



ORIGINAL RACING VIDEO GAME

# Winding HEAT™

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## OPERATOR'S MANUAL

### WARNING

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**SPATIALIZER®**  
3D-stereo

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PART NUMBER 64342

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# 1

## About this product

Thank you for purchasing this Konami product. This manual explains how to correctly and safely operate your game machine. Failing to operate the machine correctly could result in malfunction or accident, so please read the manual carefully before commencing operation.

### Note

Please refer to section 7 for information regarding arming and disarming the alarm system.

## CRITICAL EMC PARTS

THE FOLLOWING PARTS ARE CRITICAL TO THE MACHINE THIS MEANS THAT TO CONTINUE TO COMPLY WITH THE EMC DIRECTIVES YOU SHOULD ONLY REPLACE PARTS WITH THE SAME PART. FAILURE TO DO THIS CAN CAUSE DAMAGE TO OTHER EQUIPMENT.

### CRITICAL PARTS.

PART NUMBER	DESCRIPTION
80082	NOISE FILTER
14032/3/4	SWITCH MODES
162700	MAIN LOOM WITH FERRITE
53065	FAN 12V DC
10204	27 INCH MONITOR
381711	STEERING ASSEMBLY
11313	PCB MOTOR STEERING
11315	GAME PCB
381758	TOP BOX ASSEMBLY
EP1004	CREDIT CONTROL PCB
12532	

Failure to comply with the above items will invalidate the CE mark. This machine has been tested to EMC directives.

### **WARNING**

**This equipment must not be modified in any way without the written permission of Konami (UK) LTD. Failure to do so will invalidate the CE marking**



## 2

## Precautions for use

This manual contains detailed information concerning the use of "Midnight Run," an original product of Konami, LTD. BE sure to read through the manual before attempting to use this product.

Unauthorized reproduction of this document or any of its contents are strictly forbidden. We reserve the right to revise equipment specifications or contents of the software without prior notice.

The contents of this game, its main data and design are protected by copyright law and industrial property law.

For the best results, get a good understanding of the information contained in this manual in order to use the product properly.

Please heed the following suggestions in order to ensure your safety when using the product. Be sure to read and get a good understanding of the following items.

### **DANGER!**

indicates a situation where disregarding suggestions could result in death or serious injury.

### **CAUTION!**

indicates a situation where disregarding suggestions could result in injury or product damage.

## Setting Up.

---

This machine should not be moved or transported by anyone other than an industry specialist. doing so could result in injury or product damage.

---

When moving, lift the adjusters all the way up. Failing to do so may cause the adjuster and game machine mounting sections damaged.

This product is an indoor game machine. Absolutely DO NOT set up the game machine outside.

setting up this product outside could result in equipment failure.

Do not set up the game machine near emergency exits. Doing so could block exits in time of emergency and could result in death or serious injury.

---

Do not set up the game machine:

- a) in a place exposed to rain or moisture.
  - b) in a place exposed to direct sunlight
  - c) in a place exposed to direct heat from a heater, etc
  - d) near hazardous substances
  - e) on an uneven floor
  - f) near fire extinguishing equipment
  - g) in a place exposed to strong vibration
  - h) in a place exposed to excessive dust.
- 

Do not place heavy objects on the game machine or place flowerpots, planters, cups, or containers holding chemicals or water near the game machine.

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Electrical shock or damage could be caused by spilled or dropped water.

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Do not place heavy objects on the drive unit. Also do not use the game machine with the wiring exposed.

Doing so could cause malfunctions.

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Do not place items near the ventilating holes.

doing so could cause internal temperature to rise excessively, resulting in equipment failure.

---

Do not place heavy objects on the power cord.

Doing so could damage the cord and could result in fire or electric shock.

---

Never unplug by pulling on the power cord; unplug from the plug itself.

Doing so could damage the cord, and could result in electric shock.

---

Use an earthing band or similar method of discharging static electricity when adjusting the PCB switches.

If not discharged, static electricity could damage the electronic components on the board.

---

### **CAUTION!**

Absolutely do not plug more than one cord at a time in the electrical receptacle.

Doing so could result in fire, electrical shock or equipment failure.

---

Be sure to use indoor wiring within the specified voltage range. For extension cords, use wiring rated 20 A or more.

Using cords outside these specifications could result in electrical shock.

---

Be sure to use within specified voltage range.

Do not run the power cord across passages where pedestrians feet could get caught on the cord.

Using outside this range could result in equipment failure or accident.

---

This could cause pedestrians to fall and injure themselves.  
Be sure the game machine is grounded to the ground terminal.

---

## **Operation.**

**DANGER!**

---

**Do not attempt to repair the game machine yourself.**  
**Doing so could result in malfunction.**

---

**Do not use the main line anywhere except an industrial area.**  
**Using in a residential area or area next to a residential area could affect signal reception to radios, television, telephones, etc.**

---

**DANGER!**

The following users should not play the game:

- a) Those under the influence of alcohol,  
Doing so could result in accident or illness.
- b) Those who are pregnant or think they may be pregnant.
- c) Those suffering from or being treated for arm or wrist ailments.
- d) Those who are in poor physical condition.

---

**Do not plug or unplug the power cord with wet hands.**  
**Doing so could result in electrical shock.**

---

**Do not damage, modify, bend excessively, twist, pull, bind, sandwich or heat the power cord.**  
**Doing so could result in fire or electric shock.**

---

**If the power cord becomes damaged (core exposed, broken etc.), please contact your nearest dealer for replacement.**

**Using a damaged power cord could result in fire or electrical shock.**

---

**Do not place items or heavy loads on any moulding.**  
**Doing so could damage the moulding, or the objects could fall off. Placing a load on or providing a strong impact to the moulding could crack the moulding or cause bodily harm.**

---

## **Inspection and Cleaning**

**DANGER!**

---

**Be sure to unplug the power cord from the receptacle before inspecting or cleaning.**  
**Possibility of electric shock exists as long as the power cord is not unplugged.**

---

**When placing parts, be sure to use those specified in the spare parts list.**  
**Failing to do so could result in fire or equipment failure.**

---

**Do not disassemble, remodel or modify the game machine.**  
**Doing so could result in fire or electrical shock.**

---

**To clean the game machine, wipe with a soft cloth dampened in a natural detergent and wrung out.**

Using organic solvents such as thinner may decompose the material.

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## Moving and Transport

### **DANGER!**

The game machine contains parts such as a 27 inch monitor which are sensitive to vibration and impact. You should therefore be very careful when moving or transporting the game machine. Be sure not to let the machine tip over.

---

The PCB inside the game machine uses precision components. You should therefore be careful when handling the machine.

Rough handling could result in equipment failure.

---

Release the twelve level adjusters before moving the game machine.

Failing to do so could result in equipment failure or accident.

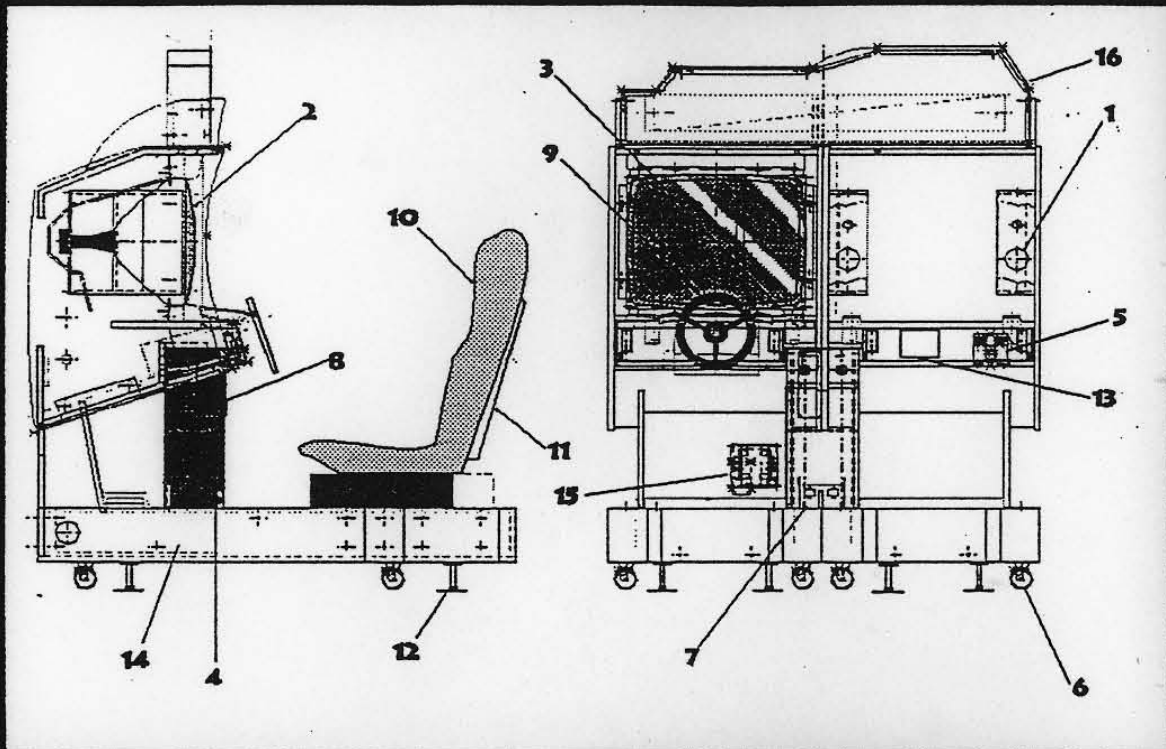
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Be sure to turn the power off before moving the game machine.

Failing to do so could result in equipment failure or accident, or electric shock.

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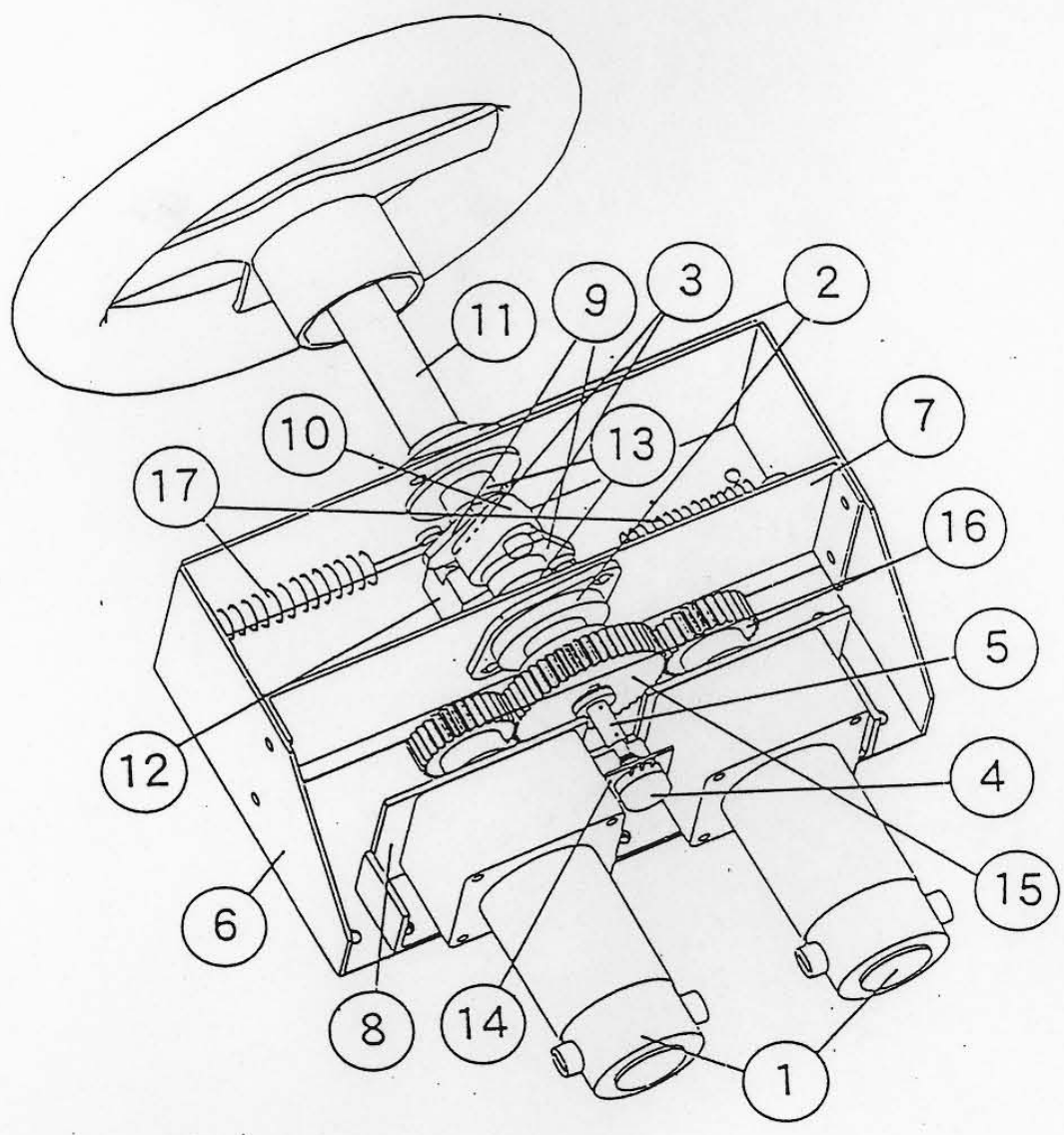




No	PART NAME	PART#
1	Speaker	56006
2	Monitor	10204
3	V.S. switch	22479
4	Coin door unit	50572
5	Mains plate	203394
6	Caster	E5060525A
7	Test switch/ meters	203319
8	Coin tower assembly	381692
9	Steering wheel	381711
10	Seat	541879
11	Seat bubble	243071
12	Adjustable feet	E3012651A
13	PSU SWITCH MODE 12V LPS62	14033
14	PSU SWITCH MODE 12V LPS23	14032
15	PSU SWITCH MODE 5V LPS63	14031
16	MAIN PCB & DRIVER	11315 / 11313
17	PEDAL ASSEMBLY	381703
18	TOP BOX ASSEMBLY	381758

2. Hd term drawing  
Winding Heat Twin

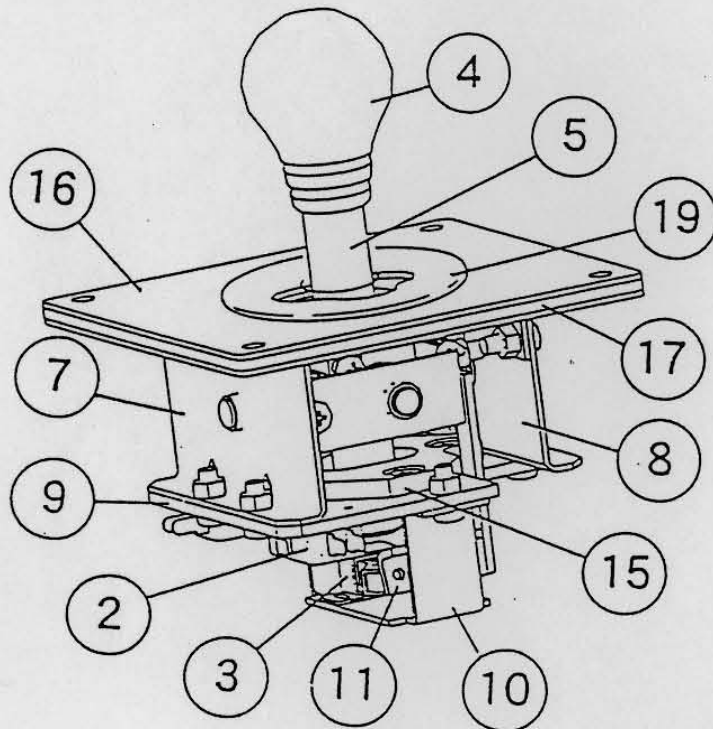
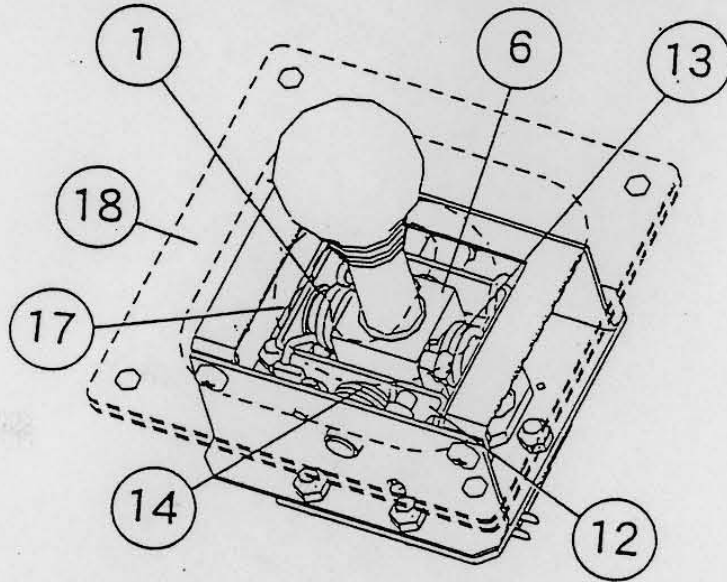
2.2 Steering wheel unit



No	PART NAME	PART#
1	Motor	51028
2	Bearing	31649
3	Bush	31650
4	Resistor, variable	42POT5K
5	Coupling	31648
6	Bkt, unit (A)	203355
7	Bkt, unit (B)	203356
8	Support, motor	203352
9	Stopper arm	203353
10	Stopper, shaft	203349
11	Shaft, handle	203354
12	Stopper, end	541877
13	Collar	203350
14	Bkt, VR	203351
15	Gear (A)	31646
16	Gear (B)	31647
17	Spring	31645

