

SEGA®

Out Run

UPRIGHT TYPE

OWNER'S MANUAL



SEGA ENTERPRISES, LTD.

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UPRIGHT TYPE

SPECIFICATIONS

INSTALLATION SPACE	: 630 mm (25 in.) W × 970 mm (38 in.) D
HEIGHT	: 1815 mm (71.5 in.)
POWER	: 250 W
C. R. T.	: 20"
WEIGHT	: 110 kg (242.5 lbs)

NOTE

- o Descriptions herein contained may be subject to improvement changes without notice.

INTRODUCTION OF THE OWNER'S MANUAL

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIs, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S manual is intended to provide detailed comments together with all the necessary information covering the operation in general of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards the OUT RUN, a new SEGA product. The manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read so as to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstance touch the interior system.

1. HANDLING PRECAUTIONS

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

- o Be sure to turn the power off before working on the machine.
- o To insert or pull out the plug quickly is dangerous.
- o It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.
- o Do not use any fuse that does not meet the specified rating.
- o Make complete connections for the IC board and other connectors. Insufficient insertion is very dangerous.

Also, for the IC board circuit inspections, only the logic tone is allowed. The use of a tester is not permitted, so be careful in this regard. After confirming that there are no irregularities, turn the power ON.

2. PREVENTION OF COUNTERFEITING AND CONVERSION

LABELLING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

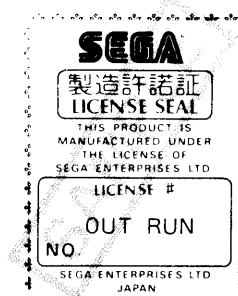
ORIGINAL SEAL

The following seal is put on the machines manufactured by SEGA.



LICENSE SEAL

The following seal is put on the kits, such as the printed circuit boards, of SEGA products.



COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1986

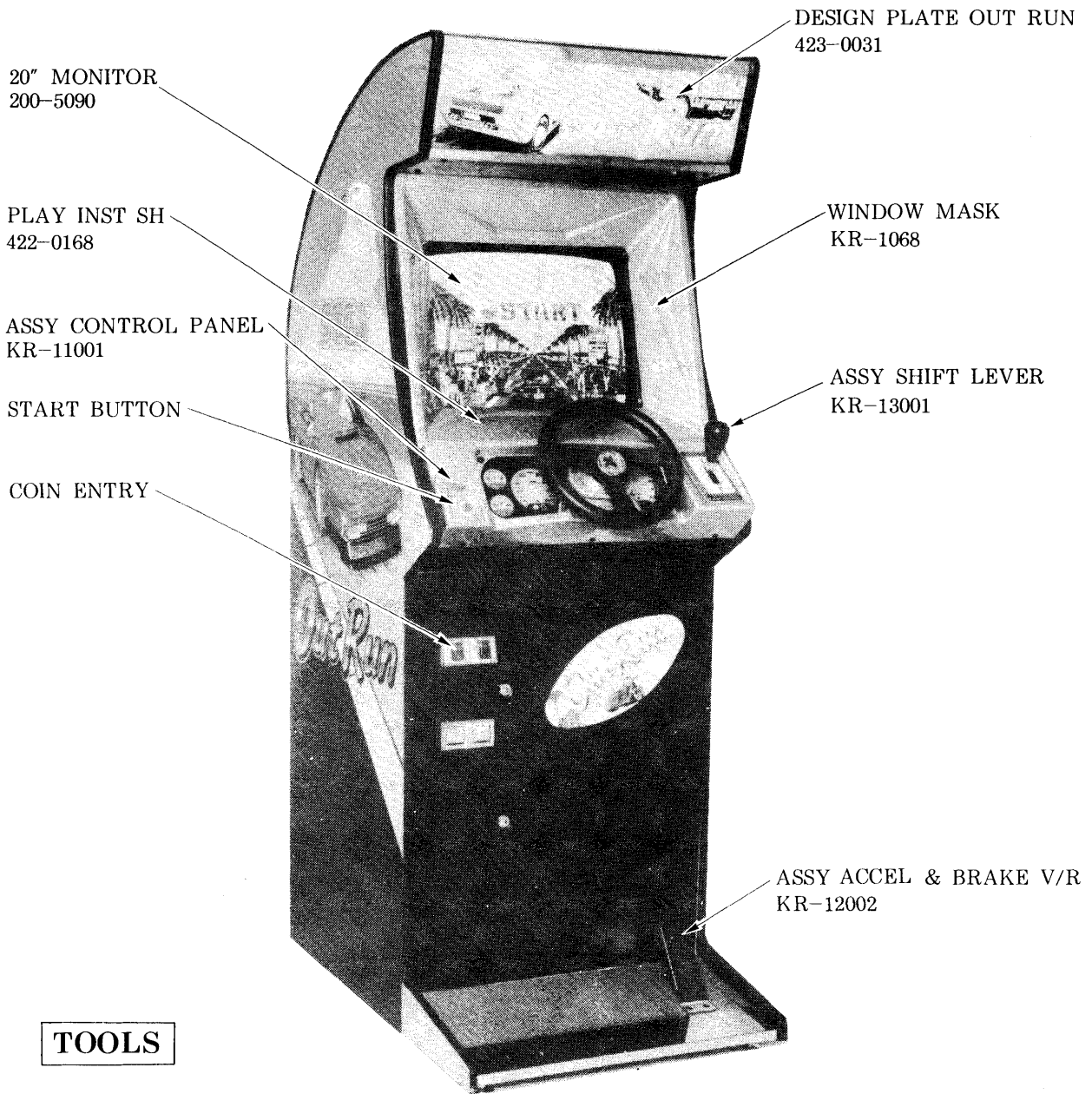
This signifies that this work was disclosed in 1986 and is the property of SEGA ENTERPRISES, LTD.

3. PRECAUTIONS CONCERNING THE PLACE OF INSTALLATION

The OUT RUN is an indoor game machine. Absolutely do not install it outside. Even indoors, avoid installing in places mentioned below so as to ensure proper usage:

- o Places subject to rain or water leakage, or condensation due to humidity.
- o In the proximity of an indoor swimming pool and/or shower.
- o Places subject to direct sunlight.
- o Places subject to heat sources from heating units, etc., or hot air.
- o Vicinity of highly inflammable/volatile chemicals or hazardous matter.
- o Sloped surfaces.
- o Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- o Places subject to any type of violent impact.
- o Dusty places.

4. NAME OF PARTS



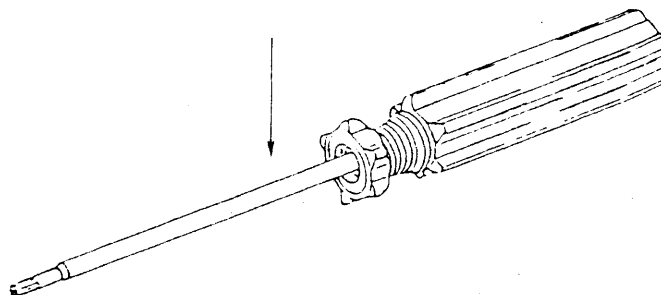
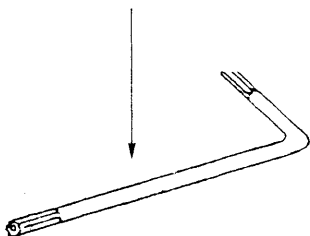
TOOLS

(TAMPERPROOF WRENCH)

(TAMPERPROOF WRENCH)

- M4 540-0006-01
- M5 540-0007-01
- M6 540-0015-01
- M8 540-0009-01

- M4 540-0018
- M5 540-0017



5. SERVICING THE HANDLE UNIT AND WINDOW MASK



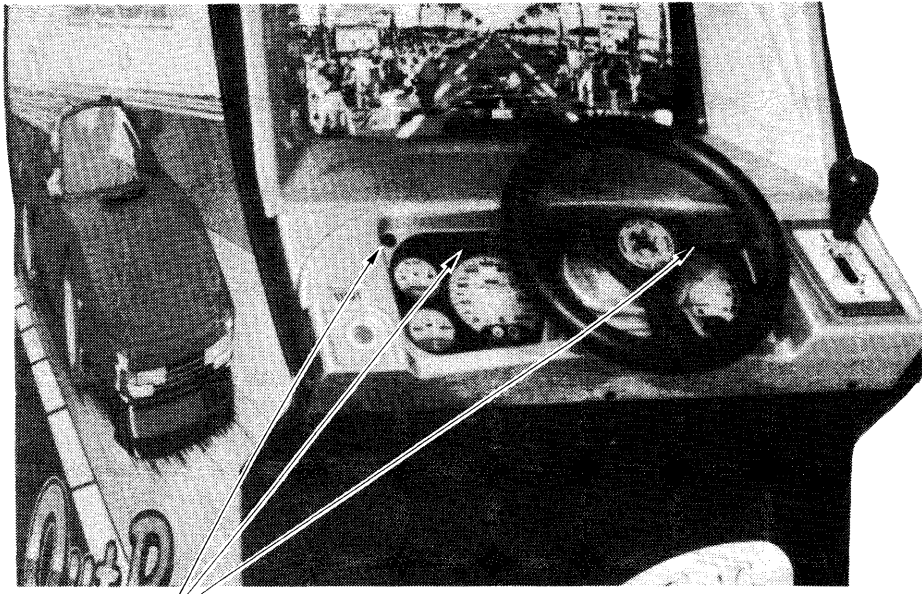
- ① The HANDLE UNIT can be opened towards you by taking off the 3 TAMPERPROOF screws.
- ② To remove the WINDOW MASK from the cabinet, take off the TAMPERPROOF screws (M4×8) inside the WINDOW MASK.
- ③ Next open it towards you.

This allows for the clearing of the monitor screen (CRT surfaces).

6. DISASSEMBLING AND ADJUSTING THE HANDLE UNIT

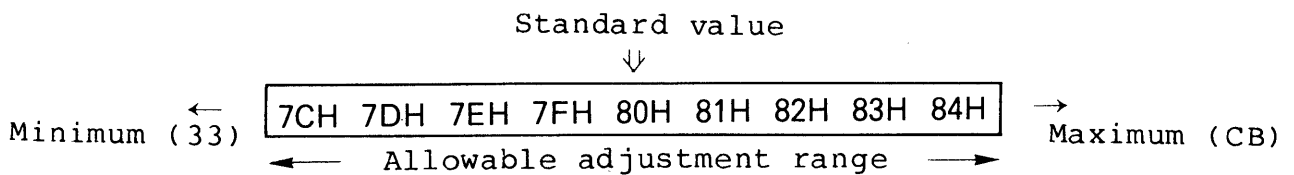
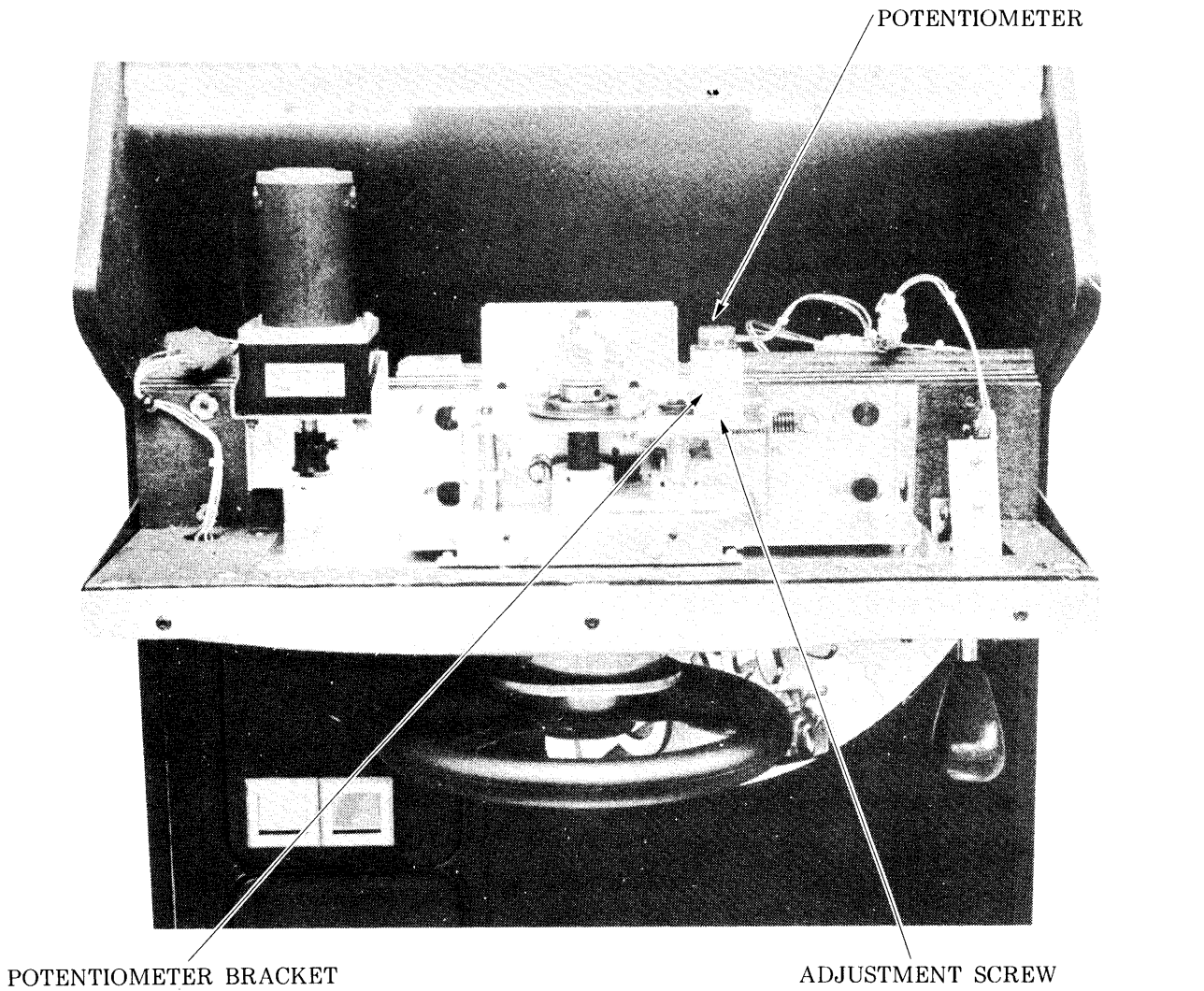
To open the dashboard, take off the 2 M8 TAMPERPROOF screws.

