

Service Manual

Closer Relations through
"Clarion Service Manual"

Overseas Sales Branch Offices

Clarion Corporation of America 5530 Rosecrans Ave., La Honda, Calif., 94030 U.S.A. Tel: 913-973-1100 Telex: CLARIONLSA 66-4447
Clarion Corporation of America (Eastern Division) 100 "Nicollet" Avenue, Roseland, New York - 11775 U.S.A. Tel: 516-487-1120 Telex: 64-0787
Clarion Shoji (EUROPE) G.m.b.H. Rudolf Diesel-Strasse 2, 62196 Eschborn 2, West Germany Tel: 06173-61041-42 Telex: 415414
Clarion (HONG KONG) Co., Ltd. 576, Crossin Centre, Canton Road, Tsimshatsui, Kowloon, Hong Kong Tel: 3-690528 Telex: H094293 CLAI-HK
Clarion Canada Inc. 1401 Meyerside Dr. Mississauga, Ontario L5T 1G8, Canada Tel: 416-675-397 Telex: 21898573 CLARION MSGA
Clarion Shoji (U.K.) Ltd. 48, Ebury Road, Dorcan Industrial Estate, Dorcan, Welbore, Wiltshire, SN3 6HQ United Kingdom Tel: (3793) 24081 Telex: 41589

Model **E971** (PE-9004A) **E970** (PE-9005A)



E971



E970

■ SPECIFICATIONS:

Radio section

Circuit system: Superheterodyne
Tuning system: Electronic tuning
Receiving frequency: LW 155kHz to 281kHz
MW 531kHz to 1,602kHz
UKW(FM) 87.5MHz to 108MHz
Intermediate frequency: LW, MW 459kHz
UKW(FM) 10.7MHz

Tape section

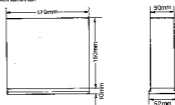
Reproduction system: Auto reversing
4 track, 2 channel, 2 program stereo cassette tape playback
(Monaural also capable)
Tape speed: 4.76cm/sec. (1 3/8 ips)

Composite

Output impedance: 10kΩ
Output level: More than 250mV
(at TAPE mode, 1kHz, 0VU, max. output)

Power supply voltage: DC 14.4V(10.8V to 15.6V)
Negative ground
Power consumption: Less than 3A
(at max. output)
Semiconductors: 2 LSI, 24 ICs, 77 Transistors
(Not included and 86 Diodes (E971)
Tuner pack) 2 LSI, 22 ICs, 65 Transistors
and 60 Diodes (E970)

Dimensions:



Weight: 1.7kg

- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

COMPONENT VIEW:

- E971 (PE-9004A-A)
- E970 (PE-9005A-A)

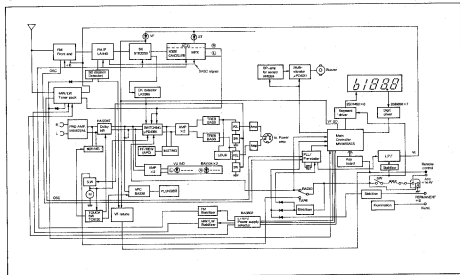
Main unit	1	Parts bag	921-7554-00	1
Mounting bracket	300-6892-00	1		
Mounting bracket	300-4976-00	1		
Parts bag	922-1247-00	1		
Sensor	002-0199-00	1		

FEATURES:

- MW/LW/UKW(FM)-MPX electronic tuning radio with auto reverse stereo deck (F.F., REW. lock and key-off auto head release).
- Provided radio traffic information (VF) system. (E971)
- Dolby NR.
- Tape selector (MTL).
- Loudness (LD).
- Separate Bass/Treble controls.
- Automatic Program Control (APC).
- VU level indicators.
- Feather-touch switches and touch tone.
- ARK mechanism.
- Digital voltage meter and digital thermometer

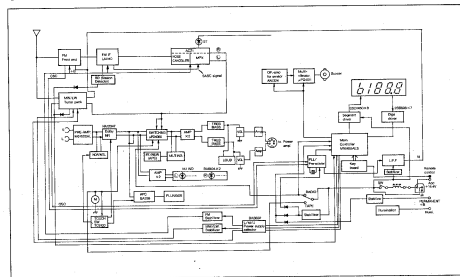
■BLOCK DIAGRAM:

©E971



■BLOCK DIAGRAM:

©E970



■ADJUSTMENT:

<TAPE MECHANISM>

1. AZIMUTH ADJUSTMENT

Play the 6.3kHz, -10VU section of the AZIMUTH tape and adjust the head azimuth adjustment screw (716-0429-00) so that the output levels are maximized in both tape running directions. (Figure 1)

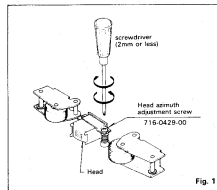


Fig. 1

2. FF/REW GEAR ENGAGEMENT ADJUSTMENT

If any abnormal sound is heard during FF/REW operation, adjust gear engagement as follows.

First identify the gear causing the abnormal sound. Then, adjust projection of the reel base plate ass'y by bending it in an appropriate direction as shown in Fig. 2: (A) when the FF gear causes abnormal sound; (B) when the REW gear causes abnormal sound.

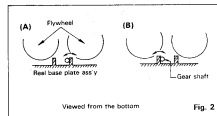


Fig. 2

3. IDLER GEAR ENGAGEMENT ADJUSTMENT

If any abnormal sound is heard during PLAY operation, adjust gear engagement as follows. First identify the gear causing the abnormal sound. Then, adjust projection of the roller plate A ass'y by bending it in an appropriate direction as shown in Fig. 3: (A) when the FWD gear causes abnormal sound, (B) when the REV gear causes abnormal sound.

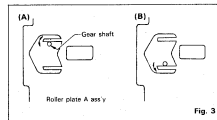


Fig. 3

4. LEAF SWITCH POSITION ADJUSTMENT

When replacing the leaf switch, first remove P.W.B from the mechanism, remove the solder on the leaf switch, adjust the position of the leaf switch from the P.W.B switch position adjustment hole, and then solder the switch. (Figure 4)

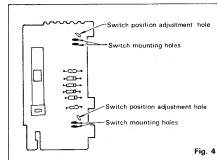




Fig. 4

■SPECIFICATION —LIMIT— Wow and flutter: Less than 0.25%(W.R.M.S)

ADJUSTMENT:

Adjustment item	Adjustment point	Procedure
S curve	IFT1 and IFT103	<ol style="list-style-type: none"> 1. Connect the output of an IF sweep generator to TP1 and the input of the vertical hold of an oscilloscope to TP3. 2. Ground TP2. 3. Adjust the S curve by means of IFT1 and IFT103. 
S curve fine adjustment	VR101	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz) and input a 28dB non-modulated SSG signal. 2. Connect a digital volt meter between TP4 and TP5. 3. Adjust VR101 so that the voltage between TP4 and TP5 is 0V. 4. May adjust 0V by receiving weak broadcasting signal.
Stop seek sensitivity	VR106	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), input a 28dB non-modulated SSG signal. 2. Adjust VR106 so that the voltage of the cathode of D105 is in the range 5V to 6V. 
SASC	VR104	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz) input an 55dB, 7kHz modulation frequency, 30% modulation degree SSG signal, and then turn on ST_SW. 2. Adjust the output level of the volume controller to -30dBm(±2.5mV). 3. Set the SSG output to 38dB and adjust VR104 so that the output level is -3dBm.
MPX 1. VCO	VR105	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), input a 55dB non-modulated SSG signal, and then turn on ST_SW. 2. Connect a frequency counter to TP8 through a 100kΩ resistor and adjust VR105 so that the counter indicates 75kHz.
2. Separation	VR103	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), connect the output of a stereo modulator to the external modulation terminal, and input a 55dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR103 so that the maximum separation is obtained.
SK 1. VCO	VR102	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), input a 55dB non-modulated SSG signal. 2. Connect the frequency counter to TP8 and adjust VR102 so that the counter indicates 57kHz.
2. 57kHz trap (E971)	L103	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), connect the output of the stereo modulator to the external modulation terminal, and then input a 55dB SSG signal. 2. Turn on SK_SW of stereo modulator. 3. Adjust L103 so that the wave form of pin 15 (TP7) of STK2200 is maximized.
WCO (E971)	VR107	<ol style="list-style-type: none"> 1. Tune at 87.5MHz (87.500MHz), input a 55dB non-modulated SSG signal, and turn on VF_SW. 2. Connect the frequency counter to TP9 through a 22kΩ resistor and adjust VR107 so that the counter indicates 129kHz. In the case, 25sec laser, seeking occurs.
Dolby NR	VR408 and VR409	Insert a Dolby level test tape (400Hz—200nW/0m), connect the millivoltmeter to TP10 and TP11, and adjust VR408 and VR409 to obtain an output of 300mV.

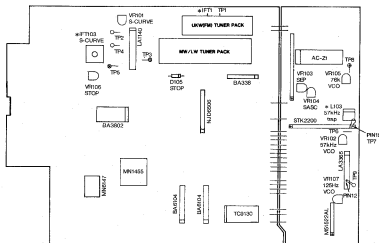
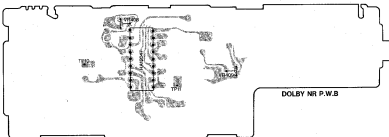
(NOTE) After the adjustment of frequency range, be sure that:
 (1) Band edge frequency of LW shall be 148.5kHz—20kHz
 (2) Band edge frequency of UKW shall be 87.5MHz +100kHz—160kHz
 at low end, and shall be lower than 108.16MHz at upper end.

● SPECIFICATION — LIMIT — Quieting sensitivity: MW Less than 33dB (at 20dB S/N)
 LW Less than 39dB (at 20dB S/N)
 UKW Less than 12dB (at 30dB S/N)
 Stereo separation: UKW More than 20dB

Adjustment item	Adjustment point	Procedure
At first	VR701	<ol style="list-style-type: none"> 1. Connect a digital voltmeter to TP701. 2. Turn VR701 to adjust voltage to 1.30V.
Temperature	1. VR703	<ol style="list-style-type: none"> 1. Connect a digital voltmeter to TP702. 2. Turn VR703 to adjust voltage to 1.30V.
	2. VR704	<ol style="list-style-type: none"> 1. Connect a resistor of 3.67kΩ to sensor terminal. 2. Push <input checked="" type="checkbox"/> key and turn VR704. Repeat to adjust until 0°C is indicated.
	3. VR705	<ol style="list-style-type: none"> 1. Connect a resistor of 3.67kΩ to sensor terminal. 2. Adjust VR705 to a point where <input checked="" type="checkbox"/> lamp begins blinking.
Voltage	VR702	Push <input checked="" type="checkbox"/> key and turn VR702. Repeat to adjust until 12.0V is indicated.

[CAUTION] 1. Power supplies for back-up and ACC shall be set to 12.00V.
 2. Power switch shall be turned off.

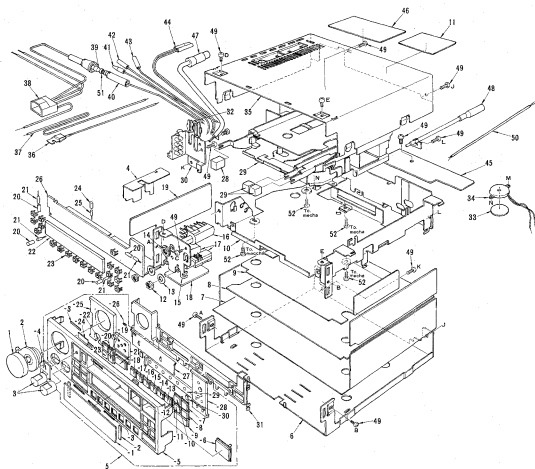
ADJUSTMENT POINT



(NOTE) The part marked *▲* should be adjusted from parts side, and the other adjustment should be done from P.W.B. pattern side.

EXPLODED VIEW - PARTS LIST:

©Main section E971



REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
1	380-4293-01	Knob (VOL)	1
2	380-4295-00	Knob (ST/MO)	1
3	380-4294-01	Knob (BASS, TREB)	2
4	347-1256-00	Insulator	1
5	940-2667-02	Switchcase ass'y	1
5-1	373-0364-03	Dial cover	1
5-2	347-0645-00	Adhesive paper	2
5-3	347-0815-00	Adhesive paper	6
5-4	378-0068-00	Badge	1
5-5	370-3561-03	Escutcheon	1
5-6	382-0506-00	Button (PRG)	1