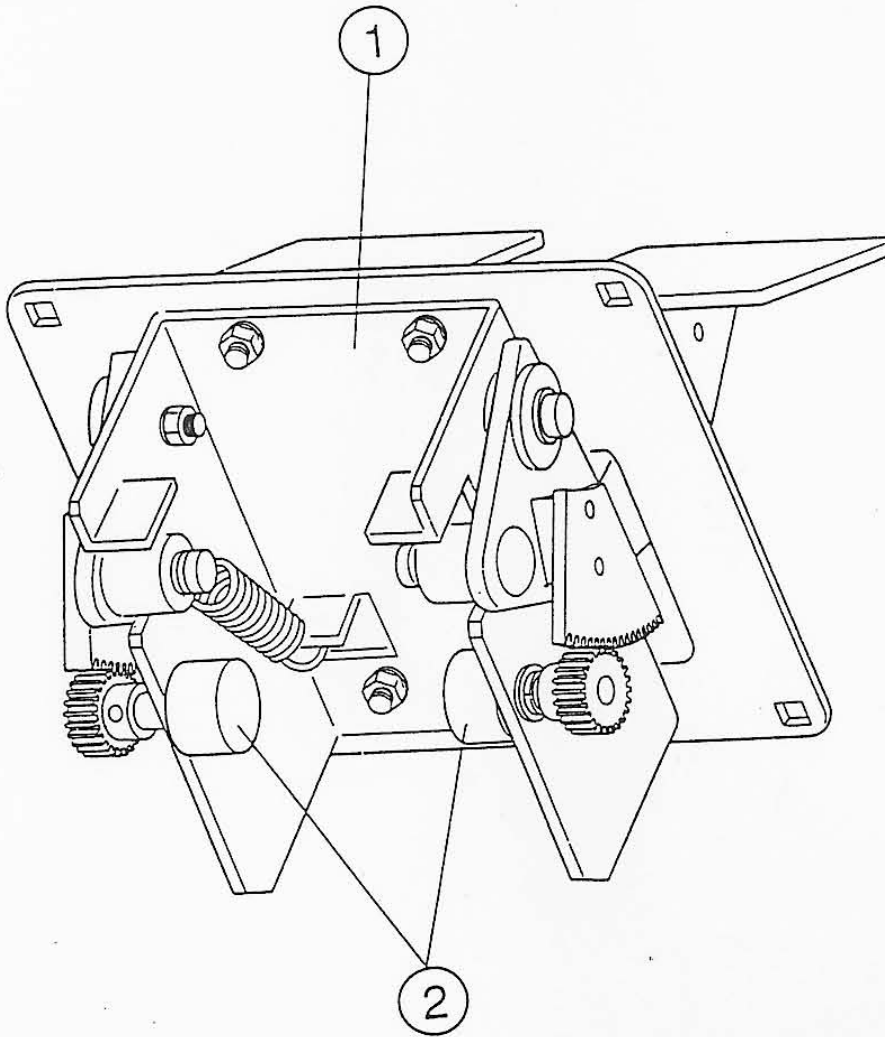


# Gear shift unit



No	PART NAME	PART#
1	Bush	31642
2	Micro switch	45A042
3	Roller catch	31643
4	Shift knob	203339
5	Shaft	203340
6	Pin, centre	203341
7	Bkt, unit (A)	203348
8	Bkt support	203342
9	Bkt switch	203343
10	Plate, cover	203344
11	Fixture, support (A)	203345
12	Fixture, support (B)	203347
13	Spring (A)	31640
14	Spring	31641
15	Guide	541873
16	Bkt, unit (B)	203346
17	Spacer (B)	541875
18	Spacer (A)	541876
19	Cover, shaft	203344

## Pedal unit

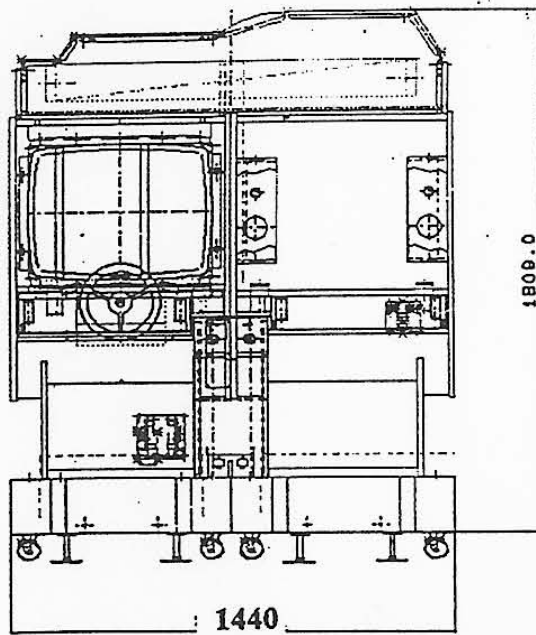
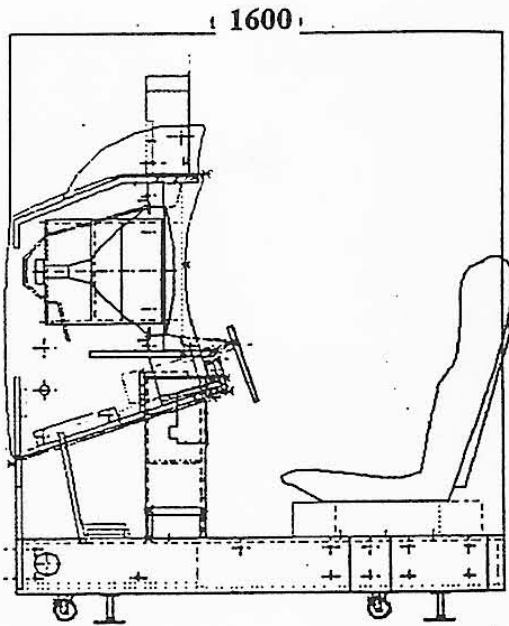


No	PART NAME	PART#
1	GAME PEDAL	381703
2	RESISTOR, VARIABLE.	42POT5K

# Specifications

**Operating power:** Depends on shipment destination

**Dimensions:** 1440 x 1600 x 1895





### **3.HOW TO PLAY**

This is a driving game which takes place on a winding road (mountain pass)-where there are drivers wanting to compete in races. The player can select a car among 14 types of machines and 4 types of tune-ups and race against other cursor and compete in time trials. This maniac driving game allows the player to perform drift driving and counter steering.

#### **HOW TO PLAY**

1. Input a coin to start the game. (In free play mode, press the [VIEW SHIFT] switch to start the game).

2. The Network Entry screen appears. If a coin(s) is dropped into another machine which is connected to this machine which is connected to this machine through the network with this screen displayed, a network race begins automatically.

\* If the machine is not connected to the network, or if another player is playing the network game, the game begins at item 3 after a coin(s) is dropped.

3. Select one of three different courses on the "Course Select" screen. Select a course with the steering wheel and press the accelerator to set. To select the "Time Attack" mode, press the brake when selecting a course.

\*Time Attack mode

The player competes against a rival lap time with no other cars appearing on the course.

There are three different courses of "Beginner's" , "Intermediate" ,and "Advanced".

Their features are as follows:

\*Beginner's Course

A course of good visibility for beginner's.

\*Intermediate Course

A course with blind corners which requires good driving skill.

\*Advanced Course

A course with a series of extremely difficult corners which requires excellent driving skill.

4. The "Car Select" screen appears. Select one of 14 different machine designs. Select a car with the steering wheel and press the accelerator to set.

5. The "Tuned Car Select" screen appears. Select one of five different tune-ups.

Their features are as follows:

\*NORMAL

No tune-up

\*ACCELERATION

Acceleration enhanced

\*MAX SPEED

Maximum speed enhanced

\*GRIP

Tyre grip enhanced

\*HANDLING

Handling enhanced

6. The game begins when all the selections above have been made. The game starts from the countdown.

7. The basic operation is as follows:

\*Steering wheel

Turning it clockwise or counter clockwise will turn the car to the right or the left.

\*Accelerator

Pressing it will accelerate the car, releasing it will decelerate the car.

\*Brake

Pressing it will decelerate the car.

\*Shift operation

Manual operation (MT) or automatic operation (AT) can be selected. Switching between MT operation can be performed at any time while the game is being played.

\*View shift

Pressing the [VIEW SHIFT] switch can change the viewpoint from the driver view of real driving to the rear view.

8. Every time you pass one of the checkpoints located along the course, extra time is added to your total remaining time.

9. The game ends when you have completed the required number of laps, or when the time has reached zero.

10. The game results, i.e., the course, remaining time, position, course record and each lap time are displayed on the screen.

**Buy-in during the game**

In Winding HEAT, no buy-in is allowed while the game is in progress.

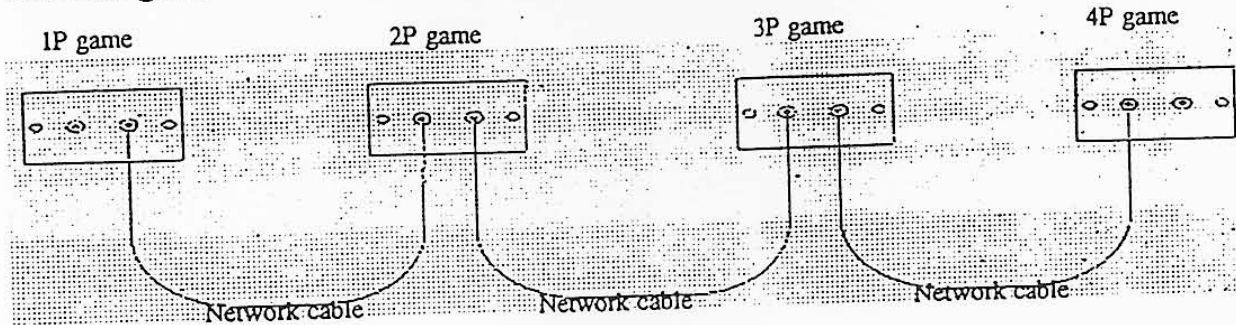
## NETWORKING FAULTS.

If when four Winding Heat machines (Two Twins) are showing the message NETWORK ERROR CALL THE CLARK, after initial game play, the following actions should be taken:

- 1) Switch the direction of the data signal e.g. rename the master machine or remove the boards from numbers two and three machines in networking series and swap them around.
- 2) If the problem still persists insert the comms termination phono plugs (included in the kit of parts) into phono socket 1 and phono socket 8 (please refer to section 6.1 of the manual, "How to network game machines).

## How to network game machines

The specifications of the main game machine PCB allow up to four game machines to be networked so players can enjoy versus games. To network, connect the networking cord supplied with each game machine to the "Network pin jack" of the drive unit.



### Notes:

When networking game machines, set the PCB main board dip switch network ID setting to 1 for the first game machine, to 2 for the second, and so on in numerical order. (Please refer to section 6.4, "Game position adjustments (dip switch settings)" for more information on settings.)

Game machines are linked together in a chain with the networking cords. Do not, however, connect anything to the first and last jack pin in the chain.

### Accessing dip switches

When setting dip switches follow the procedures described below to access them. Be sure to undertake all the steps in the correct order.

1. Turn the main power switch OFF and unplug the power cord.
2. Remove back door using key supplied.
3. Remove all fastenings around the tray holding the PCB and remove PCB.
4. Remove the 8 screws holding the sheet metal cover protecting the PCB. The dip switches are located bottom right of the PCB.

Note: Please refer to I/O checks for dip switch settings.

## 5.2 Initializing the PCB

Be sure to initialize the PCB according to the following procedures after installing the game machine, repairing or replacing the PCB to ensure the proper functioning of the game.

- 1 While pressing the test switch on the service panel, turn on the main power. (This will return all the manual test settings to the original factory settings at the time of shipment).
- 2 Initialization is completed when the "EEP-ROM INITIALIZE COMPLETE" message is displayed after the "EEP-ROM BIT CHECK OK" message is being displayed. If the test switch is not released, the "TEST SWITCH IS STILL ON. PLEASE RELEASE IT OR REPAIR" message will appear. When the test switch is released, this message will disappear. If this message appears in spite of the test switch not being pressed, contact your nearest dealer.

### **PCB start-up check (self-test)**

When the power switch is turned ON after the installation of the game machine, the self test is conducted automatically.

Be sure to perform the self test before using the machine. If an abnormality persists or the machine does not operate properly, immediately turn OFF the power to stop operating the machine.

#### •Result of test

##### **If test is OK**

After the EEPROM check is completed, the start-up check of the machine and the correction of the steering wheel, accelerator and brake positions are performed automatically. At this time, the message "DO NOT TOUCH THE STEERING WHEEL, BRAKE PEDAL AND ACCELERATOR WHEN THE MACHINE IS BEING INITIALIZED" is displayed on the screen. Do not touch the steering wheel, accelerator or brake while this message is displayed. If everything is normal, the game mode screen will appear.

##### **IF an abnormality is detected**

The test results are displayed on the screen.

###### **EEP-ROM abnormality**

The message "EEP-ROM BAD" is displayed on the screen.

What to do... Turn OFF the power switch, and then turn ON the power switch while pressing the test switch. (This will return all the manual settings to the original settings at the time of shipment.)

###### **Steering wheel abnormality**

The message "PLEASE ADJUST THE STEERING WHEEL MECHANICALLY" is displayed on the screen.

What to do... The steering wheel position cannot be corrected automatically, so to make the necessary adjustments mechanically you must refer to "7-3 Replacing and adjusting the potentiometer knobs" on pages 34 & 35.

###### **Accelerator abnormality**

The message "PLEASE ADJUST THE ACCELERATOR PEDAL MECHANICALLY" is displayed on the screen.

What to do... The brake position cannot be corrected automatically, so to make the necessary adjustments mechanically, you must refer to "7-3 Replacing and adjusting the potentiometer knobs" on pages 34 & 35.

###### **Brake abnormality**

The message "PLEASE ADJUST THE BRAKE PEDAL MECHANICALLY" is displayed on the screen.

What to do... The brake position cannot be corrected automatically, so to make the necessary adjustments mechanically, you must refer to "7-3 Replacing and adjusting the potentiometer knobs" on pages 34 & 35.

## 5.4 ADJUSTING THE GAME POSITION (MANUAL TEST)

Manually check and change the settings for the screen displays and game contents.

### •Starting Manual Test Mode

1 Turn on the power switch.

2 Press the test switch on the service panel during the game mode demo (during the game mode demo of all the game machines in

the case of networking) . (Turning ON the power while holding down the test switch will return all the preset manual test settings

to the original factory settings at the time of shipment). The unit is set in the manual test mode and the main menu is displayed on the screen.

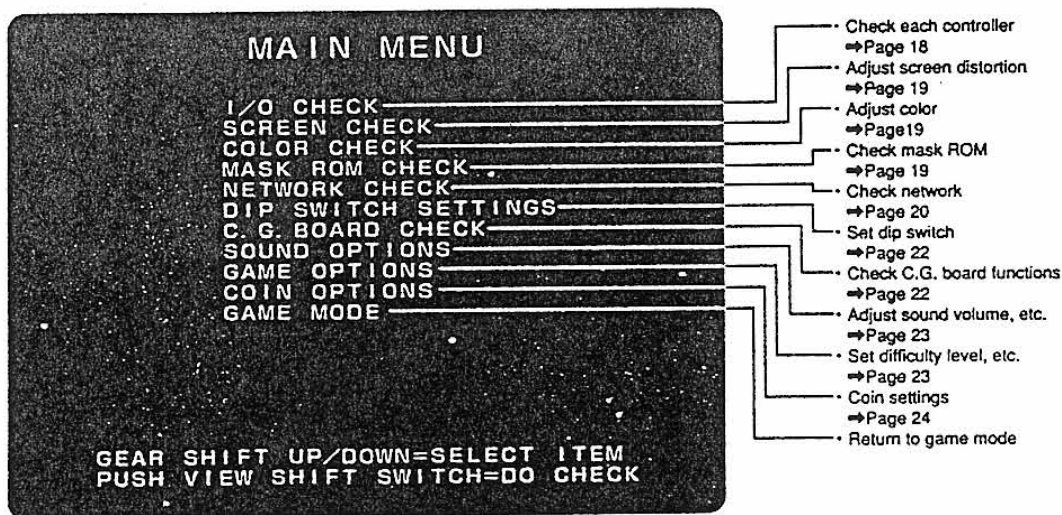
### •Ending the manual test mode

1 Select [GAME MODE] on the main menu screen.

2 Press the [VIEW SHIFT] switch.

The unit is set in the game mode.

### •Main mode screen (basic items)



### •Selecting each mode

How to select each mode from the menu

\* Select - Move the shift lever (Gear shift) up or down.

\*Set - Press the [VIEW SHIFT] switch.

After selecting a mode, refer to the page on which that mode is described in detail.

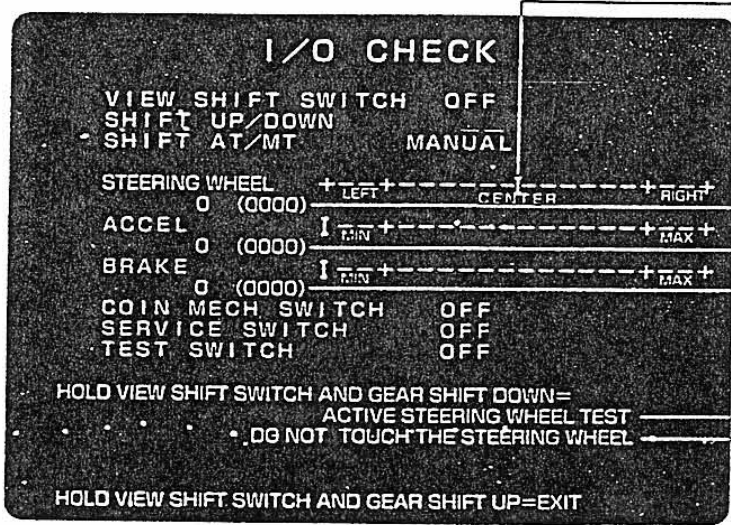


# 5.5 Mode descriptions

- The original factory settings are displayed in green; the changed settings are displayed in red.
  - \*After the completion of setting change, select "SAVE &EXIT" and press the [VIEW SHIFT] switch. This will save the changed settings automatically and return you to the main menu.
  - \*If "EXIT" is selected after the completion of setting change, the message "YOU DID NOT SAVE. DO YOU WANT TO SAVE? YES/NO" will appear. Move the shift lever when selecting "YES" or "NO", then press the [VIEW SHIFT] switch after your selection.
  - \*If "YES" is selected, the message "NOW SAVING" will appear, the changed settings will be saved and you will be returned to the main menu.
  - \*If "NO" is selected, the message "NO MODIFICATION" will appear and the changed settings will not be saved.