After doing this, spring replacements and steering adjustments can be made.



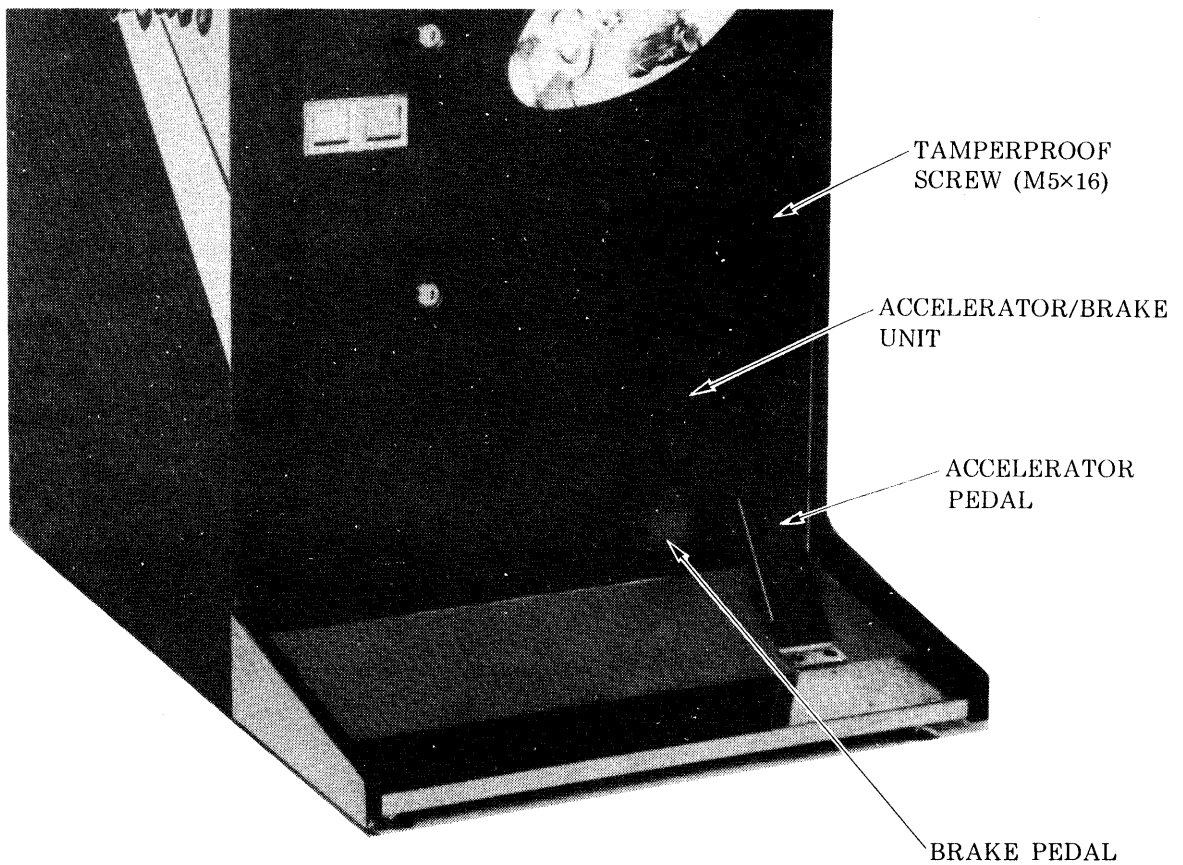
TAMPERPROOF SCREW M8

- ① Release the 2 adjusting screws of the potentiometer bracket and perform the necessary adjustments by changing its gear position, making sure that the variable is within the allowable extent as shown below, and then retighten the adjusting screw.



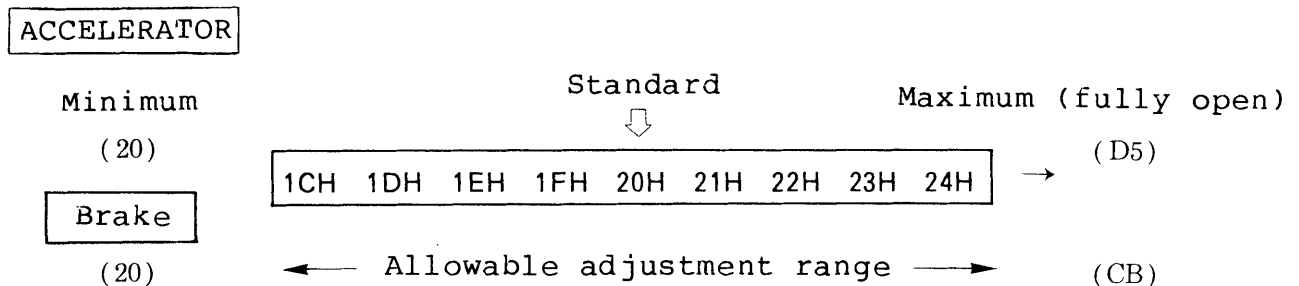
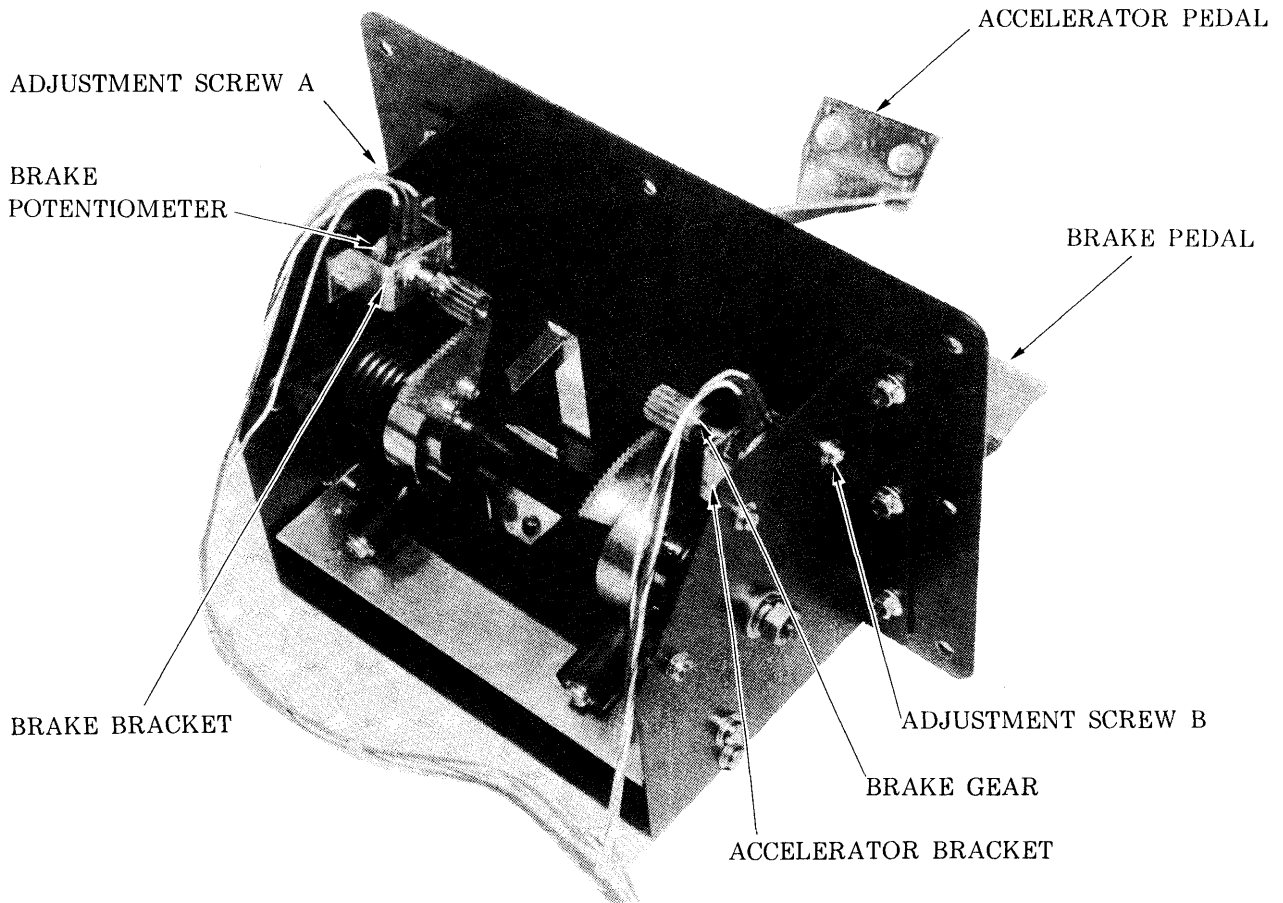
7. DISASSEMBLING AND ADJUSTING THE ACCELERATOR AND BRAKE

To remove the accelerator/brake unit, take off the 7 M5 TAMPERPROOF SCREWS.



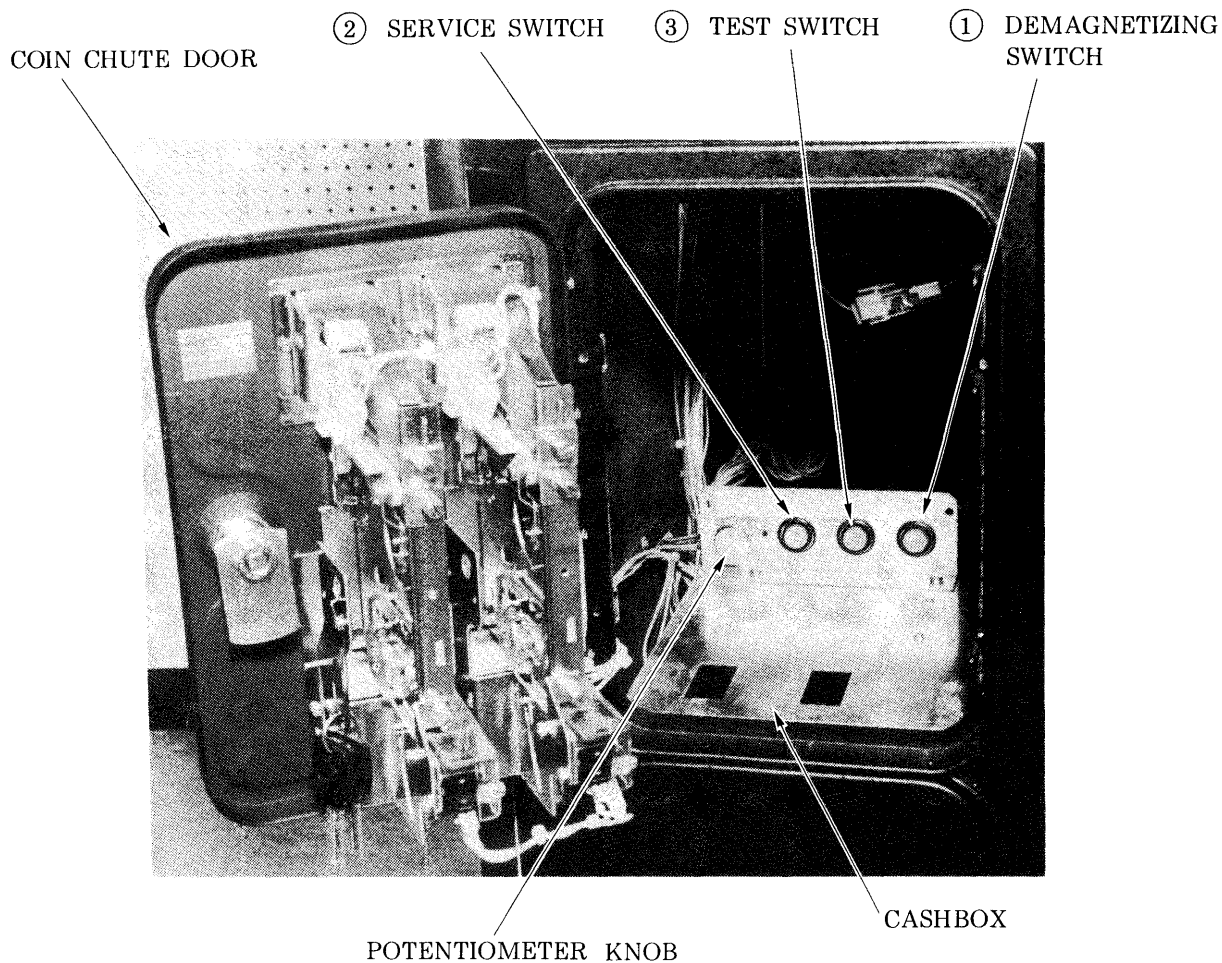
8. ADJUSTING THE ACCELERATOR/BRAKE POTENTIOMETER

- ① Display the SELF-TESTING MODE screen shown on page 16.
- ② Release the adjustment screws, move the bracket, and make adjustments so that the variable becomes 20H when the accelerator/brake is released and returns to its original position.
- ③ Even after the above procedure has been followed, if the variable is not within the allowable range, then slightly turn the gear to make an adjustment.



