

HELIFIRE

A stylized black and white illustration of a helicopter, positioned at the top right of the title 'HELIFIRE'. The helicopter is shown from a side profile, facing right, with its rotor blades visible.

OPERATION MANUAL

TUB-UP

Nintendo

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C A U T I O N S

1. P.C. Board should not be exposed direct to the sun. Direct sunshine is very harmful to LSI (memory element).
2. P.C. Board to be stored or transported should be wrapped by a conductive pouch or aluminum foil, because LSI and IC used in the machine are semiconductor integrated circuits of which basic element is MOS-FET.
3. When images on the Video Monitor Screen are disturbed by powerful noise or other electrical causes, turn the main power off once and then on again.

1. SPECIFICATIONS

- (1) Power Consumption : 103 W
- (2) Size : 600(W) × 880(D) × 1700(H)mm.
- (3) Weight : 108 Kgs.
- (4) Number of Player : 1 or 2 person(s)
- (5) Number of Submarine : 3 – 6 (Adjustable)
- (6) Accessories : Operation Manual : 1 copy
Key for Back Door : 2 pcs.
Key for Coin Box Door : 2 pcs.
Fuse : 3 pcs.
120V 4AX2, 0.3AX1
220V–240V 4A, 2A, 0.3A

NOTE: Specifications are subject to change for improvement without notice.

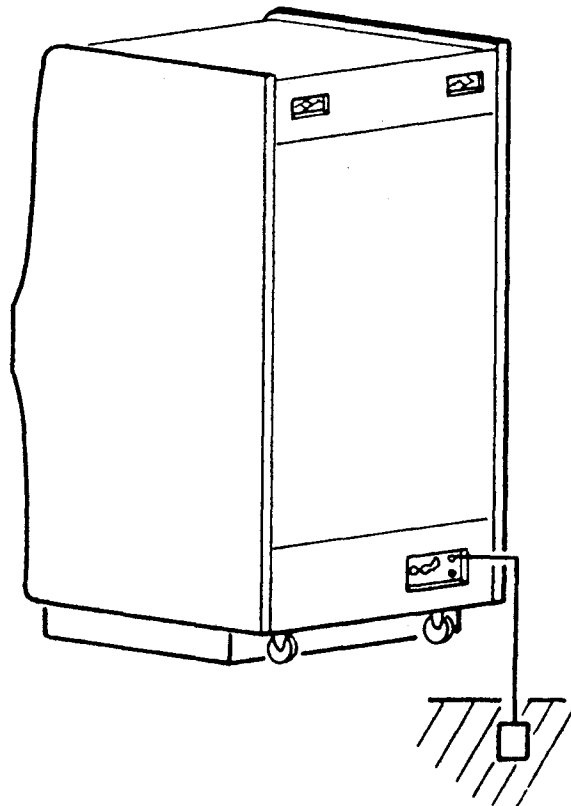
2. INSTALLATION OF THE MACHINE

2-1 Cautions on installation

- (1) The power cord of the machine should not be connected to a wall outlet together with large load unit(s) such as motor, cooler, etc.
- (2) Turn the power off before setting and removing the P.C. Board and connectors. Carefully handle them.
- (3) Do not touch IC, LSI and other electronic parts on P.C. Board. Do not use a tester or the like on them. (They may be damaged by the inner voltage of the instruments.)
- (4) When exchanging a fuse, use a new one of the prescribed capacity.
- (5) The machine should be installed where it is not hot, keeping away from a heating appliance and direct sunshine.
- (6) The machine should be installed where it is not wet and dusty.
- (7) Do not touch the inside of the video monitor which has high tension units. Inform service station, if necessary.

2-2 Earthing of machine

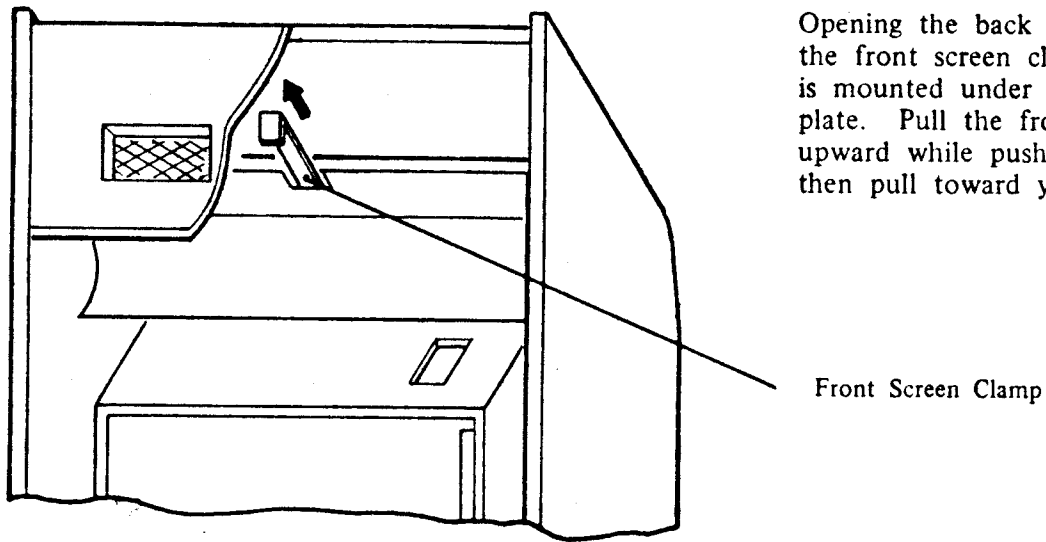
- (1) When the machine is installed in a wet place, it should be grounded to avoid accident by an electric shock.
 - a) Connect an earthing wire to the earthing terminal of the machine.
 - b) The opposite end of the earthing wire should be connected to an earthing bar which is firmly inserted into the ground.
- (2) Cautions
 - a) Do not connect the earthing wire to a water-pipe, because polyvinyl-chloride pipes are sometimes used in the water lines and, if so, the electronic continuity is cut at the points.
 - b) Do not connect the earthing wire to the gas pipe absolutely. That is very dangerous.



3. MAINTENANCE AND INSPECTION

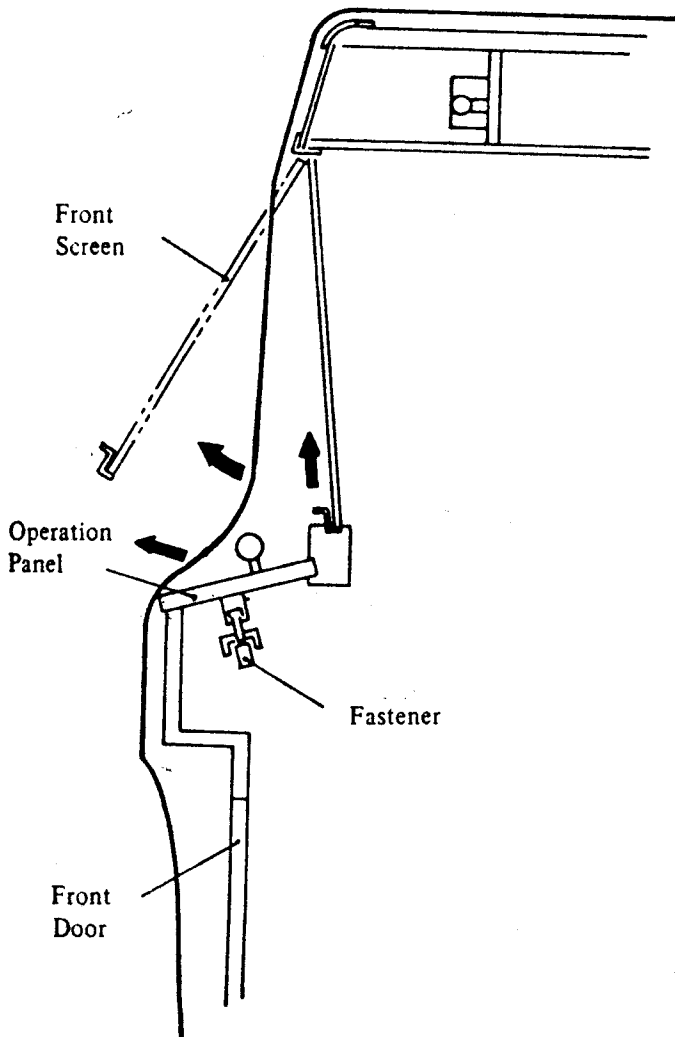
3-1 Dismounting of front screen

Opening the back door, pull the front screen clamp which is mounted under the top plate. Pull the front screen upward while pushing and then pull toward you.



