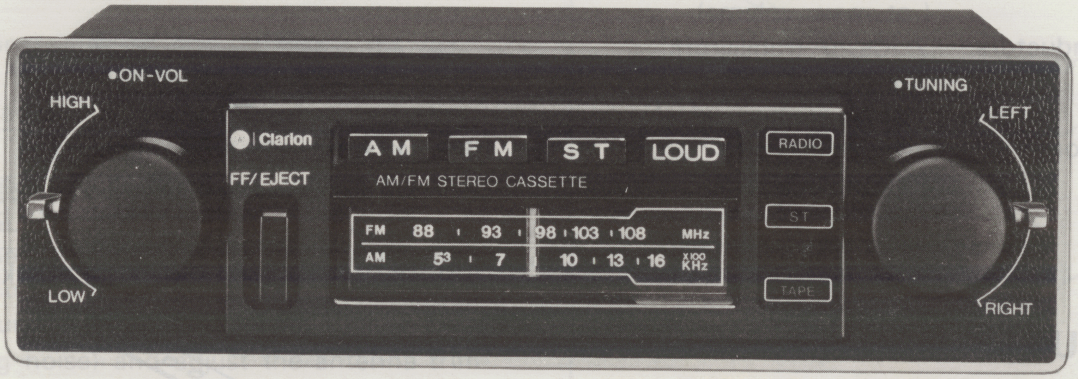
Clarion

SERVICE MANUAL

Closer Relations through "CLARION SERVICE MANUAL"

MODEL PU-695A

Manufacturer CLARION CO., LTD. / Export Division CLARION SHOJI CO., LTD.
3, Kojimachi 5-chome, Chiyoda-ku, Tokyo, 102 Japan Tel: (265)2931 Telex: J22908, J22152 CLARISHO
Overseas Sales Branch Offices:
CLARION SHOJI (EUROPA) G.m.b.H. Rudolf-Diesel-Strasse 2, 6236 Eschborn 2, West Germany Tel: 06173-61041-42 Telex: 415414
CLARION CORPORATION OF AMERICA 5500 Rosecrans Ave, Lawndale, Calif., 90260 U.S.A. Tel: 213-973-1100 Telex: CLARIONLSA 66-4447
CLARION (HONG KONG) CO., LTD. 526, Ocean Centre, Canton Road, Tsimshatsui, Kowloon, Hong Kong Tel: 3-690528 Telex: HX64293 CLAHK



SPECIFICATIONS:

Radio section

Circuit system:	Superheterodyne
Tuning system:	FM Manual μ-tuning
	AM Manual μ-tuning
Receive range:	FM 87.5MHz to 108MHz
	AM 528KHz to 1,610KHz
Intermediate frequency:	
	FM 10.7MHz
	AM 452.5KHz
Maximum sensitivity:	
	FM Less than 10dB
	AM Less than 20dB
Quieting sensitivity:	FM Less than 15dB (at 30dB S/N)
	AM Less than 33dB (at 20dB S/N)
Image rejection ratio:	
	FM More than 40dB
	AM More than 54dB
IF rejection ratio:	FM More than 70dB
	AM More than 40dB
Selectivity:	AM More than 20dB (at ±10KHz detune)
A.G.C:	AM More than 40dB
A.F.C:	FM 400KHz to 700KHz
Separation:	FM More than 20dB
Fidelity:	FM 100Hz H: 0±3dB
	L: +1±3dB
	7,000Hz H: −15±5dB
	L: −29±5dB
	AM 100Hz H: 0±3dB
	L: +1±3dB
	4,000Hz H: −16±5dB
	L: −26±5dB

Tape section

Reproduction system:	4 track, 2 channel, stereo cassette tape player (Monaural tape playable)
Tape speed:	4.75cm/sec.(17/8 ips)
Wow and flutter:	Less than 0.4% (R.M.S)
S/N:	More than 40dB

