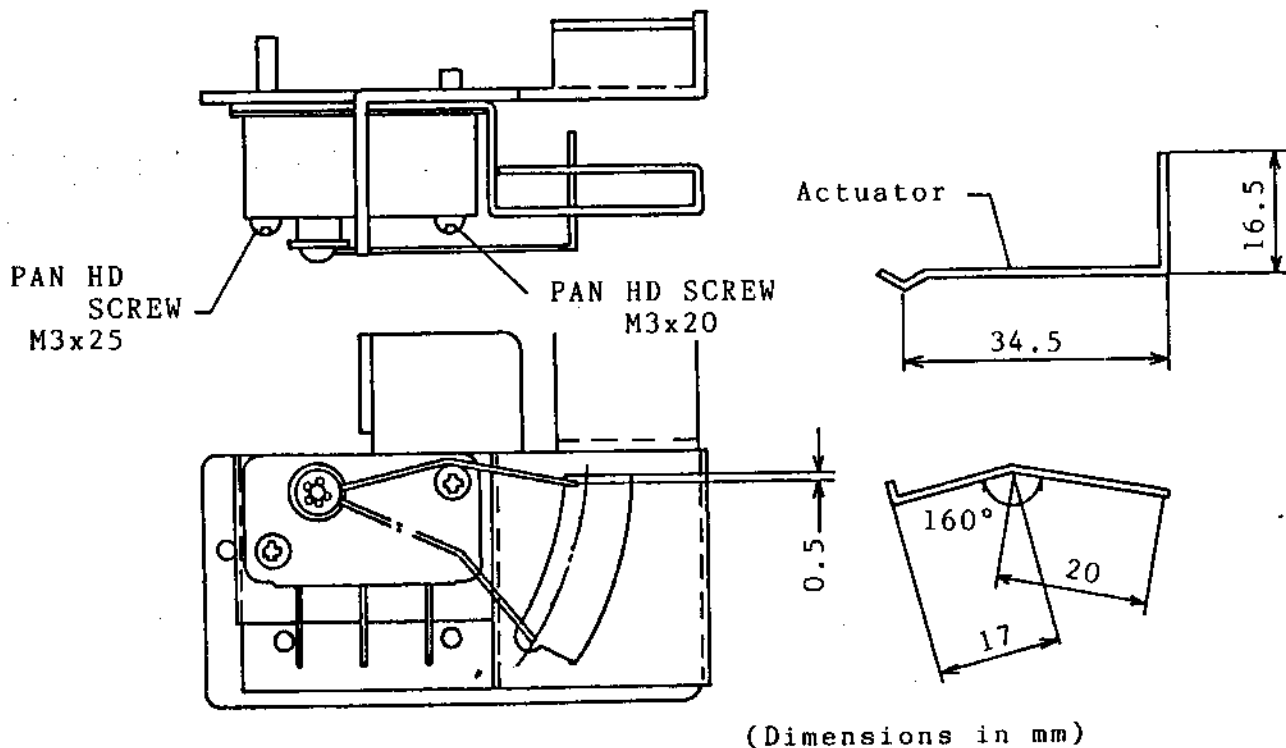
Note: When adjusting the Actuator, refer to the following sketch.

As to the wiring of the Harness, refer to the later page.

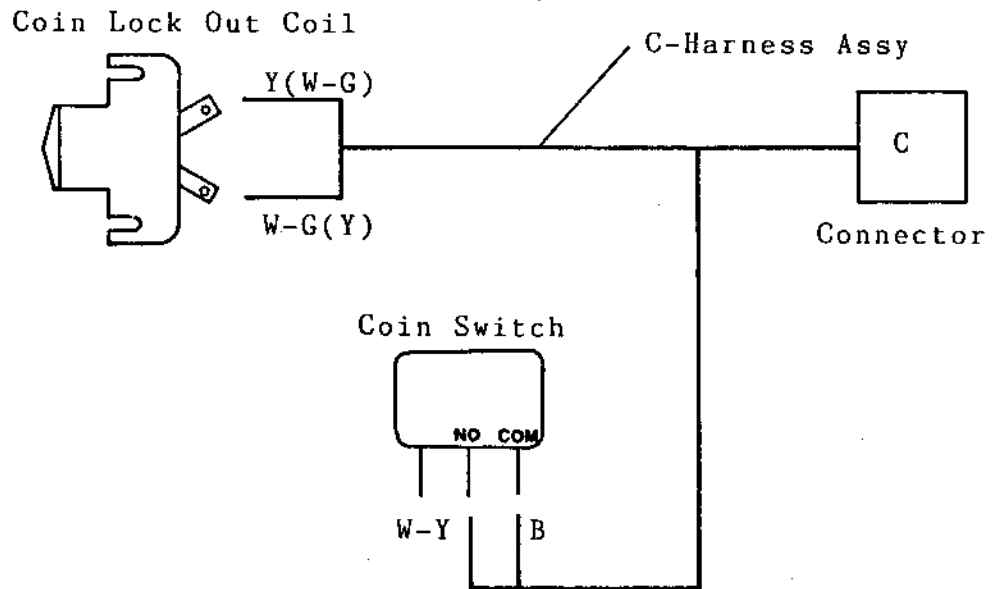
② Adjustment of the Actuator

Attach the Actuator to the Micro Switch, fold it by referring the dimensions as shown below.

The folding work should be done before the Switch is attached to the Holder by using the Screw.



③ Wiring of the Coin Switch and the Coin Lock Out Coil



Where: Y ... Yellow
W ... White
G ... Green
B ... Black

* No color is specified on the Harness to the Coin Lock Out Coil..

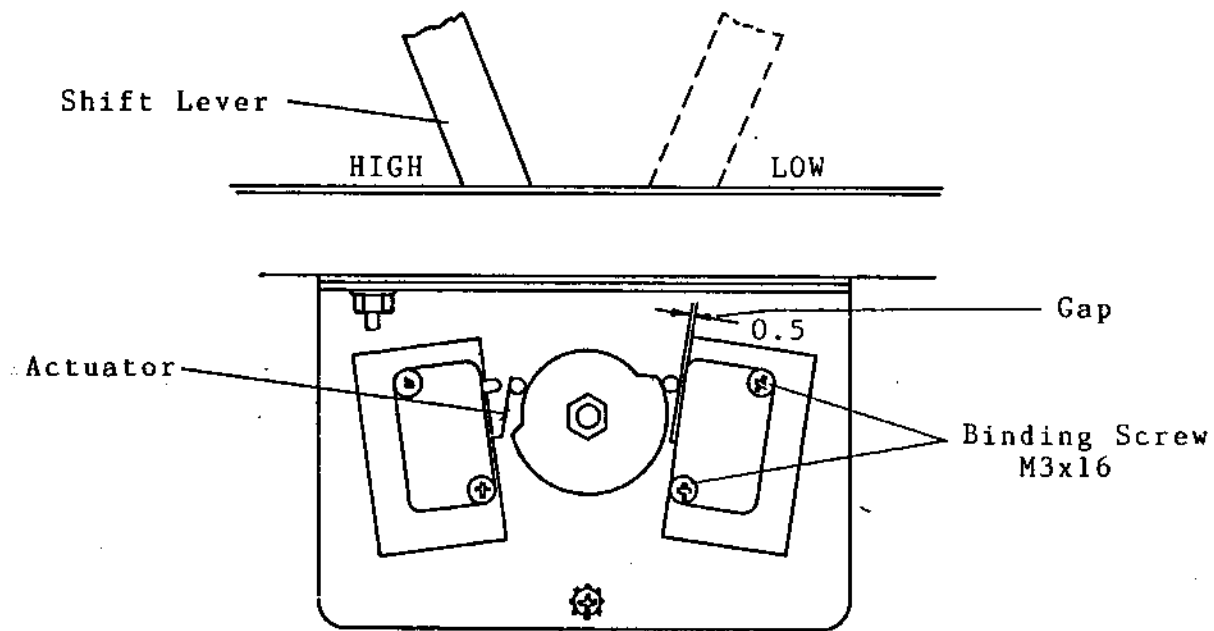
12-4. Exchange and Adjustment of the Shift Lever Switch

① Exchange

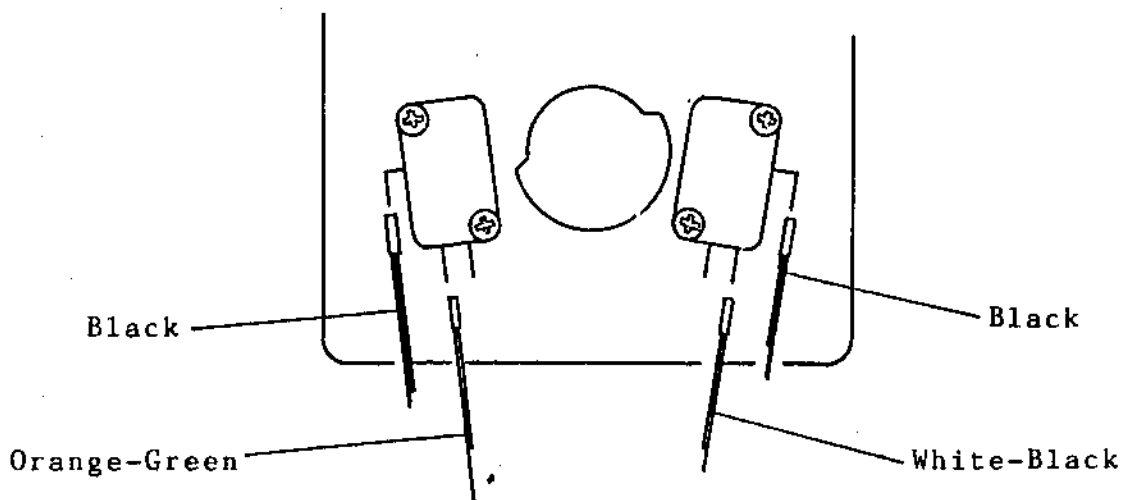
Remove 2 pieces of the Binding Screws (M3x16) which fix the Micro Switch.

② Adjustment

Adjust the Switch so that it will be surely at the "ON" position when the Shift Lever is shifted, and the gap between the Actuator and the Switch itself will be 0.5mm.



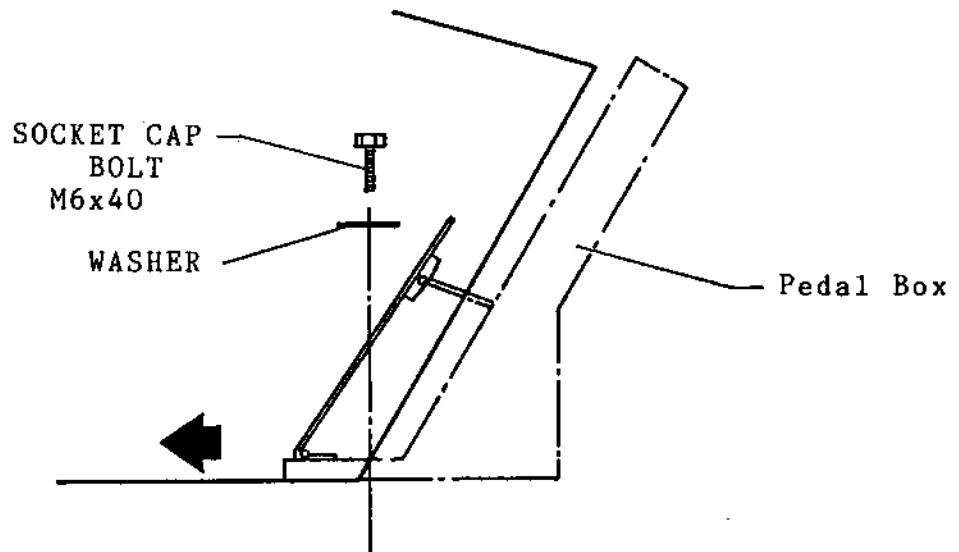
③ Wiring (J-Harness Assy)



12-5. How to detach the Pedal Box

Remove 3 pieces of the Socket Cap Bolts (M6x40) which fix the Box. And, pull the Box toward you and unplug the Connector from the main body, than the Box can be detached.

