

TWIN TYPE

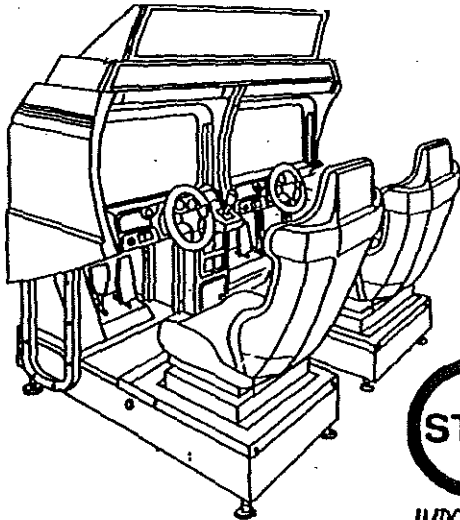
# SERVICE MANUAL

*STS Copy*

ML 0252  
DEITH LEISURE SPARES

# SEGA

# SEGA Touring Car Championship

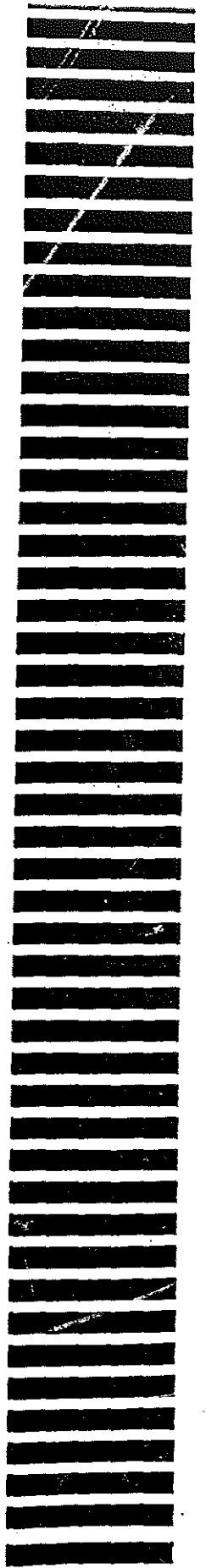


**IMPORTANT!**

Before using this product, read this OWNERS MANUAL carefully to understand the contents stated herein. After reading this manual, be sure to keep it available nearby the product or somewhere convenient in order to be able to refer to it whenever necessary.

Built in the UK by

**Deith Leisure**  
A MEMBER OF THE SEGA GROUP





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

To ensure the safe usage of the product, be sure to read the following before using the product. The following instructions are intended for the use of **qualified service personnel only**. After carefully reading and sufficiently understanding the instructions, handle the machine in an appropriate manner. Only qualified personnel should install or carry out maintenance on the product.

Terms such as WARNING!, CAUTION! and IMPORTANT! are used where an explanation is given which requires special attention, depending on the potential risk. SEGA is not responsible, for any injury or damage caused by use in a manner contrary to the instructions stated in this document. In order to prevent accidents, warning stickers and printed instructions are applied in the places where a potentially hazardous situation relating to the product could arise. Be sure to comply with these warnings.



**WARNING!**

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



**CAUTION!**

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



**IMPORTANT!**

This is cautionary information which should be complied with when handling the product. Indicates that mishandling the product by disregarding this will cause a potentially hazardous situation which whilst it may not result in personal injury could damage the equipment.

**Be sure to turn off power and disconnect from the mains supply before working on the machine.**

**Ensure that the correct fuse is fitted to the machine.**

Details of the correct fusing of the machine are enclosed in the Installation/Service Manual.

**Ensure that only qualified Service Engineers perform any maintenance work on the Machine.**

**Specification Changes (removal of equipment, conversion and addition) not designated by SEGA are not permitted and will invalidate this products CE conformity.**

The parts of the product also include any Warning Labels or Safety Covers for personal protection etc. A potential hazard will be created if the machine is operated while any parts have been removed. Should any doors, lids or protective covers be damaged or lost, do

not operate the product. SEGA is not liable in any way whatsoever for any injury and or damage caused by Specification Changes (using other firms parts, or by conversion) not designated by SEGA.

**Ensure that the product is of appropriate Electrical Specification.**

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

**Install and Operate the Product in places where appropriate lighting is available, allowing warning labels to be clearly read.**

To ensure maximum safety for both customers and operators, labels and printed instructions describing potential hazardous situations are applied to places where accidents could occur. Ensure that where the product is operated has sufficient lighting allowing any warnings to be read. If any label is peeled off, replace it immediately.

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

Some of the Monitor (TV) parts are subject to high tension voltage. Even after turning off the power some parts are still occasionally subject to high tension voltage. Monitor repair and replacement should be performed by **qualified service engineers only**.

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

- Descriptions herein contained may be subject to change without prior notification.
- The contents described herein are fully prepared with due care. however, should any questions arise or errors be found, please contact SEGA.

**INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION.**

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

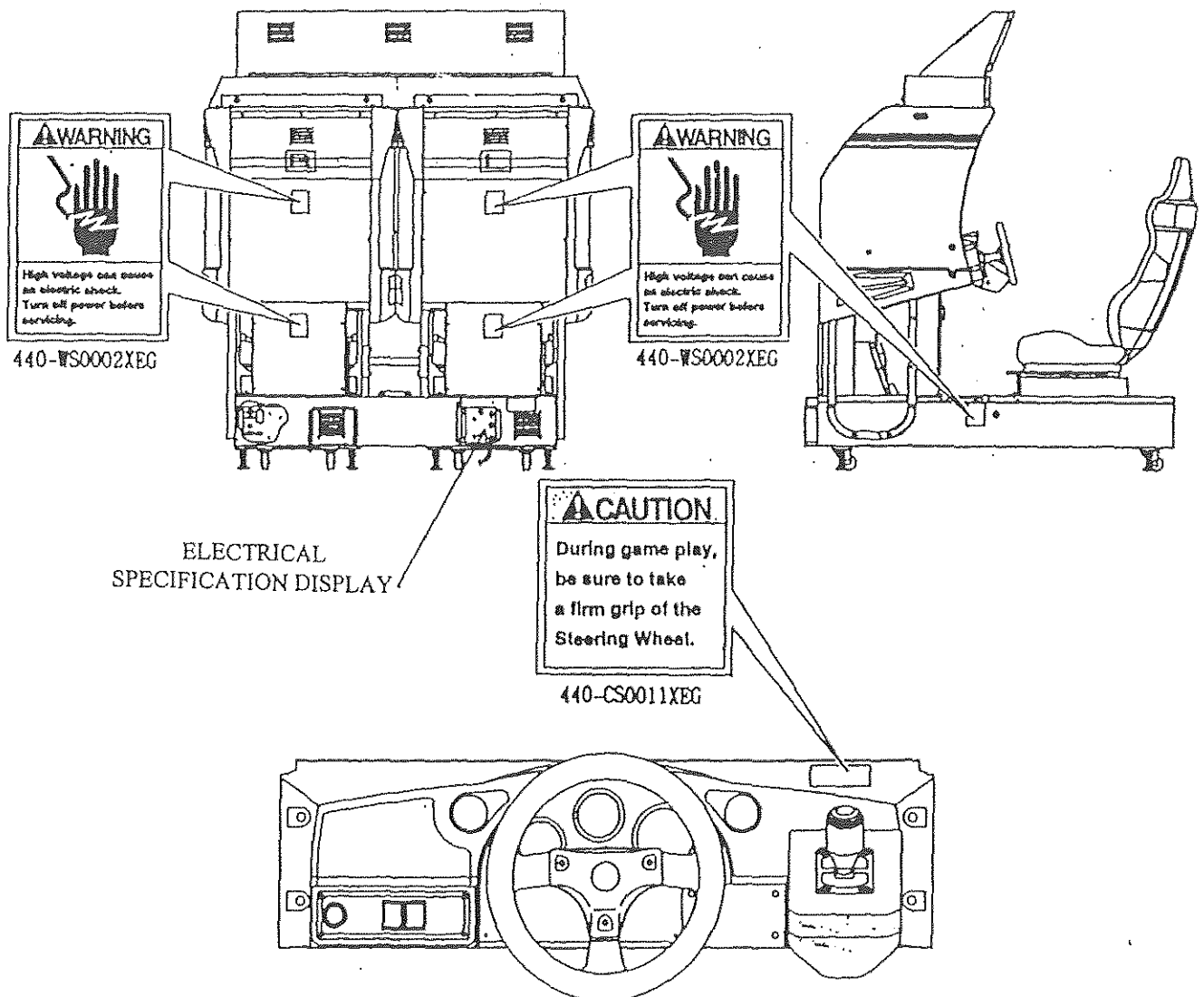
- Are there any dented parts or defects (cuts, etc) on the external surfaces of the cabinet?
- Are Castors and Leg Adjusters present and undamaged.
- Do the power supply voltage and frequency requirements meet with the local supply.
- Are all wiring connectors correctly and securely connected? Unless connected in the correct direction, connector connections can not be made successfully. Do not insert connectors forcibly.
- Are all IC's of each IC BD firmly inserted?
- Do power cords have any cuts or dents?
- Do the fuses used meet specified rating? Is the Fuse working correctly?
- Are such units as Monitors, Control equipment, IC BD, etc. firmly secured? Are all Earth Wires connected.
- Are all accessories available?
- Can all doors and lids be opened with the accessory Keys? Can doors and lids be closed firm?

## CONCERNING THE STICKER DISPLAY

SEGA product has Stickers describing the product manufacture No. (Serial No.) and Electrical Specifications. Also it has a Sticker describing where to contact for repair and for purchasing parts. When inquiring about or asking for repair, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial No. indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this Manual. In order to meet the above situations, mention the Serial No. when contacting the applicable places.

## CONCERNING WARNING DISPLAYS

SEGA product has warning displays on Stickers, Labels and or printed instructions adhered / attached to or incorporated in the places where a potentially hazardous situation can arise. The warning displays are intended for accident prevention for the customers and for avoiding hazardous situation relating to maintenance and servicing work. There are some portions in the Cabinet, which are subject to high tension voltage, etc. where accidents can be caused only by touching. When performing the servicing work, be very careful of the warning displays. Especially, any complex repair and replacement work not mentioned herein, should be performed by those technical personnel who have knowledge of electricity and technical expertise. For the prevention of accidents, caution any customer whose act runs counter to the warnings, as to the effect that he must stop the act.



### **SPECIFICATIONS**

Installation Space:	1640mm (64.6in) x 1700mm (66.9in)	
Height:	1920mm (75.6in)	
Weight:	480 kg	
Power, Max:	Rated Voltage:	210 ~ 240 V.A.C
	Rated Current:	4.6 ~ 4.0 A
	Rated Power	970W

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

### **INTRODUCTION TO THIS OWNERS MANUAL**

SEGA ENTERPRISES LTD., supported by its high electronic technology of LSI's, microprocessors, etc. and with a wealth of experience, has for more than 30 years been supplying various innovative and popular games to the world market. This Owners Manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards SEGA TOURING CAR TWIN, a new SEGA product. This manual is intended for those who have a knowledge of electricity and technical expertise especially in IC's, CRT's, microprocessors, etc. Carefully read this manual to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior systems. Should such a situation arise immediately contact the nearest branch listed below or our head office.

SEGA AMUSEMENTS EUROPE LIMITED / SEGA SERVICE CENTRE  
Unit 2, Industrial Estate, Leigh Close, New Malden, Surrey, KT3 3NL, England  
Telephone: +44(0) 181 336 2256  
Fax: +44(0) 181 336 1715

SEGA SPAIN  
C/ PLAYA DE LIENCRES, 2-EDIFICIO 3 LONDRES,  
EUROPA EMPRESARIAL CTRA, NATIONAL IV KM.24, 28230 LAS ROZAS (MADRID)  
Telephone: +34(1) 6315000  
Fax: +34(1) 6400689

## CONTENTS

BEFORE USING THIS PRODUCT	A	
STICKER DISPLAY	C	
INTRODUCTION TO THIS OWNERS MANUAL	D	
1. HANDLING AND INSTALLATION PRECAUTIONS	1	
2. ACCESSORIES	2	
3. NAME OF PARTS	3	
4. ASSEMBLING THE CABINET	4	
ASSEMBLING THE COCKPIT	4	
SECURING IN PLACE	6	
INSTALLING THE BILLBOARD	8	
INSTALLING THE AC COVERS	9	
POWER SUPPLY	10	
TURNING ON THE POWER	10	
ASSEMBLY CHECK	11	
5. PRECAUTIONS WHEN MOVING THE MACHINE	13	
6. THE GAME	14	
7. EXPLANATION OF TEST AND DATA DISPLAY	16	
VTS BRACKET	17	
TEST MODE	19	
MEMORY TEST	19	
T.G.P. TEST	19	
INPUT TEST	20	
OUTPUT TEST	20	
SOUND TEST	21	
C.R.T. TEST	21	
GAME ASSIGNMENTS	22	
COIN ASSIGNMENTS	22	
BOOKKEEPING	26	
BACKUP DATA CLEAR	27	
8. MAINTENANCE	28	
HANDLE MECHA MAINTENANCE	29	
ACCELERATOR & BRAKE UNIT MAINTENANCE	32	
SHIFT LEVER MAINTENANCE	34	
CHANGING THE VOLTAGE ON THE TRANSFORMER	35	
FUSES	36	
REPLACING THE FLOURESCENT LAMP AND LAMPS	37	
PERIODIC INSPECTION TABLE	38	
TROUBLESHOOTING	39	
GAME BOARD & DRIVE CONTROL BOARD	41	
9. COMMUNICATION PLAY	45	
10. PARTS LISTS	50	
TOP ASSEMBLY	STC-00002/3UK	50
BILLBOARD ASSEMBLY	STC-0200UK	53
BILLBOARD UPPER ASSEMBLY	STC-0210UK	54
BILLBOARD LOWER ASSEMBLY	STC-0220UK	55
LAMP UNIT ASSEMBLY	STC-0230UK	56
FLOURESCENT ASSEMBLY	STC-0240UK	57
COINCHUTE TOWER ASSEMBLY	DYN-0300UK	58
VTS ASSEMBLY	DYN-0350UK	59
WIRE COVER ASSEMBLY	DYN-0500UK	60
COCKPIT ASSEMBLY	STC-11001/2UK	61
CONTROL PANEL ASSEMBLY	STC-12003UK	65
CONTROL PANEL COVER	STC-1202-02	67
VIRTUAL BUTTON ASSEMBLY	INY-1250	68

MONITOR HANDING KIT	STC-7000UK	69
HANDING KIT	STC-6000UK	70
MAIN BASE ASSEMBLY	STC-21001UK	72
BRAKE & ACCELERATOR UNIT ASSEMBLY	DYN-1300UK	74
FLOOR REAR ASSEMBLY	DYN-2040UK	76
FLOOR FRONT ASSEMBLY	MSB-2030UK	77
SEAT ASSEMBLY	STC-2200UK	78
SEAT REAR COVER 1P	STC-1605	80
SEAT REAR COVER 2P	STC-2202	81
WOOFER ASSEMBLY	STC-1650	82
MAIN BOARD ASSEMBLY	STC-4400	83
ELEC ASSEMBLY	STC-4500UK	85
DRIVE CONTROL BOARD	INY-4600	87
INSTALLATION KIT	STC-INST-KIT	88
11. WIRE COLOUR CODE TABLE		89
12. SCHEMATICS		91
13. COIN MECH INSTALLATION AND CREDIT BOARD SETUP		93
14. DETAILS OF SANWA MONITOR		103
15. DETAILS OF NANA0 MONITOR		126



## 1. HANDLING AND INSTALLATION PRECAUTIONS

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

This Game is designed for indoor use only. The game must **NOT** be installed outdoors or under the following conditions:

1. In areas directly exposed to sunlight, high humidity, dust, excessive heat or extreme cold.
2. In locations that would present an obstacle in the case of an emergency i.e. near fire equipment or emergency exits.
3. On an unstable surface or subject to vibrations.

### ***IMPORTANT.***

This machine should only be installed by Qualified Service Personnel.

Ensure that the line voltage matches that of the transformer input tapping for more information see the section in this manual dealing with maintenance. Please note the voltage that the machine has been set to during manufacture. This machine has been set to **230V**.

Be sure to switch the power **OFF** and remove the mains plug from the wall socket before replacing any user servicable parts.

Do **NOT** attempt to repair the PCB (Printed Circuit Board) yourself as this will void the warranty. The PCB contains static sensitive components that could be damaged. Always return a faulty PCB to your distributor with adequate packaging and protection.

When removing the plug from a mains outlet always grasp the plug and not the cable. Do not use a fuse that does not meet a specified rating.

Make sure all connections are secure before restoring power.

**Ensure that the mains lead is not exposed. If the mains lead becomes exposed there is a danger of an electric shock or a short circuit**  
**Ensure that the power supply is fitted with circuit protection. Using the power supply without circuit protection is a fire hazard.**

## 2. ACCESSORIES

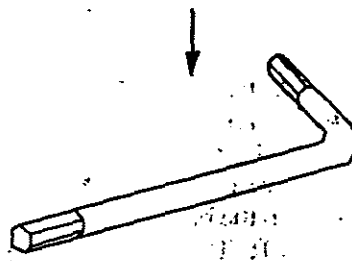
When Transporting the machine ensure that the following parts are supplied;

Seq. No.	Part Number	Description	Qty.
1	STC-0200UK	ASSY BILLBOARD STCC UK	1
2	DYN-0300UK	ASSY COIN CHUTE TOWER UK	1
3	DYN-0500UK	ASSY WIRE COVER UK	1
4	DYN-0013UK	JOINT PIPE	1
5	DYN-0014UK	BILLBOARD HOLDER DAYTONA	2
6	DYN-0006XUK	AC COVER B	1
7	DYN-0018UK	AC COVER C	1
8	DYN-0019UK	AC COVER D	1
9	RAL-XXXX-14UK	TIE BRACKET RALLY	1
10	PK0087	CARTON INST KIT STCC TWIN	1
101	600-6275-0500	CABLE FIBER OPTIC 5mm x 500cm	2
201	030-000825-SB	M8X25 BLT W/S BNP	16
202	FS1031	M8 WSHR 25OD FLT BNP	4
203	030-000820-S	M8X20 BLT W/S PAS	4
204	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	15
205	FX0400	M8 WSHR FORM A FLT BNP	12
206	FX0011	M4 NUT FLG SER BZP	3
207	FS1031	M8 WSHR 25OD FLT BNP	4
208	FX0258	M8 WSHR 22OD FLT BZP	4
209	421-9141	STICKER CAR No 2~8	1
210	509-5704	SW MICRO TYPE (OMRON K3L 13)	1
401	DLMEMC17	CERT OF CONFORMANCE STCC	1
402	420-6229-02UK	OWNERS MANUAL STCC TWIN	1
403	540-0006-01	WRENCH M4 TMP PRF	1
404	540-0007-01	WRENCH M5 TMP PRF	1
405	540-0009-01	WRENCH M8 TMP PRF	1
406	220-5484	VOL CONT B-5K OHM	1
407	390-5167	LAMP 110V 30W	2
409	OS1019	SELF SEAL BAG 9X12.3/4	1

(TAMPERPROOF WRENCH)

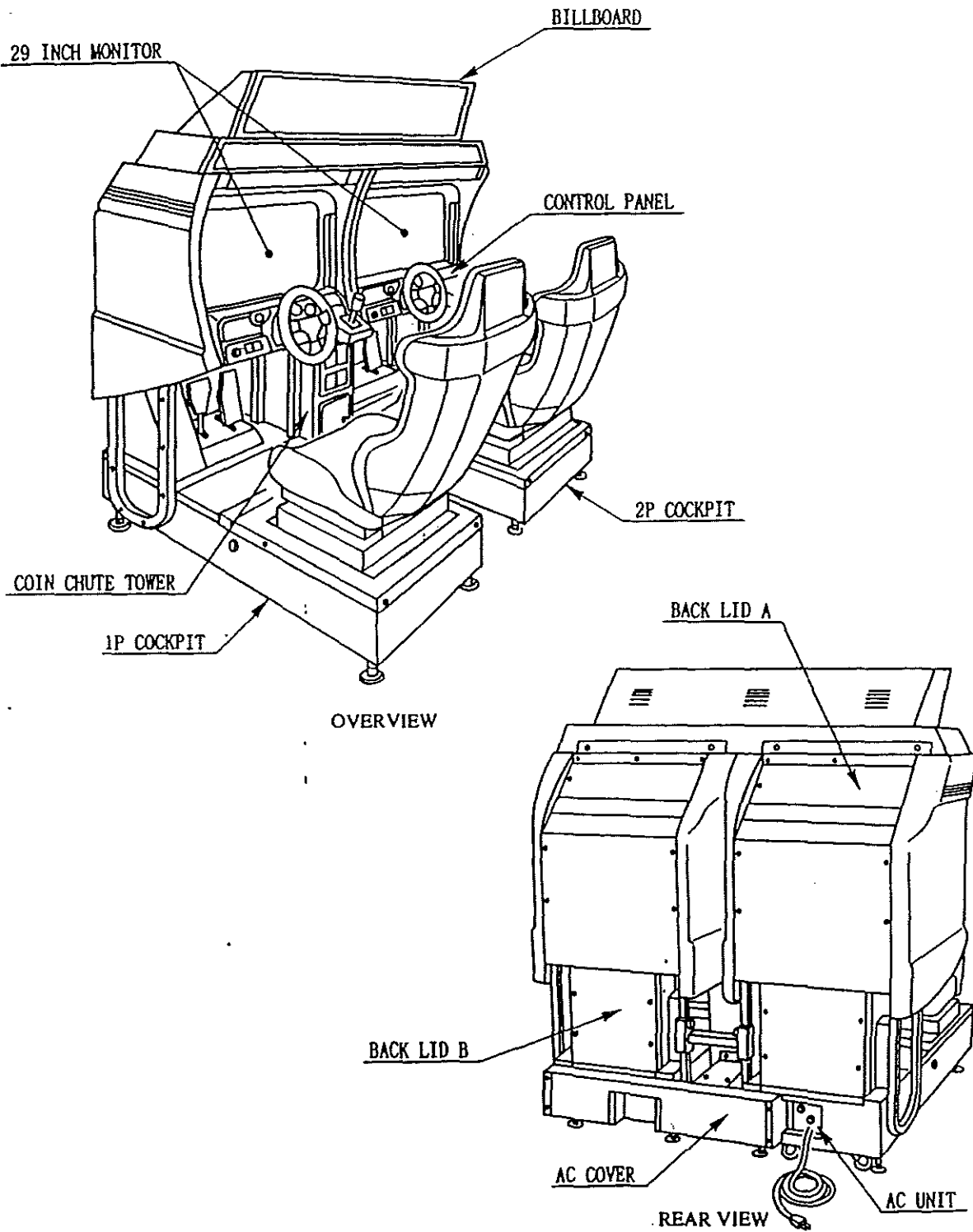
M5 540-0007-01

M8 540-0009-01



TAMPERPROOF WRENCH

### 3. NAME OF PARTS



	Width	Length	Height (mm.)	Weight (kg.)
COCKPIT (per seat)	820 ×	1,645 ×	1,520	231.0
COIN CHUTE TOWER	305 ×	330 ×	570	13.5
BILLBOARD	1,600 ×	460 ×	405	30.0
When assembled	1,632 ×	1,700 ×	1,920	513.0

## 4. ASSEMBLING THE CABINET

THE ASSEMBLY OF THIS MACHINE SHOULD ONLY BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL.  
ASSEMBLY WORK SHOULD BE CARRIED OUT AS PER THIS MANUAL.  
FAILING TO COMPLY WITH THESE INSTRUCTIONS MAY CAUSE AN ELECTRIC SHOCK HAZARD OR A MALFUNCTION IN THE MACHINE.  
WHEN ASSEMBLING THIS MACHINE SOME OF THE OPERATIONS REQUIRE MORE THAN ONE PERSON TO COMPLETE IN ORDER TO AVOID PERSONAL INJURY OR PARTS DAMAGE, BE SURE TO SEEK ASSISTANCE BEFORE ATTEMPTING THESE OPERATIONS.

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

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

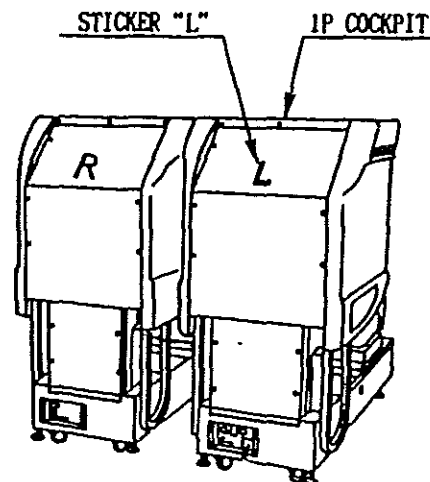
Note that the master key and the cashbox door key (see accessories) in addition to tools such as a Pozi screwdriver, adjustable wrench and a Ratchet with a 13mm socket are required for the assembly of this cabinet.



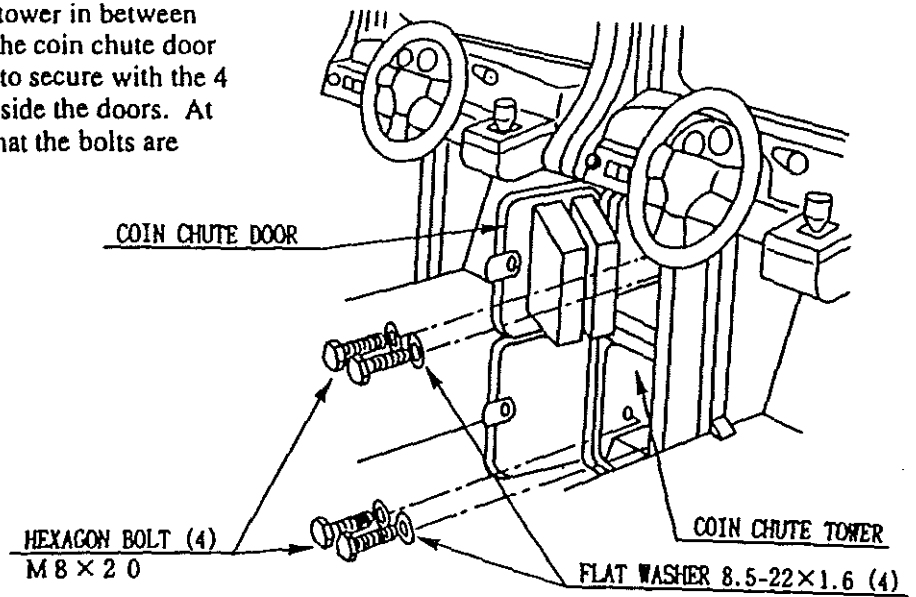
Perform the tightening of hexagon bolts described in 1 above after adjusting the leg adjusters as per 2. Make sure that until the leg adjuster adjustments are made, keep the hexagon bolts tightened temporarily.

### 1 ASSEMBLING THE COCKPIT

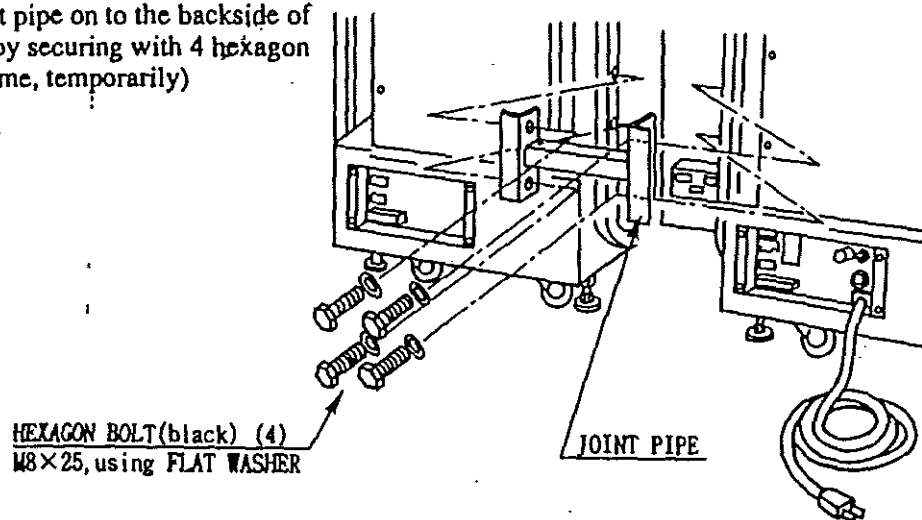
- ① Place the two cockpits side by side. Position the 1P cockpit which has the IEC Socket at the bottom left hand side, as viewed from the Monitor side. Sticker "L" is placed on the 1P cockpit and Sticker "R" on the back of the 2P cockpit.



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



- ③ Install the joint pipe on to the backside of both cabinets by securing with 4 hexagon bolts (at this time, temporarily)



## 2

## SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)



**ENSURE THAT ALL OF THE ADJUSTABLE FEET ARE IN CONTACT WITH THE FLOOR, IF THIS IS NOT ACCOMPLISHED THE CABINET MAY MOVE AND CAUSE INJURY.**

**BE SURE TO SEEK ASSISTANCE WHEN PERFORMING THE OPERATIONS INVOLVED IN ASSEMBLING THIS CABINET.**

This machine has eight casters and eight leg adjusters (Fig. 6.2a). When the installation position is determined, cause the leg adjusters to come into contact with the floor directly, make adjustments in a manner so that the casters will be raised approximately 5mm. from the floor and make sure that the machine position is level.

- ① Move the machine to the installation position. When installing the machine against or close to a wall, be sure to secure a passage space to enable the player to take a ride in the machine.
- ② Attach the joint plate for the 2 internal leg adjusters shown. First, cause the other 6 leg adjusters to come into contact with the floor. Make leg adjuster adjustments with a wrench in a manner to ensure the machine's position is level
- ③ After making adjustments, fasten the leg adjuster nut upward and secure the height of the leg adjuster (Fig.6.2b).

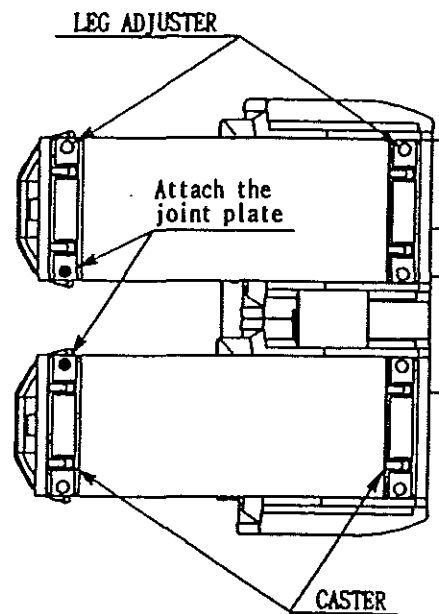
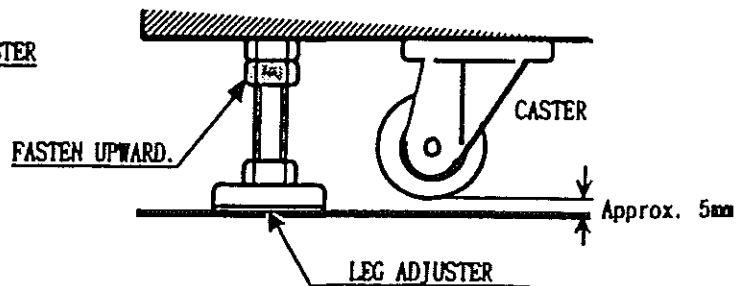
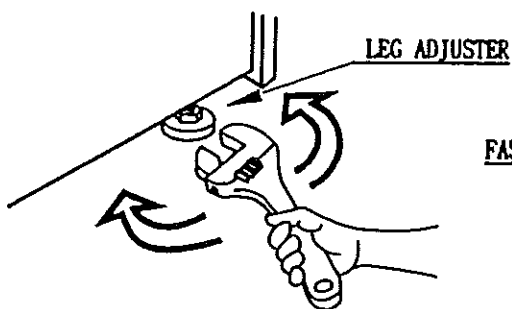
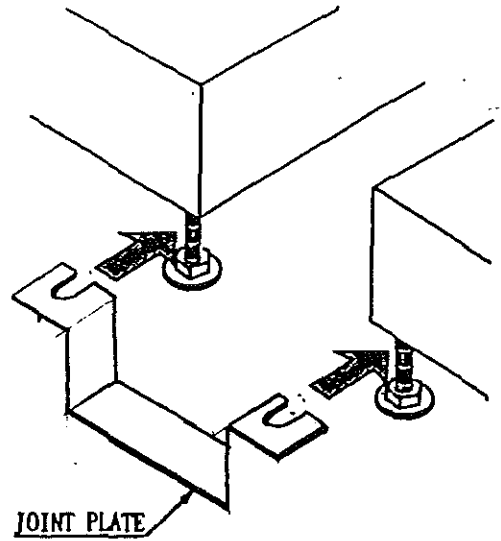
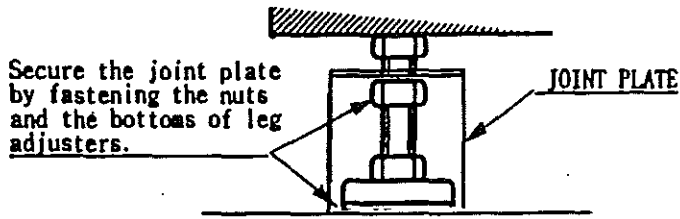


FIG. 6.2 a BOTTOM VIEW

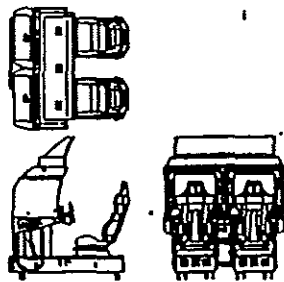


- ④ Insert the notch portions of the joint plate to the 2 leg adjuster bolt portions.
- ⑤ Lower the leg adjuster and fasten the nut upward. Secure the joint plate with the nuts and the bottoms of the leg adjuster

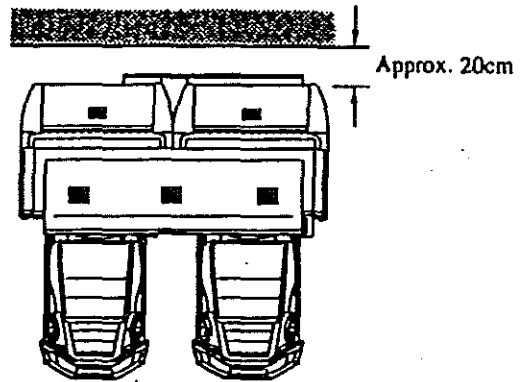


JOINT PLATE

After securing the height of the adjusters, tighten all of the hexagon bolts which were fastened temporarily as per **I** above.



Refer to this Fig. (Scale:1/100) for the layout of the place of installation.



Provide sufficient space so as to allow for ventilation by the ventilation fan.

## 3

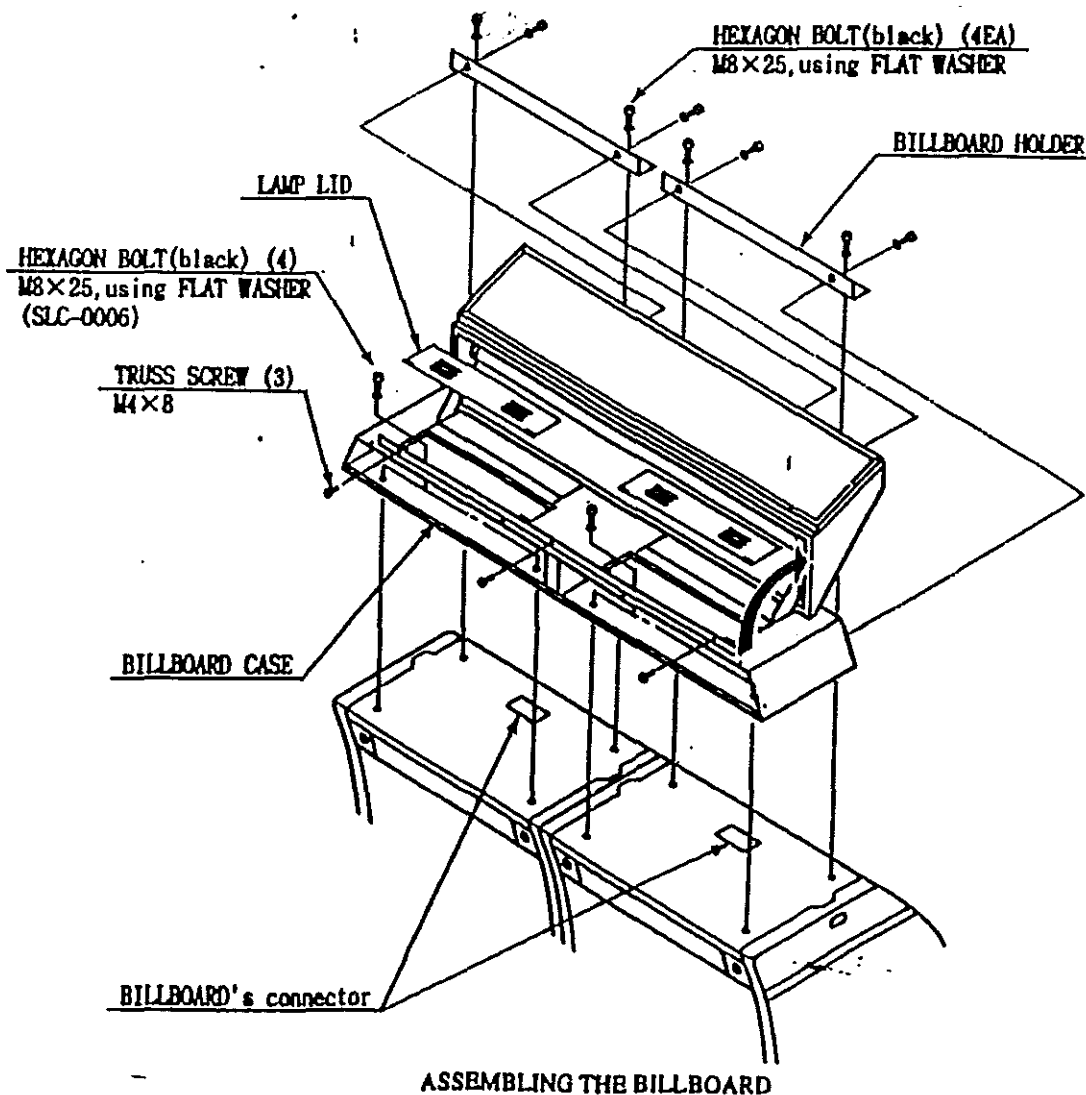
## INSTALLING THE BILLBOARD



**ONE PERSON ALONE CANNOT PERFORM THE INSTALLATION OF THE BILLBOARD ASSEMBLY. SEEK ASSISTANCE BEFORE ATTEMPTING THIS OPERATION.**

When the Billboard Plate is transported it is attached to the Billboard case; first take out the Upper Billboard Holder to remove the Billboard Plate from the Billboard Case. When installing the Billboard Plate, ensure that the Cabinet has been secured in place beforehand.

1. Take out the 3 truss head screws, open the Billboard Upper and remove the 2 Lamp Lids.
2. Mount the Billboard over the 2 cockpits and secure in place with the 4 Hexagon Bolts. When fastening the Bolts, be careful of the lamp position. If it difficult to carry out this operation with the lamps in position, temporarily remove the lamps, be sure to replace them once complete.
3. Connect a total of 3 connectors which are inside the Billboard Case
4. Connect the earth wire to the stud on the top of the Roof Lid in the IP cockpit.
5. Fit the two Billboard Holders to the back of the Billboard case using the 4 Hexagon Bolts supplied.



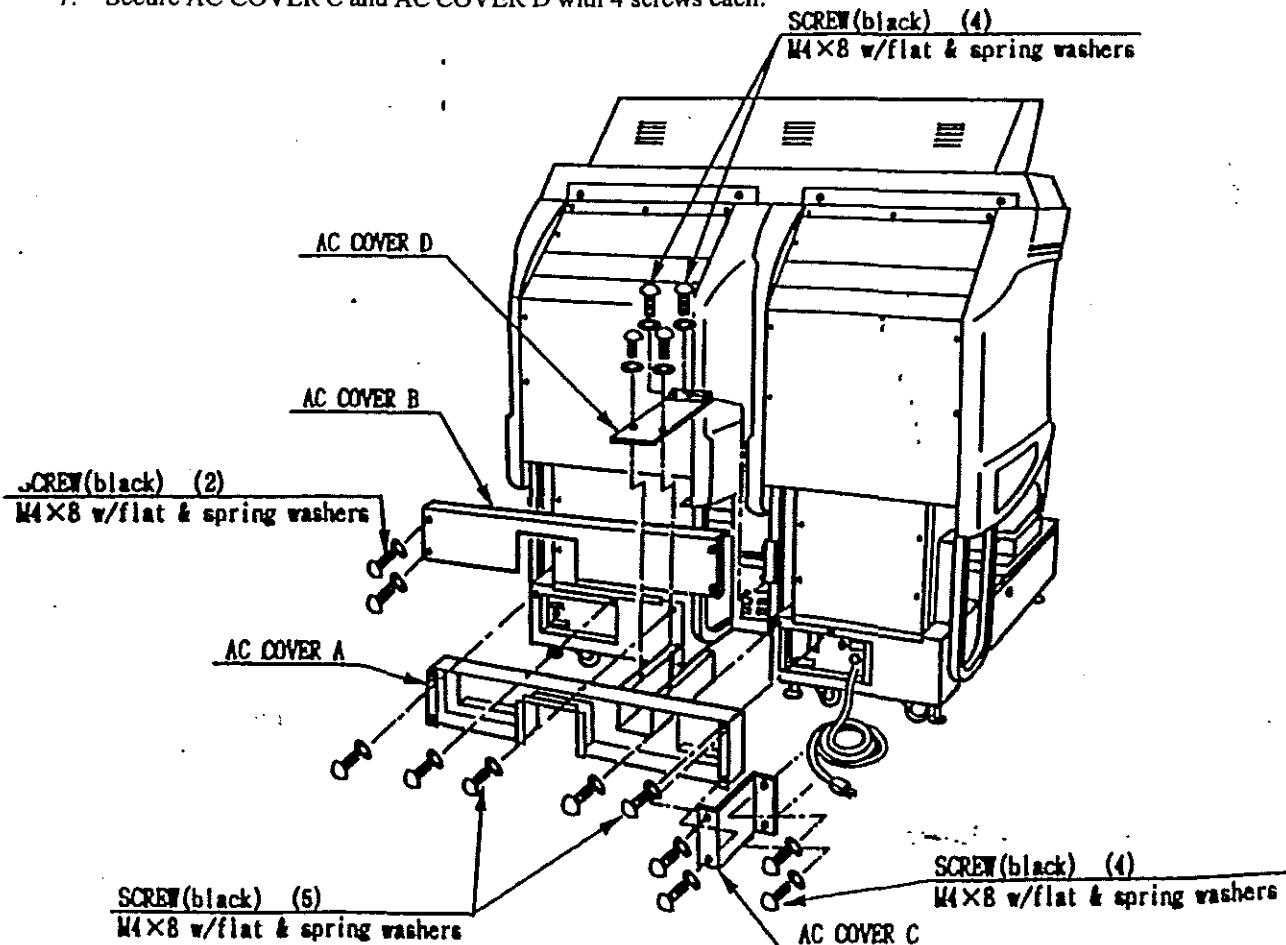




**THE ASSEMBLY OF THE WIRE COVER SHOULD BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL ONLY.  
BE SURE THAT THE MACHINE IS NOT CONNECTED TO THE MAINS SUPPLY BEFORE ATTEMPTING THIS OPERATION.**

The AC wire cover is used for protecting the wiring and fibre optic cables. When carrying out this operation be very careful so as not to trap any wire between the covers. Pay attention when handling fibre optic cables as excessive bending may cause damage.

1. Attach AC COVER A to the back of the cabinet (see diagram below) using 5 of the screws provided.
2. Make all the wiring connections between both cabinets and the coin chute tower. Insert the supplied wiring connectors to the corresponding ones which are the same colour and have the same number of pins.
3. Ensure that the correct earth connections are made between the 2 AC Brackets and the coin chute tower.
4. Insert the Fibre Optic Cables into the Fibre Optic connectors. There are 2 connectors "RX" and "TX". Ensure that the "TX" connector of one cockpit is connected to the "RX" connector of the other.
5. Secure the wiring and Fibre Optic Cables in place using the 'P' Cliops fitted in the Wire Cover.
6. Insert AC COVER B in AC COVER A from above and secure with 2 screws, be sure not to trap any wiring.
7. Secure AC COVER C and AC COVER D with 4 screws each.



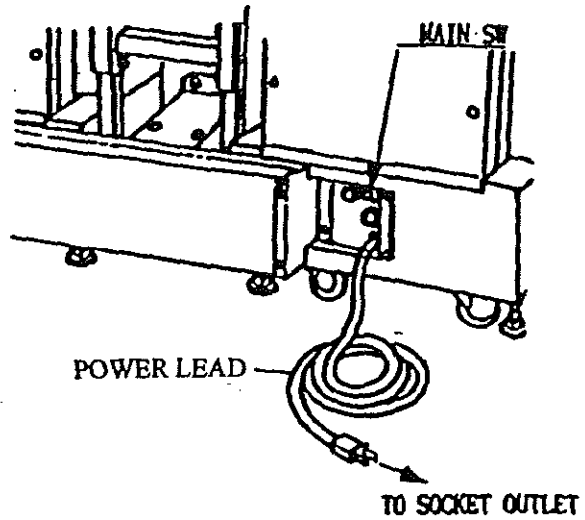
## 5 POWER SUPPLY, AND EARTH CONNECTION

**THIS OPERATION SHOULD BE CARRIED OUT ONLY AFTER THE MACHINE HAS BEEN COMPLETELY ASSEMBLED**



**WARNING!**

The AC Unit is located on the back of the IP cockpit. Using the Power Lead supplied connect this to the mains socket at the wall.



## 6 TURNING THE POWER ON

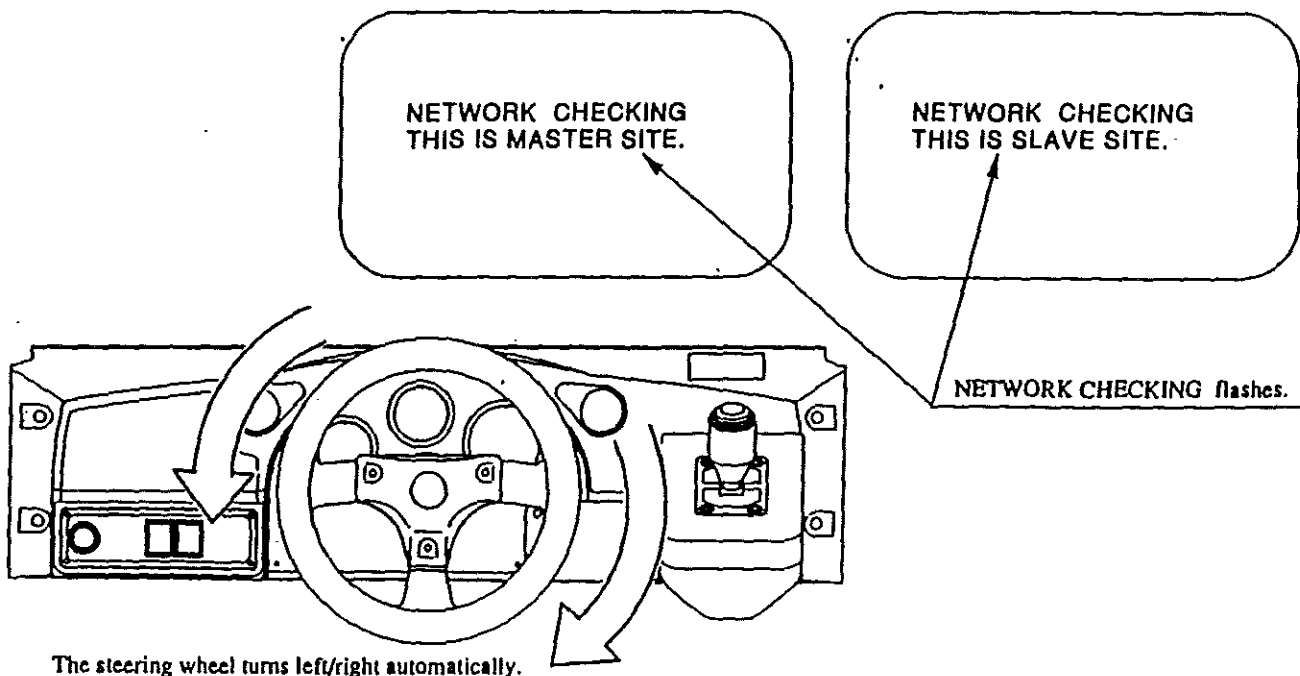
Turning the AC Units Mains SW. on will cause the machine to start the POWER ON check and NETWORK check automatically.

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

If the steering wheel is touched at this stage then the reaction during the game (reaction at the time of a course-out or crashing) cannot be obtained correctly.

In the case of an abnormal reaction during the game, turn the power off and on again to complete the POWER ON check again.

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



## 7 ASSEMBLY CHECK

In the TEST MODE, ensure that the assembly has been made correctly and IC BD. is satisfactory (refer to Section 9).

In the test mode, perform the following test:

### (1) MEMORY TEST

```

MEMORY TEST
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD

IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD

PRESS TEST BUTTON TO EXIT
  
```

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

### (2) INPUT TEST

```

INPUT TEST
STEERING WHEEL  **H
GAS PEDAL       **H
BRAKE PEDAL     **H

SHIFT UP        OFF
SHIFT DOWN     OFF
VIEW1 (ZOOM IN) OFF
VIEW2 (ZOOM OUT) OFF
START          OFF

COIN CHUTE #1  OFF
COIN CHUTE #2  OFF
SERVICE       OFF
TEST          OFF

PRESS TEST BUTTON TO EXIT
  
```

Selecting the INPUT TEST on the test mode menu screen causes the screen (on which each switch and V.R. are tested) to be displayed. Press each switch. For the coin switch test, insert a coin in the coin inlet with the coin door open. Press the Credit transfer button and COIN CHUTE # 1 will indicate on. Check the display of V.R. value for the steering wheel and accelerator & brake.

### (3) OUTPUT TEST

```

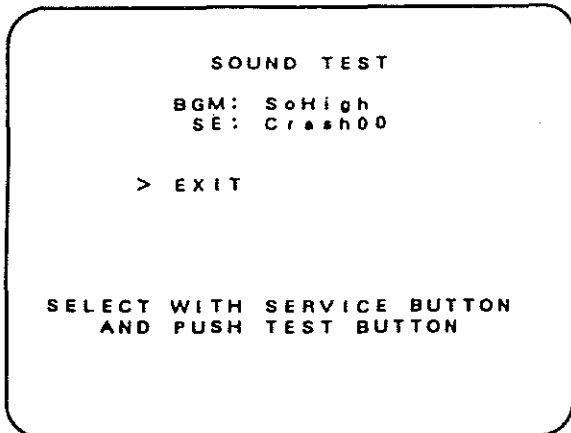
OUTPUT TEST

> START LAMP           OFF
  VIEW1 (ZOOM IN) LAMP OFF
  VIEW2 (ZOOM OUT) LAMP OFF
  LEADER LAMP          OFF
  CENTERING LEVEL     LEVEL-1
  EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
  
```

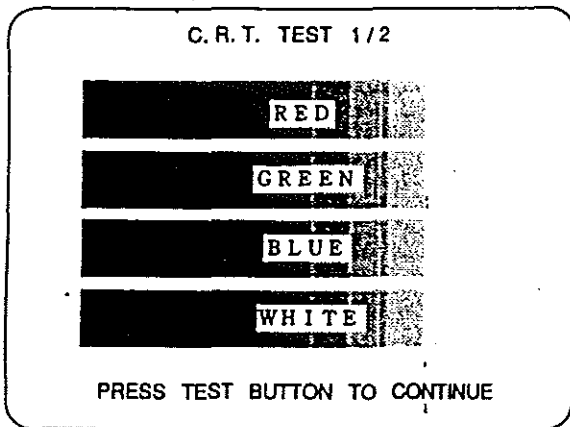
In the output test mode, carry out lamp test to ensure that each lamp lights up satisfactorily.

#### (4) SOUND TEST

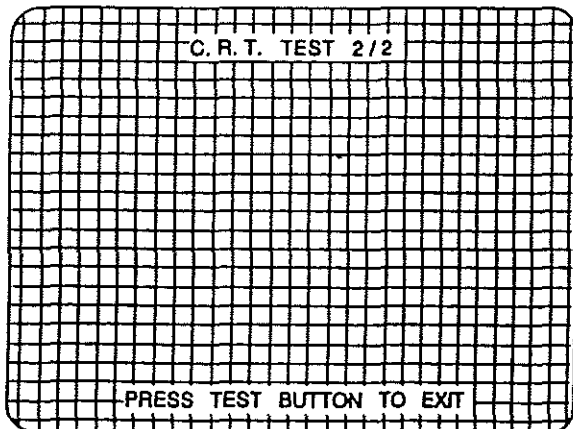


In the TEST mode, selecting SOUND TEST causes the screen (on which sound related BD and wiring connections are tested) to be displayed. Be sure to check if the sound is satisfactorily emitted from each speaker and the sound volume is appropriate.

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



In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the monitor is tested) to be displayed. Although the monitor adjustments have been made at the time of shipment from the factory, make judgment as to whether an adjustment is needed by watching the test mode screen. If it is necessary, adjust the monitor by referring to Section 14. Use the DEMAGNETIZER SW for the color deviation caused by the monitor's magnetization

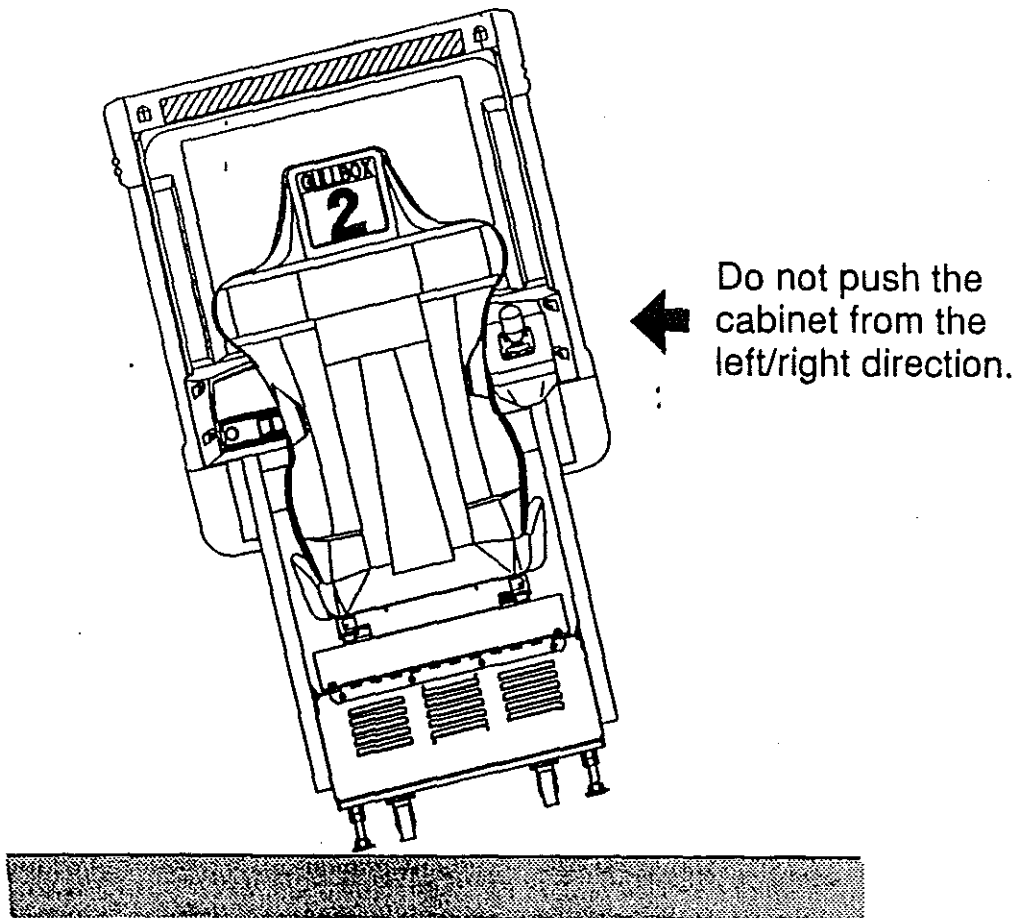


Perform the above inspections also at the time of monthly inspections.

## 5. PRECAUTIONS WHEN MOVING THE MACHINE



- When moving the machine, be sure to pull out the plug from the power supply. Moving the machine with the plug as is inserted can cause the power cord to be damaged, resulting in a fire and or electric shock.
- When moving the machine on the floor, retract the Leg Adjusters and ensure that Casters make contact with the floor. During transportation, pay careful attention so that Casters do not tread power cords and earth wires. Damaging the power cords can cause an electric shock and or short circuit.
- When moving the machine, do not push the cabinet from the left/right direction. Pushing the cabinet from the left/right direction can cause the cabinet to fall down, resulting in injury and or parts damage.

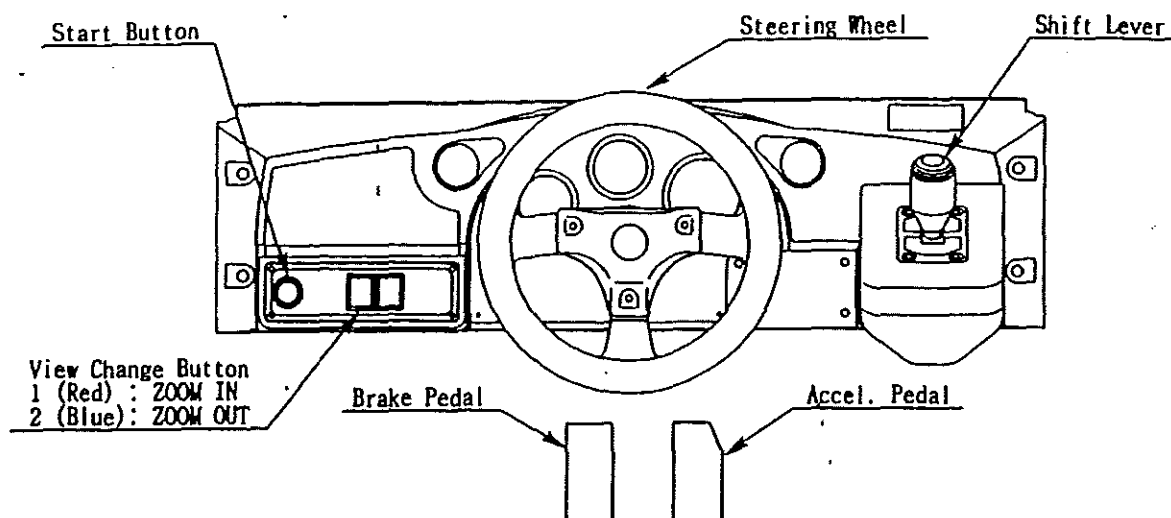


## 6. THE GAME

The following explanations apply only in cases where the machine is functioning satisfactorily. Should the game function any differently from the following contents, then a fault has occurred. Immediately look into the cause of the problem and, if explained in this manual, eliminate the problem. If the problem is not covered in this manual then contact the nearest agent or distributor. The Fluorescent lamp is always lit when the machine is energised. During ADVERTISE, ADVERTISE mode is displayed on the screen and the sound is emitted from the speakers incorporated in the seat (Note 1).

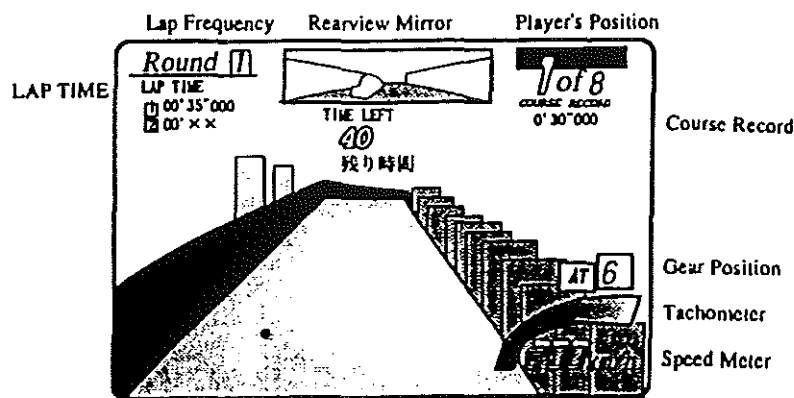
### HOW TO PLAY

- ① Enter the machine and be seated. The seat position is adjustable forward and backward. The Lever is located on the lower right-hand side facing the screen. Use the Lever to adjust the seat position.
- ② Insert a coin(s). Inserting one play worth of coins allows the selection mode to be displayed on the screen.
- ③ Choose one from among the 4 different kinds of cars. Turn the Steering Wheel to bring the desired car to the center of the screen. By stepping on the pedal, choose either 6-shift MT (manual) or AT (automatic). To choose MT, either step on the gas pedal while stepping on the Brake Pedal, or press the Start button. To choose AT, step on the Gas Pedal.



- ④ Choosing AT or MT makes the car selection effective. When the select mode is shown on the screen, countdown begins. When the countdown becomes 0, QUALIFY (a preliminary race) starts automatically. If no action is taken until the countdown shows 0, the car being selected which is located in the center of the screen will be used with AT transmission being selected automatically.
- ⑤ When the type of car and transmission are determined, the QUALIFY race begins. The results of the QUALIFY race determines the starting grid of the first race.
- ⑥ Until several seconds after the QUALIFY race has started, other participants' entry is acceptable. The first race begins after the QUALIFY race by all players has been finished.