## I/O CHECK

- The check mode for controls. To return to the main menu, move up the gear shift while pressing the [VIEW SHIFT] switch.



- The marker position changes to show the input value.
- Shows the value for the steering wheel (decimal (hexadecimal)). If the "I" mark moves to "CENTER" when the wheel is released, to "RIGHT" when the wheel is fully turned to the right, and to "LEFT" when the wheel is fully turned to the left, the wheel is properly adjusted.
- Shows the value for the accelerator (decimal (hexadecimal)). If the "I" mark moves to "MIN" when the accelerator is released and to "MAX" when the accelerator is fully pressed, the accelerator is properly adjusted.
- Shows the value for the brake unit (decimal (hexadecimal)). Make sure the "I" mark moves to "MIN" when the brake is released and to "MAX" when the brake is fully pressed.
- Hold the gear shift down and press the [VIEW SHIFT] button to perform an active steering wheel test. The steering wheel will automatically turn left and right alternately. Check that the "I" mark moves accordingly to the left and right on the meter which shows the value for the steering wheel. Do not touch the machine during the test.
- This is displayed only during the active steering wheel test.

## SCREEN CHECK

- The check mode for screen display.

Adjust the focus, distortion and size of the screen while looking at the grille screen. Use the projector adjustment PCB (see page 40) so that the colour of the colour bar is displayed at the optimum level. To return to the main menu screen, press the [VIEW SHIFT] switch.

## COLOUR CHECK

The check mode for the colour display.

Make the adjustments using the projector adjustment PCB (see page 40) so that the colour of the colour bar is displayed at the optimum level. To return to the main screen menu press the VR switch.

## MASK ROM CHECK

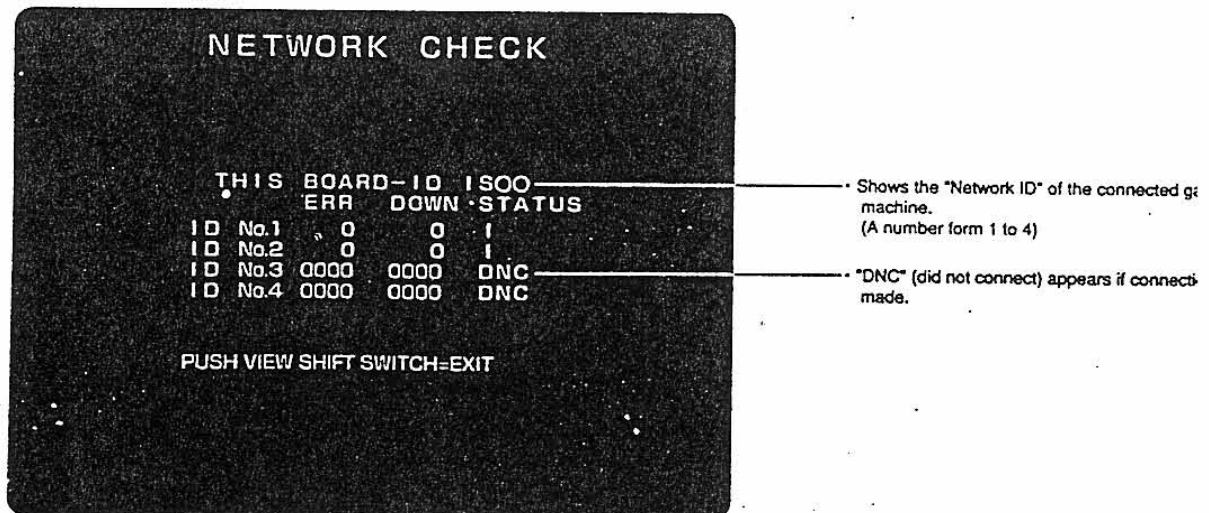
This checks each ROM in order, and displays "OK" or "BAD" at the end of the check. To return to the main menu screen, press the [VIEW SHIFT] switch.

## NETWORK CHECK

- The network communication check mode.

Observe the screen in this mode for at least one minute to make sure that the following three items are responding as described below. To return to the main menu screen, press the [VIEW SHIFT] switch.

If any of the three items responds incorrectly, it indicates possible communication malfunction. Take measures while referring to "5-6 Measures to be taken when there is a network abnormality" on page 25. If the same symptom persists in spite of taking measures or a problem not covered in this manual occurs, immediately turn off the power switch to stop operating the machine.



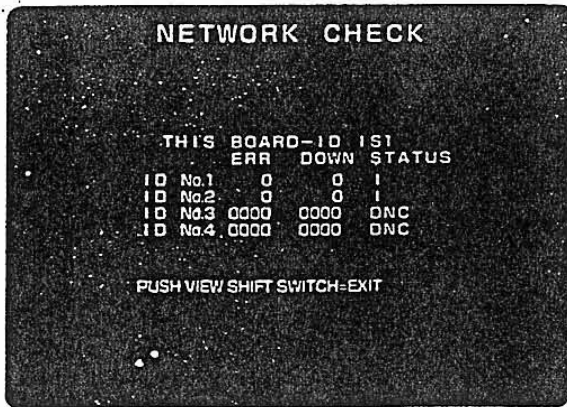
### Check Items

- \*Check that the "I" mark in the STATUS column is moving from the left to the right at a fixed speed.
- \*Check that the value in the ERR column is below "10" after one minute.
- \*Check that the value in the DOWN column does not change from "0".

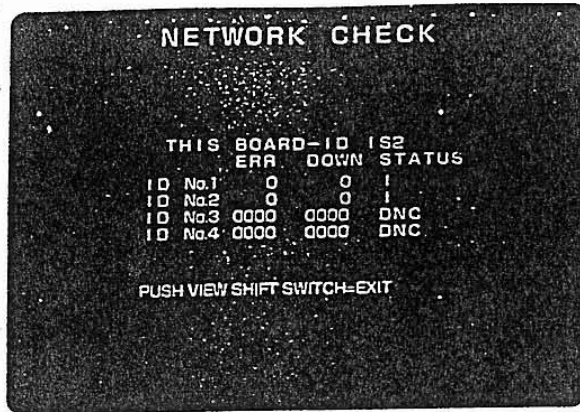
•Screen display when game machines are networked

•Two game machines are networked

Screen for player 1

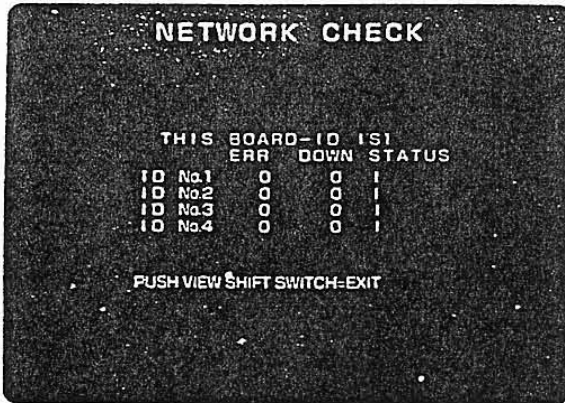


Screen for player 2



•Four game machines are networked

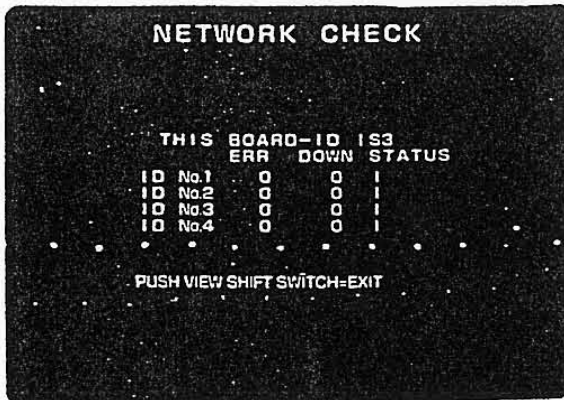
Screen for player 1



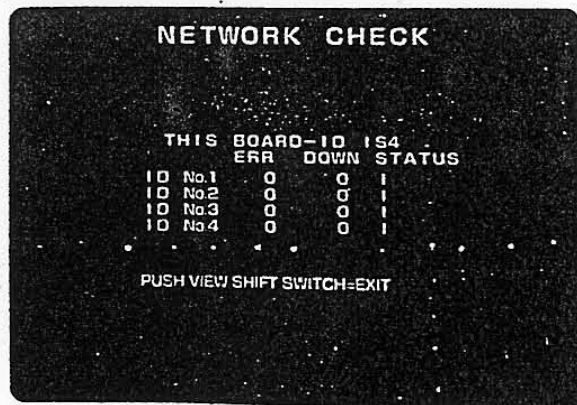
Screen for player 2



Screen for player 3



Screen for player 4



# Dip Switch Settings

## How to Set DIP Switches on the C.G. Board

- The DIP switch setting check mode.

When changing the DIP switch settings, refer to the chart below. To return to the main menu screen, press the [VIEW SHIFT] switch.

### •DIP switch setting chart

Main board (upper PCB) DIP switch

Set all the DIP switches on the C.G. board (PCB shown below) for OFF.

Setting		1	2	3	4
C.G. board setting specifications (Always OFF)		OFF			
AT/MT (Always OFF)			OFF		
Network ID	First machine			OFF	OFF
	Second machine			ON	OFF
	Third machine			OFF	ON
	Fourth machine			ON	ON

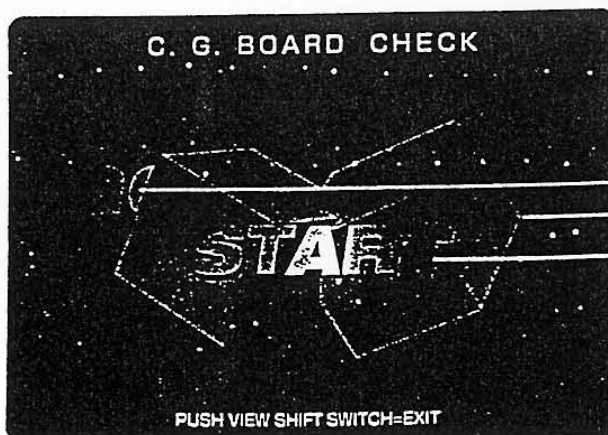
- When setting DIP switch of networking game machines, number each switch in the sequence of the small number. (Example: When networking two game machines, set the network ID of one machine to 1 and the other to 2.)
- The DIP switch on the PCB can be shifted easily by utilizing a thin flatblade screwdriver or a ball-point pen.

**MEMO**

## C.G. BOARD CHECK

The C.G. board function check mode.

Observe the screen in this mode to check whether the C.G. board is functioning properly. To return to the main menu screen, press the [VIEW SHIFT] switch.

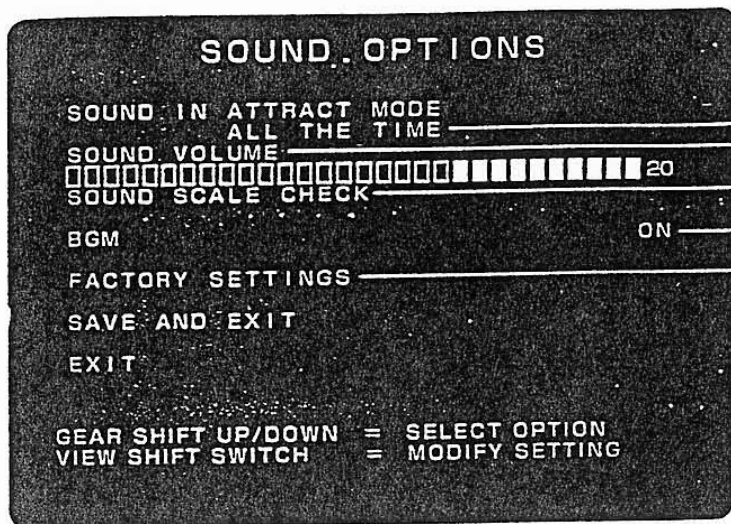


- "GOAL" is displayed behind the cubes, scrolling from the right to the left.
- The two cubes are rotating. (A picture is shown only in the left-hand side cube.)
- "START" is displayed in front of the cubes.



## SOUND OPTIONS

•The following screen appears when this mode is selected.



- Turns the demo play sound ON or OFF.
- ALL THE TIME ----- Sound always ON
- ONCE EVERY 4 CYCLES --- Sound ON every 4 cycles
- COMPLETELY OFF --- Sound always OFF

• Adjusts the volume from the level 0 (no volume) to 30 (Max.)  
 ※ To turn the sound volume up, press the [VIEW SHIFT] switch.  
 To turn the sound volume down, set the shift lever for "AT" and press the [VIEW SWITCH].

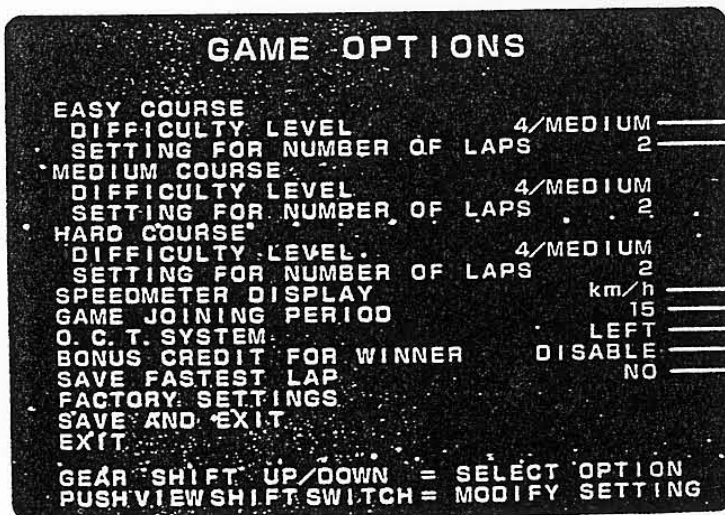
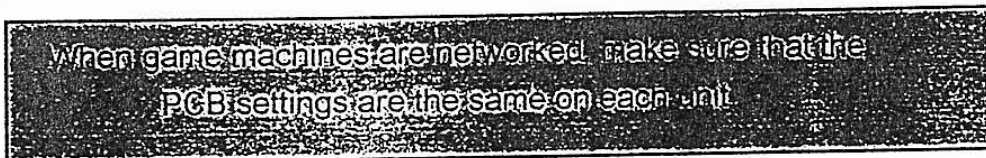
• You will hear a do-re-mi musical scale from the left external speaker and then the right external speaker, which is repeated twice.

• Turns the BGM during the game ON or OFF.  
 ※ The setting is only for the BGM to be used while the car is running on the course, and not for the demo BGM, voice or special effect sound.

• Returns all the settings to the factory settings at the time of shipment.

## GAME OPTIONS

•The following screen appears when this mode is selected.



- Difficulty level settings (8 levels)
- 1/EASIEST
- 2/VERY EASY
- 3/EASY
- 4/MEDIUM ----- Medium
- 5/MEDIUM HARD
- 6/HARD
- 7/VERY HARD
- 8/HARDEST
- Very easy
- Very difficult

• Lap number settings (2 to 5 laps)  
 • You can set the difficulty level and number of laps for each course.

• Changes the speedometer display.  
 [km/h] or [MPH]

• Sets the game joining period length.  
 (5, 10, 15 or 20)

• You can set the lane to the right or left side.

• If "ENABLE" is selected, a game is awarded to the winner who has reached the goal and come out first in a 4-participant network game.

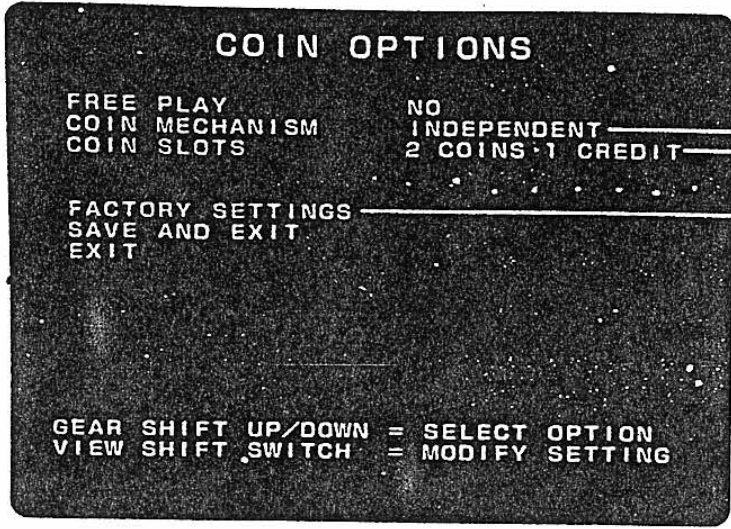
• You can set the lap time records (for top 2 ranks).  
 (The records are saved in memory even after the power source is turned off.)



# COIN OPTIONS

•The following screen appears when this mode is selected.

**Note that the coin setting options are not displayed when FREE PLAY is set to YES**



- Always keep it set to INDEPENDENT.
- Sets the relation between the number of coins and the number of credits.
- When FREE PLAY is set to YES, COIN MECHANISM and COIN SLOTS options are not displayed.
- Returns all the settings to the factory settings at the time of shipment.