(The Pedal can be slid toward you by moving the position of the Box fixing holes.)



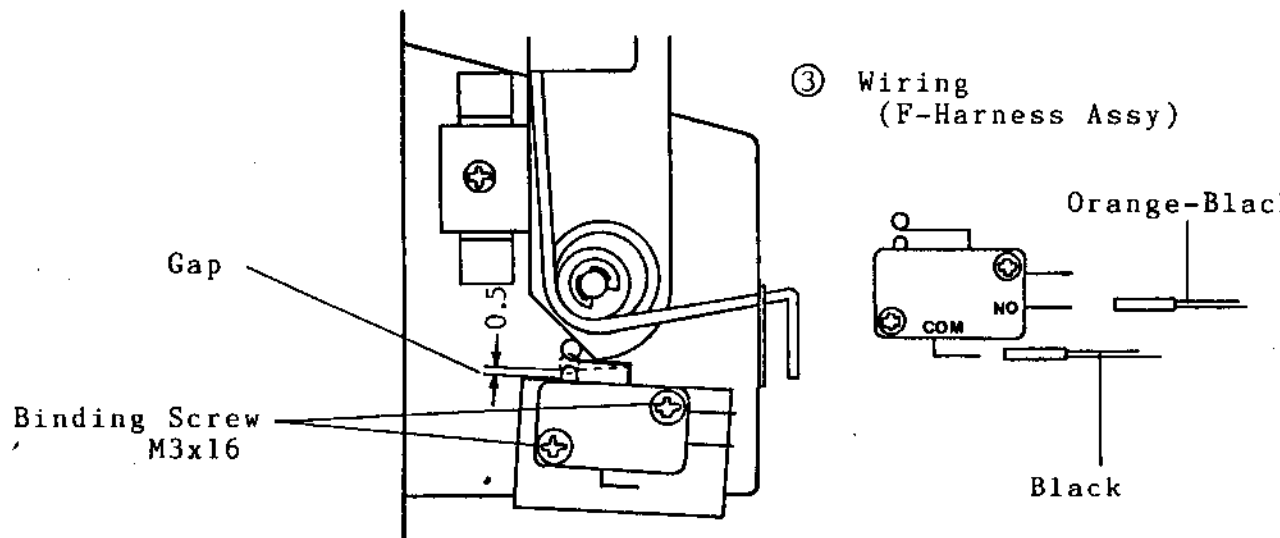
12-6. Exchange and Adjustment of the Brake Pedal Switch

① Exchange

Remove 2 pieces of the Binding Screws (M3x16) for the Micro Switch.

② Adjustment

Adjust the Switch so that it will be surely at the "ON" position when the Pedal is stepped and the gap between the Actuator and the Switch itself will be 0.5 mm.



12-7. Exchange and Adjustment of the Accelerator Pot

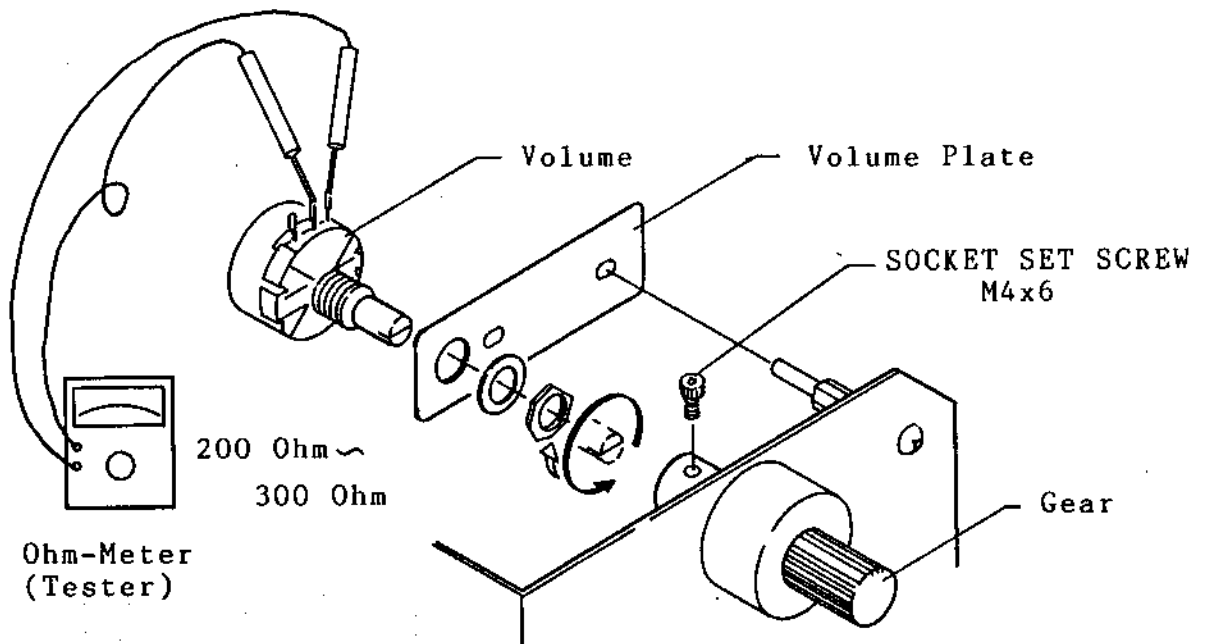
① Exchange

Unscrew 2 pieces of the Socket Set Screws (M4x6) which fix the Pot, and pull out it from the Gear.

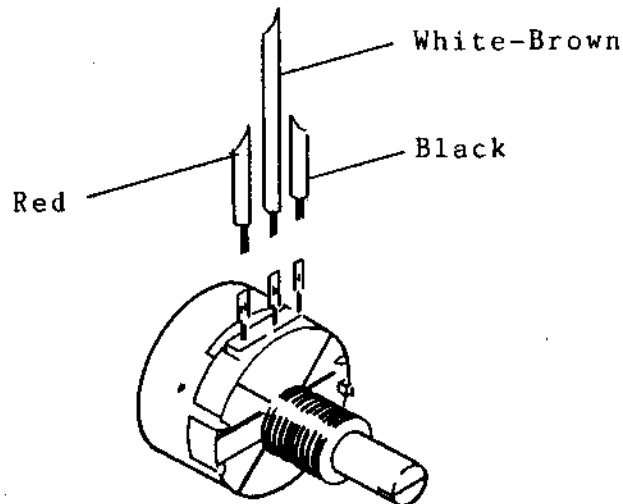
② Adjustment

As to the new Pot, after attaching the Pot Plate, turn the Shaft of the Pot counterclockwise to its end, and turn back it until the resistance shows 200~300 Ohm measured by using an ohm meter (tester).

After completing this adjustment, attach the Pot to the Gear in the condition that the Pedal is not stepped.

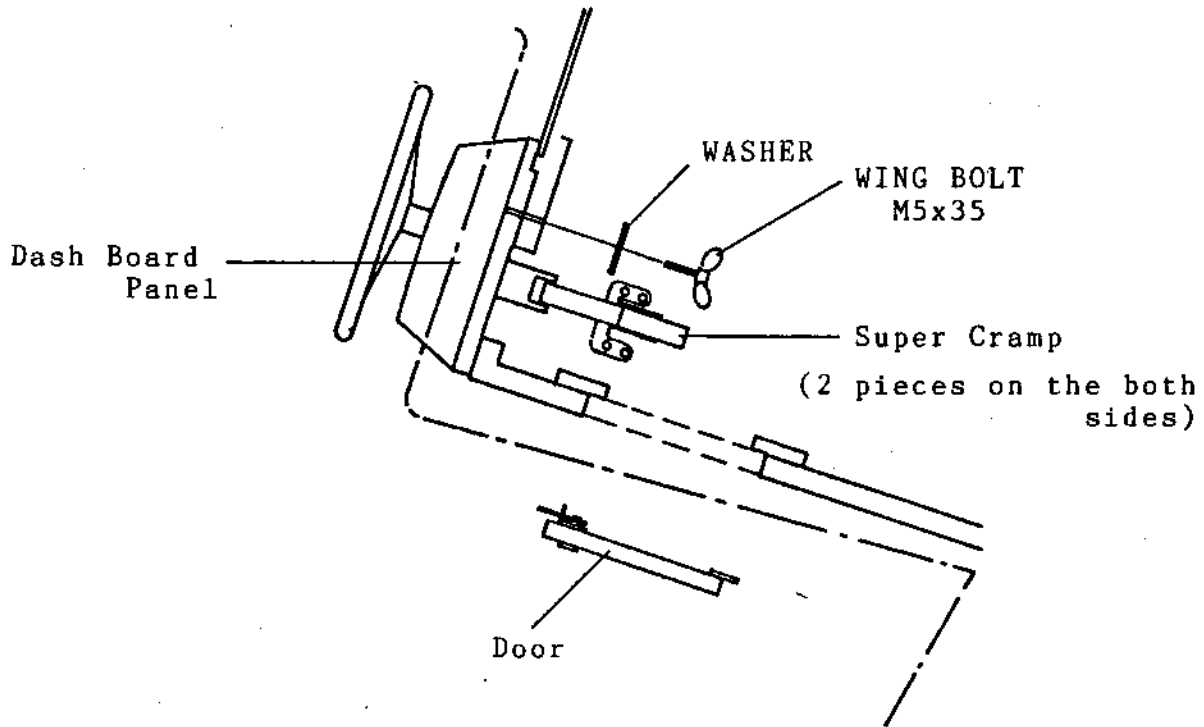


③ Wiring (E-Harness Assy)



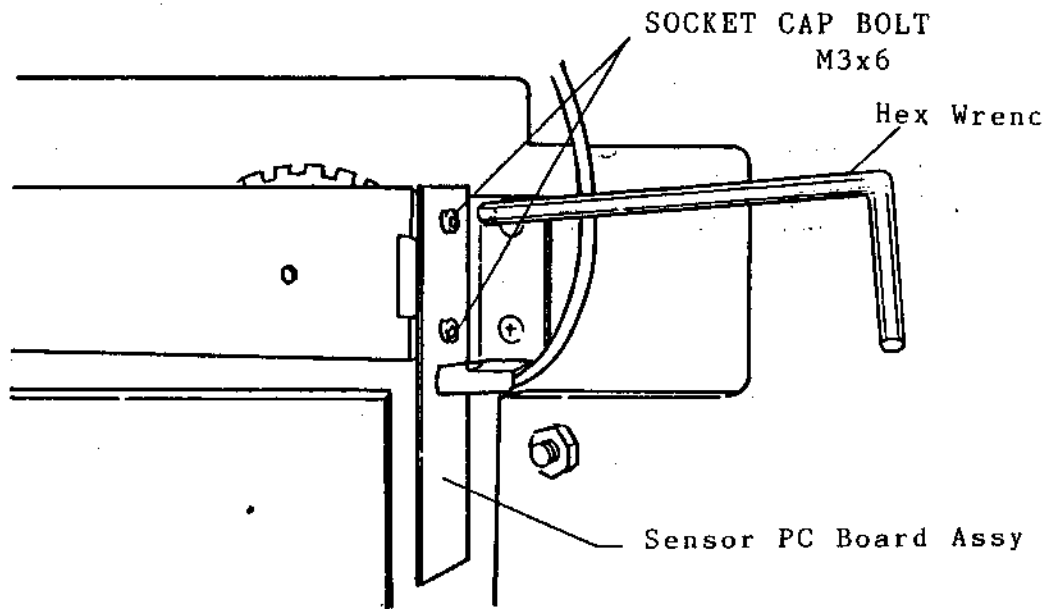
12-8. Opening of the Dash Board Panel

Open the Door located under the Dash Board, and remove the Wing Bolt (M5x35) located in the middle back of the Dash Board. And, by releasing the Super Creamps on the both side, the Panel can be opened.



12-9. Exchange of the Sensor PCB

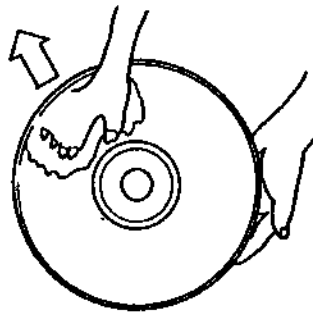
Remove 2 pieces of the Socket Cap Bolts (M3x6) which fix the Sensor PCB Assy by using a hex wrench.