- ⑦ The No. of Round (lap frequency) & Lap Time is displayed on the upper left side of the screen, Time Left in the center, the Position of your player on the upper right-hand side, and the Gear Position, Tachometer & Speed Meter on the lower right-hand side respectively.



Game mode screen

- ⑧ The View Change button allows for a 3-step view change. Except in the case of REARVIEW perspective, the rearview mirror is displayed in the upper center portion.
- ⑨ Simultaneously with the race start, the remaining time (Time Left) decreases. Finishing one Round (lap) before the Time Left becomes 0 allows the game to be continued with the remaining time added to the next Round (lap) Time Left (Note 2). If you fail to finish the Round within the Time Left, the game is over. In the QUALIFY race, the game will not be over even after the time limit. In this case, however, the player will start the first race from the lowest position.
- ⑩ Finishing the race's number of specified laps in each course allows you to proceed to the next course with the present position and the remaining time being carried over. There are 3 race courses. Play on the courses sequentially in order of the first → second → Final (course).
- ⑪ If you win the first position in the comprehensive results of the 3 courses, you can play a bonus course called EXTRA course. Finishing the final course with the best total time allows the player name to be registered (Note 3).

Some settings detailed above, and fully detailed in Notes 1-3 below, can be altered (See section 7).

Note 1 No sound output during ADVERTISE can be set.

Note 2 Specified number of Round (laps) can be chosen from among 1, 2, 3 and 20 (for event). When 20 laps are selected, choose the desired course in the car select mode by operating the Shift Lever and make the selection effective by using the Gas Pedal or Start button. In the interactive (communication) versus play, the course is determined by majority. In case of a tie, the course of which the difficulty level is lower will be selected. As the car runs more and more laps, the tire will wear out and the grip strength will be lowered but can be recovered by bringing the car in to the pit.

Note 3 The player name registration can be set before the actual race. The registered name is displayed above each player's car.

## FEATURES OF EACH COURSE

- The First Course:** The road is wide and this makes it easy to drive and therefore, how to skillfully turn the curves is important. In particular, this course allows you to concentrate on battling with the opponents.
- The Second Course:** The image of this course is based on the mountainous areas in Europe. The course is rich in natural varieties and has steep as well as gentle curves.
- The Final Course:** This course is modelled after races on urban streets. Since the road is narrow, an accurate speed control is needed.

## 7. EXPLANATION OF TEST AND DATA DISPLAY

By operating the switches on the VTS Bracket, periodically perform the tests and data checks listed below. When installing the machine initially or collecting cash, or when the machine is not functioning correctly, perform the checks in accordance with the explanations given in this section. The following shows tests and modes that should be used.

ITEMS	DESCRIPTION
<b>INSTALLATION OF MACHINE</b>	When the machine is installed, perform the following: <ol style="list-style-type: none"><li>1. Check to see that each setting is as per standard, the standard settings are made at the time of shipment.</li><li>2. In the INPUT TEST mode, check the input devices i.e. buttons, joysticks, pedals or steering wheels.</li><li>3. In the OUTPUT TEST mode, check the output devices i.e. monitors, lamps etc.</li><li>4. In the SELF TEST mode, check the IC's on the IC board.</li></ol>
<b>MEMORY</b>	Choose MEMORY TEST in the MENU mode to allow the MEMORY TEST to be performed. In this test, PROGRAM RAM's, ROM's and IC's on the IC board are checked.
<b>PERIODIC SERVICING</b>	Periodically perform the following: <ol style="list-style-type: none"><li>1. MEMORY TEST</li><li>2. Check each setting.</li><li>3. In the INPUT TEST mode, test the CONTROL device.</li><li>4. In the OUTPUT TEST mode, check the output devices i.e. monitors and lamps.</li></ol>
<b>CONTROL SYSTEM</b>	<ol style="list-style-type: none"><li>1. In the INPUT TEST mode, check the input devices i.e. buttons and joysticks</li><li>2. Adjust or replace all switches or VR's.</li><li>3. If the problem cannot be solved yet, check the CONTROL's moves.</li></ol>
<b>MONITOR</b>	In the MONITOR (PROJECTOR) ADJUSTMENT mode, check to see that Monitor adjustments are set correctly.
<b>IC BOARD</b>	<ol style="list-style-type: none"><li>1. MEMORY TEST</li><li>2. In the SOUND TEST mode, check the sound related ROM's.</li></ol>
<b>DATA CHECK</b>	Check such data as game play time and histogram to adjust the difficulty level etc.

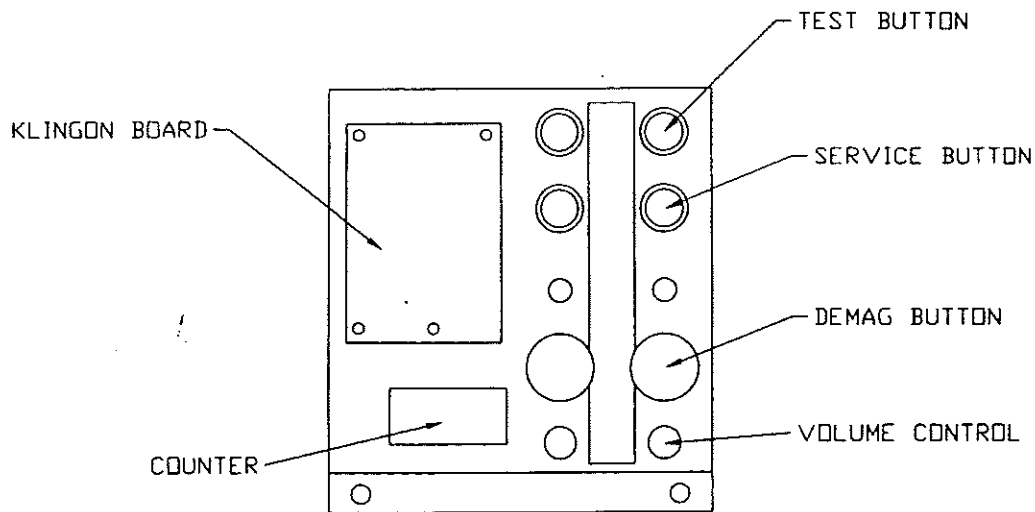


## 1. VTS BRACKET



**WARNING!**

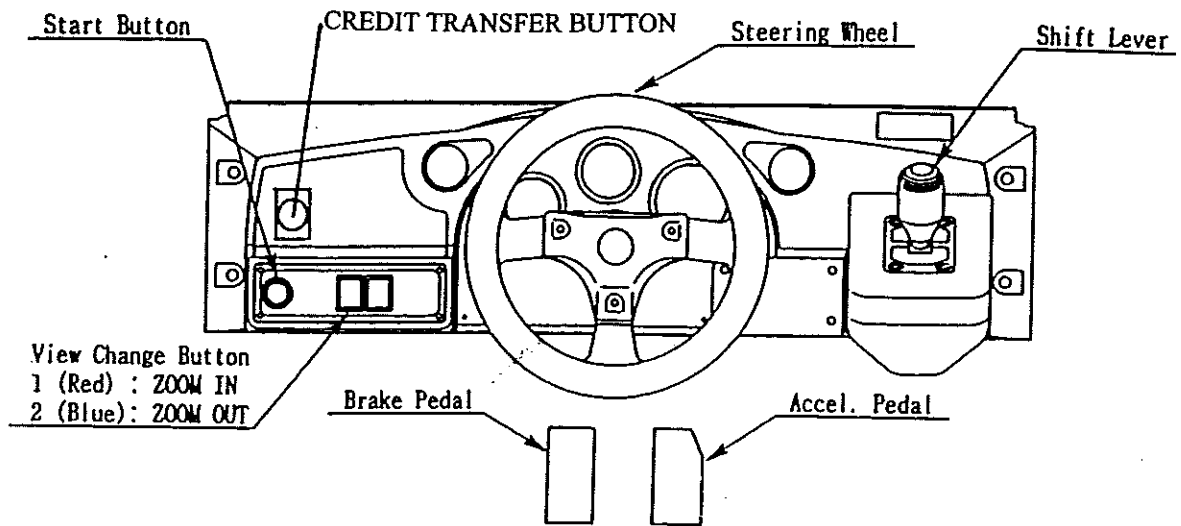
**DO NOT TOUCH PLACES OTHER THAN THOSE SPECIFIED.  
TOUCHING PLACES NOT SPECIFIED COULD CAUSE AN ELECTRIC  
SHOCK OR SHORT CIRCUIT.**



Open the Coin Chute Door, and the VTS Bracket shown above will appear.  
The function of each switch is as follows;

- TEST BUTTON** : Used during Test Mode. Refer to the following pages for details.
- SERVICE BUTTON** : Gives credits without registering on the coin meter. Also used during Test Mode. Refer to the following pages for details.
- DEMAG SWITCH** : Eliminates colour unevenness from the Monitor screen.
- SOUND VOLUME** : Adjusts the volume of all speakers on the machine.

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



## 2. TEST MODE

The Test Mode allows the functioning of each part of the cabinet and screen adjustments to be checked, and also coin and game assignments to be performed.



When setting changes are made in the Test Mode, be sure to first exit from the Test Mode after the setting changes and return to the normal mode in order to make the setting changes effective. Returning to the normal mode by turning the power OFF/ON after changing the setting makes the setting changes ineffective.

```

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

SELECT WITH SERVICE BUTTON  
AND PRESS TEST BUTTON

TEST MENU

### 3. MEMORY TEST

```

MEMORY TEST
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD

IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
IC** GOOD  IC** GOOD  IC** GOOD
    
```

PRESS TEST BUTTON TO EXIT

MEMORY TEST

### 4. T.G.P. TEST

T.G. P. TEST

```

IC** : GOOD
IC** : GOOD
    
```

PRESS TEST BUTTON TO EXIT

T.G.P. TEST

- Press the TEST BUTTON to cause the following Test Menu to be displayed on the monitor.
- Press the SERVICE BUTTON or VIEW CHANGE BUTTON (VR) until the pointer ">" is moved to the desired item to make a selection.
- Bring the pointer ">" to the desired item and press either the TEST BUTTON or START BUTTON to enter the selected item's test.
- After the test is complete, move ">" to "EXIT" and press the TEST BUTTON or START BUTTON to return to the Game Mode.

The MEMORY TEST mode is for checking the on-BD memory IC functioning.

"GOOD" is displayed for normal ICs and "BAD" is displayed for abnormal ICs.

- When the test is completed, if the results are shown as GOOD, it is satisfactory.
- If the TEST is not completed, the IC board may have malfunctioned.
- After finishing the test, pressing the TEST BUTTON or START BUTTON to return to MENU mode.

In this test, T. G. P. (screen display related IC's) check is automatically performed. If the display is as shown left, it is satisfactory. Press either the TEST button or START button to return to the Menu mode.

## 5. INPUT TEST

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

PRESS TEST BUTTON TO EXIT

INPUT TEST

Selecting INPUT TEST causes the screen shown to the left and allows each switch status and game play related V. R. values to be checked.

On this screen, periodically check the status of each switch & V. R.

- By pressing each switch, if the display on the right hand side of the name of each switch changes to ON from OFF, the SW and the wiring connections are satisfactory.
- To check CHUTE 1 coin switches, open the COIN CHUTE DOOR, insert a coin in the door and press the credit transfer button.
- To return to the MENU mode, press the TEST Button or simultaneously press the START Button & VIEW CHANGE Button 1 & VIEW CHANGE Button 2.

### THE APPROPRIATE VALUES OF EACH V.R.

STEERING WHEEL: Under 2DH ← 7D~83H → Over D3H  
FULL LEFT CENTRE FULL RIGHT

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

## 6. OUTPUT TEST

This test allows the status of each lamp and Steering Wheel's centering strength to be checked. Periodically check in this mode.

OUTPUT TEST			
>	START LAMP		OFF
	VIEW1 (ZOOM IN) LAMP		OFF
	VIEW2 (ZOOM OUT) LAMP		OFF
	LEADER LAMP		OFF
	CENTERING LEVEL		LEVEL-1
	EXIT		

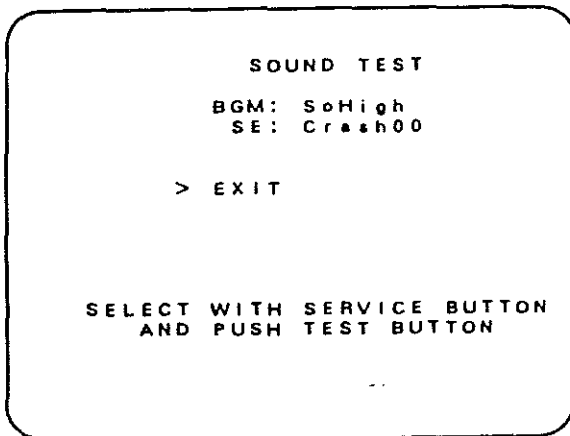
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON

OUTPUT TEST

Choose OUTPUT TEST to have the Output Test appear on the screen

- ① Press either of the SERVICE or VIEW CHANGE buttons to move the arrow to the desired test item.
  - ② Press either TEST or START buttons. If the display on the right hand side of the lamp name changes to ON from OFF and the selected lamp lights up, the lamp and wiring connections are satisfactory.
  - ③ Bring the arrow to CENTERING LEVEL and press either TEST or START. If the display changes to LEVEL 1 ~ LEVEL 8 and the steering wheels centering strength is gradually increased, the centering mechanism is satisfactory. Note that in this test mode the strength cannot be set.
- Choose EXIT and PRESS the TEST button or START button to return to the TEST MENU.

## 7. SOUND TEST

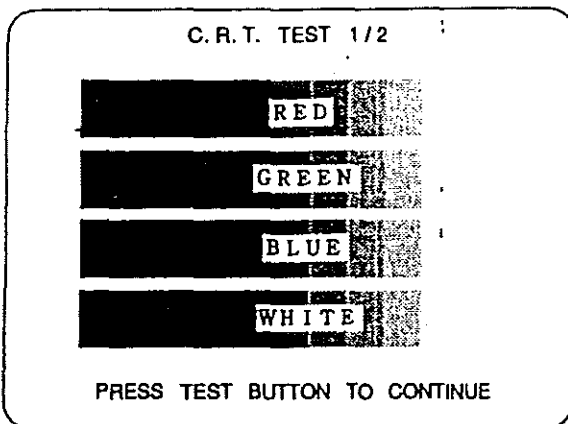


SOUND TEST

Selecting SOUND TEST allows the desired sound (sound effects, BGM, etc.) to be chosen and heard. In this test, sound related IC Boards and the Speakers incorporated into the seat are checked. Press the SERVICE button or SHIFT button to bring the arrow to the desired sound test item. Pressing the TEST button allows the selected type of sound to be emitted. Each time the TEST button is pressed, the next sound is emitted.

- B.G.M. Background music during game.
- SE Sound effects during game.
- EXIT Causes the menu mode to return on to the screen.

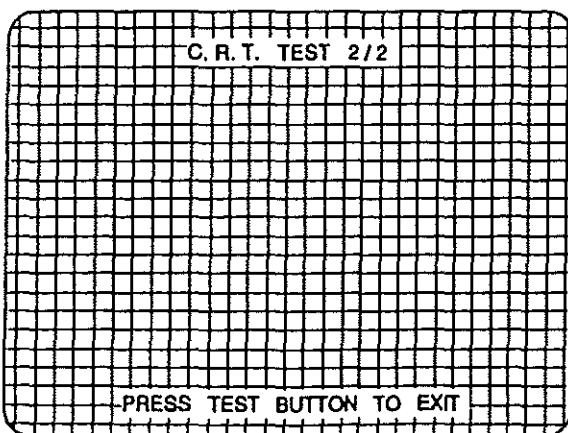
## 8. C.R.T. TEST



C. R. T. TEST

Choose C.R.T. TEST to have the Monitor Adjustment check screen appear. By watching the screen, periodically check if adjustments are required. For the Adjustment Method, refer to the Monitor sections. In the screen as per left, check the Monitor colour adjustments. By watching this screen, make colour adjustments. Each of the R (red), G (green) and B (blue) and white is darkest at the left of the screen and becomes brighter towards the right.

Press the TEST button to have the following Crosshatch screen appear.



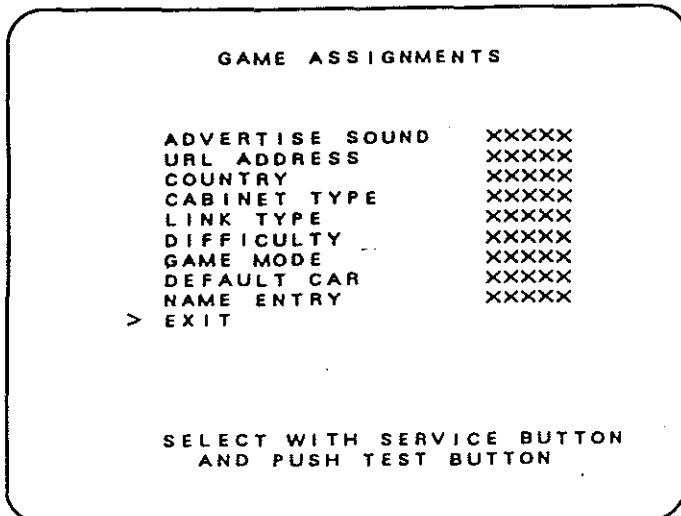
C. R. T. TEST

In the screen as per left, check monitor size and position adjustments. Check size and position adjustments by watching this screen. Adjust the monitor to make sure that the crosshatch lines do not appear to go beyond the screen size and crosshatch distortion does not occur.

Press the TEST button to have the menu return to the screen.

## 9. GAME ASSIGNMENTS

Select GAME ASSIGNMENTS to have the following screen appear. This allows settings of lap frequency, game difficulty level, etc. to be performed. Each item displays the contents described as follows:



### SETTING CHANGE PROCEDURE

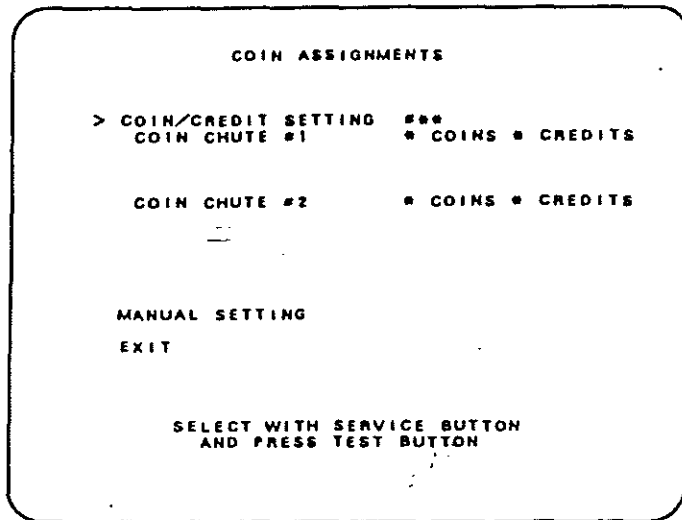
- ① Press the SERVICE button or VIEW CHANGE button to bring the arrow (>) to the desired change item.
- ② Press the TEST button or the START button to select the setting change item.
- ③ Move the arrow to EXIT and press the TEST button or the START button to return the menu mode to the screen.

#### GAME ASSIGNMENTS

- **ADVERTISE SOUND**      Setting of sound to be emitted during Advertise mode.  
OFF: No sound              ON: Sound emitted.
- **URL ADDRESS**              Sets the Internet Home Page display during ADVERTISE.  
OFF: Not displayed      ON: Displayed
- **COUNTRY**                      Allows for language setting.
- **CABINET TYPE**              Set to applicable cabinet type.
- **LINK TYPE**                      If this product is individually used, set 1P side (left) to CAR 1 and 2P side (right) to CAR 2. For communication play, be sure to set one of the machines to CAR 1 and set the rest of cars to CAR 2~8 in the manner so that no number will be duplicated.
- **DIFFICULTY**                      There are 4 levels, i., e., EASY, NORMAL, HARD, HARDEST. The difficulty level can be differentiated by varying the race start time and the additional time when passing the checkpoint.
- **GAME MODE**                      Sets the specified number of Round (laps) for the course. SHORT refers to one lap, NORMAL to 2 laps, LONG to 3 laps and GRAND PRIX to 20 laps. Use GRAND PRIX for events.
- **DEFAULT CAR**                      Select the type of car initially appearing in the center of the screen. If set to RANDOM, the DEFAULT CAR will be unspecified.
- **NAME ENTRY**                      Sets whether the name entry is to be performed before game or after game. In case of AFTER X, the name of the player with best results will be entered with his ranking being displayed. In case of BEFORE X, the name of each player is entered before game. The name registered before game is displayed above his car during game play and the name will be displayed in the ranking if he accomplishes best results. Numerals after AFTER or BEFORE shows the number of characters that can be registered (3 or 7 characters).

## 10. COIN ASSIGNMENTS

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



COIN ASSIGNMENTS

### SETTING CHANGE PROCEDURE

- ① Press the SERVICE button or VIEW CHANGE button to bring the arrow (>) to the desired change item.
- ② Press the TEST button or the START button to select the setting change item.
- ③ Move the arrow to EXIT and press the TEST button or the START button to return the menu mode to the screen.

- COIN/CREDIT SETTING      "How many coins correspond to how many credits."
- MANUAL SETTING          Allows for finer settings.
- NORMAL SETTING         Normal setting is 1 coin 1 credit

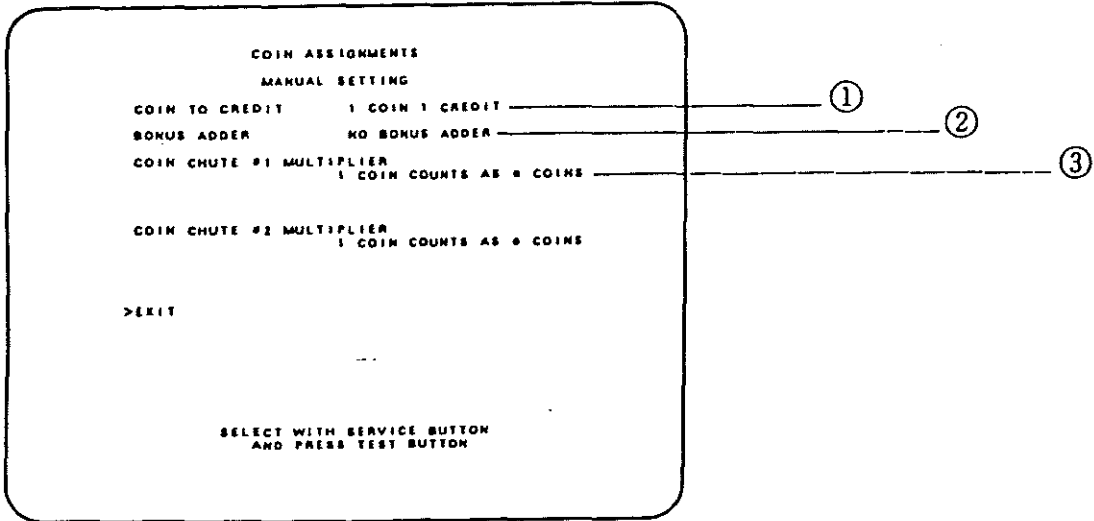
COIN/CREDIT SETTING

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



# MANUAL SETTING

Selecting MANUAL SETTING in the Coin Assignment mode displays the following screen.



## COIN ASSIGNMENTS

- ① Determines Coin /Credit setting.
- ② This sets how many coins should be inserted to obtain one Service Coin.
- ③ This sets how many tokens one coin represents.

### MANUAL SETTING

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

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

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

## 11. BOOKKEEPING

Selecting the BOOKKEEPING in the menu mode displays the bookkeeping data up to the present.

Pressing the TEST button or the START button returns the test menu on the screen.

```

          BOOKKEEPING

COIN CHUTE #1      ****
COIN CHUTE #2      ****
TOTAL COINS        ****

COIN   CREDITS      ****
SERVICE CREDITS    ****
TOTAL  CREDITS      ****

NUMBER OF GAMES    ****

TOTAL TIME          *D**H**M**S
GAME PLAY TIME      **H**M**S
AVERAGE GAME TIME  **H**M**S
LONGEST GAME TIME   **H**M**S
SHORTEST GAME TIME  **H**M**S

          TIME HISTOGRAM

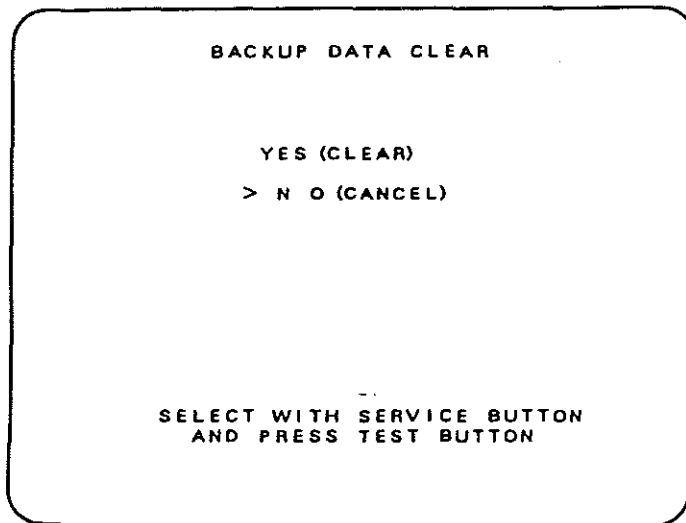
0M 0S ~ 1M59S      ****
2M 0S ~ 2M29S      ****
2M30S ~ 2M59S      ****
3M 0S ~ 3M29S      ****
3M30S ~ 3M59S      ****
4M 0S ~ 4M29S      ****
4M30S ~ 4M59S      ****
5M 0S ~ 5M29S      ****
5M30S ~ 5M59S      ****
6M 0S ~ 6M29S      ****
OVER 6M30S        ****