•The relationship between the number of coins and the number of credits for the GN677-AA

SETTING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COIN(S)	1	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	5	5	6	6
CREDIT(S)	1	2	3	4	5	6	7	1	3	5	1	2	4	1	3	5	1	2	1	5

SETTING	21	22	23	24	25	26	27	28	29	30	31	32
COIN(S)	7	7	8	8	9	10	11	12	13	14	15	16
CREDIT(S)	1	2	1	3	1	1	1	1	1	1	1	1

•The relationship between the number of coins and the number of credits for the GN677-EA  
 For the GN677-EA, refer to pages 44 to 48 setting procedure.

# KLINGON CREDIT BOARD SETTINGS

DIL SWITCH 2 (UNDER IC SOCKET)

SW1	SW2	SW3	SW4	OPTIONS	COIN 1 F	COIN 2 E	COIN 3. D	COIN 4 C
OFF	OFF	OFF		UK COIN SETTINGS	£1	50p	20p	10p
ON	OFF	OFF		BELGIUM COIN SETTINGS	N/U	50Bf	20Bf	25Pst
OFF	ON	OFF		SPANISH COIN SETTINGS	100Pst	50Pst	N/U	5Pst
ON	ON	OFF		GERMAN COIN SETTINGS USING NRI				
OFF	OFF	ON		HOLLAND COIN SETTINGS	N/U	5G	2.5G	.1G
ON	OFF	ON		PORTUGAL COIN SETTINGS	100Esu	50Esu	N/U	N/U
OFF	ON	ON		AUSTRIA COIN SETTINGS	20	10	5	1
ON	ON	ON		SWITZERLAND COIN SETTINGS	5SF	2SF	1SF	N/U
			OFF	DIRECT MODE				
			ON	2 CHANNEL MODE				

SET DIL SWITCHES (DIL-1) SW-1 TO SW-5 ACCORDING TO THE OPTIONS SETTINGS FOUND IN THE RELEVANT PRICE OF PLAY SETTINGS TABLE ON THE FOLLOWING PAGES.

SET DIL SWITCHES (DIL-2) ON THE KLINGON BOARD LOCATED UNDER THE IC SOCKET AS SHOWN IN THE TABLE ABOVE. SW-4 MUST ALWAYS BE SET TO 'ON' AS THE GAME BOARD ONLY OPERATES IN COMMON MODE. CARE MUST BE EXERCISED WHEN REMOVING THE IC-1 SO AS NOT TO DAMAGE ITS LEADOUT PINS. AFTER SETTING THE SWITCHES RETURN THE IC TO ITS SOCKET WITH THE PACKAGE INDENT MARK ADJACENT TO THE BOARD EDGE.

## PRICE OF PLAY SETTINGS FOR THE UK

### DIP SWITCH

			1	2	3	4	5
10p PLAY	50p=5	£1=10	OFF	OFF	OFF	OFF	OFF
10p PLAY	50p=5	£1=11	ON	OFF	OFF	OFF	OFF
10p PLAY	50p=6	£1=12	OFF	ON	OFF	OFF	OFF
20p PLAY	50p=2 1/2	£1=5	ON	ON	OFF	OFF	OFF
20p PLAY	50p=3	£1=6	OFF	OFF	ON	OFF	OFF
20p PLAY	50p=3	£1=7	ON	OFF	ON	OFF	OFF
20p PLAY	50p=1 2/3	£1=1 1/3	OFF	ON	ON	OFF	OFF
20p PLAY	50p=2	£1=4	ON	ON	ON	OFF	OFF
30p PLAY	50p=2	£1=5	OFF	OFF	OFF	ON	OFF
40p PLAY	50p=1 1/4	£1=2 1/2	ON	OFF	OFF	ON	OFF
40p PLAY	50p=1 1/4	£1=3	OFF	ON	OFF	ON	OFF
50p PLAY	50p=1	£1=2	ON	ON	OFF	ON	OFF
50p PLAY	50p=1	£1=3	OFF	OFF	ON	ON	OFF
60p PLAY	50p=5/6	£1=1 2/5	ON	OFF	ON	ON	OFF
60p PLAY	50p=5/6	£1=2	OFF	ON	ON	ON	OFF
80p PLAY	50p=5/8	£1=1 1/4	ON	ON	ON	ON	OFF
£1 PLAY	50p=1/2	£1=1	OFF	OFF	OFF	OFF	ON
£1 PLAY	50p=1/2	£1=1 £2=3	ON	OFF	OFF	OFF	ON
£2 PLAY	50p=1/4	£1=1/2	OFF	ON	OFF	OFF	ON
£2 PLAY	50p=1/4	£5=3	ON	ON	OFF	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

# CREDIT BOARD SETTINGS

## PRICE OF PLAY SETTINGS FOR BELGIUM

### DIP SWITCH

			1	2	3	4	5
5F PLAY	20F=4	50F=10	OFF	OFF	OFF	OFF	OFF
5F PLAY	20F=	50F=11	ON	OFF	OFF	OFF	OFF
5F PLAY	20F=5	50F=12	OFF	ON	OFF	OFF	OFF
10F PLAY	20F=2	50F=5	ON	ON	OFF	OFF	OFF
10F PLAY	20F=2	50F=5	OFF	OFF	ON	OFF	OFF
10F PLAY	20F=3	50F=7	ON	OFF	ON	OFF	OFF
15F PLAY	20F=1 1/3	50F=3 1/3	OFF	ON	ON	OFF	OFF
15F PLAY	20F=1 1/3	50F=4	ON	ON	ON	OFF	OFF
15F PLAY	20F=2	50F=5	OFF	OFF	OFF	ON	OFF
20F PLAY		50F=2 1/2	ON	OFF	OFF	ON	OFF
20F PLAY		50F=3	OFF	ON	OFF	ON	OFF
20F PLAY	50F=3	100F=7	ON	ON	OFF	ON	OFF
25F PLAY	20F=4/5	50F=2	OFF	OFF	ON	ON	OFF
25F PLAY	20F=4/5	50F=2 100F=5	ON	OFF	ON	ON	OFF
25F PLAY	20F=4/5	50F=3 100F=6	OFF	ON	ON	ON	OFF
30F PLAY	20F=2/3	50F=1 1/2	ON	ON	ON	ON	OFF
30F PLAY	20F=2/3	50F=1 1/3 100F=4	OFF	OFF	OFF	OFF	ON
30F PLAY	20F=2/3	50F=2 100F=4	ON	OFF	OFF	OFF	ON
40F PLAY	20F=1/2	50F=1 1/4	OFF	ON	OFF	OFF	ON
40F PLAY	20F=1/2	50F=2 1/4 100F=3	ON	ON	OFF	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

## PRICE OF PLAY SETTINGS FOR HOLLAND

### DIP SWITCH

			1	2	3	4	5
1G PLAY	NO BONUS		OFF	OFF	OFF	OFF	OFF
1G PLAY	2.5G=3	5G=6	ON	OFF	OFF	OFF	OFF
1G PLAY	2.5G=3	5G=7	OFF	ON	OFF	OFF	OFF
2G PLAY	NO BONUS	50F=5	ON	ON	OFF	OFF	OFF
2G PLAY	5G=3		OFF	OFF	ON	OFF	OFF
2G PLAY	5G=3	10G=7	ON	OFF	ON	OFF	OFF
3G PLAY	NO BONUS		OFF	ON	ON	OFF	OFF
3G PLAY	5G=2		ON	ON	ON	OFF	OFF
3G PLAY	5G=2	10G=5	OFF	OFF	OFF	ON	OFF
4G PLAY	NO BONUS		ON	OFF	OFF	ON	OFF
4G PLAY	10G=3		OFF	ON	OFF	ON	OFF
5G PLAY	NO BONUS	100F=7	ON	ON	OFF	ON	OFF
5G PLAY	10G=3		OFF	OFF	ON	ON	OFF
6G PLAY	NO BONUS		ON	OFF	ON	ON	OFF
6G PLAY	15G=3	50F=3 100F=6	OFF	ON	ON	ON	OFF
8G PLAY	NO BONUS		ON	ON	ON	ON	OFF
8G PLAY	20G=3	50F=1 1/3 100F=4	OFF	OFF	OFF	OFF	ON
10G PLAY	NO BONUS		ON	OFF	OFF	OFF	ON
10G PLAY	20G=3		OFF	ON	OFF	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

1 METER PULSE = 0.5G

COIN ASSIGNMENT

COIN 1=N/U, COIN 2=5G, COIN 3=2.5G, COIN 4=1G



# CREDIT BOARD SETTINGS

## PRICE OF PLAY SETTINGS FOR SPAIN

### DIP SWITCH

			1	2	3	4	5
25Pst PLAY	50Pst=2	100Pst=4	OFF	OFF	OFF	OFF	OFF
25Pst PLAY	50Pst=2	100Pst=5	ON	OFF	OFF	OFF	OFF
			OFF	ON	OFF	OFF	OFF
50Pst PLAY	100Pst=2		ON	ON	OFF	OFF	OFF
50Pst PLAY	100Pst=3		OFF	OFF	ON	OFF	OFF
50Pst PLAY	100Pst=3	200Pst=7	ON	OFF	ON	OFF	OFF
75Pst PLAY	100Pst=2/3		OFF	ON	ON	OFF	OFF
75Pst PLAY	100Pst=2/3	200Pst=3	ON	ON	ON	OFF	OFF
75Pst PLAY	200Pst=3	400Pst=7	OFF	OFF	OFF	ON	OFF
100Pst PLAY			ON	OFF	OFF	ON	OFF
100Pst PLAY	200Pst=3		OFF	ON	OFF	ON	OFF
200Pst PLAY			ON	ON	OFF	ON	OFF
200Pst PLAY	500Pst=3		OFF	OFF	ON	ON	OFF
300Pst PLAY			ON	OFF	ON	ON	OFF
300Pst PLAY	500Pst=2		OFF	ON	ON	ON	OFF
400Pst PLAY			ON	ON	ON	ON	OFF
400Pst PLAY	1000Pst=3		OFF	OFF	OFF	OFF	ON
COIN METERING 1 PULSE = 25Pst							
FREE PLAY OPTION			ON	ON	ON	ON	ON

## PRICE OF PLAY SETTINGS FOR PORTUGAL

### DIP SWITCH

			1	2	3	4	5
10Esc PLAY	50Esc=5	100Esc=10	OFF	OFF	OFF	OFF	OFF
10Esc PLAY	50Esc=5	100Esc=11	ON	OFF	OFF	OFF	OFF
10Esc PLAY	50Esc=6	100Esc=12	OFF	ON	OFF	OFF	OFF
20Esc PLAY	50Esc=2 1/2	100Esc=5	ON	ON	OFF	OFF	OFF
20Esc PLAY	50Esc=3	100Esc=6	OFF	OFF	ON	OFF	OFF
20Esc PLAY	50Esc=3	100Esc=7	ON	OFF	ON	OFF	OFF
30Esc PLAY	50Esc=1 2/3	100Esc=1 1/3	OFF	ON	ON	OFF	OFF
30Esc PLAY	50Esc=2	100Esc=4	ON	ON	ON	OFF	OFF
30Esc PLAY	50Esc=2	100Esc=5	OFF	OFF	OFF	ON	OFF
40Esc PLAY	50Esc=11/4	100Esc=2 1/2	ON	OFF	OFF	ON	OFF
40Esc PLAY	50Esc=1 1/4	100Esc=3	OFF	ON	OFF	ON	OFF
50Esc PLAY	50Esc=1	100Esc=2	ON	ON	OFF	ON	OFF
50Esc PLAY	50Esc=1	100Esc=3	OFF	OFF	ON	ON	OFF
60Esc PLAY	50Esc=5/6	100Esc=1 2/5	ON	OFF	ON	ON	OFF
60Esc PLAY	50Esc=5/6	100Esc=2	OFF	ON	ON	ON	OFF
80Esc PLAY	50Esc=5/8	100Esc=1 1/4	ON	ON	ON	ON	OFF
100Esc PLAY	50Esc=1/2	100Esc=1	OFF	OFF	OFF	OFF	ON
100Esc PLAY	50Esc=1/2	100Esc=1 200Esc=3	ON	OFF	OFF	OFF	ON
200Esc PLAY	50Esc=1/4	100Esc=1/2	OFF	ON	OFF	OFF	ON
200Esc PLAY	50Esc=1/4	100Esc=1/2 500Esc=3	ON	ON	OFF	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

# CREDIT BOARD SETTINGS

## PRICE OF PLAY SETTINGS FOR AUSTRIA

DIP SWITCH

			1	2	3	4	5
1Sch PLAY	5Sch=5	10Sch=10	OFF	OFF	OFF	OFF	OFF
1Sch PLAY	5Sch=5	10Sch=11	ON	OFF	OFF	OFF	OFF
1Sch PLAY	5Sch=6	10Sch=12	OFF	ON	OFF	OFF	OFF
2Sch PLAY	5Sch=2 1/2	10Sch=5	ON	ON	OFF	OFF	OFF
2Sch PLAY	5Sch=3	10Sch=6	OFF	OFF	ON	OFF	OFF
2Sch PLAY	5Sch=3	10Sch=7	ON	OFF	ON	OFF	OFF
3Sch PLAY	5Sch=1 2/3	10Sch=3 1/3	OFF	ON	ON	OFF	OFF
3Sch PLAY	5Sch=2	10Sch=4	ON	ON	ON	OFF	OFF
3Sch PLAY	5Sch=2	10Sch=5	OFF	OFF	OFF	ON	OFF
4Sch PLAY	5Sch=1 1/4	10Sch=2 1/2	ON	OFF	OFF	ON	OFF
4Sch PLAY	5Sch=1 1/4	10Sch=3	OFF	ON	OFF	ON	OFF
5Sch PLAY	5Sch=1	10Sch=2	ON	ON	OFF	ON	OFF
5Sch PLAY	5Sch=1	10Sch=3	OFF	OFF	ON	ON	OFF
6Sch PLAY	5Sch=5/6	10Sch=1 2/5	ON	OFF	ON	ON	OFF
6Sch PLAY	5Sch=5/6	10Sch=2	OFF	ON	ON	ON	OFF
8Sch PLAY	5Sch=5/8	10Sch=1 1/4	ON	ON	ON	ON	OFF
10Sch PLAY	5Sch=1/2	10Sch=1	OFF	OFF	OFF	OFF	ON
10Sch PLAY	5Sch=1/2	10Sch=1 20Sch=3	ON	OFF	OFF	OFF	ON
20Sch PLAY	5Sch=1/4	10Sch=1/2	OFF	ON	OFF	OFF	ON
20Sch PLAY	5Sch=1/4	10Sch=1/2 50Sch=3	ON	ON	OFF	OFF	ON
30Sch PLAY	NO BONUS		OFF	OFF	ON	OFF	ON
30Sch PLAY	5Sch=3		ON	OFF	ON	OFF	ON
50Sch PLAY			OFF	ON	ON	OFF	ON
50Sch PLAY		100Sch=3	ON	ON	ON	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

COIN ASSIGNMENT COIN 1 = 20Sch, COIN 2 = 10Sch, COIN 3 = 5Sch, COIN 4 = 1Sch

## PRICE OF PLAY SETTINGS FOR FRANCE/SWITZERLAND / GERMANY

DIP SWITCH

			1	2	3	4	5
1F PLAY	5F=5	10F=10	OFF	OFF	OFF	OFF	OFF
1F PLAY	5F=5	10F=11	ON	OFF	OFF	OFF	OFF
1F PLAY	5F=6	10F=12	OFF	ON	OFF	OFF	OFF
2F PLAY	5F=2 1/2	10F=5	ON	ON	OFF	OFF	OFF
2F PLAY	5F=3	10F=6	OFF	OFF	ON	OFF	OFF
2F PLAY	5F=3	10F=7	ON	OFF	ON	OFF	OFF
3F PLAY	5F=1 2/3	10F=3 1/3	OFF	ON	ON	OFF	OFF
3F PLAY	5F=2	10F=4	ON	ON	ON	OFF	OFF
3F PLAY	5F=2	10F=5	OFF	OFF	OFF	ON	OFF
4F PLAY	5F=1 1/4	10F=2 1/2	ON	OFF	OFF	ON	OFF
4F PLAY	5F=1 1/4	10F=3	OFF	ON	OFF	ON	OFF
5F PLAY	5F=1	10F=2	ON	ON	OFF	ON	OFF
5F PLAY	5F=1	10F=3	OFF	OFF	ON	ON	OFF
6F PLAY	5F=5/6	10F=1 2/5	ON	OFF	ON	ON	OFF
6F PLAY	5F=5/6	10F=2	OFF	ON	ON	ON	OFF
8F PLAY	5F=5/8	10F=1 1/4	ON	ON	ON	ON	OFF
10F PLAY	5F=1/2	10F=1	OFF	OFF	OFF	OFF	ON
10F PLAY	5F=1/2	10F=1 20F=3	ON	OFF	OFF	OFF	ON
20F PLAY	5F=1/4	10F=1/2	OFF	ON	OFF	OFF	ON
20F PLAY	5F=1/4	10F=1/2 50F=3	ON	ON	OFF	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON



## 5.6 MEASURES TO BE TAKEN WHEN THERE IS A NETWORK ABNORMALITY

If the "NETWORK ERROR" message appears, if any item responds incorrectly in the network communication check described on pages 20 and 21, or if the projector displays differ from the specified ones, take the following measures.

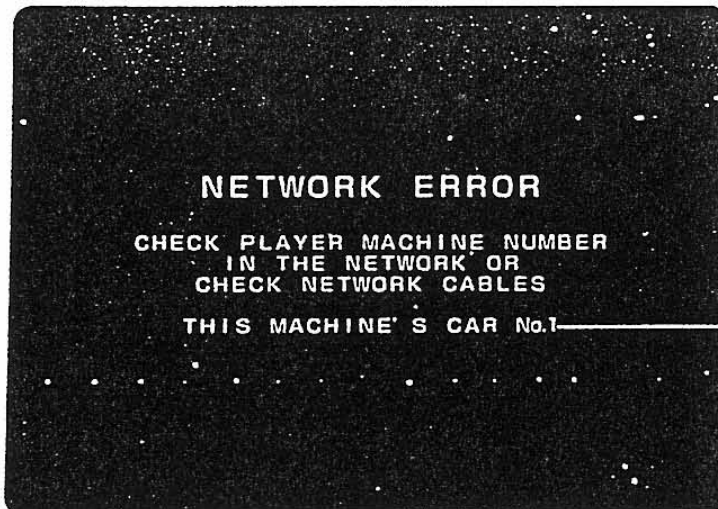
### SYMPTOM 1

The screen becomes bright and dark repeatedly after the power is turned on.