12-10. Cleaning of the Disc and Filter

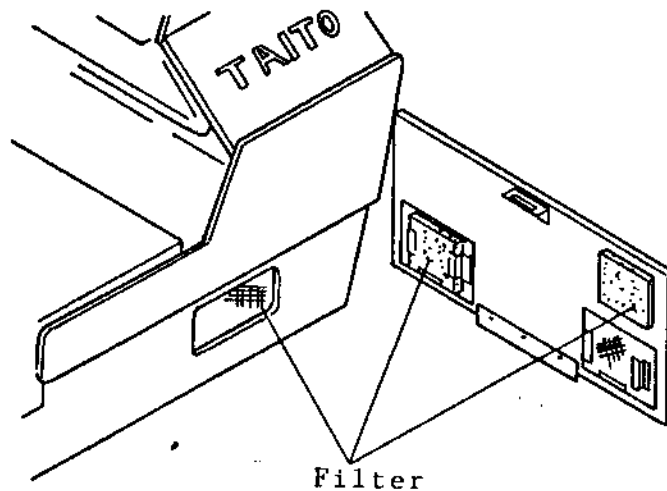
① Cleaning of the Disc

- o Clean the Disc twice a month.
- o When cleaning, sweep away dust by using a record cleaner or soft cloth.
Sweep on the Disc from the center to the outer side as shown below.
- o In case that the Disc is very dirty, wash it.
After washing, sweep away the water by using soft cloth.

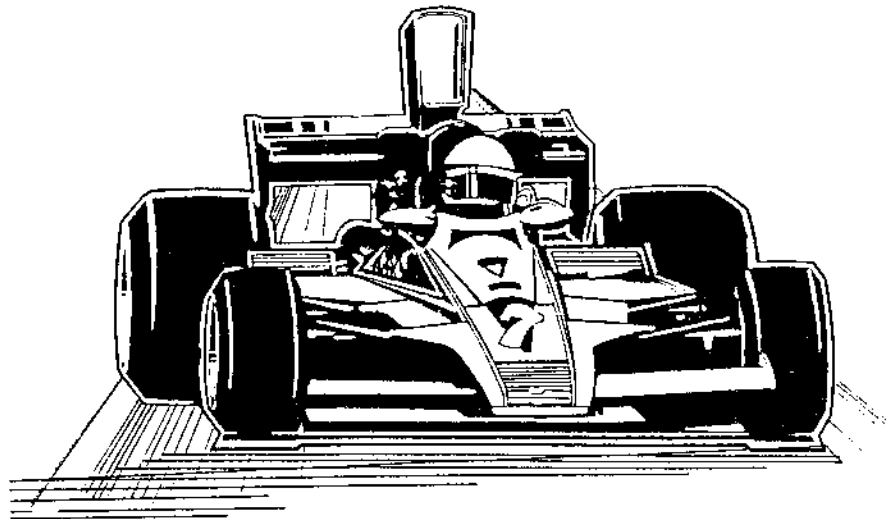


② Cleaning of the Filter

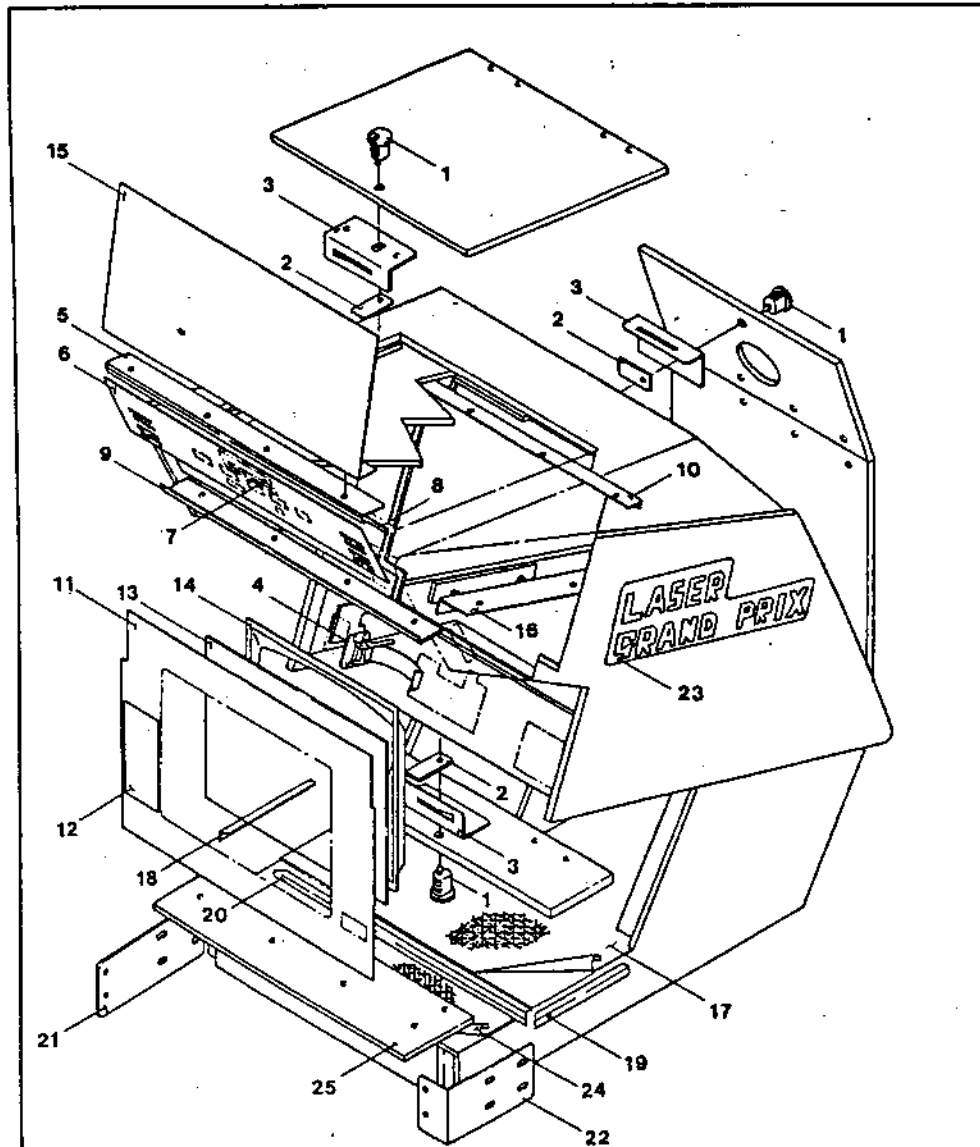
- o Wash the Filter twice a month at the same time of cleaning the Disc.
After washing the Filter, dry it well.
When attaching, no gap should exist.



PARTS CATALOG

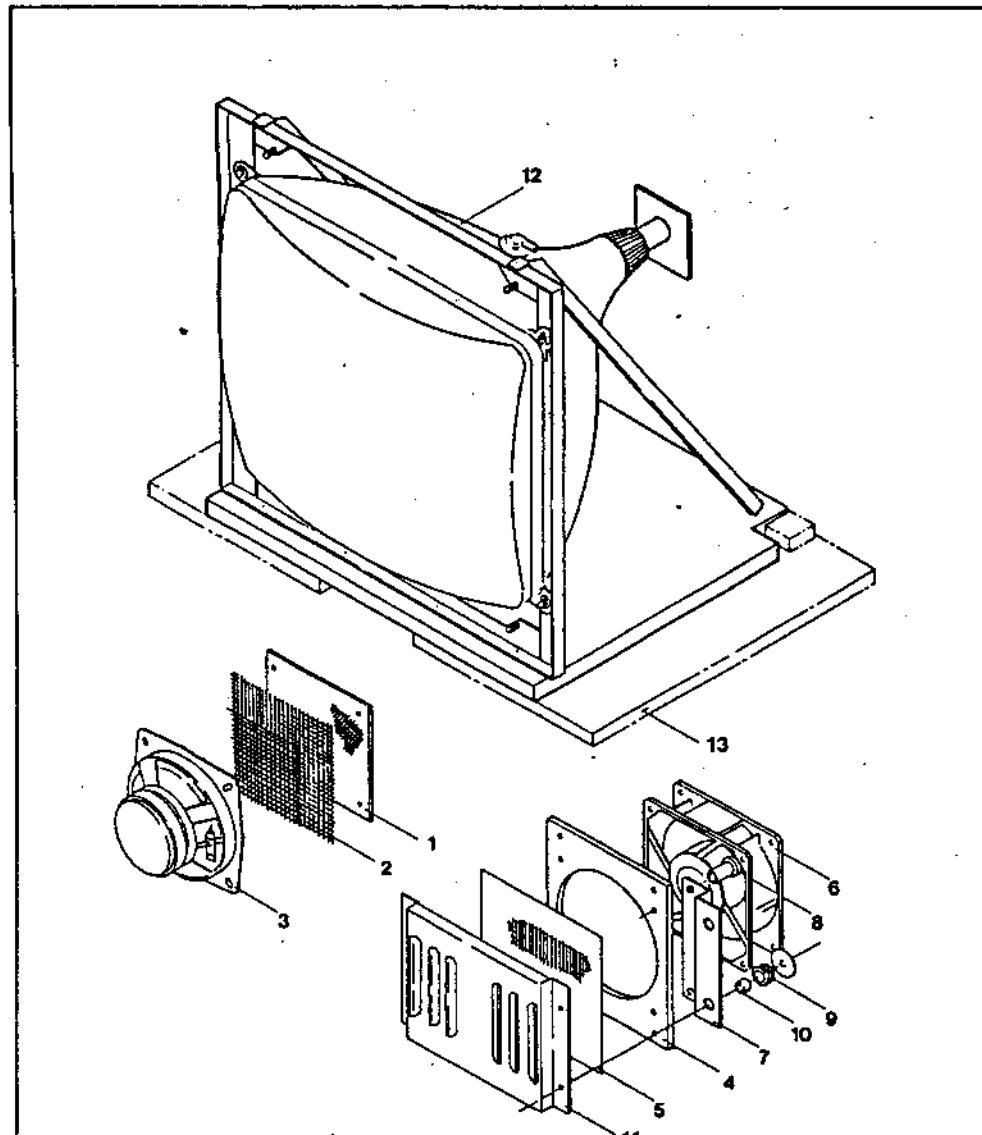


LASER GRAND PRIX CABINET ASS'Y



| Item | Part No. | Description |
|---|------------|------------------------------|
| Laser Grandprix Main Cabinet Ass'y (W90 00201A) | | |
| 1 | E50 00111A | Service Lock No.8300 Single |
| 2 | E30 00008A | Lock Plate Long-Size |
| 3 | E30 00066A | Lock Guard (B) |
| 4 | E50 60028A | Super Cramp C-137 |
| 5 | E30 01707A | Title Support Top |
| 6 | G95 00090A | LED Panel |
| 7 | G90 00183A | Today's Best Card |
| 8 | F90 00603A | Title Sponge |
| 9 | E30 01708A | Title Support Bottom |
| 10 | E30 01706A | Front Support |
| 11 | G95 00091A | Front Panel |
| 12 | G15 00042A | Front Sticker |
| 13 | F90 00597A | Color Plate 22" |
| 14 | F90 00596A | Video Mask 22" |
| 15 | G95 00105A | Display Panel |
| 16 | E30 01703A | Video Base |
| 17 | F90 00601A | Mat |
| 18 | E30 01699A | Trim (L) L=210mm |
| 19 | E30 01700A | Trim (R) L=210mm |
| 20 | E30 01698A | Trim L=720mm |
| 21 | E30 01704A | Joint Plate (A) |
| 22 | E30 01705A | Joint Plate (B) |
| 23 | G15 00036A | Cabinet Sticker Side |
| 24 | F90 00617A | Step Mat |
| 25 | E30 01761A | Step Plate |
| | M07 00026A | Cabinet Ass'y |
| | M90 00360A | Speaker Ass'y 8 ohm 10W 12cm |
| | M90 00315A | Fan Ass'y |
| | M08 00049A | Video Ass'y TC-V8N22(T) |
| | M03 00248A | Control Board Ass'y |
| | M01 10002A | Pedal Box Ass'y |