3-2 Dismounting of operation panel

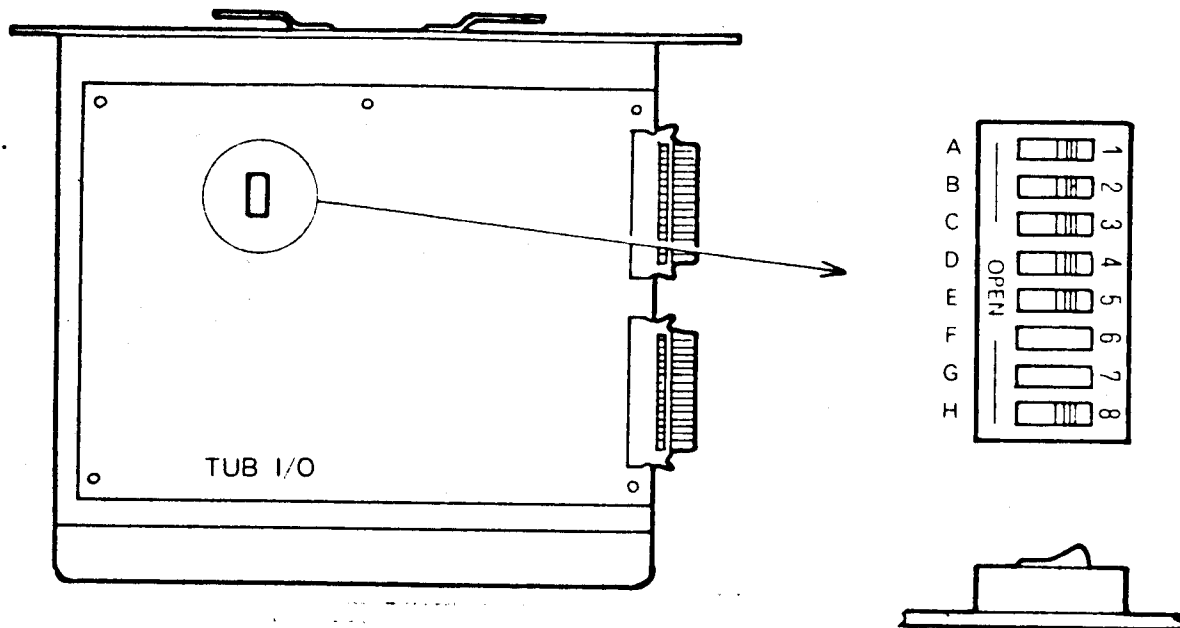
To dismount the operation panel for maintenance or inspection of the Control Lever Ass'y or Micro Switch, open the front door and unfasten the fastener.



4. POINTS AND METHODS OF ADJUSTMENT

4-1 I/O P.C. Board

The number of submarine, score level and the number of coin can be set with the switches on I/O P.C.Board according to the diagram below.



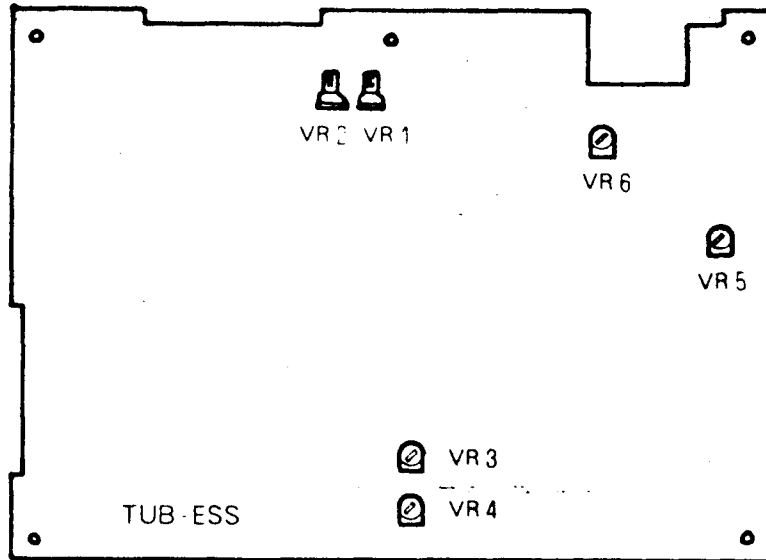
The switch is OFF
(Bottom view)







	A	B	C	D	E	F	G	H
Number of submarine								
3	OFF	OFF						
4	ON	OFF						
5	OFF	ON						
6	ON	ON						
Score level for extra submarine								
5,000 points			OFF	OFF				
6,000 points			ON	OFF				
8,000 points			OFF	ON				
10,000 points			ON	ON				
Coinage								
1 coin / 1 play					OFF			
2 coins/ 1 play					ON			
Table / Up-Right								
Table								OFF
Up-Right								ON

* Switch F and G have no function.

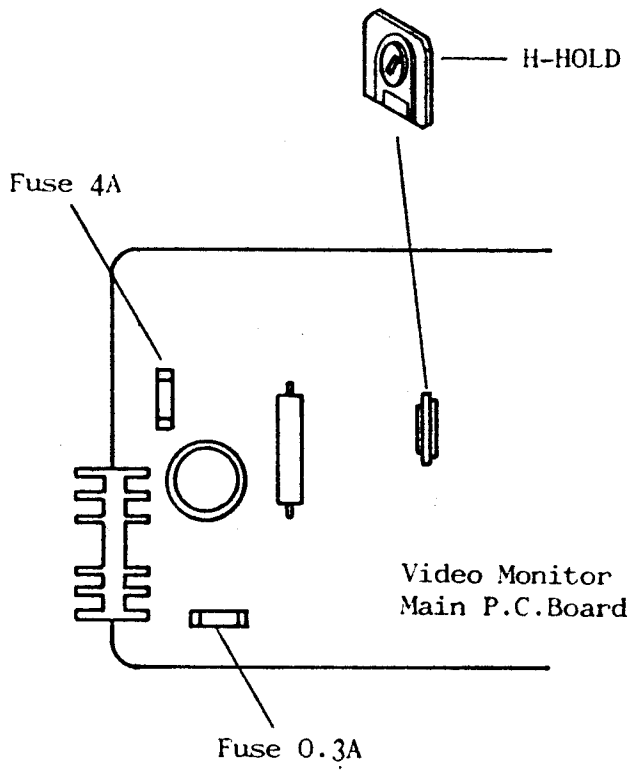
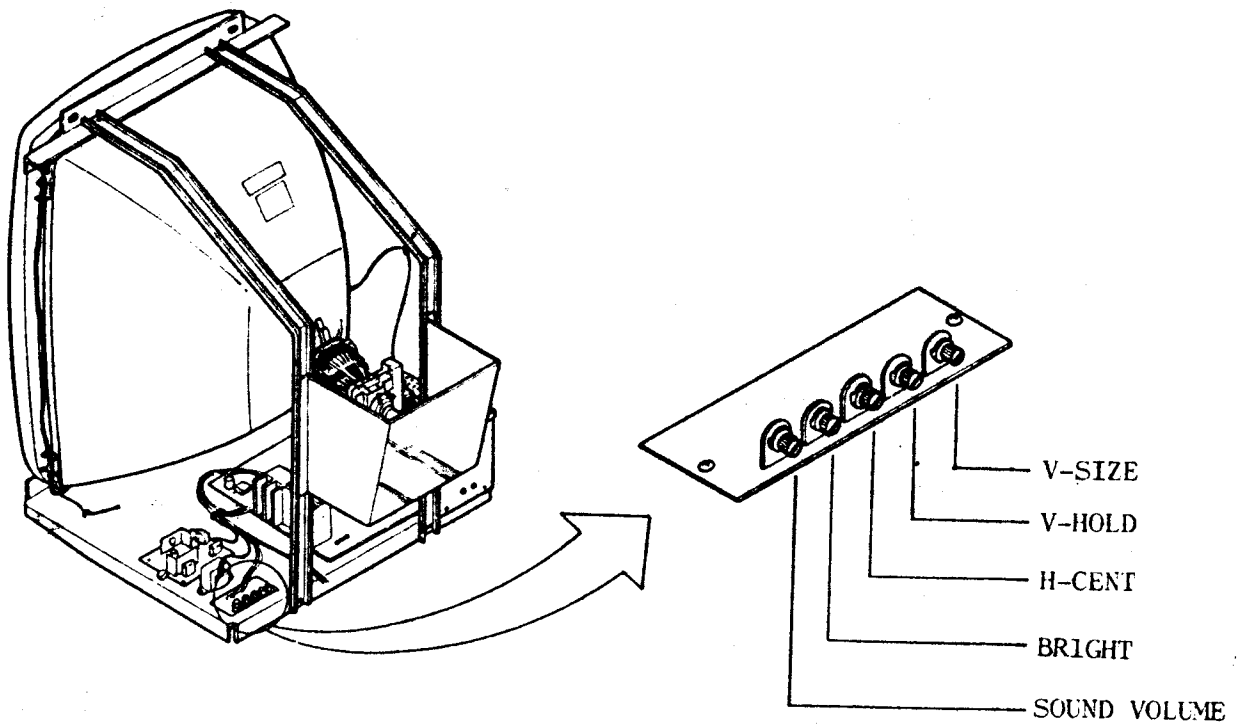
4-2 ESS P.C. Board