PRESS TEST BUTTON TO EXIT
  
```

BOOKKEEPING

- COIN CHUTE#\*      Number of coins put in each chute.
- TOTAL COINS      Total number of coins inserted in each coin chute.
- COIN CREDITS      Number of credits registered by inserting coins
- SERVICE CREDITS   Credits registered by the SERVICE button
- TOTAL CREDITS      Total number of credits (COIN CREDITS+SERVICE CREDITS)
- TOTAL TIME      The total energized time.
- TIME HISTOGRAM    Displays the play frequency as against each play time. Refer to this as a standard when setting Game Difficulty, etc.

## 12. BACKUP DATA CLEAR



BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING. When clearing, use the SERVICE BUTTON to bring the arrow (>) to "YES (CLEAR)" and press the TEST BUTTON. When the data has been cleared, "COMPLETED" will be displayed. Bring the arrow to "NO (CANCEL)" and press the TEST BUTTON to return to the Menu mode without clearing the data. Also, note that the game setting contents are not affected by BACKUP DATA CLEAR operation.

## 8. MAINTENANCE

**ALL MAINTENANCE WORK OF ANY SORT SHOULD BE CARRIED OUT  
BY QUALIFIED SERVICE PERSONNEL ONLY.  
BE SURE TO SWITCH OFF THE MAINS POWER AND DISCONNECT THE  
MAINS PLUG AT THE WALL BEFORE ATTEMPTING ANY  
MAINTENANCE WORK.**

The general maintenance of this machine is detailed in the following section. If a problem should arise that is not covered in this Service Manual then contact your nearest SEGA agent, **do not** attempt to resolve the problem yourself.

The following procedures are detailed in this section.

1. HANDLE MECHA MAINTENANCE
2. ACCELERATOR & BRAKE UNIT MAINTENANCE
3. SHIFT LEVER MAINTENANCE
4. CHANGING THE VOLTAGE ON THE TRANSFORMER
5. FUSES
6. REPLACING THE FLOURESCENT LAMP AND LAMPS
7. PERIODIC INSPECTION
8. TROUBLESHOOTING
9. GAME BOARD & DRIVE CONTROL BOARD

## 1. HANDLE MECHA MAINTENANCE

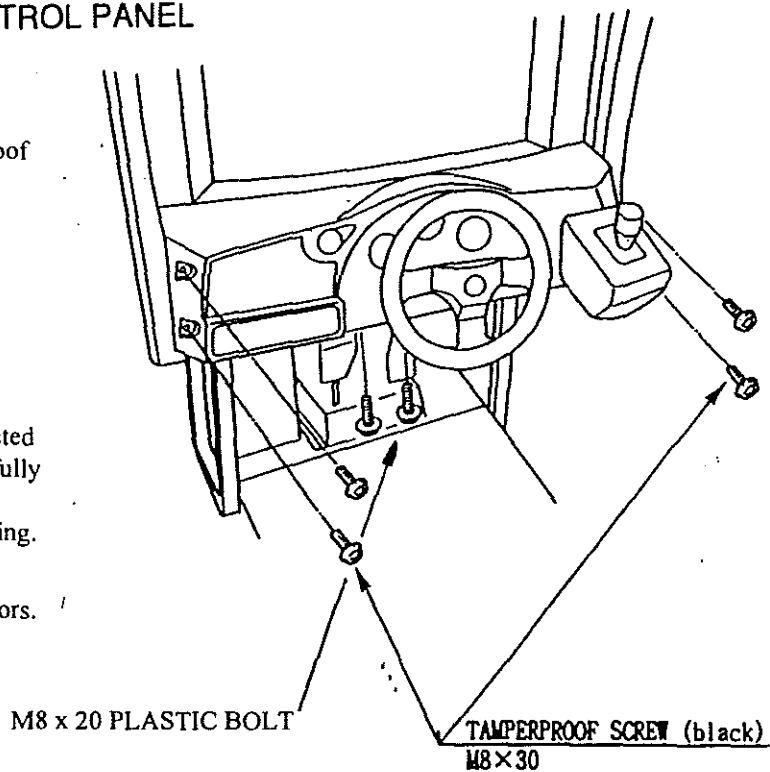


**GENERAL MAINTENANCE SHOULD BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL ONLY.  
ENSURE POWER IS DISCONNECTED FROM THE MAINS SUPPLY BEFORE ATTEMPTING ANY WORK.**

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

### REMOVING THE CONTROL PANEL

- ① Turn the Power switch OFF.
- ② Remove a total of 4 tamperproof screws from both sides of the Control Panels front part.
- ③ Remove the 2 plastic bolts from the underside of the control panel.
- ④ Wiring Connectors are connected inside the control panel. Carefully draw the control panel in a manner not to damage the wiring.
- ⑤ Disconnect the wiring connectors.



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



**Never touch places other than those specified. Touching places not specified can cause electric shock and short circuit.**



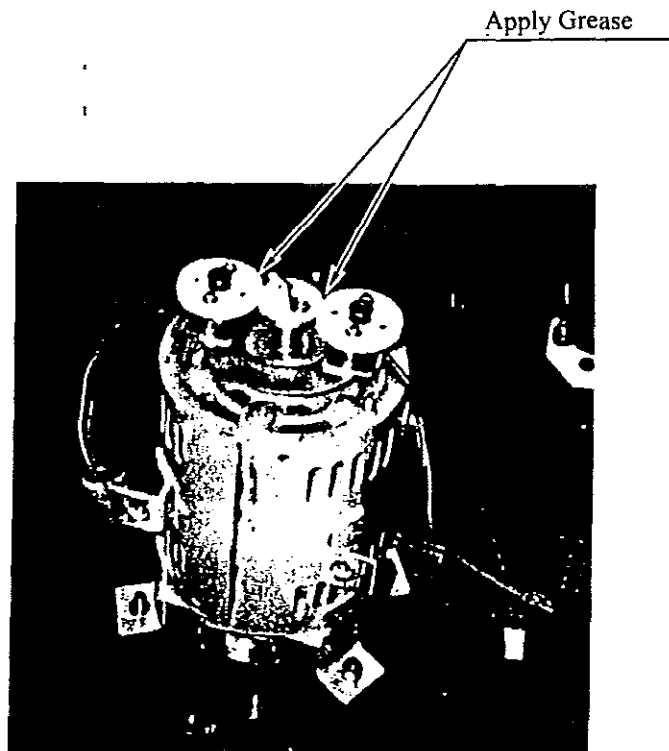
**After the replacement or adjustment of the V.R., be sure to set the variable value of the V.R. in the Test Mode's VOLUME SETTING**

## ADJUSTING THE V.R.

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

## GREASING

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



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

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

- ① Remove the Control Panel.
- ② Disconnect the connectors (3P yellow, 3P red) of both Variable Resistors.
- ③ Connect the Wiring Connector (3P yellow) which comes from the V.R. for the Motor Drive and the Connector connected to the V.R. for the Game BD & Drive Control.
- ④ The Steering Wheel value on the INPUT TEST mode screen in the Test mode will be the V.R. value for the Motor Drive BD.
- ⑤ After making V.R. adjustments, connect connectors.

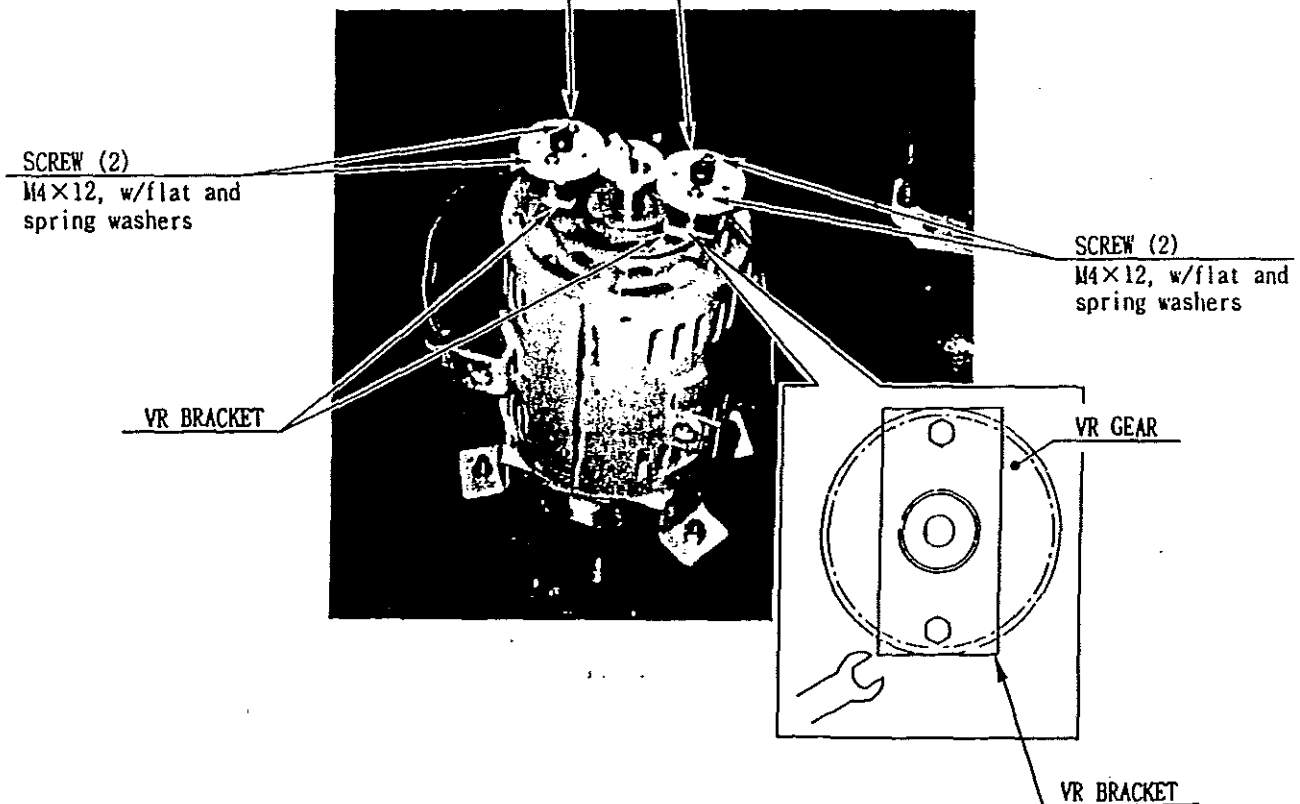
	Left		Centering position		Right
For Game BD & Drive Control:	30H or lower	←	7DH~83H	→	C0H or higher
V.R. for Motor Drive BD:	30H or lower	←	7DH~83H	→	C0H or higher

### REPLACING THE V.R.

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

V.R. for Motor Drive BD (3P yellow Connector)  
220-5373 or 220-5484

V.R. for Game BD & Drive Control (3P red Connector)  
220-5373 or 220-5484

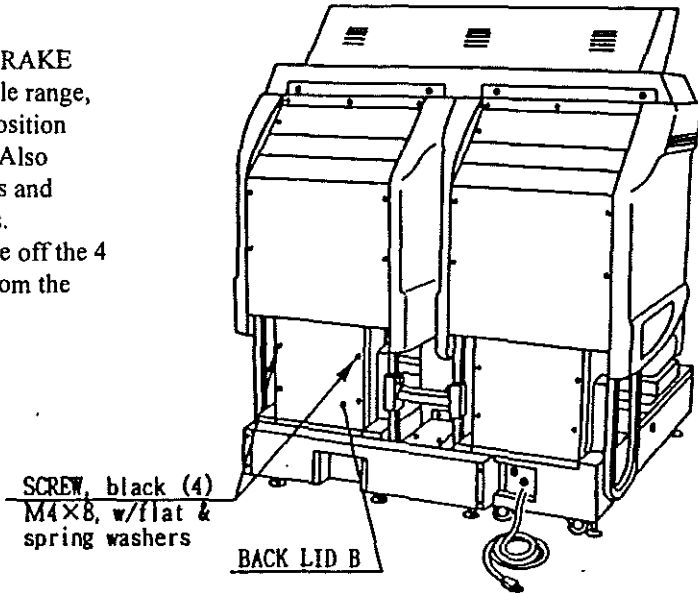


## 2. ACCELERATOR & BRAKE UNIT MAINTENANCE



**GENERAL MAINTENANCE SHOULD BE CARRIED OUT BY  
QUALIFIED SERVICE PERSONNEL ONLY.  
ENSURE POWER IS DISCONNECTED FROM THE MAINS SUPPLY  
BEFORE ATTEMPTING ANY WORK.**

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



### ADJUSTING AND REPLACING THE V.R.



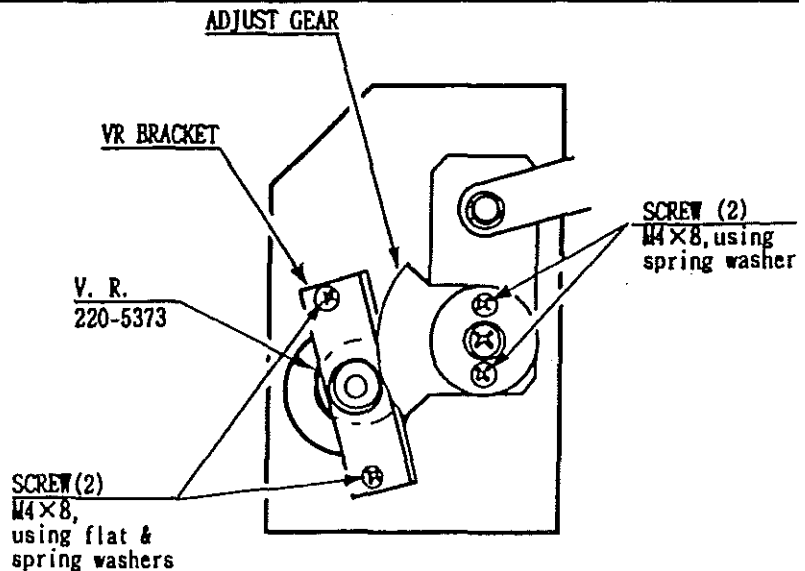
Never touch places other than those specified. Touching places not specified can cause electric shock and short circuit.

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

	When released:	↔	When stepped on:
ACCEL. :	Under 30 H	↔	Over COH
BRAKE :	Under 30 H	↔	Over COH

#### Method of V.R. replacement

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





## Method of V.R. adjustment

- ① Loosen the 2 screws which secure the V.R. Bracket and move the V.R. Bracket to disengage the gears.
- ② Have the V.R. value match with the value obtained when the pedal is released.
- ③ Mesh the gears to secure the V.R. Bracket. At this time, be sure to obtain an appropriate backlash.
- ④ Step on the pedal and check V.R. value variations. If the value is not within the above appropriate range, loosen the 2 screws which secure the ADJUST GEAR to make an adjustment.

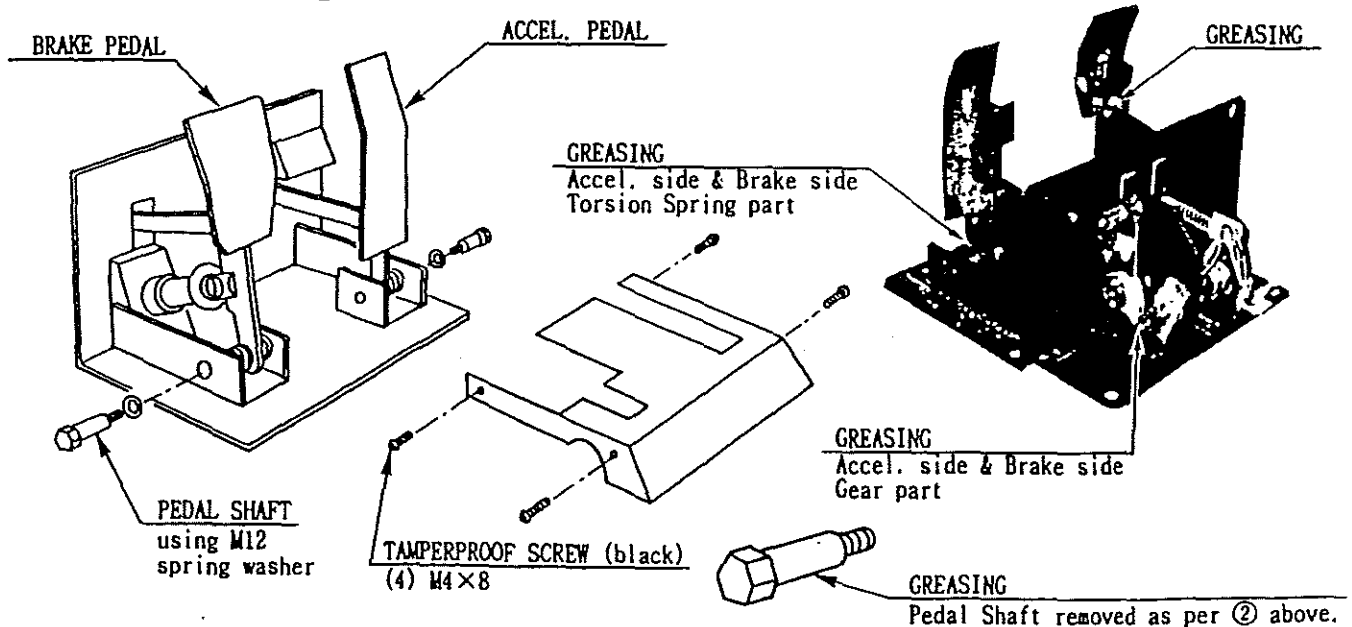
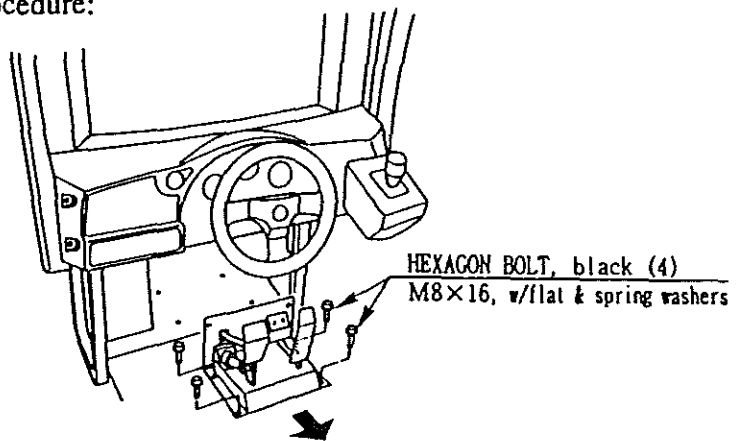
## GREASING

Apply greasing to the gear and shaft portions once every 3 months.

Use PART No. 090-0044 GREASE NET 300g (SHELL AUTO).

Apply greasing in the following procedure:

- ① Take off the 4 Hexagon Bolts (black) to pull out the unit. At this time, be very careful so as not to damage the wiring.
- ② Disconnect the wiring connector and move the unit, the weight of which is 6kg., to a spacious place in which the work can easily be performed.
- ③ Remove the 4 Tamperproof Screws (black) which secure the Pedal Cover and remove the Pedal Cover by moving it forward.
- ④ Remove the Pedal Shaft from the lower portions of ACCEL. pedal and BRAKE pedal. At this time, ensure that the ACCEL pedal and BRAKE pedal are firmly secured as they are subjected to torsion spring force.
- ⑤ After applying greasing to each part, assemble in the procedure opposite as when disassembling.



### 3. SHIFT LEVER MAINTENANCE

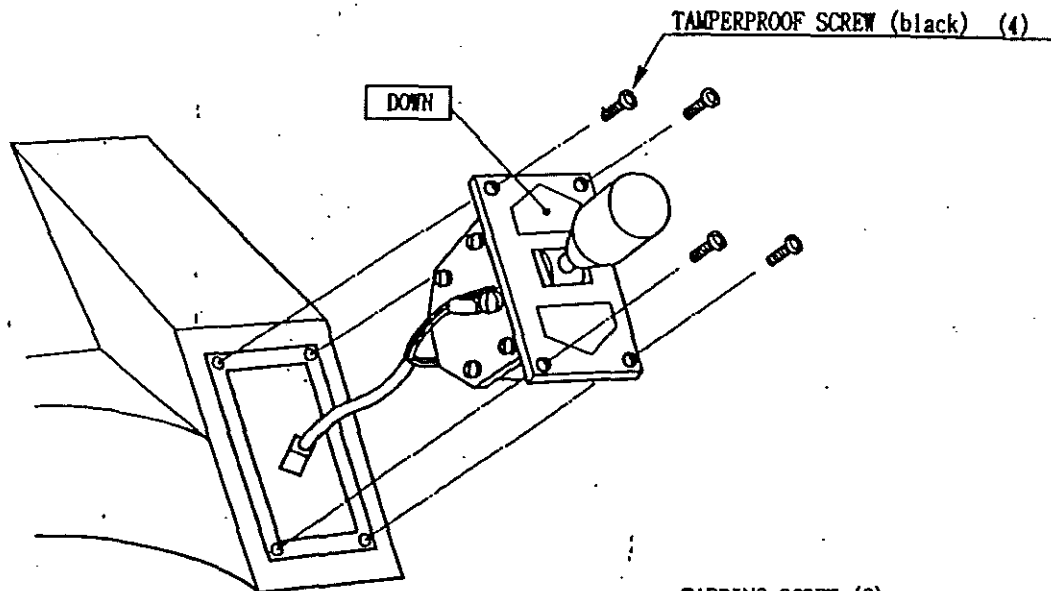
In the Test mode, if the SHIFT LEVER's SW can not be inputted satisfactorily, replace the Switch. Apply greasing to the Mechanism's sliding portion once every 3 months. When performing the above work, remove the Shift Lever Unit.



**GENERAL MAINTENANCE SHOULD BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL ONLY. ENSURE POWER IS DISCONNECTED FROM THE MAINS SUPPLY BEFORE ATTEMPTING ANY WORK.**

#### REMOVING THE SHIFT LEVER

- ① Turn the Power SW off.
- ② Remove the 4 Tamperproof Screws to lift the Shift Lever Unit.
- ③ Disconnect the Connector to remove the Shift Lever Unit.
- ④ When reinstalling, follow the procedure opposite as when removing. At this time, ensure that "DOWN" display appears on the upper part as shown.



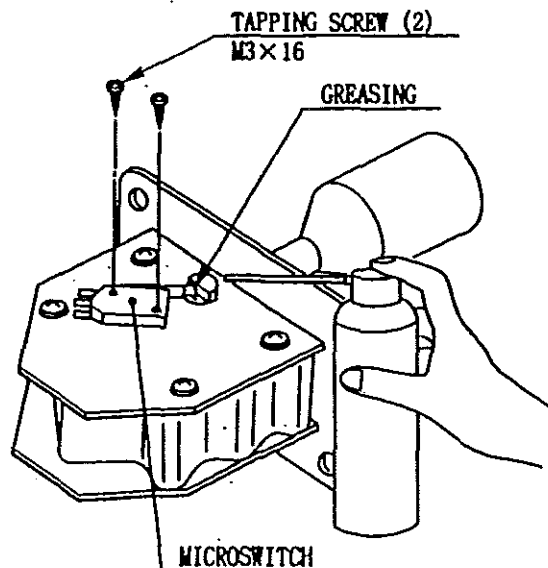
#### SWITCH REPLACEMENT

##### Method of replacement

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

#### GREASING

Apply greasing once in 3 months to the specified portions.  
For spray grease, use NOK KLUBER L 60 or Grease Mate (Part No. 090-0066).



## 5. FUSES

**FUSES SHOULD ONLY BE REPLACED BY QUALIFIED  
SERVICE PERSONNEL.  
DISCONNECT THE MACHINE FROM THE WALL BEFORE  
ATTEMPTING ANY WORK.**

There are a number of fuses used in this machine to protect the user and the machine itself from electrical overload. The following is a list of fuses used and their locations within the machine:

PART NUMBER	LOCATION	TYPE DETAILS	QTY.
838-11966	Motor Drive Board Ref: F1	7A 32mm T 240V Glass	2
838-11855	Conn Bd Ref: F1	5A 20mm T 240V Glass	2
838-11650	Eq. Amp Bd. Ref: F1	6A 20mm T 240V Glass	2
400-5306-01	SMPS Ref: F1	4A 20mm T 240V Glass	2
514-5078-10000	Eurosocket	10A 20mm T 240V Ceramic	1
514-5078-5000	AC Bracket	5A 20mm T 240V Ceramic	2
	Nanao Monitor Ref: 1	6.3A 20mm F 125/240V Glass	2
	Sanwa Monitor Ref: F801	4A 20mm F 125/240V Glass	2
	Sanwa Monitor Ref: F801	1.5A 20mm F 125/240V Glass	2

#### 4. CHANGING THE VOLTAGE ON THE TRANSFORMER

**ONLY QUALIFIED SERVICE PERSONNEL SHOULD  
CARRY OUT THIS PROCEDURE**

The Transformer fitted to this machine is capable of accepting a range of voltages from 210V to 240V. This is factory set to 230V and, in normal operating conditions, should not need to be changed. However circumstances may arise that require the primary voltage to be changed, to do this follow the procedure details below.

1. Switch the mains power off and disconnect the machine from the mains at the wall.
2. Unlock and open the Rear Floor and seat unit (ensure that the Seat Rear Cover is laid onto a soft surface to prevent damage).
3. Unscrew and remove the Front Floor (be sure to keep all screws and washers removed in a safe place).
4. Unscrew and remove Backlid B.
5. Disconnect the Accelerator & Brake unit.
6. Unscrew and remove the Pedal Base and Wire Box Cover also removing the Accelerator & Brake Unit in the process.
7. Carefully disconnect the 6 way Amp Mate'n'Lok plug connected to the Transformer Primary. This is found on Harness No. 600-6634-01UK.
8. Using Amp extraction tool No. 458994-1 or 876047-1 (not supplied) extract the pin located in position 4 on 600-6634-01UK and insert this into:-

Position 2 for 210V

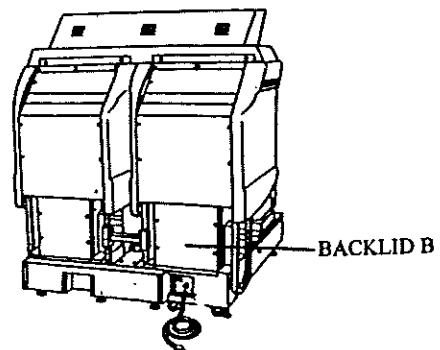
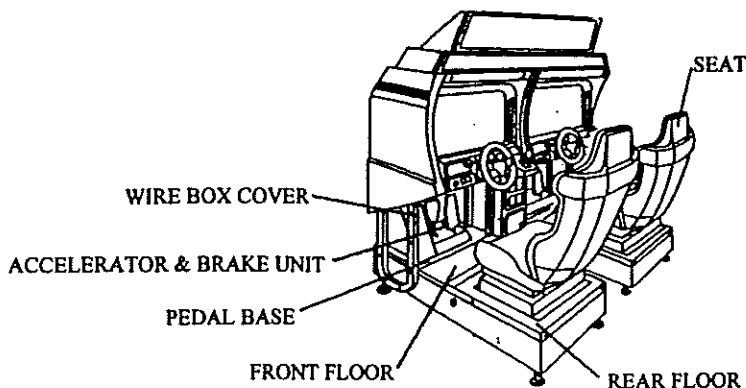
Position 3 for 220V

Position 4 for 230V

Position 5 for 240V

**DO NOT REMOVE ANY WIRES ATTACHED TO THE TRANSFORMER.**

9. Replace the Pedal Base and Wire Box Cover.
10. Reconnect the Wire Harnesses for the Accelerator & Brake Unit.
11. Replace Backlid B.
12. Replace the Front Floor.
13. Close the Rear Floor & Seat Unit and lock in place.



## 7. PERIODIC INSPECTION TABLE

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



**BE SURE TO CHECK ANNUALLY TO SEE IF THE POWER CORDS ARE DAMAGED, THE PLUG IS SECURELY INSERTED, THERE IS NO DUST BETWEEN THE SOCKET OUTLET AND THE POWER PLUG ETC. USING THE PRODUCT IN A UNCLEAN CONDITION MAY CAUSE A FIRE OF ELECTRIC SHOCK.**

**PERIODICALLY REQUEST THE PLACE OF CONTACT HEREIN STATED OR THE DISTRIBUTOR, ETC. WHERE THE PRODUCT WAS PURCHASED FROM, AS REGARDS THE INTERIOR CLEANING. USING THE PRODUCT IN AN UNCLEAN CONDITION CAN CAUSE A FIRE OR ACCIDENT. NOTE THAT CLEANING THE INTERIOR PARTS CAN BE PERFORMED ON A PAY-BASIS.**

**REGULAR INSPECTION SHOULD BE CARIED OUT BY QUALIFIED SERVICE PERSONNEL ONLY.**

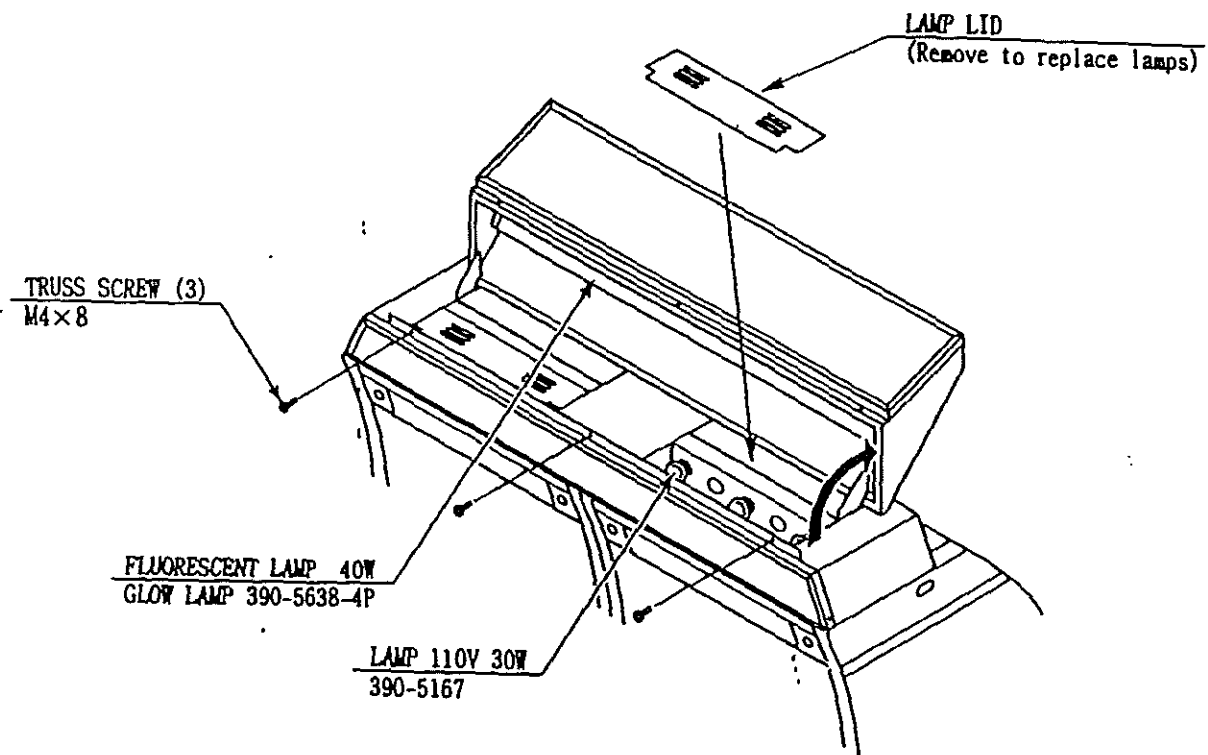
	Item	Interval
HANDLE MECHA	CHECK V.R. VALUE	MONTHLY
	CHECK ADJUST GEAR ENGAGEMENT	TRIMONTHLY
	GREASING OF GEAR	TRIMONTHLY
ACCEL & BRAKE	CHECK V.R. VALUE	MONTHLY
	CHECK ADJUST GEAR ENGAGEMENT	TRIMONTHLY
	GREASING OF GEAR AND BEARING	TRIMONTHLY
SHIFT LEVER	CHECK SW	MONTHLY
	GREASING	TRIMONTHLY
COIN CHUTE TOWER	CHECK COIN SW (IF FITTED)	MONTHLY (IF FITTED)
MONITOR	CHECK ADJUSTMENTS	MONTHLY
SEAT	ANTISTATIC MEASURES	BIMONTHLY
GAME BD	MEMORY TEST	MONTHLY
	CHECK SETTINGS	MONTHLY
INTERIOR	CLEANING	ANNUALLY
POWER SUPPLY PLUG	INSPECTION AND CLEANING	ANNUALLY
REAR CABINET	APPLY GRESE TO SEAT RAIL	TRIMONTHLY
CABINET SURFACES	CLEANING	AS REQUIRED
CONTROL PANEL	LAMPS OPERATING	MONTHLY

## 6. REPLACING THE FLOURESCENT LAMP AND LAMPS



**GENERAL MAINTENANCE SHOULD BE CARRIED OUT BY  
QUALIFIED SERVICE PERSONNEL ONLY.  
ENSURE POWER IS DISCONNECTED FROM THE MAINS SUPPLY  
BEFORE ATTEMPTING ANY WORK.**

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

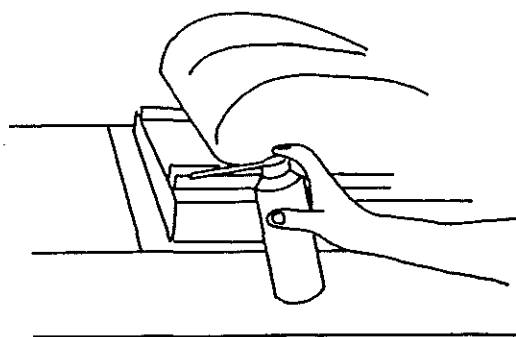


PROBLEMS	CAUSE	COUNTERMEASURES
Operation of Accel. and Brake Pedals are not satisfactory.	V.R. position deviated.	Adjust V.R. value in the test mode.
	V.R. malfunctioning.	Replace the V.R.
	ADJUST GEAR's engagement is not correct.	Adjust the engagement of ADJUST GEAR.
SHIFT LEVER doesn't operate satisfactorily.	Switch malfunctioning.	Replace the Switch
Steering Wheel reaction strength is incorrect. Deviation of Center.	Power ON check not performed correctly.	Turn off power and then turn it back on again. Complete the power on check.
	V.R. position deviated.	Adjust V. R. value in the test mode.
	V.R. malfunctioning.	Replace V.R.
Steering Wheel reaction strength is insufficient	Reaction Mecha's secular change.	Change Drive Control BD DIP SW setting
No Steering Wheel Reaction.	Connector Connection is incorrect.	Check connector connection from Base to Handle.
	The Motor Drive BD fuse is blown due to momentary overload.	Replace the Motor Drive BD Fuse
Fluorescent lamp doesn't light up.	Fluorescent lamp needs replacement.	Replace the fluorescent lamp
	The connector is disconnected.	Check connector connections in the billboard case
The LEADER lamp does not light up.	The lamp is burnt out.	Replace the lamp
	The connector is disconnected.	Check connector connections in the billboard case
Interactive play is not possible.	Communication cable is disconnected.	Connect the cable.
	Cable connections are not correct.	Connect the cable correctly
	Settings for communication play are not correct.	Ensure that GAME ASSIGNMENTS settings are correct

## REAR CABINET (Greasing to Seat Rail Portion)

Move the Seat to the rearmost portion and apply spray greasing to the portion shown at the right once every 3 months by using NOK KLUBER L60 or GREASE MATE SEGA PART No. 090-0066.

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



## CLEANING THE CABINET SURFACES

When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or diluted (with water) chemical detergent and squeezed dry. To avoid damaging surface finish, do not use such solvents as thinner, benzine, etc. other than ethyl alcohol, or abrasives, bleaching agent and chemical dustcloth.

## 8. TROUBLESHOOTING

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

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	AC UNIT FUSE functioned due to instantaneous overcurrent.	First, remove the cause of overcurrent and replace the fuse to its original status.
The color of image on MONITOR screen is incorrect.	Incorrect monitor adjustment.	Make appropriate adjustments
The on-screen image of the monitor sways and or shrinks.	The power source and voltage are not correct.	Make sure that the power supply and voltage are correct.
Sound is not emitted.	Sound volume adjustment is not correct.	Adjust the SWITCH UNIT's sound adjustment volume (control)
	Malfunctioning BD. and Amp.	Perform Sound Test to check it.
	Connector connection is incorrect.	Check connector connection from Base to Speaker.



## 9. GAME BOARD & DRIVE CONTROL BOARD



- In order to prevent an electric shock, be sure to turn power off before performing work by touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.

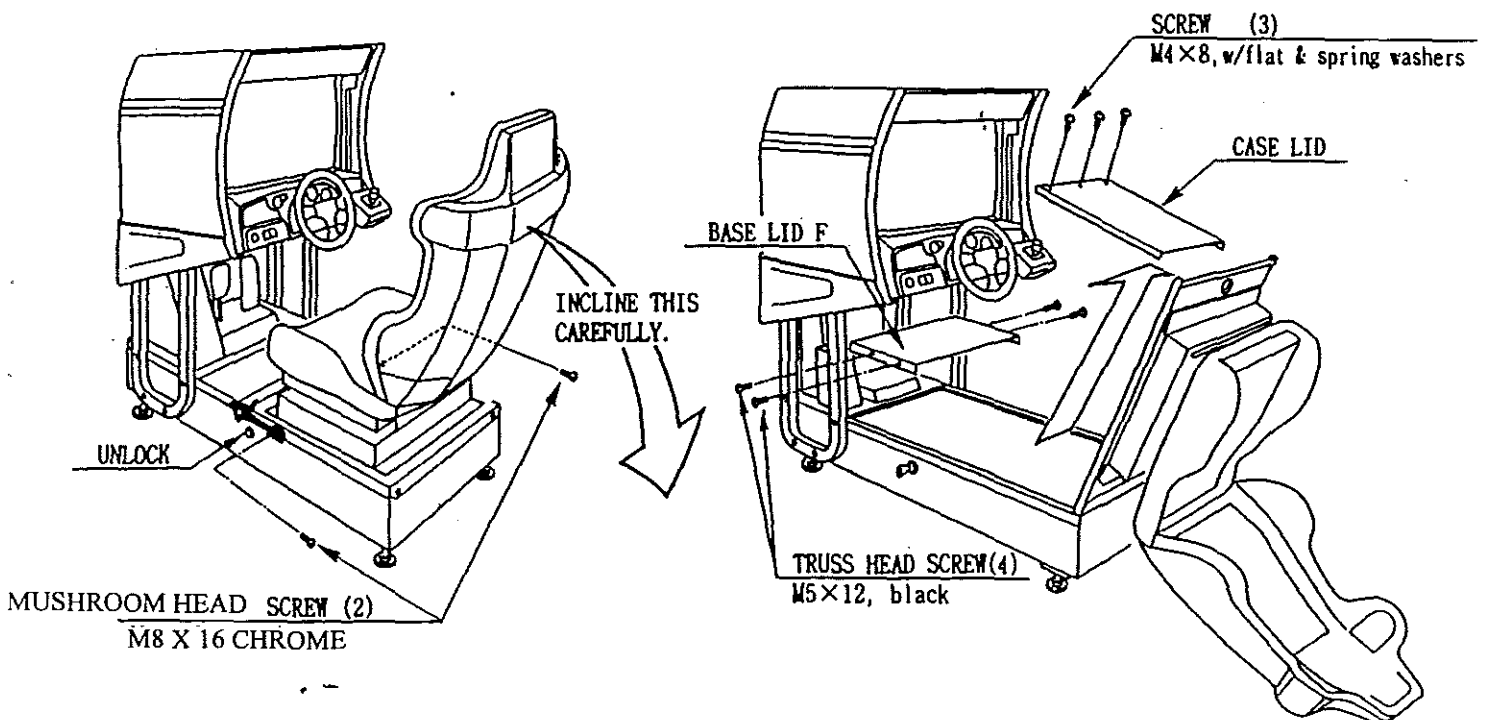


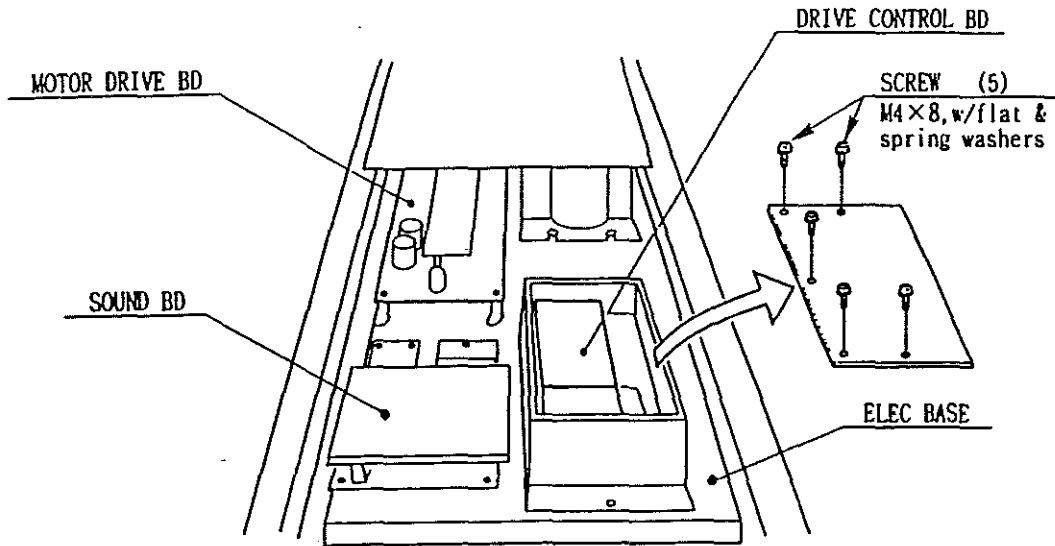
Do not expose the Game BD, etc. without a good reason. In this product, setting changes are made during the test mode. The Game BD need not be operated. Use the Game BD, etc. as is with the same setting made at the time of shipment.

### REMOVING THE BOARD

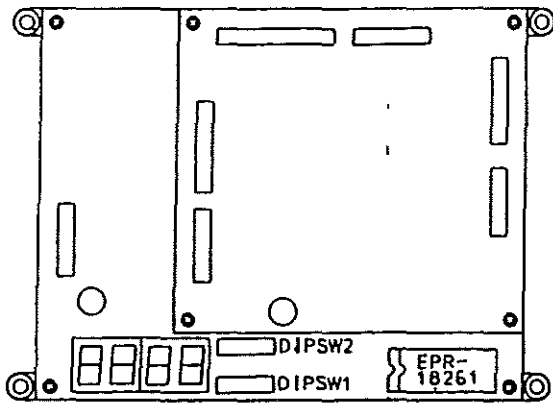
To replace the IC BD (such as Game BD, Drive BD, etc.), or to change DIP SW settings, take out the IC BD by using the following procedure:

- ① Turn the MAIN SW off.
- ② Unlock and take off the 2 Mushroom Head screws from the side of the base as shown.
- ③ Turn the knob to unlock. The seat can be inclined in the direction shown. When inclining the seat, be careful so as not to damage the seat parts. Carefully cause the backrest portion of the seat to come into contact with the floor. If the floor has hard surfaces, protect the seat from damage by using a cloth, etc. on the floor surfaces.
- ④ Take off the 3 screws to remove the case lid. The Game Board is contained in the Shield Case.
- ⑤ Take off a total of 4 screws from both sides with the seat being in an inclined state and remove BASE LID F. Removing Base Lid F allows ELEC BASE to be viewed.





- ⑥ The Drive Control BD is contained in the Shield Case. The Steering Wheel reaction is set using the Drive Control BD DIP SW 1's. Remove the 5 screws and open the Shield Case Lid to perform DIP W setting. Use Drive Control Bd's DIP SW No.1's switches 1 to 3 to set the strength as given in the table below. Ensure that all other DIP SW's are OFF.

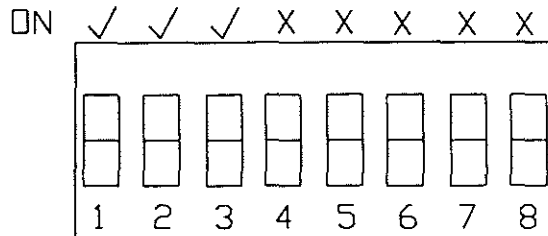


#### DIP SW SETTING

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

1	2	3	FUNCTION
OFF	OFF	OFF	Light ↑
ON	OFF	OFF	
OFF	ON	OFF	
OFF	OFF	ON	↓ Heavy
ON	OFF	ON	
ON	ON	ON	

#### DIP SWITCH No. 1

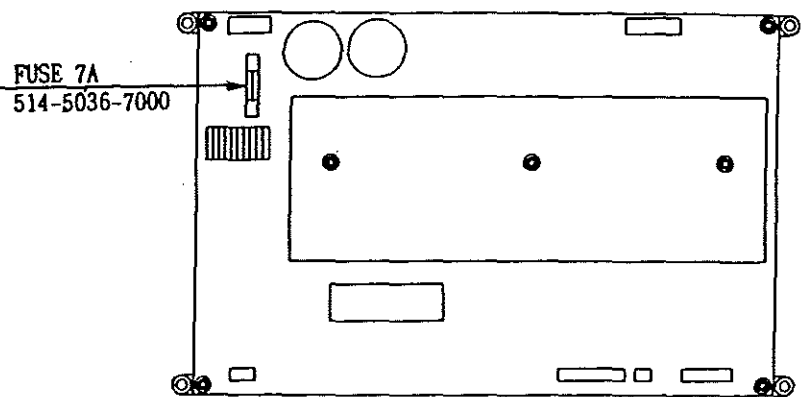


## REPLACEMENT AND ADJUSTMENT OF FUSE



- In order to prevent an electric shock, be sure to turn power off before performing work by touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.
- Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause a fire or electric shock.
- 

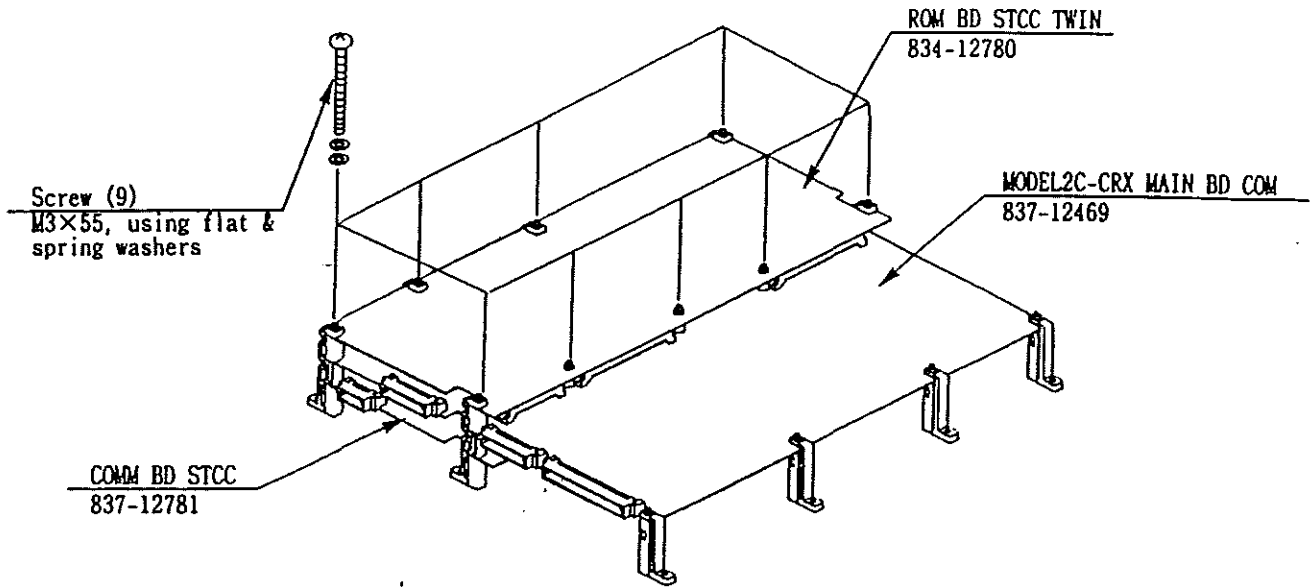
The fuse is provided on the Motor Drive BD. When replacing, be sure to use the specified fuse.



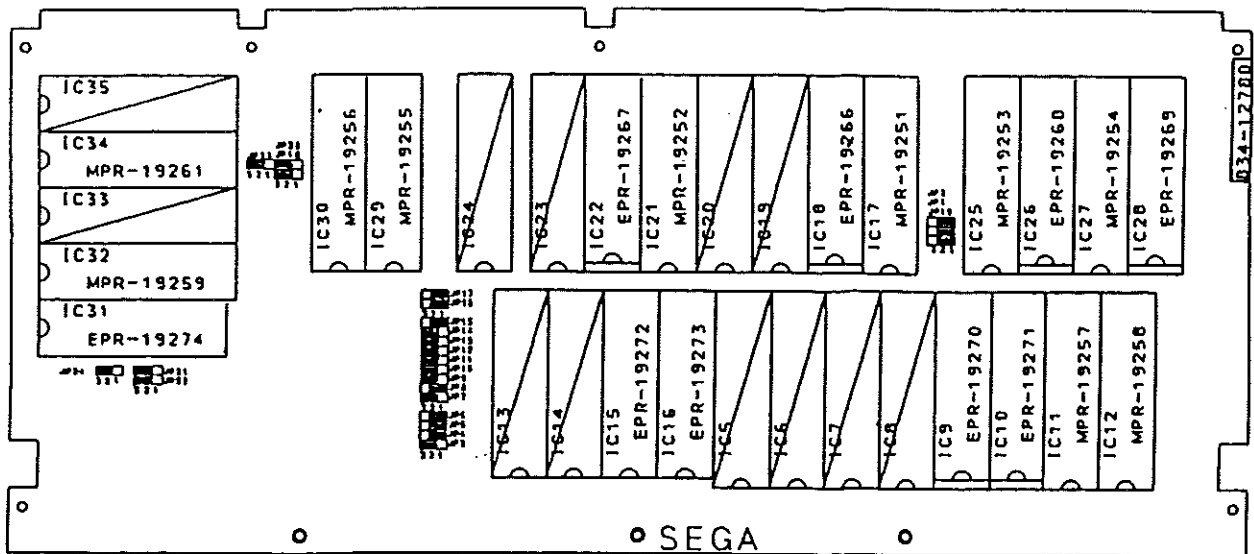
MOTOR DRIVE BD (838-11966)

# COMPOSITION OF GAME BOARD

## GAME BD STCC TWIN



## ROM BD STCC TWIN

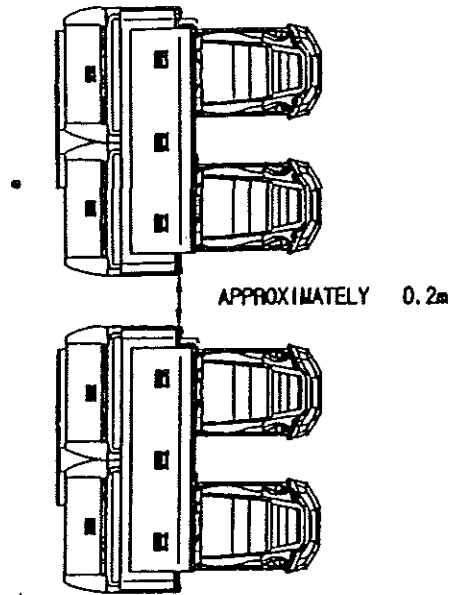


## 9. COMMUNICATION PLAY

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

### INSTALLATION PRECAUTIONS

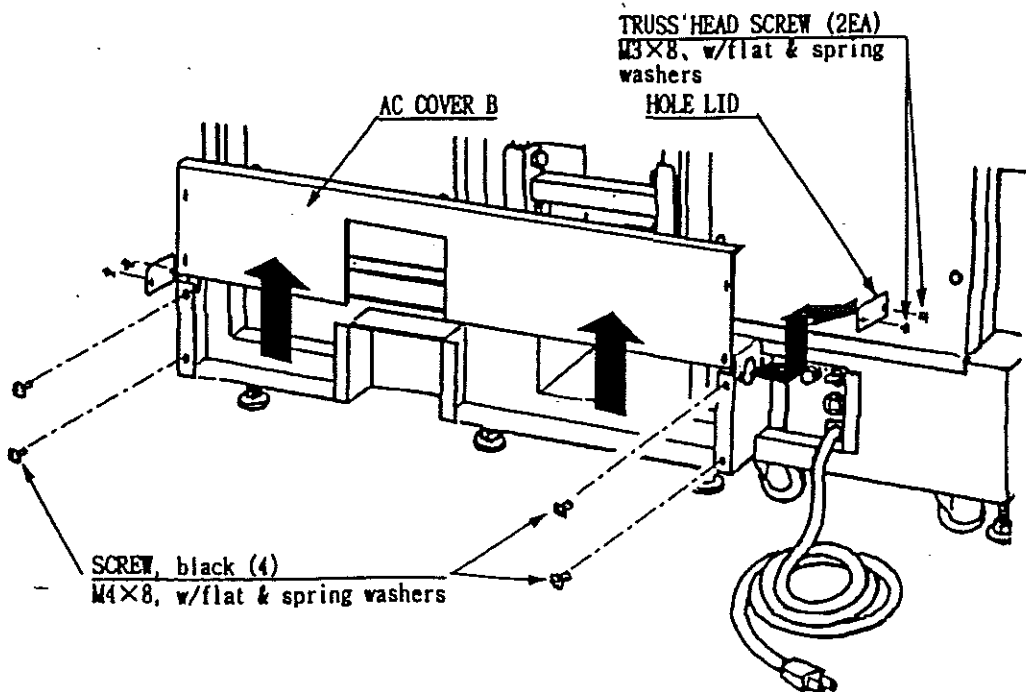
- 1) When Linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. The per unit standard voltage/amperage is 210-240V /4.6-4A .
- 2) Due to the length of the communications cable, the distance in between the machines will be approximately 0.2 meters or less.



### CONNECTING THE COMMUNICATION CABLES

Take off the 4 screws and remove AC COVER B . . .

The HOLE LID is attached over the AC COVER HOLE. By taking off 2 screws, remove the HOLE LID of the side where the other machine is to be installed.



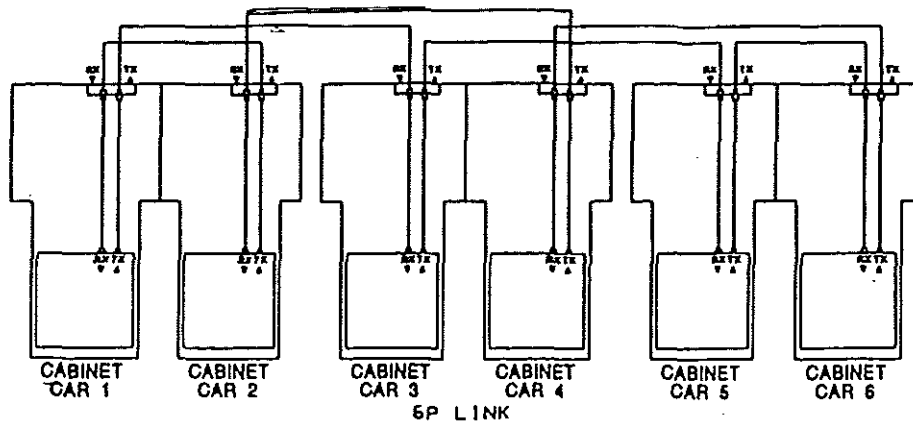
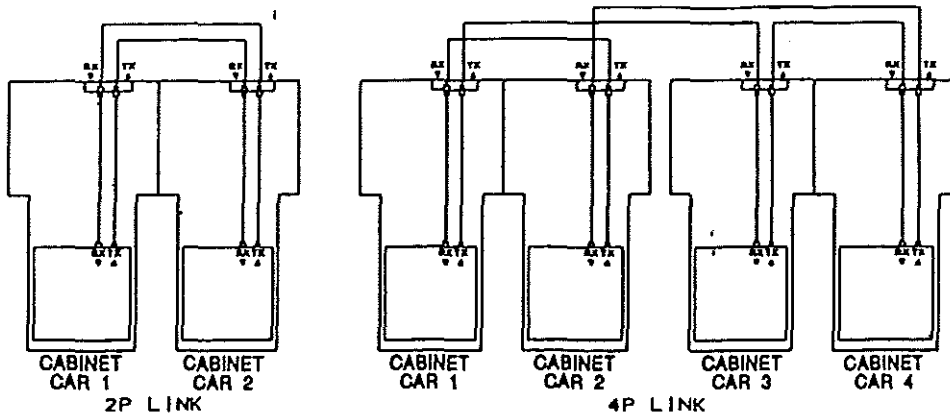
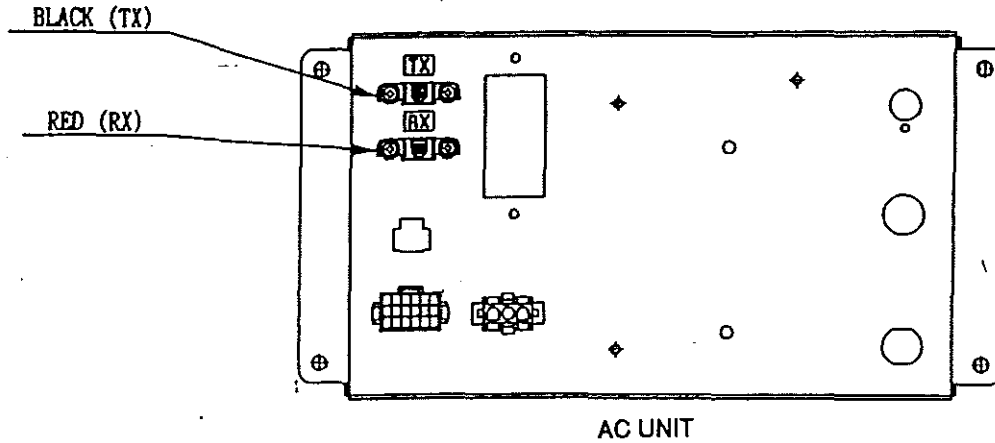
**PAGE LEFT  
INTENTIONALLY  
BLANK**

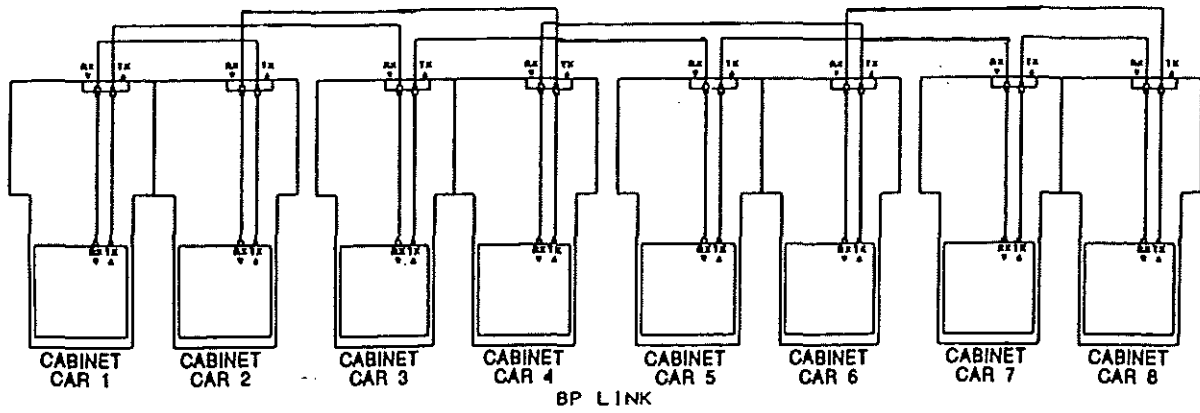
Connect the communication cable. Redo the connection which is currently made for TWIN (for 2P LINK) to change it for usage by 4P or more.

Depending on the number of units to be connected, communication connections are different. Make connection correctly as shown below.

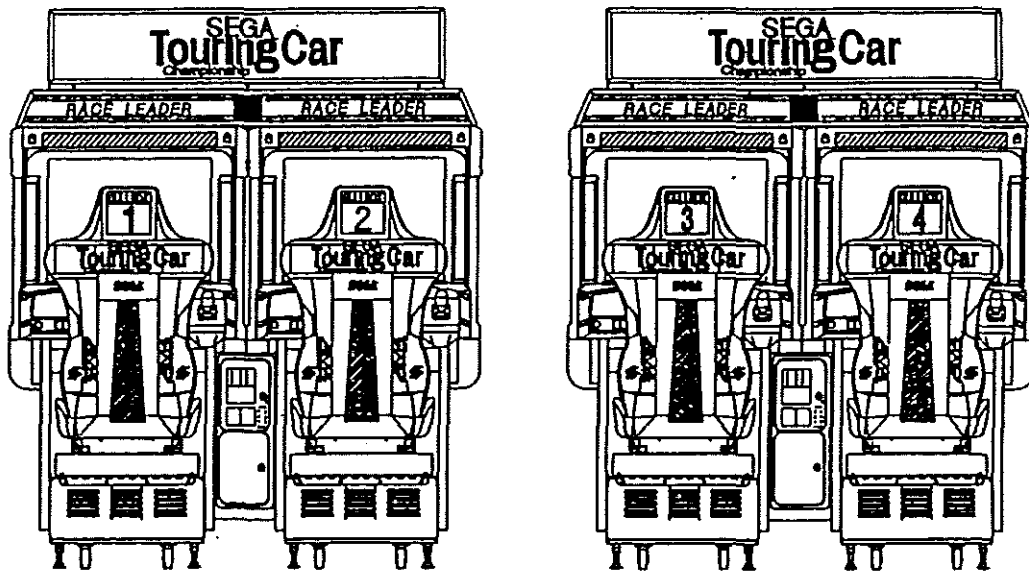


The Fibre Optic cable is used for the communication linkage. Excessive bending may damage the communication cable. Be very careful in this regard.





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





## SETTING FOR COMMUNICATION PLAY



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

When performing communication play, the settings of GAME ASSIGNMENTS in the test mode need to be changed.

- ① Cause all of the machines linked for communication play to enter the test mode.
- ② Set the LINK TYPE of the machines connected for communication play to CAR 1, CAR 2, CAR 3 ....sequentially in order starting from the left facing the screen. At this time make sure that there is no duplicated number.

One machine whose LINK TYPE is set to CAR 1 will be the MASTER unit. Thereafter, all other machines' settings except for ADVERTISE SOUND, CABINET TYPE and LINK TYPE will compulsorily be the same as those of the MASTER unit.

- ③ After changing the settings of all machines connected for communication play, ensure that all of the machine exit from the test mode.
- ④ In the NETWORK CHECK, if there is no irregularity, the ADVERTISE mode will appear, allowing for communication play.

GAME ASSIGNMENTS	
ADVERTISE SOUND	XXXXXX
URL ADDRESS	XXXXXX
COUNTRY	XXXXXX
CABINET TYPE	XXXXXX
LINK TYPE	XXXXXX
DIFFICULTY	XXXXXX
GAME MODE	XXXXXX
DEFAULT CAR	XXXXXX
NAME ENTRY	XXXXXX
> EXIT	

SELECT WITH SERVICE BUTTON  
AND PUSH TEST BUTTON

This sets CAR 1~CAR 8

GAME ASSIGNMENTS

## CAUTIONS TO BE HEDED WHEN USING THE TEST MODE

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

## 10. PARTS LIST

### 1. TOP ASSEMBLY STC-0002/3UK

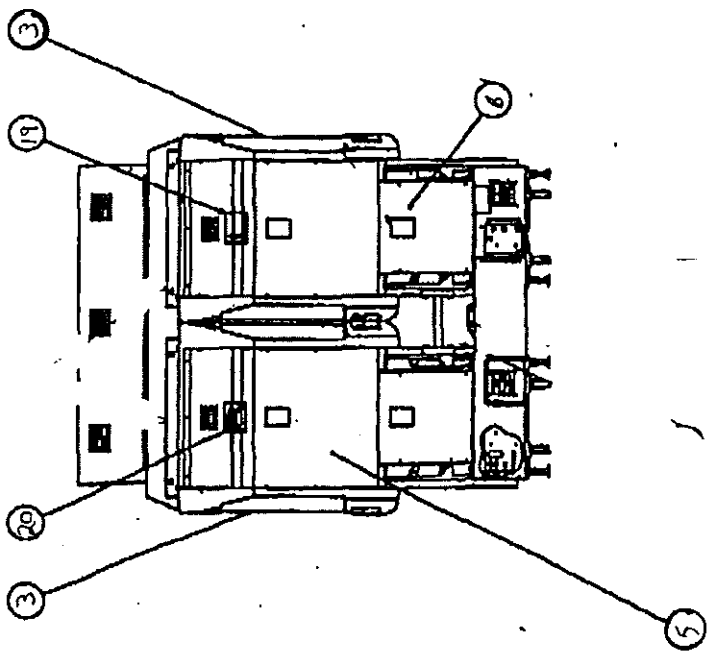
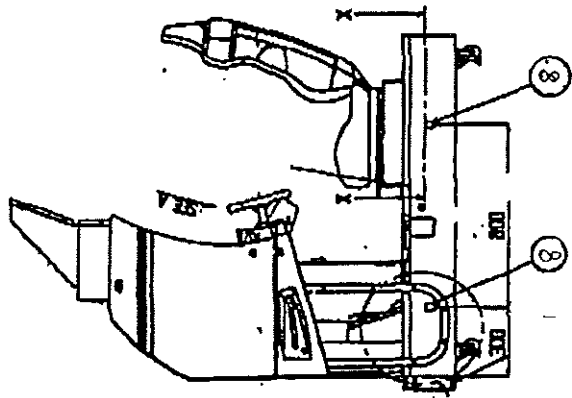
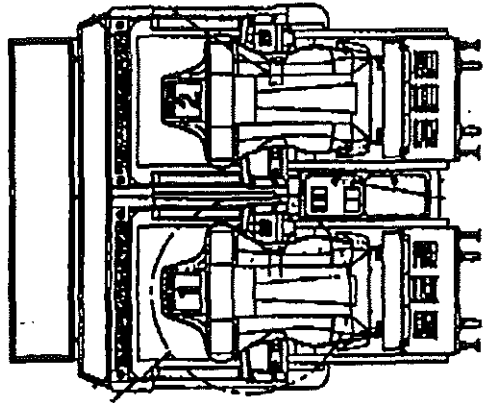
There are currently two different monitors fitted to SEGA Touring Car. Although they are identical there are two different part numbers, therefore there are also a few assemblies which are affected by this.

#### STC-00002UK

Seq. No.	Part Number	Description	Qty.
1	STC-INST-KIT	ASSY INSTALLATION KIT STCC UK	1
2	STC-6000UK	ASSY HANDING KIT STC TWIN	1
3	STC-11001UK	ASSY COCKPIT STCC UK	2
4	STC-7000UK	ASSY MONITOR HANDING	1
5	INY-0004	BACK LID INY	2
6	DYN-0008XUK	BACK LID B UK	2
7	421-7987	STICKER ELEC SPEC	1
8	421-7020UK	STICKER CAUTION FORK	4
9	421-7988-91	STICKER SERIAL NUMBER	3
10	PK0034	PALLET WOODEN RALLY	2
11	PK0086	CARTON MAIN STCC	2
12	RAL-XXXX-13UK	LOCK COVER UK	2
13	PK0037	BAG PLASTIC RALLY	2
16	LB1092	STICKER CE 25mm X 25mm	1
17	OS1080	TAPE ALL WEATHER	0.01
18	440-CS0011XEG	STICKER C GRIP HANDLE	2
19	421-8543UK	STICKER CABINET L UK	1
20	421-8544UK	STICKER CABINET R UK	1
201	008-B00820-OC	M8X20 MSCR TMP PRF BH CRM	4
202	008-T00412-OC	M4X12 MSCR TMP PRF CRM	8
203	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	26
204	FX0410	M4X12 TAPTITE POSI PAN PAS	4
205	LB1046	LABEL TESTED FOR ELEC. SAFETY	1
206	LB1003	LABEL "FAILURE TO..DAMAGE"	1
207	LB1004	LABEL "CONNECTIONS....."	1
208	LB1020	LABEL CAUTION (YEL/BLK)	1