SPEAKER, FAN & VIDEO ASS'Y



| Item | Part No. | Description |
|------|------------|---|
| | | Speaker Ass'y (M90 00360A) 8 OHM 10W 12cm |
| 1 | E30 01690A | Speaker Plate |
| 2 | F90 00230A | Net |
| 3 | A60 00014A | Speaker 8 ohm 10W 12cm |

Fan Ass'y (M90 00315A)

| | | |
|----|------------|------------------|
| 4 | D20 00093A | Fan Spacer |
| 5 | E30 01372A | Woven Wire Cloth |
| 6 | C12 00059A | Fan EB114B-38-2 |
| 7 | E30 01373A | Fan Bracket |
| 8 | F90 00066A | Quiltight Q-3 |
| 9 | F20 00004A | Grommet NG-79-C |
| 10 | E10 00009A | Spacer |
| 11 | E30 01370A | Fan Cover |

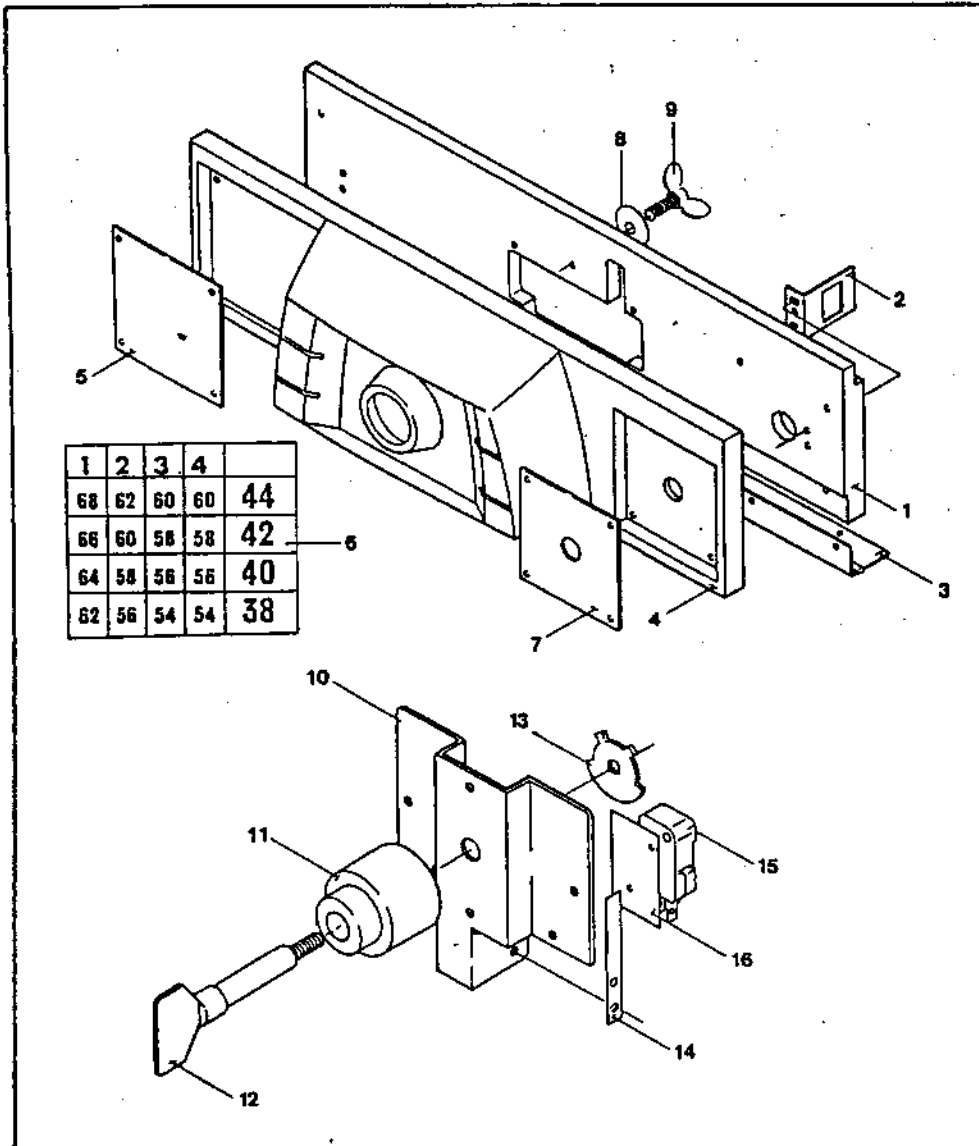
Video Ass'y (M08 00049A)

| | | |
|----|------------|-------------------------|
| 12 | M08 00049A | Video Ass'y TC-V8N22(T) |
|----|------------|-------------------------|

Main Cabinet Ass'y (W90 00201A)

| | | |
|----|------------|-----------------|
| 13 | D20 00143A | Video Board (L) |
|----|------------|-----------------|

CONTROL BOARD & KEY SWITCH ASS'Y



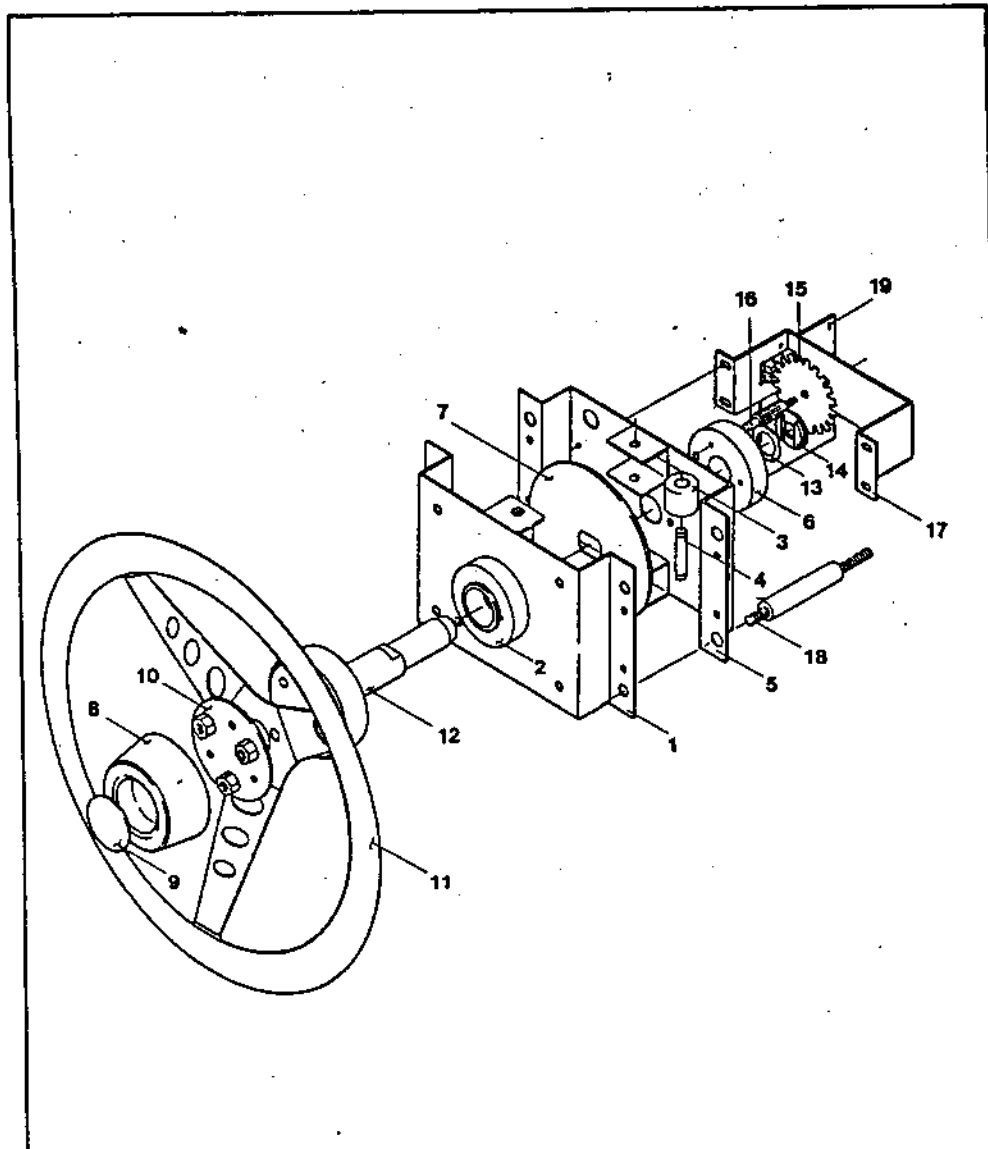
| Item | Part No. | Description |
|----------------------------------|------------|--------------------------|
| Control Board Ass'y (M03 00248A) | | |
| 1 | D20 00140A | Control Board |
| 2 | E30 00160A | Hook |
| 3 | E50 60068A | Control Hinge |
| 4 | F90 00595A | Dash Board Panel |
| 5 | G35 00201A | Instruction Plate |
| 6 | G35 00206A | Indication Card |
| 7 | G95 00093A | Key Plate |
| 8 | P27 00025A | Plain Washer 5.5x22x1.6T |
| 9 | P05 00078A | Wing Bolt M5x35 |

M90 00371A Key Switch Ass'y
M01 10001A Handle Mechanism Ass'y

Key Switch Ass'y (M90 00371A)

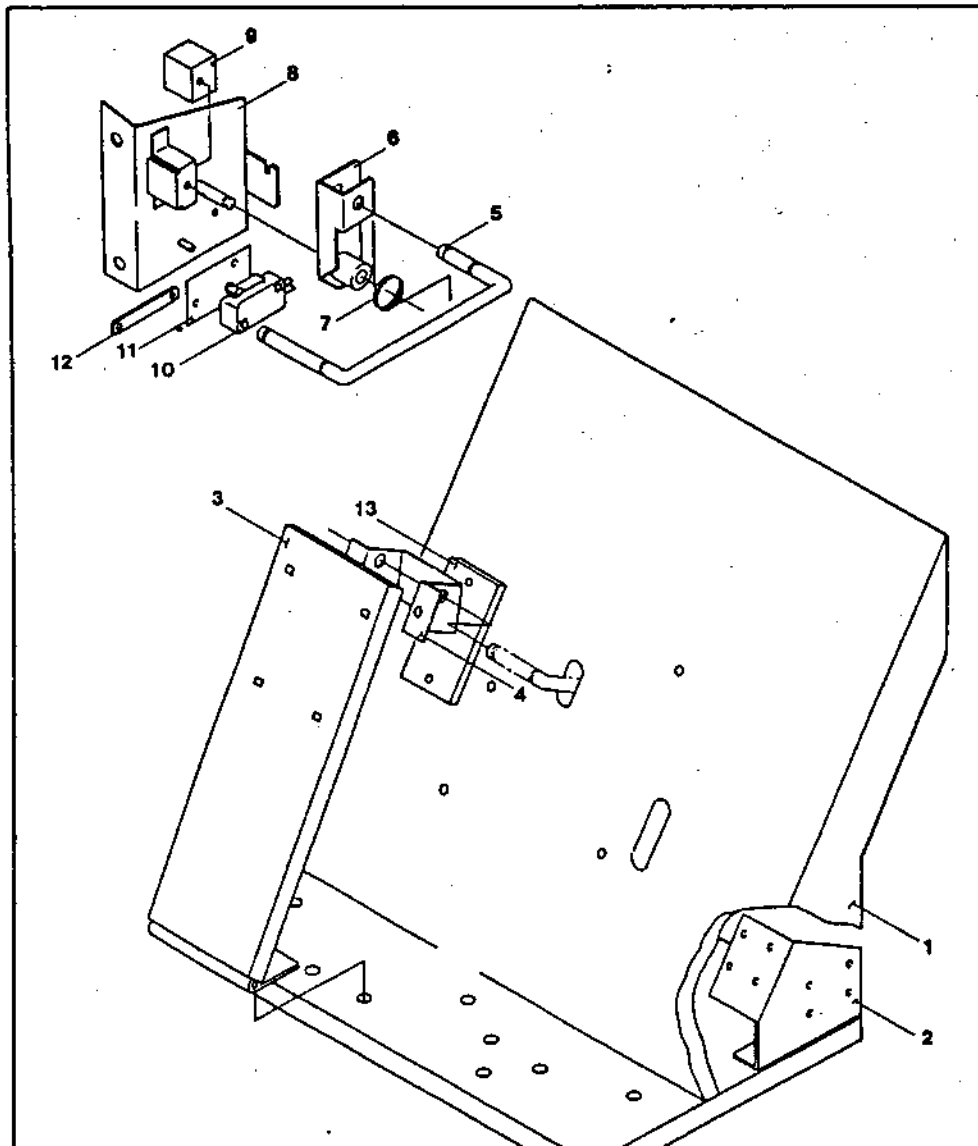
| | | |
|----|------------|------------------------|
| 10 | E30 00489A | Key Base |
| 11 | E10 00105A | Key Bush |
| 12 | E30 00488A | Key |
| 13 | E30 00487A | Switch Cam |
| 14 | E40 00040A | Cam Spring |
| 15 | C02 00083A | Micro Switch AH7155660 |
| 16 | F90 00150A | Insulator V-Type |