Semi-fixed resistors, VR1 to VR6 on ESS P.C.Board are used to adjust video monitor screen and sound balance.



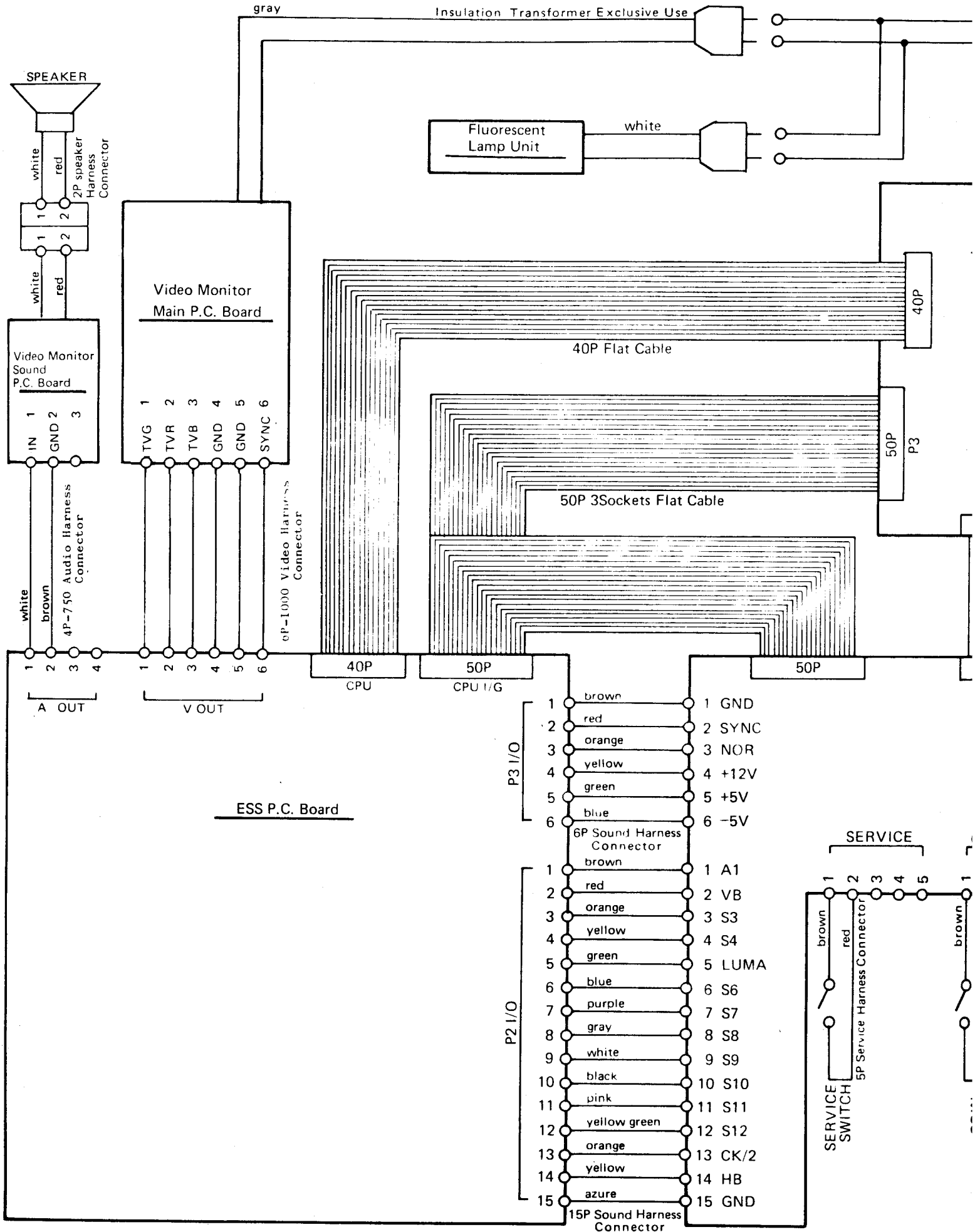
VR1	300K Ω 1/5W vertical type red knob	To adjust brightness of sun glow in back- ground		Turn left to increase brightness.
VR2	300K Ω 1/5W vertical type blue knob	To adjust brightness of sea in background		- ditto -
VR3	2K Ω 1/5W plain type	To adjust height of the sea in background	 	
VR4	30K Ω 1/5W plain type blue knob	To adjust height of the waves in back- ground	 	
VR5	10K Ω 1/5W plain type	To adjust sound volume balance between sound(firing, explosion, etc.) and melodies		
VR6	1K Ω 1/5W plain type	To adjust tone of firing sound		