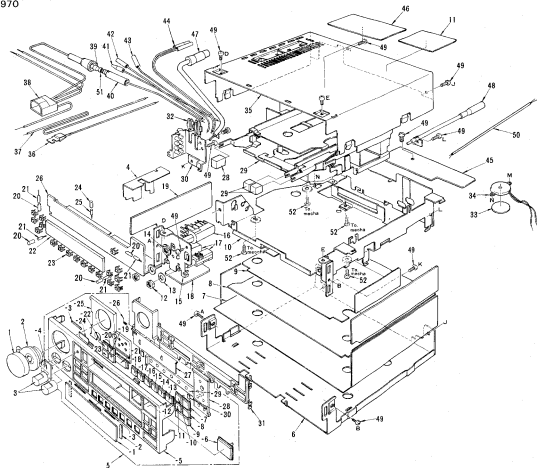
REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-7	382-0509-03	Button (L/M/U)	1
5-8	382-0509-08	Button (FC)	1
5-9	382-0511-00	Button (<>)	1
5-10	382-0509-01	Button (VF)	1
5-11	382-0509-09	Button (V)	1
5-12	382-0510-00	Button (M)	1
5-13	382-0510-08	Button (B)	1
5-14	382-0510-05	Button (S)	1
5-15	382-0510-04	Button (H)	1
5-16	382-0510-03	Button (R)	1
5-17	382-0510-02	Button (2)	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-18	382-0510-01	Button (1)	1
5-19	382-0509-07	Button (MTL)	1
5-20	382-0509-06	Button (APC)	1
5-21	382-0511-01	Button (>>)	1
5-22	382-0509-04	Button (□)	1
5-23	382-0509-02	Button (LD)	1
5-24	347-0872-00	Adhesive paper	1
5-25	371-3078-01	Trim plate	1
5-26	750-2309-01	Spring	1
5-27	320-0326-13	Dust proof cover	1
5-28	371-3077-01	Trim plate	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-29	371-3078-02	Trim plate	1
5-30	347-0772-00	Adhesive paper	2
6	304-0357-01	Lower cover	1
7	347-1216-01	Insulator	1
8	099-6828-00	P.W.B	1
9	347-1217-01	Insulator	1
10	312-0231-01	Chassis	1
11	286-9058-00	Set plate	1
12	722-0332-00	Hex nut	2
13	745-0860-00	Flat washer	2
14	722-0417-00	Hex nut	1
15	930-7674-01	VW mounting bracket	1
16	012-4067-00	Variable reactor (VOL)	1
17	012-4070-00	Variable reactor (BASS, TREB)	2
18	099-6829-00	P.W.B	1
19	099-6829-00	P.W.B	1
20	345-3619-00	P.L. cap	4
21	017-0338-08	Pilot lamp	4
22	379-0061-04	Indicator	1
23	013-3694-00	Switch	19
24	345-2830-07	P.L. cap	1
25	017-0345-14	Pilot lamp	1
26	099-6832-00	P.W.B	1
27	382-0506-01	Button (<0)	2
28	382-0505-01	Button (1)	1
29	930-0514-01	Tape mechanism	1
30	944-0851-02	Filter ass'y	1
31	374-0833-02	Back plate	1
32	335-0580-00	Lead holder	2
33	347-1255-00	Insulator	1
34	080-0093-00	Buzzer	1
35	310-1125-01	Upper case	1
36	840-0366-00	Bonding wire	1
37	850-2110-01	A-lead	1
38	852-7489-00	Extension lead	1
39	120-0030-03	Fuse (3A)	1
40	860-1822-00	A-lead	1
41	850-1580-01	A-lead	1
42	852-5222-02	Extension lead	1
43	852-6652-01	Extension lead	1
44	851-2138-01	Speaker lead	1
45	099-6830-00	P.W.B	1
46	285-0915-00	Guide label	1
47	852-7221-00	Extension lead (DIN)	1
48	092-0622-06	Antenna receptacle	1
49	731-3006-80	Tap tight (M3x6)	12
50	815-2051-00	Shielded wire	1
51	010-1610-00	Coil	1
52	714-3003-81	Machine screw (M3x3)	4

EXPLODED VIEW - PARTS LIST:

@Main section E970



REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
1	380-4293-01	Knob (VCL)	1
2	380-4295-00	Knob (ST/MDI)	1
3	380-4294-01	Knob (BASS, TREB)	2
4	347-1256-00	Insulator	1
6	940-2687-03	Escutcheon ass'y	1
5-1	373-0364-03	Dial cover	1
5-2	347-0845-00	Adhesive paper	2
5-3	347-0815-00	Adhesive paper	6
5-4	378-0089-00	Badge	1
5-5	370-3561-03	Escutcheon	1
5-6	382-0508-00	Button (PHO)	1

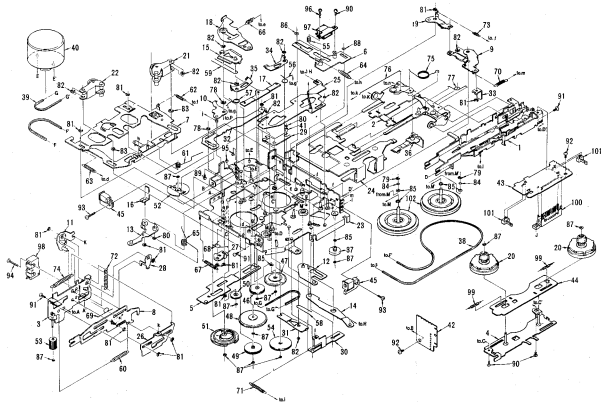
REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-7	382-0509-03	Button (L/M/U)	1
5-8	382-0509-08	Button (FC)	1
5-9	382-0511-00	Button (< >)	1
5-10	382-0807-00	Dummy button	1
5-11	382-0509-09	Button (V)	1
5-12	382-0510-00	Button (M)	1
5-13	382-0510-06	Button (R)	1
5-14	382-0510-05	Button (S)	1
5-15	382-0510-04	Button (A)	1
5-16	382-0510-03	Button (3)	1
5-17	382-0510-02	Button (2)	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-18	382-0510-01	Button (1)	1
5-19	382-0509-07	Button (MTL)	1
5-20	382-0509-06	Button (APC)	1
5-21	382-0511-01	Button (> >)	1
5-22	382-0509-04	Button (D)	1
5-23	382-0509-02	Button (LD)	1
5-24	347-0872-00	Adhesive paper	1
5-25	371-3078-01	Trim plate	1
5-26	750-2309-01	Spring	1
5-27	320-0326-14	Dust proof cover	1
5-28	371-3077-01	Trim plate	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
5-29	371-3079-02	Trim plate	1
5-30	347-0772-00	Adhesive paper	2
6	304-0357-01	Lower cover	1
7	347-1216-01	Insulator	1
8	099-6828-00	P.W.B	1
9	347-1217-01	Insulator	1
10	312-0231-01	Chassis	1
11	266-5059-00	Set plate	1
12	722-0332-00	Hex-nut	2
13	745-0560-00	Flat washer	2
14	722-0417-00	Hex-nut	1
15	330-7674-01	Wire mounting bracket	1
16	012-4067-00	Variable reactor (VCL)	1
17	012-4070-00	Variable reactor (BASS, TREB)	2
18	099-6829-00	P.W.B	1
19	099-6829-00	P.W.B	1
20	345-3619-00	P.L. cap	4
21	017-0338-06	Pilot lamp	4
22	379-0061-04	Indicator	1
23	013-3694-00	Switch	18
24	345-2830-07	P.L. cap	1
25	017-0345-14	Pilot lamp	1
26	099-6832-00	P.W.B	1
27	382-0506-01	Button (◀)	2
28	382-0505-01	Button (▶)	1
29	930-0514-00	Tape mechanism	1
30	944-0851-02	Filter ass'y	1
31	374-0833-02	Back plate	1
32	335-0580-00	Lead holder	2
33	347-1255-00	Insulator	1
34	060-0093-00	Buzzer	1
35	310-1125-01	Upper case	1
36	840-0386-00	Bonding wire	1
37	850-2110-01	A-lead	1
38	852-7489-00	Extension lead	1
39	120-0030-03	Fuse (3A)	1
40	850-1822-00	A-lead	1
41	850-1560-01	A-lead	1
42	852-5322-02	Extension lead	1
43	852-8652-01	Extension lead	1
44	851-2135-01	Speaker lead	1
45	099-6830-00	P.W.B	1
46	285-0915-00	Guide label	1
47	852-7221-02	Extension lead (DIN)	1
48	092-0522-06	Antenna receptacle	1
49	731-3006-80	Tao tight (M3x6)	12
50	815-2061-00	Shielded wire	1
51	010-1610-00	Coil	1
52	714-3003-81	Machine screw (M3x5)	4