9. ADJUSTMENT OF THE SERVICE SWITCH

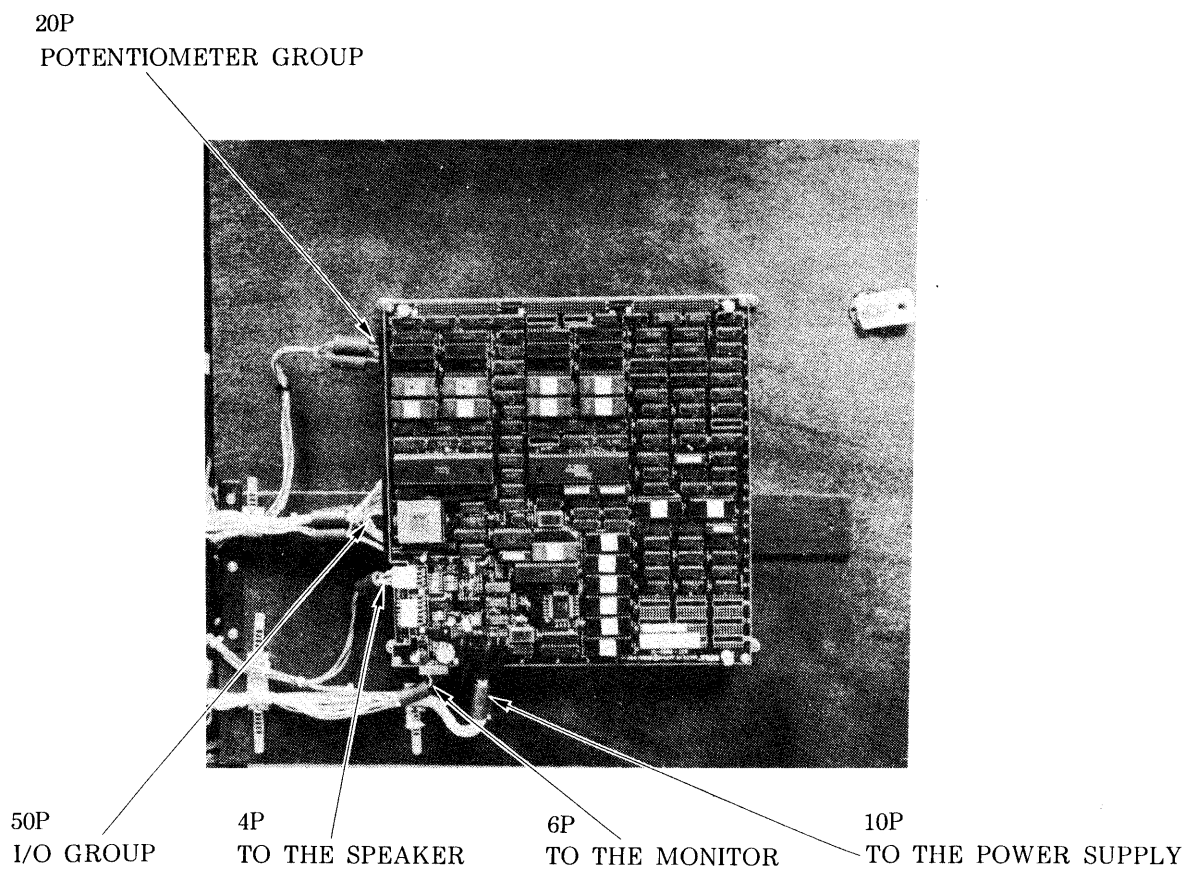
The layout as shown below can be viewed by opening the coin chute door.



OPERATING INSTRUCTIONS

- ① DEMAGNETIZING SWITCH.....Used for removing the on-screen color unevenness.
- ② SERVICE SWITCH.....Used for the purpose of servicing and increasing the credits without registering on the meter (this allows you to check the game).
- ③ TEST SWITCH.....For operating this switch, see SELF-TESTING.
- ④ POTENTIOMETER ADJUSTMENT

10. INSTRUCTION OF BOARD AND CONNECTORS

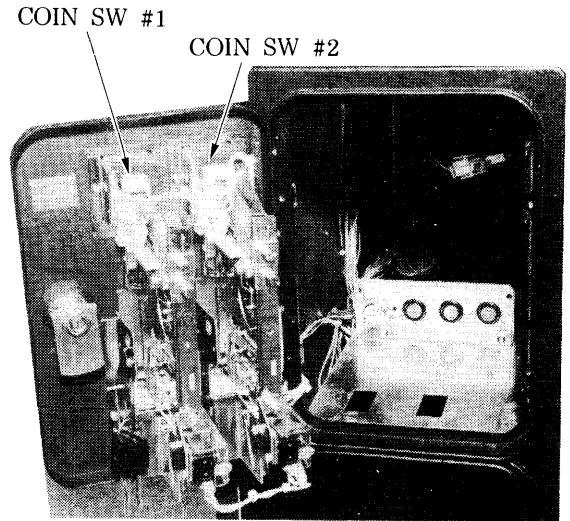


11. DIP SWITCH SETTING

GAME PRICE SETTING

DIP SW A

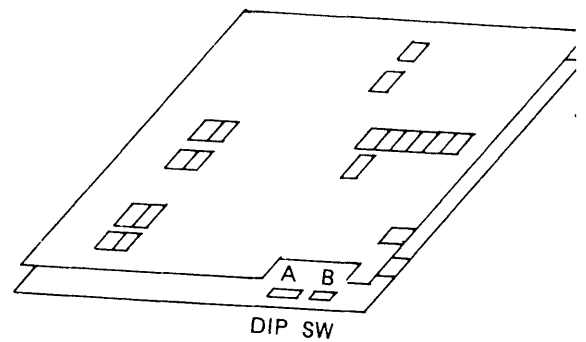
OPTION	1	2	3	4	5	6	7	8
1 COIN 1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN 3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN 4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1 COIN 5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1 COIN 6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 COINS 1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS 1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS 1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
2 COINS 3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS 1 CREDIT	OFF	ON	OFF	ON	OFF	ON	OFF	ON
3 COINS 2 CREDITS								
5 COINS 3 CREDITS								
6 COINS 4 CREDITS								
2 COINS 1 CREDIT	ON	ON	OFF	ON	ON	ON	OFF	ON
4 COINS 3 CREDITS								
1 COIN 1 CREDIT								
2 COINS 2 CREDITS								
3 COINS 3 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	ON
4 COINS 4 CREDITS								
5 COINS 6 CREDITS								
1 COIN 1 CREDIT								
2 COINS 2 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
3 COINS 3 CREDITS								
4 COINS 5 CREDITS								
1 COIN 1 CREDIT	OFF	ON	ON	ON	OFF	ON	ON	ON
2 COINS 3 CREDITS								
FREE PLAY	ON	ON	ON	ON	ON	ON	ON	ON
	COIN SW #1				COIN SW #2			



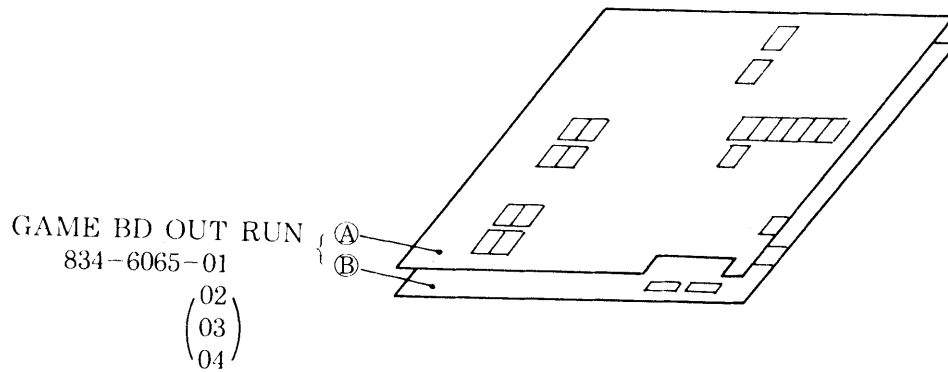
GAME OPTION SETTING

DIP SW B

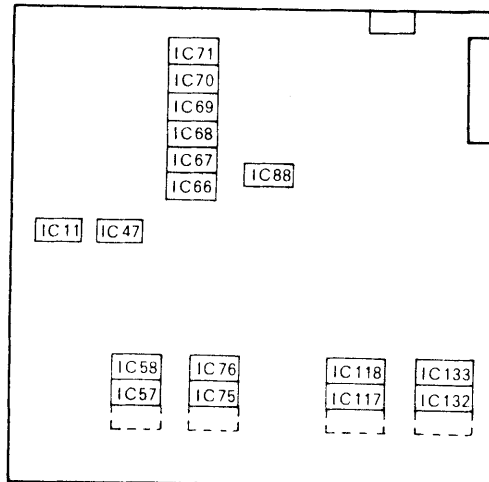
OPTION	1	2	3	4	5	6	7	8
TYPE MOVING	OFF	OFF						
UP COCKPIT	ON	OFF						
MINI UP	OFF	ON						
NOT USED	ON	ON						
ADVERTISE OFF			OFF					
SOUND ON			ON					
NOT USED								
TIME NORMAL					OFF	OFF		
EASY					ON	OFF		
ADJ. HARD					OFF	ON		
HARDEST					ON	ON		
NUMBER OF ENEMY NORMAL							OFF	OFF
EASY							ON	OFF
HARD							OFF	ON
HARDEST							ON	ON



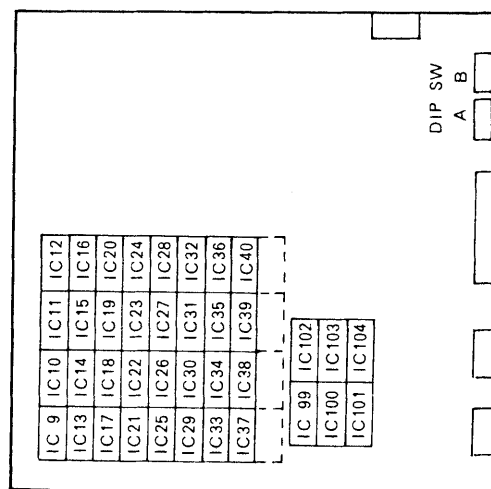
12. EPROM/ROM LOCATIONS



Ⓐ CPU BD OUT RUN 837-6063-02



Ⓑ VIDEO BD OUT RUN 837-6064-01 (02)



ONE TIME ROM				
GAME BD		834-6065-01	834-6065-02	
CPU BD		837-6063-01	837-6063-02	
Road Character	IC 11	OPR-10185	*	
	IC 47	OPR-10186		
Sub Program	IC 76	EPR-10327	EPR-10327A	
	IC 75	EPR-10328	EPR-10328A	
	IC 58	EPR-10329	EPR-10329A	
	IC 57	EPR-10330	EPR-10330A	
Main Program	IC 133	EPR-10331	EPR-10380 A	
	IC 132	EPR-10332	EPR-10381 A	
	IC 118	EPR-10333	EPR-10382 A	
	IC 117	EPR-10334	EPR-10383 A	
Sound	P	IC 88	EPR-10187	
	Data	IC 71	OPR-10188	*
		IC 70	OPR-10189	
		IC 69	OPR-10190	
		IC 68	OPR-10191	
		IC 67	OPR-10192	
		IC 66	OPR-10193	
VIDEO BD		837-6064-01	837-6064-01	
Object	IC 9	OPR-10194	*	
	IC 13	OPR-10195		
	IC 17	OPR-10196		
	IC 21	OPR-10197		
	IC 25	OPR-10198		
	IC 29	OPR-10199		
	IC 33	OPR-10200		
	IC 37	OPR-10201		
	IC 10	OPR-10203		
	IC 14	OPR-10204		
	IC 18	OPR-10205		
	IC 22	OPR-10206		
	IC 26	OPR-10207		
	IC 30	OPR-10208		
	IC 34	OPR-10209		
	IC 38	OPR-10210		
	IC 11	OPR-10212		
	IC 15	OPR-10213		
	IC 19	OPR-10214		
	IC 23	OPR-10215		
	IC 27	OPR-10216		
	IC 31	OPR-10217		
	IC 35	OPR-10218		
	IC 39	OPR-10219		
	IC 12	OPR-10221		
	IC 16	OPR-10222		
	IC 20	OPR-10223		
	IC 24	OPR-10224		
	IC 28	OPR-10225		
	IC 32	OPR-10226		
	IC 36	OPR-10227		
	IC 40	OPR-10228		
Scroll	IC 104	OPR-10230	*	
	IC 103	OPR-10231		
	IC 102	OPR-10232		
	IC 101	OPR-10266		
	IC 100	OPR-10267		
	IC 99	OPR-10268		

P : PROGRAM

MASK ROM				
GAME BD		834-6065-03	834-6065-04	
CPU BD		837-6063-01	837-6063-02	
Road Character	IC 11	OPR-10185	*	
	IC 47	OPR-10186		
Sub Program	IC 76	EPR-10327	EPR-10327A	
	IC 75	EPR-10328	EPR-10328A	
	IC 58	EPR-10329	EPR-10329A	
	IC 57	EPR-10330	EPR-10330A	
Main Program	IC 133	EPR-10331	EPR-10380 A	
	IC 132	EPR-10332	EPR-10381 A	
	IC 118	EPR-10333	EPR-10382 A	
	IC 117	EPR-10334	EPR-10383 A	
Sound	P	IC 88	EPR-10187	
	Data	IC 71	OPR-10188	*
		IC 70	OPR-10189	
		IC 69	OPR-10190	
		IC 68	OPR-10191	
		IC 67	OPR-10192	
		IC 66	OPR-10193	
VIDEO BD		837-6064-02	837-6064-02	
Object	IC 9	MPR-10371	*	
	IC 13	MPR-10372		
	IC 10	MPR-10373		
	IC 14	MPR-10374		
	IC 11	MPR-10375		
	IC 15	MPR-10376		
	IC 12	MPR-10377		
	IC 16	MPR-10378		
Scroll	IC 104	OPR-10230	*	
	IC 103	OPR-10231		
	IC 102	OPR-10232		
	IC 101	OPR-10266		
	IC 100	OPR-10267		
	IC 99	OPR-10268		

* SAME AS THE PREVIOUS COLUMN.

13. SELF-TESTING

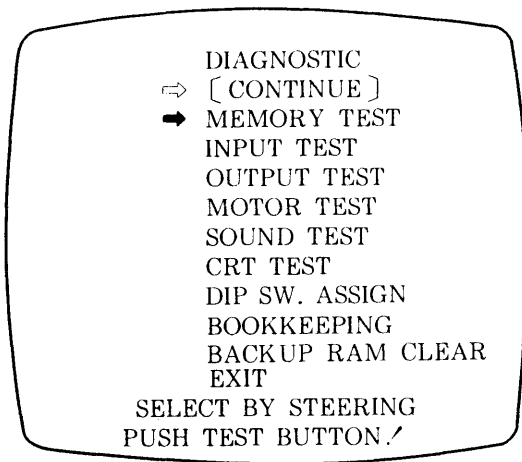
The main purposes of these tests are to check the operations of the game boards, to find the defects if any, to adjust the monitor colors properly, and to make sure the sounds are produced satisfactorily. It is also performed to indicate the assignments of the dip switches, check bookkeeping functions, etc.