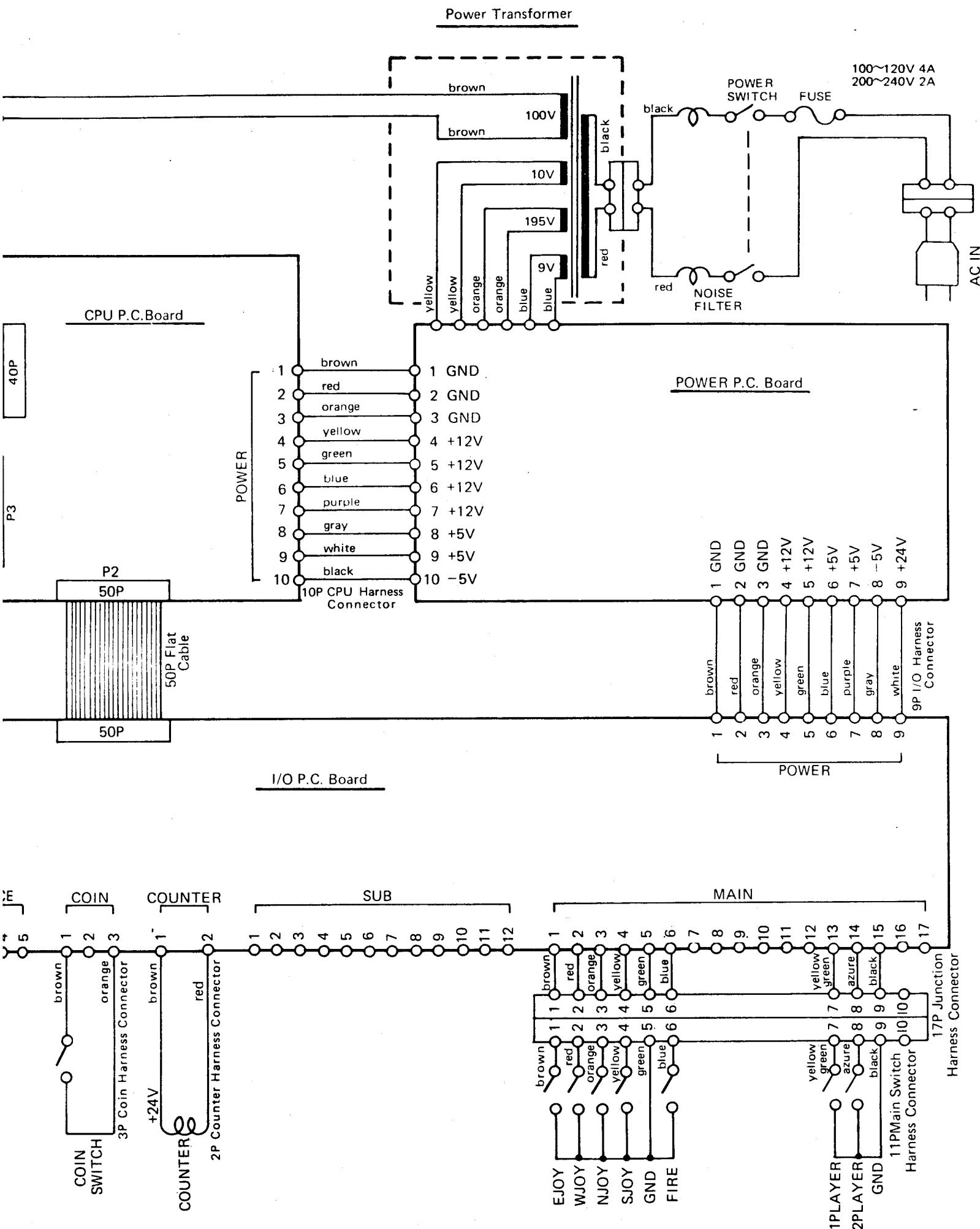
4-3 VIDEO MONITOR



NOTE : Do not touch the inside of the Video Monitor in which many parts are supplied with high tension.