210	440-WS0002XEG	STICKER W POWER OFF	6

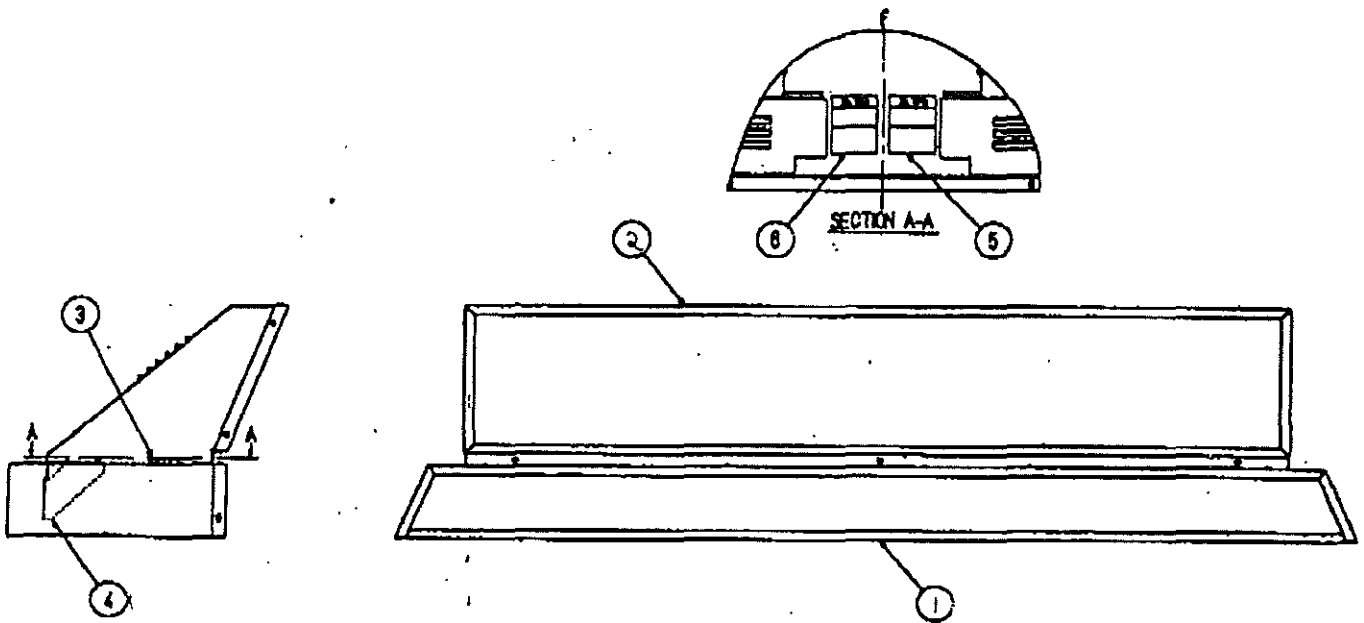
STC-00003UK

Seq. No.	Part Number	Description	Qty.
1	STC-INST-KIT	ASSY INSTALLATION KIT STCC UK	1
2	STC-6000UK	ASSY HANDING KIT STC TWIN	1
3	STC-11002UK	ASSY COCKPIT STCC SANWA UK	2
4	STC-7000UK	ASSY MONITOR HANDING	1
5	INY-0004	BACK LID INY	2
6	DYN-0008XUK	BACK LID B UK	2
7	421-7987	STICKER ELEC SPEC	1
8	421-7020UK	STICKER CAUTION FORK	4
9	421-7988-91	STICKER SERIAL NUMBER	3
10	PK0034	PALLET WOODEN RALLY	2
11	PK0086	CARTON MAIN STCC	2
12	RAL-XXXX-13UK	LOCK COVER UK	2
13	PK0037	BAG PLASTIC RALLY	2
16	LB1092	STICKER CE 25mm X 25mm	1
17	OS1080	TAPE ALL WEATHER	0.01
18	440-CS0011XEG	STICKER C GRIP HANDLE	2
19	421-8543UK	STICKER CABINET L UK	1
20	421-8544UK	STICKER CABINET R UK	1
21	EP1317	FERRITE CORE ROUND CABLE CLAMP	1
201	008-B00820-OC	M8X20 MSCR TMP PRF BH CRM	4
202	008-T00412-OC	M4X12 MSCR TMP PRF CRM	8
203	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	26
204	FX0410	M4X12 TAPTITE POSI PAN PAS	4
205	LB1046	LABEL TESTED FOR ELEC. SAFETY	1
206	LB1003	LABEL "FAILURE TO..DAMAGE"	1
207	LB1004	LABEL "CONNECTIONS....."	1
208	LB1020	LABEL CAUTION (YEL/BLK)	1
210	440-WS0002XEG	STICKER W POWER OFF	6



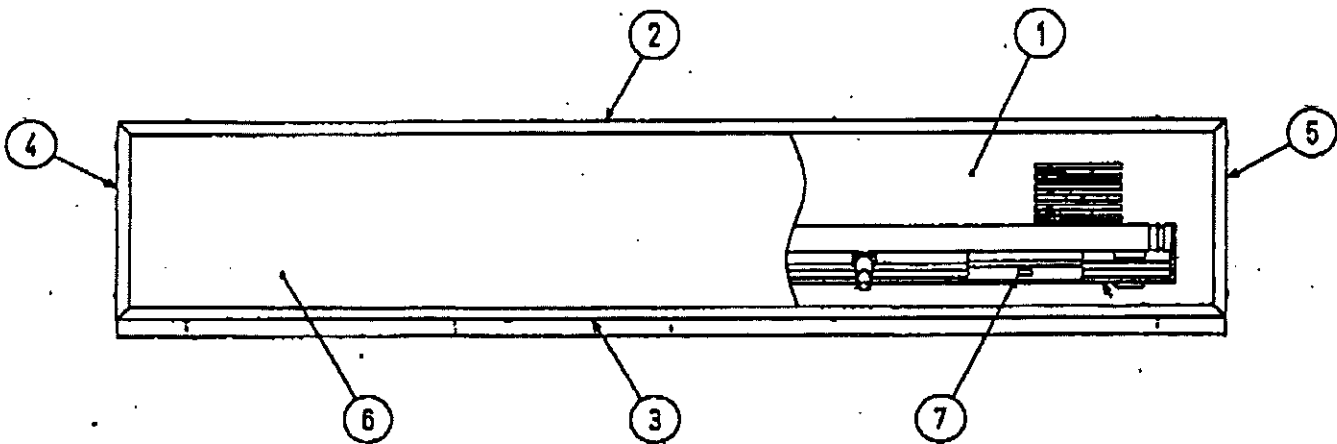
## 2. BILLBOARD ASSEMBLY STC-0200UK

Seq. No.	Part Number	Description	Qty.
1	STC-0220UK	ASSY BILLBOARD LOWER	1
2	STC-0210UK	ASSY BILLBOARD UPPER	1
3	RAL-0201UK	LAMP LID	2
4	RAL-0202UK	STAY BRKT	2
5	440-WS0012XEG	STICKER W HIGH TEMP	1
6	440-WS0002XEG	STICKER W POWER OFF	1
101	LB1096	STICKER PROTECTIVE EARTH	1
201	000-T00408-OC	M4X8 MSCR POSI TH CRM	3
202	FX0011	M4 NUT FLG SER BZP	5
301	LM9511	LOOM EARTH 750mm	1



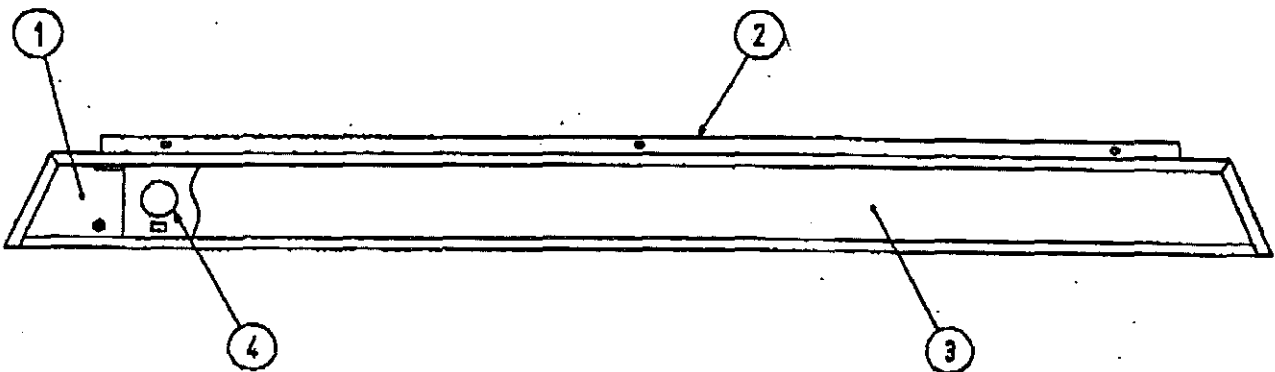
### 3. BILLBOARD UPPER ASSEMBLY STC-0210UK

Seq. No.	Part Number	Description	Qty.
1	RAL-0211UK	BILLBOARD CASE UPPER	1
2	RAL-0212UK	CORNER EDGE UPPER	1
3	RAL-0213UK	CORNER EDGE LOWER	1
4	RAL-0214UK	CORNER EDGE LEFT	1
5	RAL-0215UK	CORNER EDGE RIGHT	1
6	423-0274	BILLBOARD PLATE UPPER STCC	1
7	STC-0240UK	ASSY FL TWIN	1
101	LB1096	STICKER PROTECTIVE EARTH	1
201	000-T00408-OC	M4X8 MSCR POSI TH CRM	12
202	FX0163	N8X1/2" S/TAP POSI FLG BZP	2
203	FX0011	M4 NUT FLG SER BZP	1
301	LM9111	LOOM EARTH 300mm	1



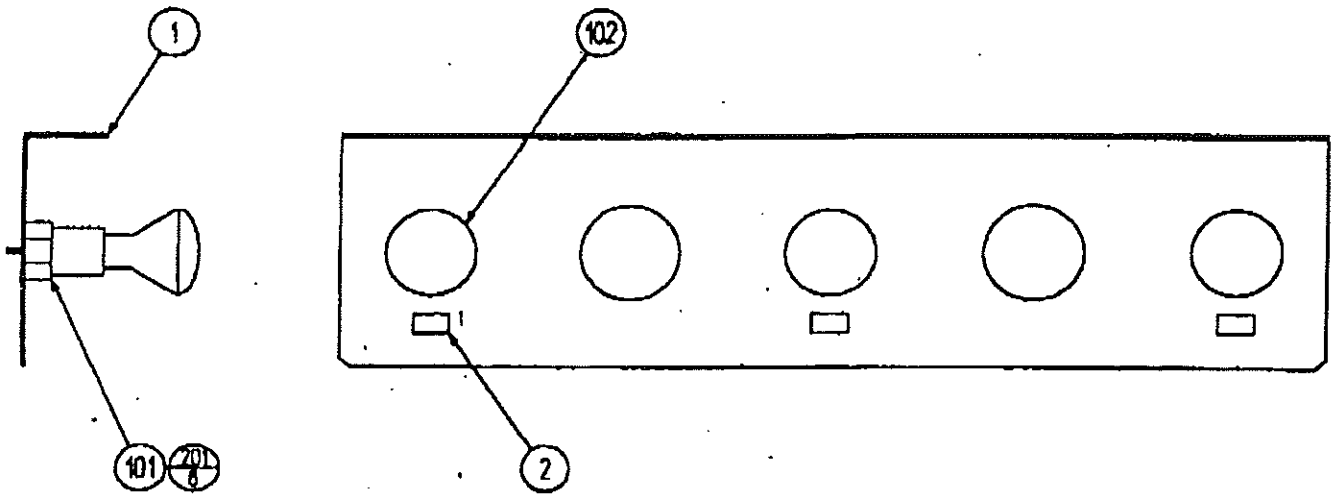
#### 4. BILLBOARD LOWER ASEMBLY STC-0220UK

Seq. No.	Part Number	Description	Qty.
1	RAL-0221UK	BILLBOARD CASE LOWER	1
2	RAL-0222UK	CORNER EDGE	1
3	423-0275	BILLBOARD PLATE LOWER	1
4	STC-0230UK	ASSY LAMP UNIT	2
101	280-A00500-A	ROUTER TWIST D5 ADH	4
201	000-T00408-OC	M4X8 MSCR POSI TH CRM	6
202	FX0037	M4X12 MSCR POSI PAN BZP	4
203	FX0009	M4 WSHR FORM A FLT BZP	4
204	FX0243	M4 WSHR SPR BZP	4



### 5. LAMP UNIT ASSEMBLY STC-0230UK

Seq. No.	Part Number	Description	Qty.
1	RAL-0231UK	LAMP PANEL	1
2	421-7501-16UK	STICKER 110V 30W	3
101	214-0110	BULB SOCKET	3
102	390-5167	LAMP 110V 30W	3
103	280-A00500-A	ROUTER TWIST D5 ADH	7
201	FX0031	M3X16 MSCR POSI PAN BZP	6
202	PP1107	GROMMET RUBBER 1.6t dia50 MATL	2
301	600-6555-07UK	LOOM LAMP UNIT	1

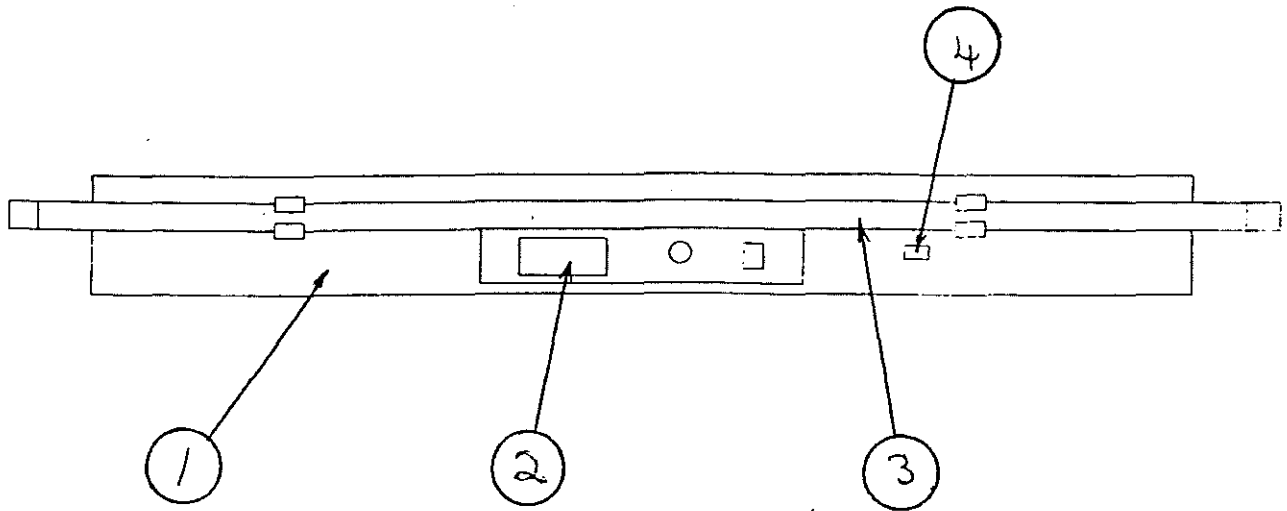




## 6. FLUORESCENT ASSEMBLY STC-0240UK

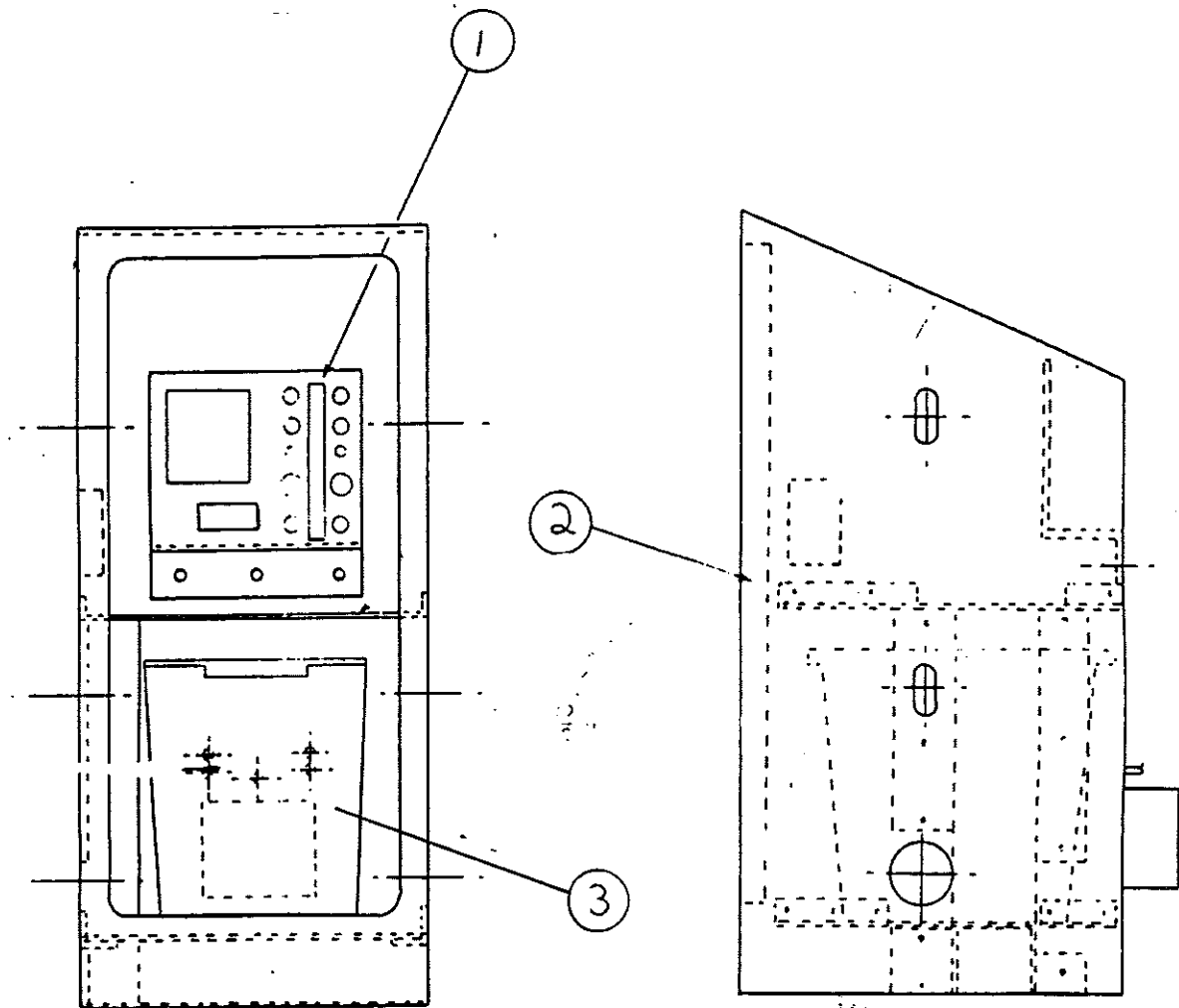
Seq. No.	Part Number	Description	Qty.
1	STC-0241UK	WOODEN BASE FL	1
2	390-5538-40-AUK	FL LIGHTING TRAY 110V 40W	1
3	LT1043	TUBE FL 40W 48" DIA38mm	1
4	421-7501-10	STICKER FL 40W	1
201	FX0163	N8X1/2" S/TAP POSI FLG BZP	4
202	280-A00500-WX	ROUTER TWIST D5 WOOD XLAR	4
301	600-6555-06UK	WIRE HARN FL	1

*Check Only  
E0003*



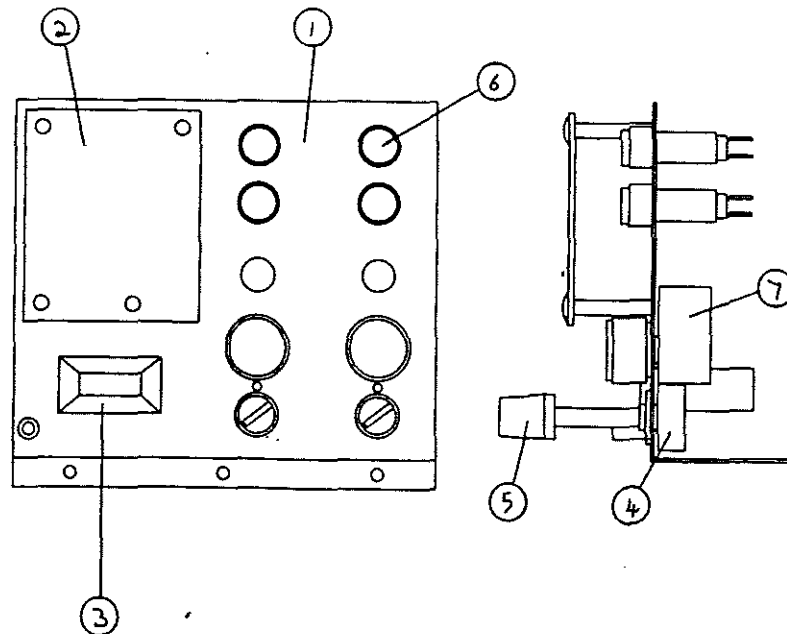
## 7. COINCHUTE TOWER ASSEMBLY DYN-0300UK

Seq. No.	Part Number	Description	Qty
1	DYN-0350UK	ASSY VTS (QUICK-FIT) UK	1
2	DYN-0301XUK	COIN CHUTE TOWER	1
3	PP1087	BOX CASH FOR MINI DOOR	1
201	FX0011	M4 NUT FLG SER BZP	4
301	LM9012	LOOM EARTH 200mm	1
302	LM9212	LOOM EARTH 400mm	1



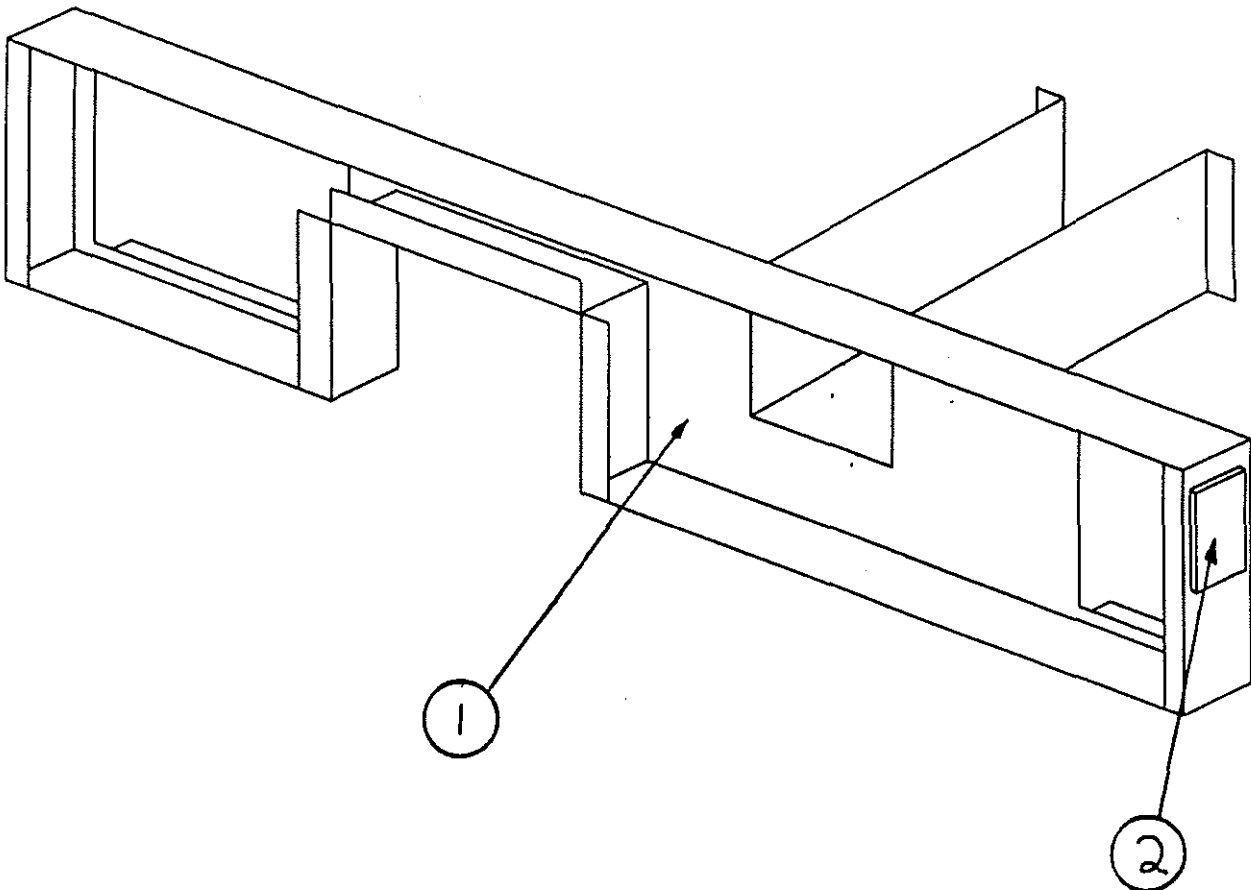
## 8. VTS ASSEMBLY DYN-0350UK

Sea. No.	Part Number	Description	Qty.
1	MP1284	BRKT PANEL VTS (KWIK FIT)	1
2	EP1004	PEC CREDIT BD KLINGON	1
3	EP1003	COUNTER IMPULSE, PANEL W/CLIP	1
4	EP1331	POT 4.7K LIN 0.11" TAB	2
5	EP1018	KNOB 15MM DIA FOR 6.3MM SHAFT	2
6	SW1100	SWITCH MOMENTARY 0.11" TAB	4
7	SW1099	SWITCH PB MOMENTARY 30/40AMP	2
200	LB1006	LABEL VTS 1 SIL/BLK VERT LIST	1
201	LB1028	LABEL 110VAC MINI YELL/BLK	1
202	FX0029	M3X10 MSCR POSI PAN BZP	4
203	FX0263	M3 WSHR FORM A FLT BZP	4
204	OS1055	TERM 1/4" RECEPT. RED F/INSUL	2
205	OS1098	CRIMP BELL END SMALL	2
206	OS1181	CABLE TIE BASE 19mmSq SELF/ADH	5
207	OS1174	CABLE TIE, NYLON 100mm	5
208	FX0011	M4 NUT FLG SER BZP	1
301	600-6559-101	WIRE HARN VTS DYN KWIK FIT	1
302	LM9111	LOOM EARTH 300mm	1



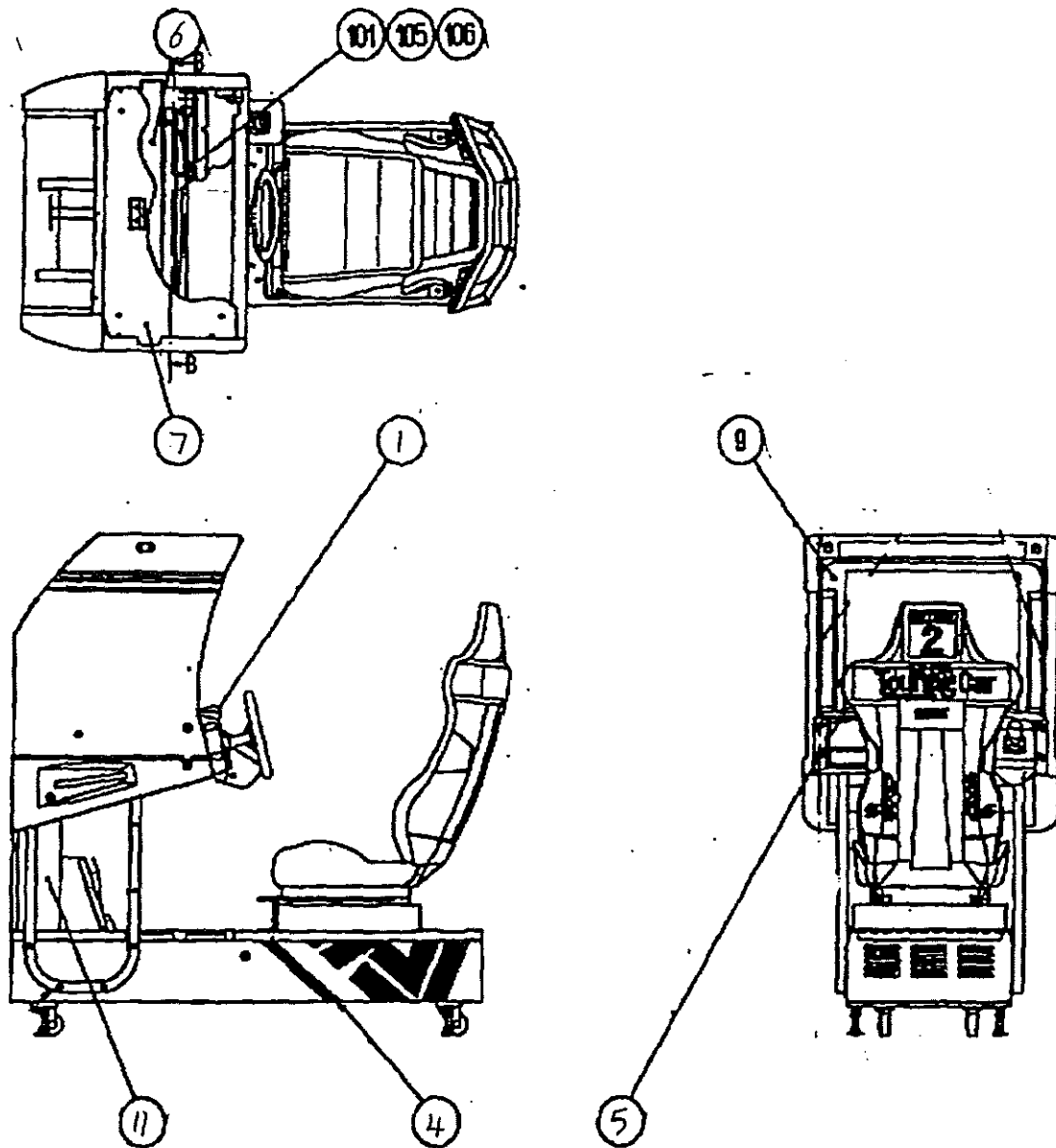
## 9. WIRE COVER ASSEMBLY DYN-0500UK

Seq. No.	Part Number	Description	Qty.
1	DYN-0005UK	AC COVER A	1
2	DYN-0009UK	HOLE LID	2
201	000-P00308-WB	M3X8 MSCR POSI PAN W/FS BNP	4
202	FX0011	M4 NUT FLG SER BZP	1
203	280-A02000-A	ROUTER TWIST D20 ADH	5
301	600-6634-35UK	WIRE HARN EXT AC	1
302	600-6634-36UK	WIRE HARN EXT TOWER L	1
303	600-6634-37UK	WIRE HARN EXT TOWER R	1
304	600-6373-76	WIRE HARNESS PLAYER SEL EXT A	1
305	LM9511	LOOM EARTH 750mm	1
306	LM9111	LOOM EARTH 300mm	1
307	LM9212	LOOM EARTH 400mm	1

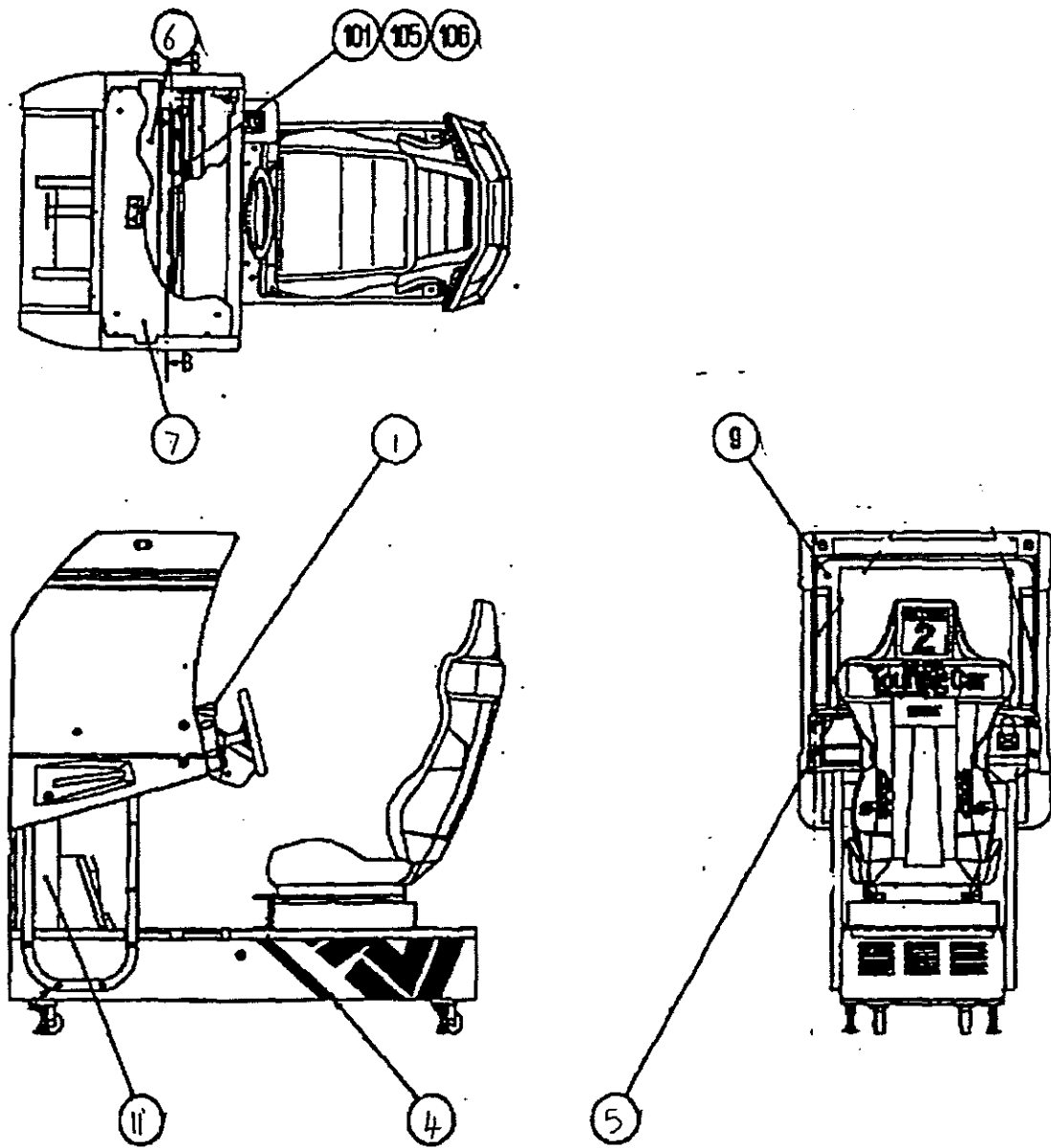


10. COCKPIT ASSEMBLY STC-11001/2UK

STC-11001UK



Seq. No.	Part Number	Description	Qty.
1	STC-12003UK	ASSY CONTROL PANEL TWIN M	1
2	MSB-2030UK	ASSY FLOOR FRONT UK	1
3	DYN-2040UK	ASSY FLOOR REAR	1
4	STC-21001UK	ASSY MAIN BASE STCC	1
5	STC-2200UK	ASSY SEAT TWIN	1
6	INY-1016UK	MONITOR SUPPORT UK	1
7	DYN-1015XUK	ROOF LID	1
8	DYN-1017UK	MASK HOLDER	1
9	TTR-1067UK	MONITOR MASK FST	1
10	422-0591-01	SUB INSTR SH STC ENG	1
11	DYN-1013XUK	WIRE COVER BOX UK	1
12	DYN-2016XUK	PEDAL BASE UK	1
13	DYN-1300UK	ASSY ACCEL & BRAKE	1
14	RAL-2007	RUBBER HOLDER R TWIN	1
15	RAL-2008	RUBBER HOLDER L TWIN	1
16	440-DS0013XEG	STICKER D MONITOR	1
101	MO1029	ASSY CLR DSPL 29 TYPE 24K 100V	1
102	OS1174	CABLE TIE, NYLON 100mm	10
103	PP1001	COLLAR FOR NANA0 MONITOR	4
104	280-A02000-A	ROUTER TWIST D20 ADH	20
105	280-5112UK	BUSH FOR FST TV	4
106	FX0012	M6 WSH 25OD FLAT BZP	4
107	280-A01200-A	ROUTER TWIST D12 ADH	12
108	LB1096	STICKER PROTECTIVE EARTH	4
109	601-6231-C100	EDGING NEW TYPE	2
110	601-6231-D100	EDGING NEW TYPE	1
111	STC-2011-A	STICKER BASE LID R	1
205	FX0400	M8 WSHR FORM A FLT BNP	12
206	FX0445	M8X45 SET BNP	2
207	FS1019	M8 WSHR SPR BNP	2
208	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	14
212	FX0011	M4 NUT FLG SER BZP	4
214	FX0013	M6 NUT FLG SER BZP	4
215	LB1034	LABEL "HIGH VOLTAGE" 64 X 38mm	1
216	FX0402	M5X8 MSCR POSI CSK BZP	4
217	000-T00512-OB	M5X12 MSCR POSI TH BNP	7
218	000-T00530-OB	M5X30 MSCR POSI TH BNP	2
219	FS1027	M5 WSHR 19OD FLT BNP	5
221	008-B00830-OB	M8X30 MSCR TMP PRF BH BNP	4
222	008-T00416-OC	M4X16 MSCR TMP PRF TH CRM	4
225	030-000616-SB	M6X16 BLT W/S BNP	6
227	FS1018	M6 WSHR FORM C FLT BNP	6
228	FS1014	M8 WSHR FORM C FLT BNP	10
229	FX0409	M8X40 SET BNP	4
230	FS1019	M8 WSHR SPR BNP	10
231	FX0302	M5 NUT FLG SER BZP	2
232	OS1199	CLIP "P" ADHESIVE 25X25MMX15MM	2
233	OS1136	CLIP ADHESIVE 28X28MM X 10MM	2
234	FAS-300009	M8X20 BLT PVC	2
235	030-000816-SB	M8X16 BLT W/S BNP	4
236	FX0431	M4X12 MSCR POSI PAN BNP	4
237	FX0404	M4 WSHR SPR BNP	4
238	FS1009	M4 WSHR FORM A FLT BNP	4
239	030-000830-SB	M8X30 BLT W/S BNP	12
301	600-6634-21	WIRE HARN MONITOR	1
302	600-6634-23	WIRE HARN EXT CONT PNL B	1
303	600-6634-28	WIRE HARN EXT VOLUME B	1
304	600-6634-29	WIRE HARN SHIELD	1
306	600-6634-34UK	WIRE HARN EXT BILLBOARD UK	1
307	600-6373-77-91	WIRE HARNESS PLAYER SEL EXT B	1
308	LM9111	LOOM EARTH 300mm	2
309	LM9611	LOOM EARTH 1000mm	1
310	LM9511	LOOM EARTH 750mm	1

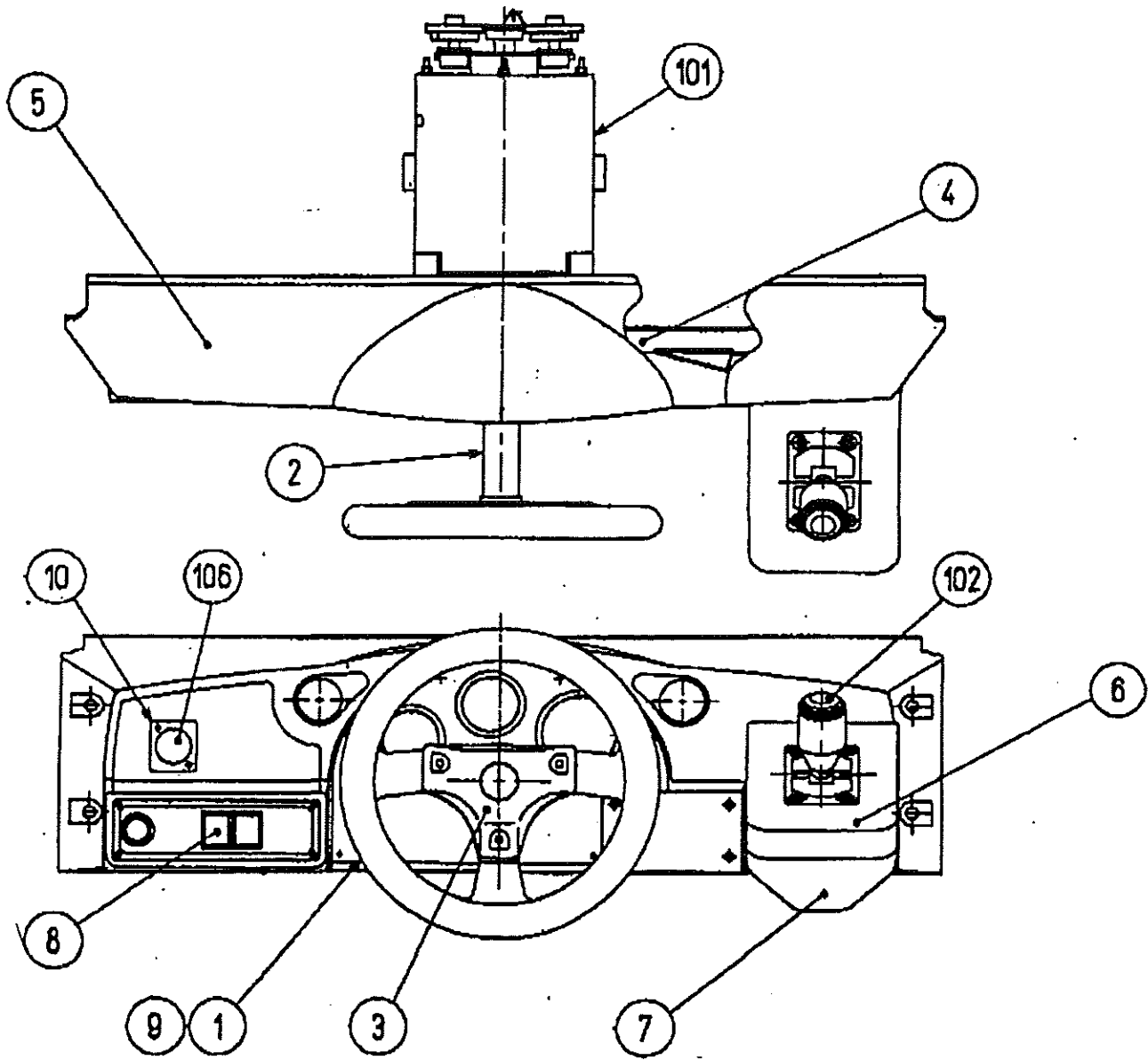


Seq. No.	Part Number	Description	Qty.
1	STC-12003UK	ASSY CONTROL PANEL TWIN M	1
2	MSB-2030UK	ASSY FLOOR FRONT UK	1
3	DYN-2040UK	ASSY FLOOR REAR	1
4	STC-21001UK	ASSY MAIN BASE STCC	1
5	STC-2200UK	ASSY SEAT TWIN	1
6	INY-1016UK	MONITOR SUPPORT UK	1
7	DYN-1015XUK	ROOF LID	1
8	DYN-1017UK	MASK HOLDER	1
9	TTR-1067UK	MONITOR MASK FST	1
10	422-0591-01	SUB INSTR SH STC ENG	1
11	DYN-1013XUK	WIRE COVER BOX UK	1
12	DYN-2016XUK	PEDAL BASE UK	1
13	DYN-1300UK	ASSY ACCEL & BRAKE	1
14	RAL-2007	RUBBER HOLDER R TWIN	1
15	RAL-2008	RUBBER HOLDER L TWIN	1
16	440-DS0013XEG	STICKER D MONITOR	1
101	200-5395-24-1SA	29 CRT ASSY FOR TERMINAL	1
102	OS1174	CABLE TIE, NYLON 100mm	10
103	PP1001	COLLAR FOR NANA0 MONITOR	4
104	280-A02000-A	ROUTER TWIST D20 ADH	20
105	280-5112UK	BUSH FOR FST TV	4
106	FX0012	M6 WSH 25OD FLAT BZP	4
107	280-A01200-A	ROUTER TWIST D12 ADH	12
108	LB1096	STICKER PROTECTIVE EARTH	4
109	601-6231-C100	EDGING NEW TYPE	2
110	601-6231-D100	EDGING NEW TYPE	1
111	STC-2011-A	STICKER BASE LID R	1
205	FX0400	M8 WSHR FORM A FLT BNP	12
206	FX0445	M8X45 SET BNP	2
207	FS1019	M8 WSHR SPR BNP	2
208	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	14
212	FX0011	M4 NUT FLG SER BZP	4
214	FX0013	M6 NUT FLG SER BZP	4
215	LB1034	LABEL "HIGH VOLTAGE" 64 X 38mm	1
216	FX0402	M5X8 MSCR POSI CSK BZP	4
217	000-T00512-OB	M5X12 MSCR POSI TH BNP	7
218	000-T00530-OB	M5X30 MSCR POSI TH BNP	2
219	FS1027	M5 WSHR 19OD FLT BNP	5
221	008-B00830-OB	M8X30 MSCR TMP PRF BH BNP	4
222	008-T00416-OC	M4X16 MSCR TMP PRF TH CRM	4
225	030-000616-SB	M6X16 BLT W/S BNP	6
227	FS1018	M6 WSHR FORM C FLT BNP	6
228	FS1014	M8 WSHR FORM C FLT BNP	10
229	FX0409	M8X40 SET BNP	4
230	FS1019	M8 WSHR SPR BNP	10
231	FX0302	M5 NUT FLG SER BZP	2
232	OS1199	CLIP "P" ADHESIVE 25X25MMX15MM	2
233	OS1136	CLIP ADHESIVE 28X28MM X 10MM	2
234	FAS-300009	M8X20 BLT PVC	2
235	030-000816-SB	M8X16 BLT W/S BNP	4
236	FX0431	M4X12 MSCR POSI PAN BNP	4
237	FX0404	M4 WSHR SPR BNP	4
238	FS1009	M4 WSHR FORM A FLT BNP	4
239	030-000830-SB	M8X30 BLT W/S BNP	12
301	600-6634-21	WIRE HARN MONITOR	1
302	600-6634-23	WIRE HARN EXT CONT PNL B	1
303	600-6634-28	WIRE HARN EXT VOLUME B	1
304	600-6634-29	WIRE HARN SHIELD	1
306	600-6634-34UK	WIRE HARN EXT BILLBOARD UK	1
307	600-6373-77-91	WIRE HARNESS PLAYER SEL EXT B	1
308	LM9111	LOOM EARTH 300mm	3
309	LM9611	LOOM EARTH 1000mm	1
310	LM9511	LOOM EARTH 750mm	1



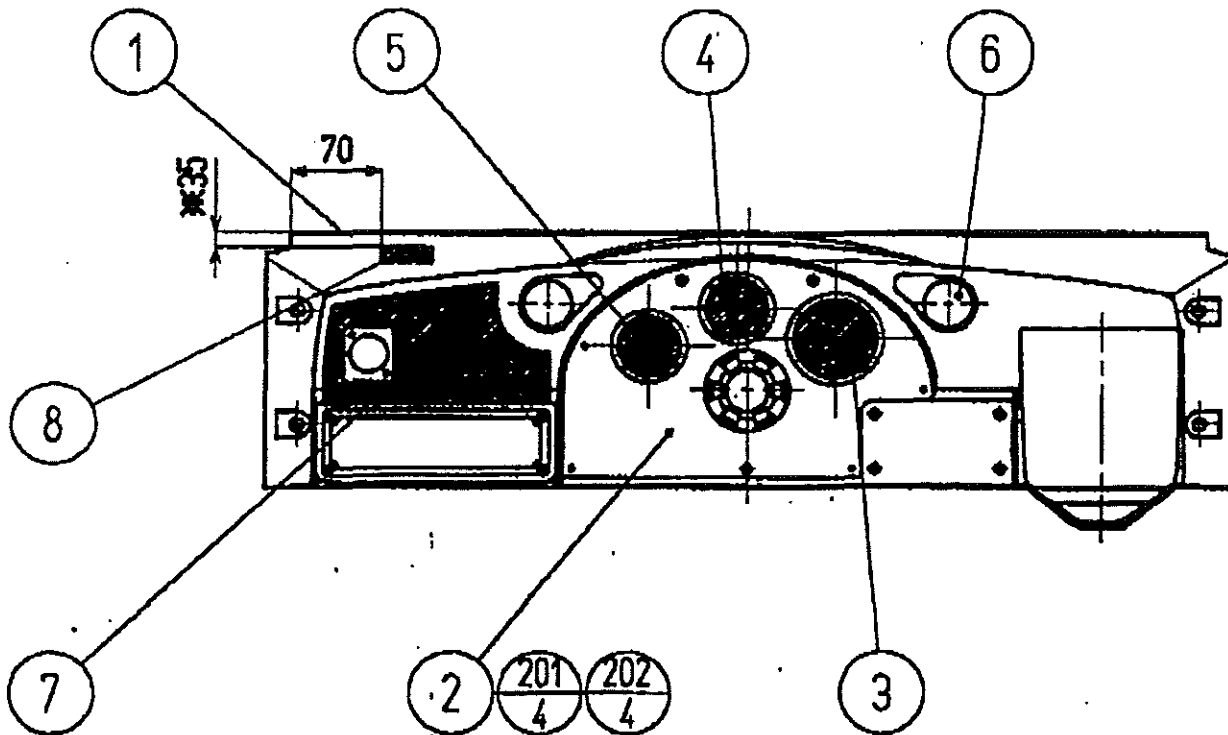
## 11. CONTROL PANEL ASSEMBLY STC-12003UK

Seq. No.	Part Number	Description	Qty.
1	DYN-1201	STEERING WHEEL (270)	1
2	DYN-1209	HANDLE COLLAR, DAYTONA	1
3	INY-1203	STEERING EMLBEM	1
4	INY-1205UK	CONTROL PANEL BRKT TWIN UK	1
5	STC-1202-02	CONTROL PANEL COVER TWIN	1
6	INY-1204	SHIFT COVER INY	1
7	DYN-1223	SHIFT COVER B DAYTONA SEGA	1
8	INY-1250	ASSY VIRTUAL BUTTON	1
9	FS4031	M8 WSHR 25OD FLT BNP	2
10	117-5164	PLATE START 37x42mm DAYTONA	1
11	DYN-0010UK	DENOMI PLATE	1
101	610-0383	ASSY HANDLE MECHA W/MOTOR	1
102	610-0408	UP/DOWN SHIFTER AL	1
103	OS1174	CABLE TIE, NYLON 100mm	10
104	280-A02000-A	ROUTER TWIST D20 ADH	5
105	280-A01000-A	ROUTER TWIST D10 ADH	2
106	509-5440	PUSH BTN SW IT GRN W/L DC 14V	1
107	OS1181	CABLE TIE BASE 19mmSq SELF/ADH	2
201	FX0261	M8 WSHR SPR BZP	5
202	FX0213	M8 NUT BZP	5
203	008-T00512-OB	M5X12 MSCR TMP PRF TH BNP	3
204	000-T00416-OB	M4X16 MSCR POSI TH BNP	3
205	000-T00416-OC	M4X16 MSCR POSI TH CRM	4
206	000-P00412-W	M4X12 MSCR POSI PAN W/FS PAS	3
207	008-T00516-OB	M5X16 MSCR TMP PRF TH BNP	4
208	FX0011	M4 NUT FLG SER BZP	2
209	FX0319	M3 NUT FLG SER BZP	2
210	000-T00416-OC	M4X16 MSCR POSI TH CRM	8
301	600-6634-24	WIRE HARN SHIFTER	1
302	600-6634-25	WIRE HARN VR BUTTON	1
303	600-6634-32	WIRE HARN EXT MOTOR	1
304	600-6634-33	WIRE HARN EARTH MOTOR	1
305	600-6373-78	WIRE HARNESS PLAYER SEL SW	1
306	LM9512	LOOM EARTH 750mm	1
307	LM9322	LOOM EARTH 500mm	1



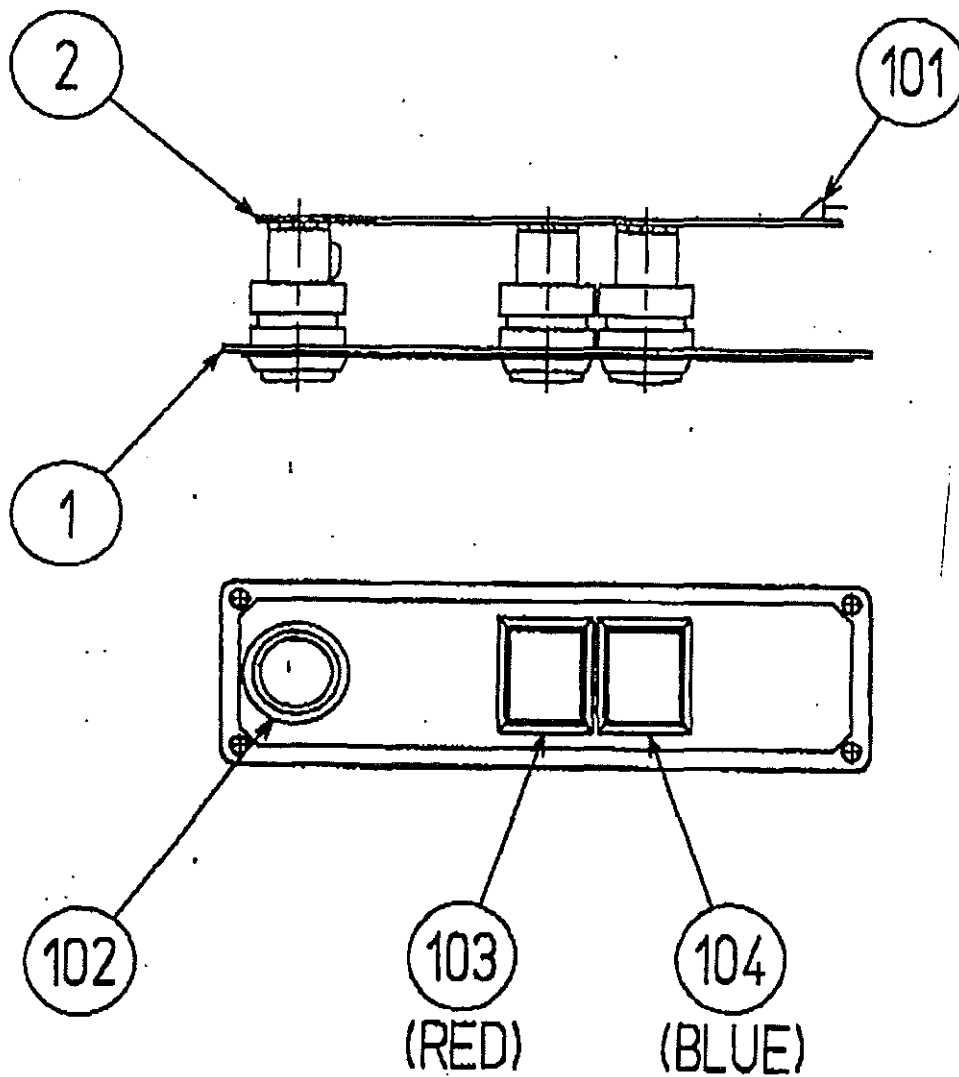
## 12. CONTROL PANEL COVER STC-1202-02

Seq. No.	Part Number	Description	Qty.
1	DYN-1214-A	CONTROL PANEL COVER BLANK	1
2	RAL-1205-A	METER PANEL	1
3	DYN-1214-C	DESIGN PLATE TACO METER TWIN	1
4	DYN-1214-D	DESIGN PLATE OIL METER TWIN	1
5	DYN-1214-E	DESIGN PLATE WATER METER TWIN	1
6	DYN-1203	TWEETER NET	2
7	422-0593-01	PLAY INTR SHT STC TWIN ENG	1
201	047-PA3207-6	RVT OPEN TYPE AL 3.2 x 7.6	
202	060-F00300	M3 FLT WSHR	



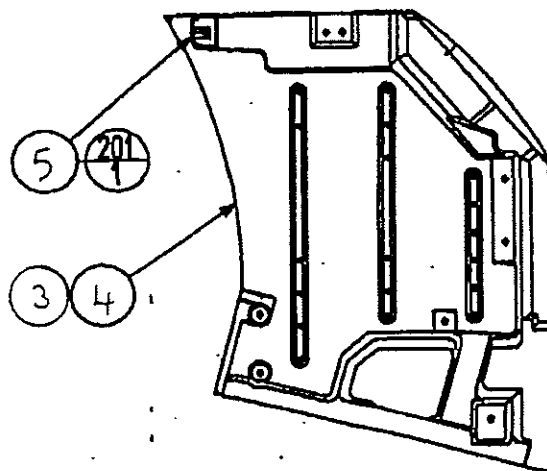
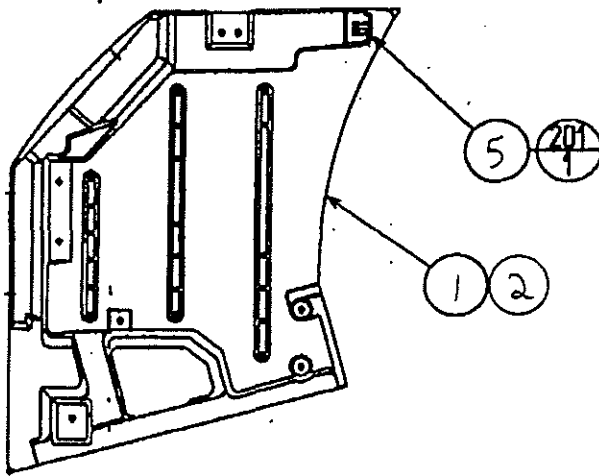
### 13. VIRTUAL BUTTON ASSEMBLY INY-1250

Seq. No.	Part Number	Description	Qty.
1	INY-1251	VR SW BRACKET	1
2	171-6478B	PC BD LIGHTING SWx5	1
101	212-5205-12	CONN JST M 12P RTA	1
102	509-55600Y	PB SW W/L 6V 1L R	1
103	509-5561-R	PB SW W/L 6V 5L R	1
104	509-5561-S	PB SW W/L 6V 5L S	1



### 14. MONITOR HANDING KIT STC-7000UK

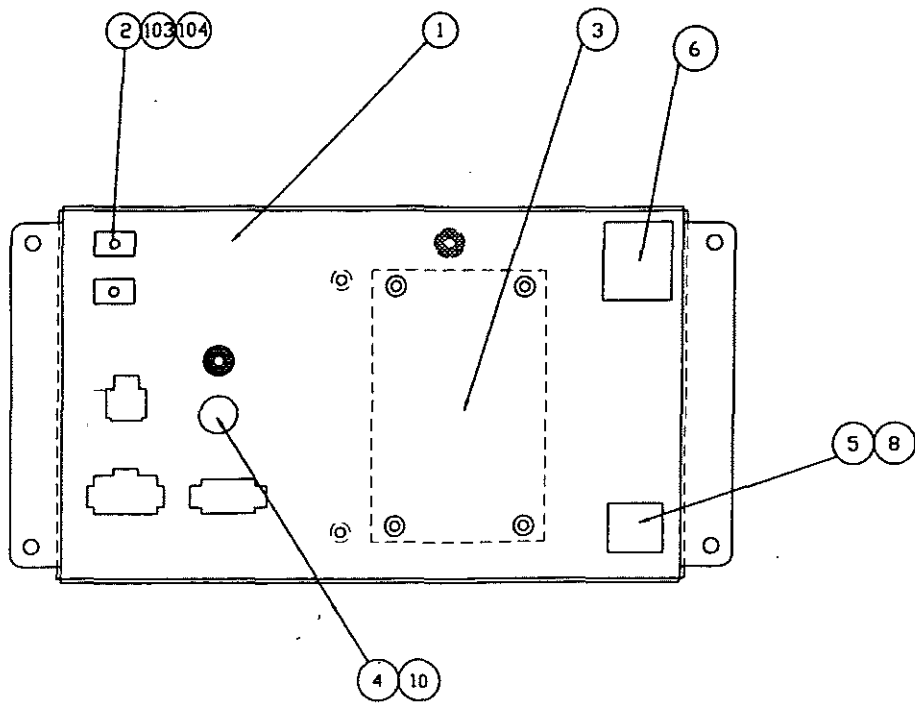
Seq. No.	Part Number	Description	Qty.
1	STC-1031	COVER PANEL L 1P	1
2	STC-1031-A	COVER PANEL L BLANK	1
3	STC-1061	COVER PANEL R 2P	1
4	STC-1061-A	COVER PANEL R BLANK	1
5	DYN-1032UK	MASK BRKT	4
6	SDW-0001UK	BLIND CAP UK	12
201	000-P00408-W	M4X8 MSCR POSI PAN W/FS PAS	4



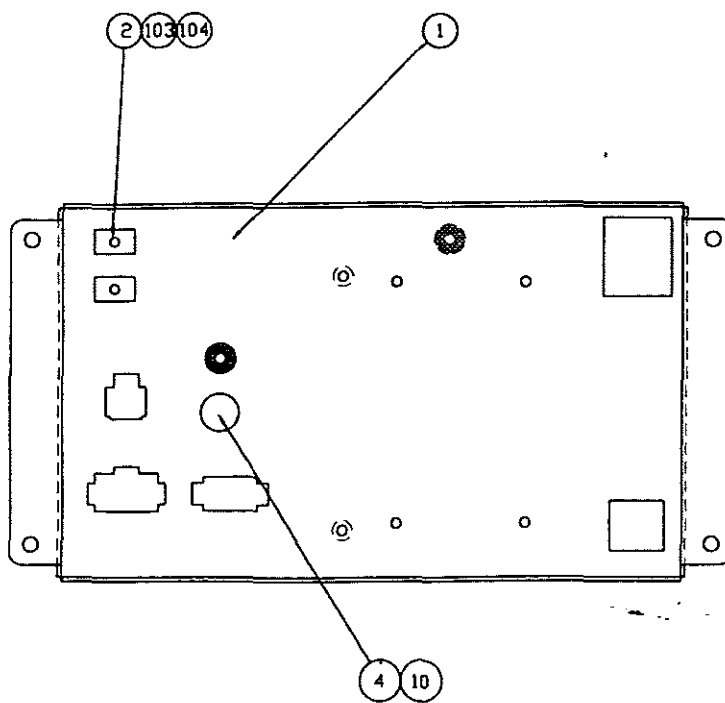
## 15. HANDING KIT STC-6000UK

Seq. No.	Part Number	Description	Qty.
1	STC-0401UK	AC BRKT UK	2
2	211-5479	CONN OPT JOINT PNL-TOCA150	4
3	EP1344	FILTER EMI 10A BLP	1
4	EP1334	FUSE HOLDER 20mm 10A 240Vac	2
5	EP1302	EUROSOCKET FUSED 10A 250Vac	1
6	EP1303	SWITCH ROCKER DPST 10A 250Vac	1
8	514-5078-10000	FUSE 5X20 CERAMIC SB 10000mA	1
10	514-5078-5000	FUSE 5X20 CERAMIC SB 5000mA	2
11	STC-1605	SEAT REAR COVER	1
12	STC-2202	SEAT REAR COVER 2P	1
101	LB1000	LABEL 5A (AC BRKT FUSE)	2
102	LB1037	LABEL 10A FUSE	1
103	LB1087	STICKER FIBRE CABLE RX	2
104	LB1088	STICKER FIBRE CABLE TX	2
105	LB1096	STICKER PROTECTIVE EARTH	4
106	LB1099	STICKER FUSE TYPE F	1
107	LB1100	STICKER FUSE TYPE T	1
108	LB1098	STICKER SWITCH 1-O	1
201	FX0037	M4X12 MSCR POSI PAN BZP	4
202	FX0243	M4 WSHR SPR BZP	4
203	FX0009	M4 WSHR FORM A FLT BZP	4
204	FX0011	M4 NUT FLG SER BZP	2
205	FX0029	M3X10 MSCR POSI PAN BZP	8
301	600-6373-60UK	WIRE HARN AC UNIT SUB	1
302	600-6775-102	WIRE HARN AC BRKT (MAIN)	1
303	LM9111	LOOM EARTH 300mm	2

### AC UNIT MAIN



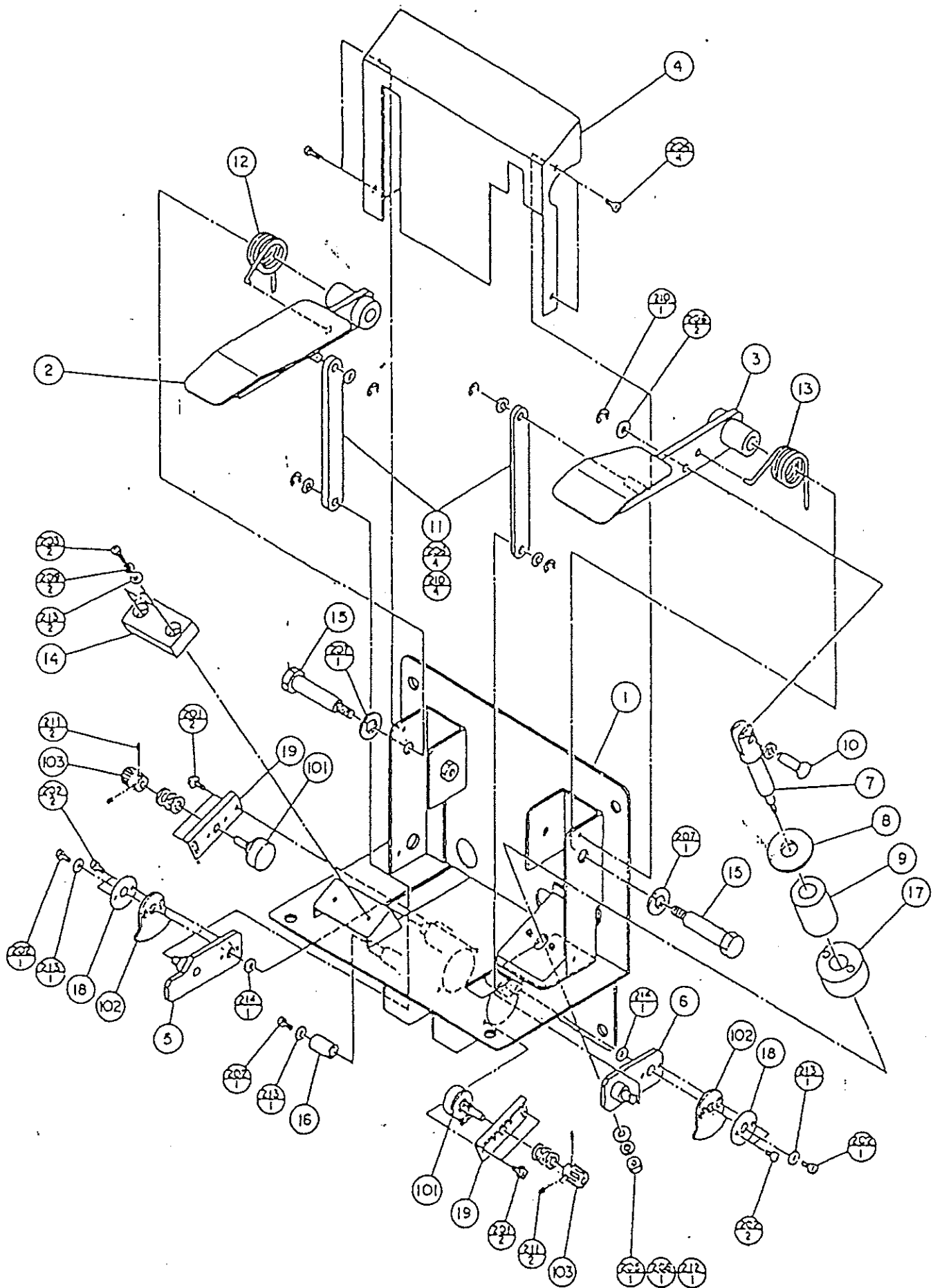
### AC UNIT SUB



16. MAIN BASE ASSEMBLY STC-21001UK

Seq. No.	Part Number	Description	Qty.
1	MSB-1121UK	MAIN BASE UK	1
2	STC-4400	ASSY MAIN BD BASE	1
3	STC-4500UK	ASSY ELEC BASE	1
4	MP1208	BRKT FAN DAYTONA	1
5	INY-1014UK	MONITOR STAND UK	1
6	MA1007	CASTOR SWIVEL 63mm NYLON	4
7	MA1011	FOOT ADJUST M16X95 TYPE C	4
101	260-0011-02	AXIAL FLOW FAN AC100V 50-60Hz	2
102	600-6275-0150	ASSY FIBER OPTIC I5 0150CM	2
105	OS1174	CABLE TIE, NYLON 100mm	10
107	FN1012	MESH GUARD METAL 120mm FAN	2
108	LB1084	LABEL AC VOLTAGE SET TO:	1
109	LB1096	STICKER PROTECTIVE EARTH	3
110	STC-2002	STICKER BASE L	1
111	STC-2003	STICKER BASE R	1
201	FX0040	M4X25 MSCR POSI PAN BZP	4
202	FX0301	M4 WSHR 16OD FLT BZP	4
203	FX0037	M4X12 MSCR POSI PAN BZP	2
204	FX0009	M4 WSHR FORM A FLT BZP	2
205	FX0320	N10X1/2" S/TAP HEX BZP	8
206	FX0245	M5 WSHR FORM A FLT BZP	4
207	OS1195	RIVET SNAP MOSS SR1811	8
208	FX0019	M4 WSHR S/PRF BZP	2
209	FX0011	M4 NUT FLG SER BZP	1
210	FX0201	M8X16 SET BZP	16
211	FX0261	M8 WSHR SPR BZP	16
212	FX0408	M8X60 SET BNP	8
213	FS1014	M8 WSHR FORM C FLT BNP	8
214	FS1019	M8 WSHR SPR BNP	8
215	OS1221	FOAM STRIP, OPEN CELL, SEL/AD	0.1
216	280-A02000-A	ROUTER TWIST D20 ADH	10
301	600-6373-12-91UK	WIRE HARN AC FAN REAR UK	1
302	600-6373-35UK	WIRE HARN AC FAN UK	1
303	600-6634-22	WIRE HARN EXT CONT PNL A	1
304	600-6634-26	WIRE HARN EXT TOWER	1
305	600-6634-27	WIRE HARN EXT VOLUME A	1
306	600-6634-38	WIRE HARN EXT RGB B	1
307	600-6775-009	WIRE HARN MAIN BASE 2	1





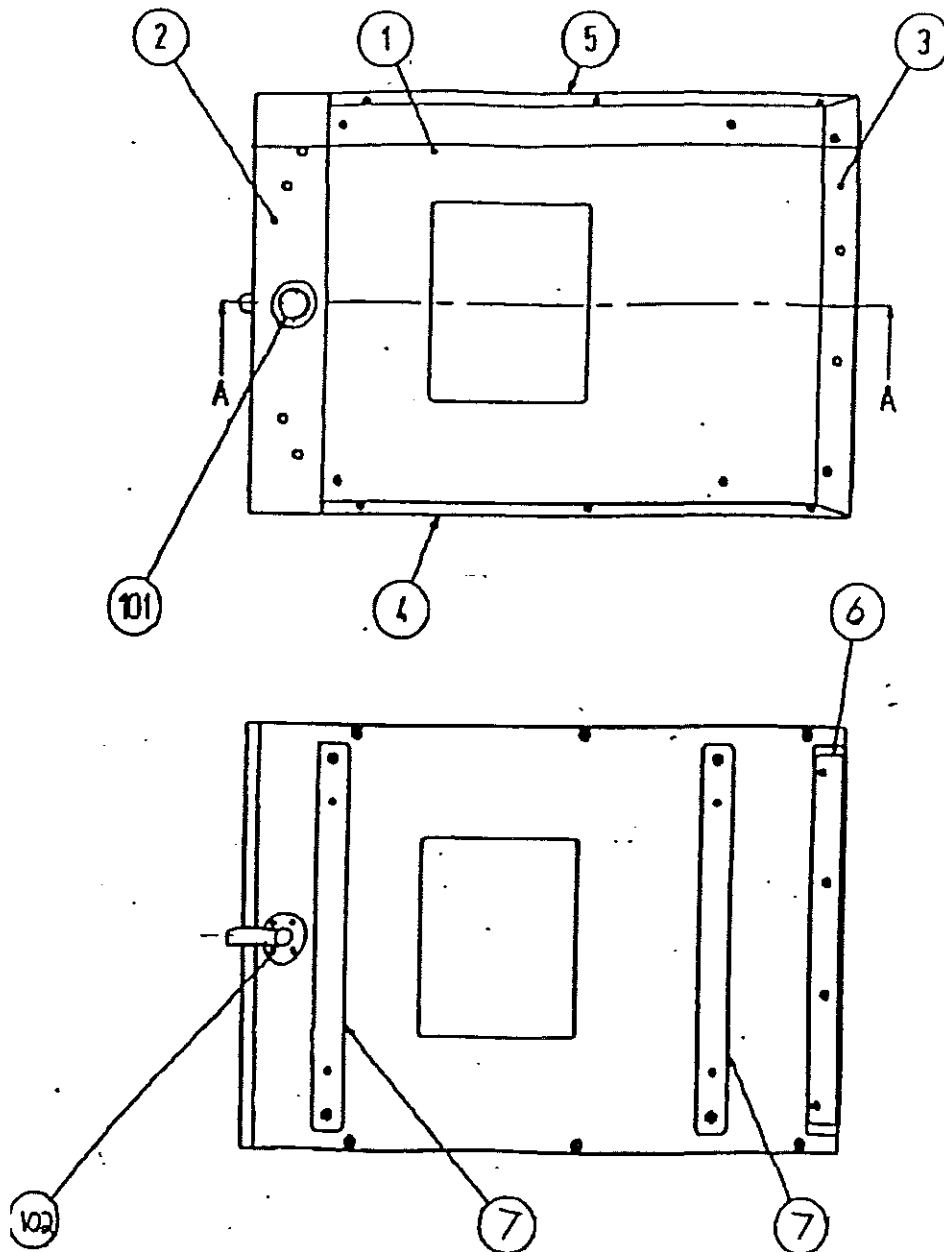


## 17. BRAKE & ACCELERATOR ASSEMBLY DYN-1300UK

Seq. No.	Part Number	Description	Qty.
1	DYN-1301	PEDAL BASE,DYN-1300 ASSY	1
2	DYN-1306	PEDAL ACCEL,DYN-1300 ASSY,AL.	1
3	DYN-1307	AEDAL BRAKE,DYN-1300 ASSY,AL.	1
4	BVG-1404	PEDAL COVER,DYN-1300 ASSY,S.S.	1
5	BVG-1405	SWING ARM A,DYN-1300 ASSY.	1
6	BVG-1406	SWING ARM B,DYN-1300 ASSY.S.S.	1
7	BVG-1407	PUSH ROD,DYN-1300 ASSY	1
8	BVG-1408	PUSH PLATE,DYN-1300 ASSY.	1
9	DYN-1302	RUBBER DAMPER,PEDAL ASSY	1
10	BVG-1410	PUSH ROD PIN,DYN-1300 ASSY.	1
11	BVG-1411	LINK ROD,DYN-1300 ASSY.	2
12	DYN-1303	SPRING,DYN-1300 ACCEL TORSION	1
13	BVG-1413	SPRING,DYN-1300 BRAKE TORSION	1
14	BVG-1414	RUBBER STOPPER BLOCK,PEDAL ASY	1
15	BVG-1415	PEDAL SHAFT,DYN-1300 ASSY.	2
16	BVG-1416	SWING ARM STOPPER,DYN-1300ASSY	1
17	BVG-1417	SPACER,DYN-1300 ASSY	1
18	GLC-2122	GEAR PLATE,DYN 1300 ASSY.	2
19	RDM-1210	VR BRKT,DYN-1300 ASSY.	2
101	220-5484	VOL CONT B-5K OHM	2
102	601-6005	ADJUST GEAR,DYN-1300 ASSY.	2
103	601-7945	GEAR 20	2
104	OS1034	SLEEVE H 20 BLACK	6
105	OS1174	CABLE TIE, NYLON 100mm	1
106	OS1181	CABLE TIE BASE 19mmSq SELF/ADH	1
201	000-P00408-W	M4X8 MSCR POSI PAN W/FS PAS	6
202	000-P00408-S	M4X8 MSCR POSI PAN W/S	7
203	000-P00416-OB	M4X16 MSCR POSI PAN BNP	2
204	008-T00408-OB	M4X8 TMP PRF SCR TH BLK	4
205	FX0212	M6 NUT BZP	1
206	FX0400	M8 WSHR FORM A FLT BNP	6
207	060-S01200-OB	M12 WSHR SPR BNP	2
208	FX0255	M6 WSHR SPR BZP	1
209	FX0404	M4 WSHR SPR BNP	2
210	065-E00600	E RING 6MM	5
211	028-A00308-P	M3X8 SET SCR HEX SKT CUP P	4
212	068-652016	FLT WSHR 6.5-20X1.6	1
213	DYN-1304	WSHR 4.4-12 X 1.6 FLT BNP	5
214	DYN-1305	FLT WSHR 12.2 -22 X 0.5	2
301	LM9111	LOOM EARTH 300mm	1
302	600-6178-54	WIRE HARN ACCEL & BRAKE	1

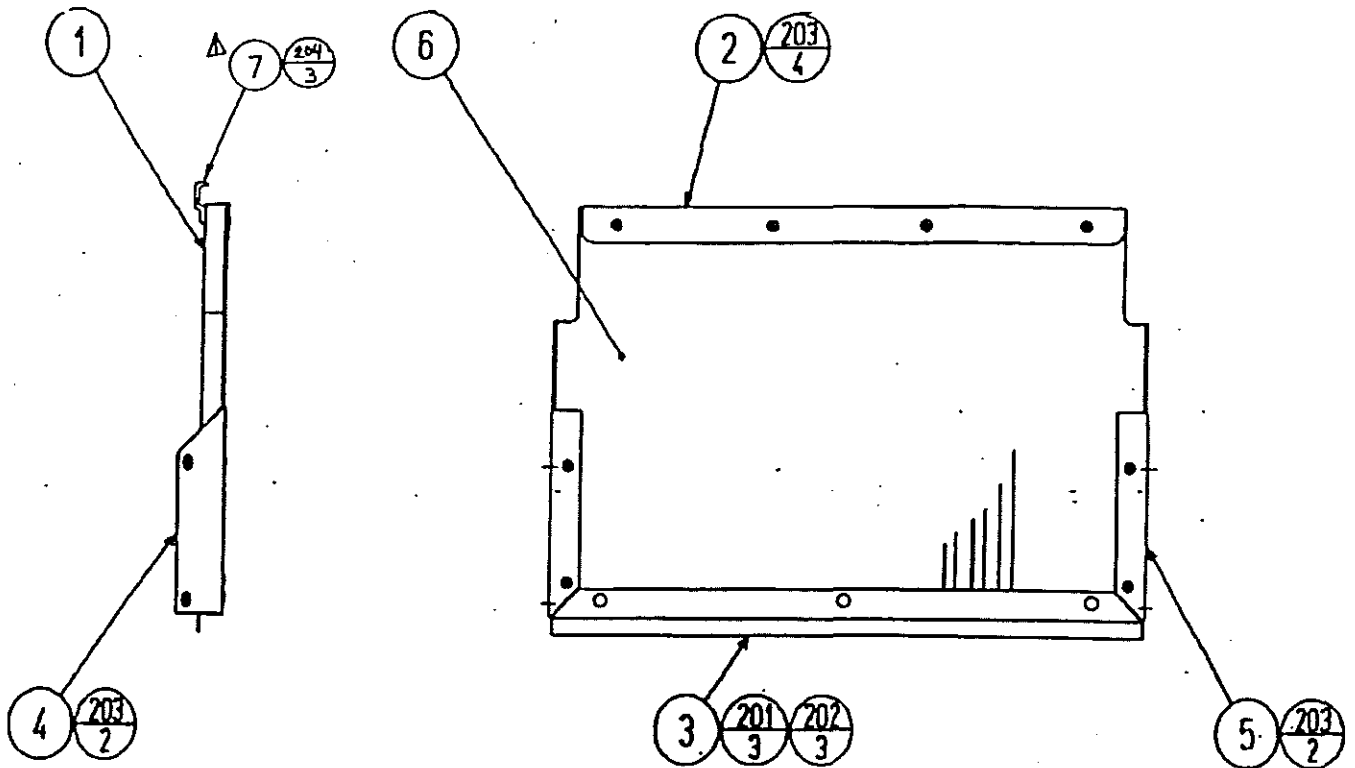
18. FLOOR REAR ASSEMBLY DYN-2040UK

Seq. No.	Part Number	Description	Qty.
1	DYN-2041UK	FLOOR REAR DAYTONA	1
2	RAL-XXXX-8UK	FLOOR EDGE R F	1
3	DYN-2043UK	FLOOR EDGE R R DAYTONA	1
4	DYN-2044UK	FLOOR EDGE R LEFT DAYTONA	1
5	DYN-2045UK	FLOOR EDGE R RIGHT DAYTONA	1
6	DYN-2006UK	HINGE 480 DAYTONA	1
7	DYN-2049UK	NUT PLATE (SEAT) DYN UK	2
101	CH1194	LOCK RADIAL WITH TONGUE, RALLY	1
201	FX0302	M5 NUT FLG SER BZP	8
202	031-000530-OC	M5X30 CRG BLT CRM	8
204	000-T00420-OC	M4X20 MSCR POSI TH CRM	6
205	FX0163	N8X1/2" S/TAP POSI FLG BZP	4



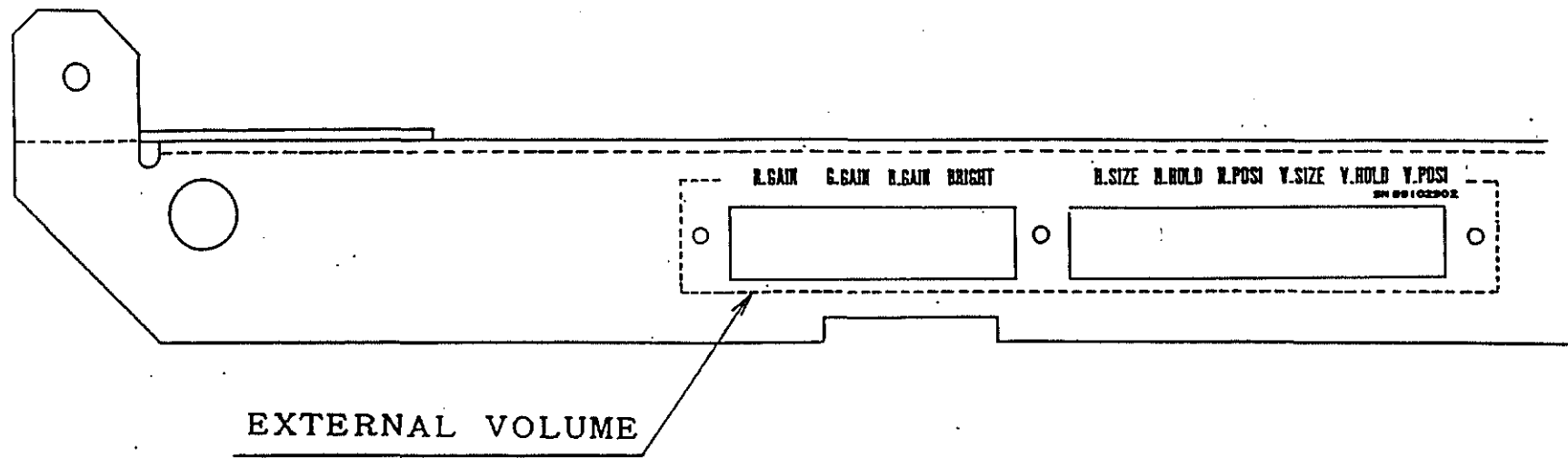
### 19. FLOOR FRONT MSB-2030UK

Seq. No.	Part Number	Description	Qty.
1	MSB-2031UK	FLOOR FRONT UK	1
2	DYN-2032XUK	FLOOR EDGE F FRONT UK	1
3	DYN-2033UK	FLOOR EDGE F R DAYTONA	1
4	DYN-2034XUK	FLOOR EDGE F LEFT UK	1
5	DYN-2035XUK	FLOOR EDGE F RIGHT UK	1
7	DYN-2037XUK	WATER DEFLECTOR	1
8	RAL-XXXX-3UK/B	ASSY FLOOR FRONT UK (BULK)	1
201	031-000530-OC	M5X30 CRG BLT CRM	3
203	000-T00420-OC	M4X20 MSCR POSI TH CRM	8



20. SEAT ASSEMBLY STC-2200UK

Seq. No.	Part Number	Description	Qty.
1	STC-1650	ASSY SUB WOOFER STCC	1
2	STC-1601-A	UPPER SEAT BLANK	1
3	STC-1601-B	UPPER SEAT INSERT	1
4	STC-1602-A	LOWER SEAT BLANK	1
5	STC-1602-B	LOWER SEAT INSERT	1
6	STC-1603	SEAT BASE	1
7	STC-1604	SEAT FRAME	2
8	STC-1606	SEAT MOUNT TRAY	1
9	STC-1607	SP MOUNT BRKT	2
10	STC-1608	SPEAKER NET L	1
11	STC-1609	SPEAKER NET R	1
12	STC-1610	SAFETY GUARD	1
13	STC-1611	CABLE BEAR BRKT	1
14	STC-1612	PROTECT RUBBER	2
15	STC-1613	SAFETY GUARD F	1
101	601-7942	SEAT RAIL AL L	1
102	601-7981	SEAT RAIL AL R	1
103	130-5159	GULL BOX SPEAKER 8 OHM 5W	2
105	601-6563-188	BUSH 2.4T	1
106	601-6563-100	BUSH 2.4T	1
107	280-5297	SCRIVET 8 1K31	6
108	OS1004	DRAFT EXCLDR 4 X7MM BLK 1 MTR.	0.75
109	OS1236	SURFACE CLEANER 3M VHB	0.25
110	OS1235	ADHESIVE TAPE 3M 950 50mm WIDE	3.5
111	OS1234	ADHESIVE TAPE 3M 927 50mm WIDE	3.5
112	OS1174	CABLE TIE, NYLON 100mm	3
113	OS1181	CABLE TIE BASE 19mmSq SELF/ADH	5
201	000-P00410-W	M4X10 MSCR POSI PAN W/FS	14
202	030-000850-SB	M8X50 BLT W/S BNP	8
203	030-000816-S	M8X16 BLT W/S PAS	4
204	000-T00408-OB	M4X8 MSCR POSI TH BNP	8
205	FX0213	M8 NUT BZP	8
206	FX0261	M8 WSHR SPR BZP	8
207	FX0258	M8 WSHR 22OD FLT BZP	20
208	FX0155	N6X1/2" S/TAP POSI FLG BZP	8
210	000-T00616-OB	M6X16 MSCR TH POSI BNP	4
211	FX0301	M4 WSHR 16OD FLT BZP	12
301	600-6774-016	WIRE HARN SPEAKER EXT	1
302	600-6774-017	WIRE SEAT EXT	1

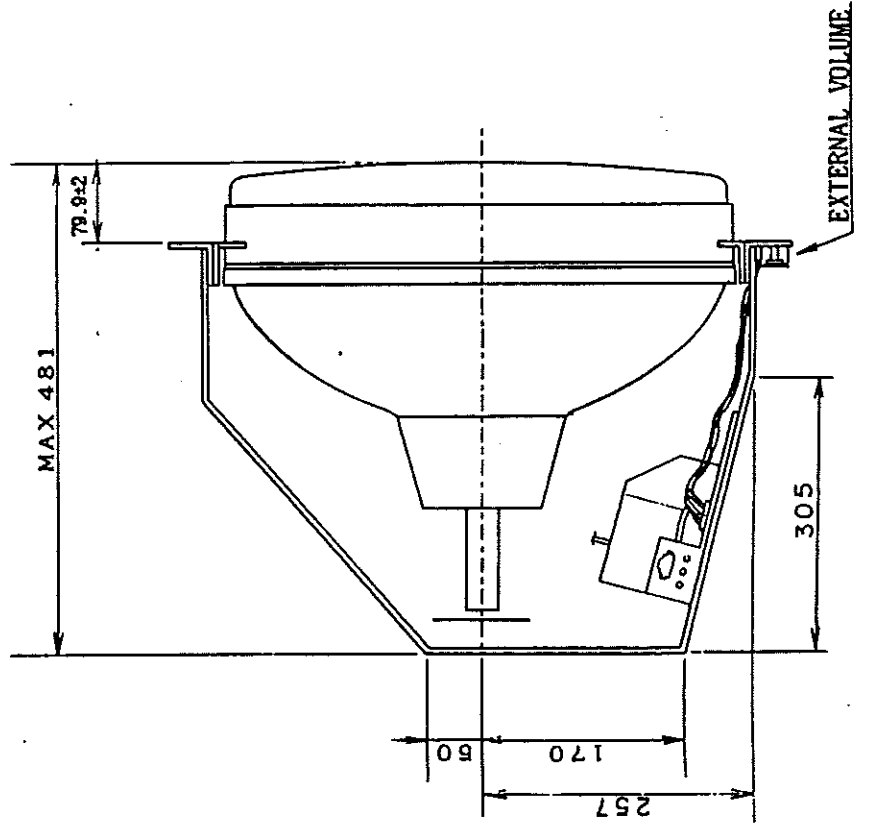
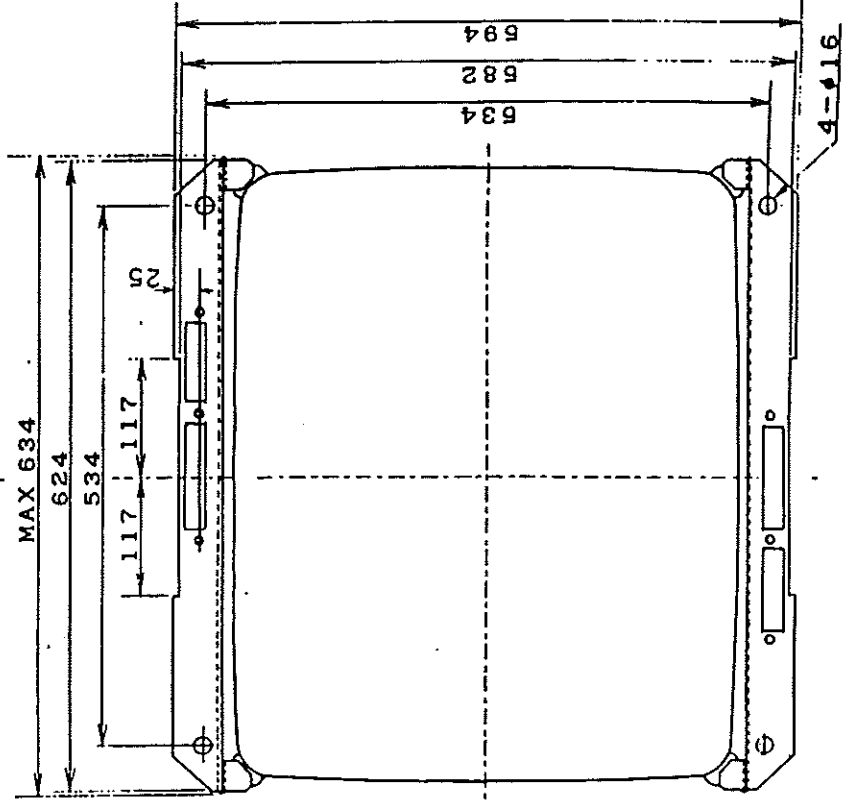
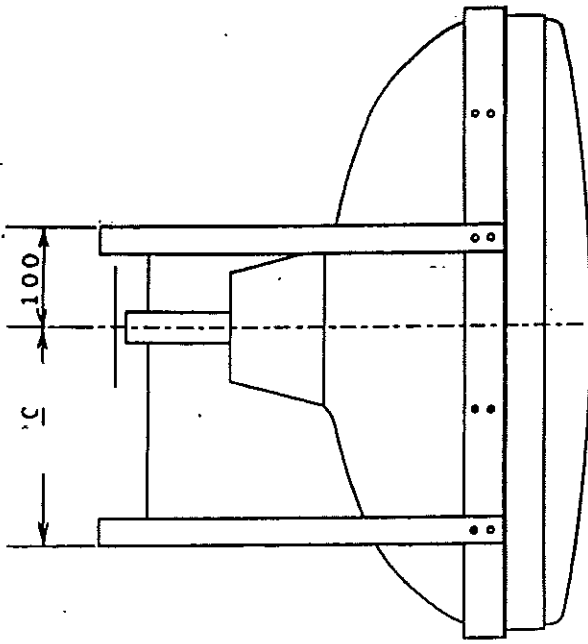


U-P connector pin assign label

5				1
GND	SYNC	B	G	R
DEM	DEM		AC	AC
15			11	

\* Connect only switch to DEM

OUTLINE OF 29" MONITOR  
 DIMENSIONS: mm





## Function adjustment

- ① R. GAIN (VR151) Red signal input gain, to be deep red when turn on right.
- ② G. GAIN (VR152) Green signal input gain, to be deep green when turn on right
- ③ B. GAIN (VR153) Blue signal input gain, to be deep blue when turn on right.
- ④ BRIGHT (VR481) Brightness, to be bright when turn on right.
- ⑤ H. SIZE (VR455) Horizontal size, adjust a video horizontal size.
- ⑥ H. HOLD (VR342) Horizontal synchronization holding, adjust a drifting out to right and left of video image.
- ⑦ H. POSI (VR451) Horizontal position, adjust a horizontal raster position.
- ⑧ V. SIZE (VR353) Vertical size, adjust a video vertical size.
- ⑨ V. HOLD (VR341) Vertical synchronization holding, adjust a drifting out to top and bottom of video image.
- ⑩ V. POSI (VR351) Vertical position, adjust a vertical raster position.
- ⑪ R. BLK (VR201) Red signal blanking, adjust a cut-off point, to be deep red when turn on right.
- ⑫ G. BLK (VR202) Green signal blanking, adjust a cut-off point, to be deep green when turn on right.
- ⑬ B. BLK (VR203) Blue signal blanking, adjust a cut-off point, to be deep blue when turn on right.
- ⑭ PCC PHASE (VR453) Pin-cushion control PHASE, adjust a phase for horizontal deflect distortion.
- ⑮ PCC AMP (VR454) Pin-cushion control AMP, adjust a horizontal deflect distortion
- ⑯ H SUB HOLD (VR343) Horizontal synchroniation sub holding at 15KHz mode, adjust a horizontal synchronization holding at mode 1.
- ⑰ V. LIN (VR354) Vertical linearity, adjust a spread the upper part of image.
- ⑱ CN405 Change of frequency connector, correspond to 24.83KHz.
- ⑲ CN404 Change of frequency connector, correspond to 15.75KHz.
- ⑳ CN402
- ㉑ CN401
- ㉒ CN302

See Fig Change of vertical polarity the deflection yoke.

	㉒ CN302 normal	㉒ CN302 reversed
㉒ CN402 inserted to normal	normal picture	vertical reversed picture
㉒ CN402 inserted to reverse	horizontal and vertical reversed picture	horizontal reversed picture

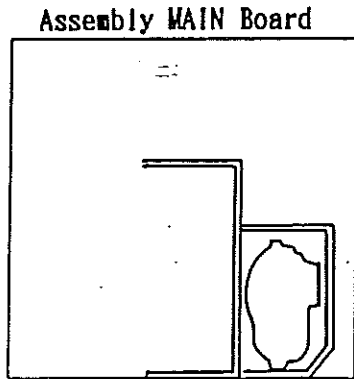