KIND OF TESTS

- 1) Memory Test: To check the EPROM programs and the map area of the RAMs.
- 2) Input Test: To test the operation of the coin switch, shift lever, handle/accelerator, brake, start switch, service switch, etc.
- 3) Output Test: To test the operation of the lamps.
- 4) Motor Test: Tests in this mode are not applicable for the upright type.
- 5) Sound Test: To check the quality of the sounds produced by the PCB and the video disc, and to adjust the balance of the speakers.
- 6) CRT Test: To check if the colors on the monitor are displayed correctly.
- 7) Dip Switch
Assignment: To indicate each dip switch assignment.
- 8) Bookkeeping: To indicate information data on average score, average play time, etc.
- 9) Backup RAM
Clear: When the power is turned off, a backup battery system automatically takes over, thus allowing the continuous storage of all bookkeeping data. Using this item will enable you to clear said data.
- 10) EXIT See page 22.

1. TEST OPERATION

- (1) Push the test switch and Fig. 1 will be shown on the screen.
- (2) Select CONTINUE or INDIVIDUAL by using the START button.



- (3) Move the steering to bring the arrow to the desired position.

FIG. 1

[CONTINUE]:

- o Bring the arrow sign to CONTINUE first, and move it to one of the tests to start. Push the TEST button, and the tests will be performed in order, one by one, starting from the test where the arrow was originally set to EXIT.
- o If the START button is pushed when the arrow is at CONTINUE, it will change to INDIVIDUAL. Pushing it again returns it to CONTINUE.

[INDIVIDUAL]:

- o If the arrow is at INDIVIDUAL first and brought to a certain test which you want to conduct, only that test is performed by pushing the TEST button.

(4) When each test is finished, push the TEST button. In the case of CONTINUE, push the TEST button, and it will automatically go into the following test. If the TEST button is pushed in the case of INDIVIDUAL, FIG. 1 is shown. If you want to end the test mode at this time, bring the arrow to EXIT and push the TEST button again, and it will return to the ADVERTISEMENT mode.

2. TEST ITEMS

(1) Memory Test:

DIAGNOSTIC MEMORY TEST					
** ROMS TEST **					
IC 118	IC 117	IC 58			
IC 133	IC 132	IC 76			
IC 57					
IC 75					
** RAMS TEST **					
IC 114	IC 115	IC 63			
IC 129	IC 130	IC 65			
IC 64	IC 95	IC 52			
IC 62	IC 92	IC 51			
IC 55	IC 54				
IC 73	IC 72				

Indication of "GOOD" following the IC No. means the IC is all right. Push the TEST button to proceed to the following test item:

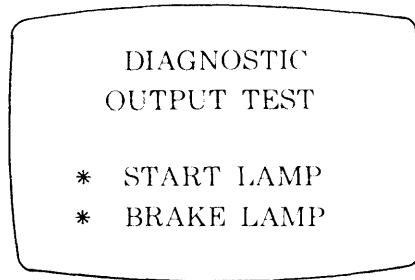
(2) Input Test

DIAGNOSTIC INPUT TEST		
COIN #1	START	
COIN #2	SERVICE	
LOW GEAR		
HIGH GEAR		
HANDLE RIGHT LEFT	80H	} (± 4H)
BRAKE	20H	
ACCEL	20H	

← HANDLE →	← ACCELERATOR →
7CH 7DH 7EH 7FH 80H 81H 82H 83H 84H	1CH 1DH 1EH 1FH 20H 21H 22H 23H 24H
Standard value	Standard value

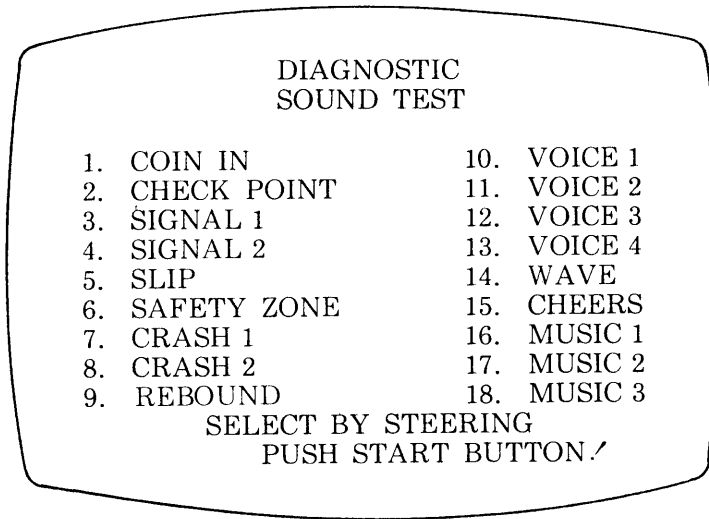
- o Operate the dip switches. When "ON" is indicated at the right side of the corresponding item on the screen, it is OK.
- o If the data value increases when pressure is applied to the accelerator's or brake's pedal, it tests out satisfactorily.
- o When the tests are ended, push the TEST button.

(3) Output Test



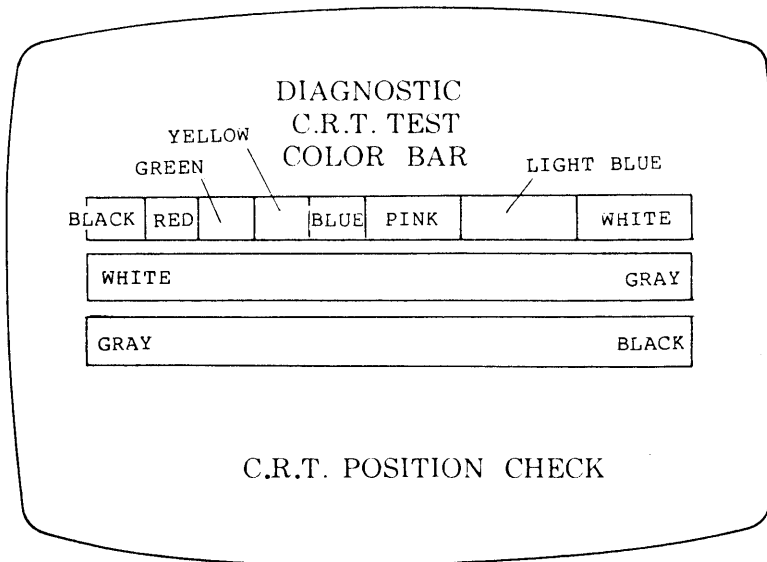
If the start LAMP lights up, it is functioning properly.
Push the TEST button when the testing has been completed.

(4) Sound test



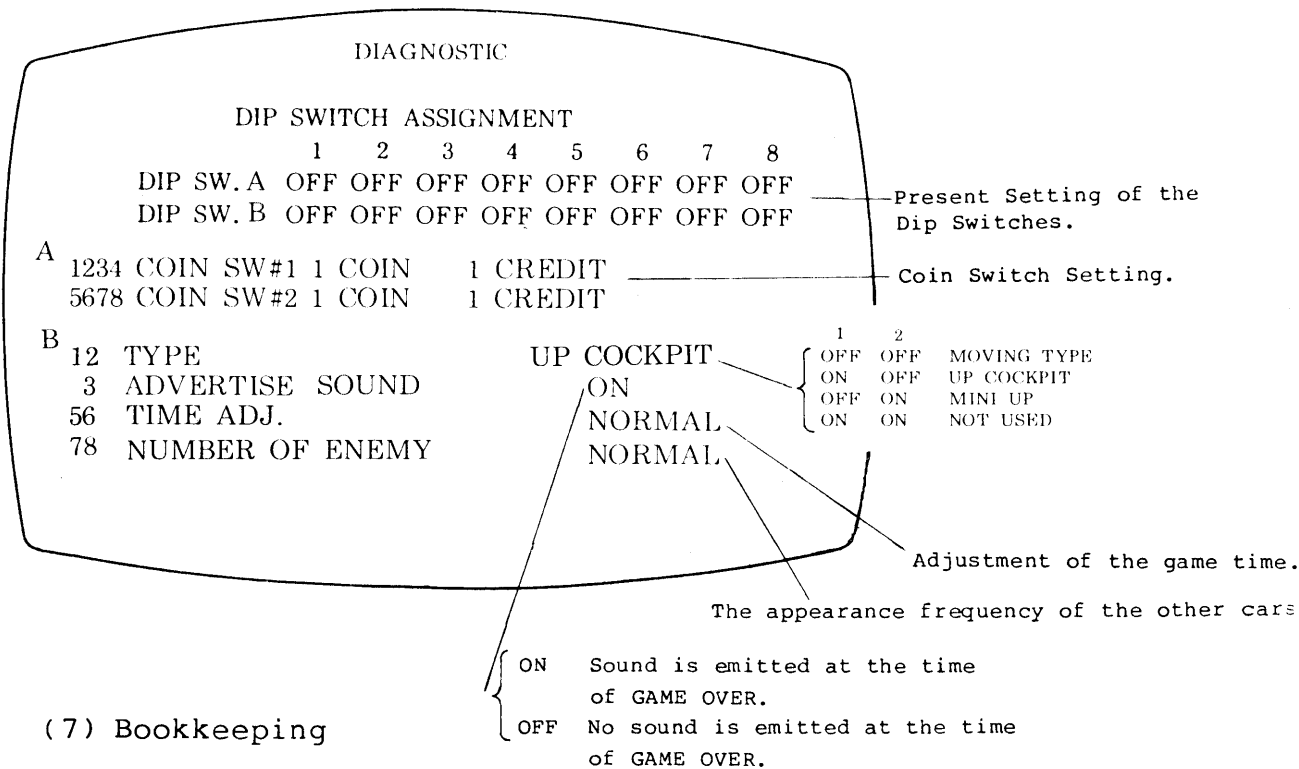
When the test has been completed, push the TEST button.

(5) C.R.T. Test

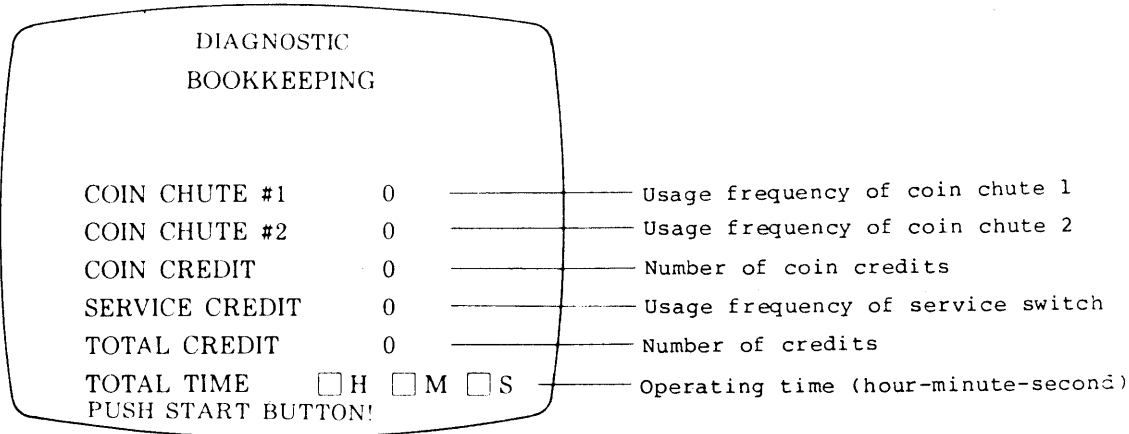


When the test has been completed, push the TEST button.

(6) DIP SWITCH ASSIGNMENTS

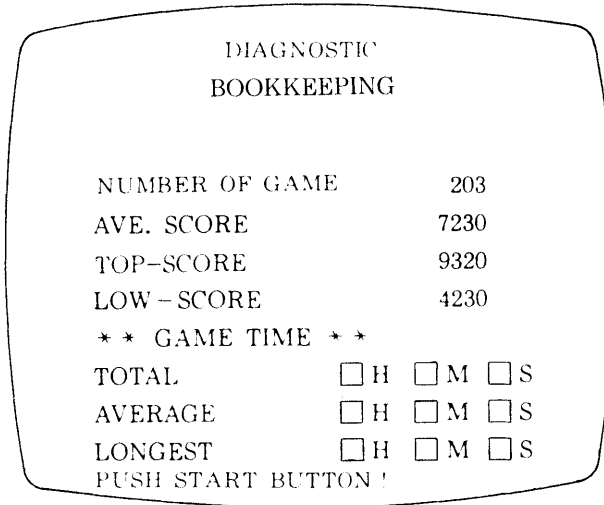


(7) Bookkeeping



* Only the data that falls within the range of up to 999H 59M 59S can be memorized.

The above screen indication is for testing.
 When the tests are finished, push the START button and the following will be shown:

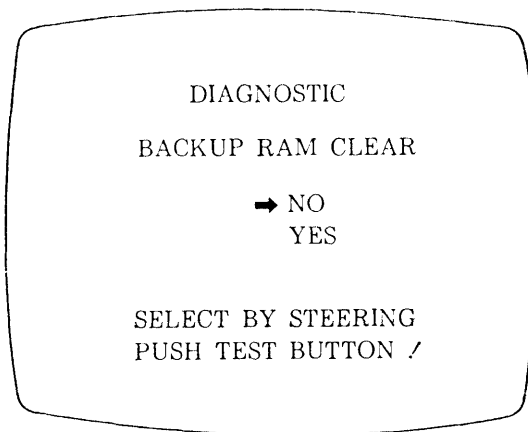


Every time the START button is pressed, the bookkeeping test display is repeated.

o When the tests are ended, push the TEST button.

(8) Backup RAM Clear:

To clear the data, bring the arrow to "YES" and push the TEST button.