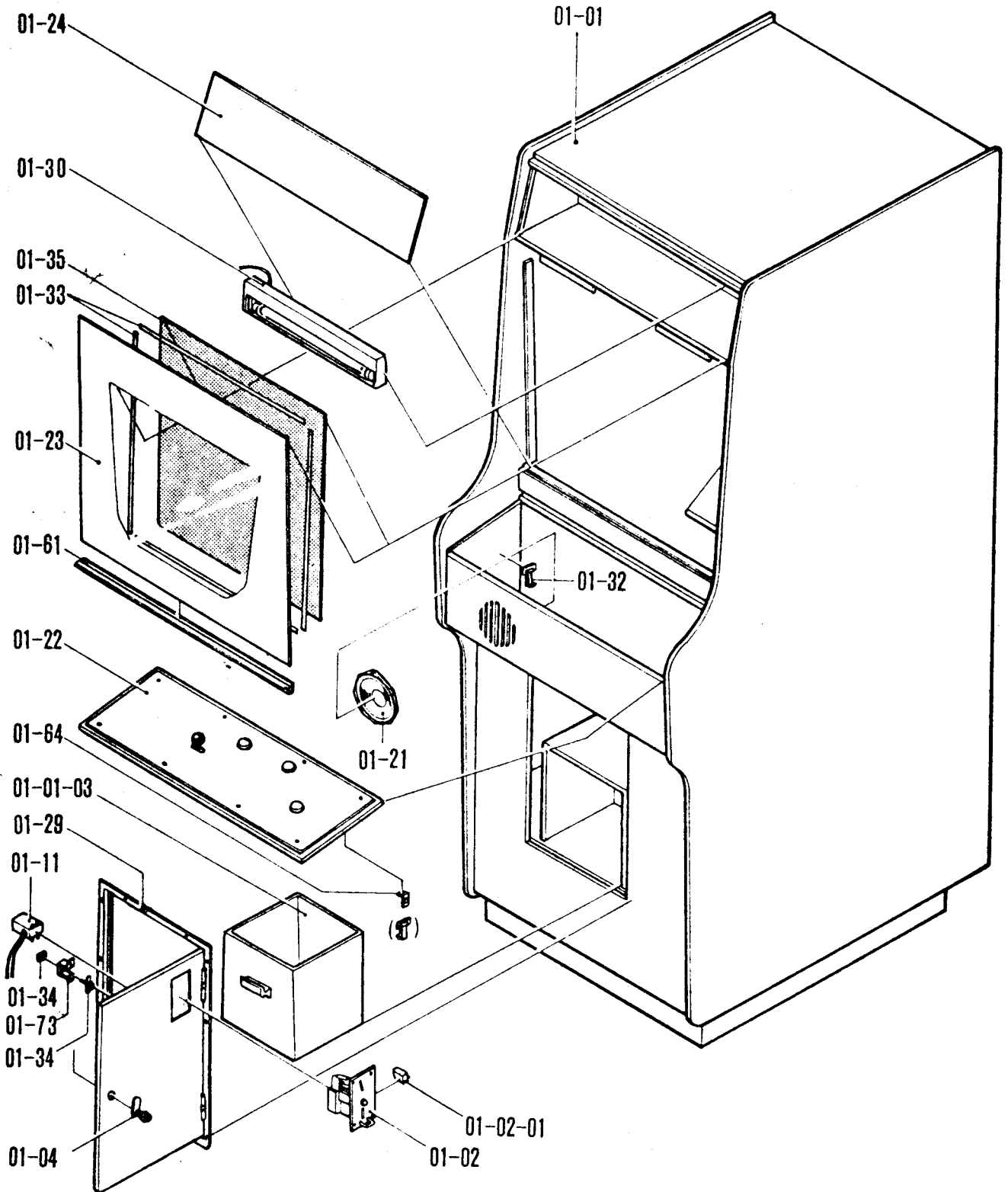
5. WIRING and CONNECTION

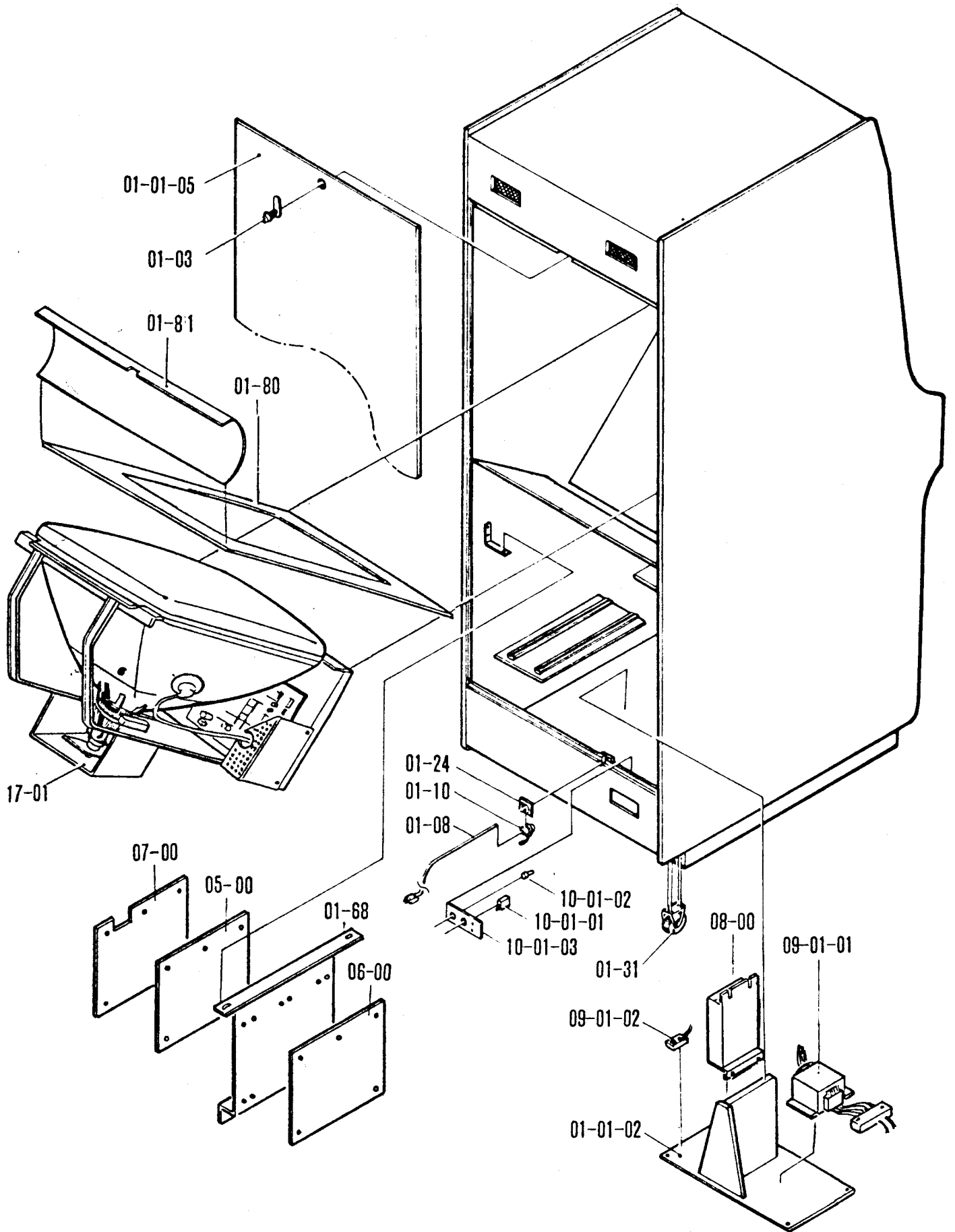




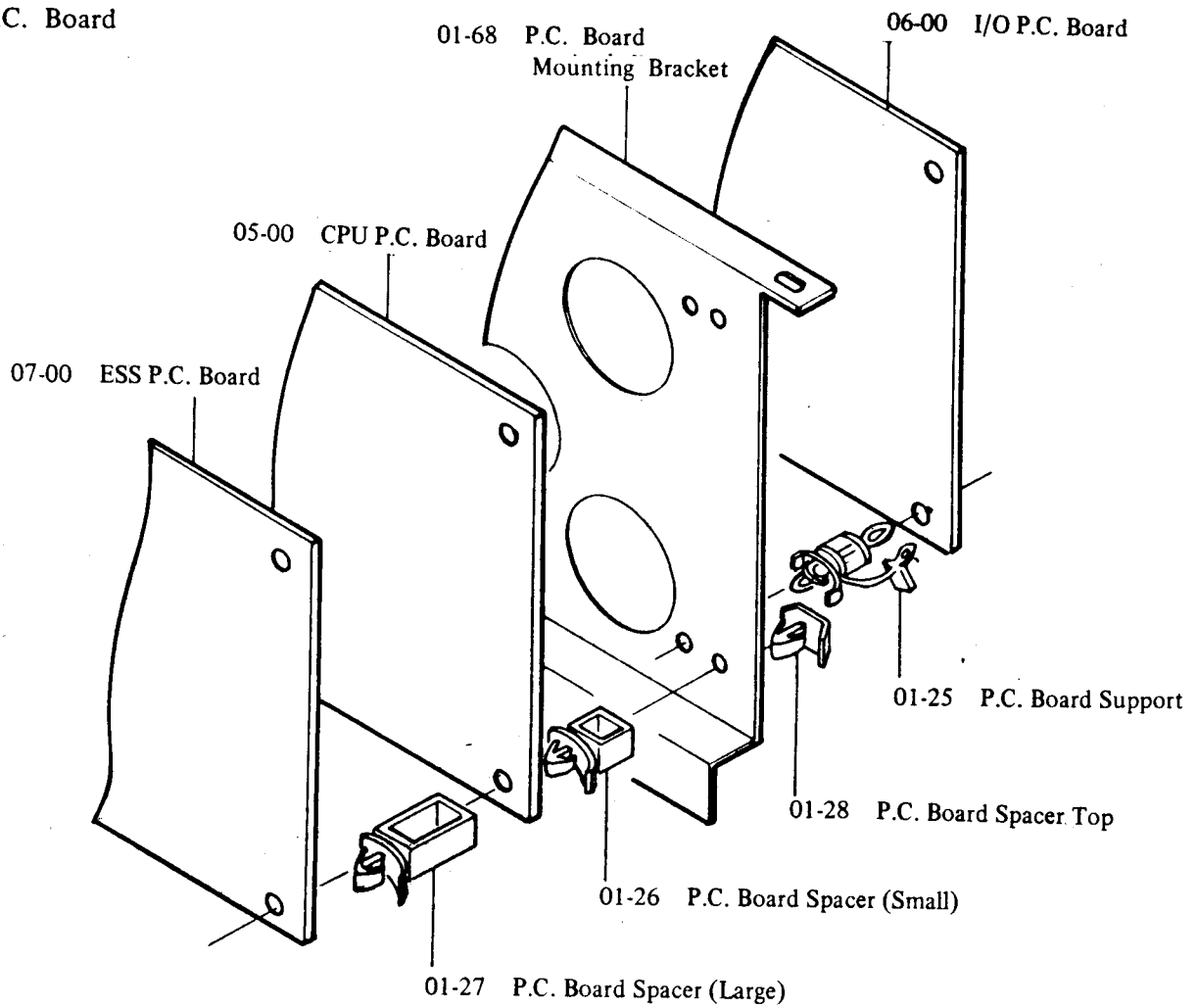
6. NAME OF EACH PARTS

6-1 Body



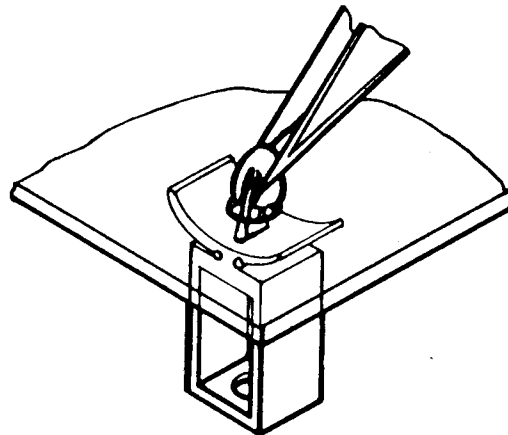


(2) P.C. Board



○ Removing P.C. Board Spacer

Press the claw with a pincette, as illustrated, and pull out the P.C. Board.