- ㉓ FOCUS Focus , adjust a best position.
- ㉔ SCREEN Screen , adjust a best position.

5. Power. When working on or near this product ensure that the power is disconnected from the mains at the wall.
6. Magnetism. If a magnet of any sort is placed in the vicinity of this product then the picture and colour will be distorted. This is rectified using the Demagnetisation coil fitted to the monitor.
7. Static Electricity. If the screen is touched then a small static charge is felt. This is not a problem and does not harm the human body.

## PRECAUTIONS

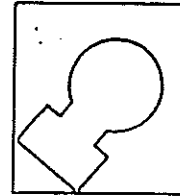
1. Shock. Do not subject this product to shock when in transit, this may cause damage.
2. High Voltage Point. Under no circumstances touch any of the High Voltage areas of this product. If there is any reason to touch any parts of this product ensure that the power has been disconnected from the mains at the wall.

### ◇ Dangerous high voltage point



27K volts  
max. 29K volts

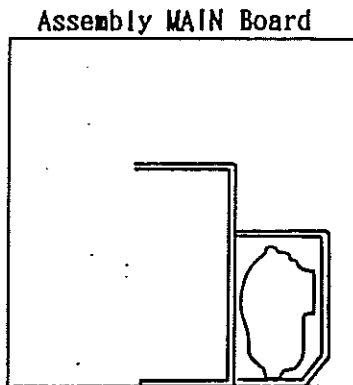
Assembly CRT/D Board



max. 10K volts

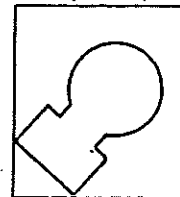
3. Volume Adjustments. Do not adjust the Volume settings on this product. If any Volume must be adjusted follow the correct procedure as improper adjustment will cause damage over long periods.
4. High Temperature Points. Under no circumstances should flammable material come into contact with this as there are certain points that run at a high temperature. If flammable material should come into contact with these points then a fire or electric shock may be caused.

### ◇ Dangerous high temperature point



max. 75°C

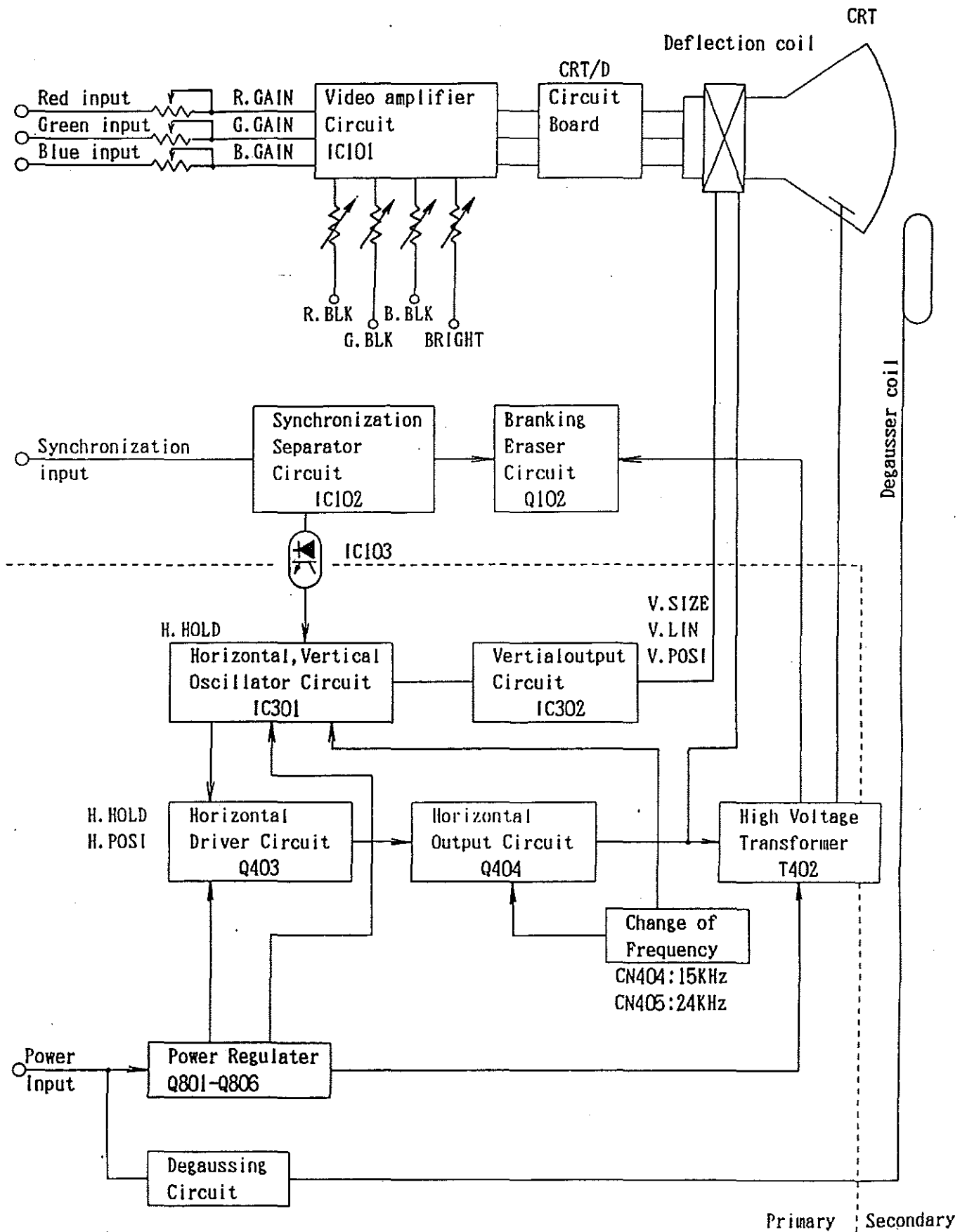
Assembly CRT/D Board



max. 80°C

\*Condition : The surroundings temperature at 40°C

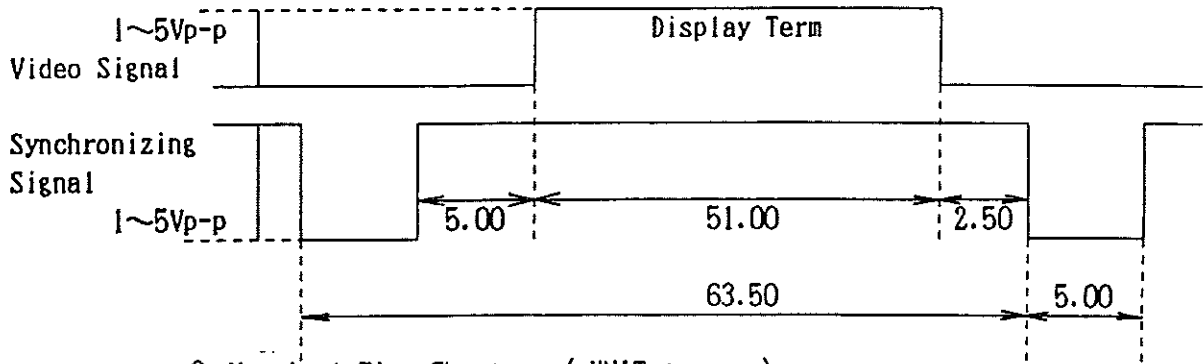
# Block Diagram



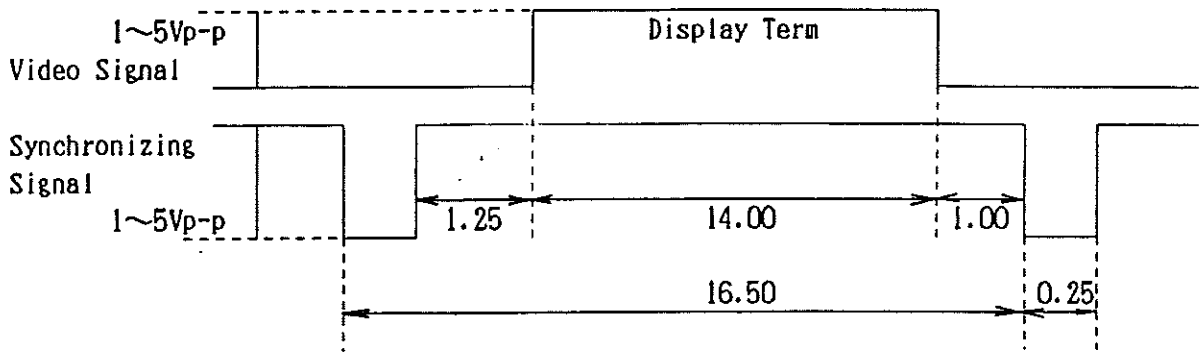
Timing Chart

( MODE 1 ) 15.75KHz

◇ Horizontal Time Chart ( UNIT :  $\mu\text{sec}$  )

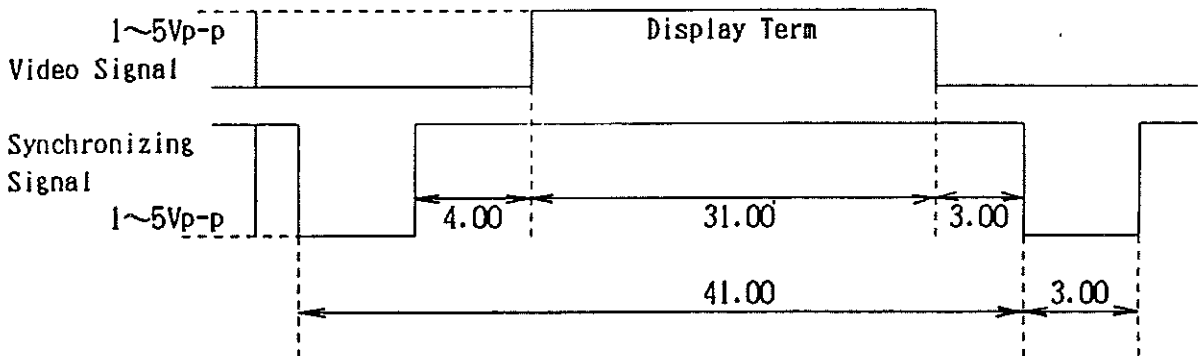


◇ Vertical Time Chart ( UNIT : msec )

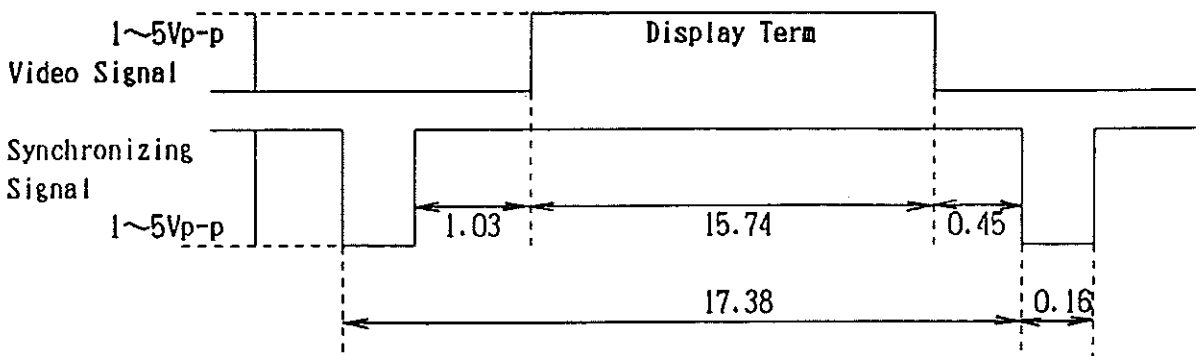


( MODE 2 ) 24.83KHz

◇ Horizontal Time Chart ( UNIT :  $\mu\text{sec}$  )



◇ Vertical Time Chart ( UNIT : msec )



#### 4. Adjustment

Position	Adjustments	Description
VR BOARD	H. HOLD	Horizontal Synchronization Holding
	H. SIZE	Horizontal Amplitude Gain
	H. POSITION	Horizontal Position
	R. GAIN	Red Signal input Gain
	G. GAIN	Green Signal input Gain
	B. GAIN	Blue Signal input Gain
	V. HOLD	Vertical Synchronization Holding
	V. SIZE	Vertical Amplitude Gain
	V. POSITION	Vertical Position
	BRIGHT	Brightness
MAIN BOARD	R. BLK	Red Signal Cut-off
	G. BLK	Green Signal Cut-off
	B. BLK	Blue Signal Cut-off
	PCC	Horizontal Deflection Distortion
	PHASE	Phase Distortion
	V. LIN	Vertical Linearity
	CN302	Function of Reverse Polarity
	CN401, CN402	Function of Reverse image
	CN404, CN405	Function of Change Frequency (CN404:15KHz/CN405:24KHz)
Side of Casing	FOCUS	Focus Adjustment
	SCREEN	Cut-off Point Adjustment

#### 5. Environmental

- |                              |  |
|------------------------------|--|
| A. Operational conditions    | Temperature            0°C to 40°C<br>Relative Humidity $\leq$ 70% st 40°C                         |
| B. Storage conditions        | Temperature            -10°C to 60°C<br>Relative Humidity $\leq$ 80%                               |
| C. Drop shock resistivity    | 40cm (at package dropped from bottom)  |
| D. AC line noise resistivity | No pull out permitted when 500Vp-p is applied by noise simulator.                                  |
| E. Vibration resistivity     | No abnormality permitted when a vibration with the max. acceleration of 1g applied for 30 minutes. |
| 6. Safety requirement        | To be determined upon negotiation.   |

B. Synchronizing Unit

	MODE 1	MODE 2
Horizontal Synchronizing Load Range	15.75KHz $\pm$ 500Hz	24.83KHz $\pm$ 500Hz
Vertical Range	55 to 62 Hz	55 to 62Hz

C. CRT Screen Unit

C-1 Raster Non-linearity

Horizontal  $\leq$  8%

Vertical  $\leq$  8%

C-2 Raster Distortion

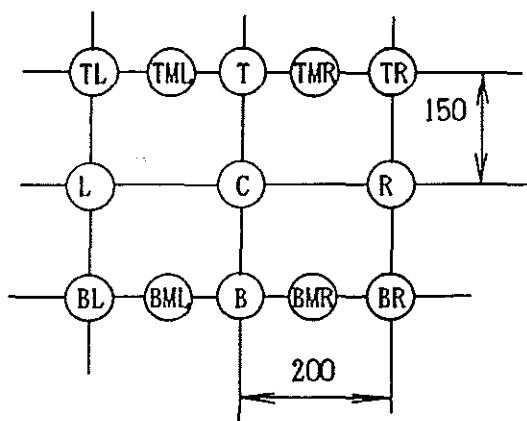
Keystone Distortion  $\leq$  3%

Barrel/Pin-cushion distortion  $\leq$  3%

Inclination  $\leq$  2°

C-3 Mis'convergence

Measure the convergence value with in 15mm circle specified below, after heating more than 15 minutes following turning on.



Measuring point	Standard (with all the color at max.)	
	X	Y
C	0.8	0.8
T, B, L, R	1.5	1.5
TML, TMR BML, BMR	2.5	2.5
TL, TR BL, BR	3.0	3.0

C-4 Color Purity

Satisfactory image should be produced at turn on image signals, after degaussing with a stick demagnetizer.

Condition: CRT fluorescent screen facing west, the territorial magnetism in Japan.

C-5 Resolution

640 (dot)  $\times$  400 (line)

C-6 Size and Position of Display

According to color monitor specification, but negotiable.

C-7 Weight

approx 38kg / net.





**PAGE LEFT  
INTENTIONALLY  
BLANK**

## **14. DETAILS OF SANWA MONITOR**

**PAGE LEFT  
INTENTIONALLY  
BLANK**

## 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		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		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		OFF	ON	ON	ON	OFF
8G Play	NO BONUS		ON	ON	ON	ON	OFF
8G Play	20G = 3		OFF	OFF	OFF	OFF	ON
10G Play	NO BONUS		ON	OFF	OFF	OFF	ON
10G Play	20G = 3		OFF	ON	OFF	OFF	ON
			ON	ON	OFF	OFF	ON
			ON	ON	OFF	OFF	ON
			OFF	OFF	ON	OFF	ON
			ON	OFF	ON	OFF	ON
			OFF	ON	ON	OFF	ON
FREE PLAY OPTION			ON	ON	ON	ON	ON

1 Meter Pulse = 0.5G

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

## PRICE OF PLAY SETTINGS FOR FRANCE / SWITZERLAND

				DIP SWITCH				
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
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 = 2½	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 = 1¼	10F = 2½		ON	OFF	OFF	ON	OFF
4F Play	5F = 1¼	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 = 1¼		ON	ON	ON	ON	OFF
10F Play	5F = ½	10F = 1		OFF	OFF	OFF	OFF	ON
10F Play	5F = ½	10F = 1	20F = 3	ON	OFF	OFF	OFF	ON
20F Play	5F = ¼	10F = ½		OFF	ON	OFF	OFF	ON
20F Play	5F = ¼	10F = ½	50F = 3	ON	ON	OFF	OFF	ON
				ON	ON	OFF	OFF	ON
				OFF	OFF	ON	OFF	ON
				ON	OFF	ON	OFF	ON
				OFF	ON	ON	OFF	ON
				ON	ON	ON	OFF	ON
FREE PLAY OPTION				ON	ON	ON	ON	ON

### 13. COIN MECH INSTALLATION AND CREDIT BOARD SETUP

Game credits between the Coin Mech and the game board for the SEGA TOURING CAR machine are controlled by a *Klingon* board. This electronic circuit allows the price of play to be set for a range of different countries. These functions are set on Dual In Line PCB mounted switches.

DIL-2 is used to set the currency (or coin ratio) and DIL-1 the price of play. Refer to the Tables on the following pages for the correct settings for your environment.

The *Klingon* board pictured in Fig 8 is mounted on the VTS Bracket within the Coin Chute Tower.

The *Klingon* board is connected to the coin validator and lamps via a dedicated wiring harness depending upon the coin validator used:

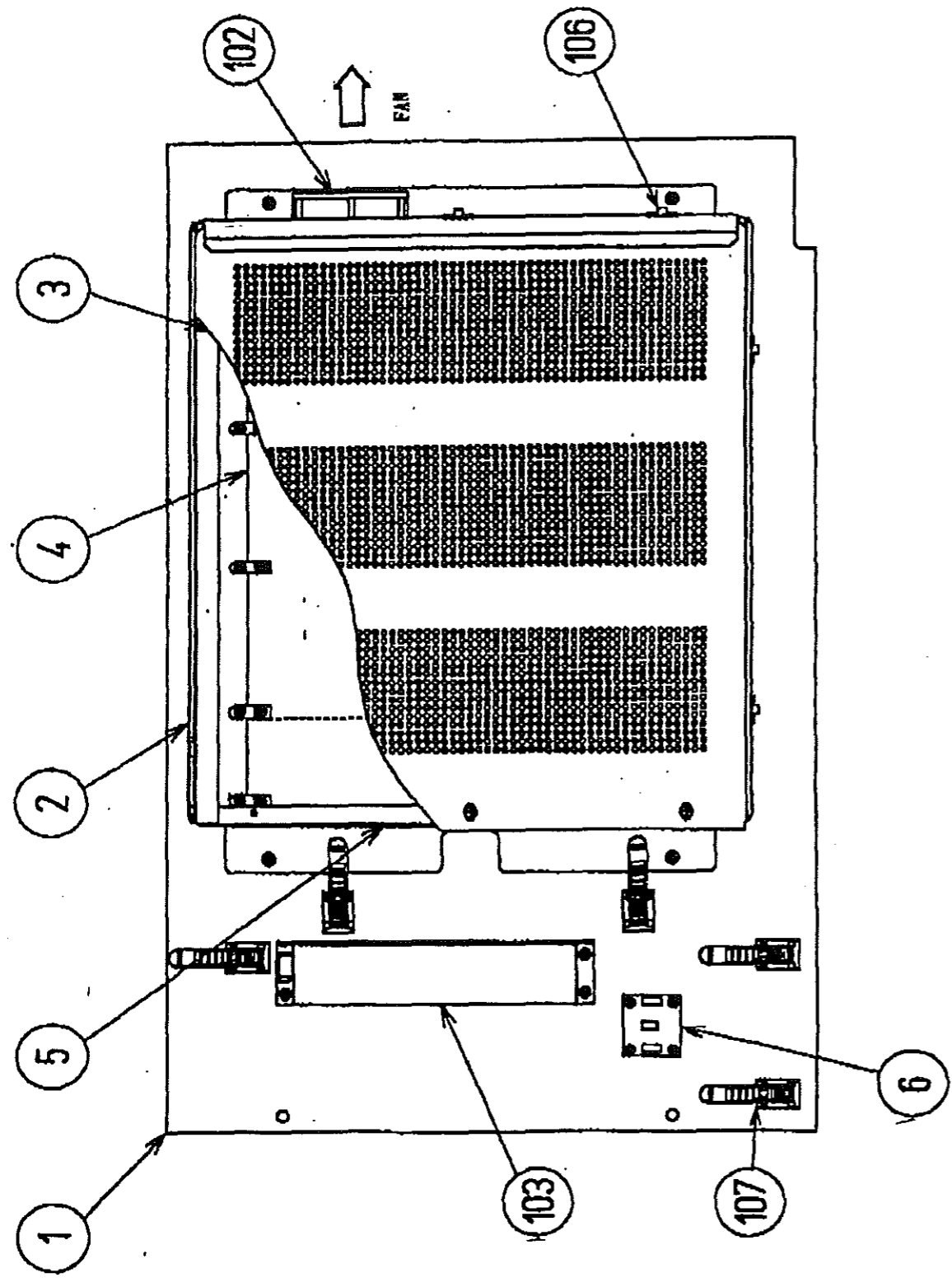
<u>Wiring Harness</u>		<u>Validator</u>	
LM1006	-	Coin Controls	(15 wayconnector)
LM1007	-	Mars	(13 wayconnector)
LM1008	-	Mechanical	See note 2
-	-	NRI	See note 1

#### Notes

1. If NRI mechs are to be used, these should be ordered with the highest denomination coin on coin path #1 and the lowest denomination on coin path #4. The *Klingon* board should be then be set up for either the UK or Switzerland settings
2. A minimum connecting lead length of 600mm is required. Mechanical coin mechs may be connected in parallel allowing two identical mechs to be fitted.

24. MAIN BOARD ASSEMBLY STC-4400

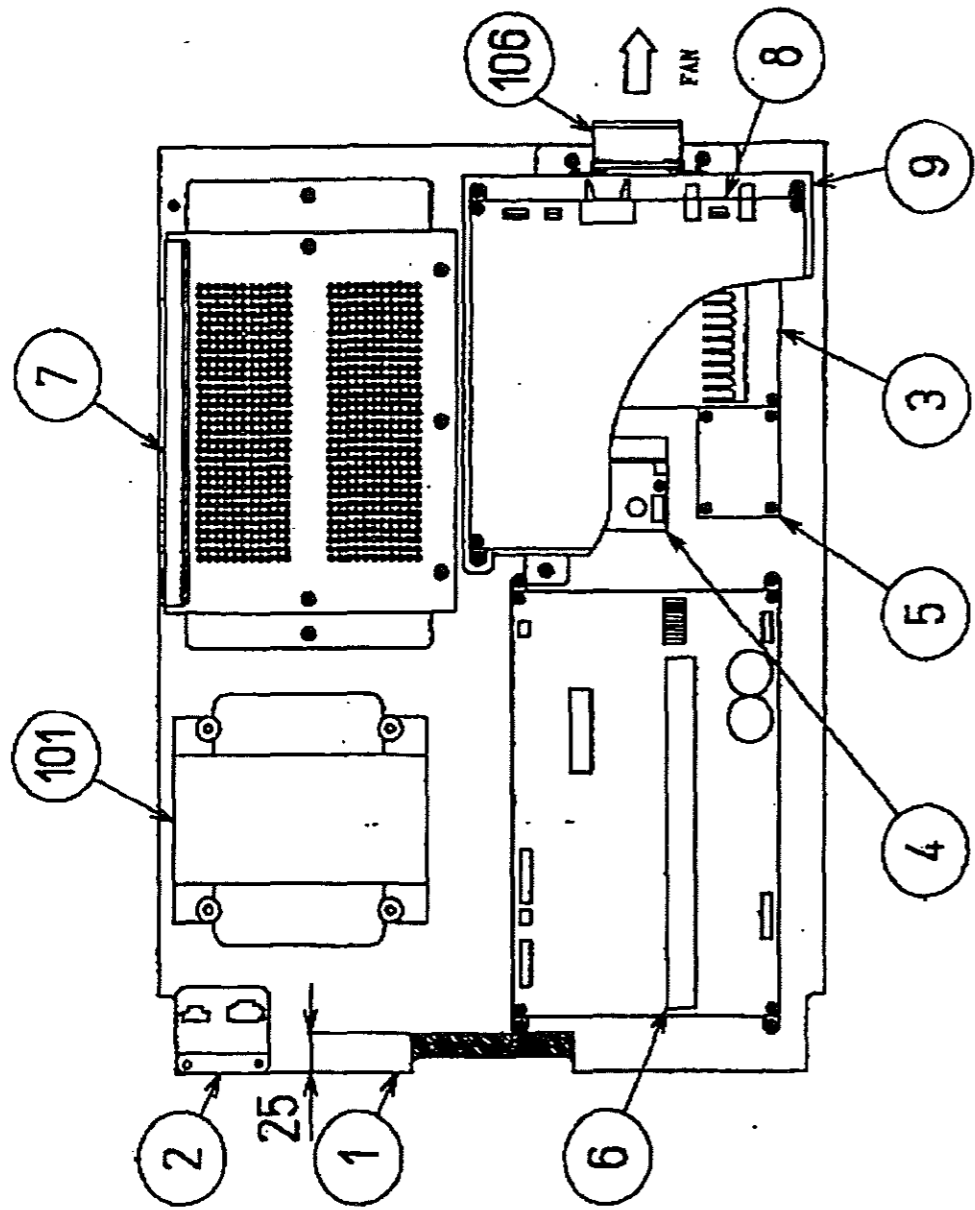
Seq. No.	Part Number	Description	Qty.
1	INY-4401UK	WOODEN BASE	1
2	105-5218	SHIELD CASE	1
3	105-5219-91	SHIELD CASE LID	1
4	610-0396-12782	ASSY BASE STCC TWIN	1
5	839-0818	FLT BD B-CRX INY	1
6	839-0542	AUDIO MIX BOARD	1
101	OS1098	CRIMP BELL END SMALL	2
102	FN1016	FAN AXIAL 5V DC 80mm	1
103	400-5306-01	SW REGU +5V12A,+12V1.5A,-5V.1A	1
104	OS1174	CABLE TIE, NYLON 100mm	10
107	280-A02064-WX	ROUTER TWIST D20 SO6.4 WOOD X	5
108	280-A00500-A	ROUTER TWIST D5 ADH	4
201	FX0020	M3X8 TAPTITE POSI PAN BZP	29
202	000-P00330-W	M3X30 MSCR POSI PAN W/FS PAS	4
204	000-P00414-W	M4X14 MSCR POSI PAN W/FS PAS	4
205	000-P00408-W	M4X8 MSCR POSI PAN W/FS PAS	3
206	FX0163	N8X1/2" S/TAP POSI FLG BZP	3
207	FX0151	N4X1" S/TAP POSI PAN BZP	4
301	600-6502-13	WIRE HARN DC FAN	1
302	600-6634-17	WIRE HARN RGB A	1
303	600-6634-19	WIRE HARN SW REGU 18P	1
304	600-6634-20	WIRE HARN MAIN BD BASE	1
305	600-6775-001	WIRE HARN MAIN BD BASE1	1
306	600-6775-002	WIRE HARN MAIN BD BASE2	1
307	600-6775-012	WIRE HARN MAIN BD BASE4	1





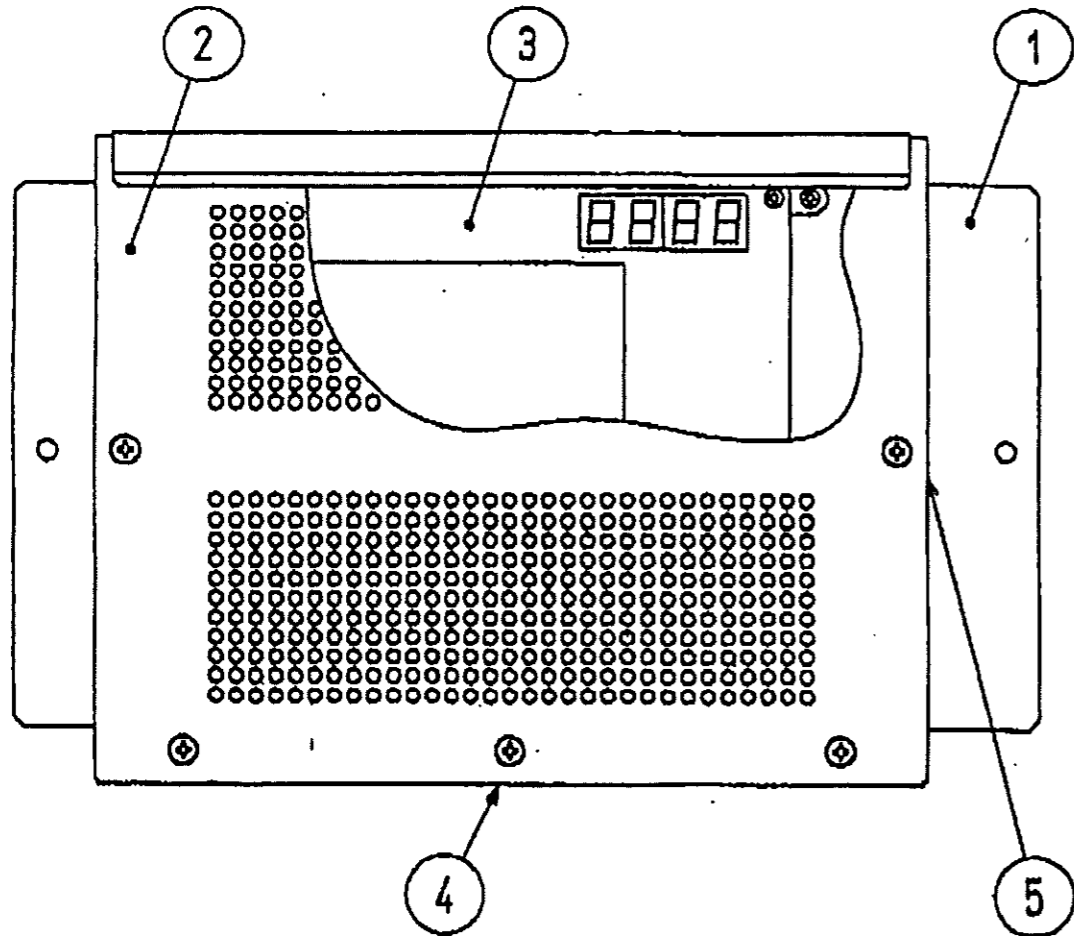
25. ELEC ASSEMBLY STC-4500UK

Seq. No.	Part Number	Description	Qty.
1	STC-4501UK	WOODEN BASE	1
2	DYN-4003	CONN BRKT ELEC	1
3	838-11650-07	EQ. PWR AMP INY TWIN	1
4	838-11651	PEC LOWPASS AMP	1
5	838-11855-01	SSR,CONN BD	1
6	838-11966	MOTOR DRIVE BD	1
7	INY-4600	ASSY DRIVE CONTROL BD	1
8	837-12784	SOUND BD STCC	1
9	STC-4502	BD MOUNT BRKT	1
101	560-5260UK	PWR XFMR 100V6.5A 12.5V6A	1
102	OS1174	CABLE TIE, NYLON 100mm	20
103	280-A02064-W	ROUTER TWIST D20 SO6.4 WOOD X	5
104	280-A01264-W	ROUTER TWIST D12 SO6.4 WOOD X	8
105	270-5052-04	LINE FILTER D	3
106	260-0029	FAN MOTOR AC 100V	1
107	OS1098	CRIMP BELL END SMALL	2
108	601-6231-C220	EDGING NEW TYPE	1
109	LB1096	STICKER PROTECTIVE EARTH	1
201	FX0046	M5X16 MSCR POSI PAN BZP	4
203	FX0151	N4X1" S/TAP POSI PAN BZP	11
204	FX0163	N8X1/2" S/TAP POSI FLG BZP	6
205	FX0156	N6X1/2" S/TAP POSI PAN BZP	4
206	FX0246	M5 WSHR SPR BZP	4
207	FS1012	M5 WSHR FORM C FLT BNP	4
208	000-P00416-W	M4X16 MSCR POSI PAN W/FS PAS	2
209	011-P00310-F	M3X10 TAPTITE POSI PAN BZP	4
210	000-P00335-W	M3X35 MSCR PH W/FS	4
301	600-6634-01UK	WIRE HARN XFMR IN UK	1
302	600-6634-02UK	WIRE HARN XFMR AC100V OUT UK	1
303	600-6634-03UK	WIRE HARN XFMR AC12.5V OUT UK	1
304	600-6634-04UK	WIRE HARN CONN BD UK	1
306	600-6634-06	WIRE HARN LOWPASS AMP	1
307	600-6634-07	WIRE HARN AMP TO AMP	1
308	600-6634-08	WIRE HARN EXT AUDIO A	1
309	600-6634-09	WIRE HARN LEADER SIGNAL	1
310	600-6634-10	WIRE HARN ELEC TO TOWER	1
311	600-6634-11	WIRE HARN MOTOR DRIVE BD OUT	1
312	600-6634-12	WIRE HARN EXT DRIVE BD	1
313	600-6634-13	WIRE HARN DRIVE BD VOLUME	1
314	600-6634-14	WIRE HARN DRIVE CONTROL BD TX	1
315	600-6634-15	WIRE HARN DRIVE CONTROL BD RX	1
316	600-6775-004	WIRE HARN ELEC BASE1	1
317	600-6775-013	WIRE HARN ELEC BASE2	1



26. DRIVE CONTROL ASSEMBLY INY-4600

Seq. No.	Part Number	Description	Qty.
1	INY-4601	SHIELD CASE	1
2	INY-4602	SHIELD CASE LID	1
3	838-11967	DRIVE CONTROL BD	1
4	839-0829	FLT BD DRIVE CONTROL BD A	1
5	839-0830	FLT BD DRIVE CONTROL BD B	1
201	FX0021	M4X8 MSCR POSI PAN BZP	5
202	FX0020	M3X8 TAPTITE POSI PAN BZP	22
204	FX0009	M4 WSHR FORM A FLT BZP	5
205	FX0243	M4 WSHR SPR BZP	5
301	600-6609-64	WIRE HARN SHIELD CASE P8	1
302	600-6609-65	WIRE HARN SHIELD CASE 10P	1
303	600-6609-66	WIRE HARN SHIELD CASE 11P	1
304	600-6609-67	WIRE HARN SHIELD CASE 12P	1
305	600-6609-68	WIRE HARN SHIELD CASE 18P	1



27. INSTALLATION KIT STC-INST-KIT

Seq. No.	Part Number	Description	Qty.
1	STC-0200UK	ASSY BILLBOARD STCC UK	1
2	DYN-0300UK	ASSY COIN CHUTE TOWER UK	1
3	DYN-0500UK	ASSY WIRE COVER UK	1
4	DYN-0013UK	JOINT PIPE	1
5	DYN-0014UK	BILLBOARD HOLDER DAYTONA	2
6	DYN-0006XUK	AC COVER B	1
7	DYN-0018UK	AC COVER C	1
8	DYN-0019UK	AC COVER D	1
9	RAL-XXXX-14UK	TIE BRACKET RALLY	1
10	PK0087	CARTON INST KIT STCC TWIN	1
101	600-6275-0500	CABLE FIBRE OPTIC 5mm x 500cm	2
201	030-000825-SB	M8X25 BLT W/S BNP	16
202	FS1031	M8 WSHR 25OD FLT BNP	4
203	030-000820-S	M8X20 BLT W/S PAS	4
204	000-P00408-WB	M4X8 MSCR POSI PAN W/FS BNP	15
205	FX0400	M8 WSHR FORM A FLT BNP	12
206	FX0011	M4 NUT FLG SER BZP	3
207	FS1031	M8 WSHR 25OD FLT BNP	4
208	FX0258	M8 WSHR 22OD FLT BZP	4
209	421-9141	STICKER CAR No 2~8	1
210	509-5704	SW MICRO TYPE (OMRON K3L 13)	1
401	DLMEMC17	CERT OF CONFORMANCE STCC	1
402	420-6229-02UK	OWNERS MANUAL STCC TWIN	1
403	540-0006-01	WRENCH M4 TMP PRF	1
404	540-0007-01	WRENCH M5 TMP PRF	1
405	540-0009-01	WRENCH M8 TMP PRF	1
406	220-5484	VOL CONT B-5K OHM	1
407	390-5167	LAMP 110V 30W	2
409	OS1019	SELF SEAL BAG 9X12.3/4	1

## 11. WIRE COLOUR CODE TABLE

THE WIRE COLOR CODE IS AS FOLLOWS:

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

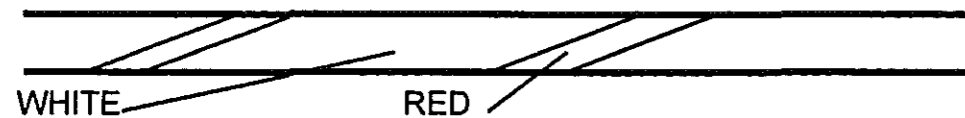
Wires other than those of any of the colors listed above will be displayed by 2 alphanumeric characters.

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

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

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

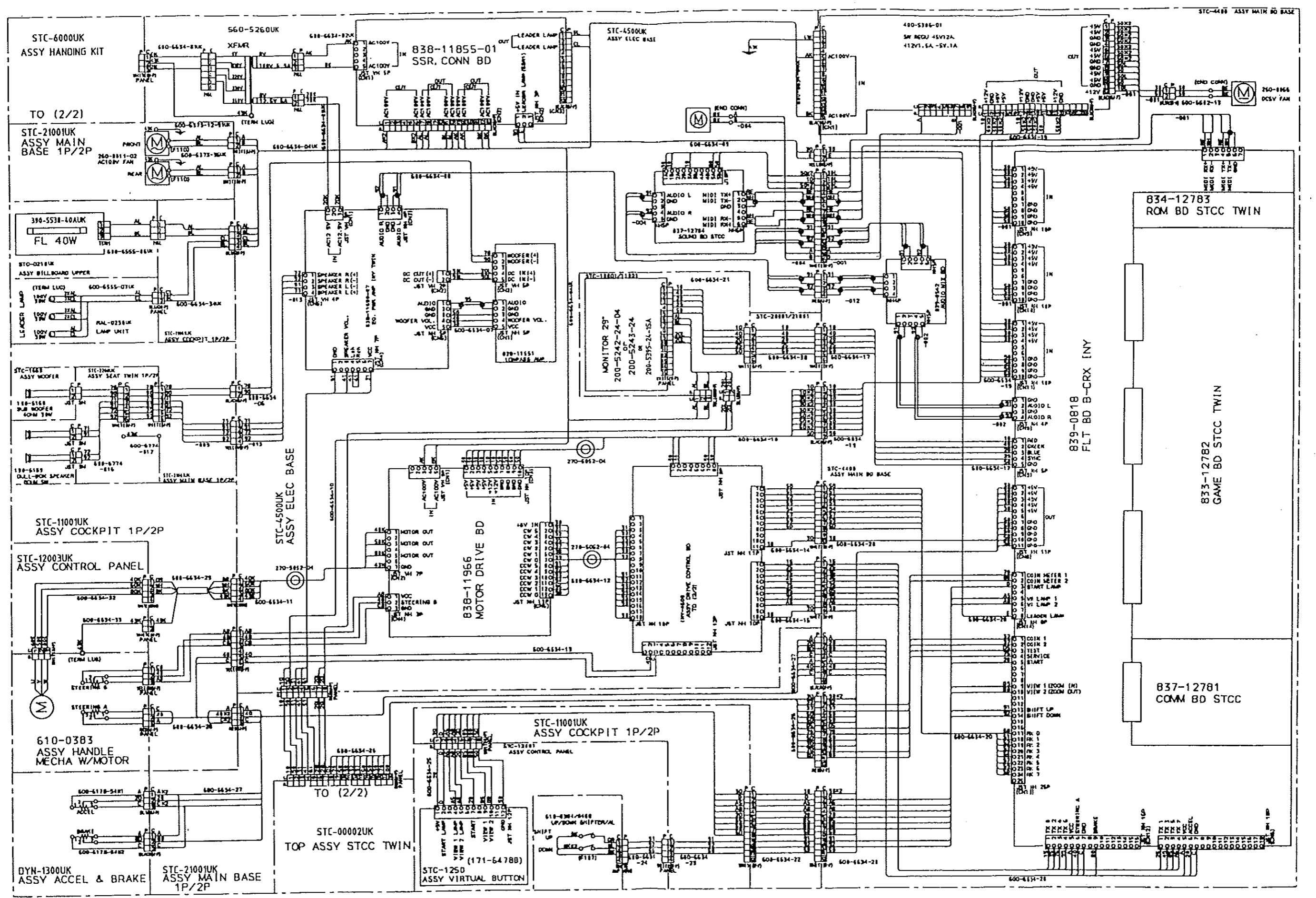
[Example] 51----- WHITE/RED



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

K:	AWG18, UL1015
L:	AWG20, UL1007
None	AWG22, UL1007

**PAGE LEFT  
INTENTIONALLY  
BLANK**



注) \*-\*-\*は600-6775-\*-\*-\*を示す

8 BLACK	9 LIGHT GREEN	10 WHITE AND 28
7 ORANGE	8 PURPLE	19 WHITE
6 WHITE	7 BROWN	20 BROWN
5 GREEN	6 SKY BLUE	U AW016 UL1018
4 YELLOW	5 PINK	R AW018 UL1018
3 BLUE	4 GRAY	L AW021 UL1009
2 RED		AW022 UL1009

設計	製図	検図	承認
TOP-ASSY V			

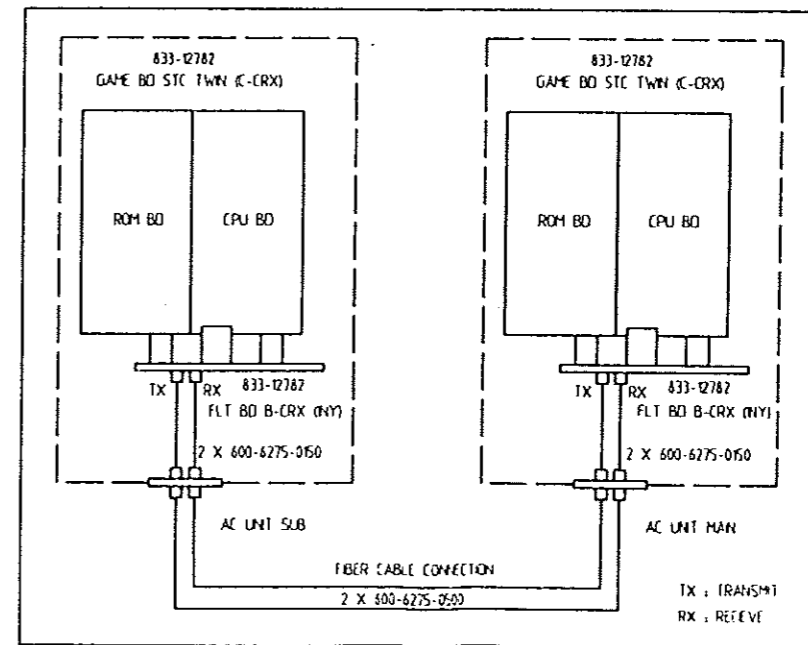
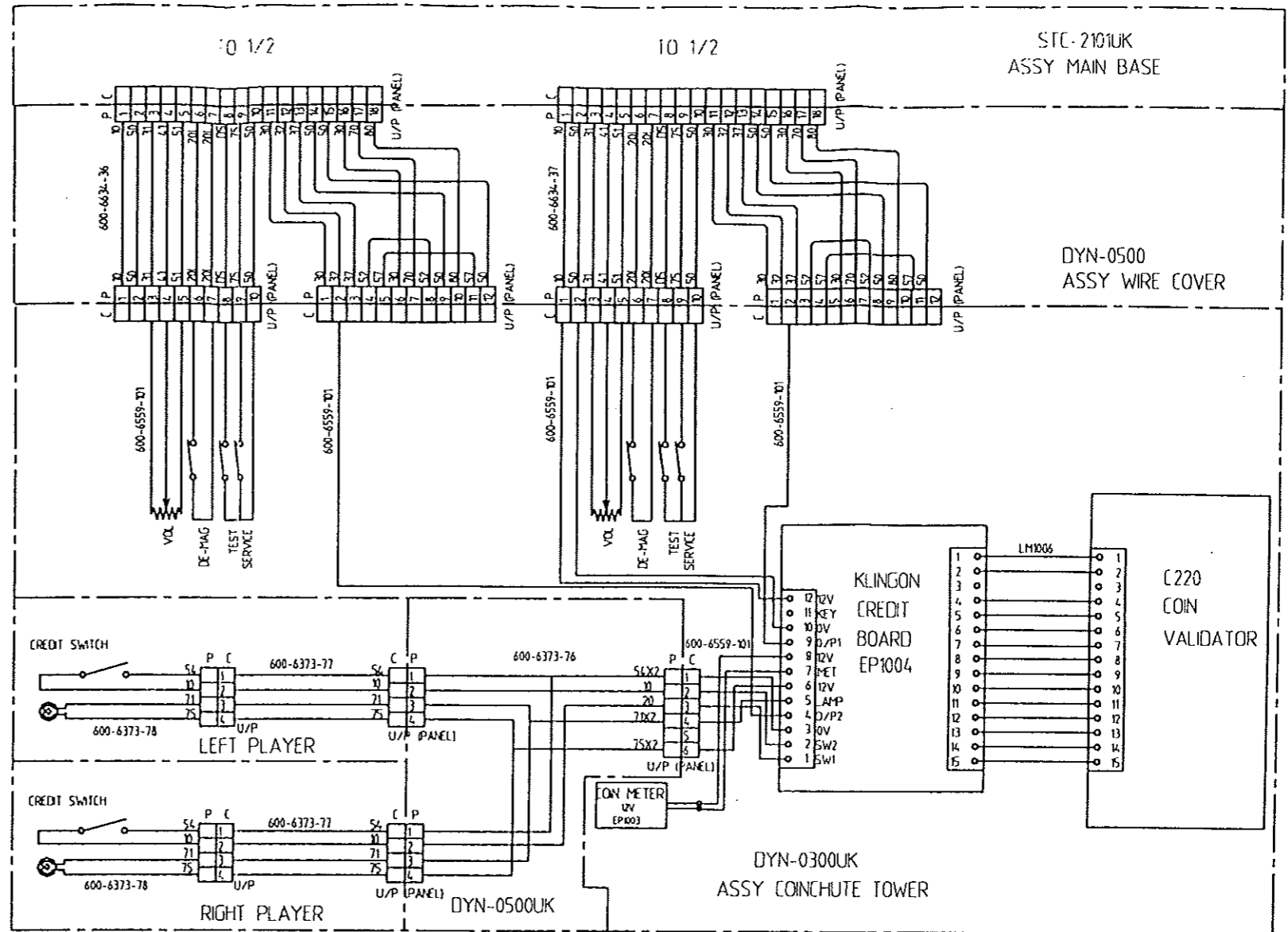
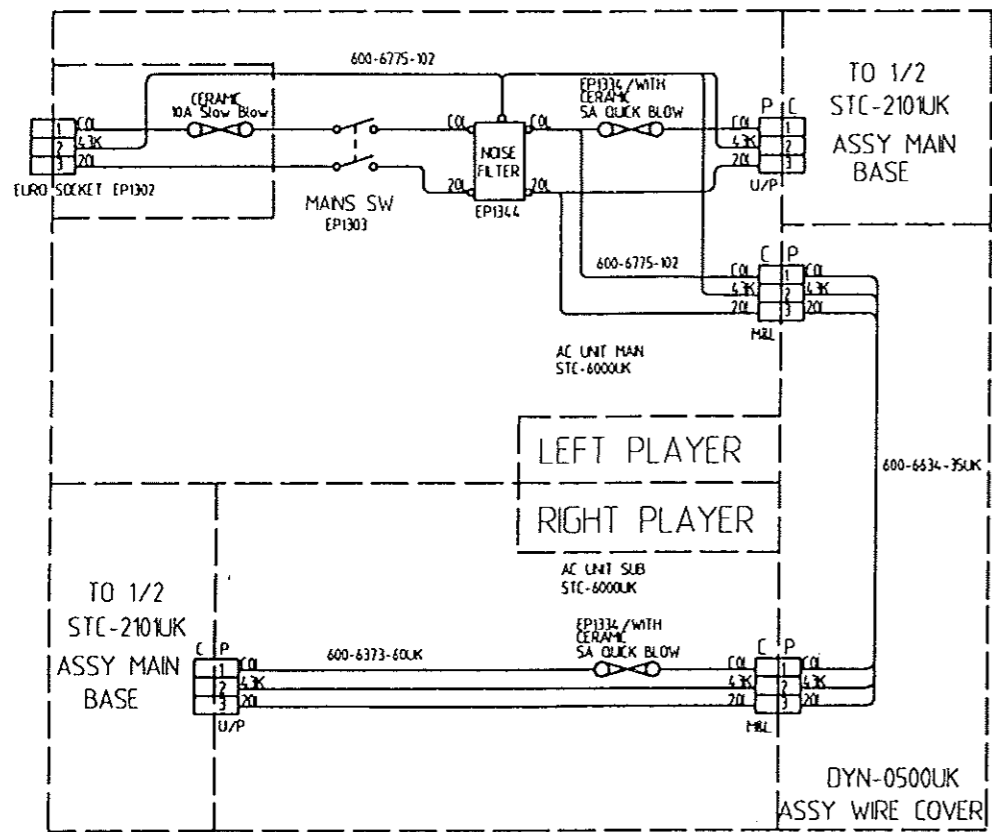
SEGA SEGA ENTERPRISES, LTD. THIS DRAWING WILL IN NO WAY BE COPIED. 許可ナク複製 製図等厳禁  
 TO BE RETURNED ON DEMAND

SEGA TOURING CAR CHAMPIONSHIP TWIN (UK) 1192-1 (1/2)

DESCRIPTION DIAGRAM No

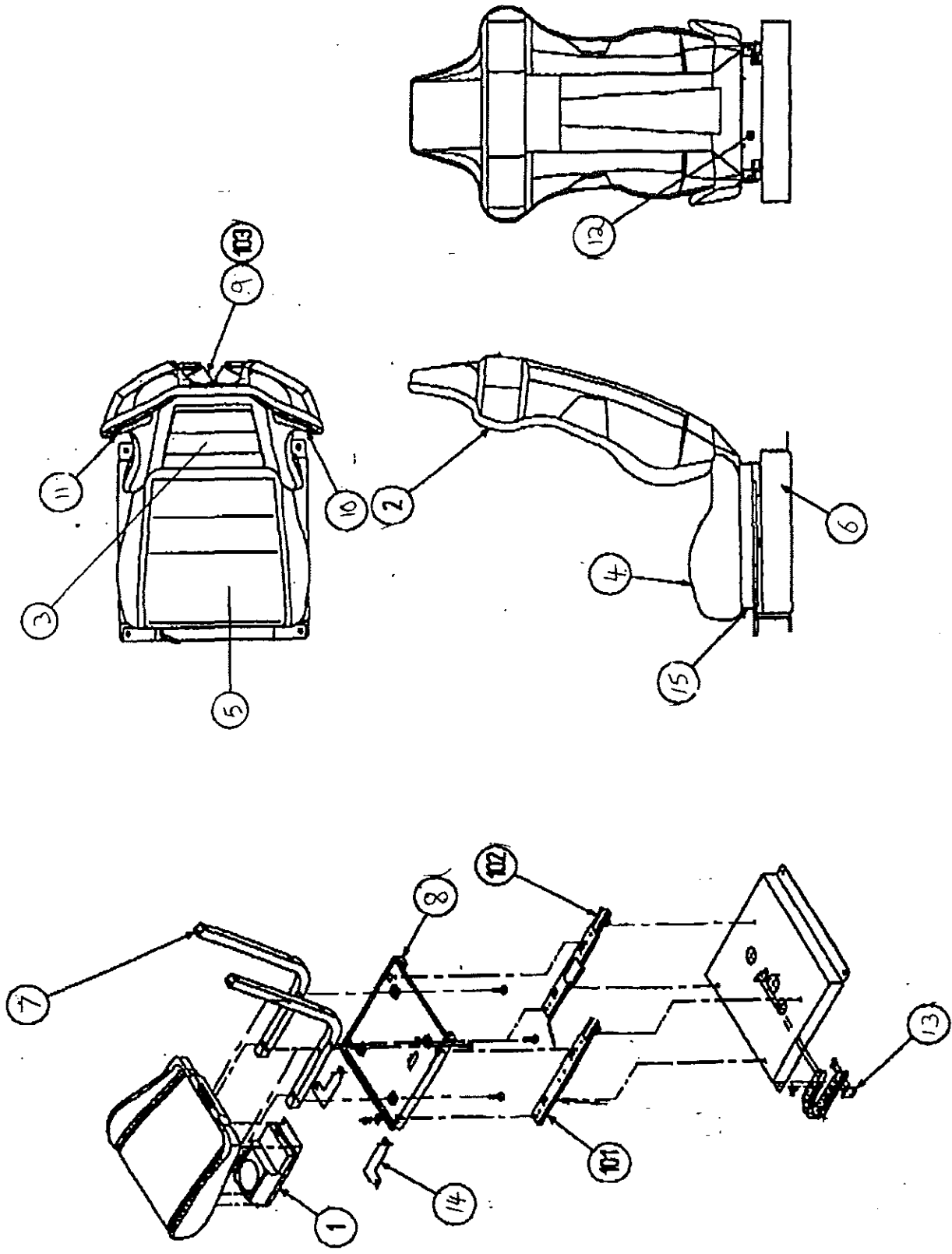






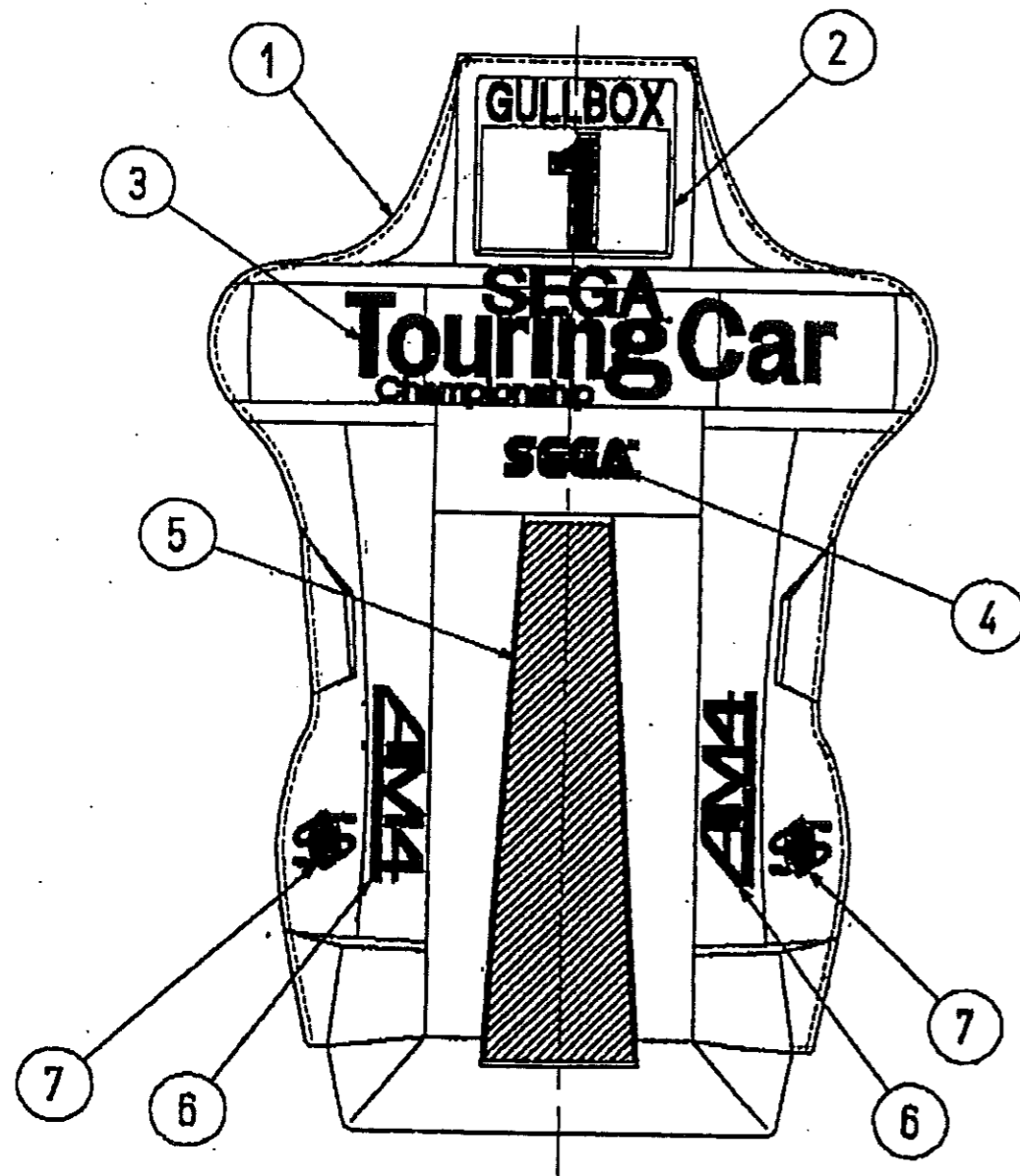
A PINK	E LIGHT GREEN	L GREEN	8 BLACK	120V	200V	220V	240V	100V 50Hz/60Hz
B SKY BLUE	1 RED	5 WHITE	9 GREY					
C BROWN	2 BLUE	6 MARGENT						
D PURPLE	3 YELLOW	7 ORANGE						





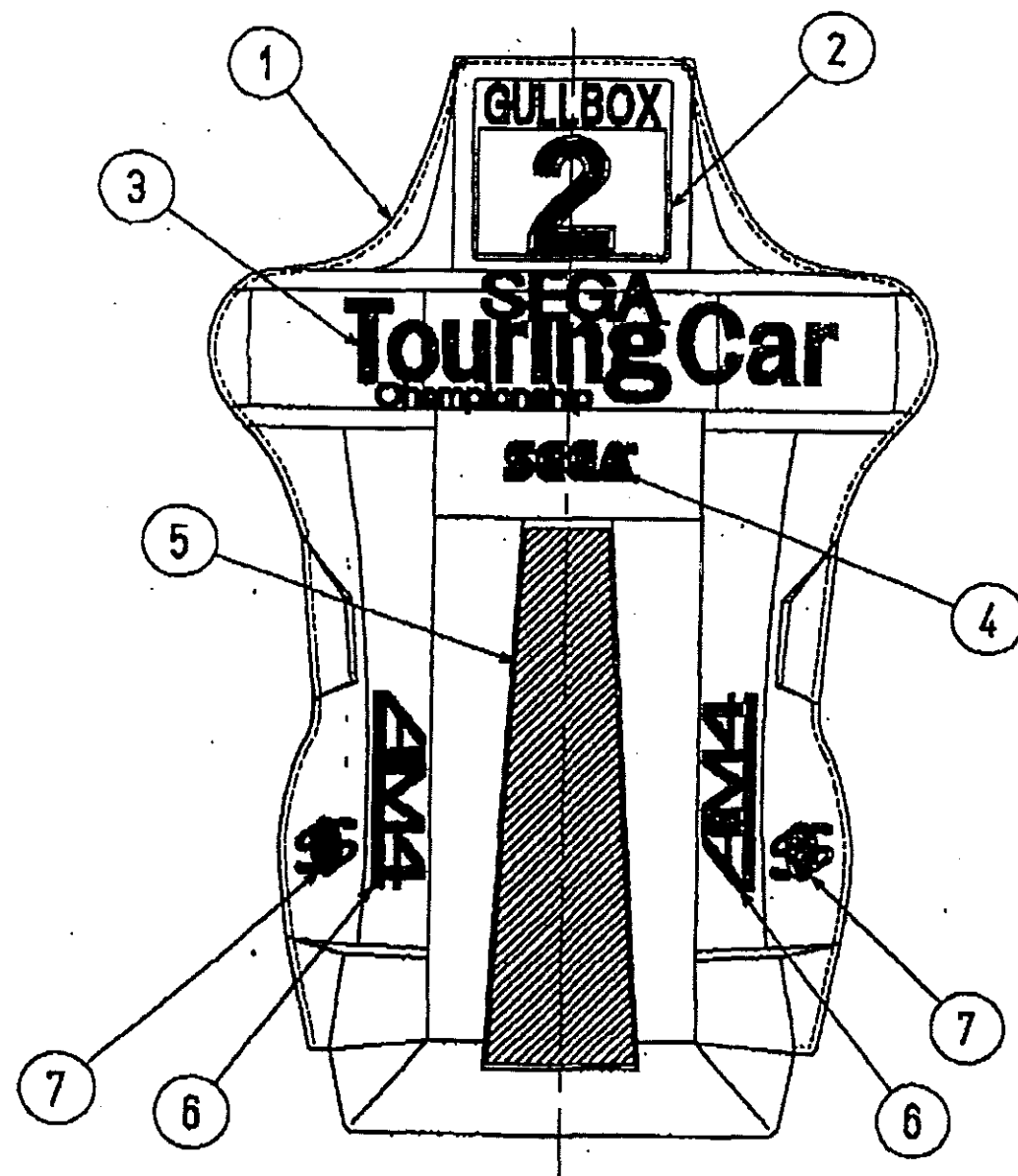
21. SEAT REAR COVER 1P STC-1605

Seq. No.	Part Number	Description	Qty.
1	STC-1605-A	SEAT REAR COVER BLANK	1
2	STC-1605-B	STICKER CAR NO 1	1
3	STC-1605-C	STRICKER COVER UPPER	1
4	STC-1605-D	STICKER SEGA LOGO	1
5	STC-1605-E	STICKER COVER C	1
6	STC-1605-F	STICKER COVER L	2
7	STC-1605-H	STICKER SATURN MARK	2



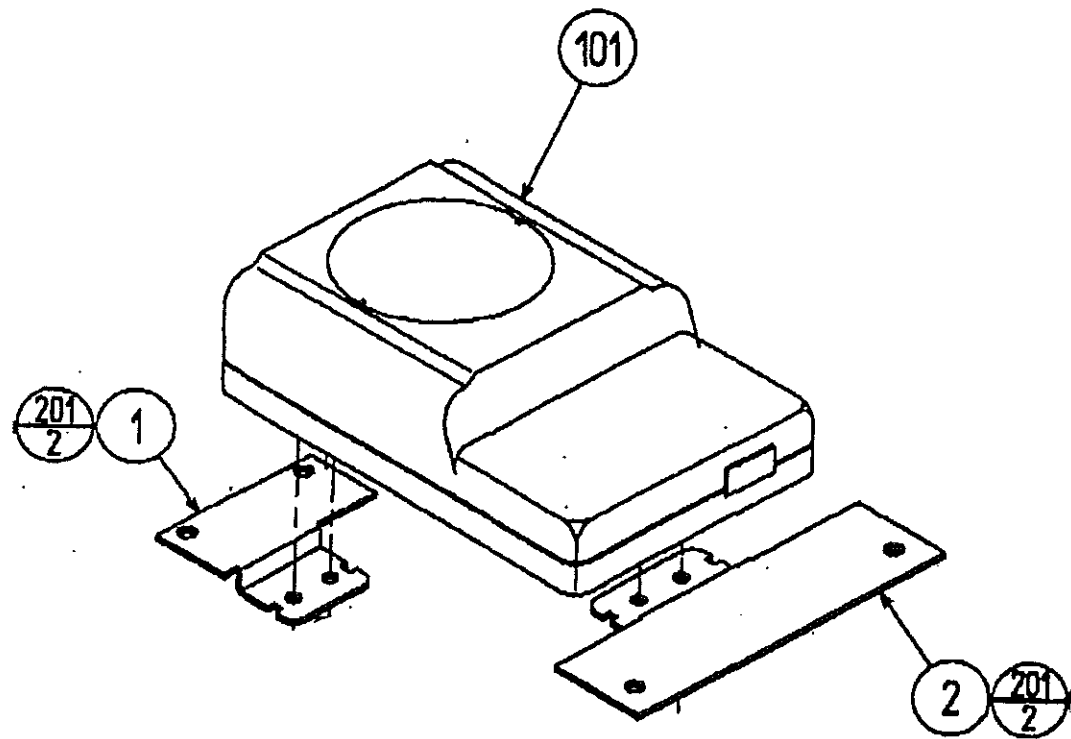
22. SEAT REAR COVER 2P STC-2202

Seq. No.	Part Number	Description	Qty.
1	STC-1605-A	SEAT REAR COVER BLANK	1
2	STC-2202-A	STICKER CAR NO 2	1
3	STC-1605-C	STRICKER COVER UPPER	1
4	STC-1605-D	STICKER SEGA LOGO	1
5	STC-1605-E	STICKER COVER C	1
6	STC-1605-F	STICKER COVER L	2
7	STC-1605-H	STICKER SATURN MARK	2



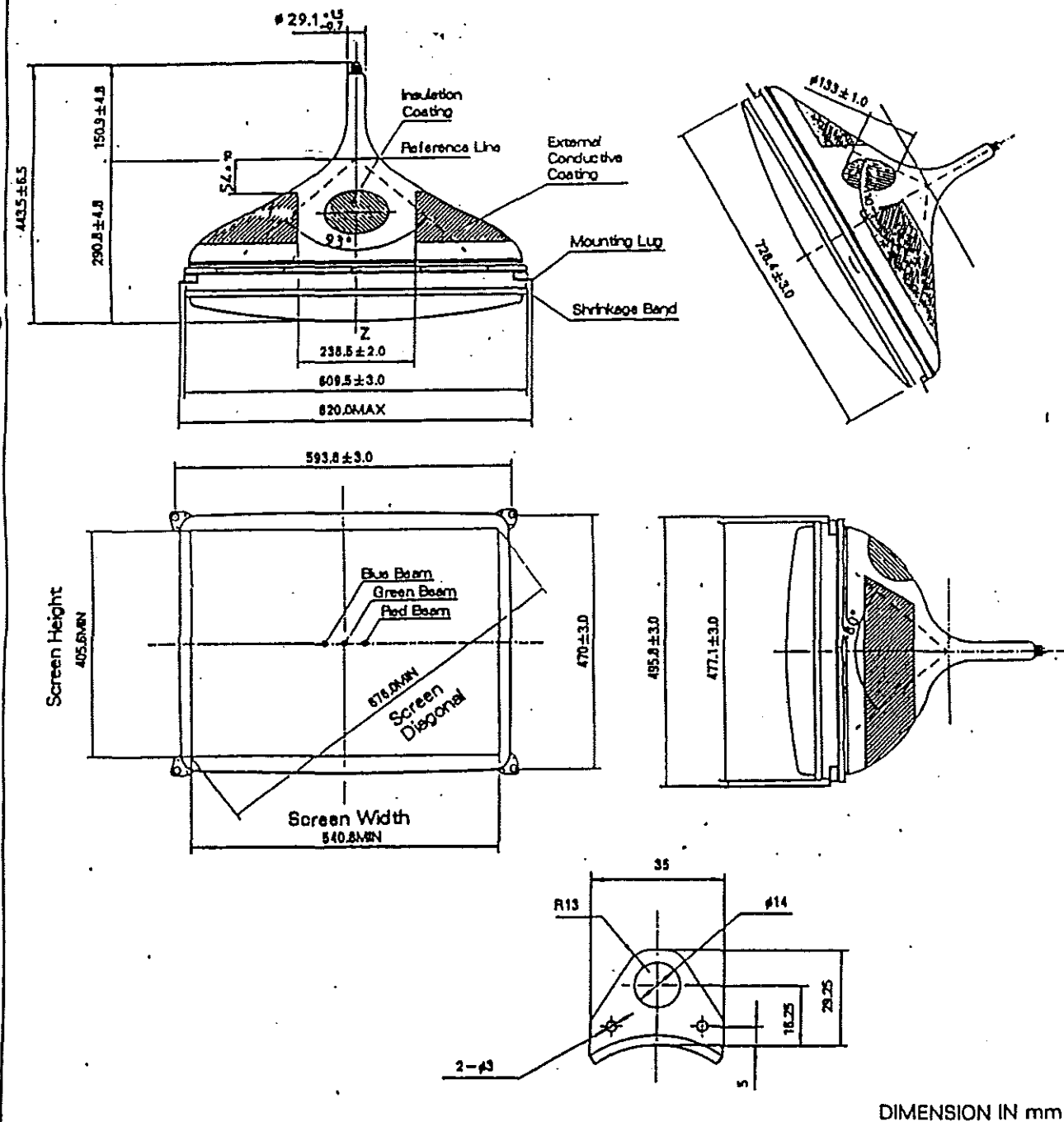
23. WOOFER ASSEMBLY STC-1650

Seq. No.	Part Number	Description	Qty.
1	STC-1651	WOOFER BRKT F	1
2	STC-1652	WOOFER BRKT R	1
101	130-5160	SUB WOOFER 4OHM 30W	1
201	FX0155	N6X1/2" S/TAP POSI FLG BZP	4



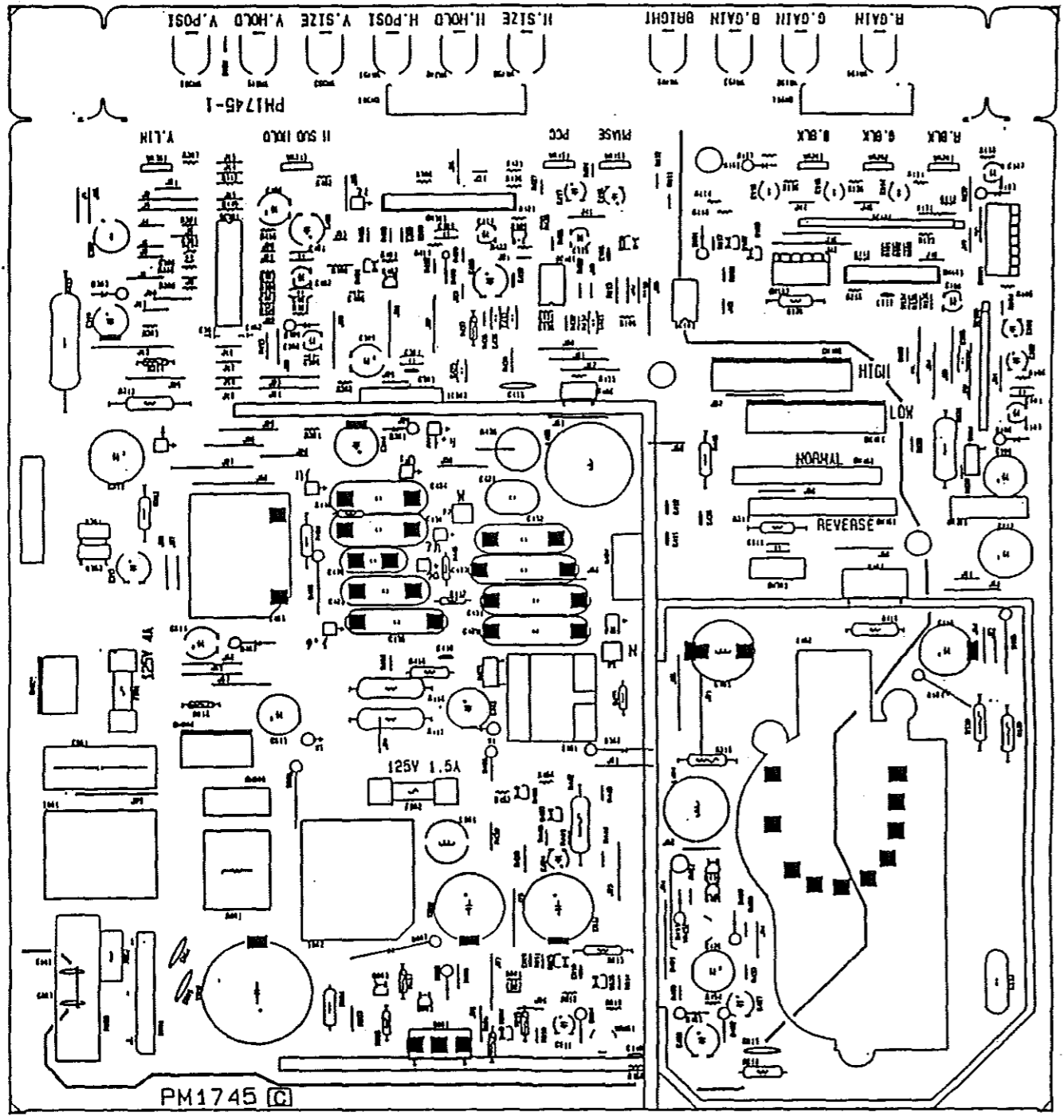
SPEC. NO.	COLOR PICTURE TUBE SPEC.	REVISE
29		

Attachment F.



DIMENSION IN mm

Detail of mounting lug



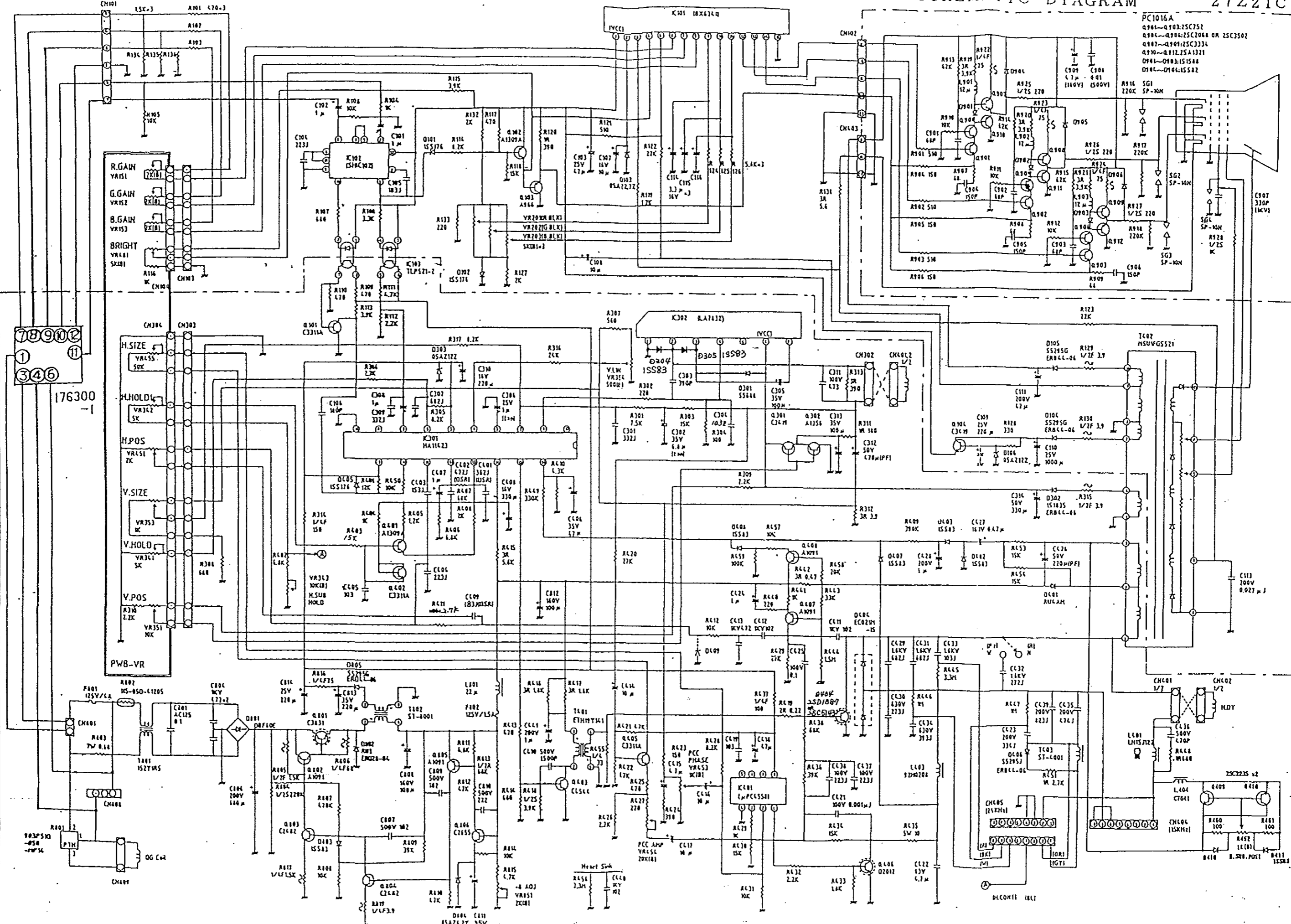


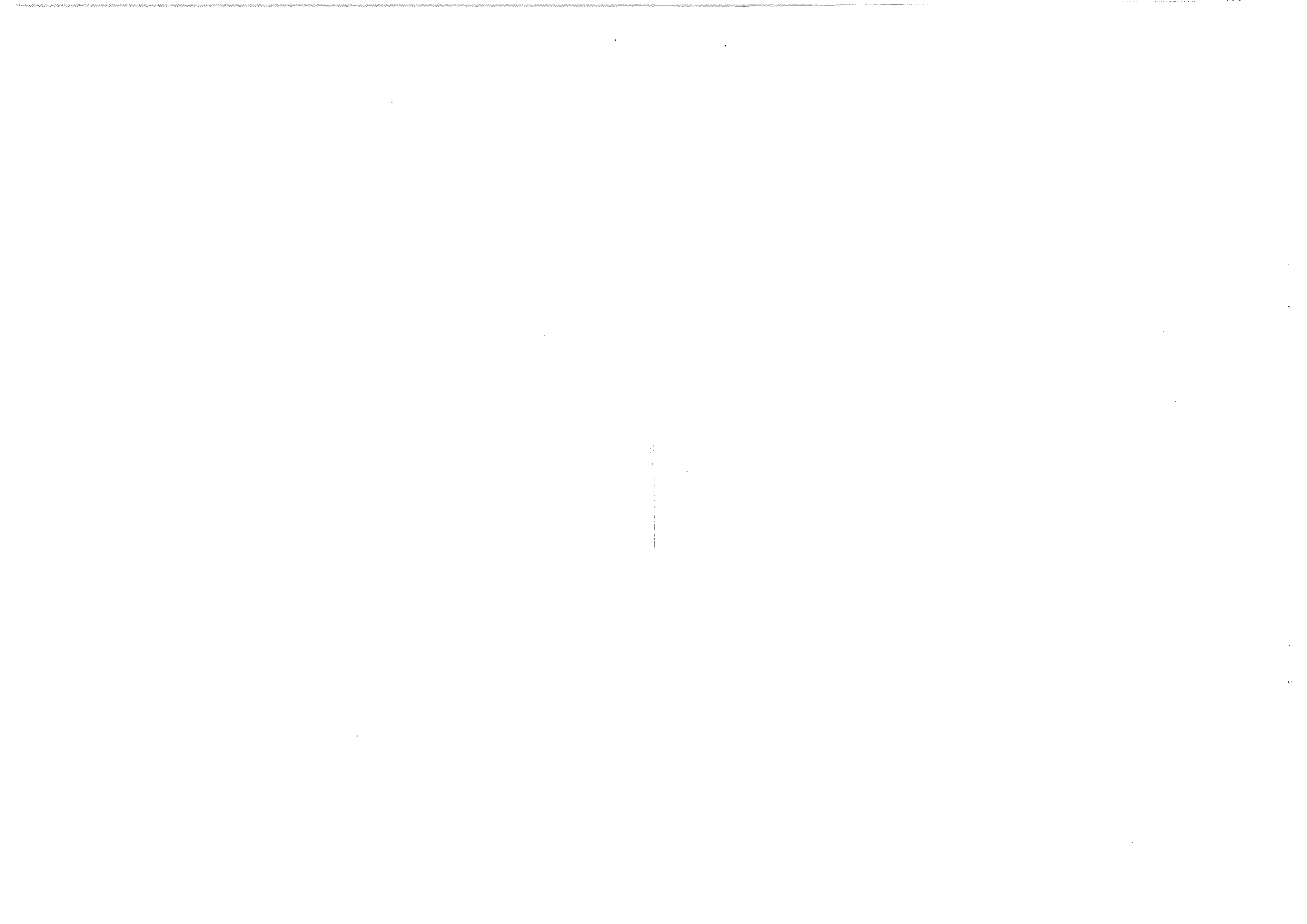
S7LWD

SCHEMATIC DIAGRAM

27Z21C

- PC1016A
- Q901-Q903:2SC752
- Q904-Q906:2SC2068 GR 2SC3502
- Q907-Q909:2SC3334
- Q910-Q912:2SA1321
- Q901-Q903:1S1588
- Q904-Q906:1S542





PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY	
1	R 101	CARBON	1/8W 470	410625471TH	5	1
2	R 102	CARBON	1/8W 470	410625471TH	5	1
3	R 103	CARBON	1/8W 470	410625471TH	5	1
4	R 104	CARBON	1/8W 1K	410625102TH	5	1
5	R 105	CARBON	1/8W 10K	410625103TH	5	1
6	R 106	CARBON	1/8W 2.2K	410625222TH	5	1
7	R 107	CARBON	1/8W 680	410625681TH	5	1
8	R 108	CARBON	1/8W 3.3K	410625332TH	5	1
9	R 109	CARBON	1/8W 470	410625471TH	5	1
10	R 110	CARBON	1/8W 470	410625471TH	7.5	1
11	R 111	CARBON	1/8W 4.7K	410625472TH	5	1
12	R 112	CARBON	1/8W 2.2K	410625222TH	5	1
13	R 113	CARBON	1/8W 3.9K	410625392TH	7.5	1
14	R 114	CARBON	1/8W 8.2K	410625822TH	5	1
15	R 115	CARBON	1/8W 3.9K	410625392TH	5	1
16	R 116	CARBON	1/8W 510	410625511TH	5	1
17	R 117	CARBON	1/8W 470	410625471TH	5	1
18	R 118	CARBON	1/8W 15K	410625153TH	5	1
19	R 119	CARBON	1/8W 1.2K	410625122TH	5	1
20	R 120	METAL	1R 390 MOS	442885391LI	15	1
21	R 121	CARBON	1/8W 510	410625511TH	10	1
22	R 122	CARBON	1/8W 22K	410625223TH	5	1
23	R 123	CARBON	1/8W 22K	410625223TH	5	1
24	R 124	CARBON	1/8W 5.6K	410625562TH	5	1
25	R 125	CARBON	1/8W 5.6K	410625562TH	5	1
26	R 126	CARBON	1/8W 5.6K	410625562TH	5	1
27	R 127	CARBON	1/8W 2K	410625202TH	5	1
28	R 128	CARBON	1/8W 330	410625331TH	5	1
29	R 129	FUSE R	1/2F 3.9	451255399LH	15	1
30	R 130	FUSE R	1/2F 3.9	451255399LH	15	1
31	R 131	METAL	3R 5.0 MOS	442885589LI	20	1
32	R 132	CARBON	1/8W 2K	410625202TH	10	1
33	R 133	CARBON	1/8W 220	410625221TH	5	1
34	R 134	CARBON	1/8W 1.5K	410625152TH	5	1
35	R 135	CARBON	1/8W 1.5K	410625152TH	5	1
36	R 136	CARBON	1/8W 1.5K	410625152TH	5	1
37	R 301	CARBON	1/8W 7.5K	410625752TH	5	1
38	R 302	CARBON	1/8W 220	410625221TH	5	1
39	R 303	CARBON	1/8W 15K	410625153TH	5	1
40	R 304	CARBON	1/8W 100	410625101TH	5	1
41	R 305	CARBON	1/8W 8.2K	410625822TH	5	1
42	R 306	CARBON	1/8W 2.7K	410625272TH	5	1
43	R 307	CARBON	1/8W 560	410625561TH	5	1
44	R 308	CARBON	1/8W 1K	410625102TH	5	1
45	R 308	CARBON	1/8W 2.2K	410625222TH	5	1
46	R 310	CARBON	1/8W 2.2K	410625222TH	5	1
47	R 311	METAL	1R 180 MOS	442865181LI	15	1
48	R 312	METAL	3R 3.9 MOS	442885399LI	15,20	1
49	R 313	METAL	1R 390 MOS	442865391LI	15	1
50	R 314	FUSE R	1/4F 150	451145151LK	10	1
51	R 315	FUSE R	1/2F 3.9	451255399LH	15	1
52	R 316	CARBON	1/8W 24K	410625243TH	5	1
53	R 317	CARBON	1/8W 8.2K	410625822TH	7.5	1
54	R 401	CARBON	1/8W 12K	410625123TH	5	1
55	R 402	CARBON	1/8W 6.8K	410625682TH	5	1
56	R 403	CARBON	1/8W 15K	410625153TH	5	1
57	R 404	CARBON	1/8W 1K	410625102TH	5	1

PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY	
58	R 405	CARBON	1/8W 1.2K	410625122TH	5	1
59	R 406	CARBON	1/8W 6.8K	410625682TH	5	1
60	R 407	CARBON	1/8W 68K	410625683TH	5	1
61	R 408	CARBON	1/8W 2K	410625202TH	7.5	1
62	R 409	CARBON	1/8W 390K	410625394TH	5	1
63	R 410	CARBON	1/8W 4.3K	410625432TH	5	1
64	R 411	CARBON	1/8W 2.7K	410625272TH	5	1
65	R 412	CARBON	1/8W 10K	410625103TH	5	1
66	R 413	CARBON	1/8W 470	410625471TH	7.5	1
67	R 414	CARBON	1/8W 680	410625681TH	5	1
68	R 415	METAL	3R 5.6K MOS	442785562LI	35	1
69	R 416	METAL	3R 1.8K MOS	442885182LI	20	1
70	R 417	METAL	3R 1.8K MOS	442885182LI	20	1
71	R 418	COMP	1/2S 3.9K	420655392TW	12.5	1
72	R 419	METAL	2R 0.22 MOS	442875228LI	15	1
73	R 420	CARBON	1/8W 27K	410625273TH	5	1
74	R 421	CARBON	1/8W 47K	410625473TH	5	1
75	R 422	CARBON	1/8W 47K	410625473TH	5	1
76	R 423	CARBON	1/8W 150	410625151TH	5	1
77	R 424	CARBON	1/8W 390	410625391TH	5	1
78	R 425	CARBON	1/8W 470	410625471TH	5	1
79	R 426	CARBON	1/8W 2.7K	410625272TH	5	1
80	R 427	CARBON	1/8W 270	410625271TH	5	1
81	R 428	CARBON	1/8W 8.2K	410625822TH	5	1
82	R 429	CARBON	1/8W 1K	410625102TH	5	1
83	R 430	CARBON	1/8W 15K	410625153TH	5	1
84	R 431	CARBON	1/8W 10K	410625103TH	5	1
85	R 432	CARBON	1/8W 2.2K	410625222TH	5	1
86	R 433	CARBON	1/8W 1.8K	410625182TH	5	1
87	R 434	CARBON	1/8W 15K	410625153TH	5	1
88	R 435	CEM	5W 10 KN12X	4815951000J	5	1
89	R 436	CARBON	1/8W 39K	410625393TH	5	1
90	R 437	FUSE R	1/4F 100	451145101LK	10	1
91	R 438	CARBON	1/8W 68K	410625683TH	7.5	1
92	R 439	CARBON	1/8W 27K	410625273TH	7.5	1
93	R 440	CARBON	1/8W 220	410625221TH	5	1
94	R 441	CARBON	1/8W 1K	410625102TH	5	1
95	R 442	METAL	3R 0.47 MOS	442885478LI	10, 20	1
96	R 443	CARBON	1/8W 33K	410625333TH	5	1
97	R 444	CARBON	1/8W 1.5M	410625155TH	5	1
98	R 445	CARBON	1/4W 3.3M	410645335TH	10	1
99	R 446	CARBON	1/4W 1M	410625104TH	10	1
100	R 447	CARBON	1/4W 1M	410625104TH	10	1
101	R 448	METAL	1R 680 MOS	442885681LI	15	1
102	R 449	CARBON	1/8W 330K	410625334TH	7.5	1
103	R 450	CARBON	1/8W 10K	410625103TH	5	1
104	R 451	METAL	1R 2.7K MOS	442885272LI	15	1
105	R 453	CARBON	1/8W 15K	410625153TH	5	1
106	R 454	CARBON	1/8W 15K	410625153TH	5	1
107	R 455	CARBON	1/4W 33	410645330TH	10	1
108	R 456	CARBON	1/8W 3.3M	410625335TH	5	1
109	R 457	CARBON	1/8W 10K	410625103TH	5	1
110	R 458	CARBON	1/8W 20K	410625203TH	5	1
111	R 459	CARBON	1/8W 100K	410625104TH	7.5	1
112	R 460	CARBON	1/8W 100	410625101TH	5	1
113	R 461	CARBON	1/8W 100	410625101TH	5	1
114	R 801	POSISTOR	903P51D050MP	4B23E89030D	5	1

PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY	QTY
115	R 802	THERMS	115-050-41205	4A08E8115SH	7.5	1
116	R 803	CEM	7W 0.88	4624D68880K	22.5	1
117	R 804	COMP	1/2S 220K	420655224TH	12.5	1
118	R 805	FUSE R	1/4P 1.5K	451145152LK	10	1
119	R 806	FUSE R	1/4P 68	451145680LK	10	1
120	R 807	CARBON	1/8W 470K	410625474TH	7.5	1
121	R 808	CARBON	1/8W 10K	410625103TH	7.5	1
122	R 809	CARBON	1/8W 39K	410625393TH	5	1
123	R 810	CARBON	1/8W 47K	410625473TH	5	1
124	R 811	CARBON	1/8W 6.8K	410625682TH	5	1
125	R 812	CARBON	1/8W 47K	410625473TH	5	1
126	R 813	METAL	1/2R 68K MOP	442755683LI	15	1
127	R 814	CARBON	1/8W 10K	410625103TH	5	1
128	R 815	CARBON	1/8W 4.7K	410625472TH	5	1
129	R 816	FUSE R	1/4P 75	451145750LK	10	1
130	R 817	FUSE R	1/4P 1.5K	451145152LK	10	1
131	R 818	COMP	1/2S 8.2M	420655825TH	12.5	1
132	R 819	FUSE R	1/4P 3.9	451145399LK	5	1
133	C 101	ELECT	50V 1u	523737109TR	5	1
134	C 102	ELECT	50V 1u	523737109TR	5	1
135	C 103	ELECT	25V 47u	523717470TR	5	1
136	C 104	FILM	50V 223J	541835223TA	5	1
137	C 105	FILM	50V 183J	541835183TA	5	1
138	C 106	CERAMIC	50V 180P	513336181TT	5	1
139	C 107	ELECT	16V 10u	523707100TR	5	1
140	C 108	ELECT	50V 10u	523737100TR	5	1
141	C 109	ELECT	25V 220u	523717221TR	5	1
142	C 110	ELECT	25V 1000u	523717102ER	5	1
143	C 111	ELECT	200V 47u	523787470TR	5	1
144	C 113	FILM	200V 273J DTW	541785273AS	10	1
145	C 114	TANTAL	16V 3.3u	531407339TN	5	1
146	C 115	TANTAL	16V 3.3u	531407339TN	5	1
147	C 116	TANTAL	16V 3.3u	531407339TN	5	1
148	C 301	ELECT	50V 332J	541835332TA	5	1
149	C 302	TANTAL	35V 6.8u	531427689TN	5	1
150	C 303	CERAMIC	50V 390P	513336391TT	5	1
151	C 304	CERAMIC	50V 103z	513338103TT	5	1
152	C 305	ELECT	35V 100u	523727101TR	5	1