EXPLODED VIEW · PARTS LIST:

②Tape mechanism section



REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
1	960-3475-02	Frame sub ass'y	1
2	960-3476-03	Guide arm ass'y	1
3	960-3479-01	Side panel ass'y	1
4	960-3479-01	Reel base P ass'y	1
5	960-3480-03	Power-P ass'y	1
6	960-3481-01	Head plate ass'y	1
7	960-3482-02	Roller-P-A ass'y	1
8	960-3483-03	E-lever ass'y	1
9	960-3484-00	Plunger-P ass'y	1
10	960-3487-02	C gear-L-P ass'y	1
11	960-3488-02	Eject link ass'y	1
12	960-3490-02	P-sub-P ass'y	1
13	960-3492-03	Cam-C-L-P ass'y	1
14	960-3493-02	Change arm ass'y	1
15	960-3494-02	Idle-U-P ass'y	1

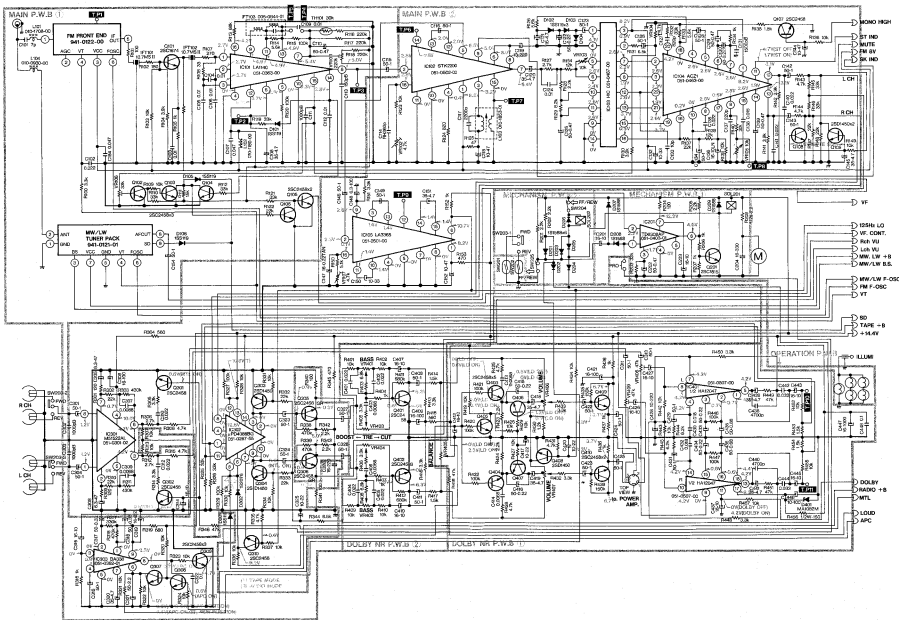
REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
16	960-3495-00	H-piece B ass'y	1
17	960-3496-01	FF gear-P ass'y	1
18	960-3497-01	H-P-lock-P ass'y	1
19	960-3498-01	Hold plate ass'y	1
20	960-3499-01	Reel base ass'y	2
21	960-3500-01	Roller-R ass'y	1
22	960-3501-01	Roller-R ass'y	1
23	960-3504-02	Deck plate ass'y	1
24	968-0077-04	Pack guide	1
25	630-1576-01	Change plate	1
26	630-1579-00	Eject plate	1
27	960-3581-00	Timing plate ass'y	1
28	630-1581-01	Switch plate	1
29	630-1582-01	Power line	1
30	630-1583-00	FF plate	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
31	630-1584-01	FF gear arm	1
32	630-1588-00	Idle-C-plate	1
33	630-1588-00	Holding piece A	1
34	630-1587-00	Brake plate-F	1
35	630-1588-00	Brake plate-R	1
36	631-0412-02	Pack stopper	1
37	631-0370-01	Tension pulley	1
38	602-0070-00	Ball	1
39	602-0080-00	Ball	1
40	960-3532-00	Motor ass'y	1
41	610-0242-00	P-roller	1
42	099-8794-00	P-W B E971	1
43	099-8704-01	P-W B E970	1
44	099-8702-01	P-W B	1
45	018-0232-00	Plunger	2