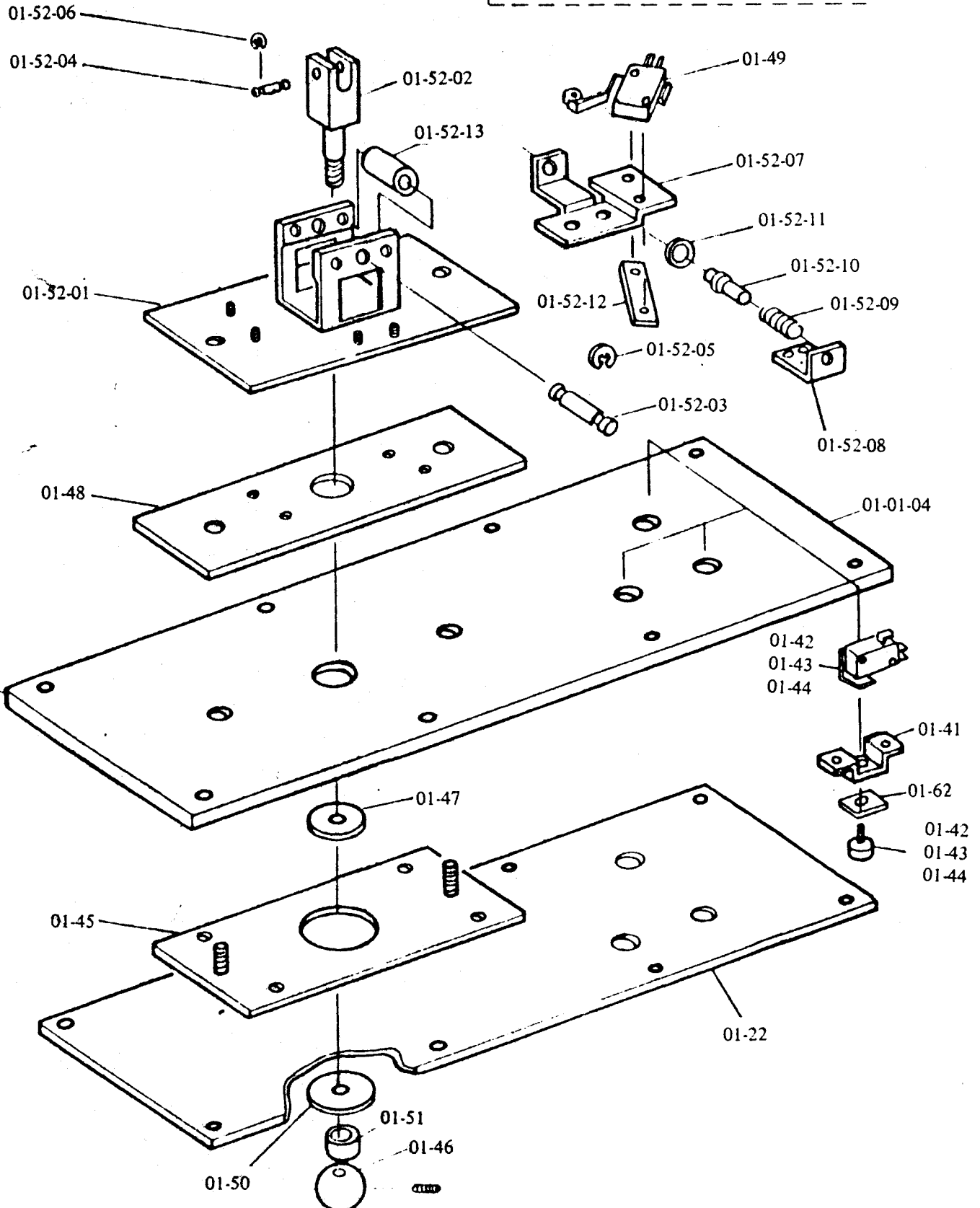
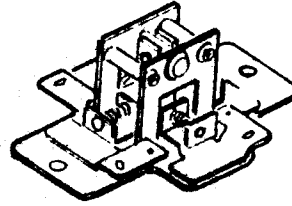


(3) Operation Panel Assembly

Following lubricating oil is used.

Shin-etsu Silicon Grease
"SILICOLUBE G31L"

01-52 Control Lever Ass'y



7. PARTS LIST

1. Body

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUBU-01-01	Body	1		
TUBU-01-01-02	Transformer Base	1		
TUBU-01-01-03	Cash Box	1		
TUBU-01-01-04	Operation Panel Ass'y Base	1		
TUBU-01-01-05	Back Door	1		
TUBU-01-02	Coin Selector	1		
TUBU-01-02-01	Coin Switch	1		
TUBU-01-03	Back Door Lock	1		
TUBU-01-04	Front Door Lock	1		
TUBU-01-08	Power Cord	1		
TUBU-01-10	Strain Relief Bushing	1		
TUBU-01-11	Game Counter	1		
TUBU-01-21	Speaker	1		
TUBU-01-22	Operation Panel	1		
TUBU-01-23	Front Screen	1		
TUBU-01-24	Name Plate	1		
TUBU-01-25	P.C. Board Support	5		
TUBU-01-26	P.C. Board Spacer (Small)	5		
TUBU-01-27	P.C. Board Spacer (Large)	5		
TUBU-01-28	P.C. Board Spacer Top	5		
TUBU-01-29	Front Door Ass'y	1		
TUBU-01-30	Fluorescent Lamp Ass'y	1		
TUBU-01-31	Caster	2		
TUBU-01-32	Operation Panel Ass'y Fastener (A)	2		
TUBU-01-33	Double Backed Tape	4		
TUBU-01-34	Service Switch	1		
TUBU-01-35	Screen Filter	1		
TUBU-01-41	Switch Bracket	3		
TUBU-01-42	Fire Switch (red)	1		
TUBU-01-43	Player Switch (1-Player, Blue)	1		
TUBU-01-44	Player Switch (2-Player, Green)	1		
TUBU-01-45	Control Lever Ass'y Mounting Plate	1		
TUBU-01-46	Control Knob	1		
TUBU-01-47	Blind Plate	1		
TUBU-01-48	Vibration Proof Rubber	1		

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUBU-01-49	Control Switch	4		
TUBU-01-50	Control Lever Plate	1		
TUBU-01-51	Control Lever Collar	1		
TUBU-01-52	Control Lever Ass'y	1		
TUBU-01-52-01	Control Lever Ass'y Base	1		
TUBU-01-52-02	Control Lever	1		
TUBU-01-52-03	Control Lever Pin(Large)	1		
TUBU-01-52-04	Control Lever Pin(Small)	1		
TUBU-01-52-05	E Ring 8	2		
TUBU-01-52-06	E Ring 4	2		
TUBU-01-52-07	Slide Pin Bracket(Large)	4		
TUBU-01-52-08	Slide Pin Bracket(Small)	4		
TUBU-01-52-09	Compression Spring	4		
TUBU-01-52-10	Slide Pin	4		
TUBU-01-52-11	Nylon Washer	4		
TUBU-01-52-12	Nut Plate	4		
TUBU-01-52-13	Stay	2		
TUBU-01-61	Front Screen Frame(Lower)	1		
TUBU-01-62	Micro Switch Blind Plate	3		
TUBU-01-64	Operation Panel Ass'y Fastener(B)	2		
TUBU-01-68	P.C.Board Mounting Bracket	1		
TUBU-01-73	Service Switch Bracket	1		
TUBU-01-74	Strain Relief Bushing Plate	1		
TUBU-01-80	Blind Cardboard(Large)	1		
TUBU-01-81	Blind Cardboard(Small)	1		
TUBU-17-01	Video Monitor(20-5F)	1		
TUB -05-00	CPU P.C.Board	1		
TUB -06-00	I/O P.C.Board	1		
TUB -07-00	ESS P.C.Board	1		
TUB -08-00	Power P.C.Board	1		
TUBU-09-01-01	Power Trasformer Unit	1		
TUBU-09-01-02	2P Table Tap	1		
TUBU-10-01	Power Switch Ass'y	1		
TUBU-10-01-01	Power Switch	1		
TUBU-10-01-02	Fuse Holder	1		
TUBU-10-01-03	Power Switch Plate	1		
TUBU-11-01	10P CPU Harness Connector	1		
TUBU-11-02	9P I/O Harness Connector	1		