153	C 306	TANTAL	25V 1u	531416109TN	5	1
154	C 307	FILM	50V 682J	541835682TA	5	1
155	C 308	ELECT	50V 1u	523737109TR	5	1
156	C 309	FILM	50V 223J	541835223TA	5	1
157	C 310	ELECT	16V 220u	523707221TR	5	1
158	C 311	FILM	100V 473J	541835473TA	5	1
159	C 312	ELECT	50V 470u PF	521037471FN	5	1
160	C 313	ELECT	35V 100u	523727101TR	5	1
161	C 314	ELECT	50V 330u	523737331TR	5	1
162	C 401	FILM	50V 362J DSR	541635362AS	5	1
163	C 402	FILM	50V 472J DSR	541635472AS	5	1
164	C 403	FILM	50V 153J	541835153TA	5	1
165	C 404	FILM	50V 223J	541835223TA	5	1
166	C 405	CERAMIC	50V 103Z	513338103TT	5	1
167	C 406	ELECT	35V 47u	523727470TR	5	1
168	C 407	ELECT	50V 1u	523737109TR	5	1
169	C 408	ELECT	16V 330u	523707331TR	5	1
170	C 409	FILM	50V 183J DSR	541635183AS	5	1
171	C 410	CERAMIC	500V 1500P	5134H6152PB	5	1

PH1745C  
(27221C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No		QTY
172	C 411	CERAMIC	1KV 1000P	5131F8102LB	5	1
173	C 412	CERAMIC	1KV 1000P	5131F8102LB	5	1
174	C 413	CERAMIC	1KV 4700P	5131F6472LB	10	1
175	C 414	ELECT	50V 10u	523737100TR	5	1
176	C 415	ELECT	50V 4.7u	523737479TR	5	1
177	C 416	ELECT	50V 10u	523737100TR	5	1
178	C 417	ELECT	50V 10u	523737100TR	5	1
179	C 418	ELECT	35V 47u	523727470TR	5	1
180	C 419	CERAMIC	50V 103Z	513338103TT	5	1
181	C 421	FILM	100V 102J	541835102TA	5	1
182	C 422	FILM	63V 4.7u MMB	542818475LA	10	1
183	C 423	FILM	200V 334J DHS	542285334AS	12.5	1
184	C 424	ELECT	50V 1u	523737109TR	5	1
185	C 425	FILM	100V 104J	541845104AA	5	1
186	C 426	ELECT	50V 220u PF	521037221PN	5	1
187	C 427	ELECT	160V 0.47u	523767478TR	5	1
188	C 428	ELECT	200V 1u	523787109TR	5	1
189	C 429	FILM	1.6KV 822J DKR	5420E5822AS	20	1
190	C 430	FILM	630V 273J DTW	5417D5273AS	15	1
191	C 431	FILM	1.6KV 682J DKR	5420E5682AS	20	1
192	C 432	FILM	1.6KV 272J DKR	5420E5272AS	15	1
193	C 433	FILM	1.6KV 103J DKR	5420E5103AS	20	1
194	C 434	FILM	630V 393J DTW	5417D5393AS	15	1
195	C 435	FILM	200V 474J DHS	542285474AS	17.5	1
196	C 436	CERAMIC	500V 470P	5134H6471FB	5	1
197	C 437	FILM	100V 223J	541835223TA	5	1
198	C 438	FILM	100V 223J	541835223TA	5	1
199	C 439	FILM	200V 823J DHS	542285823AS	7.5	1
200	C 440	CERAMIC	1KV 1000P	5131F6102LB	5	1
201	C 441	ELECT	200V 1u	523787109TR	5	1
202	C 801	FILM	AC250V 0.1 QXR	543896104LN	17.5	1
203	C 802	CERAMIC	2KV 1000P	5131G6102LB	7.5	1
204	C 803	CERAMIC	2KV 1000P	5131G6102LB	7.5	1
205	C 804	CERAMIC	1KV 4700P	5131F6472LB	10	1
206	C 805	CERAMIC	1KV 4700P	5131F6472LB	10	1
207	C 806	ELECT	200V 680u AWP	520487681AM	10	1
208	C 807	CERAMIC	500V 1000P	5134H6102FB	5	1
209	C 808	ELECT	160V 100u	523767101TR	7.5	1
210	C 809	CERAMIC	500V 1000P	5134H6102FB	5	1
211	C 810	CERAMIC	500V 2200P	5134H6222FB	5	1
212	C 811	ELECT	35V 47u	523727479TR	5	1
213	C 812	ELECT	160V 100u	523767101TR	7.5	1
214	C 813	ELECT	35V 220u	523727221TR	5	1
215	C 814	ELECT	25V 220u	523717221TR	5	1
216	C 815	ELECT	2KV 4700P	5131G6472LB	10	1
217	D 101	DIODE	1SS176	11SS176002T	7.5	1
218	D 102	DIODE	1SS176	11SS176002T	7.5	1
219	D 103	DIODE	05AZ2.7Z	105AZ2.7Z2T	7.5	1
220	D 104	DIODE	ERB44-06	1ERB440607P	15	1
221	D 105	DIODE	ERB44-06	1ERB440607P	15	1
222	D 106	DIODE	05AZ12Z	105AZ12Z02T	7.5	1
223	D 301	DIODE	S5688G	1S5688G001T	7.5	1
224	D 302	DIODE	ERB44-06	1ERB440607P	15	1
225	D 303	DIODE	05AZ12Z	105AZ12Z02T	7.5	1
226	D 401	DIODE	RU4AM	1RU4AM0006K	20	1
227	D 402	DIODE	1SS83	11SS830007H	7.5	1
228	D 403	DIODE	1SS83	11SS830007H	7.5	1

PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY
229	D 404	DIODE	ESC021M-15	1ESC021M08P	1
230	D 405	DIODE	1SS178	11SS178002T	7.5
231	D 406	DIODE	ERB44-06	1ERB440607P	15
232	D 407	DIODE	1SS83	11SS830007H	10
233	D 408	DIODE	1SS83	11SS830007H	7.5
234	D 409	DIODE	删除		7.5
235	D 410	DIODE	1SS83	11SS830007H	7.5
236	D 411	DIODE	1SS83	11SS830007H	7.5
237	D 801	DIODE	DBF60E	1DBF60E008S	1
238	D 802	DIODE	ERD28-04	1ERD280406P	20
239	D 803	DIODE	1SS83	11SS830007H	7.5
240	D 804	DIODE	05AZ 6.2Y	105AZ6.2Y2T	7.5
241	D 805	DIODE	ERB44-06	1ERB440607P	15
242	Q 101	TRANSISTOR	2SC3311A.R	00C3311AR7M	1
243	Q 102	TRANSISTOR	2SA1309A.R	00A1309AR7M	1
244	Q 103	TRANSISTOR	2SA966	00A9660004T	1
245	Q 104	TRANSISTOR	2SC3419	00C3419006T	1
246	Q 301	TRANSISTOR	2SC3419	00C3419008T	1
247	Q 302	TRANSISTOR	2SA1356Y	00A1356006T	1
248	Q 401	TRANSISTOR	2SA1309A.R	00A1309AR7M	1
249	Q 402	TRANSISTOR	2SC3311A.R	00C3311AR7M	1
250	Q 403	TRANSISTOR	2SC4544 OR 2SC4075		1
251	Q 404	TRANSISTOR	2SD1887 OR 2SC5143		1
252	Q 405	TRANSISTOR	2SC3311A.R	00C3311AR7M	1
253	Q 406	TRANSISTOR	2SD2012 OR 2SC3746		1
254	Q 407	TRANSISTOR	2SA1091.0	00A1091001T	1
255	Q 408	TRANSISTOR	2SA1091.0	00A1091001T	1
256	Q 409	TRANSISTOR	2SC2235Y	00C2235Y04T	1
257	Q 410	TRANSISTOR	2SC2235Y	00C2235Y04T	1
258	Q 801	TRANSISTOR	2SC3831	00C3831006K	1
259	Q 802	TRANSISTOR	2SA1091.0	00A1091001T	1
260	Q 803	TRANSISTOR	2SC2482	00C2483004T	1
261	Q 804	TRANSISTOR	2SC2482	00C2483004T	1
262	Q 805	TRANSISTOR	2SA1091.0	00A1091001T	1
263	Q 806	TRANSISTOR	2SC2655	00C2655Y04T	1
264	IC101	HIC	BX6341	04BX634106R	1
265	IC102	HIC	SHIC102	04SHIC1026A	1
266	IC103	IC	TLP521-2	05TLP52126T	1
267	IC301	IC	HA11423	03HA114236H	1
268	IC302	IC	LA7832	03LA783206S	1
269	IC401	IC	uPC4558	03uPC45586N	1
270	VR151	VOL	VZ084SL1 2K	4000050023H	1
271	VR152	VOL	VZ084SL1 2K	4000050023H	1
272	VR153	VOL	VZ084SL1 2K	4000050023H	1
273	VR201	VOL	VZ067TH1 5K	4010100053H	1
274	VR202	VOL	VZ067TH1 5K	4010100053H	1
275	VR203	VOL	VZ067TH1 5K	4010100053H	1
276	VR341	VOL	VZ084SL1 5K	4000050053H	1
277	VR342	VOL	VZ084SL1 5K	4000050053H	1
278	VR343	VOL	VZ067TH1 10K	4010100014H	1
279	VR351	VOL	VZ084SL1 10K	4000050014H	1
280	VR353	VOL	VZ084SL1 1K	4000050013H	1
281	VR354	VOL	VZ067TH1 500	4010100052H	1
282	VR451	VOL	VZ084SL1 2K	4000050023H	1
283	VR452	VOL	VZ067TL1 1K	4000110013H	1
284	VR453	VOL	VZ067TH1 1K	4010100013H	1
285	VR454	VOL	VZ067TH1 20K	4010100014H	1

PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY
343	J 27	JP	WIRE 20mm	7300002420K	1
344	J 28	JP	WIRE 20mm	7300002420K	1
345	J 29	JP	WIRE 7.5mm	7300002407K	1
346	J 30	JP	WIRE 15mm	7300002415K	1
347	J 31	JP	WIRE 15mm	7300002415K	1
348	J 32	JP	WIRE 15mm	7300002415K	1
349	J 33	JP	WIRE 5mm	7300002405K	1
350	J 34	JP	WIRE 5mm	7300002405K	1
351	J 35	JP	WIRE 10mm	7300002410K	1
352	J 36	JP	WIRE 10mm	7300002410K	1
353	J 37	JP	WIRE 15mm	7300002415K	1
354	J 38	JP	WIRE 10mm	7300002410K	1
355	J 39	JP	WIRE 7.5mm	7300002407K	1
356	J 40	JP	WIRE 5mm	7300002405K	1
357	J 41	JP	WIRE 10mm	7300002410K	1
358	J 42	JP	WIRE 7.5mm	7300002407K	1
359	J 43	JP	WIRE 5mm	7300002405K	1
360	J 44	JP	WIRE 7.5mm	7300002407K	1
361	J 45	JP	WIRE 7.5mm	7300002407K	1
362	J 46	JP	WIRE 15mm	7300002415K	1
363	J 47	JP	WIRE 20mm	7300002420K	1
364	J 48	JP	WIRE 7.5mm	7300002407K	1
365	J 49	JP	WIRE 7.5mm	7300002407K	1
366	J 50	JP	WIRE 10mm	7300002410K	1
367	J 51	JP	WIRE 10mm	7300002410K	1
368	J 52	JP	WIRE 15mm	7300002415K	1
369	J 53	JP	WIRE 15mm	7300002415K	1
370	J 54	JP	WIRE 15mm	7300002415K	1
371	J 55	JP	WIRE 15mm	7300002415K	1
372	J 56	JP	WIRE 20mm	7300002420K	1
373	J 57	JP	WIRE 15mm	7300002415K	1
374	J 58	JP	WIRE 10mm	7300002410K	1
375	J 59	JP	WIRE 10mm	7300002410K	1
376	J 60	JP	WIRE 15mm	7300002415K	1
377	J 61	JP	WIRE 7.5mm	7300002407K	1
378	J 62	JP	WIRE 15mm	7300002415K	1
379	J 63	JP	WIRE 10mm	7300002410K	1
380	J 64	JP	WIRE 10mm	7300002410K	1
381	J 65	JP	WIRE 20mm	7300002420K	1
382	J 66	JP	WIRE 20mm	7300002420K	1
383	J 67	JP	WIRE 15mm	7300002415K	1
384	J 68	JP	WIRE 15mm	7300002415K	1
385	J 69	JP	WIRE 15mm	7300002415K	1
386	J 70	JP	WIRE 10mm	7300002410K	1
387	J 71	JP	WIRE 20mm	7300002420K	1
388	J 72	JP	WIRE 15mm	7300002415K	1
389	J 73	JP	WIRE 15mm	7300002415K	1
390	J 74	JP	WIRE 20mm	7300002420K	1
391	J 75	JP	WIRE 15mm	7300002415K	1
392	J 76	JP	WIRE 7.5mm	7300002407K	1
393	J 77	JP	WIRE 15mm	7300002415K	1
394	J 78	JP	WIRE 10mm	7300002410K	1
395	J 79	JP	WIRE 20mm	7300002420K	1
396	J 80	JP	WIRE 15mm	7300002415K	1
397	J 81	JP	WIRE 15mm	7300002415K	1
398	J 82	JP	WIRE 15mm	7300002415K	1
399	J 83	JP	WIRE 5mm	7300002405K	1



PH1745C  
(27Z21C)

## PARTS LIST

'95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY
288	VR455	VOL	VZ084SL1 50K	4000050054H	1
287	VR481	VOL	VZ084SL1 5K	4000050053H	1
288	VR851	VOL	VZ067TH1 2K	4010100013H	1
289	T 401	TORANS	ETH19Y141AY	63219Y141AH	1
290	T 402	FBT	MSU1FGS521	6201FGS521M	1
291	T 403	TORANS	ST-4001	637ST4001OR	1
292	T 801	LINE P	UF2327S152Y1R5	66152Y1R50D	1
293	T 802	TORANS	ST-8001	634ST8001OR	1
294	L 401	LIN COIL	LH15J122SH	67115J122SA	10
295	L 403	H COIL	340208	6503402080A	10
296	L 404	cho COIL	C7641	650C764100B	7.5, 10
297	L 801	COIL	TSL1110-220K2R2	650220K2R2T	10
298	F 801	FUSE	4A/125V	790000409MS	1
299	F 802	FUSE	1.5A/125V	790000159MS	1
300	CN103	CNNECTOR	B10B-PH-K-S	7210800010J	1
301	CN303	CNNECTOR	B14B-PH-K-S	7210800014J	1
302	CN801	CNNECTOR	B2P3-VH	7210300102J	1
303	CN101	CNNECTOR	B6P-SHP-1AA	7210400006J	1
304	CN808	CNNECTOR	B4P-VH	7210300004J	1
305	CN102	CNNECTOR	B5P-SHP-1AA	7210400005J	1
306	CN404	CNNECTOR	B8P-VH	7210300008J	1
307	CN405	CNNECTOR	B8P-VH	7210300008J	1
308	CN302	CNNECTOR	RTB1.5-2	7210100002J	1
309	CN403	CNNECTOR	RTB1.5-3	7210100003J	1
310	CN104	CNNECTOR	S10B-PH-K-S	7210900010J	1
311	CN304	CNNECTOR	S14B-PH-K-S	7210900014J	1
312	CN809	CNNECTOR	TS80P-02-V1	7210700002T	1
313	CN401	CNNECTOR	TS80P-04-V1	7210700004T	1
314	CN402	CNNECTOR	TS80P-04-V1	7210700004T	1
315	P 1	PIN	TEL312 KI	7223TEL312S	1
316	P 2	PIN	TEL312 KI	7223TEL312S	1
317	J 1	JP	WIRE 10mm	7300002410K	1
318	J 2	JP	WIRE 15mm	7300002415K	1
319	J 3	JP	WIRE 15mm	7300002415K	1
320	J 4	JP	WIRE 7.5mm	7300002407K	1
321	J 5	JP	WIRE 7.5mm	7300002407K	1
322	J 6	JP	WIRE 7.5mm	7300002407K	1
323	J 7	JP	WIRE 7.5mm	7300002407K	1
324	J 8	JP	WIRE 10mm	7300002410K	1
325	J 9	JP	WIRE 5mm	7300002405K	1
326	J 10	JP	WIRE 10mm	7300002410K	1
327	J 11	JP	WIRE 7.5mm	7300002407K	1
328	J 12	JP	WIRE 20mm	7300002420K	1
329	J 13	JP	WIRE 7.5mm	7300002407K	1
330	J 14	JP	WIRE 7.5mm	7300002407K	1
331	J 15	JP	WIRE 7.5mm	7300002407K	1
332	J 16	JP	WIRE 7.5mm	7300002407K	1
333	J 17	JP	WIRE 7.5mm	7300002407K	1
334	J 18	JP	WIRE 7.5mm	7300002407K	1
335	J 19	JP	WIRE 7.5mm	7300002407K	1
336	J 20	JP	WIRE 5mm	7300002405K	1
337	J 21	JP	WIRE 5mm	7300002405K	1
338	J 22	JP	WIRE 5mm	7300002405K	1
339	J 23	JP	WIRE 15mm	7300002415K	1
340	J 24	JP	WIRE 15mm	7300002415K	1
341	J 25	JP	WIRE 15mm	7300002415K	1
342	J 26	JP	WIRE 12.5mm	7300002412K	1

PH1745C  
(27Z21C) PARTS LIST '95.7.20

No	PARTS No	NAME	DISCRIPTION	SN/No	QTY
400	J 84	JP	WIRE 7.5mm	7300002407K	1
401	J 85	JP	WIRE 15mm	7300002415K	1
402	J 86	JP	WIRE 10mm	7300002410K	1
403	J 87	JP	WIRE 10mm	7300002410K	1
404	J 88	JP	WIRE 10mm	7300002410K	1
405	J 89	JP	WIRE 15mm	7300002415K	1
406	J 90	JP	WIRE 15mm	7300002415K	1
407	J 91	JP	WIRE 5mm	7300002405K	1
408	J 92	JP	WIRE 10mm	7300002410K	1
409	J 94	JP	WIRE 10mm	7300002410K	1
410	W 1	WIRE KIT	1007 AWG24 55mm	7611745000T	1
411	W 409	WIRE KIT	PH-005	7511010005H	1
412	Q 404A	SCREW	BTB 3x8	811000308CU	1
413	Q 404B	SILICON	YG6260	885YG62601T	1
414	D 401A	TUVE	φ 1.0 l=10mm	8611000001T	2
415	D 404A	SCREW	BTB 3x8	811000308CU	1
416	D 404B	SILICON	YG6260	885YG62601T	1
417	Q 406A	SCREW	BTB 3x8	811000308CU	1
418	Q 406B	SILICON	YG6260	885YG62601T	1
419	IC302A	SCREW	BTB 3x8	811000308CU	1
420	IC302B	SILICON RAVER	M-45	865M450000Y	1
421	Q 801A	HEATSINK	A	8210000027N	1
422	Q 801B	HEATSINK	B		1
423	Q 801C	SCREW	BTB BIND 4x10	811200410CU	1
424	Q 801D	BLAKET	BAND-3	83200000240	1
425	Q 801E	SILICON RAVER	TC-45A	865TC45A00A	1
426	Q 801F	SCREW	BTBW 3x8	811500308CU	4
427	A 500	SCREW	BTBW 3x8	811500308CU	2
428	A 501	SCREW	BTBW 3x8	811500308CU	5
429	A 502	SCREW	BTBW 3x8	811500308CU	3
430	B 201	CLAMPER	LWS-2W	852LWS2W0NN	2
431	B 202	BLAHET	VR HOLDER,PWB	8352900024M	2
432	B 203	NYLON LATCH	P4080B	853NRP460BK	2
433	B 204	SHEET, INSULATING	(PC1016A)	8670010003Y	1
434	F 801A	F. HOLDER	MINI	7925400014J	2
435	F 802A	F. HOLDER	MINI	7925400014J	2
436	M 103	WIRE	PH-046	7512100046N	1
437	M 303	WIRE	PH-048	7512140048T	1
438	M 401	WIRE	PH-049	7511080049N	1
439	M 302	WIRE	PH-050	7511020050T	1
440	M 808	WIRE	PH-052	7510040052T	1
441	B 101	LABEL	VR ADJ, POINT	8960003008S	1
442	B 102	LABEL	FOCUS. SCREEN	8960003010S	1
443	B 103	LABEL	WARNING	8960004001S	1
444	B 104	LAPPING BAND	PLT-0.7	850007001NP	4
445	B 105	CHASSIS, PWB	A	8340010025T	2
446	B 106	CHASSIS, PWB	D	8340010002T	2
447	B 107	LABEL	LABEL PH	8960004003S	1
448	B 108	ILET	BS EY 1.8-3	7230000001S	35
449	U 101	PCB	PH1745	700121745CS	1
	D304	DIODE	ISS83	ISS830007H	1
	D305	DIODE	ISS83	ISS830007H	1

---

**15. DETAILS OF NANA0 MONITOR**

**PAGE LEFT  
INTENTIONALLY  
BLANK**

# Cautions

## 1 Primary and Secondary Circuit

To avoid a severe electric shock, never touch the primary parts. When you make adjustments in this monitor, use the dielectric tuning tool. Don't short anything otherwise they may cause a trouble.

## 2 Impact

Don't give any impact to the color monitor during transportation, otherwise a trouble may result. The shipping package is durable against a drop of 400mm. However, if the package drops from a height of exceeding 400mm, it may be damaged.

## 3 High Voltage

Never touch the interior of the color monitor carelessly, since a very dangerous high voltage exceeding 20,000V is produced inside the monitor. Disconnect the AC plug from the socket before touching the interior.

## 4 High-Temperature Section

If dust or paper scraps remain in the interior of the color monitor, they may cause a trouble like electric shock or a fire. Particularly be careful with the ingress of these foreign substances due to a practical joke of customers.

## 5 Troubles

If an abnormal noise, smoke, or an unusual odor was detected, turn off the power switch immediately and also disconnect the plug from the plug socket. If the instrument is operated as it is, an unexpected trouble may result.

## 6 Magnetism

Magnetism causes the disturbance of CRT performance. Don't allow any magnet nor speaker to be close to the color monitor. Even if it approaches the instrument, it does not cause a trouble, but the picture may be colored or distorted.

## 7 Static Electricity

If you touch the CRT surface, you may feel a slight electric shock. This is caused by the static electricity being produced on the CRT surface and it does not affect the human body.

## 8 Control knobs

Don't manipulate control knobs uselessly. Entrust a skilled technician with their adjustments. If these control knobs are adjusted at random, the instrument may malfunction after a long-time use. For detailed adjustments, refer to the separate adjustment and check procedures.

## 9 Connecting CRT and PCB

Use only CRT and PCB cording the same serial number. Apply silicon grease around anode button when putting anode cap on. Please make sure that only other material is not attached around contact area.

## 10 Modification

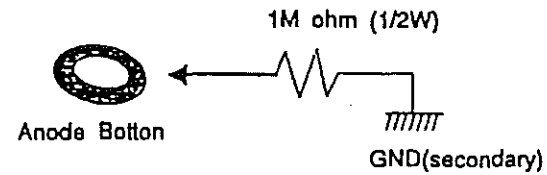
Never modify any part of the equipment without permission by authorised party. NANA O corporation will not be responsible for any damage or incident caused by an unauthorised modification.

◆ Notice

1. How to discharge the electricity on the CRT Anode button.

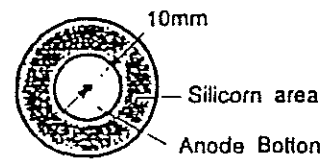
Use the following jig to discharge on the CRT Anode button. This action must be done after disconnecting the AC cord.

During discharging, do not attempt to touch the mentioned area (an arrow below).

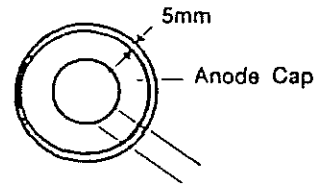


2. How to mount the Anode cap.

- (1). Clean up around the Anode button and inside of Anode cap.
- (2). Paint the Silicon grease around the Anode button uniformly.  
( Recommended grease; KS-650N, Shinetsukagaku )

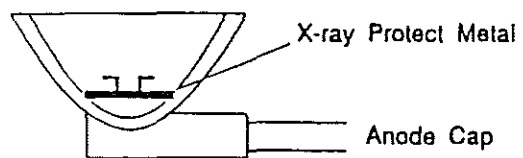


\* Do not paint inside of 10mm.



\* Over-painted area may be less than 5mm.

- (3). Lock the hook inside of the Anode cap onto the Anode button surely. If it has X-ray metal in the Anode cap, attach it onto the Anode button surely.



- (4). After locking the Anode button, pull the Anode to make sure the connection.

3. Please pay your attention to CRT neck and NECK PCB. Do not put both part to other material. It will be caused the damage.

4. Be careful to insert the NECK PCB to CRT.

5. Do not clamp CN102 lead and High Voltage lead from FBT with other lead wires.

# I. Specifications

## 1. Features

- This color monitor is equipped with 29" flat screen CRT and scans the dual frequencies of 15kHz and 24kHz.
- Remote Control PCB provides the easy access to adjust the screen image.
- The composite PCB is superior to endure the shock or damage comparison with the paper phenol PCB.
- The switching power supply provides the stable image quality in fair condition of power source.

## 2. Electrical Specifications

All measurements are subject to prior warm up at least 30 minutes and to be carried out in the standard normal inspection environment. The value herein described stands on following signals.

Input signal:    Mode 1        15.625kHz, Sega System 32 Timing  
                         Mode 2        24.39kHz, Sega System 24 Timing

Setting:    The screen faces to East and volumes and switches are set to the factory pre-set condition unless otherwise specified.

Measurement:    Linearity, Distortion, Convergence  
                         • Mode 2 signal is used for MS9-29SU.

### 2-1 Deflection

#### 2-1-1 Scanning Frequency

(Horizontal synchronising signal)

Frequency:    15.75kHz  $\pm$  300Hz (MODE 1), 24.6kHz  $\pm$  300Hz (MODE 2)

Blanking Pulse width:    less than 8.5 $\mu$ S

(Vertical synchronising signal)

Frequency:    55 ~ 65Hz

Blanking Pulse width:    less than 1.3mS

#### 2-1-2 Linearity

Horizontal     $\pm$ 12% max.

Vertical         $\pm$ 10% max.



### 2-1-3 Distortion

Trapezoidal distortion	less than 3%
Barrel/pincushion distortion	less than 3%
Tilt	less than 2°

### 2-1-4 Display Size, Display Position

Those settings are adjusted by the timings in Clause 9.

### 2-1-5 Display Size Control

Display shall be overscanned by tuning by the adjust volume on the Control PCB with the signals in Clause 9.

## 2-2 Image

2-2-1 Center resolution          640 dots x 405 lines

2-2-2 Bandwidth  
Video Bandwidth          More than 16MHz (at -3dB)

## 2-3 ITC Adjustment

### 2-3-1 Color Purity

No trouble shall be appeared after degaussing by a handy-bar demagnetizer.

### 2-3-2 Misconvergence

- Within a circle having a diameter corresponding to 60% of vertical length of CRT.          less than 1.5mm
- Within a circle having a diameter equivalent to vertical length of CRT (excluding the above circle)          less than 2.5mm
- Within CRT screen (excluding the above circles)          less than 3.0mm

### 2-3-3 White Balance

x:      0.274 ± 0.020

y:      0.280 ± 0.020

Color temperature target is about 10600°K. Brightness and Contrast volume set at factory pre-setting. Measured by white windows pattern at center.

### 2-3-4 Jittering

No jittering shall be noticeable from 50cm distance.

### 2-3-5 Brightness

42 ± 7ft-L

3Vp-p input voltage, white windows (180x180mm) on center

### 2-4 Power Input

Input voltage 120V AC ± 10%, 60Hz

Power consumption 105 ± 20W

Inrush Current Less than 40A peak at cold start (Input voltage 120VAC)

Less than 70A peak at hot start (Input voltage 120VAC)

### 2-5 Input signal specification

2-5-1 Sync signal: Horizontal Negative polarity or Positive polarity, TTL level  
Vertical Negative polarity, TTL level

2-5-2 Video signal: Analog, Positive

2-5-3 Scanning: Non-interlaced

### 2-6 CRT

2-6-1 Display Tube 29" 110° deflection color CRT  
CRT type : M68JUA068X  
Iron Mask

2-6-2 Trio Pitch 0.72mm (center)

2-6-3 Transmission Rate 39%

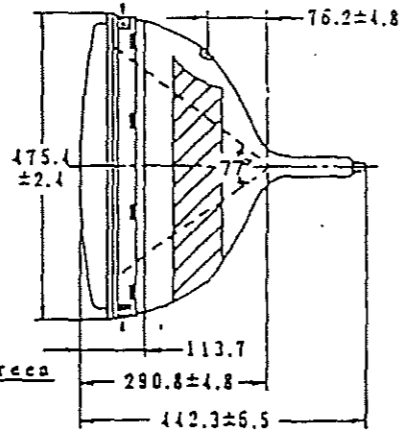
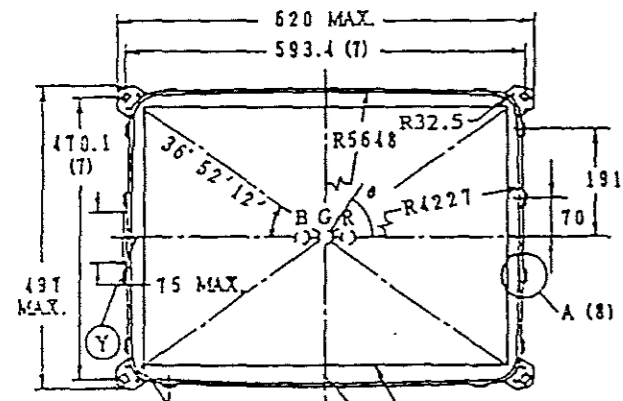
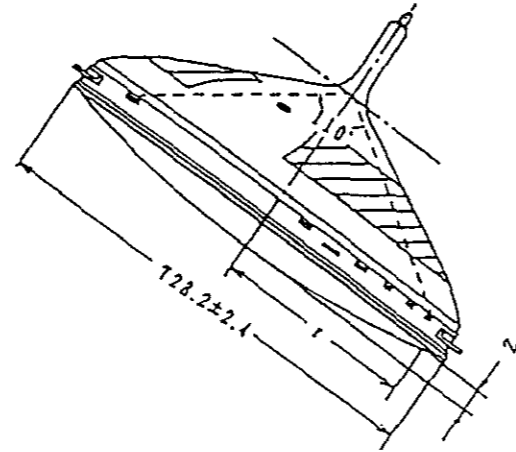
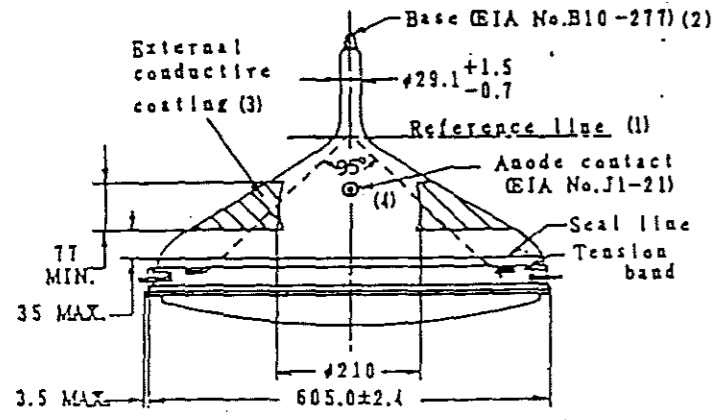
2-6-4 CRT Dimension

TUBE SPECIFICATION

American Matsushita Electronics Corporation

Dimensions in mm

M 6 8 J U A 0 6 8 X



Minimum useful screen  
 Diagonal 676.0  
 Horizontal 540.8  
 Vertical 405.6

$$Z = \frac{\sqrt{K(\theta)^2 + r^2} - r(\theta)}{B(\theta)}$$

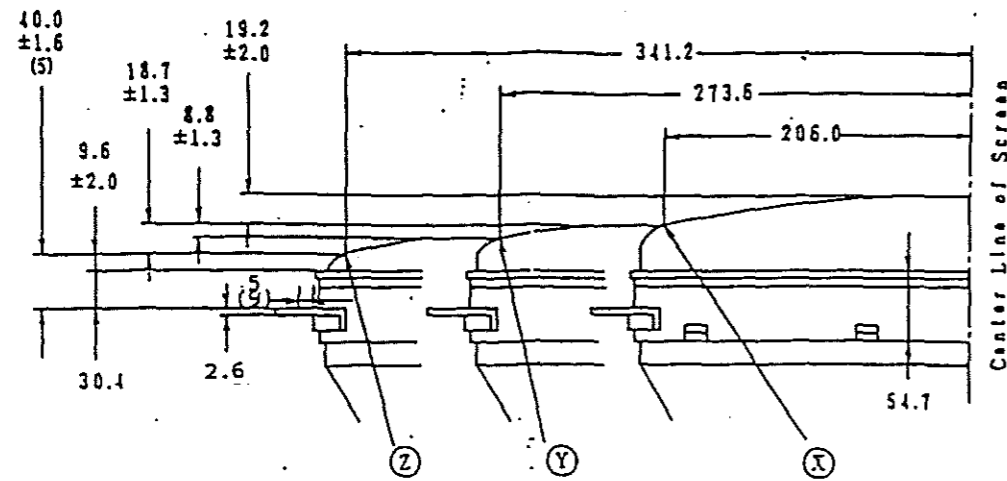
$$B(\theta) = \sum_{l=0}^5 B_l \cdot \cos(2l \cdot \theta)$$

$$K(\theta) = \frac{1}{\sum_{l=0}^5 K_l \cdot \cos(2l \cdot \theta)}$$

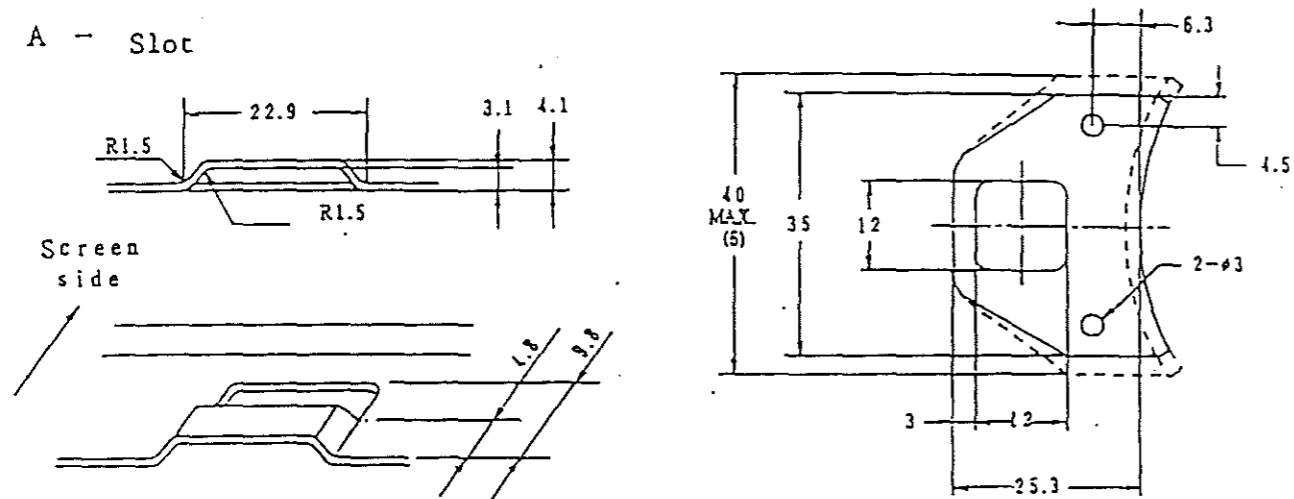
$\theta$ ; Angle from long axis

$K_0$	$1.3720958 \times 10^{-3}$	$B_0$	1.7508762
$K_1$	$3.2976780 \times 10^{-4}$	$B_1$	0.4992099
$K_2$	$-1.2286042 \times 10^{-3}$	$B_2$	-1.5658756
$K_3$	$-2.4794464 \times 10^{-4}$	$B_3$	-0.3842095
$K_4$	$2.7589475 \times 10^{-7}$	$B_4$	$-6.27861 \times 10^{-7}$
$K_5$	$-1.3568352 \times 10^{-8}$	$B_5$	$-3.38107 \times 10^{-7}$

Dimensions in mm

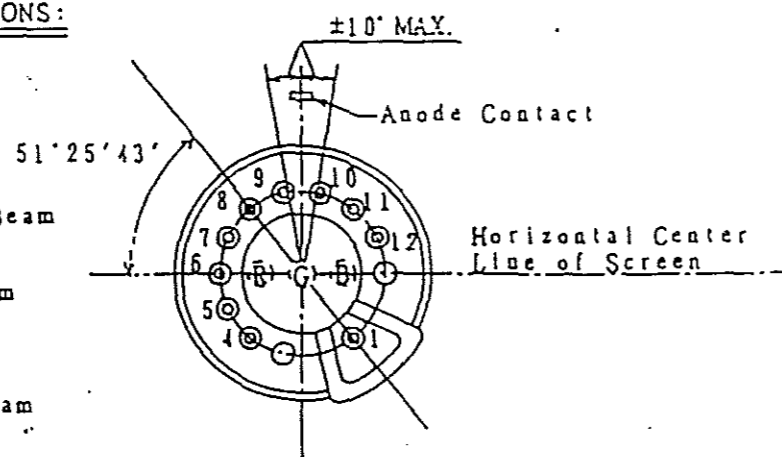


- A - Slot



SPECIFICATION OF PIN CONNECTIONS:

- Pin No.1 : Grid No.3,5
- Pin No.4 : I.C.
- Pin No.5 : Grid No.1
- Pin No.6 : Cathode of Green Beam
- Pin No.7 : Grid No.2,4
- Pin No.8 : Cathode of Red Beam
- Pin No.9 : Heater
- Pin No.10: Heater
- Pin No.11: Cathode of Blue Beam
- Pin No.12: I.C.



BOTTOM VIEW OF BASE

### 3 Mechanical Specifications

#### 3-1 Outline

Refer to the attached sheet.

#### 3-2 Weight

Net: 37kg  
Gross: 43kg

#### 3-3 Adjustment Functions

\* Refer to Page 19.

##### 3-3-1 User Control

Brightness (BRIGHT)  
Contrast (CONTRAST)  
Vertical position (V.POSI)  
Vertical size (V.SIZE)  
Horizontal size (H.SIZE)  
Horizontal position (H.POSI)  
Red signal gain (R-GAIN)  
Green signal gain (G-GAIN)  
Blue signal gain (B-GAIN)

##### 3-3-2 Maintenance Control

Side pin spc (SPC15)  
Trapezoid (TRAP)  
Vertical linearity (V.LIN)  
H.SIZE Limiter (H.S.LIM)  
Red signal bias(R-CUTOFF)  
Green signal bias (G-CUTOFF)  
Blue signal bias(B-CUTOFF)  
Horizontal position (H.POSI)

Focus (FOCUS)  
Screen (SCREEN)