Printed in Japan 298-2266-00 Feb.'79 PU-695A

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Wow and flutter:	Less than 0.4% (R.M.S)
S/N:	More than 40dB

Printed in Japan 298-2266-00 Feb.'79

Cross talk: More than 30dB
(for adjacent channel)
More than 40dB
(for adjacent track)

Reproduction frequency range:
50Hz to 10,000Hz

Fast forward time: Less than 200 seconds
(C-60)

○ **Synthesis**

Power supply voltage:
D.C 14.0V
(10.8V to 15.6V)
Negative ground

Current consumption:
Less than 1.5A
(at max. output)

Load impedance: 4Ω×2

Power output: More than 3.5W×2
(at 10% distortion)
More than 5.5W×2
(at max. volume)

Semiconductors: 7 ICs, 7 transistors,
1 FET and 11 diodes

Weight: 1.6kg

Dimensions: Width 177mm
Height 43.5mm
Depth 150mm

■FEATURES:

○ Use of FET in FM front end
An FET is employed in the FM front end to assure a remarkably high performance specially with regard to interference characteristic.

○ Motor antenna lead
Since motoı antenna and radio switches are combined, antenna can operating the radio.

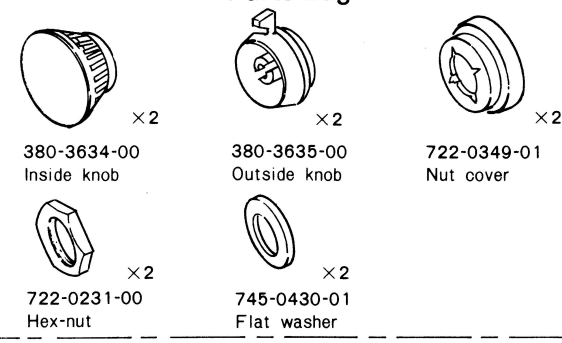
○ Use of a strong signal suppressing circuit assures clear reception areas having many FM broadcasts.

○ FM noise killer
This noise killer cuts off the unpleasant car noise at the time of FM reception to assure a clear, noise free reception.

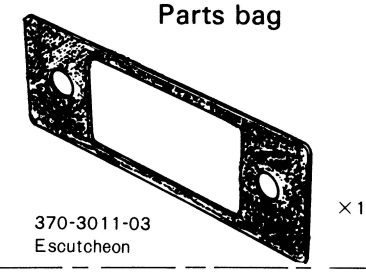
○ Loudness : Built in circuit
Built in loudness circuit assures splendid bass and treble response even at low listening volume.

■COMPONENT VIEW:

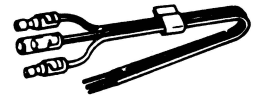
Parts bag 1



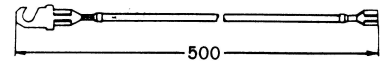
Parts bag 1



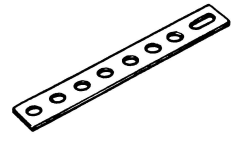
852-4649-00 Extension lead 1



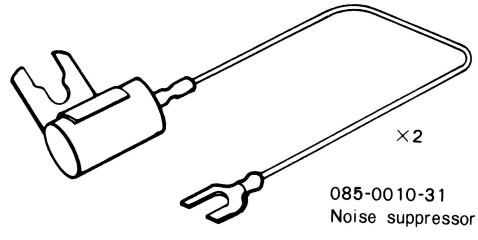
852-5115-00 Extension lead 1

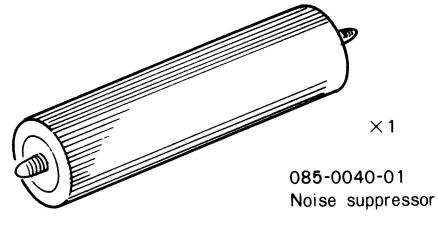


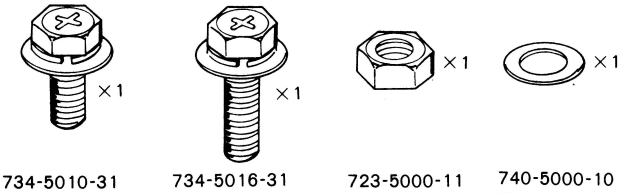
300-4976-00 Mounting bracket 1



Parts bag 1







734-5010-31
D-Sems hex-bolt
(M5×0.8×1.0)