Possible causes and measures to be taken...

POSSIBLE CAUSES	MEASURES
<p>*One of the networking cords used is disconnected from the game machine.</p> <p>*A networking cord is connected to the first pin jack of the first game machine or the second pin jack of the last game machine.</p>	<p>*Properly connect the networking cords between the game machines. Make sure the pin jacks that are not in use are free of dust or dirt.</p> <p>*Disconnect the networking cord attached to the first pin jack of the first game machine or the second pin jack of the last game machine.</p>

SYMPTOM 2 The "NETWORK ERROR" message appears on the screen after the power is turned on.

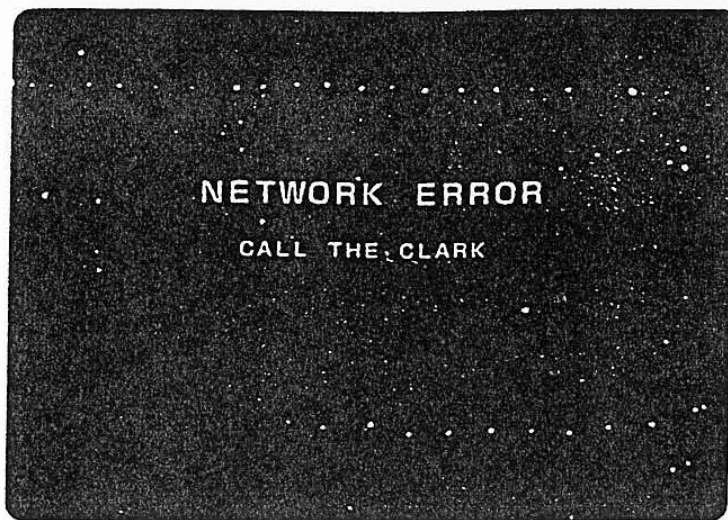


Shows the "Network ID" of the game machine (A number for 11o4)

•Possible causes and measures to be taken...

POSSIBLE CAUSES	MEASURES
<p>*The main board DIP switch "NETWORK ID" settings are improper.</p>	<p>*Set the DIP switch properly. (See page 22).</p>

**SYMPTOM 3** The "NETWORK ERROR" message appears on the screen during playing.



**Possible causes and measures to be taken**

POSSIBLE CAUSES	MEASURES
<ul style="list-style-type: none"><li>*One of the networking cords has been disconnected from the game machine during play.</li><li>*One of the networking cords have been damaged internally.</li></ul>	<ul style="list-style-type: none"><li>*1. Turn OFF the power switch.</li><li>2. Connect the network cord properly.</li><li>3. Turn ON the power switch.</li><li>*Replace the networking cord with the spare networking cord. (You can also use commercially sold video cable (75 ohms 3C-FV) having a length of 2m or less).</li></ul>
<ul style="list-style-type: none"><li>*The test switch (on the service panel) of one of the networked game machines has been touched.</li></ul>	<ul style="list-style-type: none"><li>*1. Turn OFF the power switches of all the networked game machines.</li><li>2. Close the maintenance door.</li></ul>
<ul style="list-style-type: none"><li>* Any of the machines which are connected through the network have different game option settings (in the manual test).</li></ul>	<ul style="list-style-type: none"><li>*Enter the manual test mode and set for the same game options among all the machines.</li></ul>

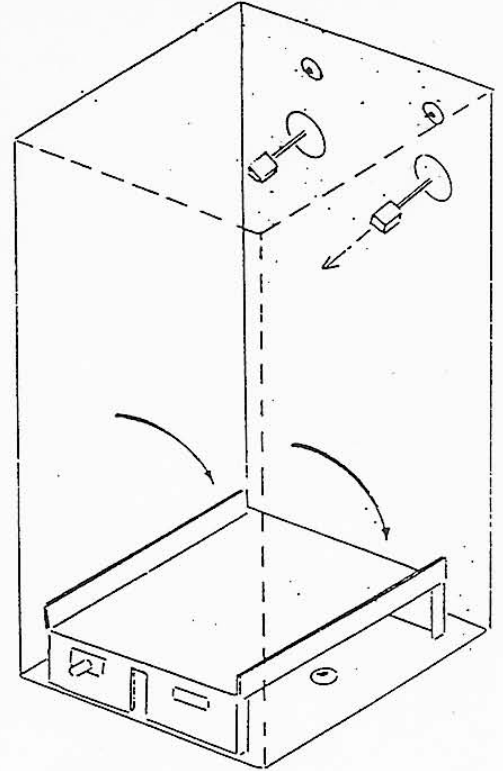
## Fixing coin door assembly

Remove meter bracket and cash box from the lower half of the coin tower via the cash box door.

Place coin tower assembly between twin cabinets in the space provided.

Fix coin tower assembly to cabinets at the four fixing holes.

Using the 4 M8 Button head screws, washers and allen key provided in the assembly kit.



Replace the meter bracket and push firmly to the bottom of the coin tower (front first).

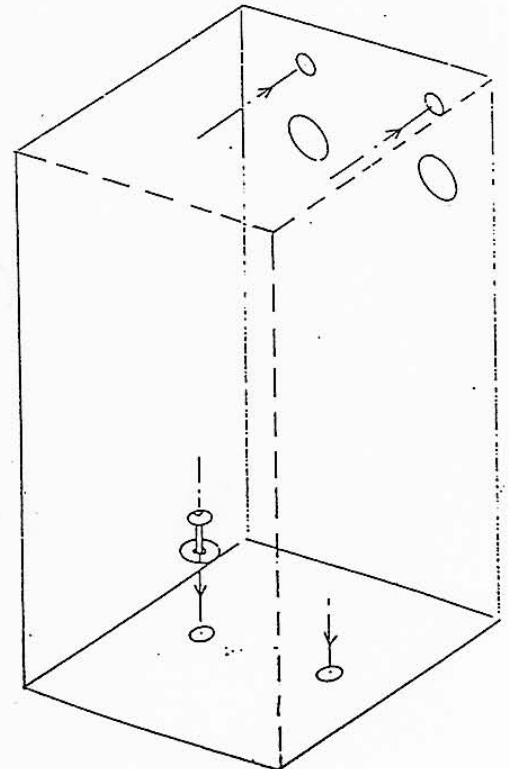
Connect the looms to coin mechs and alarm via access holes to the cabinets.

### ***WARNING!***

Please note that when assembling coin tower, take care to earth the tower as follows:

- a) Remove the rear door.
- b) Feed the green/yellow earthing cable through the connection holes in the cabinet and connect the 0.25 inch faston to the steering assembly inside the cabinet.
- c) Replace the rear door.

**This operation should be carried out by a qualified service engineer.**



# Alarm system

The alarm system fitted as standard to Midnight Run, has a battery back-up facility; so for practical reasons the unit is despatched in a de-activated state.

To re-activate alarm:

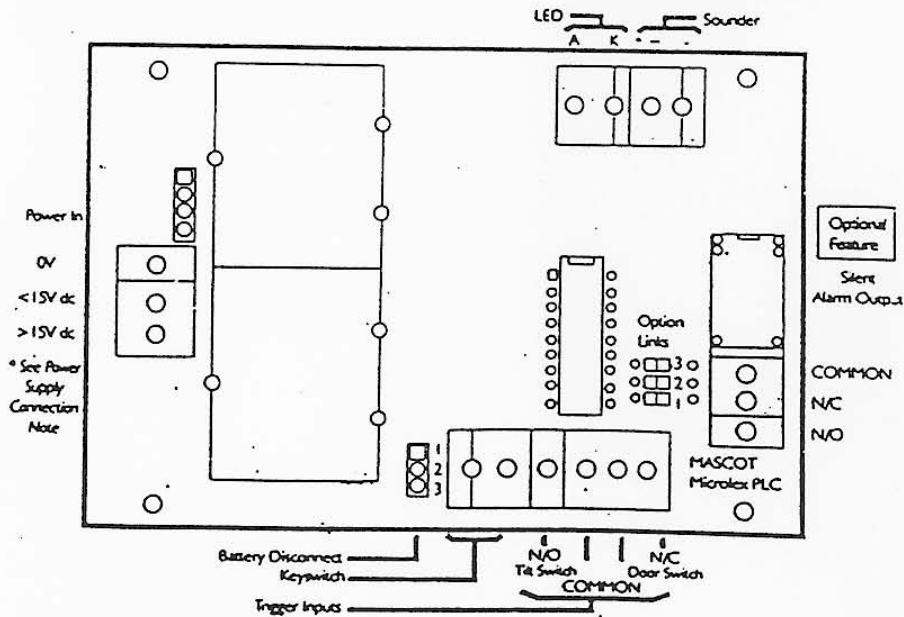
- 1) Connect the *Green* and *Black/Grey* wires from the alarm PCB to the Key Switch situated above the footpedals in the left hand cabinet.
- 2) Locate *battery disconnect link* on Alarm PCB, remove link from pins 1 and 2 and replace on pins 2 and 3 (see diagram below). The alarm is now activated honest!

## Alarm operation

To arm system close cash box door and remove key from Key Switch. After approximately 10 seconds the system is active any attempt to open the cash door without the key switch inserted will result in alarm sounding.

Dis-arming the system is via the Key Switch.

### CONNECTION AND CONFIGURATION



# 7

## Assembly of game machine

Follow the instructions below in order to assemble the game machine. In order that no faults occur follow the procedure step by step.

### 7.1

#### Assembly procedure and part numbers

The following are the assembly instructions for the Midnight run:

1. Place the left hand and right hand cabinets alongside each other respectively making sure, there are no obstructions to the rear or under the feet of the machine.
2. Open the upper back door of both cabinets using a posidrive screw driver and insert the M6x55mm coach bolt into the holes directly inside the cabinet approximately half way up the internal sides of the cabinet behind the monitor.

Install the coin tower (part# 381692), centre joining plate (part# 203307) and back plate (part# 203377) using 12 M8x35 button head screws and washers. Tighten central coach bolt with M6 nut and penny washer. Use the M8 allen provided and securely tighten.

4. Lower the adjustable feet by turning the locking nuts anti-clockwise in order to lower the foot plate towards the ground. Make sure the machine is level and free from obstruction.
5. Remove bezels and perspex from top header box (see section 7.2) and fit with M6x10mm button head screws using the M6 allen key provided. Place the two top box fitting brackets (203581) onto the top of the machine. Align with holes and insert M8 x 35 screws and tighten. Place top header box assembly on top of assembled machine and attach the right and left hand cheeks. Connect the cord leading to the fluorescent tube via the connecting block. Run the cable through the holes on the top of the cabinet inside the back door and connect to the mains unit at the base of the cabinet..

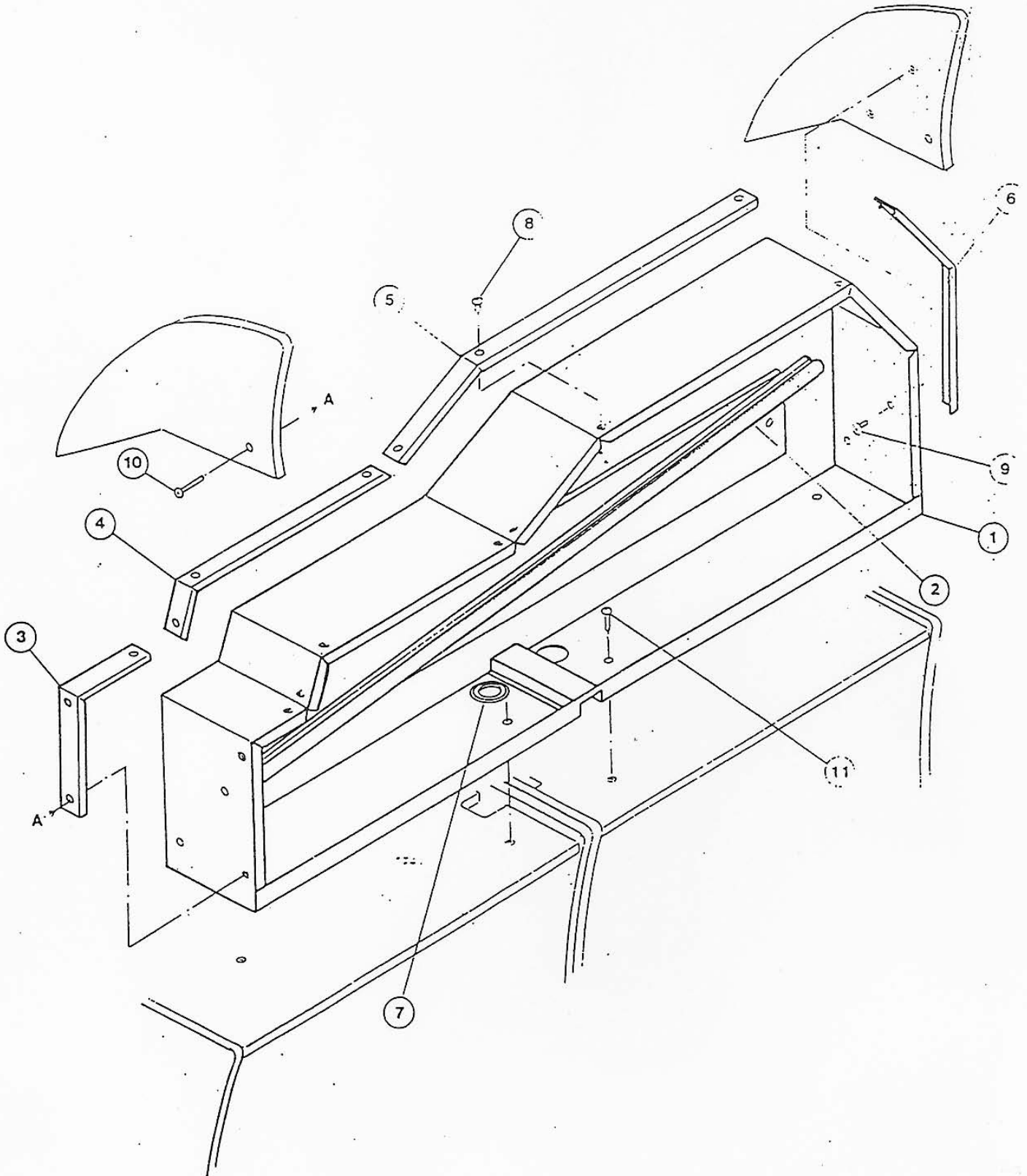
Replace the perspex and bezels fasten with bright zinc M6 screws.



# KIT OF PARTS

42POT5K	5K POT RA20YN	20FF
31653	SPRING FOOT PEDAL	20FF
31660	STEERING 4.5KG SPRING	20FF
31662	STEERING TORSIONAL SPRING	20FF
80003	8A Q/B FUSE 20MM	20FF
64342	THIS MANUAL	10FF
81019	BULB 12V WEDGE 2.2W	50FF
64349	INSTRUCTIONS MASCOT ALARM	10FF
.350	INSTRUCTIONS MONITOR	10FF
203307	JOINING PLATE	10FF
203522	BLANKING PLATE	10FF
30656	M8X35 BHEAD BZP SCREWS	120FF
30740	WASHER M8 SPRING	120FF
30739	WASHER M8 X 21MM OD BZP	120FF
30051	COACH BOLT M6 X 55 BLACK	10FF
30004	WASHER M6 PLAIN	10FF
372	WASHER M6 X14MM O/D	110FF
30057	M6 X 25 BUT'HEAD SCREW	40FF
30634	M6 X 35 " " BOLT BZP	60FF
30118	M6 X 10 " " SCREW	40FF
66093	4MM ALLEN KEY	20FF
13206	PHONO TERMINATION PLUG	20FF
66140	5MM ALLEN KEY	10FF
203581	TOP BOX FIXING BRKT	2 OFF
30134	M6 X 20 C'SINK SCREW	80FF
45AO42	MICRO SWITCH MATSUSHITA	10FF

## 1. Fixings for top box.

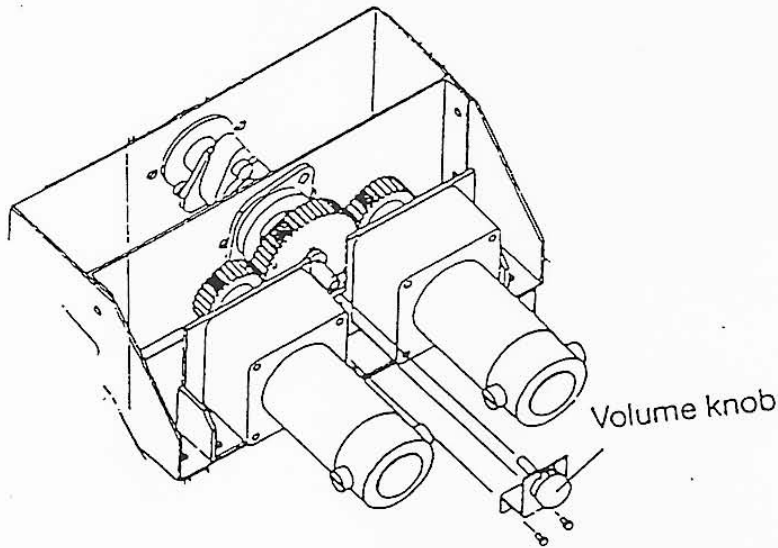


	PART#	TITLE	QTY.
1.	203296	BOX A PANEL	1
2.	381686	FLOTUBE ASSY	1
3.	203407	L\H BEZEL	1
4.	203408	L\H TOP BEZEL	1
5.	203409	R\H TOP BEZEL	1
6.	203410	R\H BEZEL	1
7.	541898	HOLE GROMMET	10
8.	30205	M6 X 10 SCREW BZP	10
9.	30118	M6 X 10 SCREW	4
10	30057	M6 X 25 SCREW	4
11	30634	M6 X 35 SCREW	2
12	243065	TOP FLASH	1
13	162509	LOOM	1

This game machine contains precision parts. It is adjusted and settings made for optimal performance at time of shipment, but adjustment of controls may need to be made after installation, depending on installation conditions and location. The game machine should also be periodically inspected and adjusted to ensure trouble free operation.