HANDLE MECHANISM ASS'Y



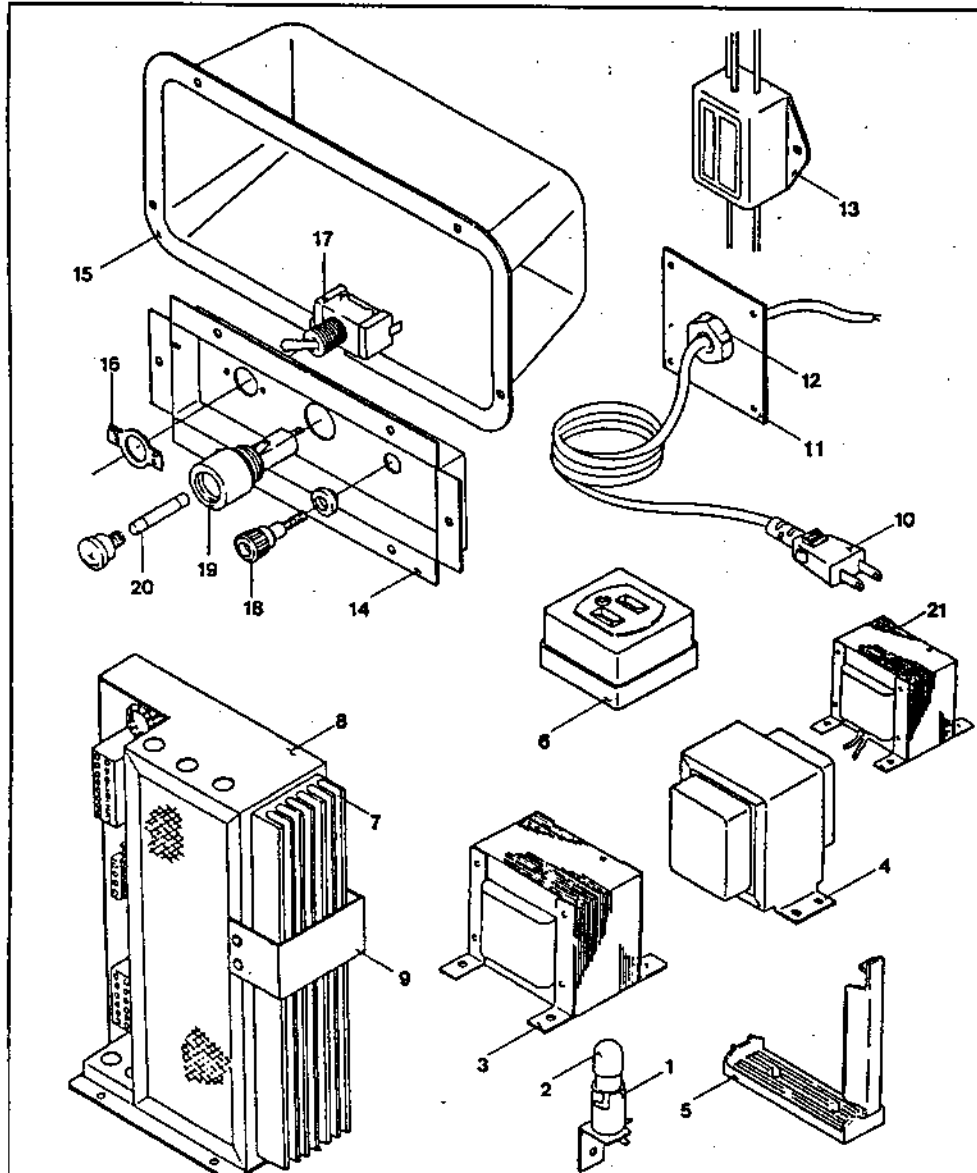
| Item | Part No. | Description |
|------|------------|-------------------------------------|
| | | Handle Mechanism Ass'y (M01 10001A) |
| 1 | E30 01728A | Hub Base (B) |
| 2 | E10 00409A | Hub |
| 3 | H90 00093A | Tension Roller |
| 4 | E10 00408A | Roller Shaft |
| 5 | E30 01727A | Hub Base (A) |
| 6 | E10 00382A | Hub (A) |
| 7 | E30 01723A | Brake Wheel |
| 8 | F90 00158A | Steering Cap |
| 9 | G90 00073A | Decoreation Plate |
| 10 | E30 00420A | Retaining Plate Ass'y |
| 11 | F90 00334A | Steering Wheel |
| 12 | E10 00410A | Steering Shaft |
| 13 | E10 00379A | Spacer |
| 14 | E70 00036A | Gear (A) |
| 15 | E30 00656A | Pulse Cam |
| 16 | E70 00037A | Gear (B) |
| 17 | E30 01726A | Sencor Board Bracket |
| 18 | E10 00406A | Joint Shaft |
| 19 | K90 00118A | Sensor PC Board Ass'y |

PEDAL BOX & BRAKE MECHANISM ASS'Y



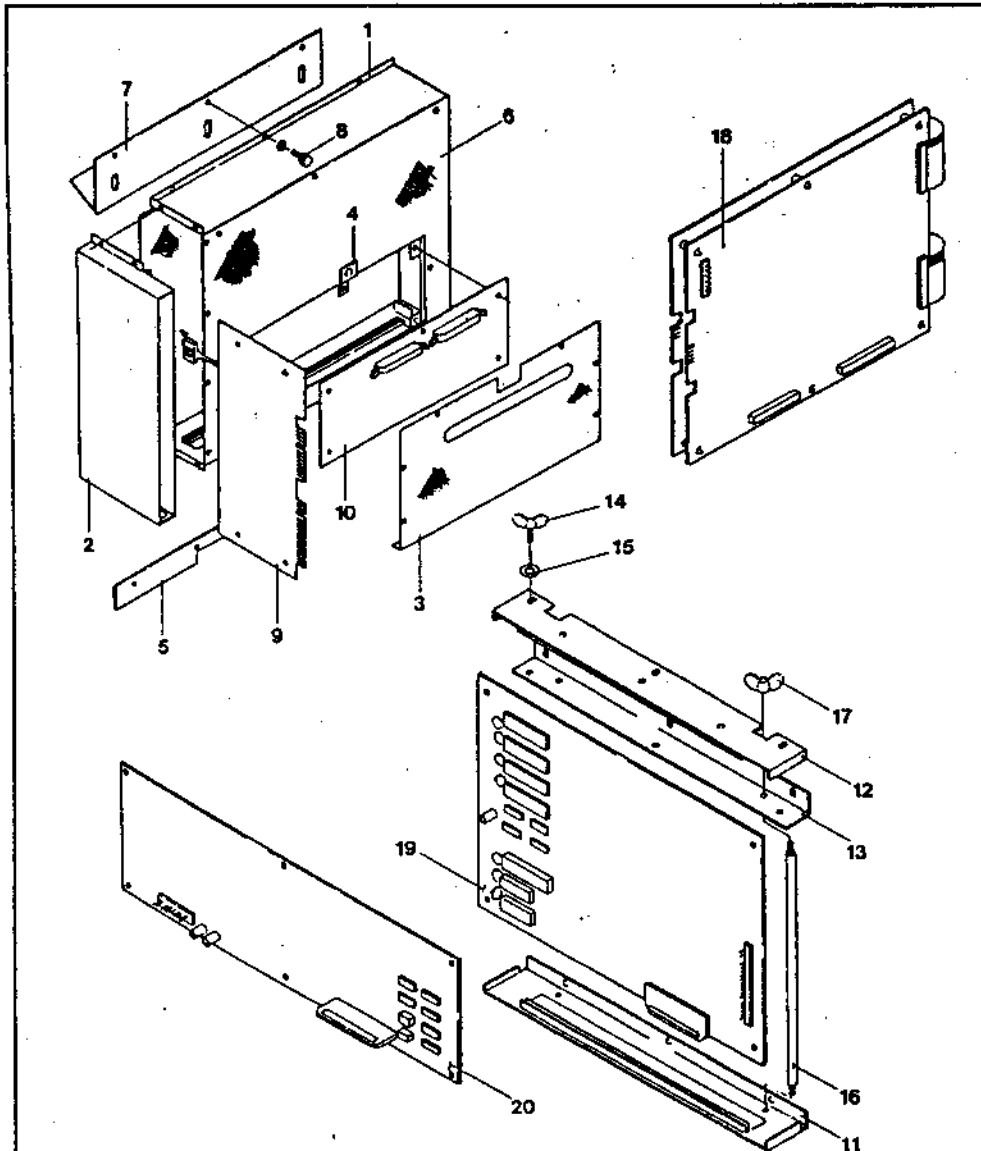
| Item | Part No. | Description |
|--|------------|------------------------|
| Pedal Box Ass'y (M01 10002A) | | |
| 1 | D20 00141A | Pedal Box |
| 2 | E30 01758A | Pedal Box Support (R) |
| | E30 01757A | Pedal Box Support (L) |
| M01 10003A Accelerator Mechanism Ass'y | | |
| M01 10004A Brake Mechanism Ass'y | | |
| L90 00448A E Harness Ass'y | | |
| L90 00449A F Harness Ass'y | | |
| Brake Mechanism Ass'y (M01 10004A) | | |
| 3 | E30 01720A | Pedal |
| 4 | E30 01680A | Pedal Bracket |
| 5 | E10 00404A | Link |
| 6 | E90 00431A | Link Cam |
| 7 | E40 00120A | Spring |
| 8 | E90 00432A | Base Plate |
| 9 | F90 00604A | Bumper Rubber |
| 10 | C02 00083A | Micro Switch AH7155660 |
| 11 | F90 00150A | Insulator V-Type |
| 12 | E30 00153A | Tap Plate |
| 13 | F90 00605A | Pedal Rubber |