734-5016-31
D-Sems hex-bolt
(M5×0.8×16)

723-5000-11
Hex-nut
(M5×0.8)

740-5000-10
Flat washer

■ADJUSTMENTS:

< AM CIRCUIT >

Adjustment item	Signal input section	Signal output section	Signal frequency	Adjustment section	Adjustment	Instruments required	Note
IFT	TP_{201} (Tuner RF)	TP_{202}	452.5KHz	$IFT_{201,202}$	Adjust the cores of IFT maximum waveform height with good symmetry	● Sweep generator ● Oscilloscope ● V.T.V.M	IF curve Vol: minimum Tone: maximum Balance: center Dial pointer: right end
Tracking	Antenna receptacle	Speaker lead	1620KHz	TC_{203} (OSC Trimmer)	Adjust the trimmers or coil for maximum indication of V.T.V.M.	● Standard signal generator ● V.T.V.M. ● Dummy load (4Ω) ● Dummy ANT	to SSG(75Ω) 5Ω 15PF 65PF to SET Use dummy antenna between SSG and antenna receptacle
			600KHz	L_{203}(OSC Coil)			
			1400KHz	TC_{201} (ANT Trimmer) TC_{202}(RF Trimmer)			

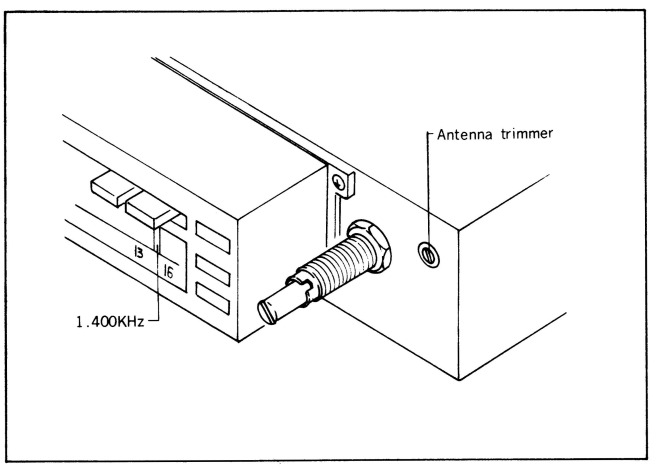
■ANTENNA TRIMMER ADJUSTMENT

Antenna trimmer must be adjusted in the following cases. It helps increasing the sensitivity.

- ○ After installing or after repairing the set.
- ○ When the antenna or the antenna cable is replaced.
- ○ When the radio sensitivity is poor and noise is prominent.

● Method of adjustment

Set the receiver volume control to max., tone control to high, and the dial pointer to around 1,400KHz to receive white noise (hissing noise) and adjust the antenna trimmer (screw) so that the noise output becomes maximum.