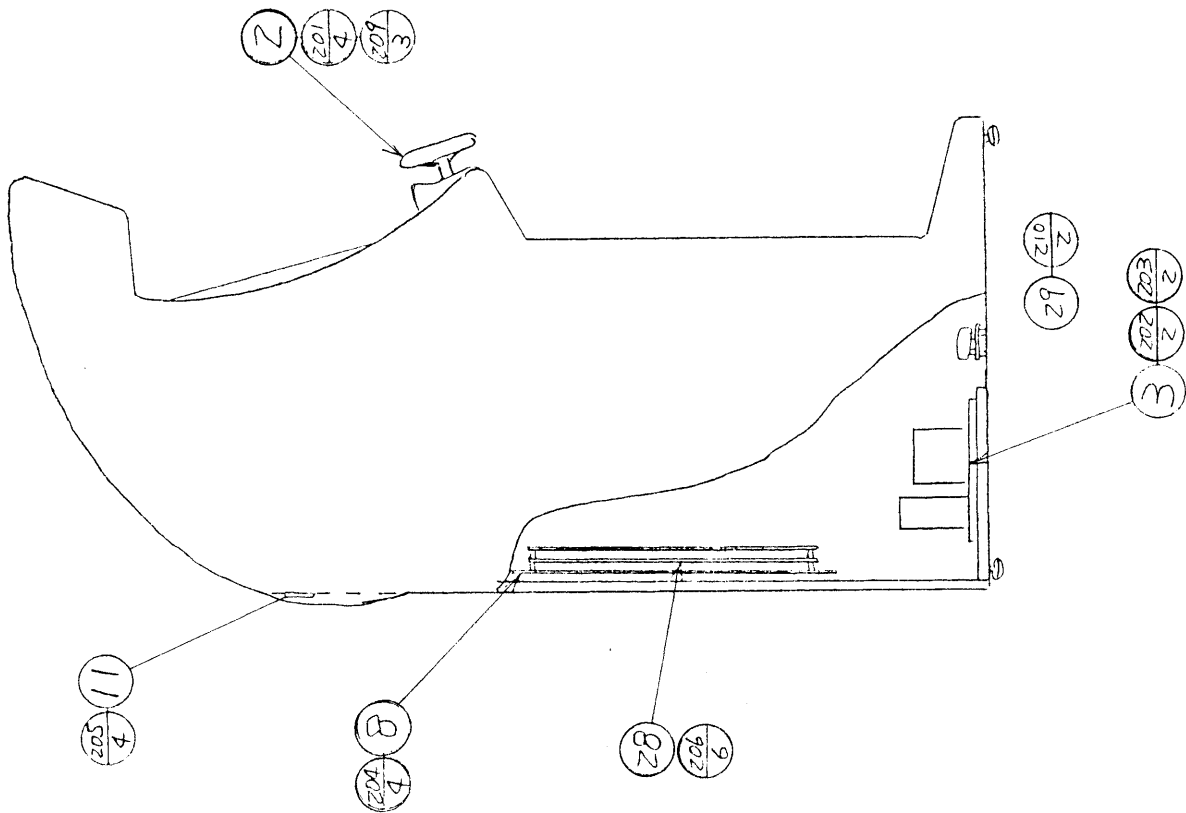
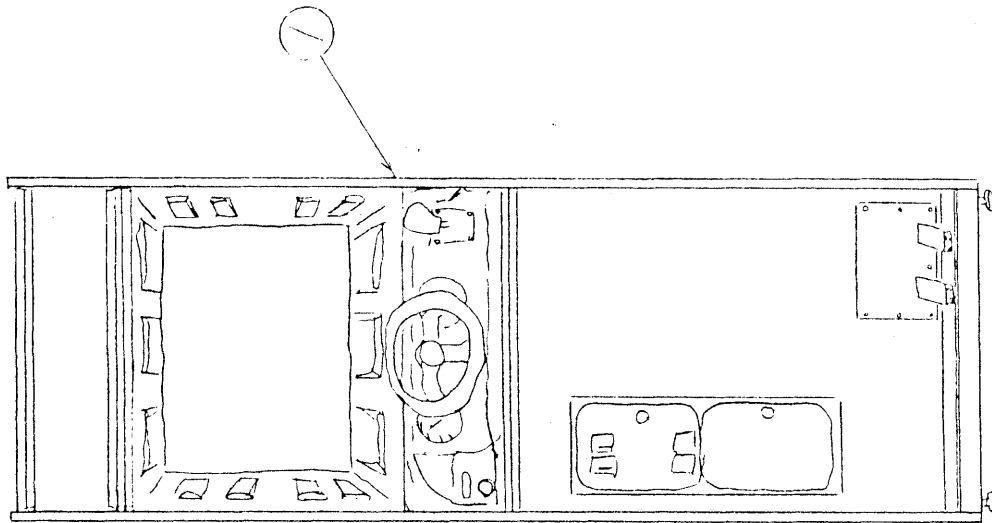
When the test is finished, push the TEST button to end the test (in the case of "INDIVIDUAL," however, the test mode returns to Fig. 1 first).

(9) EXIT

In the state as shown in Fig. 1, operate the steering to bring the arrow to EXIT and push the TEST button. The self-testing will then end and return to the ADVERTISEMENT mode.

14. PARTS LIST

① TOP ASSY OUT RUN U/R USA (KR-00002) (D-1/2)

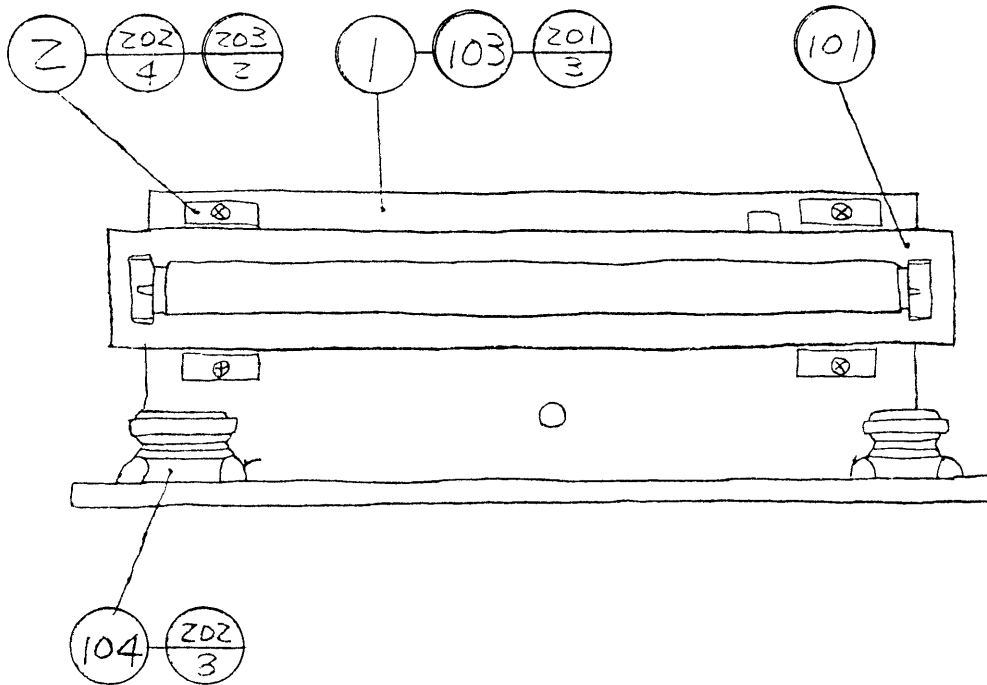


① TOP ASSY OUT RUN U/R USA (KR-00002) (D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-10002	ASSY CABINET U/R USA
2	KR-11001	ASSY CONT PANEL
3	KR-40002	ASSY PWR SPLY EXPORT
4	421-5800-45	ORIGINAL SEAL OUT RUN
5	420-5305-02	OWNERS MANUAL OUT RUN U/R ENG
6	421-6412-01	ADJ INSTR SH OUT RUN
8	KR-0013	SHIELD BASE
10	421-6120	STICKER SEGA USA
11	117-5123	NAMEPLATE ELEC SPECIFICATION USA
12	81979	STICKER SERVICE INSTR
15	421-6119	STICKER FCC
16	82789	STICKER DANGER HIGH VOLTAGE
17	83602	STICKER SERIAL NO INFO
18	SGM-3640	POLYETHYLENE COVER HN UPRIGHT
19	SGM-2675	POLYETHYLENE BAG 240×370
20	SGB-1035X	KEY BAG
21	421-6186-1	DENOMINATION SHEET 1 GAME 2×25¢
22	421-6186-2	DENOMINATION SHEET 1 GAME 25¢
23	540-0009-01	WRENCH FOR TAMP SCR M8
24	540-0006-01	WRENCH FOR TAMP SCR M4
25	540-0007-01	WRENCH FOR TAMP SCR M5
26	540-0015-01	WRENCH FOR TAMP TYPE M6
27	220-5130	*VOL CONT B-5K OHM
28	834-6065-02	GAME BD OUT RUN
	834-6065-04	GAME BD OUT RUN
29	422-0168	PLAY INSTR STICKER U/R
30	420-5318	DISPLAY MANUAL 20" 200-5090 ENG
201	029-0050	TMP PRF SCR BH M8×30
202	000-0530	M SCR PH M5×30
203	069-0001	FLT WSHR 5.5-20×1.6
204	000-0412-FS	M SCR PH W/FS M4×12
205	046-0001	SCR NAIL THH 1.5×16
206	010-0310-F	S-TITE SCR PH W/F M3×10
209	008-0516	TMP PRF SCR TH M5×16

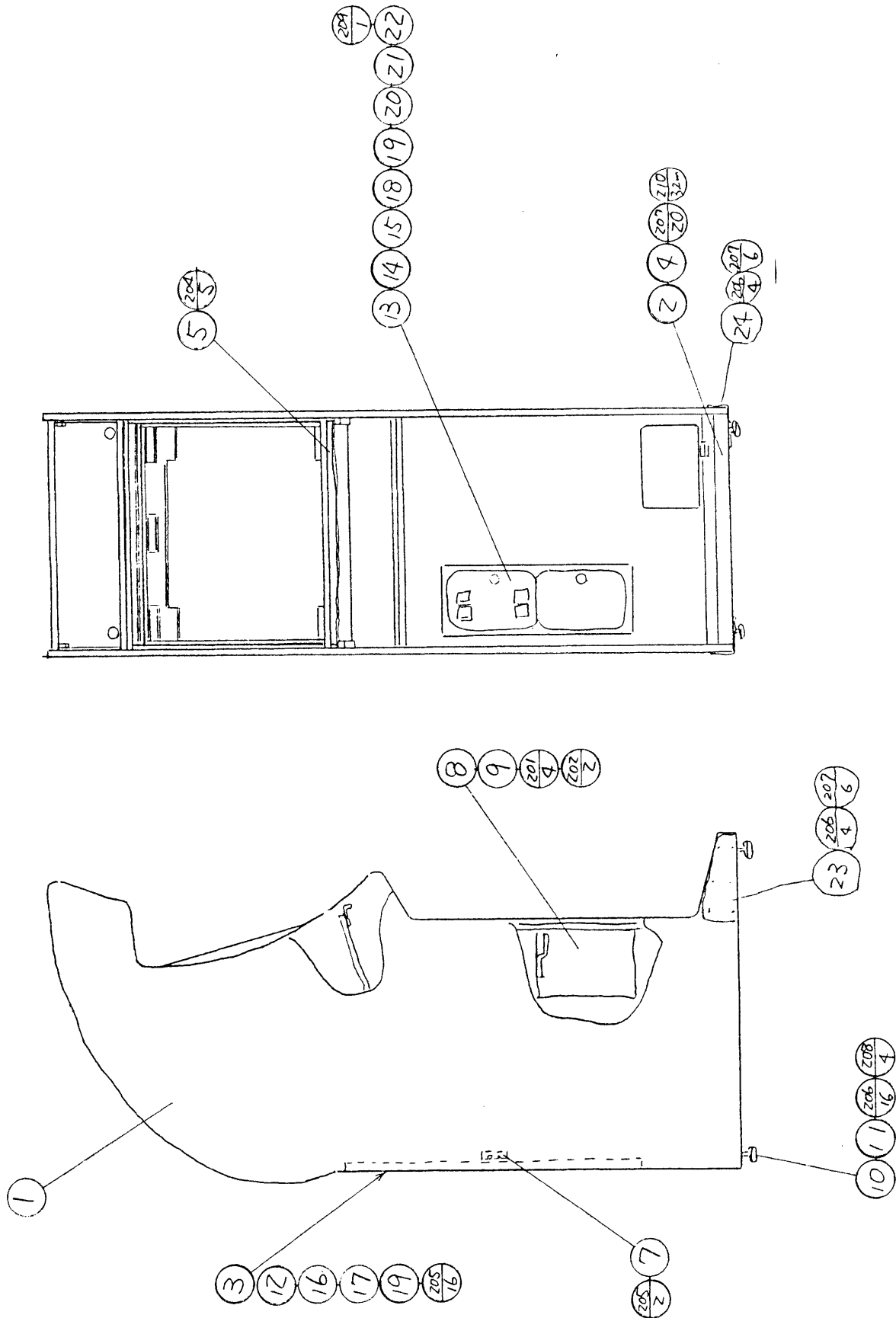
* Note : VOL CONT refers to the potentiometer.