\* Caution: Do not adjust above volumes except the authorized service personnel.

### 3-4 Power Cord and Signal Input Connector

**A: UP connector**

- #1pin Red from B connector #6
- #2pin Green from B connector #5
- #3pin Blue from B connector #4
- #4pin Grey from B connector #2
- #5pin White from B connector #3
- #6pin Black from D connector #1
- #7pin Black from D connector #3
- #9pin Red from C connector #3
- #10pin Red from C connector #5
- #8, #11~15pin open

**B: EHR-6 connector**

- #1pin Open
- #2pin Grey
- #3pin White
- #4pin Blue
- #5pin Green
- #6pin Red

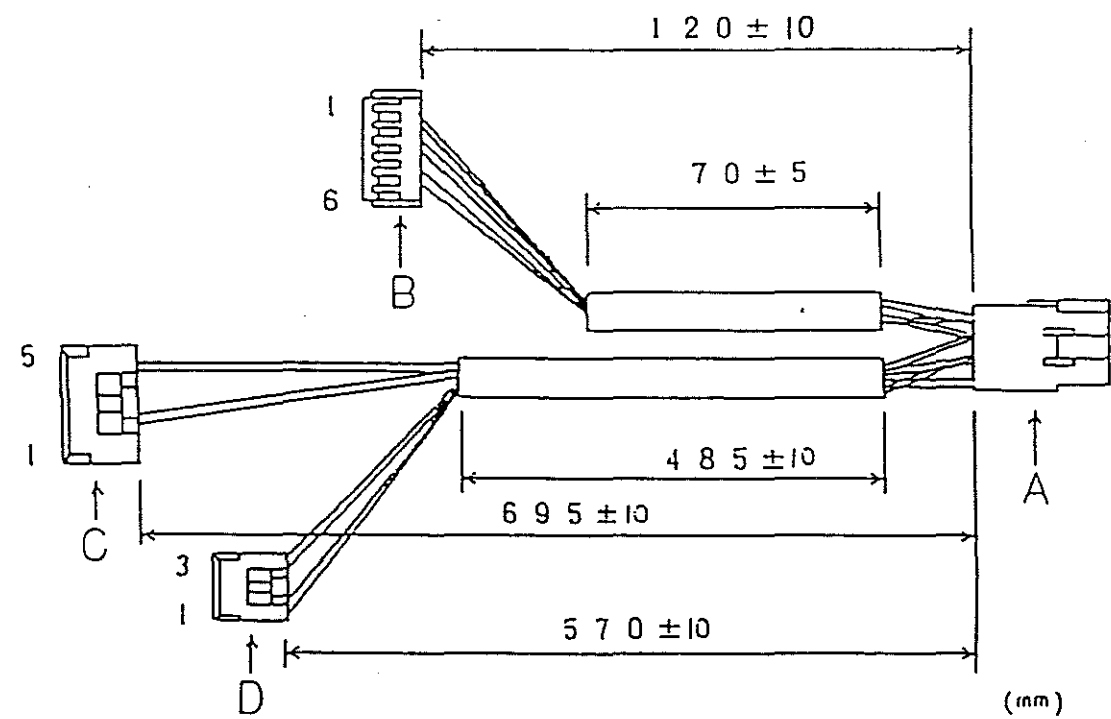
**C: VHR-5N connector**

- #1~2,4pin Open
- #3pin Red
- #5pin Red

**D: VHR-3N connector**

- #1pin Black
- #2pin Open
- #3pin Black

\* Tight up the ferrite core (Matsushita, KR06TA191010W) on the harness of EHR-6P connector side.



## 4 Reliability and Safety

4-1 Safety Standards      UL1950

4-2 X-Ray                  DHHS

4-3 AC line noise resistance

No asynchronized condition shall be detected when applying 500V<sub>p-p</sub> pulse by using a noise simulator.

4-4 High Voltage Label      Anode lead, Focus lead, Screen lead, DY lead

4-5 MTBF                  20,000 hours without CRT (MIL-HDBK-217F)

## 5 Environmental Conditions

5-1 Operating conditions

Temperature      0°C ~ 40°C  
Relative humidity      Less than 70%, non condensing

5-2 Storage conditions

Temperature      -10°C ~ 60°C  
Relative humidity      Less than 80%, non condensing

5-3 Drop Test      40cm (drop on five faces without top face)

5-4 Vibration Test

No abnormal symptom shall appear when applying vibrations having the maximum acceleration of 1G for 30 minutes.

## 6 Pin Assignment

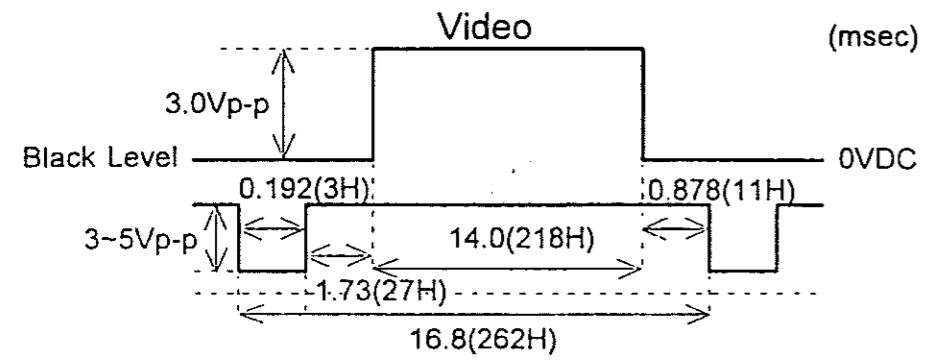
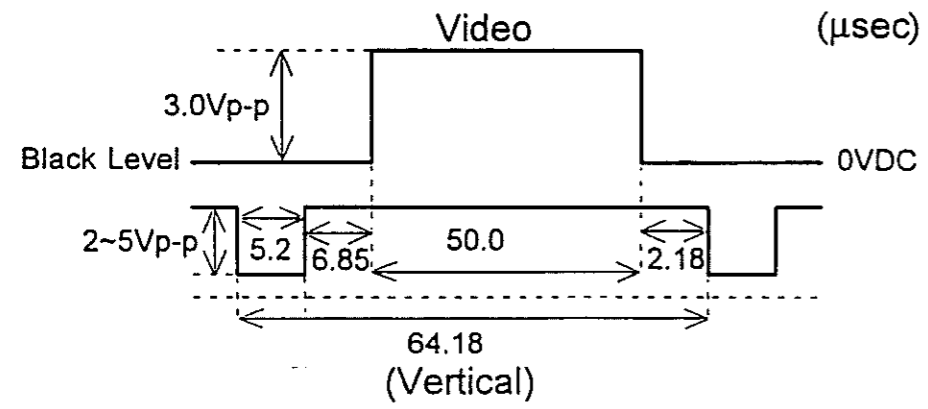
Pin No.		
1	Vertical sync	Negative polarity, 3V ~ 5Vp-p
2	Horizontal sync	Negative Composite, 2V ~ 5Vp-p or Negative polarity, 3V ~ 5Vp-p
3	Ground	Ground
4	Blue video	Positive polarity, Black level, more than 0VDC or Positive polarity, White level, Black level + 3Vp-p
5	Green video	Same as specified
6	Red video	Same as specified

\* Please open 1pin when input a composite sync into 2pin.

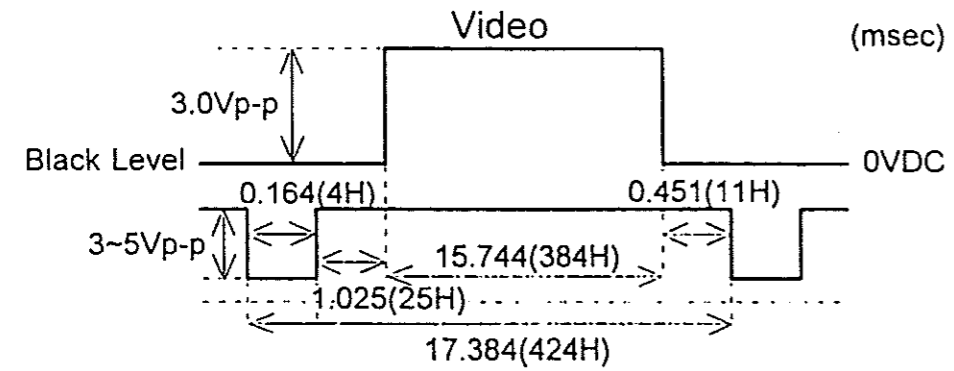
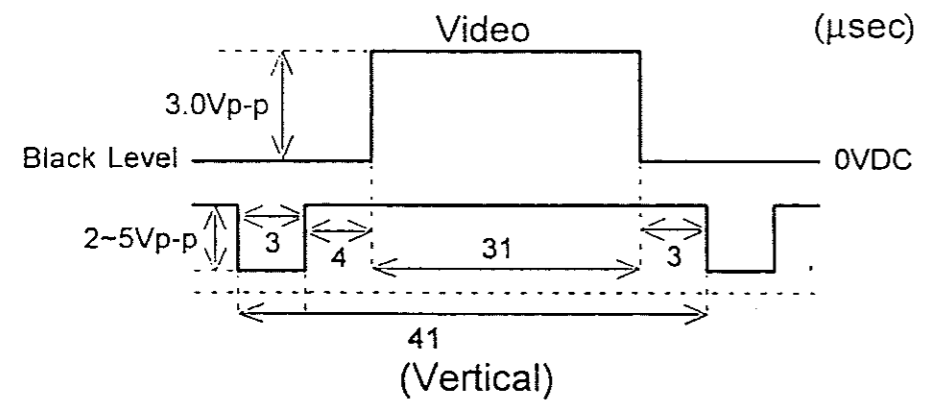


## 8 Timing Chart

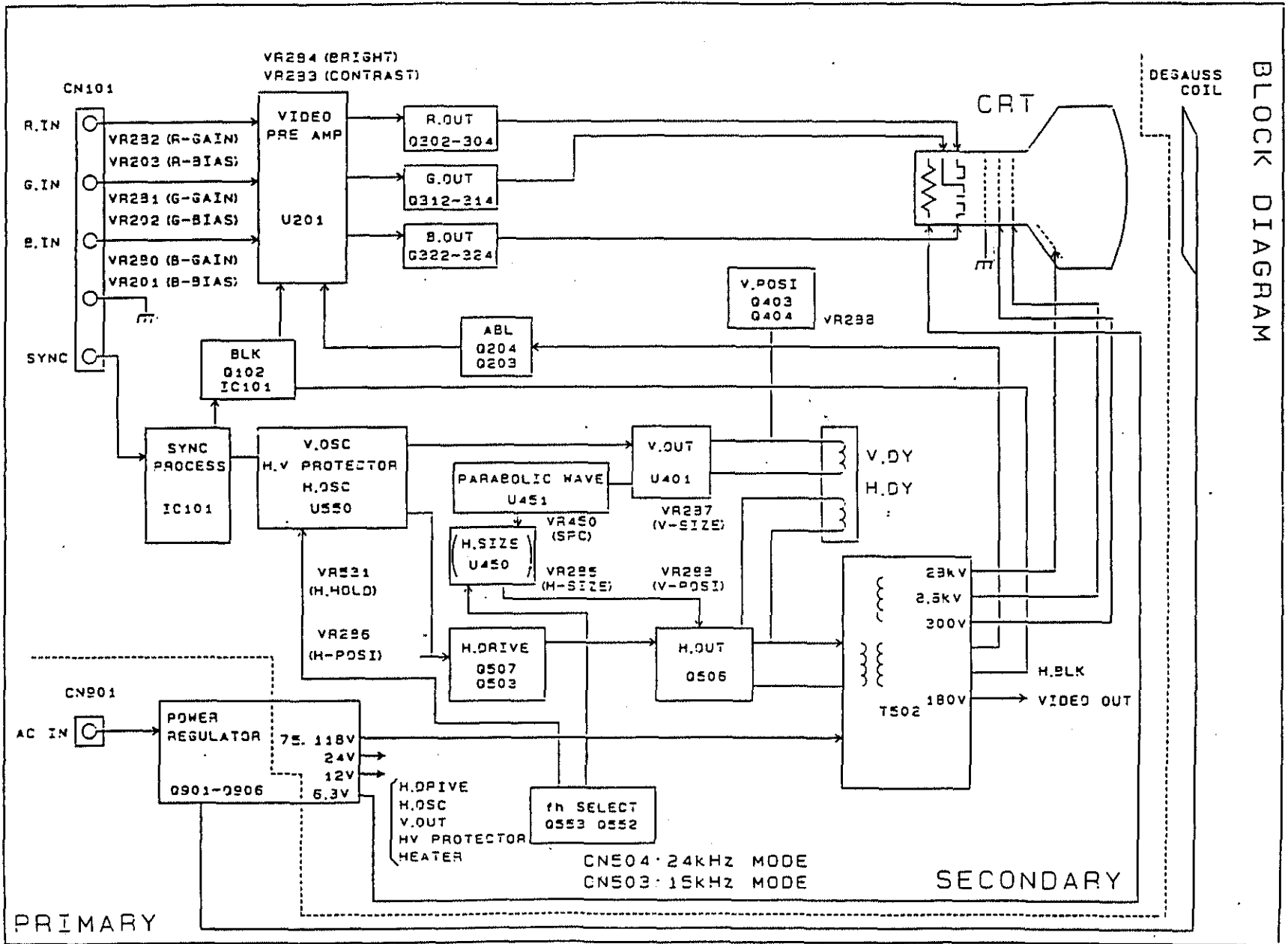
15.58kHz (Horizontal)



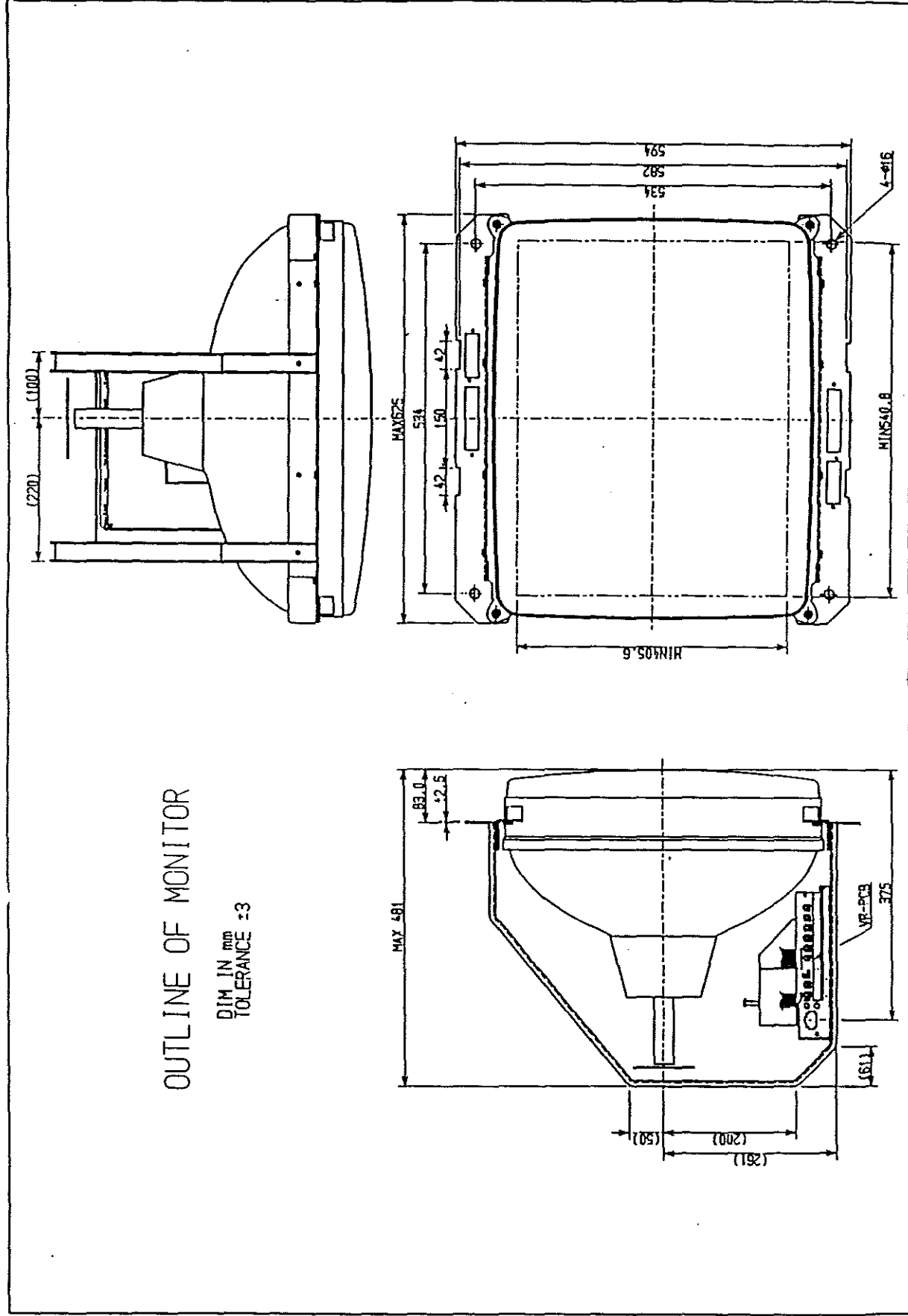
24.39kHz (Horizontal)



9. Block Diagram

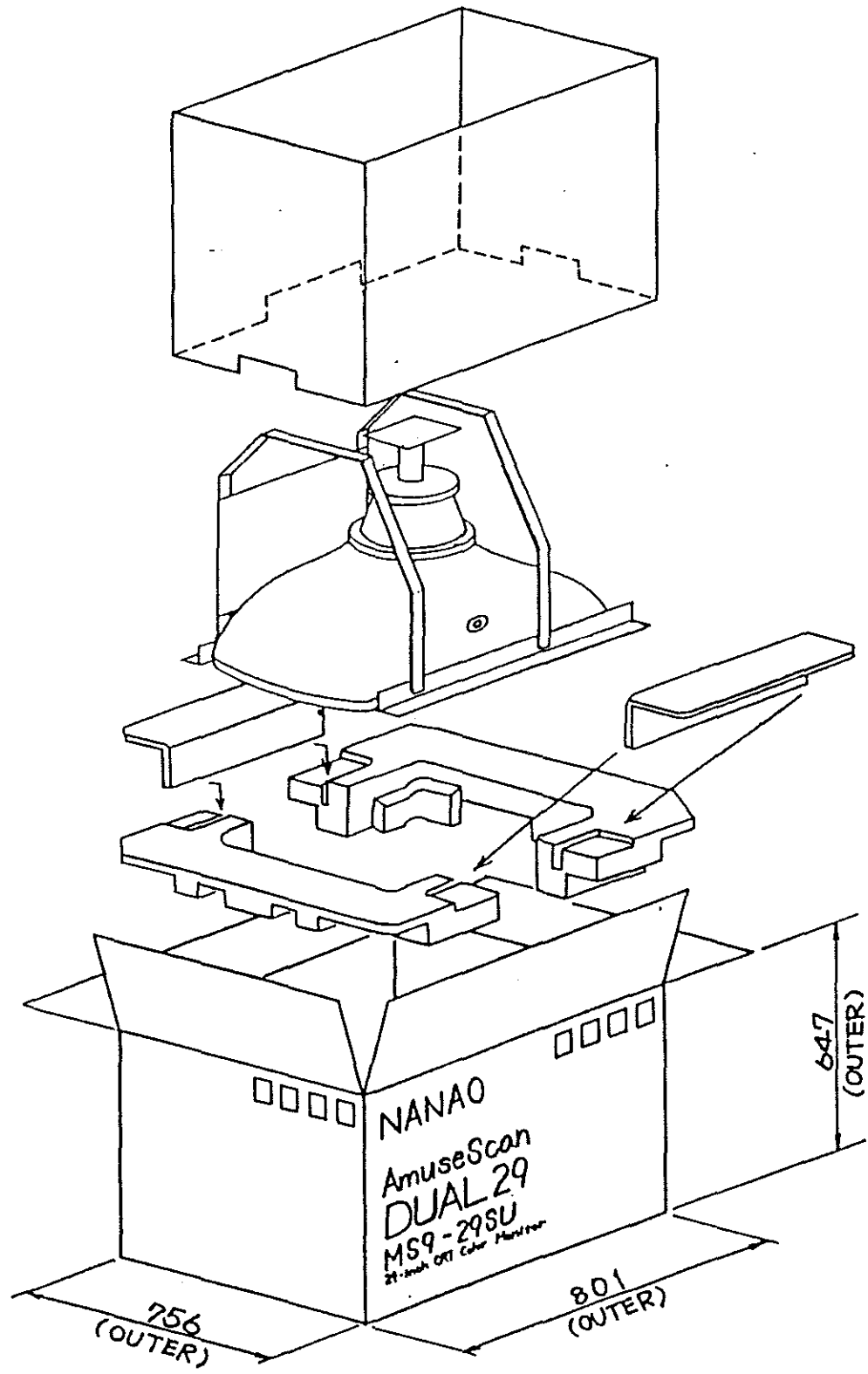


# 10. Outline

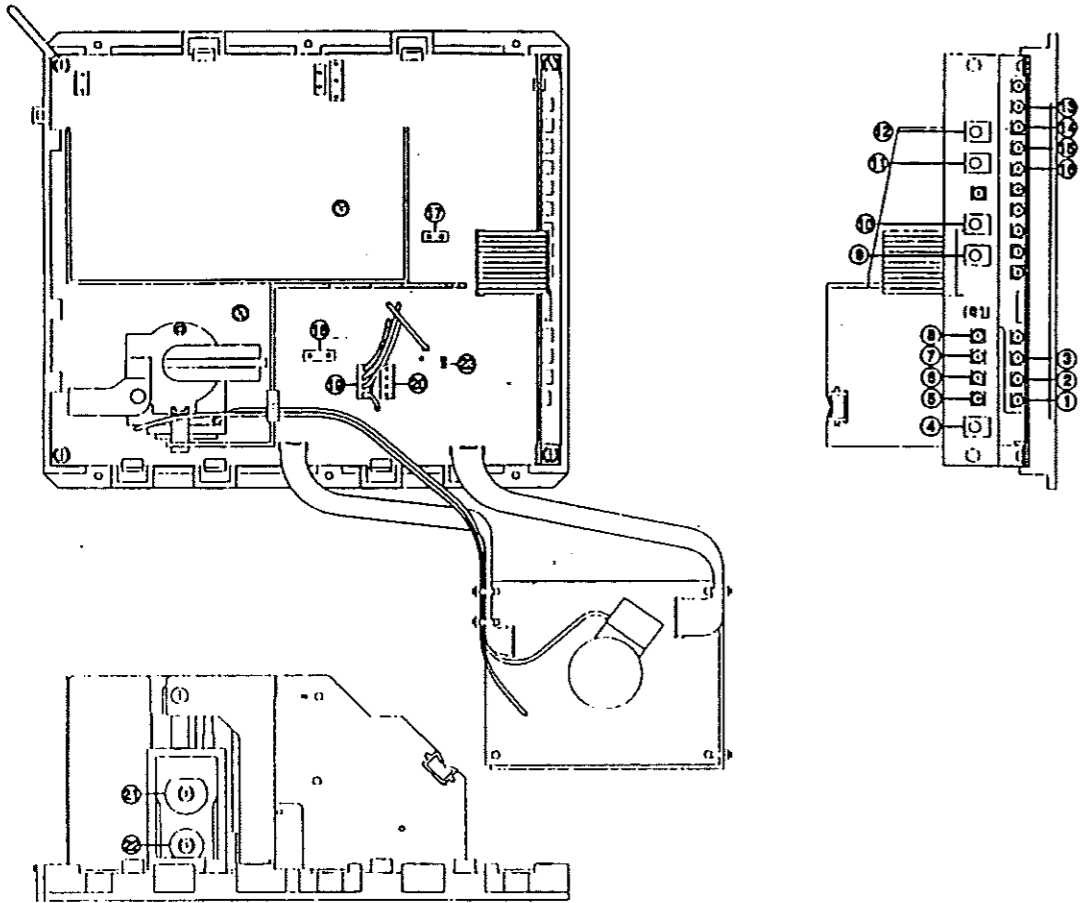


# 11. Packing Drawing

(mm)







## II. Adjustment for User Control



1. R-Cutoff (VR201)  
RED BIAS adjustment.  
RED color gets stronger when turning this VR to clockwise.
2. G-Cutoff (VR202)  
GREEN BIAS adjustment.  
GREEN color gets stronger when turning this VR to clockwise.
3. B-Cutoff (VR203)  
BLUE BIAS adjustment.  
BLUE color gets stronger when turning this VR to clockwise.
4. CONTRAST (VR283)

5. R-GAIN (VR280)  
RED INPUT GAIN adjustment  
RED color gets deeper when turning this VR to clockwise.
6. G-GAIN (VR281)  
GREEN INPUT GAIN adjustment  
GREEN color gets deeper when turning this VR to clockwise.
7. B-GAIN (VR282)  
BLUE INPUT GAIN adjustment  
BLUE color gets deeper when turning this VR to clockwise.
8. BRIGHT (VR284)
9. H. SIZE (VR285)  
Horizontal size adjustment.  
Note: Use the hex core driver to turn this coil.
10. H. POSI (VR286)  
Horizontal phase adjustment.
11. V. SIZE (VR287)  
Vertical size adjustment.
12. V. POSITION (VR288)  
Vertical position adjustment.
13. V. LIN (VR401)  
Vertical linearity adjustment.
14. TRAP (VR453)  
Trapezoidal distortion adjustment.
15. SPC15 (VR450)  
Side Pin Cushion adjustment.
16. H.S.LIM (VR452)  
Horizontal side limitation adjustment. Sealed with the Silicon rubber.

17.18. Deflection Yoke Polarity Connectors

	CN401 normal	CN401 reverse
CN501 normal connection	 Normal screen	 Mirrored screen
CN501 reverse connection	 Reversed screen	 180° rotated screen

19. H. Freq. Switching Connector (CN503)  
Used for 15kHz signal.

20. H. Freq. Switching Connector (CN504)  
Used for 24kHz signal.

21. Focus

22. Screen  
Adjust to just back raster disappearing.

23. Horizontal Size Changeable Connector (Wide: CN506, Narrow: CN507)  
This connector changes the range of horizontal size control. If the screen is too wide even adjusting H. SIZE, change this connector to NARROW position.

### III. Detail Adjustment

† Necessary Equipment & Tools: Hand demagnetizer, Digital multimeter, Frequency counter, Plastic driver.

#### 1. Preset

##### A). Setting before detail adjustment.

CRT direction	TV style, face to East	Volume position	RGB Gain: 1 o'clock RGB Cut-off: clockwise max. Others: center
DY polarity	Normal (CN501, 401)	Screen VR	Just disappeared the raster
fH connector	High (CN504)	Focus VR	Best focused
H. Size Tap	Inserted to CN507		

B). CRT and other metal parts are degaussed. Burning time should be more than 30 minutes.

#### 2. Adjustment

\* Standard signal: System 24. If required, use the game logic board.  
\* Input voltage: 120VAC, 60Hz

##### A). +B Adjustment without any signal

Set the fH connector to CN503. Make sure the +B voltage between GND(chassis) and TP2 for reading 76 +/- 0.2VDC.

Set the fH connector to CN504. Make sure the +B voltage between GND(chassis) and TP2 for reading 119 +/- 0.2VDC.

##### B). ITC Adjustment RED raster and cross-hatch signal

###### B-1. Earth magnetizm setting

Set to shipping distination. CRT is faced to East.

###### B-2. Purity Adjustment

B-2-1. Receive white closs-hatch and adsut it roughly.

B-2-2. Receive RED raster signal.

B-2-3. Pull the DY toward your body and adjust 2P magnet for getting the RED bar on the center of the screen. (Fig. B-2-3)

B-2-4. Push the DY away from your body and fix it at best RED color position with checking the tilt distortion.

B-2-5. Check the white uniformity with white raster signal.

B-2-6. Check the purity condition with RGB to South, North and West direction after degaussing by the hand demagnetizer. If noticeable error on the corner or edge, attach the magnet piece onto CRT funnel to compensate it.

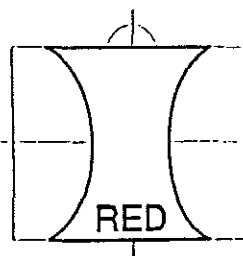


Fig. B-2-3



**B-3. Static Convergence Adjustment.**

- B-3-1. Receive cross-hatch signal and adjust focus to correct position.
- B-3-2. Receive magenta cross-hatch and adjust 4P magnet in order to receive the best magenta colour at the centre of the screen.
- B-3-3. Receive white cross-hatch and adjust 6P magnet in order to receive the best white colour at the centre of the screen.
- B-3-4. If necessary, repeat B-3-2 and B-3-3.

**B-4. Dynamic Convergence Adjustment**

- B-4-1. Receive magenta cross-hatch.
- B-4-2. Swing the DY up and down until the best convergence is obtained at the top and bottom of the screen. Next, fix the DY using wedges. (Fig.B-4-2)

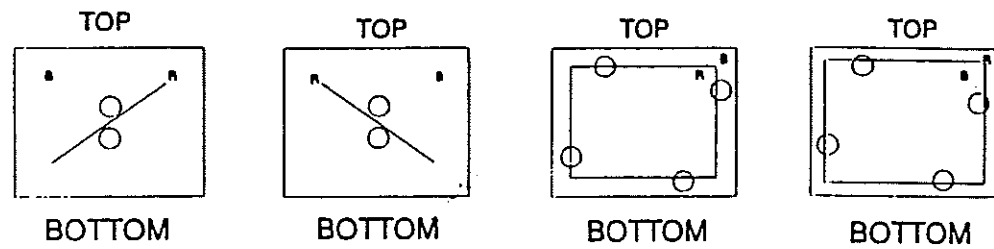


Fig. B-4-2

- B-4-3. Swing the DY on both sides until the best convergence is obtained on the edges. Then fix the DY again.
- B-4-4. The wedges should be placed as per Fig. B-4-4.
- B-4-5. If the edges are still not satisfactory then place the ferrite between the CRT and the DY.

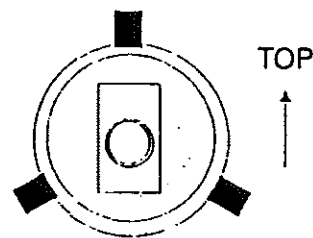


Fig. B-4-4

**B-5. Fixing of the DY**

- CP magnet, DY screw: Locked By the paint.
- Wedges: Fixed with the silicon rubber.

**C). X-ray protector check** with standard signal  
 Input 12.5VDC between GND(chassis) and J466. Endure the protection activates. (Fig. C: recommended circuit)

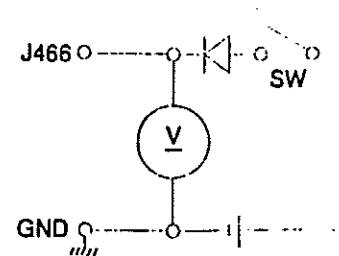


Fig. C

D). V.Lin (VR401) adjust with standard signal  
Adjust this VR for getting the same height at top and bottom of the screen. (Fig. D)

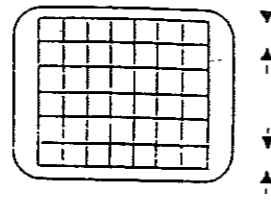


Fig. D

E). Distortion Adjustment with standard signal

E-1. Side Pincushion Adjustment

Adjust VR450 for getting the strait line at left and right edges.

E-2. Trapezoid Adjustment

Adjust VR453 for getting the best rectangle image.

E-3. Parallelogramic Adjustment

Adjust VR552 for getting the best rectangle image.

F). H & V Size (H:VR285, V:VR287) Adjustment with standard signal

Adjust horizontal and vertical size to the designated size precisely.

G). H & V Position (H:VR286, V:VR288) Adjustment with standard signal

Adjust the image to center precisely.

H). White Balance Adjustment with grey scale standard signal

\* Gain VR VR280, VR281, VR282

\* Cut-off VR VR201, VR202, VR203

Tune the image for getting the pure white by adjusting above volumes. Check both brighten and darken part.

I). Brightness (VR284) Adjustment with standard signal

I-1. Raster Brightness

Set the Brightness VR maximum. Adjust the raster brightness by tuning the Screen VR about 0.8ft-L. After this, set the Brightness VR just disappearing the raster screen.

I-2. Window Brightness Adjustment with standard signal

Set the Brightness VR maximum and the Contrast VR at center click. Adjust the Sub-Contrast VR (VR204) for getting the brightness at 42 +/- 2ft-L.

I-3. White Field Brightness Adjustment with standard signal

Set the Brightness and Contrast VR maximum. Adjust the ABL VR (VR205) for getting the brightness at 21 +/- 1ft-L.

J). Focus Adjustment with standard signal

Adjust this VR on FBT for getting the best focus point at designated area. (Fig. J)

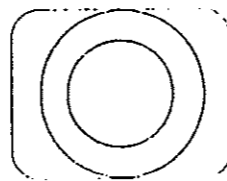


Fig. J

## IV. Trouble Shooting

### 1. No screen

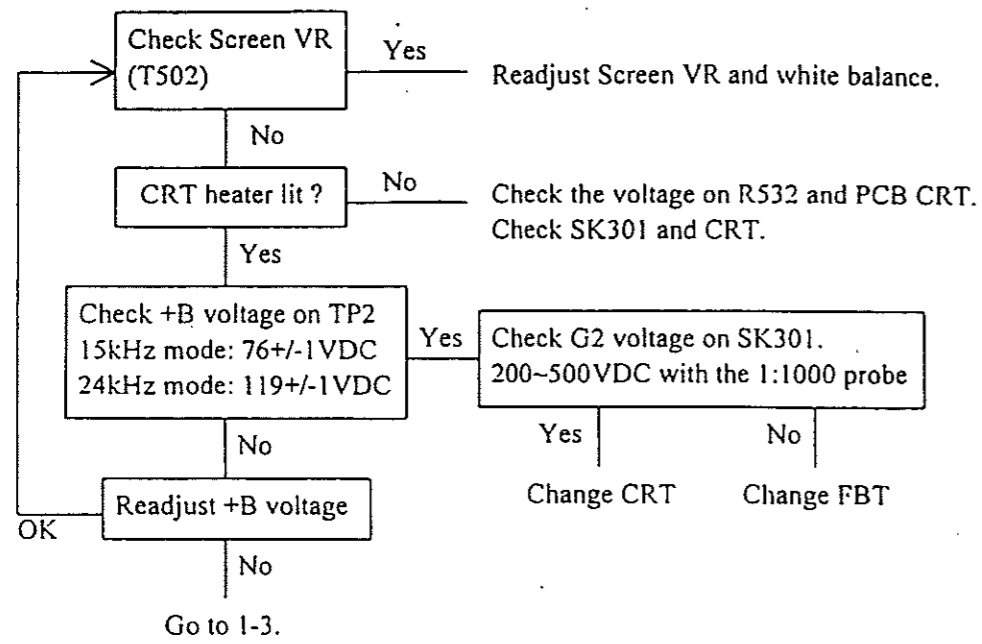
#### 1-1. Fuse blown

Trouble in the Primary circuit.

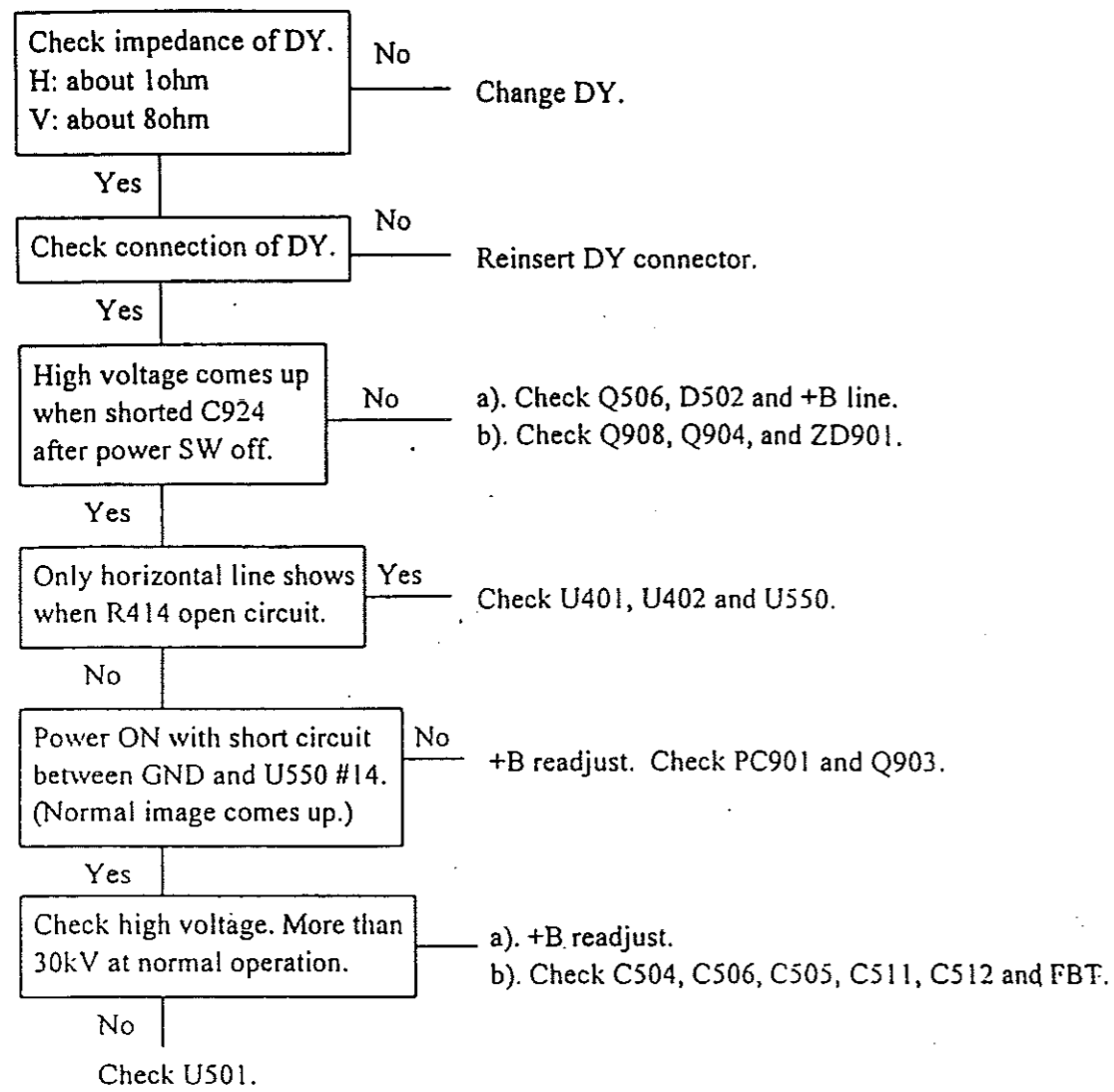
Check Q901, T901, BD901, D901, C911, PTH901.

Recheck the input voltage when turning the power switch ON. (Voltage should be 108~132VAC.)

#### 1-2. High voltage comes up but no raster image

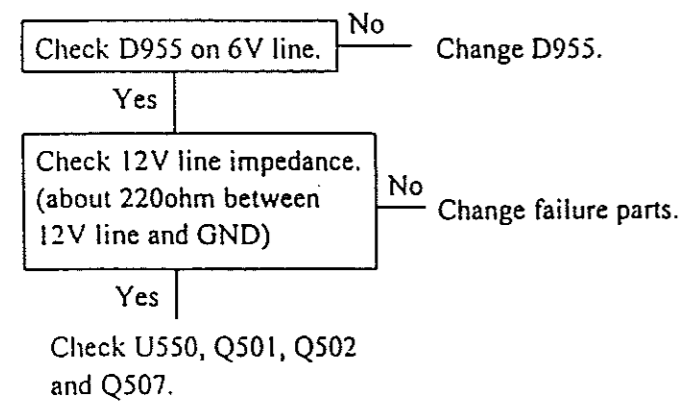


1-3. High voltage comes shortly.

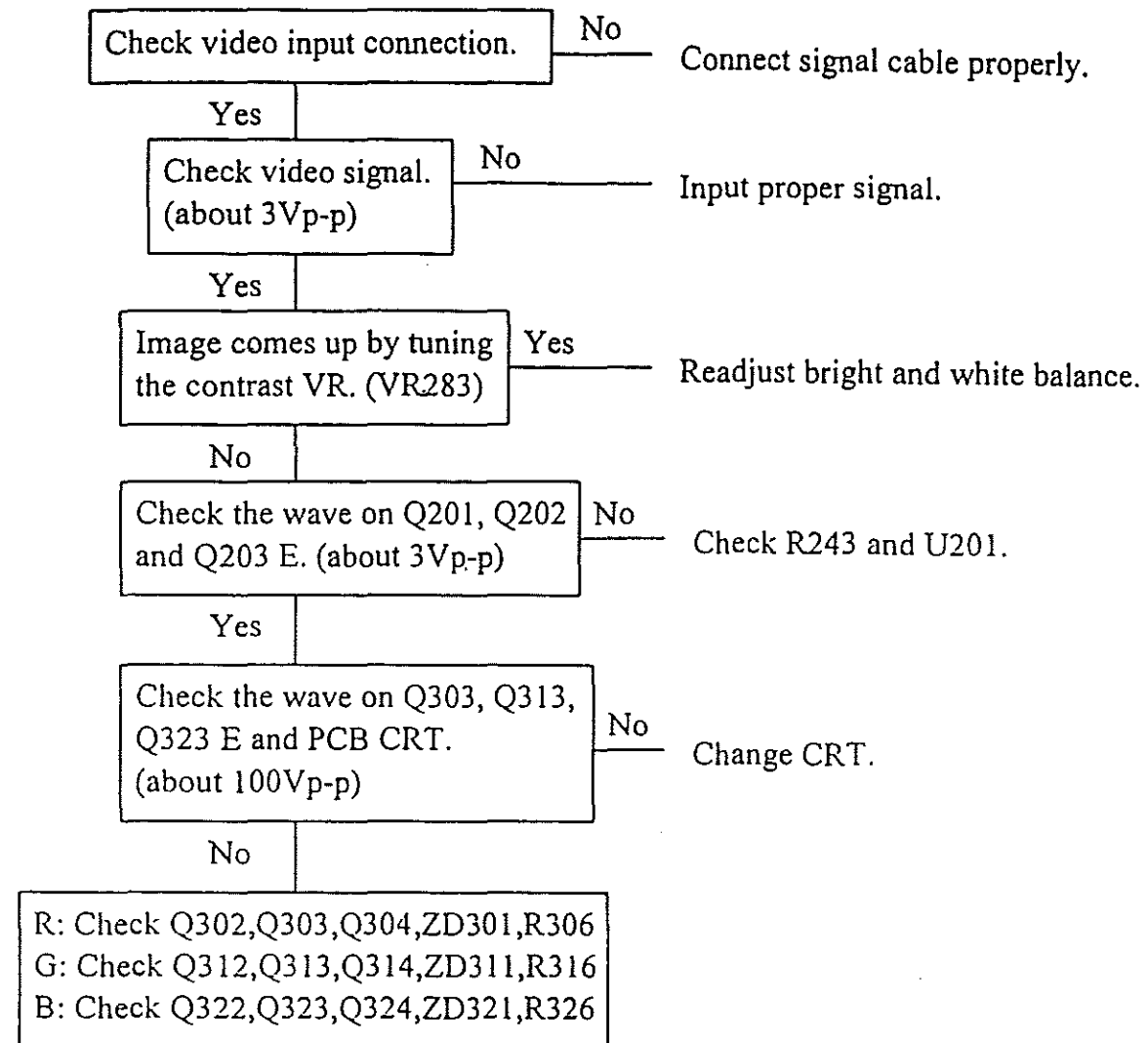


1-4. No high voltage but noise sounds.

\* Discharge C924 before turning the power SW ON again.

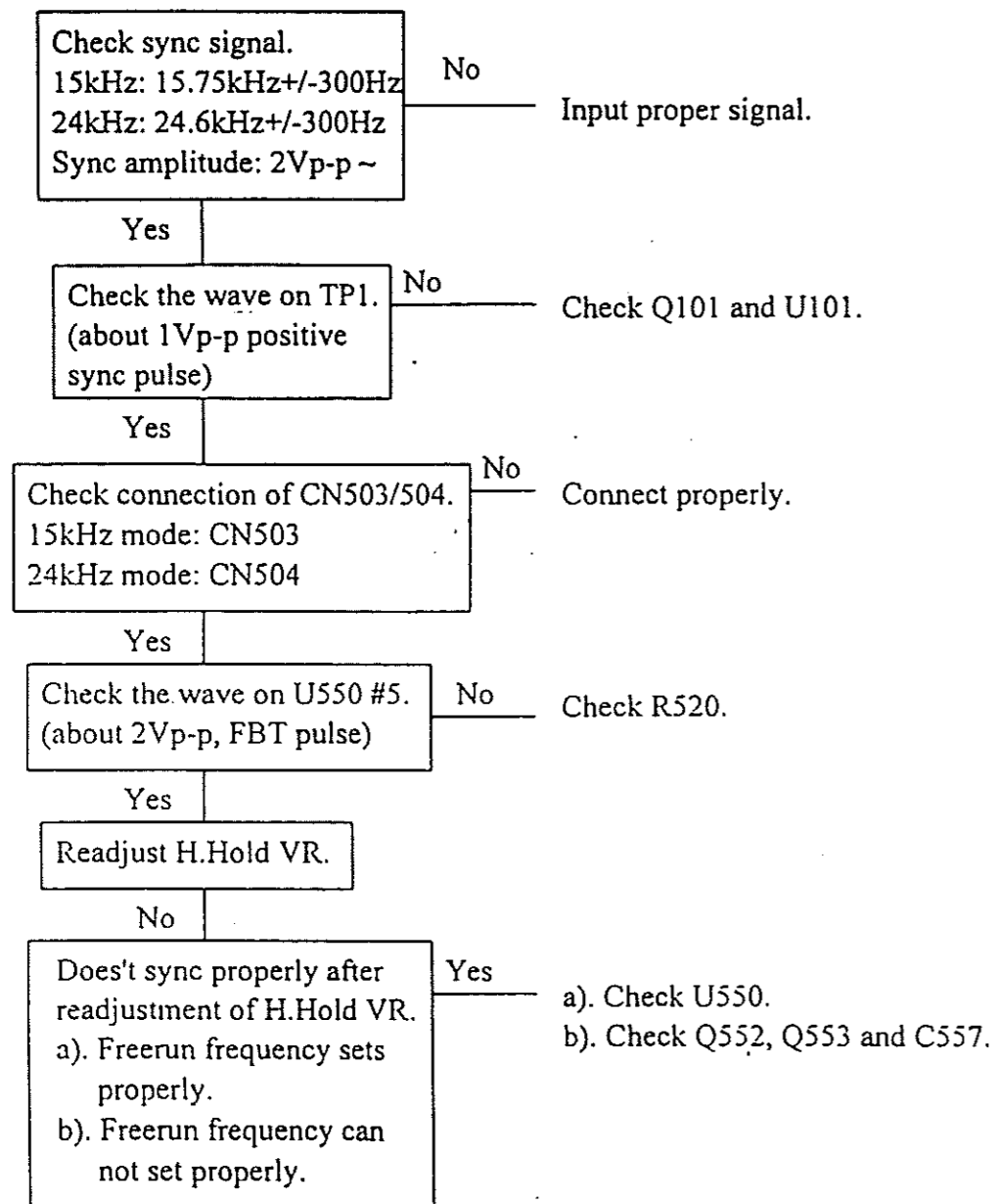


2. Raster lit but no images (or particular color doesn't show)

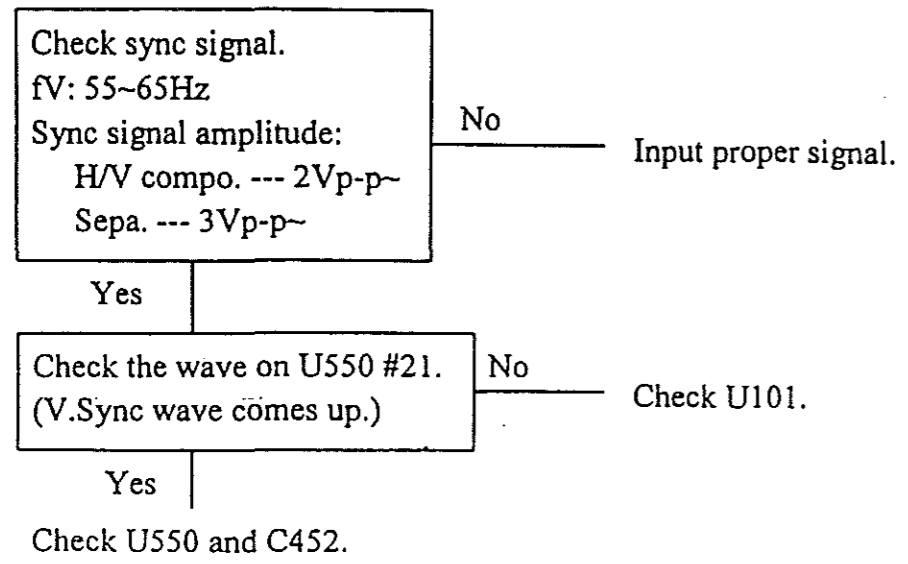


### 3. Doesn't sync properly.

#### 3-1. Horizontal sync



3-2. Vertical sync



## V. Important service Safety Information

The B+ controls in this monitor are sealed not to remove unnecessarily because of protecting the user from X-ray radiation. The B+ Adj. controls should not normally have to be adjusted. But if the part related X-ray circuit are replaced due to the damage, check the B+ voltage to assure that there are within specification after adjustment. Then, seal these controls according to the manufacture's requirement.

H.V. failure may increase X-ray radiation. Therefore, monitors should not be operated with H.V. level exceeding the specified rating. The max. operating H.V. specified on the chassis is 28.5 +/-1.5kV at max. brightness with an input voltage of 120VAC. Higher voltage may also increase possibility of failure in H.V. supply to CRT.

It is important to maintain specified values of all components in the horizontal deflection, high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage or operating supply voltage. No change should be made to the original design of the monitor.

Components shown on the schematic diagram identified ★ mark should be replaced only with exact factory recommended parts. The use of unauthorized substitute parts may cause X-ray radiation.

To determine the presence of high voltage, use an accurate and high impedance H.V. meter connected between second anode lead and the CRT dag grounding.

When servicing the High Voltage System, AC line cord should be disconnecting a 10kΩ resistor in series with an insulated wire (such as a test probe). Attach such tool between picture tube dag and second anode lead after servicing the anode cap onto picture tube and eliminate static charge.



REF. NO.	PART NO.	DESCRIPTION		QTY.
<u>COILS</u>				
L301	00L13120KT	(CHOKE)	LF-5.0S-120K	1
L302	00L134R7KT	(CHOKE)	LF-5.0S-4R7M	1
L311	00L13120KT	(CHOKE)	LF-5.0S-120K	1
L312	00L134R7KT	(CHOKE)	LF-5.0S-4R7K	1
L321	00L13100KT	(CHOKE)	LF-5.0S-100K	1
L322	00L134R7KT	(CHOKE)	LF-5.0S-4R7K	1
L313	00L13100KT	(CHOKE)	LF-5.0S-100K	1
L323	00L13100KT	(CHOKE)	LF-5.0S-100K	1
L324	00L13120KT	(CHOKE)	LF-5.0S-120K	1
<u>SPARK-GAP</u>				
SG301	08R38116A1		1KV	1
SG311	08R38116A1		1KV	1
SG321	08R38116A1		1KV	1
SG333	08F38315A1		DSP-201M-500B	1
<u>OTHER PARTS</u>				
CN301	00F44547B1	CONNECTOR	2.36 PIN (GT-PIN)	1
CN302	00J40642A7	CONNECTOR	B8B-PH-K-S	1
CN303	00F40953A4	CONNECTOR	B5B-XH-A	1
SK301	08F43120A1	C. R. T. -SOCKET	CYT3210-2101	1
	08N49197A1	RADIATOR-OTH-126-T		3
<u>JUMPER</u>				
J301	08F09122A1	JUMPER	P=5	1
J303	08F09122A4	JUMPER	P=15	1
J304	08F09122A2	JUMPER	P=10	1
J305	08F09122A5	JUMPER	P=20	1
J307	08F09122A1	JUMPER	P=5	1

REF.NO.	PART NO.	DESCRIPTION	QTY.
	08R31225A1	C. R. T. M68JUA068X	1
	05F18637A1	DEFLE-YOKE KY4UL319X	1
	08N50441A1	C. P-MAGNET ETC33X8KA	1
	08N46012A1	WEDGE	3
	05U01695E1	ASSY-COATING EARTH	1
	00N08110A1	ACETATE TAPE No.156 NITTO巾19mm l=100mm	2
	08J08089A2	ACETATE TAPE AT-570F 巾15mm l=30mm	3
	0FN803010D	TAP-TITE-P-TP 3×10	9
	0FJ924016N	TAP-TITE-P-BIND 4×16	1
	08N54089A1	CLAMPER T18R	20
	00F55550A1	PLASTIC-RIVET No.615	2
	00R54072A1	ANODE CLAMPER	1
	05F16640A1	ASSY-D. G-COIL	1
	05C02613A1	BRACKET 29S	2
	05B00977A1	BASE 29S	1
	05B00975A1	STAY 29S	2
	05D07075A1	PCB-HOLDER 29S	1
	05D06224A1	CRT SCREW	4
	0FF706012D	SCREW-SEMS-P-HEX M6×4 (W/SW付)	4
	0FJ924008D	TAP-TITE-P-BIND 4×8	4
	05D07110A1	N. P-MS9-29SU	1
	05D07111A1	LABEL-II. V-29SU	1
	05D07112A1	LABEL-CN-29SU	1
	05D01095A1	FUSE-LABEL	1
	05D04910A1	II. V-WARKING-LABEL	1
	05D06444A1	DIHS-LABEL	1
	05D06450A1	LABEL-IIV	1
	05D06454A1	UL-LABEL	1
	05D06455A1	CRT-LABEL	1

REF. NO.	PART NO.	DESCRIPTION			QTY.
C321	OKH80331JM	CERAMIC	DD107 50V SL	331J	1
C322	OKH81222KB	CERAMIC	DD106 50V B	222K	1
C331	02L81102KB	CERAMIC	DE0907 2KV B	102K	1
C332	OPR41100MW	ELECTRO.	KME 250V	10uF	1

TRANSISTORS

Q301	OCH21740S2	SILICON	2SC1740S		1
Q302	OCF24001ZL	SILICON	2SC4001L		1
Q303	OCH24218Z2	SILICON	2SC4218		1
Q304	0AH21624Z2	SILICON	2SA1624		1
Q311	OCH21740S2	SILICON	2SC1740S		1
Q312	OCF24001ZL	SILICON	2SC4001L		1
Q313	OCH24218Z2	SILICON	2SC4218		1
Q314	0AH21624Z2	SILICON	2SA1624		1
Q321	OCH21740S2	SILICON	2SC1740S		1
Q322	OCF24001ZL	SILICON	2SC4001L		1
Q323	OCH24218Z2	SILICON	2SC4218		1
Q324	0AH21624Z2	SILICON	2SA1624		1

DIODES

D301	00J25891A1		1SS133		1
D302	00N25030T1		1SS244		1
D303	00N25030T1		1SS244		1
D311	00J25891A1		1SS133		1
D312	00N25030T1		1SS244		1
D313	00N25030T1		1SS244		1
D321	00J25891A1		1SS133		1
D322	00N25030T1		1SS244		1
D323	00N25030T1		1SS244		1
ZD301	00N25735D2		HZS15NB2		1
ZD311	00N25735D2		HZS15NB2		1
ZD321	00N25735D2		HZS15NB2		1
ZD322	08F09122A1	JUMPER	P=5		1
ZD323	08F09122A1	JUMPER	P=5		1
ZD324	08F09122A1	JUMPER	P=5		1

## PCB-CRT (5U02224A2)

REF. NO.	PART NO.	DESCRIPTION			QTY.
PCB	05B00950B1	PCB-CRT			1/2
<u>FIXED RESISTORS</u>					
R300	OBK10471JT	CARBON	1 / 4	470-J	1
R301	OBK10121JT	CARBON	1 / 4	120-J	1
R302	OBK10180JT	CARBON	1 / 4	18-J	1
R303	OCL04224JT	CARBON	RD50SS	220K-J	1
R304	OBK10183JT	CARBON	1 / 4	18K-J	1
R305	OHM37562JS	METAL	BSR 5W	5.6K-J	1
R306	OBL08101JL	FUSING	RF25L10	100-J	1
R307	OCH14271JM	SOLID	RC 1/2	270-J	1
R308	OBK10102JT	CARBON	1 / 4	1K-J	1
R310	OBK10471JT	CARBON	1 / 4	470-J	1
R311	OBK10121JT	CARBON	1 / 4	120-J	1
R312	OBK10270JT	CARBON	1 / 4	27-J	1
R313	OCL04224JT	CARBON	RD50SS	220K-J	1
R314	OBK10183JT	CARBON	1 / 4	18K-J	1
R315	OHM37562JS	METAL	BSR 5W	5.6K-J	1
R316	OBL08101JL	FUSING	RF25L10	100-J	1
R317	OCH14271JM	SOLID	RC 1/2	270-J	1
R320	OBK10471JT	CARBON	1 / 4	470-J	1
R321	OBK10121JT	CARBON	1 / 4	120-J	1
R322	OBK10270JT	CARBON	1 / 4	27-J	1
R323	OCL04224JT	CARBON	RD50SS	220K-J	1
R324	OBK10183JT	CARBON	1 / 4	18K-J	1
R325	OHM37562JS	METAL	BSR 5W	5.6K-J	1
R326	OBL08101JL	FUSING	RF25L10	100-J	1
R327	OCH14271JM	SOLID	RC 1/2	270-J	1
R331	OCH14105JM	SOLID	RC 1/2	1M-J	1

CAPACITORS

C301	OKH80331JM	CERAMIC	DD107 50V SL	331J	1
C302	OKH81222KB	CERAMIC	DD106 50V B	222K	1
C311	OKH80271JM	CERAMIC	DD107 50V SL	271J	1
C312	OKH81222KB	CERAMIC	DD106 50V B	222K	1

REF. NO.	PART NO.	DESCRIPTION	QTY
EY7	08N51059A1	EYELET 1.6×3.0	1
EY8	08N51059A1	EYELET 1.6×3.0	1
EY9	08N51059A1	EYELET 1.6×3.0	1
EY10	08N51059A1	EYELET 1.6×3.0	1
EY11	08N51059A1	EYELET 1.6×3.0	1
EY12	08N51059A1	EYELET 1.6×3.0	1
EY14	08N51059A1	EYELET 1.6×3.0	1
EY15	08N51059A1	EYELET 1.6×3.0	1
EY16	08N51059A1	EYELET 1.6×3.0	1
EY17	08N51059A1	EYELET 1.6×3.0	1
EY18	08N51059A1	EYELET 1.6×3.0	1
EY19	08N51059A1	EYELET 1.6×3.0	1
EY20	08N51059A1	EYELET 1.6×3.0	1
EY21	08N51059A1	EYELET 1.6×3.0	1
EY22	08N51059A1	EYELET 1.6×3.0	1
EY23	08N51059A1	EYELET 1.6×3.0	1

REF.NO.	PART NO.	DESCRIPTION			QTY
J470	08F09122A8	JUMPER	P=7.5		1
J471	08F09122A8	JUMPER	P=7.5		1
J472	08F09122A2	JUMPER	P=10		1
J473	08F09122A2	JUMPER	P=10		1
J474	08F09122A6	JUMPER	P=25		1
J475	08F09122A4	JUMPER	P=15		1
J476	08F09122A8	JUMPER	P=7.5		1
J477	08F09122A2	JUMPER	P=10		1
J478	08F09122A2	JUMPER	P=10		1
J479	08F09122A1	JUMPER	P=5		1
J480	08F09122A1	JUMPER	P=5		1
J481	08F09122A1	JUMPER	P=5		1
J482	08F09122A2	JUMPER	P=10		1
J502	0ZL49000ZA	JUMPER	RK73Z2A	TD	1
J503	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J507	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J508	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J509	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J510	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J511	0ZL49103JA	CARBON	RK73K2A	TD 10K-J	1
J512	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J513	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J515	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J519	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J520	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J522	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J524	0ZL49103JA	CARBON	RK73K2A	TD 10K-J	1
J525	0ZL49000ZA	JUMPER	RK73Z2A	TD	1
J526	0AL49000ZA	JUMPER	RK73Z2B	TD	1

EYELET

EY1	08N51059A2	EYELET	2.0×3.0		1
EY2	08N51059A2	EYELET	2.0×3.0		1
EY3	08N51059A2	EYELET	2.0×3.0		1
EY4	08N51059A2	EYELET	2.0×3.0		1
EY5	08N51059A2	EYELET	2.0×3.0		1
EY6	08N51059A2	EYELET	2.0×3.0		1

REF. NO.	PART NO.	DESCRIPTION		QTY
J430	08F09122A3	JUMPER	P=12.5	1
J431	08F09122A2	JUMPER	P=10	1
J432	08F09122A2	JUMPER	P=10	1
J433	0CLO4682JT	CARBON	1 / 2      6.8K-J	1
J434	08F09122A2	JUMPER	P=10	1
J435	08F09122A2	JUMPER	P=10	1
J436	08F09122A8	JUMPER	P=7.5	1
J437	08F09122A2	JUMPER	P=10	1
J438	08F09122A8	JUMPER	P=7.5	1
J439	08F09122A8	JUMPER	P=7.5	1
J440	08F09122A3	JUMPER	P=12.5	1
J441	08F09122A4	JUMPER	P=15	1
J442	08F09122A4	JUMPER	P=15	1
J443	08F09122A4	JUMPER	P=15	1
J444	08F09122A4	JUMPER	P=15	1
J445	08F09122A4	JUMPER	P=15	1
J446	08F09122A4	JUMPER	P=15	1
J447	08F09122A4	JUMPER	P=15	1
J448	08F09122A4	JUMPER	P=15	1
J449	08F09122A5	JUMPER	P=20	1
J450	08F09122A6	JUMPER	P=25	1
J451	0BK10222JH	CARBON	1 / 4      2.2K-J	1
J452	08F09122A4	JUMPER	P=15	1
J453	08F09122A5	JUMPER	P=20	1
J454	08F09122A5	JUMPER	P=20	1
J455	08F09122A6	JUMPER	P=25	1
J457	08F09122A2	JUMPER	P=10	1
J458	08F09122A5	JUMPER	P=20	1
J459	08F09122A5	JUMPER	P=20	1
J460	08F09122A3	JUMPER	P=12.5	1
J461	08F09122A2	JUMPER	P=10	1
J463	08F09122A1	JUMPER	P=5	1
J464	08F09122A5	JUMPER	P=20	1
J465	08F09122A8	JUMPER	P=7.5	1
J466	08F09122A2	JUMPER	P=10	1
J467	08F09122A2	JUMPER	P=10	1
J468	08F09122A8	JUMPER	P=7.5	1
J469	08F09122A8	JUMPER	P=7.5	1

REF. NO.	PART NO.	DESCRIPTION			QTY
<u>JUMPER</u>					
J281	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J282	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J283	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J284	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J289	0ZL49000ZA	JUMPER	RK73Z2A	TD	1
J290	0ZL49333JA	CARBON	RK73K2A	TD 33K-J	1
J292	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J293	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J294	0AL49000ZA	JUMPER	RK73Z2B	TD	1
J401	08F09122A2	JUMPER	P=10		1
J402	08F09122A2	JUMPER	P=10		1
J403	08F09122A2	JUMPER	P=10		1
J405	08F09122A2	JUMPER	P=10		1
J407	08F09122A3	JUMPER	P=12.5		1
J408	08F09122A3	JUMPER	P=12.5		1
J409	08F09122A2	JUMPER	P=10		1
J410	08F09122A2	JUMPER	P=10		1
J411	08F09122A2	JUMPER	P=10		1
J412	08F09122A2	JUMPER	P=10		1
J413	08F09122A2	JUMPER	P=10		1
J414	08F09122A2	JUMPER	P=10		1
J415	08F09122A3	JUMPER	P=12.5		1
J416	08F09122A6	JUMPER	P=25		1
J417	08F09122A3	JUMPER	P=12.5		1
J418	08F09122A3	JUMPER	P=12.5		1
J419	0CLO4102JT	CARBON	1 / 2	1K-J	1
J420	08F09122A3	JUMPER	P=12.5		1
J421	08F09122A3	JUMPER	P=12.5		1
J422	08F09122A5	JUMPER	P=20		1
J423	08F09122A2	JUMPER	P=10		1
J424	08F09122A2	JUMPER	P=10		1
J425	08F09122A5	JUMPER	P=20		1
J426	08F09122A6	JUMPER	P=25		1
J427	08F09122A1	JUMPER	P=5		1
J428	08F09122A2	JUMPER	P=10		1
J429	08F09122A3	JUMPER	P=12.5		1



REF.NO.	PART NO.	DESCRIPTION	QTY
CN902	00F40916A2	POST B3P5-VH	1
CN903	00F40019A1	POST YP115S-2P	1
	05Y02175A1	ASS'Y CN102	1
	05Y02176A1	ASS'Y CN502	1
	05Y02744A1	ASS'Y CN HF	1
	05Y02176A1	ASS'Y CN570	1
	05Y02745A1	ASS'Y CN HS	1
	05U02234A1	ASS'Y H OUT	1
	05U01897A5	ASS'Y P.V.D	1
	05C02448A1	RADIATOR FBT	(1)
	05D06939A1	RADIATOR	(1)
	00J40193A2	EDGE-SADDLE	(2)
	0FJ923010D	TAP-TITE-P-BAIND 3x10	4
	0FJ924010D	TAP-TITE-P-BAIND 4x10	1
	00N51517A2	SPRING BAND	(3)
	0FJ923010D	TAP-TITE-P-BAIND 3x10	(3)
	08N52611A1	TFC CAP	(1)
	08R52115A1	ISOLATION SHEET 30x16 (U401)	(1)
TP1	00J44862A2	RT-01T-1.0B	1
TP2	00J44862A2	RT-01T-1.0B	1
	05D07141A1	LABEL CONT	1

REF.NO.	PART NO.	DESCRIPTION	QTY
---------	----------	-------------	-----

COILS

L503	05F16622A1	(CHOKE)	1
L504	05F16623A1	(LINEAR)	1
(L504)	08N46396A1	SILICON SHEET	1
L901	05F16611A1	(LINE FILTER)	1
L951	05F16318A1	(CHOKE)	1