### 8.1 How to replace the potentiometer.

Turn the main power switch OFF, and unplug the power cord. Unscrew the 8 screws on the play panel and slide out the steering unit.

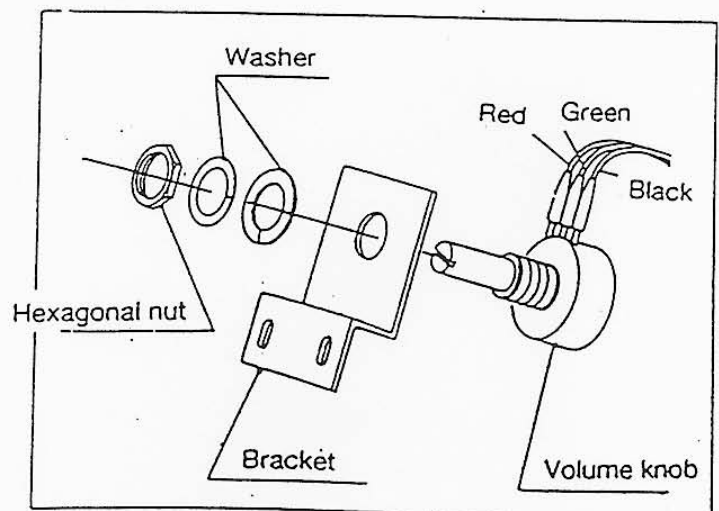


After sliding out the steering unit, the potentiometer can be found at the rear of the steering wheel unit. Disconnect the wiring, then loosen the fixings fastening the tip of the volume knob. Unscrew the bracket holding the resistor in place and lift both the bracket and the potentiometer clear of the unit.

Remove the hexagonal nut and 2 washers holding the potentiometer to the bracket, and remove the resistor.

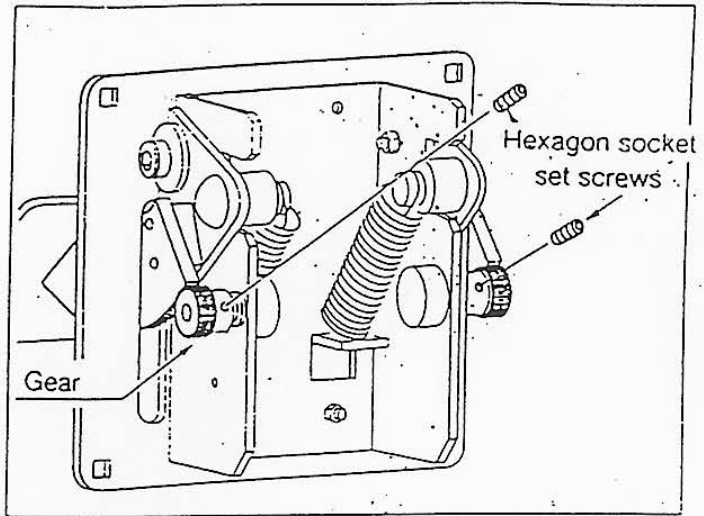
When replacing the potentiometer, please *use only* the type specified in Section 4.2

After replacing the potentiometer, be sure to adjust it as described on the next page.

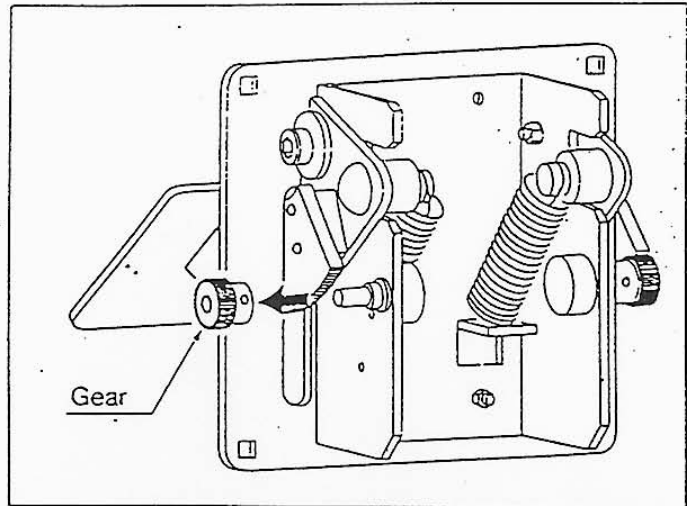


## 8.2 Inspecting and replacing the pedal Potentiometer

Loosen the hexagonal socket set on the gears (to which the potentiometer are attached) to release the potentiometer. If the screws are hard to loosen, put pressure on the accelerator to move the gears to a position from which it is easier to loosen the screws.

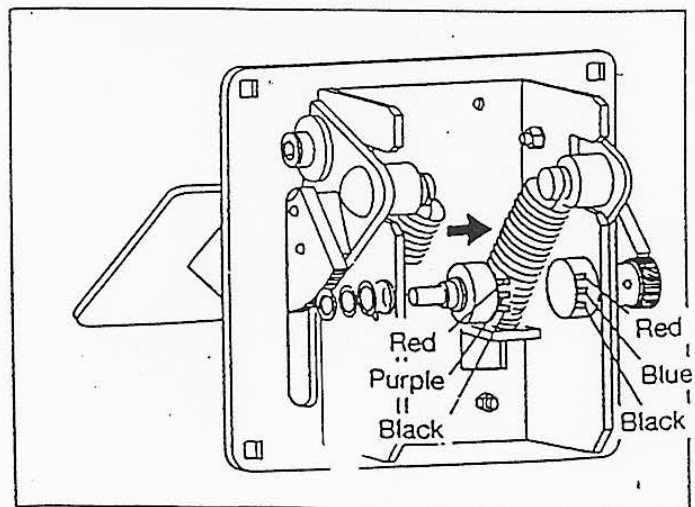


Loosen the hexagon socket set screws holding the potentiometer in place, and remove the gears.



Remove the nuts and washers fastening the potentiometer to the plates, and take out the volume knobs. When replacing the new resistor, make sure you connect the wiring correctly.

Use the correct Potentiometer as specified in section 4.4





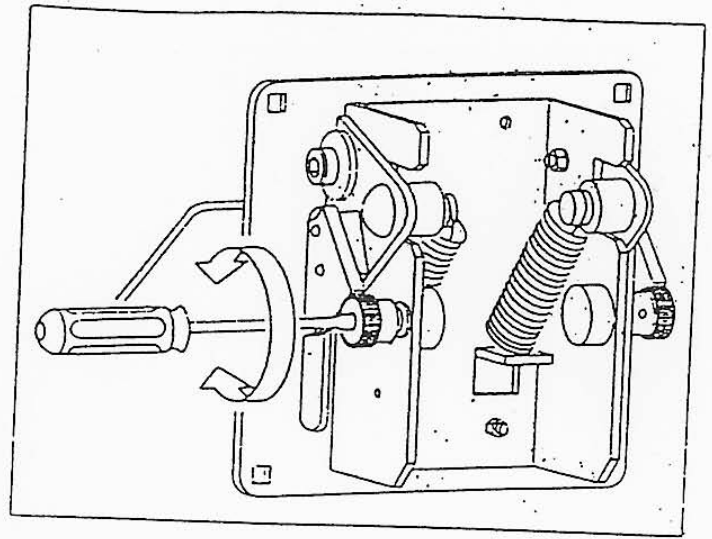
## How to adjust the Potentiometer

Without touching the pedal, adjust the tip of each potentiometer with a minus screwdriver.

Turn the potentiometer for the brake fully in a clockwise direction, then turn it back a little (about 10 degrees) in an anti clockwise direction.

Turn the potentiometer for the accelerator fully in an anticlockwise direction, then turn it back a little (about 10 degrees) in a clockwise direction.

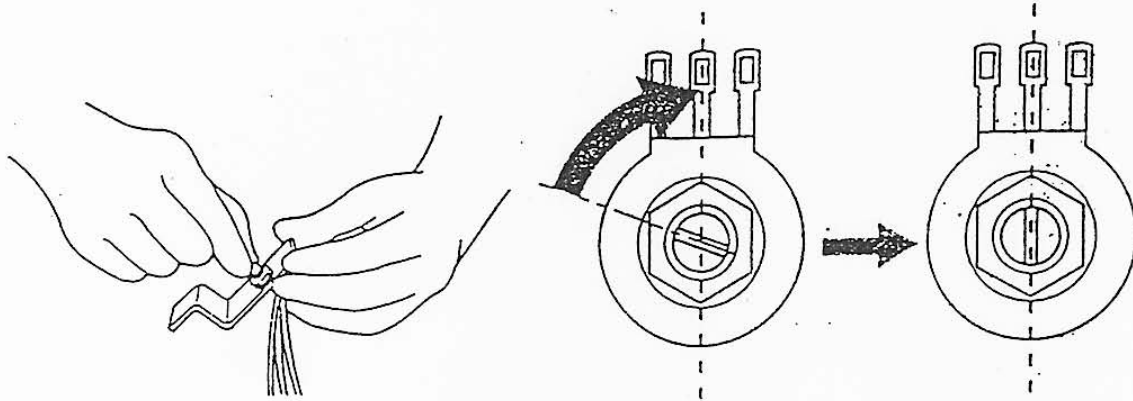
After adjusting, firmly fasten the potentiometer to the gears with hexagon socket set screws.



After adjusting, be sure to conduct a self test (please refer to section 6.3, "PCB startup check (self test)").

## How to adjust the Potentiometer

Grasp the volume potentiometer tip and turn so that the marker is aligned at the centre.



Adjust so that the long groove is parallel to the terminals.

After adjusting, be sure to conduct a self-test (refer to section 6.3 "PCB startup check (self test)").

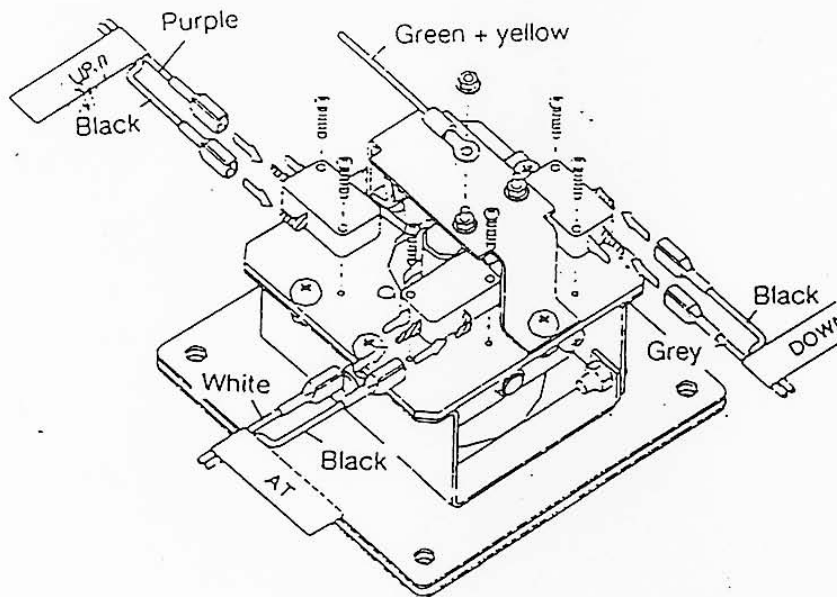
### 8.3 Replacing the gear shift unit switch

Turn the main power switch OFF, and unplug the power cord.

Remove the four button head bolts holding the gear shift unit in place, and lift out the gear shift unit.

Remove the screws holding the gear shift unit micro switch in place and the wiring, and replace the new micro switch.

Please use correct micro switch as specified in section 4.3



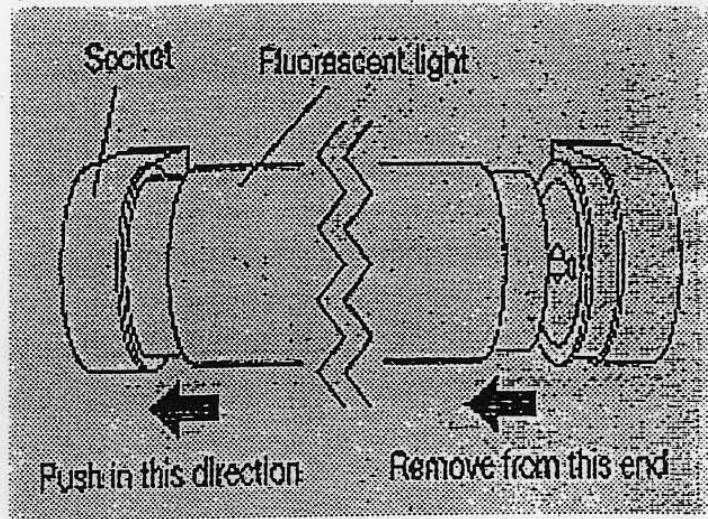
## 8.4 Replacing fluorescent light.

Turn the main power switch OFF, and unplug the power cord

Remove the 10 screws holding the top box glass in place. Carefully slide off the glass to expose the fluorescent tube.

Flourescent light type: Straight tube  
20w.

Push the flourescent light in the direction of the socket, and carefully pull out from the opposite end in a diagonal direction. Be careful not to catch the flourescent light wiring when replacing the sheet metal cover.

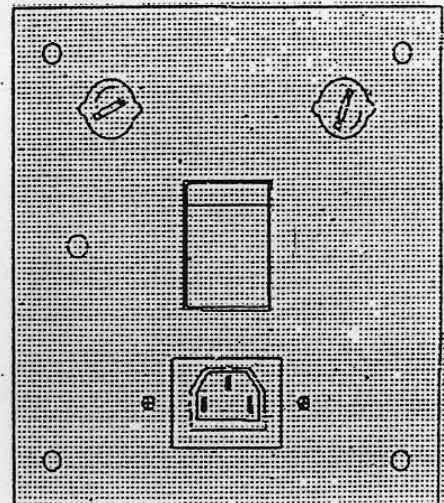


## 8.5 Replacing fuses.

Turn the main power OFF and unplug the main power cord.

Be sure to check that the power cord has been unplugged before begining work. On the plate holding the main power switch, you will find an IC socket and 2 fuse holders. Open the fuse holder cover by turning in the direction of the arrows on the cover. Remove fuses, attatch new fuses and close cover.

**Note: only use 8 amp anti-surge fuses.**



# Monitor Specifications

## CRT

- 25", 27" or 33" diagonal measure.
- Polished faceplate with P22 phosphor.
- Striped trio spacings (standard): 0.82 mm

## HORIZONTAL SCAN

- Frequency: Mode 1: 15.1 kHz. to 18.0 kHz.  
Mode 2: 24.5 kHz. to 28.5 kHz.
- Linearity:  $\pm 5\%$

## INPUT SIGNAL

- Video: RGB analog  
1V to 4V p-p (adjustable with contrast control)  
1.0 k Ohms input impedance,
- Active Video:  
Mode 1: 46.0-50.0 usec.  
Mode 2: 29.5-30.5 usec.
- Sync Level: 0-5 V TTL Level
- Sync Polarity:  
Positive or Negative Going  
Separate or Composite.
- Optional inputs available:  
Negative video.  
RGB analog 0-0.7V, 75 Ohms input impedance.

## PICTURE SIZE REGULATION

- 2%

## VERTICAL SCAN

- Frequency: 47 Hz to 63 Hz
- Linearity:  $\pm 5\%$

## GEOMETRIC DISTORTION

- $\pm 2\%$  (max)

## VIDEO CHARACTERISTICS

- Bandwidth (-3dB): 15 MHz typical
- Rise Time: Less than 23 nanoseconds
- Overshoot (max): 5%

## MECHANICAL

- The 25" comes standard in a F25M4 frame assembly. Custom frames can be furnished upon request. Contact your sales representative for details.

## USER ADJUSTABLE REMOTE CONTROLS

- Brightness, Contrast, Horizontal Hold, Horizontal Size, Horizontal Video Position, Vertical Hold, Vertical Size, Vertical Raster Position.