SWITCHING & POWER LINE ASS'Y



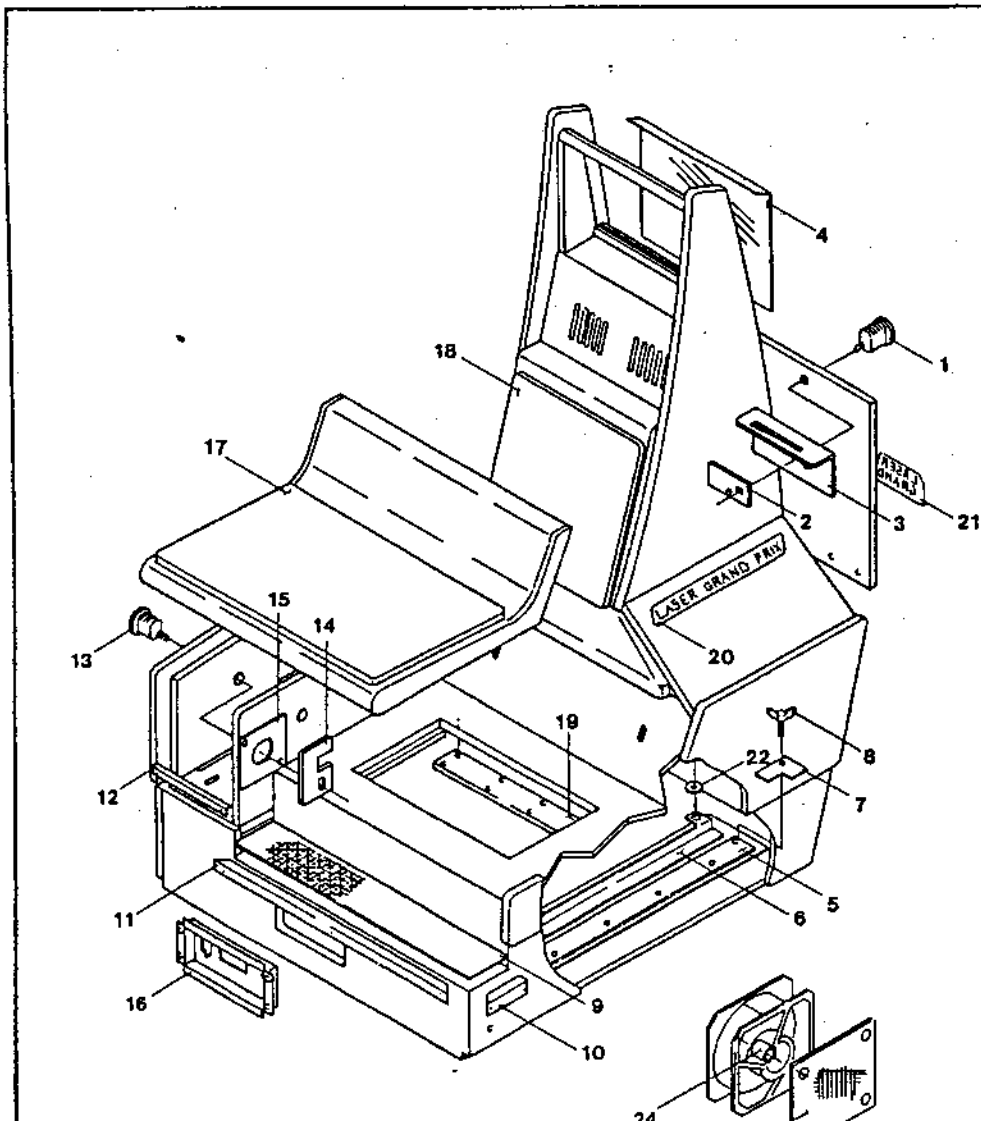
| Item | Part No. | Description |
|------|------------|--|
| | | Main Electric Ass'y (W90 00203A) |
| 1 | C05 50204A | Lamp Socket L-Type |
| 2 | C14 00086A | Pilot Lamp 12V 150mA |
| 3 | M9D 00362A | Transformer Ass'y |
| 4 | C10 00270A | Video Transformer |
| 5 | F90 00483A | FRC Clamp |
| 6 | C05 50470A | AC Receptacle |
| | M41 00006A | Switching Regulator Ass'y |
| | W90 00205A | Power Line Ass'y |
| | M90 00379A | Shield Box Ass'y |
| | M90 00365A | PC Board Guide Ass'y - Sound |
| | K20 00032A | Sound PC Board Ass'y |
| | M42 00366B | Main PC Board Ass'y |
| | K60 00010B | Timer & Score PC Board Ass'y |
| | L10 00038B | Main Harness Ass'y |
| | L90 00457A | Z-M-U Harness Ass'y |
| | L90 00452A | N Harness Ass'y |
| | L90 00455A | Q1-S1 Harness Ass'y |
| | L50 00015B | FRC Harness Ass'y 50P L=1300mm |
| | L50 00016B | FRC Harness Ass'y 40P L=2700mm |
| | | Switching Regulator Ass'y (M41 00006A) |
| 7 | K30 10006A | Switching Regulator Ass'y |
| 8 | H90 00092A | Regulator Box |
| 9 | E30 01687A | Regulator Stop |
| | | Power Line Ass'y (W90 00205A) |
| 10 | | AC Cord |
| 11 | E30 00897A | Mold Cord Plate |
| 12 | F90 00144A | Mold Cord Bush |
| 13 | C18 00008A | Noise Filter ZMB-2206-02 |
| 14 | E30 00091A | Switch Box |
| 15 | F90 00047A | Switch Cover |
| 16 | G95 00023A | Guide Plate ON-OFF |
| 17 | C02 00020A | Toggle Switch ET125A-12 |
| 18 | C06 01002A | Earth Terminal |
| 19 | C05 50144A | Fuse Holder S-N 2058 |
| 20 | C16 00037A | Fuse 5A |
| | L90 00454A | Z Harness Ass'y |
| | L90 00043A | Earth Harness Ass'y |
| 21 | C10 00244A | Transformer |

PC BOARD & GUIDE ASS'Y



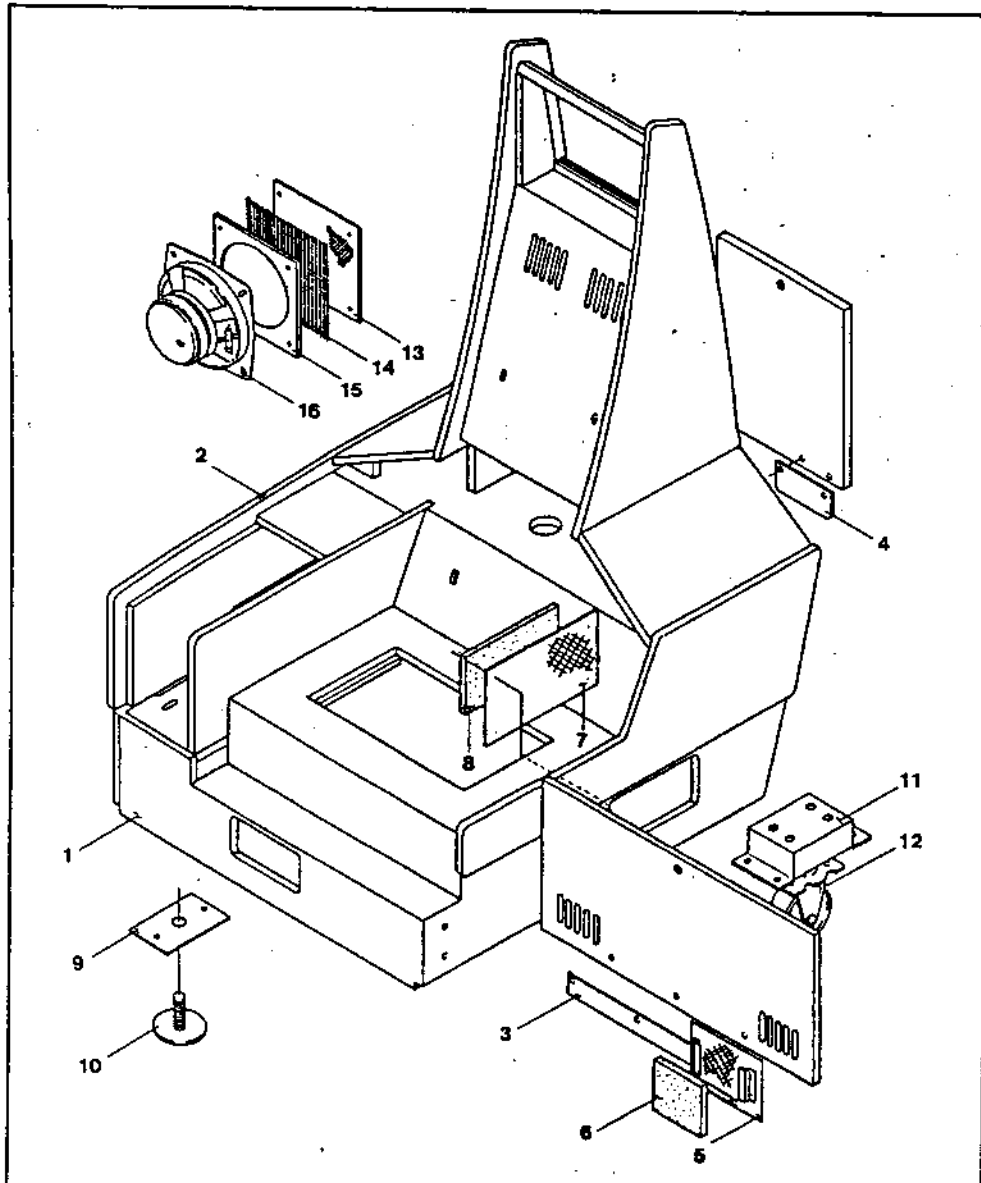
| Item | Part No. | Description |
|--|------------|------------------------------|
| Shield Box Ass'y (M90 00379A) | | |
| 1 | H90 00106A | Shield Box |
| 2 | E30 01792A | Filter Board Box |
| 3 | E30 01790A | Shield Cover |
| 4 | E30 01802A | Board Support Bracket |
| 5 | E30 01791A | Guide Rail |
| 6 | E30 01845A | Shield Box Cover |
| 7 | E30 01846A | Guide Bracket |
| 8 | P05 00060A | Roller Screw M4x10 |
| 9 | K90 00123A | Filter PC Board Ass'y |
| 10 | K90 00124A | FRC Filter PC Board Ass'y |
| PC Board Guide Ass'y (M90 00365A) SOUND | | |
| 11 | H90 00099A | PC Board Guide (A-S) |
| 12 | H90 00100A | PC Board Guide (B-S) |
| 13 | E30 01764A | Guide Bracket (S) |
| 14 | P05 00043A | Wing Bolt M3x10 |
| 15 | P27 00004A | Plain Washer 3M |
| 16 | E10 00212A | Shaft |
| 17 | P22 00005A | Wing Nut M3 |
| 18 | M42 00366B | Main PC Board Ass'y |
| 19 | K20 00032A | Sound PC Board Ass'y |
| 20 | K60 00010A | Timer & Score PC Board Ass'y |

LASER GRAND PRIX SEAT CABINET ASS'Y



| Item | Part No. | Description |
|---|------------|-------------------------------|
| Laser Grandprix Seat Cabinet Ass'y (W90 00202A) | | |
| 1 | E50 00111A | Service Lock No.8300 Single |
| 2 | E30 00008A | Lock Plate Long-Size |
| 3 | E30 00066A | Lock Guard (B) |
| 4 | F90 00600A | Smork |
| 5 | E30 01702A | Disk Guide |
| 6 | E30 01855A | Disk Stay L |
| 7 | E30 01729A | Disk Stop |
| 8 | P05 00055A | Wing Bolt M4x10 |
| 9 | F90 00602A | Seat Mat |
| 10 | E30 01695A | Trim L-90mm |
| 11 | E30 01697A | Trim L-540mm |
| 12 | E30 01696A | Trim L-180mm |
| 13 | E50 00110A | Service Lock No,8300 Double |
| 14 | E30 01686A | Key Lock |
| 15 | E30 01689A | Lock Washer |
| 16 | E30 01710A | Connector Box |
| 17 | F90 00598A | Seat (A) |
| 18 | F90 00599A | Seat (B) |
| 19 | E30 01694A | Seat Bracket |
| 20 | G15 00035A | Seat Sticker Side |
| 21 | G15 00037A | Seat Sticker Back |
| 22 | F90 00635A | Disk Bumper |
| 23 | E30 01716A | Fan Punching |
| 24 | E10 00289A | Board Spacer R |
| | M07 00027A | Seat Cabinet Ass'y |
| | M90 00315A | Fan Ass'y |
| | M90 00300A | Speacker Ass'y 8 ohm 10W 12cm |
| | M40 00019A | Cash Box Ass'y |
| | M90 00372A | Disk Player LD-V1001 |
| | C51 00001A | Laser Disk "LASER GRANDPRIX" |
| | M01 10005A | Shift Board Ass'y |
| | M05 00021A | Reflector Board Ass'y |