② ASSY FL & SP UNIT EXPORT (KR-1070)



ITEM NO.	PART NO.	DESCRIPTION
1	KR-1067	FL & SP BASE
2	VE-1036	FL BRKT
3	SGB-3751-5	WIRE HARN FL & SP UNIT
	211-0087	CONN PLUG AMP 4P BROWN
	211-0085	CONN PLUG AMP 2P BROWN
	280-5015	FASTON RCPT 187
	209-0023	CONN CLOSED END
101	390-5120-01	ASSY FL LIGHT 15W 60Hz PALUCK
102	211-0041	CONN PIN AMP
103	280-0419	HARNESS LUG
104	130-5001	SPEAKER 8 OHM \varnothing 120
201	005-3510	W SCR .RH 3.5x10
202	005-3513-F	W SCR RH W/F 3.5x13
203	010-0406-F	S-TITE SCR PH W/F M4x6

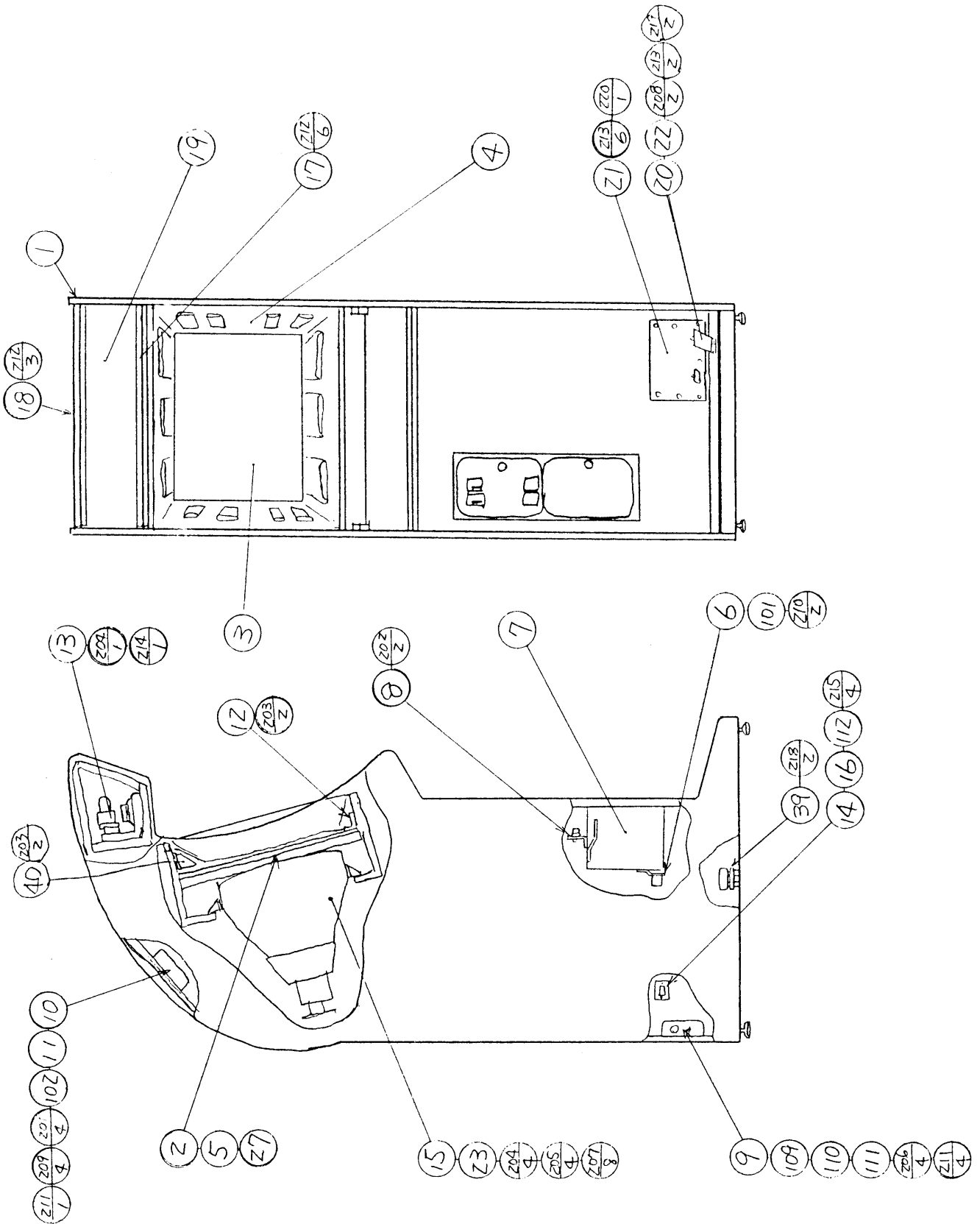
③ ASSY SUB-CABINET U/R USA (KR-1600) (D-1/2)



③ ASSY SUB - CABINET U/R USA (KR - 1600) (D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-1601	WODDEN CABINET
2	KR-1602	SUPPORT BRACKET
3	KR-1603	BACK DOOR
4	KR-1604	FLOOR MAT
5	KR-1605	BRACKET HOLDER
7	SH-2061X	STOPPER
8	KR-1606	COVER CASHBOX
9	KR-1608	LOCK BRACKET
10	TI-1079	LEG ADJUSTOR BRKT
11	601-0455	LEG ADJUSTOR
12	TA-1010	HINGE 148
13	220-5128-03	ASSY COIN CHUTE 2 DOOR USA 254×2
14	HN-1050	SPACE RING
15	DP-1167	TNG LKG
16	DP-1148X	LKG TNG
17	117-0062	PLATE LOCK RETAINER
18	109-0045	KEY HOLDER
19	220-5044-01	MAG LOCK W/O KEY
20	220-5045-01	KEY MASTER FOR 220-5044-01
21	220-5046	MAG LOCK W/KEYS
22	SGB-3751-16	WIRE HARN COIN SW
	211-0073	CONN PLUG AMP 4P WHITE
	280-5016	FASTON RCPT 205
	280-0425	CORD CLAMP \varnothing 10
23	KR-1609	BRACKET UNDER RIGHT
24	KR-1610	BRACKET UNDER LEFT
101	211-0041	CONN PIN AMP
201	000-0406-S	M SCR PH W/S M4×6
202	000-0408-S	M SCR PH W/S M4×8
204	000-0516-S	M SCR PH W/S M5×16
205	005-3516-F	W SCR RH W/F 3.5×16
206	000-0520-S	M SCR PH W/S M5×20
207	046-0001	SCR NAIL
208	059-0007	HEX NUT 3/8-16
209	000-0306-S	M SCR PH W/S M3×6
210	244-063	DOUBLE FACE TAPE 20mm

④ ASSY CABINET U/R USA (KR-10002) (D-1/3)



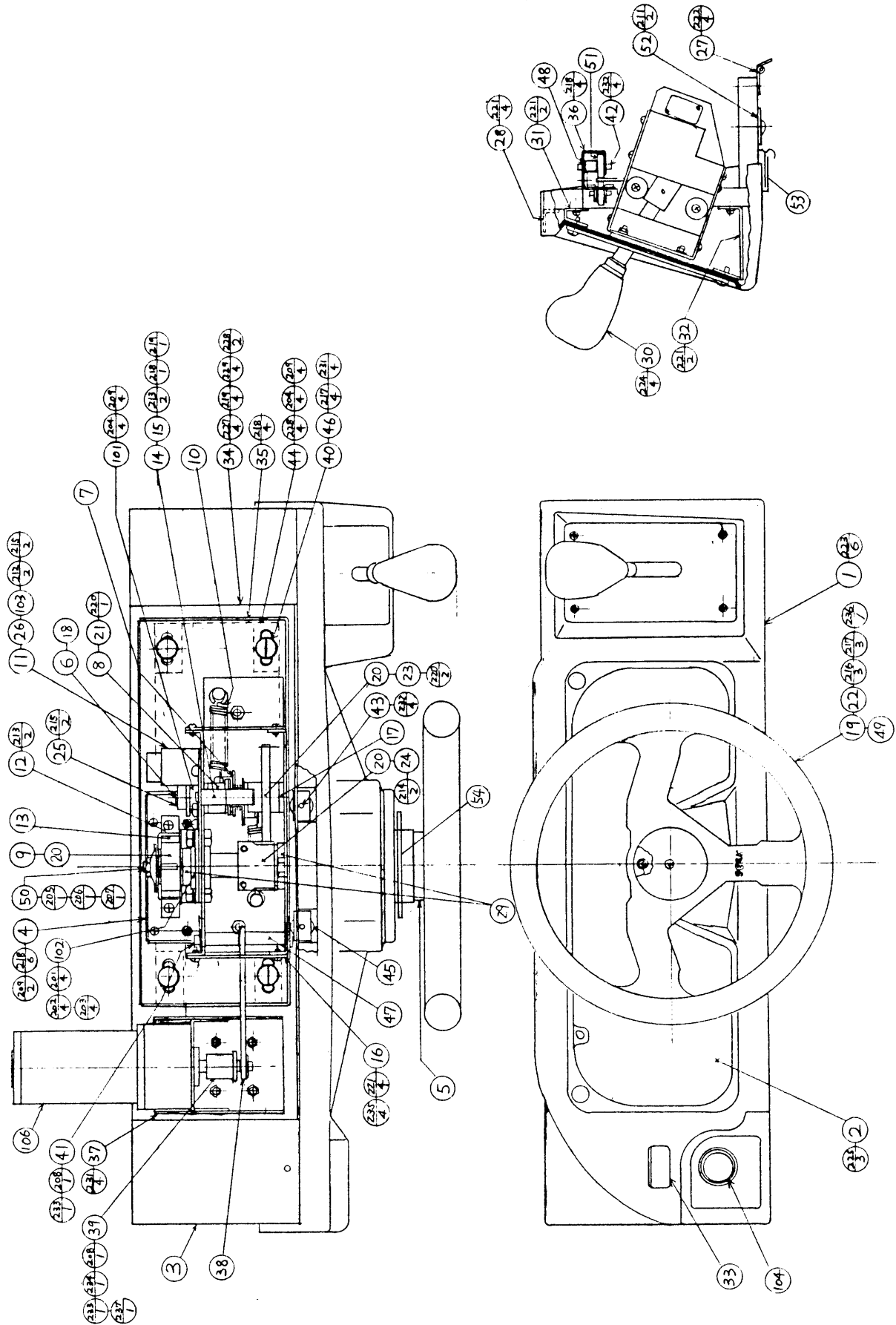
④ ASSY CABINET U/R USA (KR--10002) (D-2/3)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-1600	ASSY SUB-CABINET U/R
2	HN-1038	MASK BOARD
3	HN-1039X	WINDOW GLASS
4	KR-1068	WINDOW MASK
5	AB-1206	TV MASK 20
6	RA-1016	METER BRKT
7	KR-1607	CASHBOX
8	KR-1720	SP UNIT
9	MO-1215Y	COVER
10	HN-1042	FAN BRKT
11	MO-1051Y	GUARD PLATE
12	HN-1040	HOLDER BRKT
13	KR-1070	ASSY FL & SP UNIT EXPORT
14	105-0064	BRKT MAIN SW
15	200-5090	ASSY CLR DSPL 20 TYPE 100V
16	409-0049	SW STOPPER 1/2
17	KR-1064X	FRAME LOWER
18	KR-1065X	FRAME UPPER
19	423-0031	DESIGN PLATE OUTRUN
20	KR-1071	ACCEL & BRAKE PEDAL
21	KR-12002	ASSY ACCEL & BRAKE U/R
22	KR-1073	SHAFT
23	TY-1019	BRKT TV
24	SGB-3751-17	WIRE HARN EARTH
	211-0167	TERMINAL LUG ROUND ID 5
25	SGB-3751-3	WIRE HARN FAN MOTOR
	211-0085	CONN PLUG AMP 2P BROWN
26	SGB-3751-4	WIRE HARN EXT AC 100V
	600-5133	CABLE & CONN 300L
	211-0085	CONN PLUG AMP 2P BROWN
	211-0080	CONN CAP AMP 2P BROWN
	211-0117	CONN CAP AMP 2P YELLOW
	209-0032	CONN CLOSED END
27	AB-1151Y	TV MASK GRAY SMOKE
28	SGB-3751-6	WIRE HARN EXT FL
	211-0085	CONN PLUG AMP 2P BROWN
	211-0080	CONN CAP AMP 2P BROWN
29	SGB-3751-7	WIRE HARN EXT SP
	211-0087	CONN PLUG AMP 4P BROWN
	211-0082	CONN CAP AMP 4P BROWN
30	SGB-3751-9	WIRE HARN 50P
	211-5105	CONN FEM 50P
	211-0102	CONN PLUG AMP 4P YELLOW
	211-0044	CONN CAP AMP 2P WHITE
	211-0080	CONN CAP AMP 2P BROWN
	211-0121	CONN CAP AMP 4P RED
	211-0081	CONN CAP AMP 3P BROWN
	211-0072	CONN CAP AMP 4P WHITE
	211-0082	CONN CAP AMP 4P BROWN
	212-5033	CONN FEM 2P
	270-5016	FERRITE SLEEVE CORE
31	SGB-3751-10	WIRE HARN 20P
	211-5088	CONN FEM 20P
	211-0060	CONN CAP AMP 3P WHITE
	211-0046	CONN CAP AMP 6P WHITE
	270-5016	FERRITE SLEEVE CORE

④ ASSY CABINET U/R USA (KR-10002) (D-3/3)

ITEM NO.	PART NO.	DESCRIPTION
32	SGB-3751-11	WIRE HARN RG8
	211-0044	CONN CAP AMP 2P WHITE
	211-0060	CONN CAP AMP 3P WHITE
	212-5034	CONN FEM 6P
	270-5016	FERRITE SLEEVE CORE
33	SGB-3751-15	WIRE HARN COIN METER
	211-0087	CONN PLUG AMP 4P BROWN
	209-0023	CONN CLOSED END
34	SGB-3751-2	WIRE HARN AC
	211-0118	CONN CAP AMP 3P RED
	209-0023	CONN CLOSED END
	280-5015	FASTON RLPT 187
35	HN-1069	RUBBER CUSHION
36	80931	STICKER COIN METER
37	83005	STICKER MAIN SW PUSH ON PUSH OFF
38	SGB-3751-18	WIRE HARN EXT DC
	211-0096	CONN PLUG AMP 2P YELLOW
	211-0115	CONN CAP AMP 2P RED
	212-5034	CONN FEM 6P
39	839-0048	SSR BD DC MOTOR
40	KR-1612	BRACKET
101	220-5064	MAG CNTR 601G DC SV
102	260-0011	AXIAL FLOW FAN AC 100V 50~60Hz
103	280-0419	HARNES LUG
104	211-0041	CONN PIN AMP
105	211-0042	CONN SOCKET AMP
106	211-0005	CONTACT
107	280-5008	CORD CLAMP \varnothing 15
108	280-0425	CORD CLAMP \varnothing 10
109	280-0418	BUSHING STRAIN RELIEF 8.3
110	280-0417	TERMINAL BINDING POST BLACK
111	600-0110	CA & PL ASSY
112	509-0039	SW PB TYPE
113	211-0005	CONN CLAMP LOCK
201	000-0310-FS	M SCR PH W/FS M3 \times 10
202	000-0408-S	M SCR PH W/S M4 \times 8
203	000-0416-FS	M SCR PH W/FS M4 \times 16
204	069-0001	FLT WSHR 5.5-20 \times 1.6
205	000-0520-S	M SCR PH W/S M5 \times 20
206	031-0425-B	CRG BLT-BLK M4 \times 25
207	000-0510-S	M SCR PH W/S M5 \times 10
208	065-0004	E RING 4mm
209	008-0425	TMP PRF SCR TH M4 \times 25
210	010-0408-F	S-TITE SCR PH W/F M4 \times 8
211	051-0004	FLG NUT M4
212	008-0516	TMP PRF SCR TH M5 \times 16
213	008-0520	TMP PRF SCR TH M5 \times 20
214	000-0530	M SCR PH M5 \times 30
215	005-3513-F	W SCR RH W/F 3.5 \times 13
216	005-3510	W SCR PH 3.5 \times 10
217	006-3110	W SCR FH 3.1 \times 10
218	005-3520	W SCR PH 3.5 \times 20
219	060-0006	FLT WSHR M6
220	008-0535	TMP PRF SCR TH M5 \times 35
221	008-0416	TMP PRF SCR TH M4 \times 16