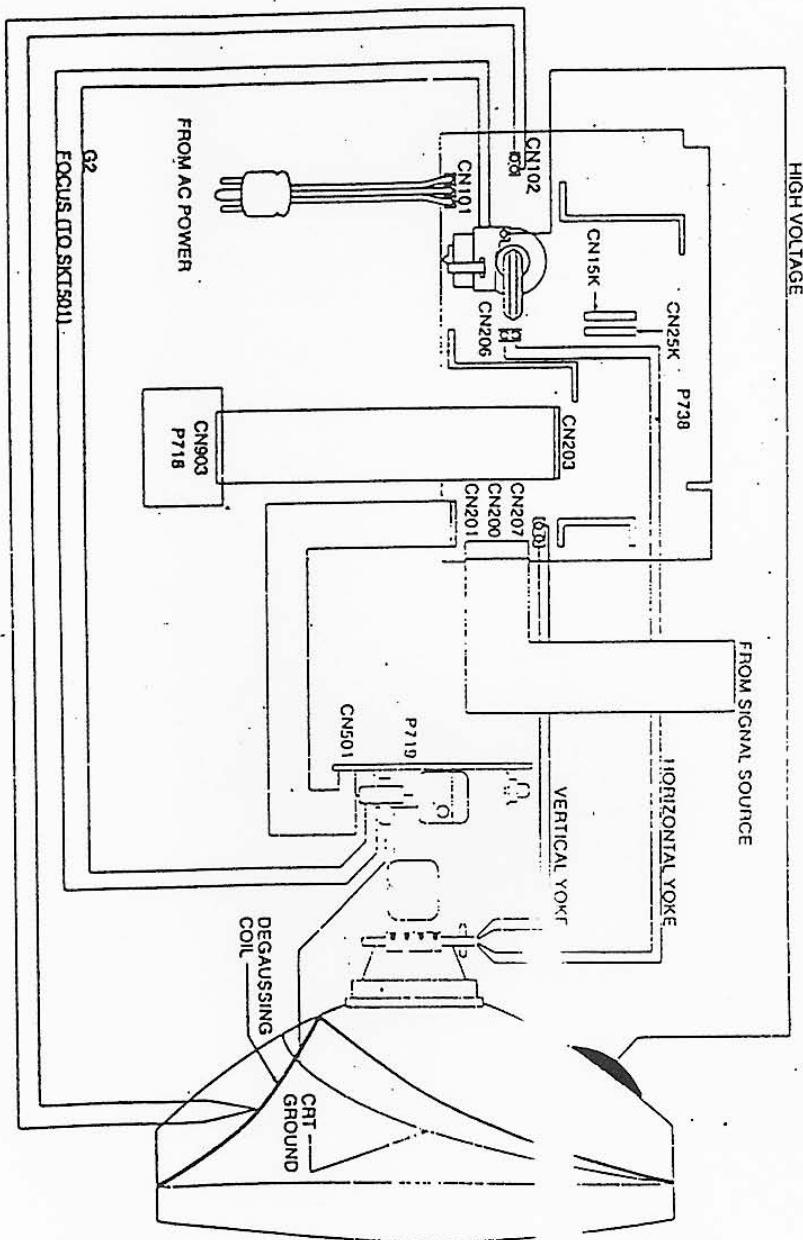
## POWER SUPPLY

- Type: Switch Mode Power Supply (No Isolation Transformer Required):
- Voltage: 90-264 VAC, 50-60 Hz.
- Power: 25" Monitor 100W (max).  
27" Monitor 100W (max).  
33" Monitor 130W (max).
- NOTE: Alternate thermistor needed for 220V operation.

## ENVIRONMENTAL CONDITIONS

- Operating temperature 0 to 55 degrees celcius.
- Complies with U.L., C.S.A., and D.H.H.S. standards.





AC INPUT CONNECTOR: CN101

Amp type 350760-4  
Mating Amp type 1-480700-0

Pin	Description
1	AC hot
2	Earth gnd
3	AC neutral

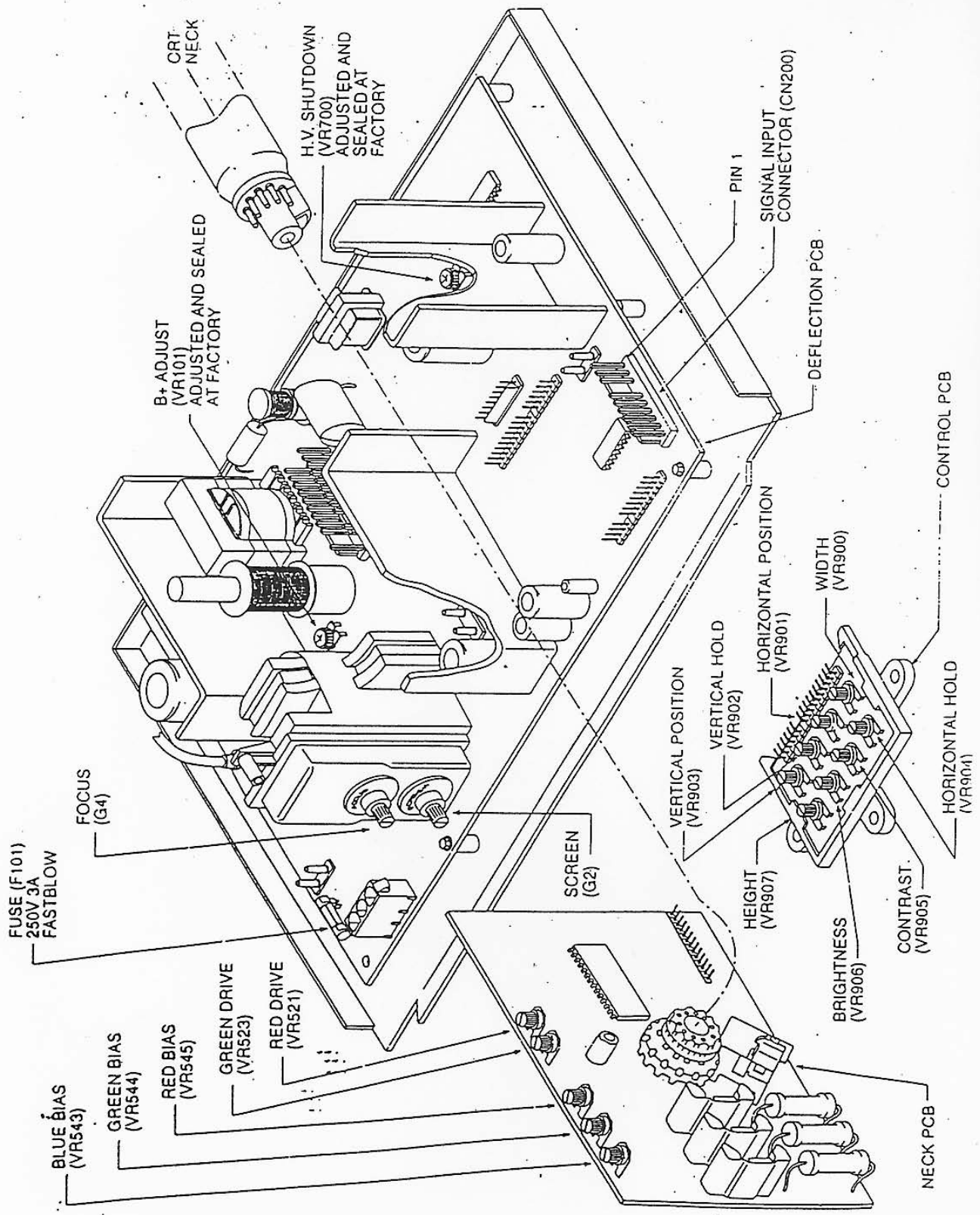
MODE SELECTION CONNECTORS

CN15K 15KHz Operation  
CN25K 25KHz Operation

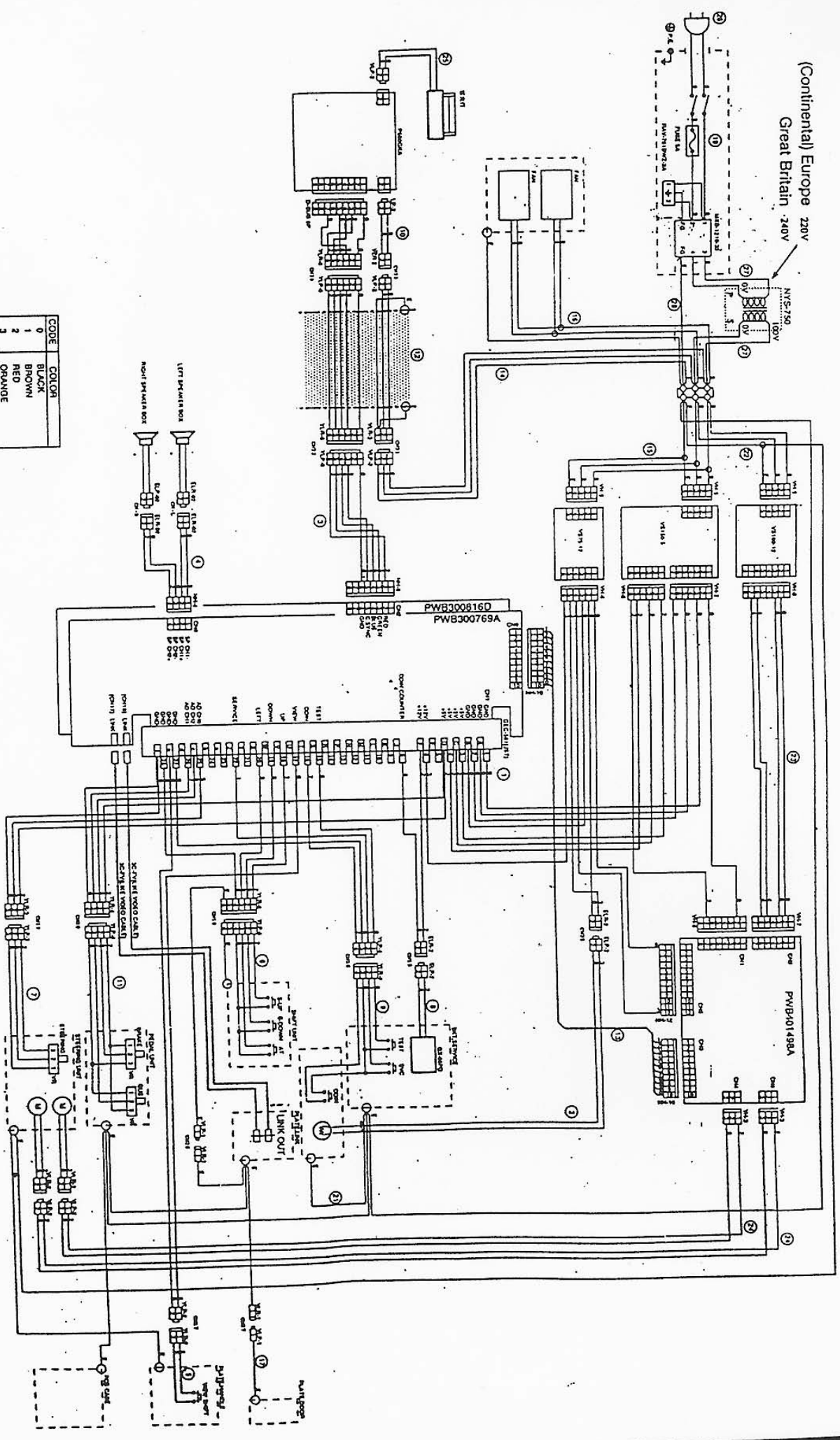
INPUT SIGNAL CONNECTOR: CN200

Amp type 1-640445-1  
Mating Amp type 1-640428-1

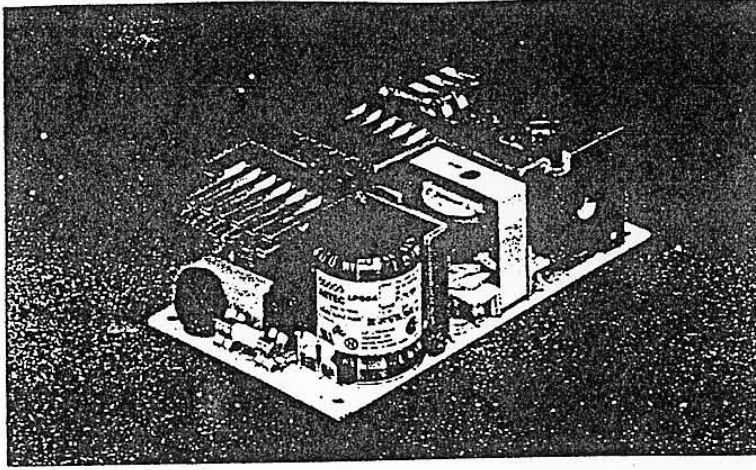
Pin	Description
1	Red
2	Green
3	Blue
4	Gnd
5	Vertical
6	Horizontal
7	
8	Gnd
9	Vertical
10	Horizontal



(Continental) Europe 220V  
Great Britain 240V



CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GREY
9	WHITE
E	GREEN/YELLOW



## LPS Series 60 Watts • Single Output

The LPS Series of power supplies is an AC/DC universal input, single output design offering the latest in high technology performance. This rugged PCB design measures only 3" x 5" and features Class B EMI, high efficiency, and very high reliability. The LPS Series is ideal for telecommunications and computer peripheral applications, test and industrial equipment, medical instrumentation, and business machines.

### SPECIAL FEATURES

- High efficiency
- Built-in EMI filter
- Universal input
- Low output ripple
- Adjustable output
- Overvoltage protection
- Overload protection

### ENVIRONMENTAL

Operating temperature:  
0° to 50°C ambient; derate each  
output at 2.5% per degree from 50°  
to 70°C

Electromagnetic susceptibility:  
designed to meet IEC 801,-2, -3, -4,  
-5, Level 3

Humidity: Operating; non-  
condensing 5% to 95%

Vibration: Three orthogonal axes,  
sweep at 1 oct/min, 5 min. dwell at  
four major resonances 0.75 peak 5  
Hz to 500 Hz, operational

Storage temperature: -40° to 85°C

Temperature coefficient: ± .04% per  
degree C

MTBF demonstrated: > 550,000  
hours at full load and 25°C ambient  
conditions

### ELECTRICAL SPECIFICATIONS

#### Input

Input range . . . . . 85 VAC to 264 VAC; 120 to 370 VDC  
Frequency . . . . . 47 - 440 Hz  
Inrush current . . . . . < 18 A peak @ 115 VAC; < 36 A peak @ 230 VAC;  
cold start @ 25°C  
Input current . . . . . 1.5 A max. (RMS) @ 115 VAC  
Efficiency . . . . . 70% typical at full load  
EMI filter . . . . . FCC Class B conducted, CISPR 22 Class B  
conducted, EN55022 class B conducted and VDE  
0878 PT3 class B conducted (radiated pending)

Safety ground  
leakage current . . . . . < 0.5mA @ 50/60Hz, 264 VAC input

#### Output

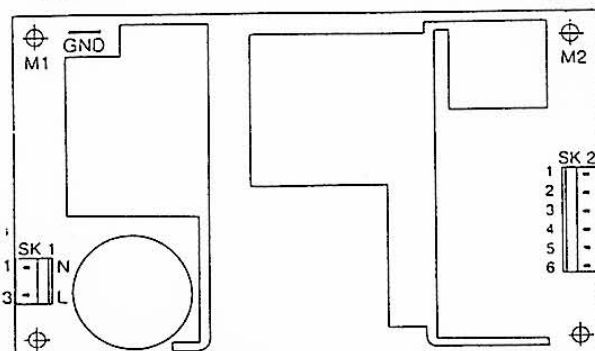
Maximum power . . . . . 60 W for convection; 80 W with 30 CFM forced air  
Adjustment range . . . . . ± 5% minimum  
Hold-up time . . . . . 20 ms at 60 watt load and 115 VAC nominal line  
Overload  
protection . . . . . Short circuit protection on all outputs. Case overload  
protected @ 110% to 145% above peak rating

Overvoltage  
protection . . . . . 5V output: 6.0 to 6.7 VDC. Other outputs 10% to 25%  
above nominal output

### SAFETY

VDE	0805/EN60950 (IEC950)	11774-3336-1255 9LC #86665
UL	UL1950	E132002
CSA	CSA 22.2-234 Level 3	LR53982C
NEMKO	EN 60950/EMKO-TUE	P95100123
	(74-sec) 203	
BABT	EN60950/BS7002	PS / 605272
CB	Certificate and report	
CE	Mark	1521, 1522, 1523, 1524

Model Number	Output Voltage	Minimum Load	Maximum Load with Convection Cooling	Maximum Load with 30 CFM Forced Air	Peak Load <sup>1</sup>	Regulation <sup>2</sup>	Ripple P/P (PARD) <sup>3</sup>
LPS62	5 V	0 A	12 A	16 A	18 A	± 2%	50 mV
LPS63	12 V	0 A	5 A	6.7 A	7.5 A	± 2%	120 mV

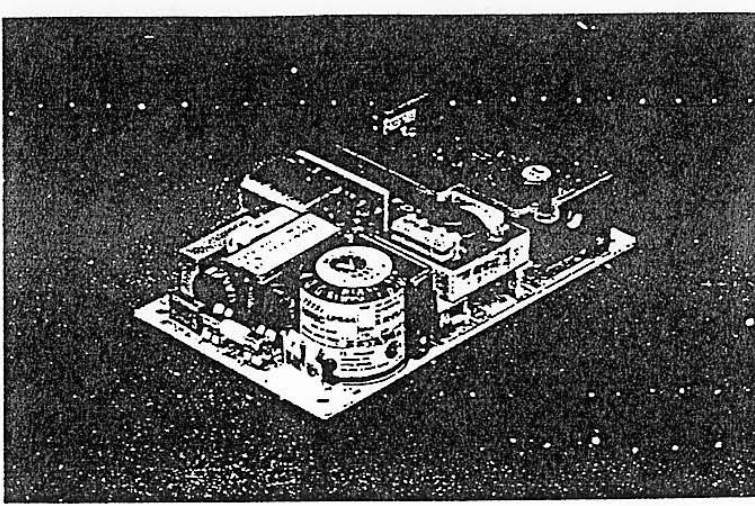


### PIN ASSIGNMENTS

Connector: LPS62 LPS63

SK1 1	Neutral	Neutral
SK1-3	Line	Line
SK2-1	+5 V	+12 V
SK2-2	+5 V	+12 V
SK2-3	+5 V	+12 V
SK2-4	Common	Common
SK2-5	Common	Common
SK2-6	Common	Common

## LPS Series 40 Watts • Single Output



The LPS Series of power supplies is an AC/DC universal input, single output design offering the latest in high technology performance. This rugged PCB design measures only 3" x 5" and features Class B EMI, high efficiency, and very high reliability. The LPS Series is ideal for telecommunications and computer peripheral applications, test and industrial equipment, medical instrumentation, and business machines.