SEAT CABINET & SPEAKER ASS'Y

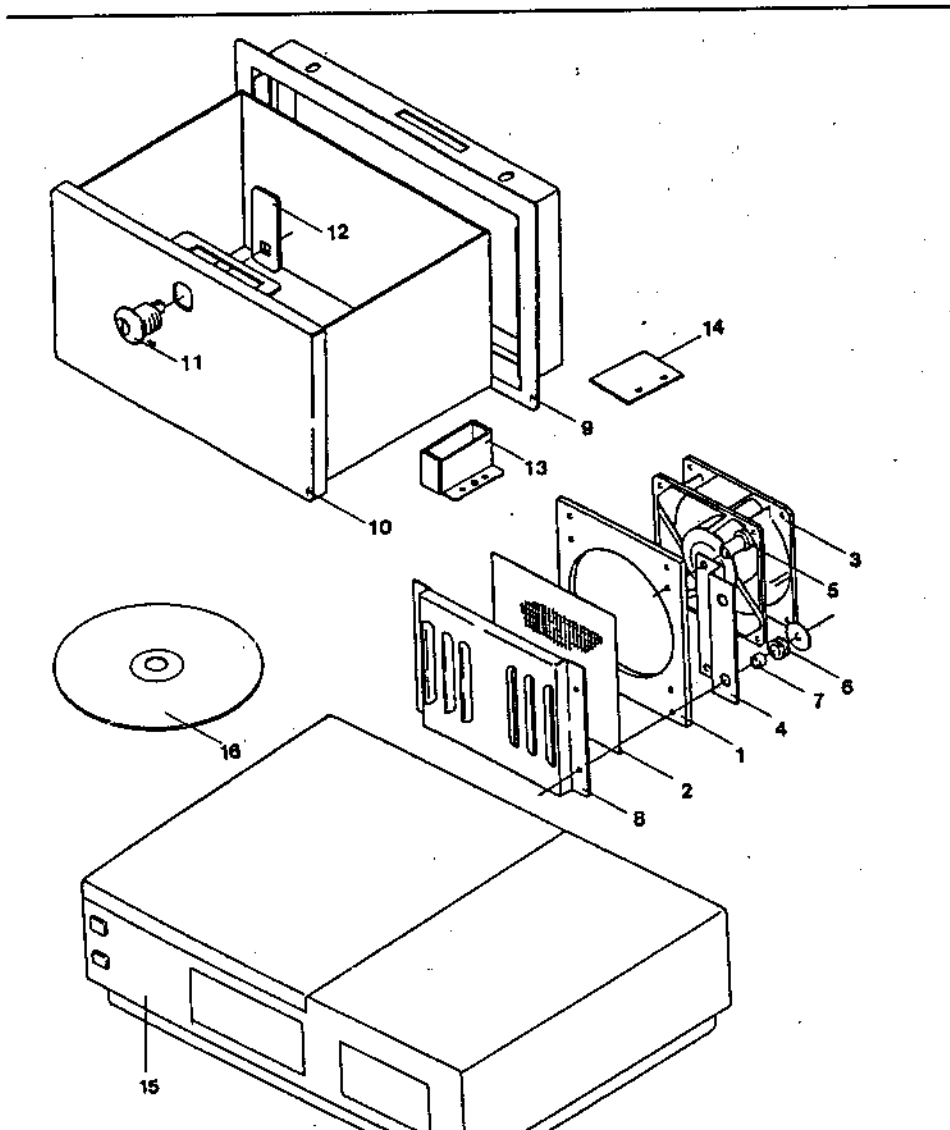


| Item | Part No. | Description |
|---------------------------------|------------|----------------------|
| Seat Cabinet Ass'y (M07 00027A) | | |
| 1 | D30 00036A | Seat Cabinet |
| 2 | F90 00042A | Cabinet Edge Black |
| 3 | E30 01693A | Door Stopper L=320mm |
| 4 | E30 00021A | Back Door Stopper |
| 5 | E30 01718A | Filter Plate (S) |
| 6 | F90 00607A | Filter (S) |
| 7 | E30 01717A | Filter Plate (L) |
| 8 | F90 00606A | Filter (L) |
| 9 | E30 01762A | Adjuster Plate |
| 10 | E30 00006A | Adjuster |
| 11 | E30 01760A | Caster Bracket S |
| 12 | E50 60069A | Caster 420R-N,D=38mm |

Speaker Ass'y (M90 00300A) 8 OHM 10W 12cm

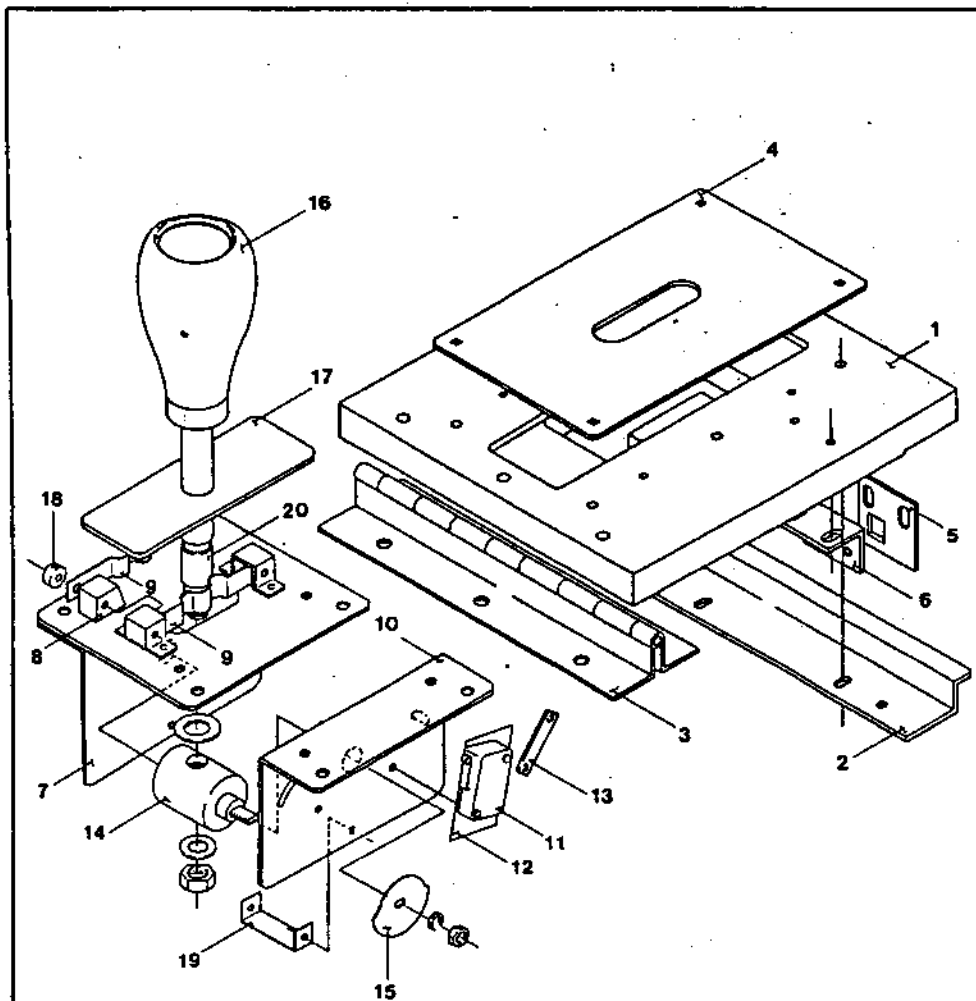
| | | |
|----|------------|------------------------|
| 13 | E30 01336A | Punching Metal |
| 14 | F90 00230A | Net |
| 15 | D20 00046A | Speaker Board |
| 16 | A60 00014A | Speaker 8 ohm 10W 12cm |

FAN, CASH BOX & LASER DISC ASS'Y



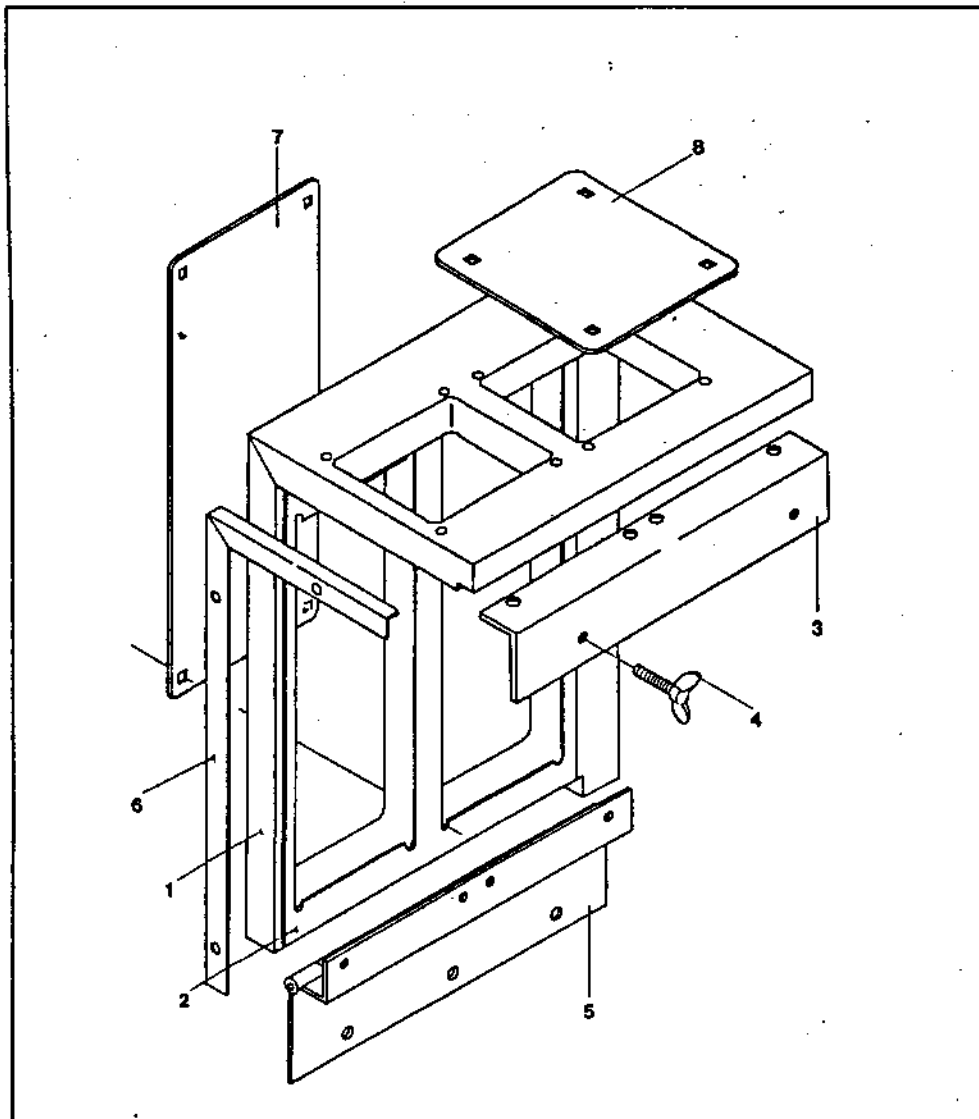
| Item | Part No. | Description |
|-----------------------------|------------|------------------------------|
| Fan Ass'y (M90 00315A) | | |
| 1 | D20 00093A | Fan Spacer |
| 2 | E30 01372A | Woven Wire Cloth |
| 3 | C12 00059A | Fan EB114B-38-2 |
| 4 | E30 01373A | Fan Bracket |
| 5 | F90 00066A | Quitight Q-3 |
| 6 | F20 00004A | Grommet NG-79-C |
| 7 | E10 00009A | Spacer |
| 8 | E30 01370A | Fan Cover |
| Cash Box Ass'y (M04 00019A) | | |
| 9 | E30 01721A | Cash Box Frame |
| 10 | E30 01722A | Cash Box |
| 11 | E50 00102A | Dow Lock C818 R90° |
| 12 | E30 00177A | Lock Plate (C) |
| 13 | E30 01683A | Coin Bracket |
| 14 | E30 01851A | Shutter Plate |
| 15 | M90 00372A | Disk Player LD-V1001 |
| 16 | C51 00001A | Laser Disk "LASER GRANDPRIX" |