L952	00K11101K0	(CHOKE) TSL1110-101K	1
L953	00L20101K0	(CHOKE) ELF1010SKI-101K	1

OTHER PARTS

U101	00N27192A5	TC74HC86AF	1
U201	00N26549A1	M51387P	1
U401	08F26454A2	LA7837	(1)
U402	00N26469A4	M5218	1
U450	08F26578A1	AN5551	1
U451	00N26469A4	M5218	1
U501	00R26138A1	UPC358HA	1
U550	08N26517A1	LA7853	1
U951	08N26343A7	UPC78M12A	1
U961	08R26113T1	AN1431M	1
PC901	08R28114A1	TLP621-LF2	1
CF901	08N51217T1	FUSE-CLIP PFC5000-0202	2
F901	08R32159A2	FUSE 23706.3 6.3A 125V	1
CN101	00J40192A5	CONNECTOR S6BEN	1
CN508	00F44547B1	GT-PN	1
CN280	00J40193A2	CONNECTOR S12B-EN	1
CN401	00F40752A2	POST W-P3002	1
CN402	00J40643A2	CONNECTOR S12B-PN-K-S	1
CN501	08F40149A2	POST B2P-LV-TN	1
CN503	00F40831A3	CONNECTOR B4P-VII	1
CN504	00F40831A3	CONNECTOR B4P-VII	1
CN506	00J44862A2	CONNECTOR PIN RT-01T-1.00	1
CN507	00J44862A2	CONNECTOR PIN RT-01T-1.00	1
CN901	00F40916A1	POST B2P-VII	1

REF. NO.	PART NO.	DESCRIPTION	QTY
D951	08N25521F1	31DF6	1
D952	08R25111F1	31DF4	1
D953	08J25878A1	RL2Z	1
D954	08J25878A1	RL2Z	1
D955	08R25013F1	ERB83-004	1
D956	08J25878A1	RL2Z	1
D957	00N25092T2	ERA15-02	1
BD901	00N25196A4	RBV-406	1
ZD101	08H25199C2	(ZENER) RD5.1MB2	1
ZD102	08H25199C2	(ZENER) RD5.1MB2	1
ZD103	08H25199C2	(ZENER) RD5.1MB2	1
ZD449	00H25777C2	(ZENER) RD12MB2	1
ZD450	08H25201C2	(ZENER) RD6.2MB2	1
ZD451	00H25777C2	(ZENER) RD12MB2	1
ZD452	08H25199C2	(ZENER) RD5.1MB2	1
ZD501	08H25207C2	(ZENER) RD15MB2	1
ZD502	08H25199C2	(ZENER) RD5.1MB2	1
ZD901	08N25416T3	(ZENER) 1ZB20	1
ZD902	08H25213C4	(ZENER) RD27MB	1
ZD903	08H25209C2	(ZENER) RD18MB2	1
ZD904	08H25207C2	(ZENER) RD15MB2	1
ZD952	08N25416T3	(ZENER) 1ZB20	1

TRANS FORMERS

T501	05F13617A1	(DRIVE-TRANS)	1
T502	05F13618A1	(FLYBACK)	1
T901	05F13619A1	(POWER-TRANS)	1

POSISTOR

PTH901	08J29031A1	PTH451C263DG8ROMI40	1
--------	------------	---------------------	---

THERMISTOR

NTH901	00N38508A1	115-050-41205	1
NTH951	08J38247T2	NT732ATD LOOK-K	1

REF. NO.	PART NO.	DESCRIPTION	QTY
<u>DIODES</u>			
D101	08H25035C1	DAN217	1
D102	00H25737C1	DAN202K	1
D103	00H25737C1	DAN202K	1
D105	00H25737C1	DAN202K	1
D201	08H25035C1	DAN217	1
D202	08H25035C1	DAN217	1
D203	08H25035C1	DAN217	1
D204	08H25035C1	DAN217	1
D205	08H25035C1	DAN217	1
D206	08H25035C1	DAN217	1
D207	08H25035C1	DAN217	1
D208	08H25035C1	DAN217	1
D209	08H25035C1	DAN217	1
D211	00H25737C1	DAN202K	1
D212	00H25737C1	DAN202K	1
D213	08H25035C1	DAN217	1
D214	08H25035C1	DAN217	1
D215	08H25035C1	DAN217	1
D401	08N25358T1	IDL42A	1
D402	08N25358T1	IDL42A	1
D403	08N25358T1	IDL42A	1
D404	00H25737C1	DAN202K	1
D405	00H25737C1	DAN202K	1
D407	00H25737C1	DAN202K	1
D450	00H25737C1	DAN202K	1
D451	00H25737C1	DAN202K	1
OR D502	08J25030A1	ESC021M-15	(1)
D502	08R25112A1	FMP-3FU	OR
D505	00J25234A3	ERB44-04	1
D507	08N25358T1	IDL42A	1
D509	08H25035C1	DAN217	1
D901	08N25520T1	IJU41	1
D902	00H25737C1	DAN202K	1
D903	00H25737C1	DAN202K	1
D904	00H25737C1	DAN202K	1
D905	00H25737C1	DAN202K	1

REF. NO.	PART NO.	DESCRIPTION		QTY
<u>TRANSISTORS</u>				
Q101	OCK42412KZ	SILICON	2SC2412K	1
Q102	OCK42412KZ	SILICON	2SC2412K	1
Q201	OAK41037KZ	SILICON	2SA1037K	1
Q202	OAK41037KZ	SILICON	2SA1037K	1
Q203	OAK41037KZ	SILICON	2SA1037K	1
Q204	OCK42412KZ	SILICON	2SC2412K	1
Q205	OAK41037KZ	SILICON	2SA1037K	1
Q401	OCK42412KZ	SILICON	2SC2412K	1
Q402	OCK42412KZ	SILICON	2SC2412K	1
Q403	ODF22400AZ	SILICON	2SD2400A	1
Q404	0BF21569AZ	SILICON	2SB1569A	1
Q451	OAK41037KZ	SILICON	2SA1037K	1
Q452	00H29358T1	SILICON	DTC144EK	1
Q501	OCK42412KZ	SILICON	2SC2412K	1
Q502	OAK41037KZ	SILICON	2SA1037K	1
Q503	0AH21020ZZ	SILICON	2SA1020	1
Q506	OCF24692ZZ	SILICON	2SC4692	(1)
Q507	08F24546ZZ	FET	2SK941	1
Q508	ODF21944ZZ	SILICON	2SD1944	(1)
Q550	OAK41037KZ	SILICON	2SA1037K	1
Q551	OCK42412KZ	SILICON	2SC2412K	1
Q552	OAK41037KZ	SILICON	2SA1037	1
Q553	00H29365T1	SILICON	DTC143EK	1
Q554	OCK42412KZ	SILICON	2SC2412K	1
Q555	00H29358T1	SILICON	DTC144EK	1
Q901	08N24597A1	FET	2SK1531	(1)
Q902	OCK42412KZ	SILICON	2SC2412K	1
Q903	OCK42412KZ	SILICON	2SC2412K	1
Q904	OCK42412KZ	SILICON	2SC2412K	1
Q905	OAK41037KZ	SILICON	2SA1037K	1
Q906	OCK42412KZ	SILICON	2SC2412K	1
Q953	OCK42412KZ	SILICON	2SC2412K	1
Q954	OAK41255ZZ	SILICON	2SA1255	1

REF. NO.	PART NO.	DESCRIPTION				QTY
C555	OKK90103KB	CERAMIC	GRM40	B	103K	1
C556	OKM871R0MW	ELECTRO.	KME	50V	1 $\mu$ F-M	1
C557	OKK91472JM	PLASTIC	DSR	50V	472J	1
C558	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C559	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C560	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C561	0EQ35470MT	ELECTRO.	YZ	16V	47 $\mu$ F-M	1
C562	0EQ35101MT	ELECTRO.	YZ	10V	100 $\mu$ F-M	1
C564	OKQ16474J1	PLASTIC	ECQ-Y	1H	474J	1
C565	OGK90104KB	CERAMIC	GRM40	B	104K	1
C566	OGK90104KB	CERAMIC	GRM40	B	104K	1
C567	0EK90105ZF	CERAMIC	GRM40	F	105Z	1
C901	ORP15104MS	PLASTIC	LPX	250V	104M	1
C911	0QM12102M2	ELECTRO.	SMH	200V	1000 $\mu$ F-M	1
C912	0UP56104JF	PLASTIC	ECQ-E	1H	104J	1
C914	0ZP45471KR	CERAMIC	DE0705	1KV	471K	1
C915	0ZP45471KR	CERAMIC	DE0705	1KV	471K	1
C921	OKK90222KB	CERAMIC	GRM40	B	222K	1
C923	OKK90682KB	CERAMIC	GRM40	B	682K	1
C924	OGK90104KB	CERAMIC	GRM40	B	104K	1
C925	OGK90104KB	CERAMIC	GRM40	B	104K	1
C927	OGK90104KB	CERAMIC	GRM40	B	104K	1
C951	0NP47181M2	ELECTRO.	SXE	100V	181M	1
C952	0NP47221M2	ELECTRO.	SXE	100V	221M	1
C953	0PP59470MP	ELECTRO.	KMG	160V	47 $\mu$ F-M	1
C954	01P47681M1	ELECTRO.	SXE	35V	680 $\mu$ F-M	1
C955	0GQ07181HT	ELECTRO.	UPL	1F	180 $\mu$ F-M	1
C956	0CQ07681MT	ELECTRO.	UPL	1A	680 $\mu$ F-M	1
C957	01Q35100MT	ELECTRO.	YZ	35V	10 $\mu$ F-M	1
C958	0EQ35470MT	ELECTRO.	YZ	16V	47 $\mu$ F-M	1
C961	OGK90104KB	CERAMIC	GRM40	B	104K	1
C962	ORP56334KF	PLASTIC	ECQ-E	1H	334K	1
C963	0ZP45221KR	CERAMIC	DE0705	1KV	221K	1
C991	00Q57102ME	CERAMIC	DE1310		102M	1
C992	00Q57102ME	CERAMIC	DE1310		102M	1
C994	00Q57102ME	CERAMIC	DE1310		102M	1

REF. NO.	PART NO.	DESCRIPTION				QTY
C410	OKK86221JC	CERAMIC	GRM40	CH	221J	1
C411	OKP762R2MT	ELECTRO.	KME-8P50V		2.2 $\mu$ F-M	1
C413	OGK90104KB	CERAMIC	GRM40	B	104K	1
C414	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C416	OKQ16105J1	PLASTIC	ECQ-Y	1H	105J	
C450	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C451	OKQ35220MT	ELECTRO.	VZ	50V	22 $\mu$ F-M	1
C452	OEQ10104GT	PLASTIC	ECH-U	1C	104G	1
C453	OKP13103JT	PLASTIC	ECQ-B	1H	103J	1
C454	OKK90472KB	CERAMIC	GRM40	B	472K	1
C455	OKQ35100MT	ELECTRO.	VZ	50V	10 $\mu$ F-M	1
C456	OKQ35100MT	ELECTRO.	VZ	50V	10 $\mu$ F-M	1
C457	OKQ35100MT	ELECTRO.	VZ	50V	10 $\mu$ F-M	1
C458	OKQ35220MT	ELECTRO.	VZ	50V	22 $\mu$ F-M	1
C459	OKQ35220MT	ELECTRO.	VZ	50V	22 $\mu$ F-M	1
C501	0WH81222KB	CERAMIC	DD09	500V B	222K	1
C502	OKP13473JT	PLASTIC	ECQ-B	1H	473J	1
C503	0IQ35101MT	ELECTRO.	VZ	35V	100 $\mu$ F-M	1
C504	07H73103JF	PLASTIC	DKR	1.8KV	103J	1
C505	07H73912JF	PLASTIC	DKR	1.8KV	912J	1
C506	0UG77393JF	PLASTIC	DTW	400V	393J	1
C507	0UQ05684JF	PLASTIC	DHSA	400V	684J	1
C509	0NP56155JF	PLASTIC	ECQ-E	1H	155J	1
C510	0NP56155JF	PLASTIC	ECQ-E	1H	155J	1
C511	0XG77183JF	PLASTIC	DTW	630V	183J	1
C512	0XG77153JF	PLASTIC	DTW	630V	153J	1
C513	0RP59100MT	ELECTRO.	KMG	250V	10 $\mu$ F-M	1
C514	0RP80104KF	PLASTIC	DFZ	250V	104K	1
C515	0PP41101MW	ELECTRO.	KME	160V	100 $\mu$ F-M	1
C516	OGK90104ZF	CERAMIC	GRM40	F	104Z	1
C519	0UP16684JS	PLASTIC	PM	400V	684J	1
C522	0KH81102KD	CERAMIC	DD104	50V	102K	1
C531	0QK66474JF	PLASTIC	DHS	200V	474J	1
C550	OKK86101JC	CERAMIC	GRM40	CH	101J	1
C551	OKK86102JC	CERAMIC	GRM40	CH	102J	1
C552	OKK86391JC	CERAMIC	GRM40	CH	391J	1
C553	OKP13682JT	PLASTIC	ECQ-B	1H	682J	1
C554	OKQ35100MT	ELECTRO.	VZ	50V	1 $\mu$ F-M	1

REF. NO.	PART NO.	DESCRIPTION			QTY
C106	0ZL49103JA	CARBON	1 / 10	10K-J	1
C107	0KQ35220MT	ELECTRO.	YZ 50V	22 $\mu$ F-M	1
C108	0KK86102JC	CERAMIC	GRM40 CH	102J	1
C109	0EK90105ZF	CERAMIC	GRM40 F	105Z	1
C201	0EQ35470MT	ELECTRO.	YZ 16V	47 $\mu$ F-M	1
C202	0EQ35470MT	ELECTRO.	YZ 16V	47 $\mu$ F-M	1
C203	0EQ35470MT	ELECTRO.	YZ 16V	47 $\mu$ F-M	1
C204	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C205	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C206	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C207	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C208	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C209	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C210	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C211	0KQ352R2MT	ELECTRO.	YZ 50V	2.2 $\mu$ F-M	1
C212	0KQ352R2MT	ELECTRO.	YZ 50V	2.2 $\mu$ F-M	1
C213	0KQ352R2MT	ELECTRO.	YZ 50V	2.2 $\mu$ F-M	1
C214	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C215	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C216	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C217	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C218	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C219	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C220	0EQ35471MT	ELECTRO.	YZ 16V	470 $\mu$ F-M	1
C221	0EQ35101MT	ELECTRO.	YZ 16V	100 $\mu$ F-M	1
C222	0EQ35220MT	ELECTRO.	YZ 50V	22 $\mu$ F-M	1
C280	0EP12100MT	ELECTRO.	KRE 16V	10 $\mu$ F-M	1
C281	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C400	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C401	0GK90104ZF	CERAMIC	GRM40 F	104Z	1
C402	0EQ35471MT	ELECTRO.	YZ 16V	470 $\mu$ F-M	1
C403	0KPI3103JT	PLASTIC	ECQ-B IH	103J	1
C404	0KQ16105J1	PLASTIC	ECQ-Y IH	105J	1
C405	0KQ16105J1	PLASTIC	ECQ-Y IHI	105J	1
C406	01Q35102MT	ELECTRO.	YZ 35V	1000 $\mu$ F-M	1
C407	01Q35101MT	ELECTRO.	YZ 35V	100 $\mu$ F-M	1
C408	01Q35101MT	ELECTRO.	YZ 35V	100 $\mu$ F-M	1
C409	01Q35101MT	ELECTRO.	YZ 35V	100 $\mu$ F-M	1



REF.NO.	PART NO.	DESCRIPTION			QTY
---------	----------	-------------	--	--	-----

VARIABLE RESISTORS

VR201	00H13332WB	SEMIFIXED	RH063LC	3.3K-B	1
VR202	00H13332WB	SEMIFIXED	RH063LC	3.3K-B	1
VR203	00H13332WB	SEMIFIXED	RH063LC	3.3K-B	1
VR204	00H13472WB	SEMIFIXED	RH063LC	4.7K-B	1
VR205	00H13103WB	SEMIFIXED	RH063LC	10K-B	1
VR280	00H03332TB	SEMIFIXED	RH063MC	3.3K-B	1

VARIABLE RESISTORS

VR281	00H03332TB	SEMIFIXED	RH063MC	3.3K-B	1
VR282	00H03332TB	SEMIFIXED	RH063MC	3.3K-B	1
VR283	02G20502QB	VARIABLE	RK09K1130	5K-B	1
VR284	00H03332TB	SEMIFIXED	RH063MC	3.3K-B	1
VR285	02G20103PB	VARIABLE	RK09K1130	10K-B	1
VR286	02G20103PB	VARIABLE	RK09K1130	10K-B	1
VR287	02G20103PB	VARIABLE	RK09K1130	10K-B	1
VR288	02G20103PB	VARIABLE	RK09K1130	10K-B	1
VR401	00H13222WB	SEMIFIXED	RH063LC	2.2K-B	1
VR402	00H13104WB	SEMIFIXED	RH063LC	100K-B	1
VR450	00H13332WB	SEMIFIXED	RH063LC	3.3K-B	1
VR451	00H13103WB	SEMIFIXED	RH063LC	10K-B	1
VR452	00H13332WB	SEMIFIXED	RH063LC	3.3K-B	1
VR453	00H13102WB	SEMIFIXED	RH063LC	1K-B	1
VR550	00H13472WB	SEMIFIXED	RH063LC	4.7K-B	1
VR551	00H13223WB	SEMIFIXED	RH063LC	22K-B	1
VR552	00H13103WB	SEMIFIXED	RH063LC	10K-B	1
VR951	00H13102WB	SEMIFIXED	RH063LC	1K-B	1
VR952	00H13102WB	SEMIFIXED	RH063LC	1K-B	1

CAPACITORS

C101	0KQ351R0MT	ELECTRO.	YZ	50V	1 $\mu$ F-M	1
C102	0KQ351R0MT	ELECTRO.	YZ	50V	1 $\mu$ F-M	1
C103	0KK86102JC	CERAMIC	GRM40	CH	102J	1
C104	0GK90104ZF	CERAMIC	GRM40	F	104Z	1
C105	0GK90104ZF	CERAMIC	GRM40	F	104Z	1

REF. NO.	PART NO.	DESCRIPTION			QTY
R903	OCH14224JM	SOLID	1 / 2	220K-J	1
OR R903	OCH14224KM	SOLID	1 / 2	220K-K	1
R905	OHM37223JN	CEMENT	BSR 5N	22K-K	1
R906	OFM36101KN	CEMENT	BGR 3N	100-K	1
R911	OZL49105JA	CARBON	1 / 10	1.0M-J	1
R912	OZL49105JA	CARBON	1 / 10	1.0M-J	1
R913	OZL49330JA	CARBON	1 / 10	33-J	1
R914	OEL32R10JM	METAL	BPR 28	0.1-J	1
R915	OCL04101JT	CARBON	1 / 2	100-J	1
R917	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R918	OZL49822JA	CARBON	1 / 10	8.2K-J	1
R921	OZL49472JA	CARBON	1 / 10	4.7K-J	1
R922	OZL49473JA	CARBON	1 / 10	47K-J	1
R923	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R924	OZL49123JA	CARBON	1 / 10	12K-J	1
R925	OZL49563JA	CARBON	1 / 10	56K-J	1
R926	OZL49273JA	CARBON	1 / 10	27K-J	1
R927	OEL09104JL	METAL	RSS 2W	100K-J	1
R928	OZL49333JA	CARBON	1 / 10	33K-J	1
R929	OZL49331JA	CARBON	1 / 10	330-J	1
R953	OCL04333JT	CARBON	1 / 2	33K-J	1
R958	OZL49472JA	CARBON	1 / 10	4.7K-J	1
R959	OZL49472JA	CARBON	1 / 10	4.7K-J	1
R961	OZL49823JA	CARBON	1 / 10	82K-J	1
R962	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R963	OZL49392JA	CARBON	1 / 10	3.9K-J	1
R964	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R965	OZL49102JA	CARBON	1 / 10	1.0K-J	1
R966	OZL49122JA	CARBON	1 / 10	1.2K-J	1
R967	07M361R5KH	CEMENT	BGR 7Z	1.5-K	1
R968	OZL49683JA	CARBON	1 / 4	68K-J	1
R969	OZL49683JA	CARBON	1 / 4	68K-J	1
R970	OZL49474JA	CARBON	1 / 10	470K-J	1
R971	OZL49113JA	CARBON	1 / 10	11K-J	1
R972	OZL49393JA	CARBON	1 / 10	39K-J	1

REF. NO.	PART NO.	DESCRIPTION			QTY
R532	ODL081R5JL	FUSING	1 / 4	1.5-J	1
R533	OBL49182JA	CARBON	1 / 4	1.8K-J	1
R534	OBL49182JA	CARBON	1 / 4	1.8K-J	1
R535	OBL49182JA	CARBON	1 / 4	1.8K-J	1
R536	OZL49182JA	CARBON	1 / 4	1.8K-J	1
R537	OZL49182JA	CARBON	1 / 4	1.8K-J	1
R538	OZL49182JA	CARBON	1 / 4	1.8K-J	1
R539	OZL49182JA	CARBON	1 / 4	1.8K-J	1
R549	OZL49473JA	CARBON	1 / 10	47K-J	1
R550	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R551	OZL49123JA	CARBON	1 / 10	12K-J	1
R552	OZL49223JA	CARBON	1 / 10	22K-J	1
R553	OZL49303JA	CARBON	1 / 10	30K-J	1
R554	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R555	OZL49103JA	CARBON	1 / 10	10K-J	1
R556	OZL49183JA	CARBON	1 / 10	18K-J	1
R557	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R558	OZL49332JA	CARBON	1 / 10	3.3K-J	1
R559	OZL49473JA	CARBON	1 / 10	47K-J	1
R560	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R561	OZL49102JA	CARBON	1 / 10	1K-J	1
R562	OZL49153JA	CARBON	1 / 10	15K-J	1
R563	OZL49223JA	CARBON	1 / 10	22K-J	1
R564	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R565	OZL49103JA	CARBON	1 / 10	10K-J	1
R566	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R567	OZL49103JA	CARBON	1 / 10	10K-J	1
R568	OZL49103JA	CARBON	1 / 10	10K-J	1
R571	OBL08101JL	FUSING	1 / 4	100-J	1
R572	OZL49333JA	CARBON	1 / 10	33K-J	1
R573	OZL49223JA	CARBON	1 / 10	22K-J	1
R581	OZL49223JA	CARBON	1 / 10	22K-J	1
R583	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R584	OZL49000ZA	JUMPER	1 / 10	0	1
R585	OCL04124JT	CARBON	1 / 2	120K-J	1
R901	OCHI4474JM	SOLID	1 / 2	470K-J	1
OR R901	OCHI4474KM	SOLID	1 / 2	470K-K	1
R902	ONL171R0KZ	CEMENT	MZS 15N	1.0-K	1

REF. NO.	PART NO.	DESCRIPTION			QTY.
R460	OZL49223JA	CARBON	1 / 10	22K-J	1
R461	OZL49223JA	CARBON	1 / 10	22K-J	1
R462	OZL49223JA	CARBON	1 / 10	22K-J	1
R463	OZL49223JA	CARBON	1 / 10	6.8K-J	1
R464	OZL49103JA	CARBON	1 / 10	10K-J	1
R465	OZL49153JA	CARBON	1 / 10	15K-J	1
R466	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R468	OZL49224JA	CARBON	1 / 10	220K-J	1
R469	OZL49102JA	CARBON	1 / 10	1K-J	1
R470	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R471	OZL49102JA	CARBON	1 / 10	1K-J	1
R472	OZL49103JA	CARBON	1 / 10	10K-J	1
R473	OZL49473JA	CARBON	1 / 10	47K-J	1
R474	OBL49102JA	CARBON	1 / 4	1K-J	1
R475	OZL49223JA	CARBON	1 / 10	22K-J	1
R476	OZL49273JA	CARBON	1 / 10	27K-J	1
R502	OZL49471JA	CARBON	1 / 10	470-J	1
R503	OZL49471JA	CARBON	1 / 10	470-J	1
R504	OZL49153JA	CARBON	1 / 10	15K-J	1
R505	OBL49222JA	CARBON	1 / 4	2.2K-J	1
R506	OZL49103JA	CARBON	1 / 10	10K-J	1
R507	ODL09101JM	METAL	RSS 1W	100-J	1
R508	OFL09101JL	METAL	RSS 3W	100-J	1
R510	OFL09471JL	METAL	RSS 3W	470-J	1
R511	OBL49330JA	CARBON	1 / 4	33-J	1
R513	OEL09471JL	METAL	RSS 2W	470-J	1
R514	OBL49182JA	CARBON	1 / 4	1.8K-J	1
R515	OZL49223JA	CARBON	1 / 10	22K-J	1
R516	OBL08R10JL	FUSING	1 / 4	0.1-J	1
R519	OCL084R7JL	FUSING	1 / 2	4.7-J	1
R520	OBL083R3JL	FUSING	1 / 4	3.3-J	1
R521	OZL49681JA	CARBON	1 / 10	680-J	1
R522	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R523	OZL49101JA	CARBON	1 / 10	100-J	1
R524	OZL482211F	CARBON	1 / 10	2.21K-F	1
R525	OZL483011F	CARBON	1 / 10	3.01K-F	1
R526	OZL49123JA	CARBON	1 / 10	.12K-J	1
R529	OZL49103JA	CARBON	1 / 10	10K-J	1

REF. NO.	PART NO.	DESCRIPTION			QTY.
R290	OZL49000ZA	JUMPER	1 / 10	0	1
R291	OZL49822JA	CARBON	1 / 10	8.2K-J	1
R292	OZL49000ZA	JUMPER	1 / 10	0	1
R293	OZL49000ZA	JUMPER	1 / 10	0	1
R294	OZL49000ZA	JUMPER	1 / 10	0	1
R295	OZL49153JA	CARBON	1 / 10	15K-J	1
R296	OZL49332JA	CARBON	1 / 10	3.3K-J	1
R297	OZL49000ZA	JUMPER	1 / 10	0	1
R298	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R299	OZL49103JA	CARBON	1 / 10	10K-J	1
R401	OZL49102JA	CARBON	1 / 10	1K-J	1
R402	OZL49563JA	CARBON	1 / 10	56K-J	1
R403	OZL49333JA	CARBON	1 / 10	33K-J	1
R404	OZL49124JA	CARBON	1 / 10	120K-J	1
R405	OZL49470JA	CARBON	1 / 10	47-J	1
R406	OZL49223JA	CARBON	1 / 10	22K-J	1
R407	OZL49563JA	CARBON	1 / 10	56K-J	1
R409	OZL49563JA	CARBON	1 / 10	56K-J	1
R410	OZL49183JA	CARBON	1 / 10	18K-J	1
R412	OZL49332JA	CARBON	1 / 10	3.3K-J	1
R413	OZL49105JA	CARBON	1 / 10	1M-J	1
R414	OZL49103JA	CARBON	1 / 10	10K-J	1
R415	OZL49473JA	CARBON	1 / 10	47K-J	1
R416	OZL49223JA	CARBON	1 / 10	22K-J	1
R417	OZL49153JA	CARBON	1 / 10	15K-J	1
R418	OZL49153JA	CARBON	1 / 10	1.5K-J	1
R419	OZL49683JA	CARBON	1 / 10	68K-J	1
R420	OCL41102JT	CARBON	1 / 2	1K-J	1
R425	OBL08101JL	FUSING	1 / 4	100-J	1
R426	OFLO9121JL	METAL	RSS 3W	120-J	1
R427	OEL091R0JL	METAL	RSSX 2W	1.0-J	1
R451	OZL49102JA	CARBON	1 / 10	1K-J	1
R453	OZL482943F	CARBON	1 / 10	294K-F	1
R454	OZL49563JA	CARBON	1 / 10	56K-J	1
R455	OZL49223JA	CARBON	1 / 10	22K-J	1
R456	OZL49153JA	CARBON	1 / 10	15K-J	1
R457	OBL08221JL	FUSING	1 / 4	220K-J	1
R458	OZL49333JA	CARBON	1 / 10	33K-J	1

REF. NO.	PART NO.	DESCRIPTION			QTY.
R221	OZL49102JA	CARBON	1 / 10	1K-J	1
R222	OZL49470JA	CARBON	1 / 10	47-J	1
R223	OZL49470JA	CARBON	1 / 10	47-J	1
R224	OZL49470JA	CARBON	1 / 10	47-J	1
R225	OZL49470JA	CARBON	1 / 10	47-J	1
R226	OZL49470JA	CARBON	1 / 10	47-J	1
R227	OZL49470JA	CARBON	1 / 10	47-J	1
R228	OBL49471JA	CARBON	1 / 4	470-J	1
R229	OBL49471JA	CARBON	1 / 4	470-J	1
R230	OBL49471JA	CARBON	1 / 4	470-J	1
R231	OZL49221JA	CARBON	1 / 10	220-J	1
R232	OZL49333JA	CARBON	1 / 10	33K-J	1
R233	OZL49221JA	CARBON	1 / 10	220-J	1
R235	OZL49102JA	CARBON	1 / 10	1K-J	1
R236	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R237	08J38247T2	THERMISTOR	1 / 10	100K-J	1
R238	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R239	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R240	OZL483321F	CARBON	1 / 10	3.32K-J	1
R241	OZL49823JA	CARBON	1 / 10	82K-J	1
R242	OZL49471JA	CARBON	1 / 10	470-J	1
R243	OBL08221JL	FUSING	1 / 4	220-J	1
R244	OZL49221JA	CARBON	1 / 10	220-J	1
R245	OZL49332JA	CARBON	1 / 10	3.3K-J	1
R246	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R247	OZL49102JA	CARBON	1 / 10	1K-J	1
R248	OZL49154JA	CARBON	1 / 10	150K-J	1
R249	OZL481102F	CARBON	1 / 10	11.0K-F	1
R278	0BK10223JT	CARBON	1 / 4	22K-J	1
R281	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R282	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R283	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R284	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R285	OZL49682JA	CARBON	1 / 10	6.8K-J	1
R286	OZL49272JA	CARBON	1 / 10	2.7K-J	1
R287	OZL49000ZA	JUMPER	1 / 10	0	1
R288	OZL49222JA	CARBON	1 / 10	2.2K-J	1
R289	OZL49000ZA	JUMPER	1 / 10	0	1

MS 9 - 2 9 S U P A R T S - L I S T

PCB-MAIN (5T01087A2)

REF.NO.	PART NO.	DESCRIPTION			QTY.
PCB	05A00585D1	PCB-MAIN			1
<u>FIXED RESISTORS</u>					
R101	0ZL49471JA	CARBON	1 / 10	470-J	1
R102	0ZL49222JA	CARBON	1 / 10	2.2K-J	1
R103	0ZL49223JA	CARBON	1 / 10	22K-J	1
R104	0ZL49222JA	CARBON	1 / 10	2.2K-J	1
R105	0ZL49222JA	CARBON	1 / 10	2.2K-J	1
R106	0ZL49223JA	CARBON	1 / 10	22K-J	1
R107	0ZL49223JA	CARBON	1 / 10	22K-J	1
R108	0ZL49222JA	CARBON	1 / 10	2.2K-J	1
R109	0ZL49222JA	CARBON	1 / 10	2.2K-J	1
R110	0CLO4102JT	CARBON	1 / 2	1K-J	1
R111	0ZL49823JA	CARBON	1 / 10	82K-J	1
R112	0BL49681JA	CARBON	1 / 4	680-J	1
R113	0ZL49103JA	CARBON	1 / 10	10K-J	1
R114	0ZL49103JA	CARBON	1 / 10	10K-J	1
R115	0ZL49104JA	CARBON	1 / 10	100K-J	1
R201	0BL49152JA	CARBON	1 / 4	1.5K-J	1
R202	0BL49152JA	CARBON	1 / 4	1.5K-J	1
R203	0BL49152JA	CARBON	1 / 4	1.5K-J	1
R204	0ZL49561JA	CARBON	1 / 10	560-J	1
R205	0ZL49561JA	CARBON	1 / 10	560-J	1
R206	0ZL49561JA	CARBON	1 / 10	560-J	1
R207	0ZL49221JA	CARBON	1 / 10	220-J	1
R208	0ZL49221JA	CARBON	1 / 10	220-J	1
R209	0ZL49221JA	CARBON	1 / 10	220-J	1
R210	0ZL49473JA	CARBON	1 / 10	47K-J	1
R211	0ZL49473JA	CARBON	1 / 10	47K-J	1
R212	0ZL49473JA	CARBON	1 / 10	47K-J	1
R216	0ZL49102JA	CARBON	1 / 10	1K-J	1
R217	0ZL49102JA	CARBON	1 / 10	1K-J	1
R218	0ZL49102JA	CARBON	1 / 10	1K-J	1
R219	0ZL49102JA	CARBON	1 / 10	1K-J	1
R220	0ZL49102JA	CARBON	1 / 10	1K-J	1

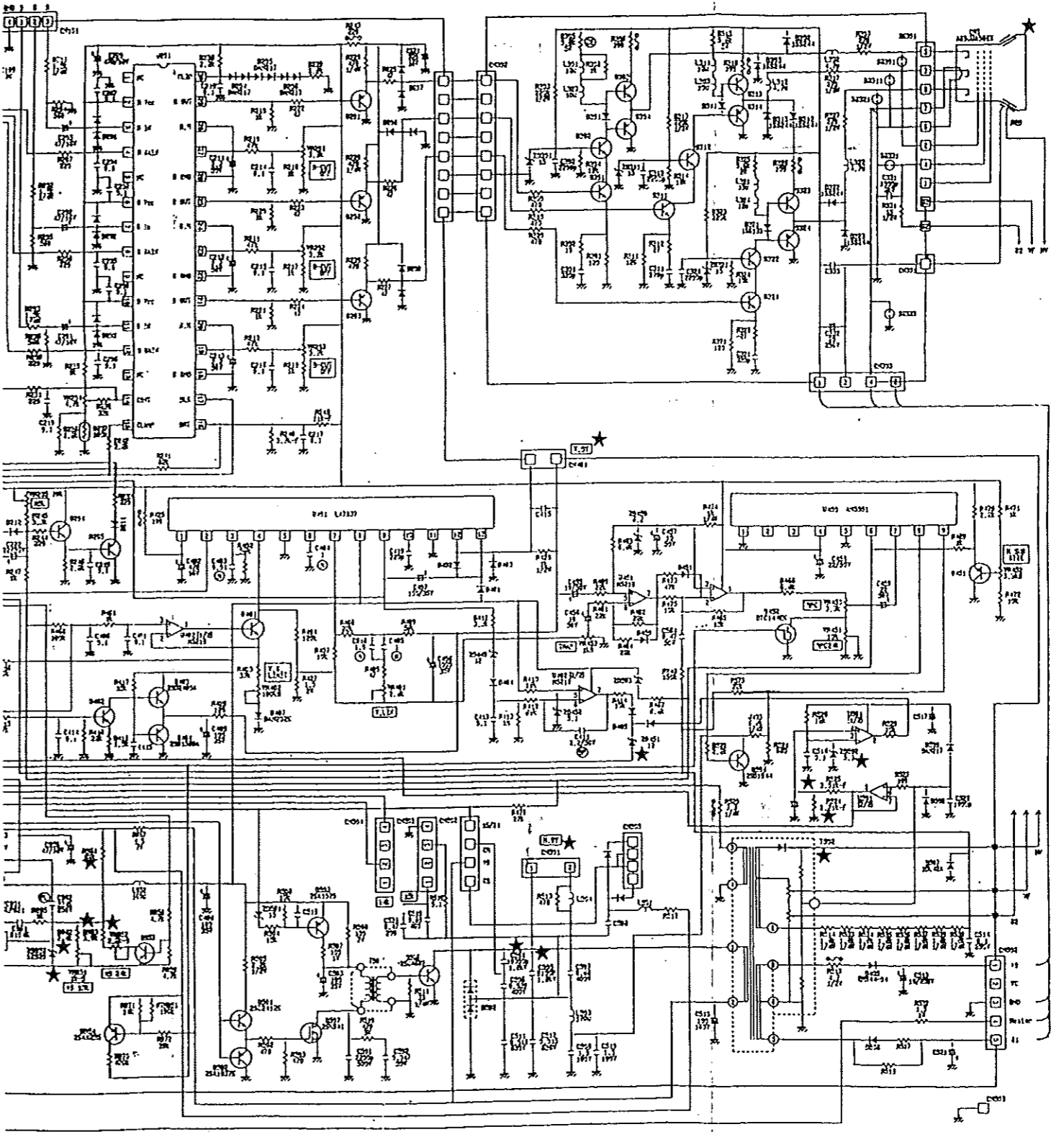
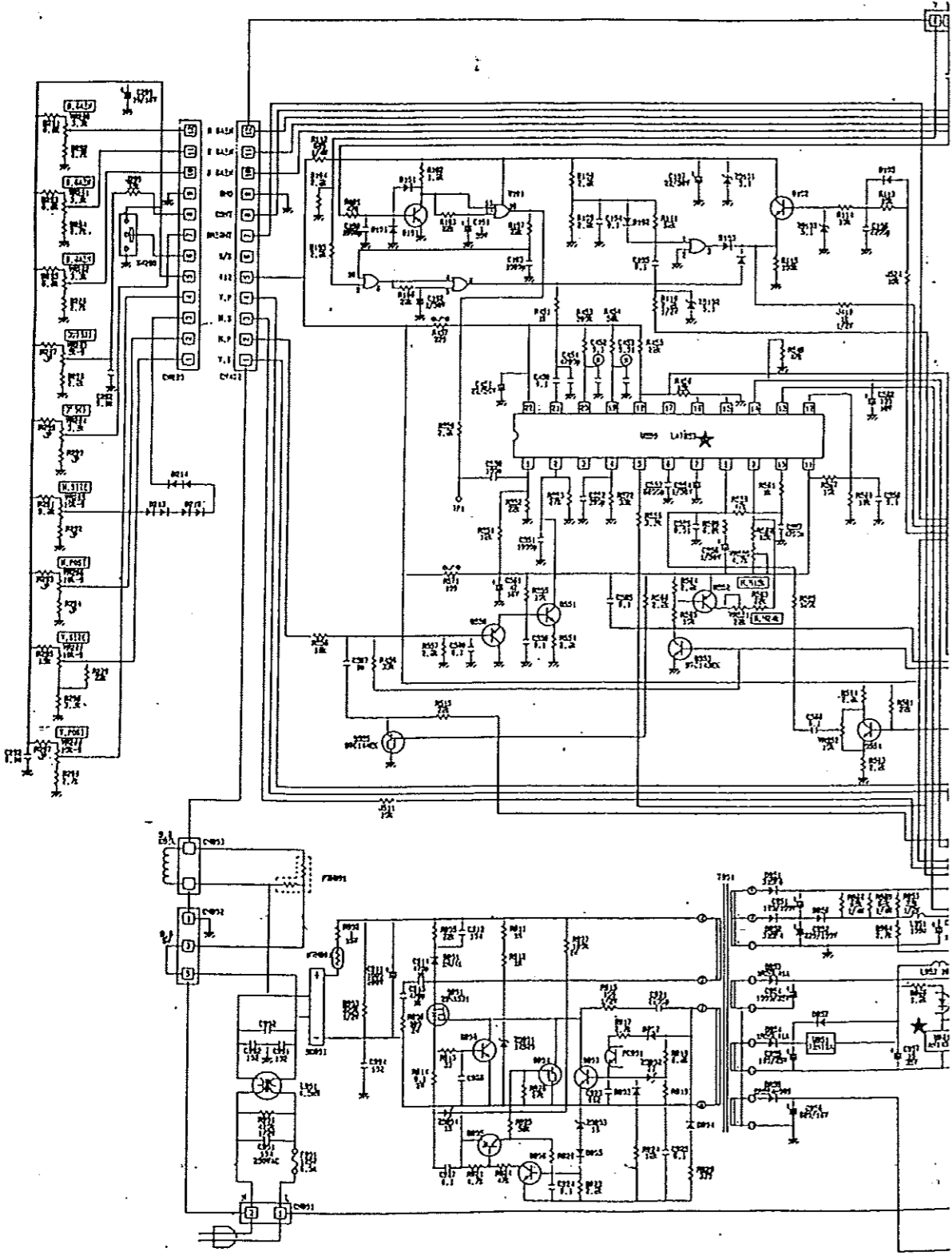
• X-Ray related parts list


Symbol	Description	
T502	FBT	MSU1FHH09
R525	R-METAL	3.01k $\Omega$ -F
R524	R-METAL	2.21k $\Omega$ -F
ZD502	Zener Diode	RD5.1MB2
VR951	R-SEMX	1k $\Omega$ -B
VR952	R-SEMX	2.2k $\Omega$ -B
DY	--	05F13637A1
C504	C-PL	10000pF-J, 1.6kV
C505	C-PL	9100pF-J, 1.6kV
R961	R-CA	82k $\Omega$
R962	R-CA	2.4k $\Omega$
R963	R-CA	3.9k $\Omega$
U961	IC	AN1431M
CRT		M68JUA068X
U550	IC	LA7853
ZD451	Zener Diode	RD12MB2

## VI. Circuit Diagram

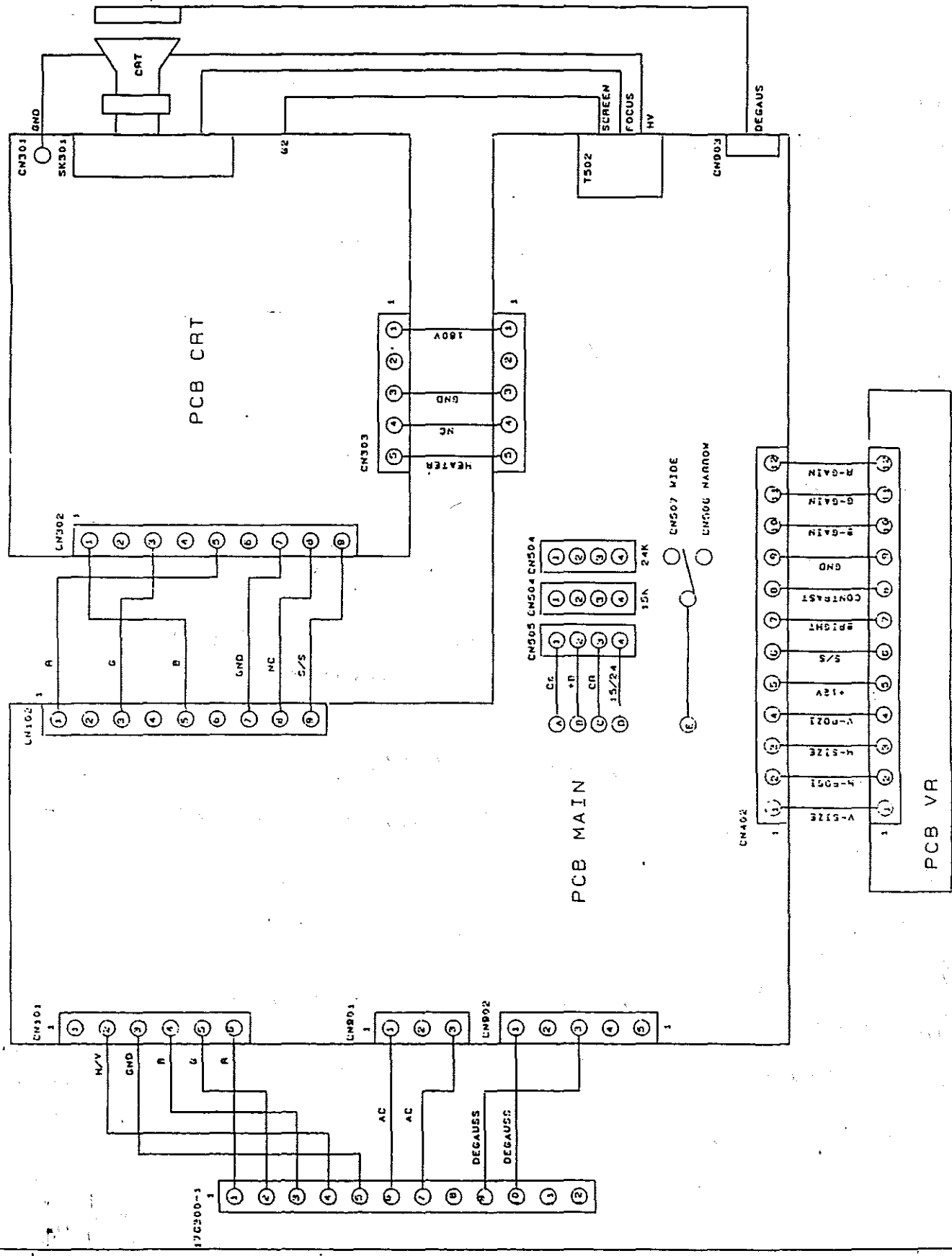
- \* Parts list                      Page 32 ~ 54
- \* Connection diagram            Page 55
- \* Circuit diagram                Page 56





株式会社 ナナオ				TITLE
DATE	DRAWN	CHECKED	DESIGNED	APPROVED
SCALE	.65/1			
				MS9-29SU SCHEMATIC DIAGRAM
				DRAW NO.
				E-B0279 (5T01087) 





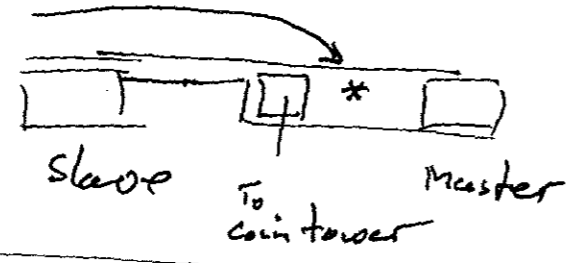
Post test Master side for Earth bond on

Base	-----	less than 100mS
Monitor Stand	-----	" "
Billboard upper	-----	" "
Billboard lower	-----	" "

Repeat on Slave side with same results

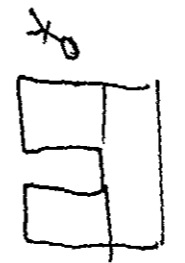
continuity between Master slave OK

Starpoint loose



\* Cleaner was cleaning Master side Screen  
 \* Blown backwards by force of shock (3")  
 \* Right arm

- \* Removed Rear of Master cabinet.
- \* Inspection showed all Earths connected & secure



- \* Inspection of cables under Master seat revealed  
 Pink (100V feed) to rear fan was loose (not connected)  
 Insulation boot was intact. Earth to fan & Rear metalwork < 1.12

- \* Logic tray shows signs of liquid spillage ~~under~~ at front

- \* Area under footrest ok. no loose wires.  
 All Earth points secure.