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUBU-11-03	6P Sound Harness Connector	1		
TUBU-11-04	15P Sound Harness Connector	1		
TUBU-11-05	5P Service Harness Connector	1		
TUBU-11-06	3P Coin Harness Connector	1		
TUBU-11-07	11P Main Switch Harness Connector	1		
TUBU-11-08	17P Junction Harness Connector	1		
TUBU-11-09	2P Counter Harness Connector	1		
TUBU-11-10	2P Speaker Harness Connector	1		
TUBU-11-17	50P Flat Cable	1		
TUBU-11-18	40P Flat Cable	1		
TUBU-11-19	50P 3 Sockets Flat Cable	1		
TUBU-11-20	4P-750 Audio Harness Connector	1		
TUBU-11-21	6P-1000 Video Harness Connector	1		

2. CPU P.C. Board

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB 05-00	CPU P.C.Board	1	Complete Set	
TUB 05-01	IC 74LS153	8	Dual 4-Line to 1-Line Data Selector/Multiplexer	
TUB 05-02	" 8216	2	Buffer and Line Driver	
TUB 05-03	" 74LS08	6	Quadruple 2-Input Positive AND Gate	
TUB 05-04	" 74LS32	1	Quadruple 2-Input Positive OR Gate	
TUB 05-05	" 74LS174	3	Hex D-Type Flip Flop W/Reset	
TUB 05-06	" MK4116	8	RAM	
TUB 05-07	" 74LS74	1	Dual D-Type Edge-Triggered Flip Flop W/Set and Reset	
TUB 05-08	" 74LS04	1	Hex Inverter	
TUB 05-09	" 74LS02	1	Quadruple 2-Input Positive NOR Gate	
TUB 05-10	" 74LS00	1	Quadruple 2-Input Positive NAND Gate	
TUB 05-11	" 74LS138	1	3-to 8-Line Decoder/Demultiplexer	
TUB 05-12	" 74LS139	1	Dual 2-to 4-Line Decoder/Demultiplexer	
TUB 05-13	" C2708	9	EP-ROM	
TUB 05-14	" 74LS241(8216)	2	Octal Buffer/Line Driver/Line Receiver W/3-State Output	
TUB 05-15	Resistor	2	33 Ω $\frac{1}{4}W \pm 5\%$	
TUB 05-16	"	2	150 Ω " "	
TUB 05-17	"	8	1K Ω " "	
TUB 05-18	Ceramic Capacitor	43	0.1 μF 50V	
TUB 05-19	" "	8	0.2 μF "	
TUB 05-20	" "	2	120 pF "	
TUB 05-21	" "	1	330 pF "	
TUB 05-22	Electrolytic Capacitor	2	100 μF 16V	
TUB 05-23	"	2	220 μF 6.3V	

3. I/O P.C. Board

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB-06-00	I/O P.C.Board	1	Complete Set	
TUB-06-01	IC 75361A	1	Dual NAND TTL to Mos Driver	
TUB-06-02	" 7416	2	Hex Inverter Buffer Driver	
TUB-06-03	" 74109	1	Dual J-K Positive Edge Triggered Flip-Flop W/Set and Reset	
TUB-06-04	" 74123	1	Dual Retriggerable Monostable Multivibrator	
TUB-06-05	" 74161	4	Synchronous Presettable 4-Bit Binary Counter W/Direct Reset	
TUB-06-06	" 74198	1	8 Bit Shift Register	
TUB-06-07	" 74S04	1	S Hex Inverter	
TUB-06-08	" 74LS00	4	Quadruple 2-Input Positive NAND Gate	
TUB-06-09	" 74LS04	3	Hex Inverter	
TUB-06-10	" 74LS14	1	Hex Schmitt Trigger Inverter	
TUB-06-11	" 74LS20	1	Dual 4-Input Positive NAND Gate	
TUB-06-12	" 74LS26	1	Buffer and Interface Gates Open Collector Output	
TUB-06-13	" 74LS32	1	Quadruple 2-Input Positive OR Gate	
TUB-06-14	" 74LS42	1	BCD-to-Decimal Decoder	
TUB-06-15	" 74LS55	1	2-Wide 4-Input AND-OR-INVERTER Gate	
TUB-06-16	" 74LS74	1	Dual D-Type Edge-Triggered Flip-Flop W/Set and Reset	
TUB-06-17	" 74LS86	4	Quadruple 2-Input Exclusive OR Gate	
TUB-06-18	" 74LS151	8	8-Line to 1-Line Data Selector/Multiplexer	
TUB-06-19	" 74LS156	1	2-Line to 4-Line Decoder	
TUB-06-20	" 74LS158	1	Quadruple 2-Line to 1-Line Data Selectors/Multiplexers	
TUB-06-21	" 74LS160	1	Synchronous Presettable Decade Counter W/Direct Reset	
TUB-06-22	" 74LS164	2	8-Bit Serial-In Parallel-Out Shift Register	
TUB-06-23	" 74LS174	5	Hex D-Type Flip-Flop W/Reset	
TUB-06-24	" 74LS175	2	Quadruple D-Type Flip-Flop W/Reset	
TUB-06-25	" 74LS240	3	Octal Buffer/Line Driver/Line Receiver W/3-State Output	

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB-06-26	IC 74LS368	3	Hex Bus Driver W/3-State Output (Inverted)	
TUB-06-27	Dip Switch	1	76SB08 8P	
TUB-06-28	Transistor	5	2SC828	
TUB-06-29	"	1	2SC1384	
TUB-06-30	Diode	1	IS1885	
TUB-06-31	"	3	IS1595	
TUB-06-32	"	11	IS2075	
TUB-06-33	Resistor	4	51 Ω $\frac{1}{4}W$	
TUB-06-34	"	4	100 Ω "	
TUB-06-35	"	6	330 Ω "	
TUB-06-36	"	5	390 Ω "	
TUB-06-37	"	1	510 Ω "	
TUB-06-38	"	7	1K Ω "	
TUB-06-39	"	4	7.5 K Ω "	
TUB-06-40	"	2	10K Ω "	
TUB-06-41	"	2	33K Ω "	
TUB-06-42	Resistor Array	3	1K Ω \pm 5%	
TUB-06-43	" "	3	4.7 K Ω "	
TUB-06-44	" "	6	68 Ω "	
TUB-06-45	Dipped-Mica Capacitor	1	180pF 50V	
TUB-06-46	Ceramic Capacitor	1	220pF "	
TUB-06-47	" "	1	330pF "	
TUB-06-48	" "	2	680pF "	
TUB-06-49	" "	1	1000pF "	
TUB-06-50	" "	2	0.01 μ F	
TUB-06-51	Electrolytic Capacitor	2	33 μ F 16V	
TUB-06-52	" "	1	47 μ F "	
TUB-06-53	" "	1	100 μ F "	
TUB-06-54	" "	2	220 μ F 10V	
TUB-06-55	Tantalum Capacitor	1	3.3 μ F 25V	
TUB-06-56	" "	25	10 μ F 25V	
TUB-06-57	" "	1	33 μ F 16V	
TUB-06-58	Non-Polarized Electrolytic Capacitor	5	4.7 μ F 25V	
TUB-06-59	Monolithic Ceramic Capacitor	25	0.1 μ F 50V	
TUB-06-60	Crystal Oscillator	1	ST-5D 1225 20.160MHZ.	