⑤ ASSY CONTROL PANEL (KR-11001) (D-1/3)



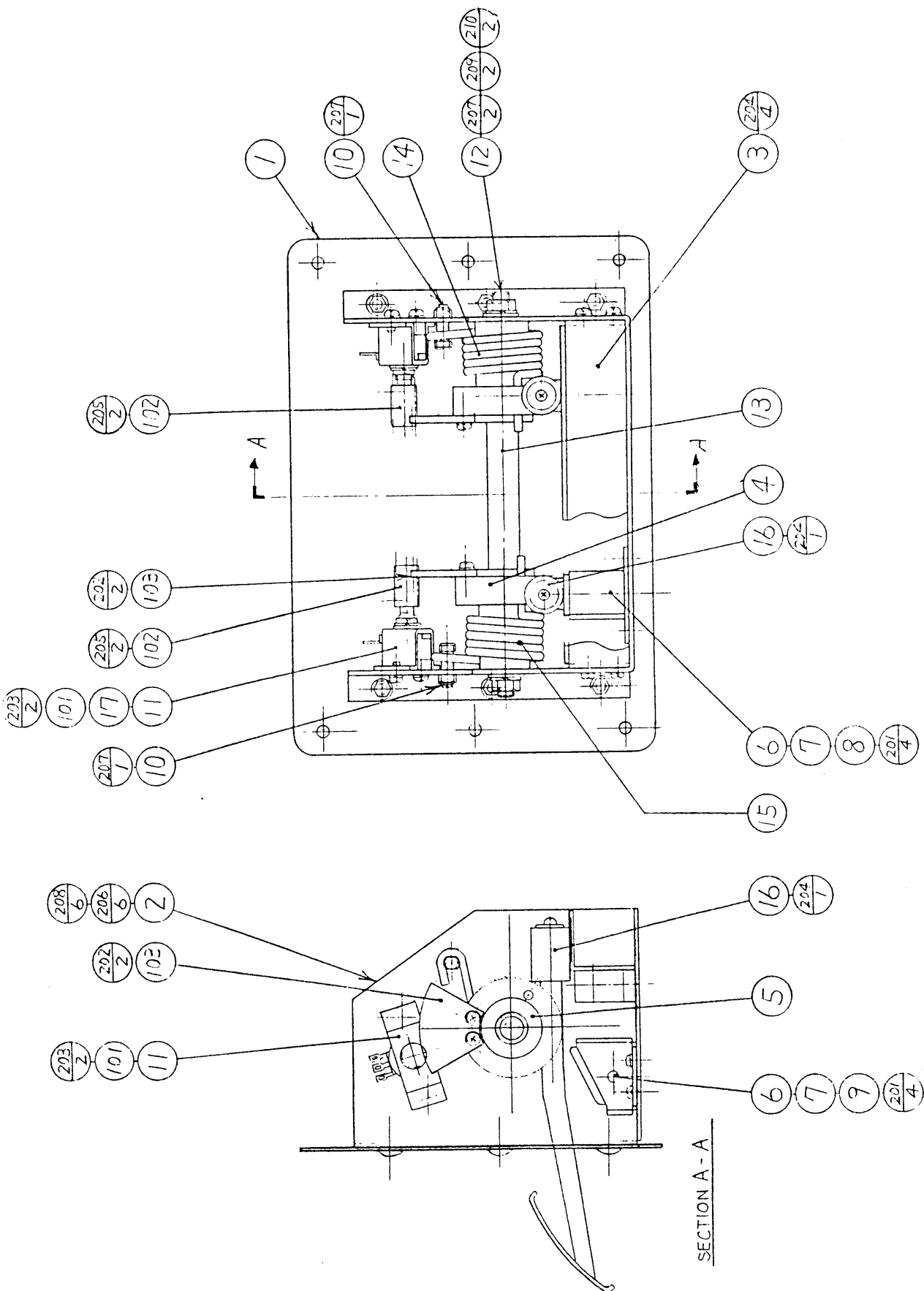
⑤ ASSY CONTROL PANEL (KR-11001) (D-2/3)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-1133	CONTROL PANEL
2	KR-1134	METER PANEL
3	KR-1132	CONT WOODEN BASE
4	KR-1105X	HANDLE BASE
5	KR-1106X	STEERING WHEEL SHAFT
6	KR-1107	SHAFT
7	KR-1108	ARM PLATE
8	KR-1109X	ARM BAR
9	KR-1110Y	STEERING WHEEL STOPPER
10	KR-1111X	EXTENSION SPRING
11	KR-1112	VOLUME BRACKET
12	KR-1113	BUMPER BRACKET
13	KR-1114	BUMPER
14	KR-1115	STOPPER
15	KR-1116	RUBBER STOPPER
16	KR-1117	PLATE
17	KR-1119	COLLAR B
18	KR-1120	SPACER A
19	KR-1121X	STEERING HANDLE \varnothing 270
20	KR-1122	KEY A
21	KR-1123	KEY B
22	KR-1125X	HANDLE EMBLEM
23	KR-1126	GEAR A
24	KR-1127	GEAR B
25	KR-1128	GEAR C
26	KR-1129	GEAR D
27	KR-1130	HINGE 590
28	KR-1131	BRACKET
29	KR-1118	COLLAR A
30	KR-13001	ASSY SHIFT LEVER S
31	KR-1141	BRACKET A
32	KR-1142	BRACKET B
33	117-5133	START PLATE
34	KR-1143	BASE
35	KR-1144	SLIDE BASE
36	KR-1145	ROLLER BRACKET
37	KR-1146	MOTOR BRACKET
38	KR-1147	ROD
39	KR-1148	CAM
40	KR-1149	SHOULDER SCREW
41	KR-1150	SHAFT
42	KR-1151	SHAFT LONG
43	KR-1152	SHAFT SHORT
44	KR-1153	SLIDE PLATE
45	KR-1154	ROLLER A
46	KR-1155	PLASTIC WASHER
47	KR-1156	COLLAR
48	KR-1157	SPACER
49	KR-1165	SPACER
50	KR-1137	STOPPER WASHER
51	KR-1164	ROLLER B
52	KR-1171	PLATE
53	KR-1173	COVER PLATE
54	KR-1174	SPACER

⑤ ASSY CONTROL PANEL (KR-11001) (D-3/3)

ITEM NO.	PART NO.	DESCRIPTION
	SGB-3751-13	WIRE HARN HANDLE VR
	211-0059	CONN PLUG AMP 3P WHITE
	SGB-3751-14	WIRE HARN START SW
	211-0100	CONN PLUG AMP 4P RED
	280-0472	FASTON RCPT 110
	SGB-3751-19	WIRE HARN DC MOTOR
	211-0094	CONN PLUG AMP 2P
	209-0023	CONN CLOSED END
101	100-5015	BEARING \varnothing 10
102	100-5035	BEARING \varnothing 20
103	220-5130	VOL CONT B-5K OHM
104	509-5053	PUSH BTN SWITCH GREEN W/LAMP
105	211-0041	CONN PIN AMP
106	350-5086	MOTOR DC 45V
107	280-5008	CORD CLAMP \varnothing 15
108	280-0419	HARNESS LUG
109	601-0460	TIE BELT
201	030-0825	HEX BLT M8 \times 25
202	060-0008	FLT WSHR M8
203	061-0008	SPR WSHR M8
204	054-0005	U NUT M5
205	050-0010	HEX NUT M10
206	069-0009	FLT WSHR 10.5-28 \times 2
207	061-0010	SPR WSHR M10
208	060-0010	FLT WSHR M10
209	060-0005	FLT WSHR M5
211	008-0512	TMP PRF SCR TH M5 \times 12
212	000-0408-FS	M SCR PH WFS M4 \times 8
213	000-0510-FS	M SCR PH W/FS M5 \times 10
214	028-0010	SET SCR HEX SKT CP M5 \times 8
215	028-0014	SET SCR HEX SKT CP UNBR M4 \times 4
216	029-0078	TMP PRF SCR TH M6 \times 16
217	061-0006	SPR WSHR M6
218	000-0510-S	M SCR PH W/S M5 \times 10
219	069-0022	FLT WSHR 5.5-14 \times 1
220	028-0007	SET SCR HEX SKT CP UNBR M4 \times 10
221	000-0416-FS	M SCR PH M4 \times 16 W/FS
222	008-0516	TMP PRF SCR TH M5 \times 16
223	008-0416	TMP PRF SCR TH M4 \times 16
224	008-0408	TMP PRF SCR TH M4 \times 8
225	001-0420	M SCR FHT M4 \times 20
227	000-0514-S	M SCR PH 5 \times 14 W/S
228	001-0516	M SCR FH 5 \times 16
229	005-3516	W SCR RH 3.5 \times 16
231	054-0006	U NUT M6
232	045-0003	COT PIN 1.6 \times 12
233	045-0005	COT PIN 2 \times 15
234	028-0012	SET SCR CHEESE HEAD SPECIAL M5 \times 12
235	054-0004	U NUT M4
236	008-0425	TMP PRF SCR TH M4 \times 25
237	045-0014	SPR PIN UNBR 3 \times 26
238	005-3113	W SCR RH 3.1 \times 13
239	006-3113	W SCR FH 3.1 \times 13

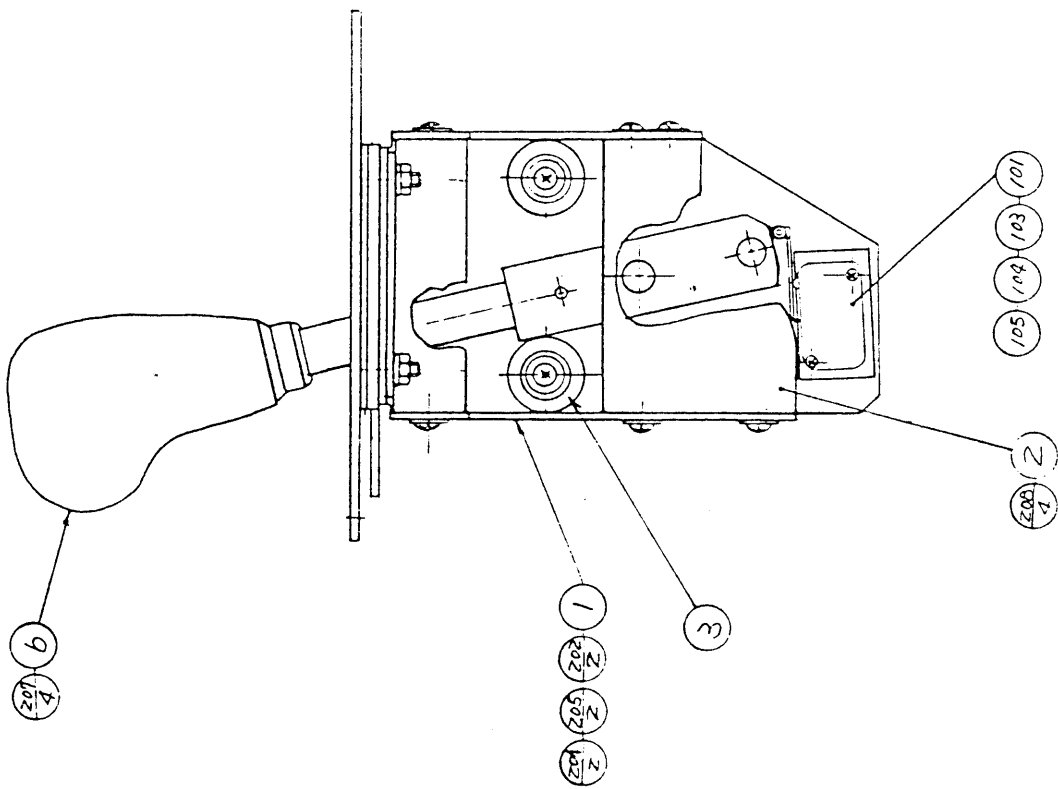
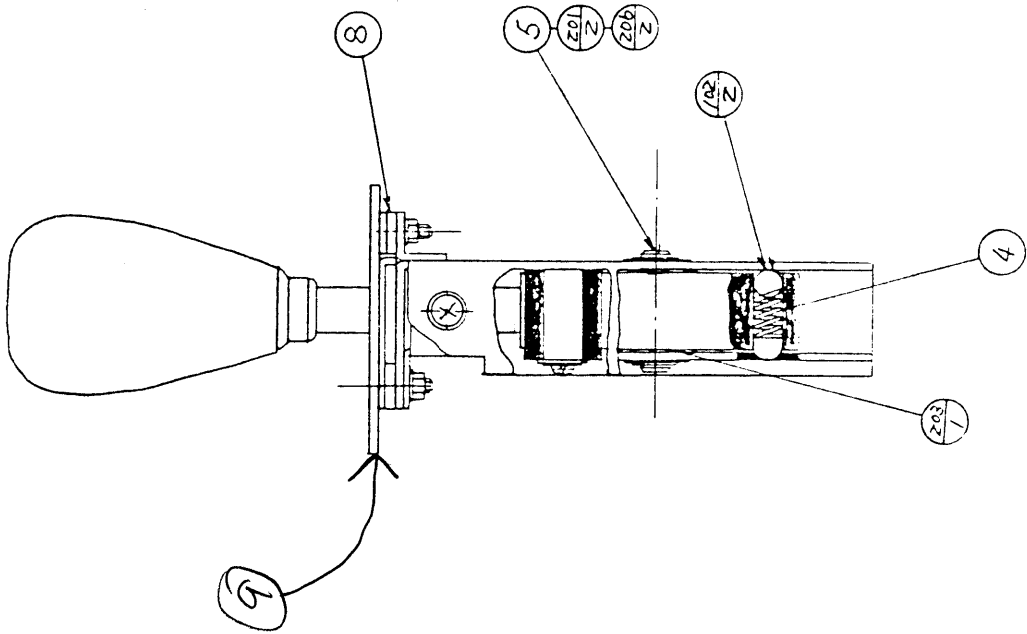
⑥ ASSY ACCEL & BRAKE U/R (KR-12002) (D-1/2)