### SPECIAL FEATURES

- Universal input
- High efficiency
- Built-in EMI filter
- Low output ripple
- Adjustable output
- Overvoltage protection
- Overload protection

### ENVIRONMENTAL

Operating temperature:  
0° to 50°C ambient; derate each output at 2.5% per degree from 50° to 70°C

Electromagnetic susceptibility:  
designed to meet IEC 801,-2, -3, -4, -5, Level 3

Humidity: Operating; non-condensing 5% to 95%

Vibration: Three orthogonal axes, sweep at 1 oct/min, 5 min. dwell at four major resonances 0.75 peak 5 Hz to 500 Hz, operational

Storage temperature: -40° to 85°C

Temperature coefficient: ± .04% per degree C

MTBF demonstrated: > 550,000 hours at full load and 25°C ambient conditions

### ELECTRICAL SPECIFICATIONS

#### Input

Input range . . . . . 85 VAC to 264 VAC; 120 to 370 VDC  
Frequency . . . . . 47 - 440 Hz  
Inrush current . . . . . < 18 A peak @ 115 VAC; < 36 A peak @ 230 VAC cold start @ 25°C

Input current . . . . . 1 A max. (RMS) @ 115 VAC

Efficiency . . . . . 70% typical at full load

EMI filter . . . . . FCC Class B conducted, CISPR 22 Class B conducted, EN55022 class B conducted and VDE 0878 PT3 class B conducted (radiated pending)

Safety ground . . . . . < 0.5mA @ 50/60Hz, 264 VAC input leakage current

#### Output

Maximum power . . . . . 40 W for convection; 55 W with 30 CFM forced air

Adjustment range . . . . . ± 5% minimum

Hold-up time . . . . . 20 ms at 40 watt load and 115 VAC nominal line

#### Overload

protection . . . . . Short circuit protection on all outputs. Case overload protected @ 110% to 145% above peak rating

#### Overvoltage

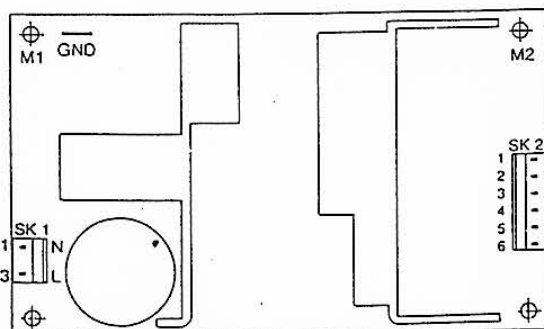
protection . . . . . 5V output: 6.0 to 6.7 VDC. Other outputs 10% to 25% above nominal output

### SAFETY

VDE	0805/EN60950 (IEC950)	11774-3336-1241 (LC# 84936)
UL	UL1950	E132002
CSA	CSA 22.2-234 Level 3	LR53982C
NEMKO	EN 60950/EMKO-TUE	P94100375 (74-sec) 203
BABT	EN60950/BS7002	PS/604781
CB	Certificate and report	1119,1125,1126,1127
CE	Mark	

Model Number	Output Voltage	Minimum Load	Maximum Load with Convection Cooling	Maximum Load with 30 CFM Forced Air	Peak Load <sup>1</sup>	Regulation <sup>2</sup>	Ripple P/P (PARD) <sup>3</sup>
--------------	----------------	--------------	--------------------------------------	-------------------------------------	------------------------	-------------------------	--------------------------------

LPS43    12 V    0 A    3.3 A    4.5 A    5 A    ± 2%    120 mV

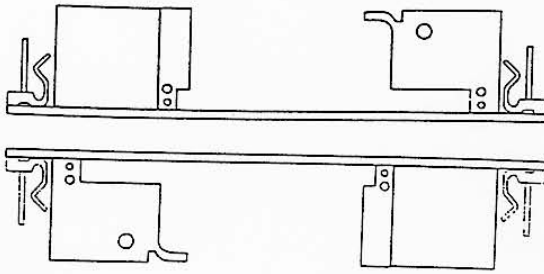


### PIN ASSIGNMENTS

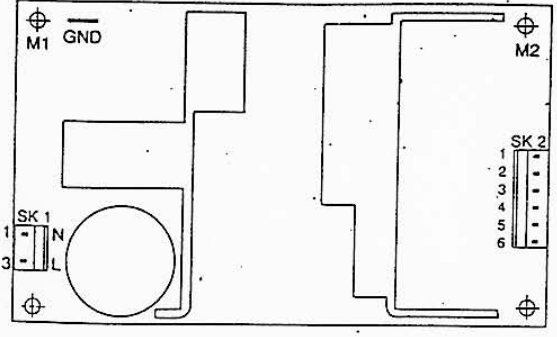
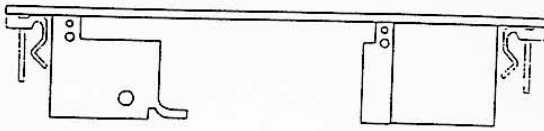
Connector	LPS43
SK1-1	Neutral
SK1-3	Line
SK2-1	+12 V
SK2-2	+12 V
SK2-3	+12 V
SK2-4	Common
SK2-5	Common
SK2-6	Common



LPS62 5 V



LPS63 12 V



LPS43 12 V

# WINDING HEAT

Technische Information

**Winding Heat** ist der erfolgreichste KONAMI Fahrsimulator aller Zeiten. Er bietet im Vergleich zu seinem Vorgänger noch bessere Grafik (Tagfahrt in den Bergen, mit Gegenverkehr !!) und noch mehr Autos zur Auswahl. Jedes einzelne Teil des Gehäuses war auf dem Prüfstand und wurde, wenn nötig, solange verbessert, bis es unseren Anforderungen entsprach. Die Platine hat hunderte Teststunden auf dem Buckel und ist sicher und zuverlässig.

**Wir wissen, was wir unseren Kunden schuldig sind !**

**Der Knaller: Jedes Auto kann für jede Strecke speziell getuned werden:**

<b>Fahrsituation</b>	<b>Optimales Tuning</b>
Kurvige Strecken	Reifenhaftung
Viele Geraden	Endgeschwindigkeit
Starke Steigungen	Beschleunigung
Kombinationsstrecken	Gesamthandling

Das Fahrverhalten ist einzigartig. Genaueste Reaktionen und das realistischste Feed Back, das es je gegeben hat. Überzeugen Sie sich und Ihre Kunden von der Tatsache, daß dies vermutlich der zur Zeit beste neue Fahrsimulator auf dem Markt ist.

*Mit diesem Spitzensimulator  
erzielen Sie Spitzenkassen.  
Das ist erwiesen !!*

## Winding Heat Deluxe (1 Spieler):

Maße: 115cm x 188cm x 239cm (BxTxH)  
Gewicht: 230 kg  
Leistung: 400 W  
Monitor: 50"

## Winding Heat Twin (Mitte November 1996):

Maße: 144cm x 163cm x 190cm (BxTxH)  
Größtes Einzelteil: 72cm x 163cm x 155cm (BxTxH)  
Gewicht: 430 kg  
Monitor: 27"

**Auch als 1 Spieler Sitz oder Standversion verfügbar**



## FAX Übertragung

Von: Peter von Schlippe  
Coin Op  
An: Herrn Meister  
Firma: G + F  
Adresse: Mainz  
Datum: 15. Oktober 1996  
Uhrzeit: 18:53

**KONAMI (Deutschland) GmbH**  
Berner Str. 109  
60437 Frankfurt  
FAX: 069 - 95081262  
TEL: 069 - 95081261  
Seite 1 von 1 Seite(n)

CC:

### Preisliste

Sehr geehrter Herr Meister,

gegenüber der Ihnen vorliegenden Preisliste hat sich der Preis von Winding Heat Twin wie folgt geändert:

	alter Preis	neuer Preis
Aufsteller	27.900,00	28.900,00
Großhändler	22.900,00	24.900,00
Ihr Preis	21.900,00	22.900,00

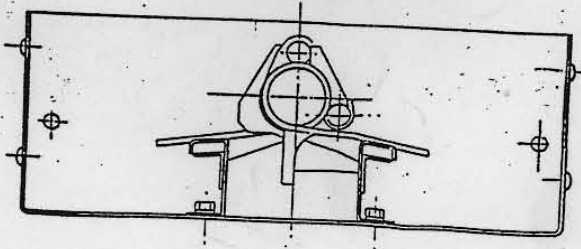
Mit freundlichen Grüßen

KONAMI (Deutschland) GmbH  
- Coin Op Division -

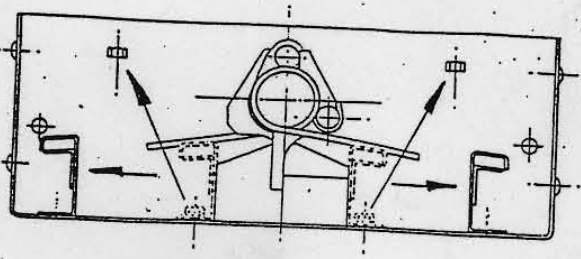
Peter v. Schlippe  
General Manager

# RELEASE TORSION SPRINGS

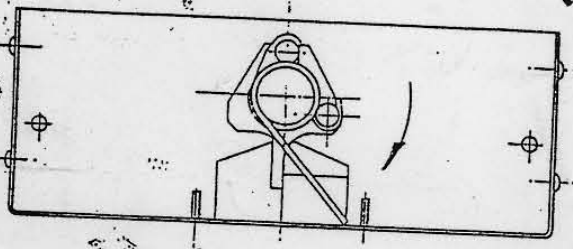
①



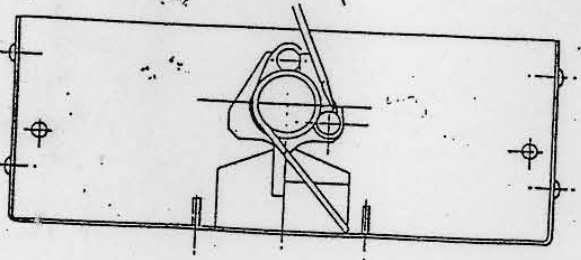
BESTEHENDE VORRICHTUNG



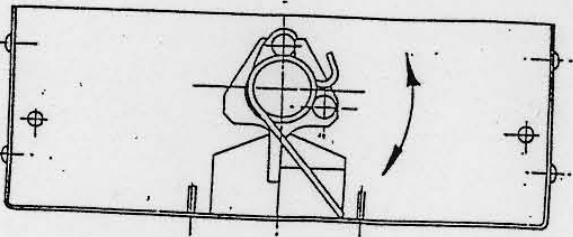
ENTFERNEN SIE DIE SCHRAUBEN + KLAMMERN



DRÜCKEN SIE DIE VERLÄNGERUNG DER FEDER NACH UNTEN



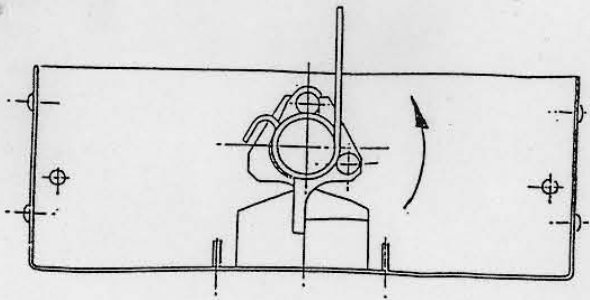
BENUTZEN SIE EINEN SCHRAUBENZIEHER UM DEN FEDERHACKEN ZU LÖSEN



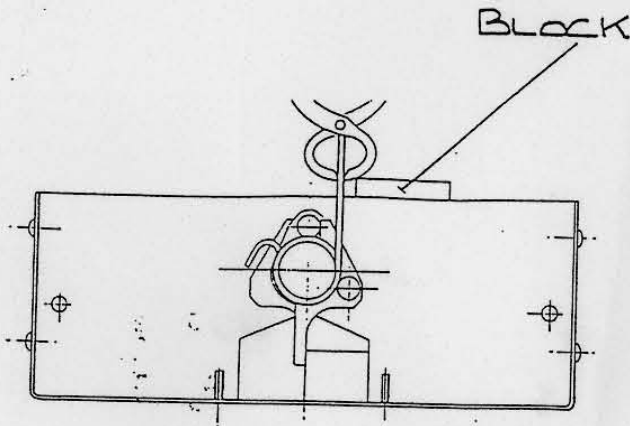
SETZEN SIE DIE FEDER FREI



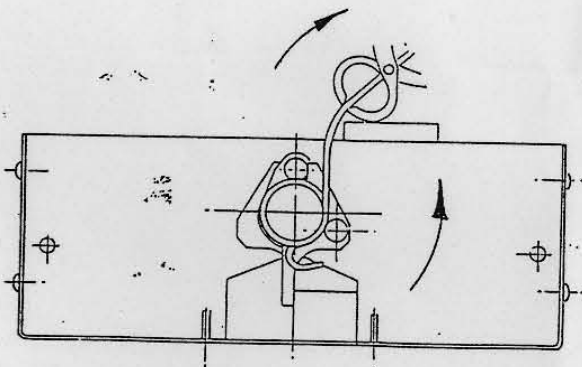
# UNWIND SPRINGS



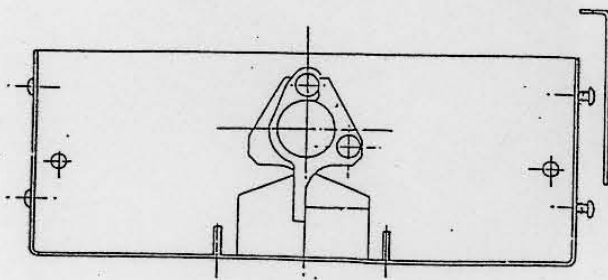
(2)  
DREHEN SIE DIE  
FEDER SO, DAS SIE  
VERLÄNGERUNG NACH  
OBEN ZEIGT



FÜGEN SIE EINEN  
BLOCK BEI UND HALTEN  
DIE FEDER MIT EINEM  
ENSPRECHENDEN WERKZEUG



DREHEN SIE DIE  
FEDER "DURCH"  
HERAUSHEBELN  
HERAUS

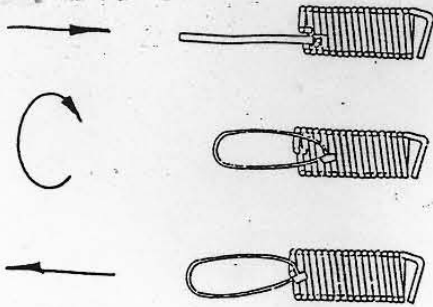


NACHDEM DIE ALTE  
FEDER HERAUS IST  
SETZEN SIE BITTE  
DIE NEUEN FEDER-  
HALTERUNGEN EIN  
Rechts No. 203798  
Links No. 203797

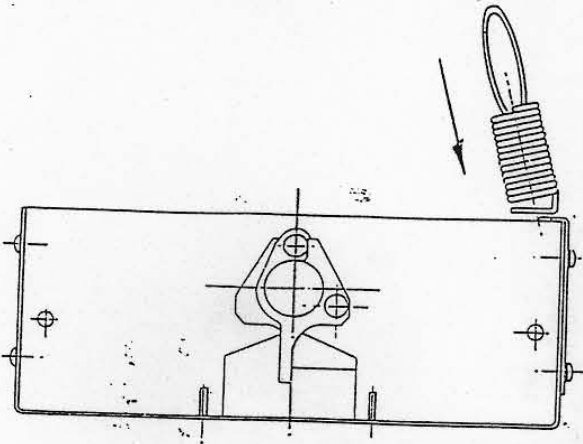


# NEUES FEDERN KIT

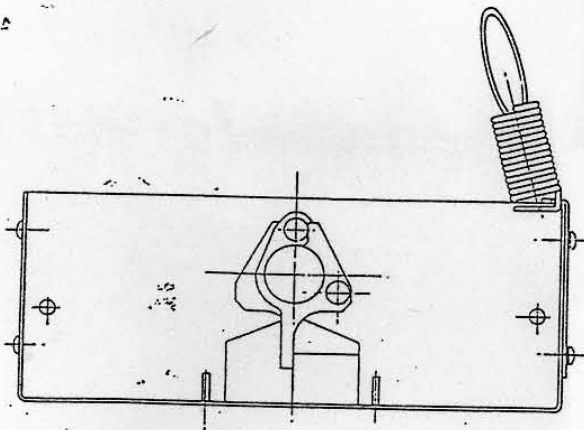
3



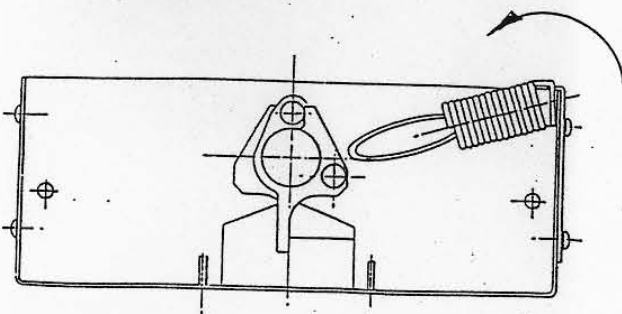
DIE VORGEFORMTE  
SCHLEIFE HANGEN SIE  
BITTE MIT DEM  
VERSCHLUß VORAN  
IN DIE NEUE FEDER  
EIN



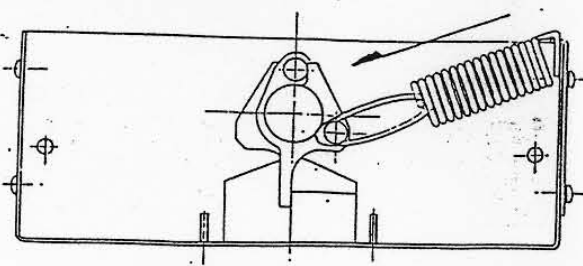
FÜGEN SIE DIE  
NEUE FEDER DER  
HALTERUNG ZU



UND HAGEN DIESE  
ENTSPRECHEND EIN



DREHEN SIE DIE  
FEDER UND



HANGEN DIE SCHLEIFE  
WIE NEBENSTEHEND  
EIN

JUSTIEREN SIE DIE KLAMMERN