< FM CIRCUIT >

Adjustment item	Signal input section	Signal output section	Signal frequency	Adjustment section	Adjustment	Instruments required	Note
IFT	TP_{101}	TP_{102}	10.7MHz	$IFT_{101,104,105}$	First obtain the waveform shown in the Fig. on the right by adjusting IFT105. Then adjust IFT101 and 104 so that the waveform becomes high and symmetrical.	● Sweep generator ● Oscilloscope ● V.T.V.M.	(10.7MHz)
S-curve				IFT_{105}	Adjust the core for waveform having good symmetry and good linearity.	● Sweep generator ● Oscilloscope ● V.T.V.M.	10.7MHz
Tracking	Antenna receptacle	Speaker lead	87.5MHz	TC_{103} (OSC Trimmer)	Adjust the trimmers for maximum indication of V.T.V.M.	● Speaker ● V.T.V.M. ● SG	
			98MHz	TC_{101} (ANT Trimmer) TC_{102}(RF Trimmer)			

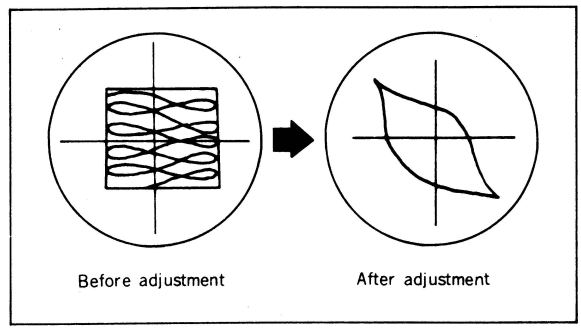
■ Adjustment of Multiplex section

● Adjusting V.C.O

This adjustment is for adjusting the frequency of the voltage controlled oscillator (V.C.O).

First set the band switch to FM (monaural). Connect TP103 to the Vertical terminal of oscilloscope and calibrated 19KHz signal (calibration use signal of Stereo Modulates) to the Horizontal terminal.

Now adjust the semifixed potentiometer VR102 so that the Lissajuous figure does not move.



NOTE) The Lissajuous figure will not become a circle because of sine wave and square wave.