4. ESS P.C. Board

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB-07-00	ESS P.C.Board	1	Complete Set	
TUB-07-01	IC 74LS74	3	Hex Inverter	
TUB-07-02	" 8080A	1	8 Bit Microprocessor	
TUB-07-03	" 74LS367	3	Hex Bus Driver W/3 State Output	
TUB-07-04	" 8035	1	8 Bit Microprocessor	
TUB-07-05	" 2708	1	1K Byte EP-ROM	
TUB-07-06	" NE555	1	Precision Timers	
TUB-07-07	" 74LS05	2	Hex Inverter with Open Collector	
TUB-07-08	" LM324	2	Operational Amplifiers	
TUB-07-09	" 74LS32	1	Quadruple 2-Input Positive OR Gate	
TUB-07-10	" 74LS157	4	Quadruple 2-Line to 1-Line Data Selector/Multiplexer	
TUB-07-11	" 2114	1	4096 Bit Static RAM	
TUB-07-12	" 74LS74	4	Dual D-Type Edge Triggered Flip Flop W/Set and Reset	
TUB-07-13	" 74LS175	2	Quadruple D-Type Flip Flop W/Reset	
TUB-07-14	" 74LS164	5	8 Bit Serial-In Parallel-Out Shift Register	
TUB-07-15	" 74LS00	2	Quadruple 2-Input Positive NAND Gate	
TUB-07-16	" 74LS75	2	Quadruple Bistable Latch	
TUB-07-17	" DAC-08	1	8 Bit Digital-to-Analog Converter (CQ Rank)	
TUB-07-18	" CA3080	2	Operational Transconductance Amplifiers	
TUB-07-19	" 74LS161	7	Synchronous Presetable 4 Bit Binary Counter W/Direct Reset	
TUB-07-20	" 74LS85	1	4 Bit Magnitude W/Exp	
TUB-07-21	" 74LS20	1	Dual 4-Input Positive NAND Gate	
TUB-07-22	" 74LS10	2	Triple 3-Input Positive NAND Gate	
TUB-07-23	" 4049UB	2	C Mos Hex Inverter	
TUB-07-24	" 74LS133 (74S133)	2	13 NAND Gate	
TUB-07-25	" 74LS86	1	Quadruple 2-Input Exclusive OR Gate	
TUB-07-26	" 74367	1	Hex Buffer Gates and Drivers	
TUB-07-27	" 4066	3	C Mos Quad Bilateral Switch of Analog or Digital Signals	

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB-07-28	IC 74LS27	1	Triple 3-Input NOR Gate	
TUB-07-29	" 74121	1	Mono Stable One Shot Multi Vibrator	
TUB-07-30	" 7404	1	Hex Inverter Gates	
TUB-07-31	" 7400	1	Quad 2-Input NAND Gates	
TUB-07-32	" 75461(75471)	2	2-Input AND Drivers	
TUB-07-33	Transistor	2	2SC1740	
TUB-07-34	"	1	2SA733	
TUB-07-35	"	14	2SC711 (E or F type)	
TUB-07-36	"	1	2SC 2320 (F type)	
TUB-07-37	Diode	1	IS1595	
TUB-07-38	"	12	1SS 53	
TUB-07-39	Tantalum Capacitor	2	4.7 μ F 16V	
TUB-07-40	"	1	47 μ F 16V	
TUB-07-41	Electrolytic Capacitor	22	1 μ F 50V	
TUB-07-42	"	3	3.3 μ F 50V	
TUB-07-43	"	2	10 μ F 16V	
TUB-07-44	"	2	4.7 μ F 35V	
TUB-07-45	"	2	22 μ F 16V	
TUB-07-46	"	2	33 μ F 16V	
TUB-07-47	"	4	220 μ F 16V	
TUB-07-48	Ceramic Capacitor	42	0.068 μ F 25V	
TUB-07-49	" "	1	0.001 μ F 50V	
TUB-07-50	" "	3	0.01 μ F 50V	
TUB-07-51	" "	1	0.022 μ F 50V	
TUB-07-52	Mylar Capacitor	4	0.1 μ F 50V	
TUB-07-53	" "	2	0.033 μ F 50V	
TUB-07-54	" "	1	0.01 μ F 50V	
TUB-07-55	" "	2	0.068 μ F 25V	
TUB-07-56	" "	1	0.0047 μ F 25V	
TUB-07-57	Semi-Fixed Resistor	1	30K Ω 1/5W Blue Knob	
TUB-07-58	"	1	300K Ω " Red Knob	
TUB-07-59	"	1	300K Ω " Blue Knob	
TUB-07-60	"	1	2K Ω "	
TUB-07-61	"	1	10K Ω "	
TUB-07-62	"	1	1K Ω "	

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB-07-63	Resistor(Carbon)	2	10 Ω $\frac{1}{4}$ W	
TUB-07-64	" "	3	51 Ω "	
TUB-07-65	" "	1	120 Ω "	
TUB-07-66	" "	3	270 Ω "	
TUB-07-67	" "	1	330 Ω "	
TUB-07-68	" "	1	470 Ω "	
TUB-07-69	" "	3	680 Ω "	
TUB-07-70	" "	16	1K Ω "	
TUB-07-71	" "	4	1.2 K Ω "	
TUB-07-72	" "	2	2K Ω "	
TUB-07-73	" "	2	2.4 K Ω "	
TUB-07-74	" "	3	3.9 K Ω "	
TUB-07-75	" "	1	4.3 K Ω "	
TUB-07-76	" "	11	4.7 K Ω "	
TUB-07-77	" "	4	5.6 K Ω "	
TUB-07-78	" "	1	6.2 K Ω "	
TUB-07-79	" "	30	10K Ω "	
TUB-07-80	" "	1	1.8M Ω "	
TUB-07-81	" "	6	15K Ω "	
TUB-07-82	" "	1	22K Ω "	
TUB-07-83	" "	1	30K Ω "	
TUB-07-84	" "	4	47K Ω "	
TUB-07-85	" "	1	8.2 K Ω "	
TUB-07-86	" "	3	100K Ω "	
TUB-07-87	" "	1	200K Ω "	
TUB-07-88	" "	1	270K Ω "	
TUB-07-89	" "	1	300K Ω "	
TUB-07-90	" "	2	470K Ω "	
TUB-07-91	" "	5	3.3 K Ω "	
TUB-07-92	Resistor Array	1	1K Ω 10 elements	

5. Power P.C. Board

No.	Name of Parts	Q'ty	Remarks	FOB Japan per pc.
TUB 08-00	Power P.C.Board	1	Complete Set	
TUB 08-01	Silicon Rectifier Diode	1	4B4B41 4A Bridge	
TUB 08-02	" " "	2	1B4B41 1A Bridge	
TUB 08-03	IC 3-D-0050	2	Switching Regulator IC	
TUB 08-04	" TA7089	1	Regulator IC	
TUB 08-05	" 78M24	1	24V Regulator IC	
TUB 08-06	Transistor	2	2SA1012	
TUB 08-07	"	1	2SA817	
TUB 08-08	"	1	2SC2562	
TUB 08-09	Resistor (Carbon)	2	100 Ω $\frac{1}{4}$ W	
TUB 08-10	" "	5	1K Ω "	
TUB 08-11	" "	1	3.3 K Ω "	
TUB 08-12	" "	1	5.1 K Ω "	
TUB 08-13	" "	1	15K Ω "	
TUB 08-14	" (Cement)	1	0.03 Ω 2W	
TUB 08-15	" "	1	1 Ω "	
TUB 08-16	" (Coil Winding)	1	0.1 Ω 1W	
TUB 08-17	" (Metal)	1	100 Ω 2W	
TUB 08-18	" "	1	510 Ω 1W	
TUB 08-19	Variable Resistor	3	B2 K Ω	
TUB 08-20	" "	2	B50K Ω	
TUB 08-21	Electrolytic Capacitor	2	2200 μ F 16V	
TUB 08-22	" "	2	3300 μ F 16V	
TUB 08-23	" "	3	10 μ F 16V	
TUB 08-24	" "	1	1000 μ F 35V	
TUB 08-25	" "	1	1000 μ F 16V	
TUB 08-26	" "	1	47 μ F 25V	
TUB 08-27	Mylar Capacitor	1	1000pF 50V	
TUB 08-28	Diode	1	CTB24 Shot Key Diode	
TUB 08-29	"	1	IS1834 Fast Recovery Diode	
TUB 08-30	Choke Coil	1	3A 200 μ H	
TUB 08-31	" "	1	0.5A 400 μ H	