⑥ ASSY ACCEL & BRAKE U/R (KR-12002) (D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-1216	LID
2	KR-1217	PEDAL BRACKET
3	KR-1218	STOPPER BRACKET
4	KR-1219	ACCEL BAR
5	KR-1220	BRAKE BAR AND PEDAL
6	KR-1221	BUMPER BRACKET A
7	KR-1222X	BUMPER BRACKET B
8	KR-1223	BUMPER A
9	KR-1224	BUMPER B
10	KR-1225	SPRING STOPPER
11	KR-1205	VR BRACKET
12	KR-1208	SHAFT BRAKE ACCEL
13	KR-1209	COLLAR
14	KR-1210	TORSION SPRING A
15	KR-1211	TORSION SPRING B
16	KR-1213	BUMPER
18	SGB-3751-12 211-0045	WIRE HARN ACCEL & BRAKE VR CONN PLUG AMP 6P WHITE
101	220-5130	VOL CONT B-5K OHM
102	601-5410	GEAR 15 \varnothing 6
103	601-5423	GEAR 1/6
104	211-0041	CONN PIN AMP
105	280-5008	CORD CLAMP \varnothing 15
106	601-0460	TIE BELT
201	000-0406-S	M SCR PH W/S M4x6
202	000-0408-S	M SCR PH W/S M4x8
203	000-0408-FS	M SCR PH W/FS M4x8
204	000-0510-FS	M SCR PH W/FS M5x10
205	028-0002	SET SCR PH SPCL M3x6
206	031-0514-B	CRG BLT BLK M5x14
207	050-0008	HEX NUT M8
208	051-0005	FLG NUT M5
209	060-0008	FLT WSHR M8
210	061-0008	SPR WSHR M8

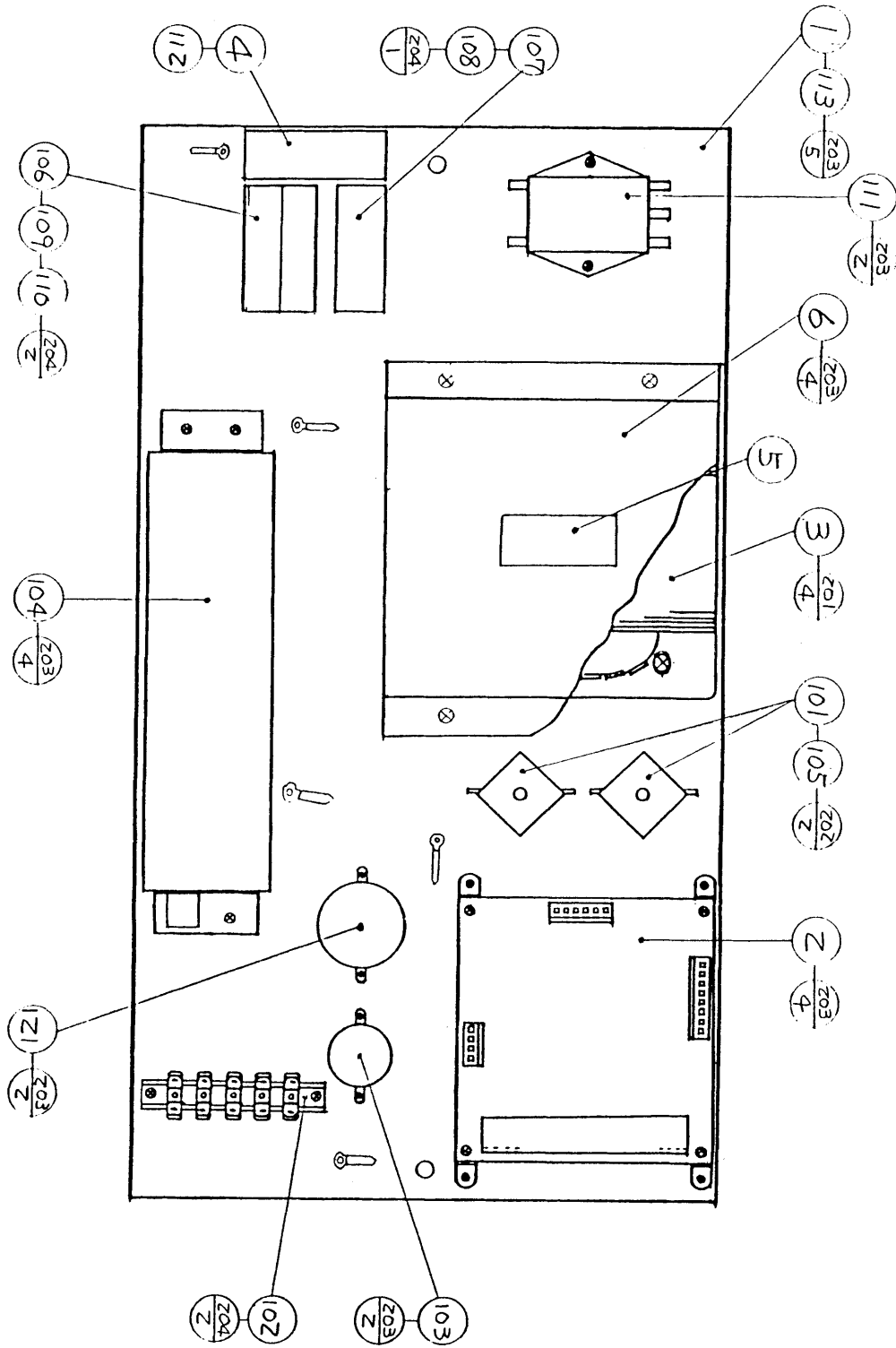
⑦ ASSY SHIFT LEVER S (KR-13001) (D-1/2)



⑦ ASSY SHIFT LEVER S (KR-13001) (D-2/2)

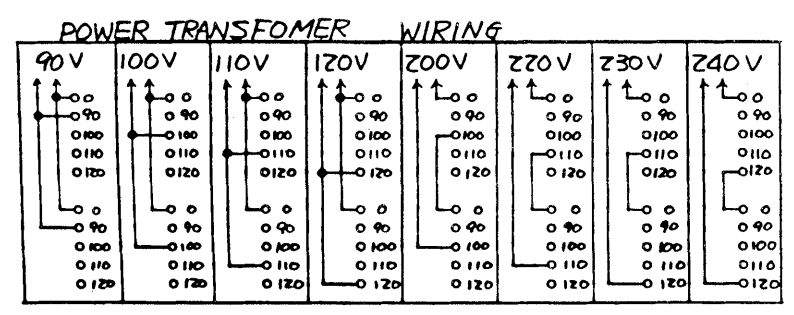
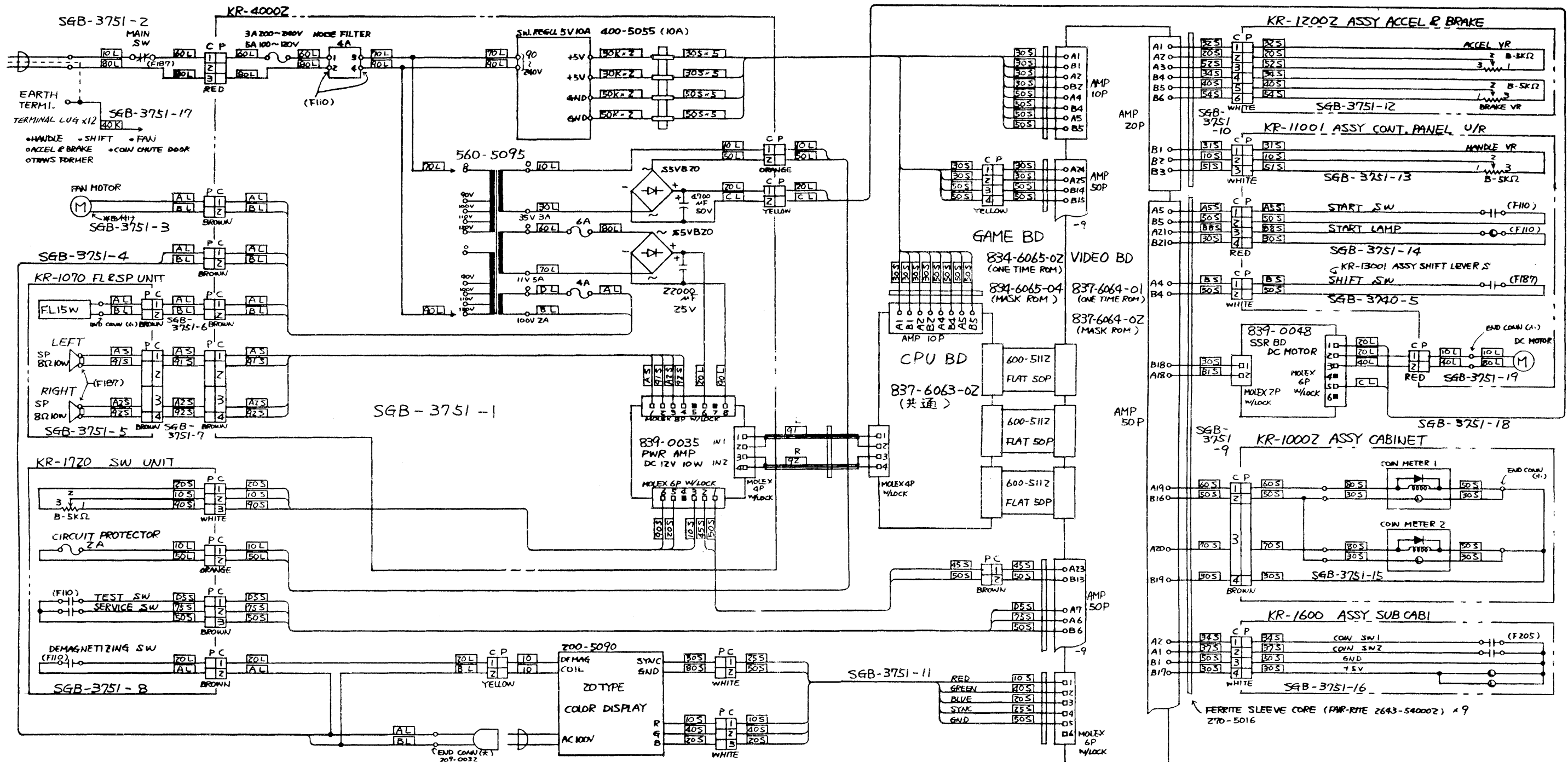
ITEM No.	PART No.	DESCRIPTION
1	KR-1312	SHIFT BRACKET B
2	KR-1314	COVER BRACKET B
3	KR-1303	STOPPER
4	KR-1320	COMPRESSION SPRING
5	KR-1304	SHAFT
6	KR-1315	SUB ASSY SHIFT LEVER
7	SGB-3740-5	WIRE HARN SHIFT SW
	211-0043	CONN PLUG AMP 2P WHITE
	280-5015	FASTON RCPT 187
8	KR-1316	SPACER
9	KR-1318	MOUNT BRACKET
101	211-0041	CONN PIN AMP
102	101-5004	STEEL BALL \varnothing 8.7312
103	509-5088	SW MICRO TYPE
104	310-0012	PAPER INSULATOR
105	117-0141	LOCK PLATE
201	069-0005	FLT WHIR SPECIAL 8.3-14.3×0.5
202	000-0408-FS	M SCR PH W/FS M4×8
203	069-0049	NYLON WASHER SPECIAL 8.5-14×1
204	000-0316	M SCR PH M3×16
205	069-0007	FLT WSHR
206	065-0006	E RING 6mm
207	054-0004	M4 U NUT
208	010-0408-F	S-TITE SCR W/F M4×8

⑧ ASSY PWR SPLY EXPORT (KR-40002) (D-2/2)



⑧ ASSY PWR SPLY EXPORT (KR-40002) (D-1/2)

ITEM NO.	PART NO.	DESCRIPTION
1	KR-4002	BASE
2	839-0035	PWR AMP DC 12V 10W
3	560-5095	PWR XFMP 90-240V 100V 11V 35V
4	421-6503	STICKER FUSE INSTR
	421-6504	STICKER FUSE INSTR
5	81319	STICKER 120V
	80666	STICKER 200V
	80556	STICKER 220V
	80595	STICKER 230V
	80309	STICKER 240V
6	RA-4002	COVER
7	SGB-3751-1	WIRE HARN PWR SPLY
	211-0085	CONN PLUG AMP 2P BROWN
	211-0097	CONN PLUG AMP 3P RED
	211-0080	CONN CAP AMP 2P BROWN
	211-0060	CONN CAP AMP 3P WHITE
	211-0082	CONN CAP AMP 4P BROWN
	211-0123	CONN CAP AMP 4P YELLOW
	212-5076	CONN FEM 4P
	212-5034	CONN FEM 6P
	212-5067	CONN FEM 8P
	211-5101	CONN FEM 10P
	211-0117	CONN CAP AMP 2P YELLOW
	270-5016	FERRITE SLEEVE CORE
	211-0116	CONN CAP AMP 2P ORANGE
101	117-0184	TERMINAL PLATE IL 4P
102	117-5131	TERMINAL PLATE 5P
103	150-0173	CAP E 4700 MF 50V C-TYPE
104	400-5055	SW REGU 90-240V 5V 10A
105	481-0157	DIODE BRIDGE S5VB20
106	514-0064	FU HLDR 2P W/COVER
107	514-0065	FU HLDR 1P W/COVER
108	514-0036	FU 3A 6.4×30mm
	514-0034	FU 5A 6.4×30mm
109	514-0040	FU 4A 6.5×30mm
110	514-0031	FU 6A 6.5×30mm
111	601-0429	NOISE FLTR AC 250V 4A
112	601-0769	STAPLE MAX #3
113	280-0419	HARNES LUG
114	211-0167	TERMINAL LUG ROUND ID 5
115	211-0041	CONN PIN AMP
116	211-0042	CONN SOCKET AMP
117	211-0005	CONN CLAMP LOCK
118	211-5047	CONTACT
119	280-5015	FASTON RCPT 187
120	280-0472	FASTON RCPT 110
121	150-0265	CAP E 22000 MF 25V C-TYPE
201	000-0414-FS	M SCR PH W/FS M4×14
202	005-3110	W SCR RH 3.1×10
203	005-3113-F	W SCR RH W/F 3.1×13
204	005-3120	W SCR RH 3.1×20



15. WIRING DIAGRAM

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