SHIFT BOARD & LEVER ASS'Y



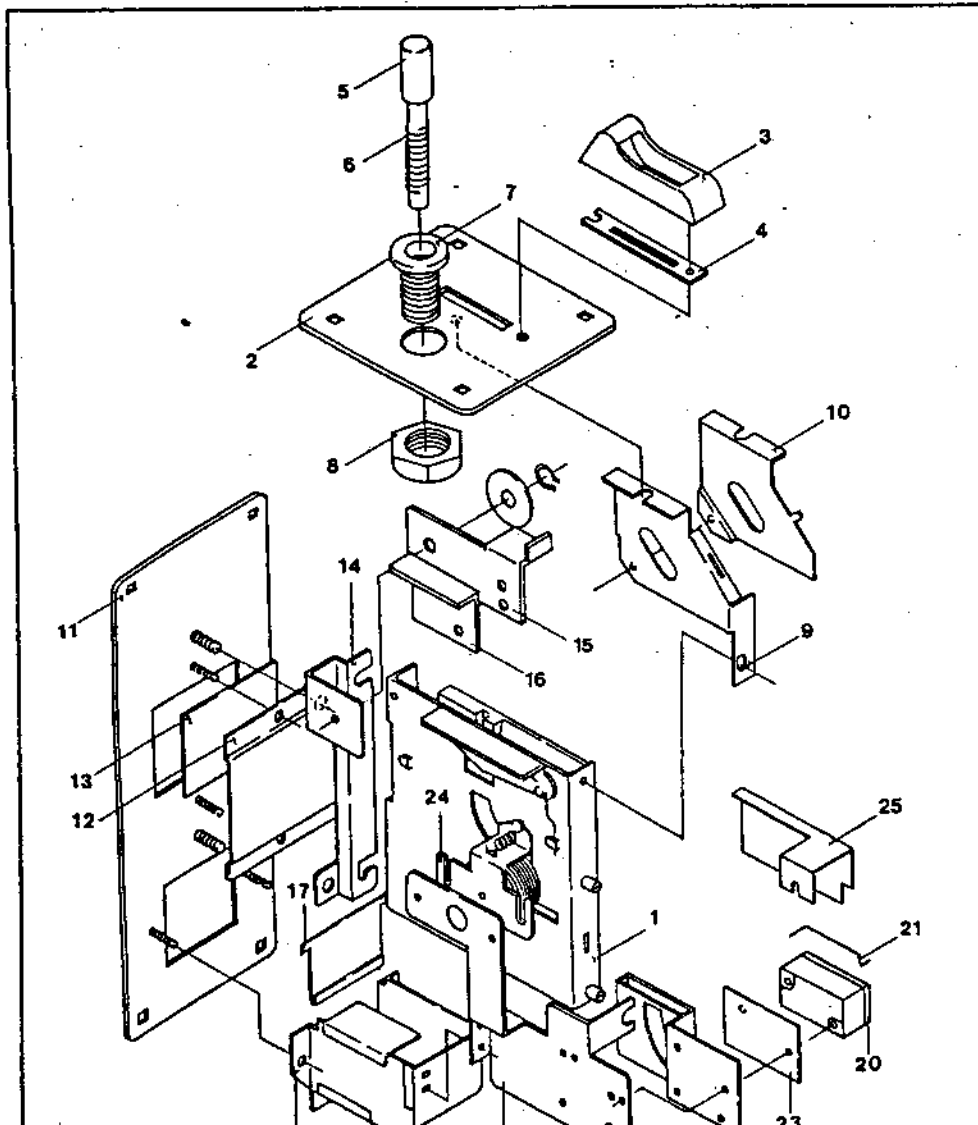
| Item | Part No. | Description |
|------|------------|--------------------------------|
| | | Shift Board Ass'y (M01 10005A) |
| 1 | D20 00145A | Shift Board |
| 2 | E30 01719A | Shift Board Joint |
| 3 | E50 60067A | Shift Hinge (S) |
| 4 | G95 00092A | Shift Plate |
| 5 | E30 00991A | Hook |
| 6 | E30 00978A | Hook Bracket |
| | | M01 10006A Shift Lever Ass'y |
| | | Shift Lever Ass'y (M01 10006A) |
| 7 | E30 01724A | Shift Bracket (A) |
| 8 | F90 00609A | Rubber Bumper |
| 9 | E40 00121A | Tension Spring |
| 10 | E30 01725A | Shift Bracket (B) |
| 11 | C02 00083A | Micro Switch AH7155660 |
| 12 | F90 00150A | Insulator V-Type |
| 13 | E30 00153A | Tap Plate |
| 14 | E10 00407A | Center Shaft |
| 15 | E30 01434A | Cam |
| 16 | H90 00094A | Shift Lever |
| 17 | F90 00554A | Mask |
| 18 | F90 00608A | Spacer Rubber |
| 19 | E30 01459A | Spacer |
| 20 | E10 00405A | Roller |
| | L90 00450A | J Harness Ass'y |

REJECTOR BOARD & SHUT ASS'Y



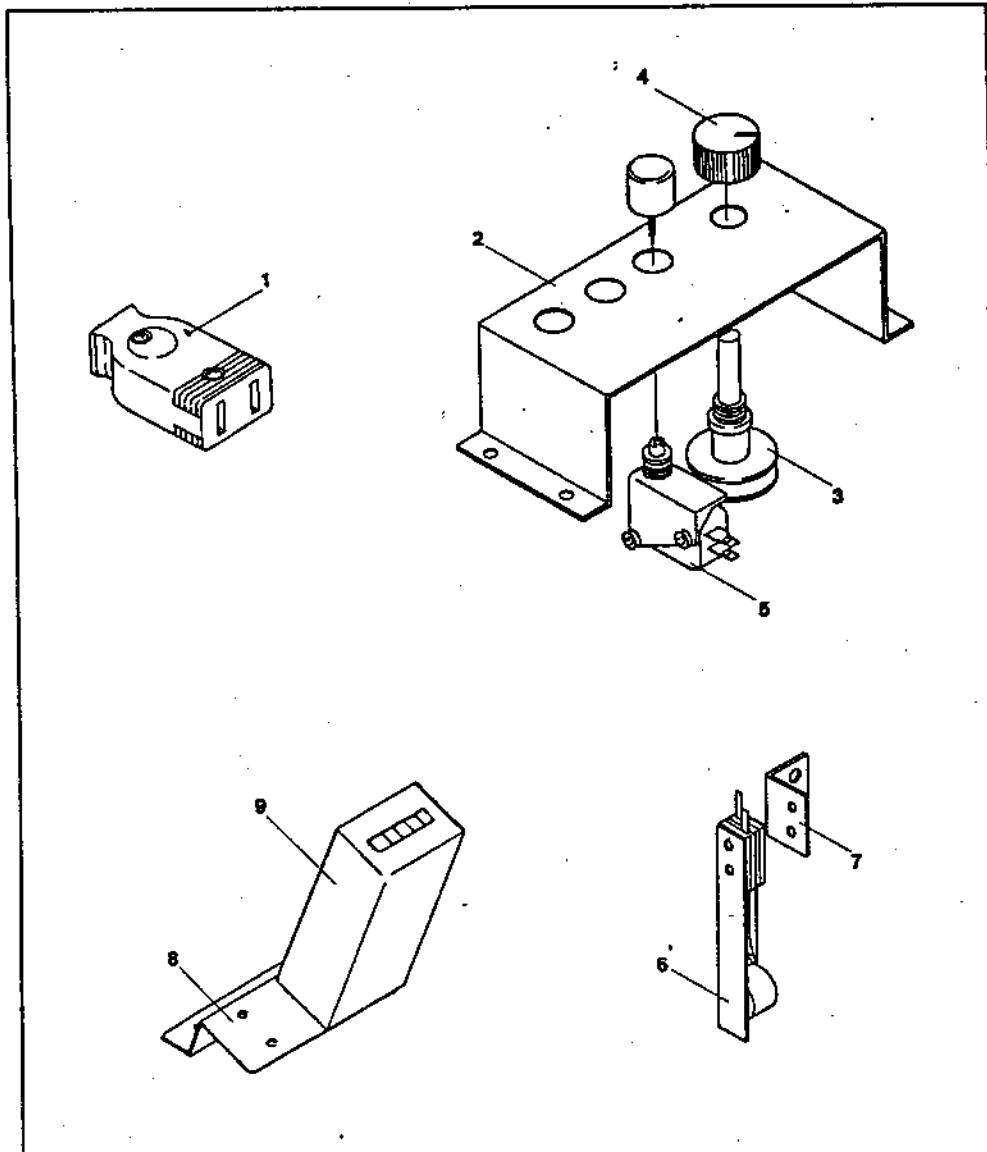
| Item | Part No. | Description |
|------|------------|--|
| | | Rejector Board Ass'y |
| 1 | D20 00142A | Rejector Board |
| 2 | E30 01714A | Rejector Support |
| 3 | E30 01715A | Joint Support |
| 4 | P05 00060A | Wing Bolt M4x20 |
| 5 | E50 60066A | Shift Hinge (L) |
| | P22 00007A | Wing Nut M4 |
| 6 | E30 01849A | Rejector Board Cover |
| | | Rejector Ass'y |
| | M05 00023A | Rejector Shut Ass'y |
| | | Rejector Shut Ass'y 1 Way (M05 00023A) |
| 7 | E30 01713A | Entry Shutter |
| 8 | E30 01767A | Entrance Shutter |

REJECTOR ASS'Y 1WAY



| Item | Part No. | Description |
|------|------------|--------------------------|
| | | Rejector Ass'y |
| 1 | | Rejector AD-81PP |
| 2 | E30 01691A | Coin Entrance |
| 3 | E20 00087A | Coin Entry Molding |
| 4 | | Entry Plate |
| 5 | E10 00403A | Cancel Button |
| 6 | E40 00001A | Cancel Button Spring |
| 7 | E10 00054A | Cancel Button Holder |
| 8 | E10 00007A | Holder Nut |
| 9 | E30 01681A | Coin Chute (A) |
| 10 | E30 01682A | Coin Chute (B) |
| 11 | E30 01712A | Entry Base |
| 12 | E30 01227A | Price Cover |
| 13 | | Price Card |
| 14 | E30 01226A | Holder Support |
| 15 | E30 01684A | Lever (A) |
| 16 | E30 01685A | Lever (B) |
| 17 | E30 01225A | Cup Door |
| 18 | E30 01207A | Cup |
| 19 | E30 01206A | Chute Bracket |
| 20 | C02 00052A | Micro Switch C-5G3-3 |
| 21 | C03 00001A | Actuator CAA-1 |
| 22 | E30 00285A | MS Coin Guide |
| 23 | F90 00148A | Insulator C-5G, Type-3 |
| 24 | C11 00802A | Coin Lockout Coil DC-12V |
| 25 | E30 00180A | Actuator Cover |
| | | C Harness Ass'y |

CENTRAL CONTROL & TILT ASS'Y



| Item | Part No. | Description |
|---|------------|---------------------------|
| Seat Cabinet Electric Ass'y (W90 00204A) | | |
| 1 | C05 50461A | AC Socket |
| | L10 00039A | Main Seat Harness Ass'y |
| | L90 00453A | U Harness Ass'y |
| | L90 00451A | K Harness Ass'y |
| | L90 00456A | P1-Q1 Harness Ass'y |
| | M90 00363A | Central Control Ass'y |
| | M90 00364A | Tilt Ass'y |
| Central Control Ass'y (M90 00363A) | | |
| 2 | E30 01711A | Volume & Switch Bracket |
| 3 | C02 00164A | Rotary Switch |
| 4 | E90 00416A | Knob |
| 5 | C02 00033A | Push Button Switch VAQ-4R |
| Tilt Ass'y (M90 00364A) | | |
| 6 | C04 01027A | Tilt Switch |
| 7 | E30 01688A | Tilt Stay |
| Laser Grandprix Seat Cabinet Ass'y (W90 00202A) | | |
| 8 | E30 01850A | Counter Bracket (110°) |
| 9 | C17 00008A | Counter ME-5 |



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