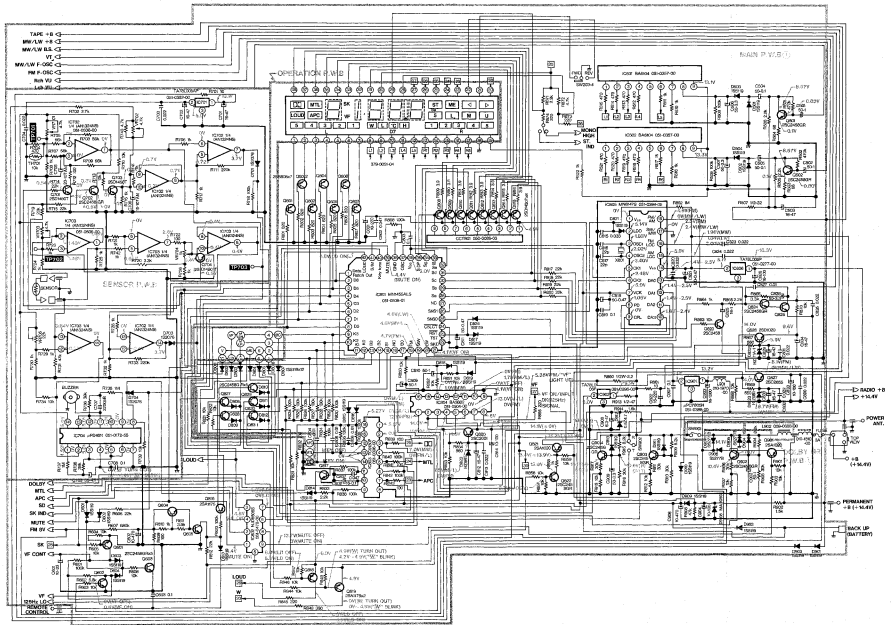
REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
46	613-0044-01	Idle gear	1
47	613-0045-00	Pulley gear	1
48	613-0048-01	Gear A	1
49	613-0047-01	Gear B	1
50	613-0048-01	Gear C	1
51	613-0049-03	Cam gear	1
52	613-0050-02	Channel-C gear	1
53	613-0051-00	Gear	1
54	613-0052-01	FF gear	1
55	750-1910-00	Azimuth spring	1
56	750-2278-02	Brake-F spring	1
57	750-2279-02	Brake-R spring	1
58	750-2281-01	FF-U spring	1
59	750-2282-03	Idle-U spring	1
60	750-2283-00	E-J-lever spring	1
61	750-2284-00	P-roller spring	1
62	750-2286-00	Roll-P-A spring	1
63	750-2287-00	Roll-P-B spring	1
64	750-2288-00	Head-P spring	1
65	750-2291-01	Cam-G spring	1
66	750-2292-00	Head-L spring	1
67	750-2293-00	Change-G spring	1
68	750-2294-01	Timing-P spring	1
69	750-2295-01	Hook arm spring	1
70	750-2296-00	Plunger-P spring	1
71	750-2297-01	P-sub spring	1
72	750-2298-00	E-link spring	1
73	750-2299-00	P-lock spring	1
74	750-2300-02	E-plate spring	1
75	750-2301-03	Slot in spring	1
76	750-2302-00	Rod spring	1
77	750-2320-00	E-lock spring	1
78	744-0018-01	E-ring	2
79	744-0022-00	E-ring	2
80	743-1200-10	E-ring	2
81	743-1500-10	E-ring	13
82	743-2000-10	E-ring	10
83	743-2600-10	E-ring	2
84	745-0645-00	Washer	2
85	748-0817-00	Washer	6
86	746-0822-01	Washer	1
87	746-0828-01	Washer	12
88	748-0717-01	Washer	1
89	732-2604-11	Machine screw (M2.5x4)	1
90	714-2003-81	Machine screw (M2.5x3)	3
91	714-2603-81	Machine screw (M2.5x3)	3
92	714-2604-81	Machine screw (M2.5x4)	2
93	714-2604-11	Machine screw (M2.5x4)	1
94	714-2308-81	Machine screw (M2.3x8)	2
95	716-0347-00	Screw	2
96	716-0428-00	Screw	1
97	011-0285-00	Head	1
98	013-3800-00	Switch	1
99	013-3801-00	Switch	2
100	013-3866-00	Switch	1
101	013-3887-00	Switch	2
102	611-0067-00	Fly wheel	2

■CIRCUIT DIAGRAM:

ⓈE971

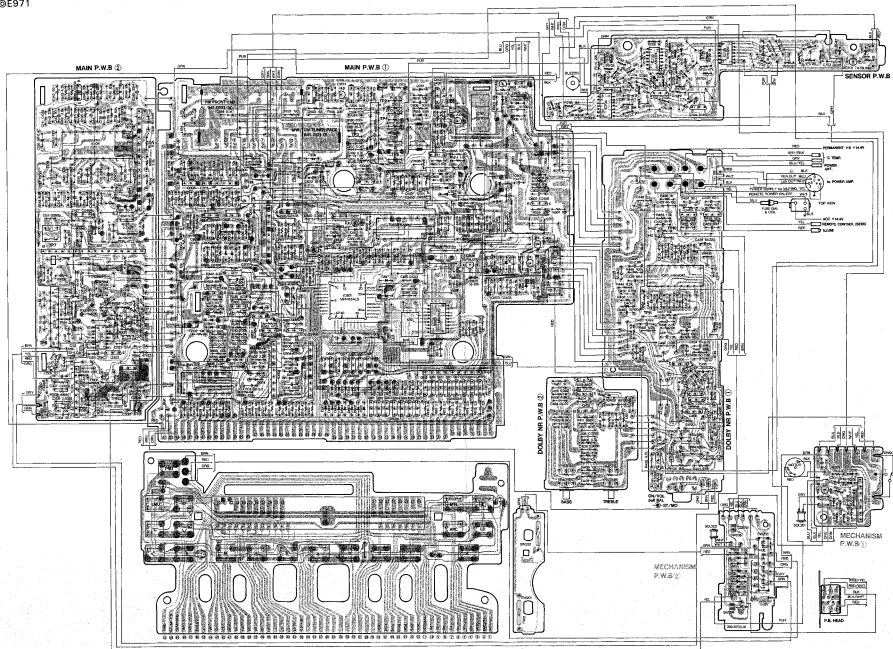


CIRCUIT DIAGRAM:
©E971



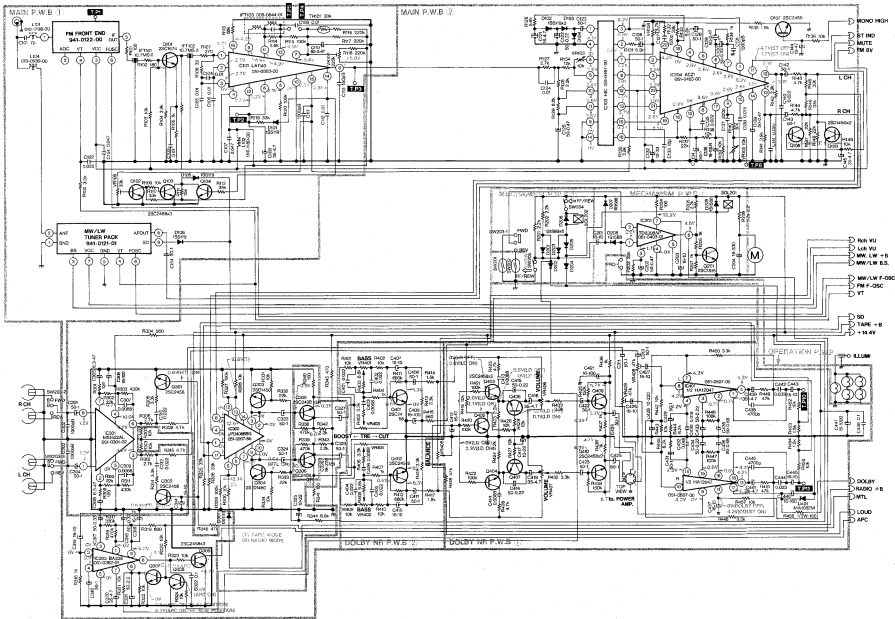
■ PRINTED WIRING BOARD:

©E971



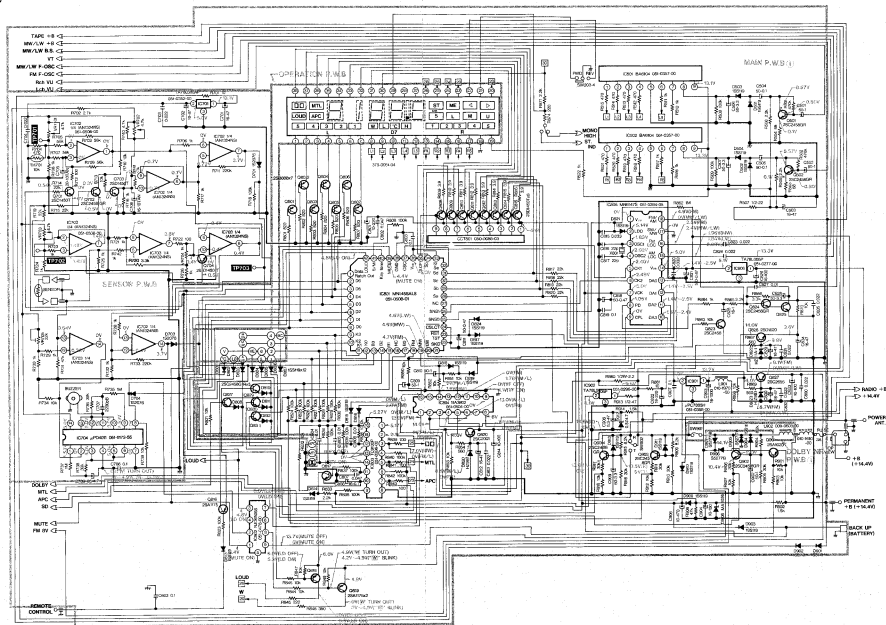
■ **CIRCUIT DIAGRAM:**

©E970



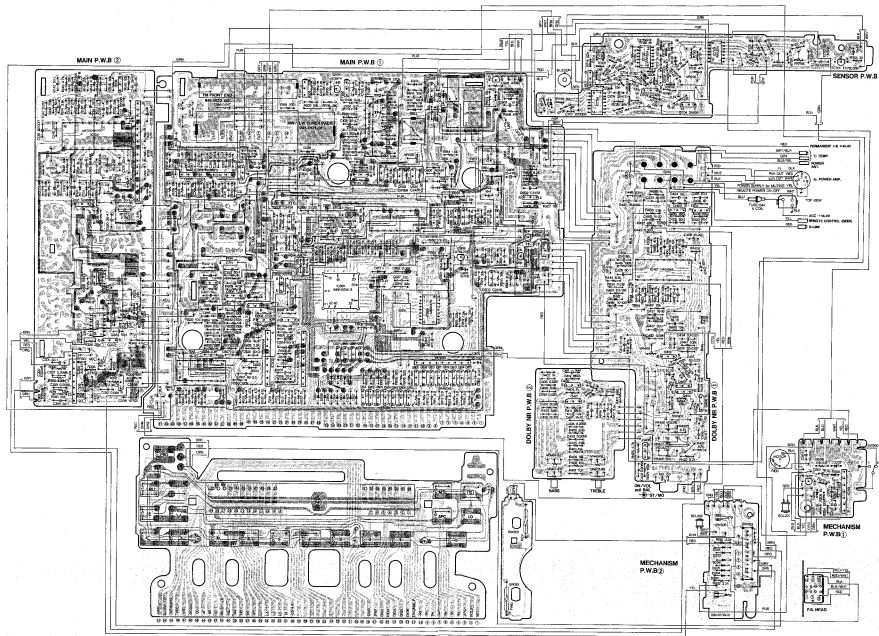
■CIRCUIT DIAGRAM:

©E970



■ PRINTED WIRING BOARD:

©E970



PARTS LIST:

©Electrical section
@MAIN P.W.B

REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY	REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY
D881	001-0095-00		Diode (1S2076)	1	Q881	103-1029-00		Transistor (2SD1405F1)	1
D882	001-0170-00		Diode (1M1096M)	1	Q101	103-1450-20		Transistor (2SD1405F1)	13
D883	001-0213-03		Diode (H28B1)	2	R102	032-0059-06		Film resistor (5W320Q)	1
D884	001-0278-00		Diode (S5277B)	1	R103	032-0059-08		Film resistor (5W100Q)	1
D885	001-0278-01		Diode (S5277B)	1	R104	111-1001-91		Film resistor (5W100Q)	1
D886	001-0286-00		Diode (H211A-1)	1	R105	111-1021-91		Film resistor (5W100Q)	11
D887	001-0322-26		Diode (O 624 7Z)	1					
D888	001-0330-00		Diode (18S119)	43					
TH81	002-0184-00		Thermistor	1					
IF101	005-0844-01		I-transformer 1	1					
IF102	005-0865-01		I-transformer 2	1					
L101	010-0930-00		Coil	1					
L102	010-1180-00		Coil	1					
L103	010-1708-00		Coil	1					
L104	010-1853-01		Coil	1					
L105	010-1970-00		Coil	1					
VR101	012-3808-05		Variable resistor (4.7K)	3					
VR102	012-3808-06		Variable resistor (10K)	2					
VR103	012-3808-08		Variable resistor (33K)	1					
VR104	012-3808-11		Variable resistor (20K)	1					
CC101	050-0086-03		Component circuit (4.7K)	1					
IC101	051-0287-55		IC (74P0488B)	1					
IC102	051-0277-00		IC (A748L00P)	1					
IC103	051-0296-00		IC (A748L00P)	1					
IC104	051-0301-02		IC (M1522AL)	1					
IC105	051-0367-00		IC (BA6104)	2					
IC106	051-0362-01		IC (BA338)	1					
IC107	051-0363-00		IC (LA1140)	1					
IC108	051-0388-00		IC (4PC7805H)	1					
IC109	051-0394-05		IC (MNE147S)	1					
IC110	051-0396-00		IC (TC9130P)	1					
IC111	051-0483-00		IC (AC21)	1					
IC112	051-0487-00		IC	1					
IC113	051-0478-00		IC (JND850BS)	1					
IC114	051-0601-00		IC (LA393S)	1					
IC115	051-0602-00		IC (5TK220OTC)	1					
IC116	051-0604-00		IC (BA3802)	1					
IC117	051-0608-01		IC (MN1455AL)	3					
X101	061-1037-00		Crystal (4.5MHz)	1					
Q101	100-1175-89		Transistor (2SA1175)	2					
Q102	102-1674-12		Transistor (2SC1674)	1					
Q103	102-2001-12		Transistor (2SC2001L)	1					
Q104	102-2458-28		Transistor (2SC2458GR)	34					
Q105	102-2655-25		Transistor (2SC2655V)	1					

REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY	REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY
R101	111-6841-91		Film resistor (5W100Q)	1	C101	179-4773-23		Electrolytic capacitor (50V1.5F)	2
R102	111-6221-91		Film resistor (5W320Q)	7	C102	181-1063-32		Electrolytic capacitor (50V1.5F)	1
R103	111-6221-91		Film resistor (5W320Q)	4	C103	182-1053-62		Electrolytic capacitor (50V1.5F)	2
C101	043-0174-00		Polyester capacitor (2200P)	1	C104	182-1056-62		Electrolytic capacitor (50V1.5F)	2
C102	043-0200-00		Polyester capacitor (1000P)	1	C105	182-1063-32		Electrolytic capacitor (50V1.5F)	1
C103	172-1042-30		Polyester capacitor (8.2K)	5	C106	182-1073-12		Electrolytic capacitor (50V1.5F)	1
C104	172-3322-20		Polyester capacitor (8200P)	2	C107	182-1073-22		Electrolytic capacitor (50V1.5F)	3
C105	173-4732-30		Polyester capacitor (8200P)	2	C108	182-1073-32		Electrolytic capacitor (50V1.5F)	2
C106	180-1022-05		Ceramic capacitor (50V1000P B)	3	C109	182-2246-62		Electrolytic capacitor (50V2.2F 2P)	2
C107	180-1512-06		Ceramic capacitor (50V1500P B)	1	C110	182-2263-22		Electrolytic capacitor (50V2.2F)	1
C108	180-8212-06		Ceramic capacitor (50V8200P B)	1	C111	182-3363-22		Electrolytic capacitor (50V3.3F)	2
C109	171-1033-06		Ceramic capacitor (50V101.5P)	11	C112	182-4743-62		Electrolytic capacitor (50V4.7F)	1
C110	171-1933-06		Ceramic capacitor (50V193.5P)	1	C113	182-4746-62		Electrolytic capacitor (50V4.7F NP)	1
C111	171-2233-06		Ceramic capacitor (25V202.5P)	13	C114	182-4753-52		Electrolytic capacitor (50V4.7F)	2
C112	171-4733-06		Ceramic capacitor (25V472.5P)	2	C115	182-4756-32		Electrolytic capacitor (50V4.7F)	1
C113	171-6823-06		Ceramic capacitor (25V682.5P)	2	C116	182-4783-12		Electrolytic capacitor (50V4.7F)	2
C114	174-1000-13		Ceramic capacitor (1000P)	1	C117	183-1043-62		Electrolytic capacitor (50V1.5F)	13
C115	174-2200-13		Ceramic capacitor (2200P)	2	C118	183-1053-62		Electrolytic capacitor (50V1.5F)	1
C116	174-3610-37		Ceramic capacitor (50V3610P)	1	C119	183-2253-62		Electrolytic capacitor (50V2.2F)	1
C117	174-7090-13		Ceramic capacitor (7090P)	1	C120	183-2263-32		Electrolytic capacitor (50V2.2F)	1
C118	042-0239-00		Electrolytic capacitor (18V1.5F TAN)	1	C121	183-3343-62		Electrolytic capacitor (50V3.3F)	1
C119	042-0248-00		Electrolytic capacitor (18V2.2F TAN)	1	C122	183-3353-62		Electrolytic capacitor (50V3.3F)	4
C120	042-0249-00		Electrolytic capacitor (18V2.2F TAN)	1	C123	183-3353-22		Electrolytic capacitor (50V3.3F)	2
C121	179-1053-62		Electrolytic capacitor (50V1.5F)	2	C124	183-4743-62		Electrolytic capacitor (50V4.7F)	1
C122	179-1089-33		Electrolytic capacitor (18V1000P)	1	C125	183-4753-62		Electrolytic capacitor (50V4.7F)	3
C123	179-2273-22		Electrolytic capacitor (10V220P)	2	C126	183-4783-12		Electrolytic capacitor (50V4.7F)	1
C124	179-2273-33		Electrolytic capacitor (10V220P)	2	C127	183-4783-32		Electrolytic capacitor (50V4.7F)	1
C125	179-4783-22		Electrolytic capacitor (50V4.7F)	3					

@DOLBY NR P.W.B

REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY	REF. NO.	PART NO.	(ORDER NO.)	DESCRIPTION	QTY
D101	001-0170-04		Diode (1M1092M)	1	R101	111-2221-91		Film resistor (5W100Q)	1
D102	009-0603-00		Choke	1	R102	111-3321-22		Film resistor (5W330Q)	3
VR101	012-3808-05		Variable resistor (4.7K)	2	VR101	012-3808-05		Variable resistor (4.7K)	5
IC101	051-0507-00		IC (BA1204T)	1	IC101	051-0507-00		IC (BA1204T)	1
Q101	102-2458-28		Transistor (2SC2458GR)	9	Q101	111-4721-21		Film resistor (5W4.7K)	1
Q102	103-1450-20		Transistor (2SD1405F1)	3	Q102	111-4721-91		Film resistor (5W4.7K)	1
Q103	111-1021-91		Film resistor (5W100Q)	5	R101	111-4731-91		Film resistor (5W4.7K)	1
Q104	111-1031-22		Film resistor (5W100Q)	1	R102	111-5611-91		Film resistor (5W5611Q)	1
Q105	111-1031-22		Film resistor (5W100Q)	1	R103	111-6221-91		Film resistor (5W320Q)	2
Q106	111-1031-22		Film resistor (5W100Q)	1	R104	111-6221-91		Film resistor (5W320Q)	1
Q107	111-1041-22		Film resistor (5W1041Q)	2	R105	111-6841-91		Film resistor (5W100Q)	1
Q108	111-1511-82		Film resistor (5W1511Q)	1	C101	173-1042-10		Polyester capacitor (2200P)	2
Q109	111-1521-91		Film resistor (5W1521Q)	4	C102	173-1831-30		Polyester capacitor (1800P)	2
Q110	111-1541-91		Film resistor (5W1541Q)	2	C103	173-3331-10		Polyester capacitor (3300P)	1
Q111	111-6831-91		Film resistor (5W6831Q)	1	C104	173-4721-10		Polyester capacitor (4700P)	2
Q112	111-2221-32		Film resistor (5W2221Q)	1	C105	171-2233-06		Ceramic capacitor (25V222.5P)	4

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
C16E04,16A14	171-6823-06	Capacitor (25V0.050P)	4
C16F	179-1083-33	Electrolytic capacitor (10V1000µF)	1
C16H	179-2273-23	Electrolytic capacitor (10V200µF)	1
C17E01,17E02,17E03	182-1053-82	Electrolytic capacitor (30V1.5µF)	10
C17E04,17E05,17E06	182-1063-82	Electrolytic capacitor (30V1.5µF)	8
C16E	182-1073-22	Electrolytic capacitor (10V100µF)	1

③SENSOR P.W.B

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
D16E16,16A	001-0095-00	Diode (1S207B)	3
TR16E	002-0200-00	Thermistor	1
VR16E	012-3808-07	Variable resistor (20k)	1
VR16H	012-4101-02	Variable resistor (1k)	1
VR16E,16H,16J	012-4101-06	Variable resistor (1k)	3
IC16E	051-0172-55	IC (µPD4011BG)	1
IC16H	051-0352-00	IC (TA78L005AF)	1
IC16E,16J	051-0505-00	IC (JA11324NB)	2
Q16E	102-2458-28	Transistor (2SC2458GR)	1
Q16E,16H,16J	103-1450-20	Transistor (2SD1450T)	3
R16E	111-1001-21	Film resistor (1/4W10k)	1
R16E,16J	111-1011-21	Film resistor (1/4W100k)	1
R16E,16E,16H,16J,16K,16L,16M,16N,16P,16Q,16R,16S,16T,16U,16V,16W,16X,16Y,16Z	111-1021-21	Film resistor (1/4W1k)	15
R16E,16H,16K,16L,16M,16N,16P,16Q,16R,16S,16T,16U,16V,16W,16X,16Y,16Z	111-1031-21	Film resistor (1/4W10k)	4
R16E	111-1041-21	Film resistor (1/4W100k)	1
R16E,16T	111-1051-21	Film resistor (1/4W1k)	2

④MAIN P.W.B (CHIP RESISTOR)

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
R102	116-1021-10	Chip resistor (1/4W1k)	1
	111-1021-71	Film resistor (1/4W1k)	
	116-2721-10	Chip resistor (1/4W20k)	
R12E,12J	111-2721-10	Chip resistor (1/4W20k)	2
	111-3331-10	Film resistor (1/4W20k)	
	116-4341-10	Chip resistor (1/4W30k)	
R10E,10J	111-4341-71	Film resistor (1/4W30k)	2
	116-4721-10	Chip resistor (1/4W7k)	
R11E	111-4721-71	Film resistor (1/4W7k)	1
	117-1031-10	Chip resistor (1/4W10k)	
	111-1031-71	Film resistor (1/4W10k)	
R10E,10J,10K	111-1031-71	Film resistor (1/4W10k)	6
	117-1211-10	Chip resistor (1/4W12k)	
	111-1211-71	Film resistor (1/4W12k)	
R12E,12J	117-1521-10	Chip resistor (1/4W15k)	2
	111-1521-71	Film resistor (1/4W15k)	
	117-2231-10	Chip resistor (1/4W22k)	
R13E	111-2231-71	Film resistor (1/4W22k)	1
	117-2231-10	Chip resistor (1/4W22k)	
	111-2231-71	Film resistor (1/4W22k)	
R16E	117-2721-10	Chip resistor (1/4W27k)	1
	111-2721-71	Film resistor (1/4W27k)	

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
C16E,16E	182-1073-32	Electrolytic capacitor (10V100µF)	2
C16E,16E,16H,16A,16B	182-2243-62	Electrolytic capacitor (10V0.22µF)	4
C16E,16E	182-2263-22	Electrolytic capacitor (10V20µF)	2
C16E,16E,16H,16A	182-4763-82	Electrolytic capacitor (30V4.7µF)	4
C16E,16E	183-6843-82	Electrolytic capacitor (30V0.68µF)	2

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
R16E,16E,16H,16J	111-2231-21	Film resistor (1/4W22k)	3
R16E,16J	111-2241-21	Film resistor (1/4W22k)	2
R16E	111-2721-21	Film resistor (1/4W27k)	1
R16E	111-3321-21	Film resistor (1/4W33k)	1
R16E,16H	111-3931-21	Film resistor (1/4W39k)	1
R16E	111-4711-21	Film resistor (1/4W47k)	1
R16E	111-4721-21	Film resistor (1/4W47k)	1
R16E	111-4731-21	Film resistor (1/4W47k)	1
R16E,16E,16H,16J	111-5631-21	Film resistor (1/4W56k)	4
C16E	171-1043-06	Capacitor (30V1.0µF)	1
C16E	171-2223-06	Capacitor (30V0.022µF)	1
C16E,16H	171-2233-06	Capacitor (30V0.22µF)	2
C16E	042-0178-00	Electrolytic capacitor (16V10µF, PAN)	1
C16E	042-0181-01	Electrolytic capacitor (20V10µF, PAN)	1
C16E	182-4763-52	Electrolytic capacitor (10V4.7µF)	1
C16E	182-4763-22	Electrolytic capacitor (10V4.7µF)	1
C16E	182-4763-32	Electrolytic capacitor (10V4.7µF)	1

(Note) The upper parts on the parts list mean chip parts to be accommodated. The lower parts on the list mean equivalent parts.

⑤MECHANISM P.W.B

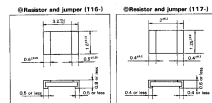
REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
DI0E-08H	001-0112-00	Diode (1S158B)	9
IC08E	051-0403-01	IC (TD6308AP)	1
Q08E	102-1815-26	Transistor (2SC1815BY)	1
R16E,16H	111-1011-22	Film resistor (1/4W1k)	1
R16E,16H	111-1021-22	Film resistor (1/4W2k)	2
R16E,16H	111-2221-22	Film resistor (1/4W2k)	1

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	QTY
R16E,16J	111-2221-71	Film resistor (1/4W2k)	2
R16E	111-2291-82	Film resistor (1/4W2.2k)	1
R16E	111-3331-22	Film resistor (1/4W3.3k)	1
C08E	179-3373-33	Electrolytic capacitor (16V300µF)	1
C16E,16J	182-1063-32	Electrolytic capacitor (10V100µF)	2
C16E	182-4743-82	Electrolytic capacitor (30V0.47µF)	1

■CHIP PARTS:

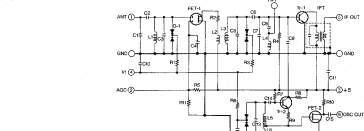
This set partially uses chip parts. The chip parts is directly soldered to a P.W.B pattern face instead of conventional lead type resistors. Normally, data such as capacitance is not indicated on the body of chip parts; however, such data is printed on the pattern face for reference. When replacing chip parts, equivalent parts can be also used instead of chip parts.

When soldering chip parts, use a 40W or less solder iron whose edge is small. When soldering equivalent parts, be sure that they do not contact the case, mechanism, or so. Moreover, if the pattern is pressed remarkably by back side soldered parts, there is a possibility that the pattern is broken. Therefore, adhere the parts with proper bonding agent.



■TUNER PACK CIRCUIT:

①UKW/FM circuit



②MW/LW circuit