■ **REGARDING NOISE KILLER SYSTEM**

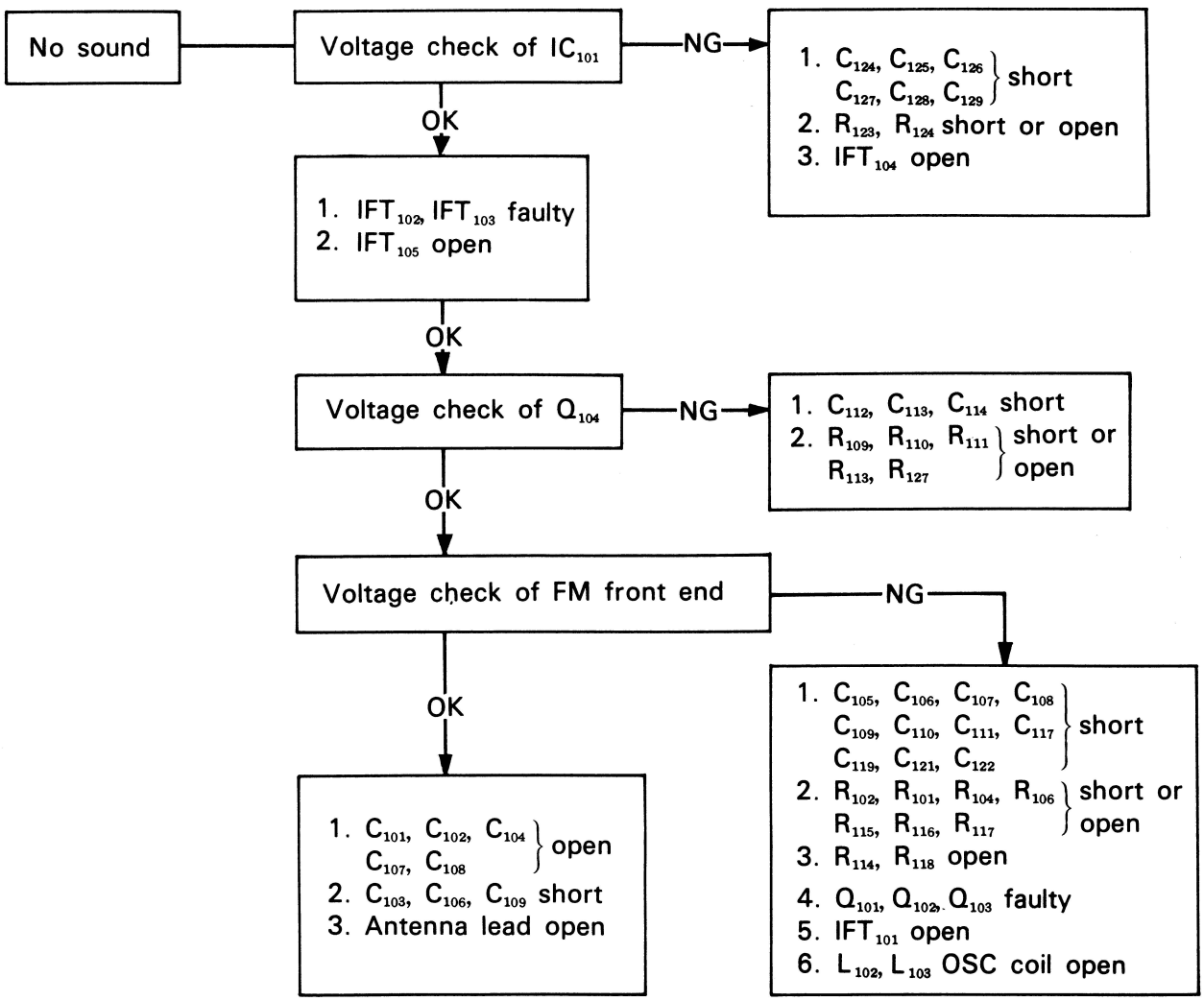
● Adjustment of clean NX

Apply a dummy noise voltage 100mV to R163 through the noise meter (NM-445) and adjust VR101 so that the noise in the speaker output is minimized.

■TROUBLESHOOTING:

(Refer to the circuit diagram and printed wiring board)

FM SECTION (circuit)



Sensitivity is bad →

1. C_{111}, C_{113}, C_{124} open
2. IFT_{101}, IFT_{104}, IFT_{105} adjustment faulty
3. TC_{101}, TC_{102} adjustment faulty

Oscillates →

1. C_{103}, C_{106}, C_{121} open
2. R_{102}, R_{125} short

Distortion →

1. D_{101}, D_{102} short
2. IFT_{105} adjustment faulty
3. C_{121}, C_{129} open

MPX section is bad → Voltage check of IC_{103}

NG →

1. R_{154}, R_{155}, R_{156} short or open
2. VR_{102} faulty
3. C_{158}, C_{159}, C_{162}, C_{165}, C_{166} short

OK ↓

Check of IC_{103} section

NG →

1. C_{158}, C_{159}, C_{162}, C_{167}, C_{168} open
2. C_{514} short
3. R_{159}, PL_{102}, R_{507} open
4. C_{157} open

OK ↓

Replace the IC_{103}

AM SECTION (circuit)

No sound → Voltage check of $Q_{201, 202, 203}$

NG →

1. C_{201}, C_{203}, C_{206}, C_{212}, C_{215} short
2. RF, OSC coil or $IFT_{201, 202}$ open

↓

Check of $Q_{201, 202, 203}$ section

NG →

1. ANT coil open
2. RF, OSC coil short
3. ANT, RF, OSC trimmer short
4. C_{202} short or open
5. C_{210} open
6. R_{204}, R_{209}, C_{215} open
7. $IFT_{201, 202}$ faulty

↓

Replace the $Q_{201, 202, 203}$

Sensitivity is bad

1. ANT coil short
2. ANT trimmer adjustment faulty
3. $IFT_{201,202}$, L_{203} adjustment faulty
4. C_{203}, C_{206}, C_{212}, R_{216} open

Oscillates

1. OSC coil open
2. C_{203}, C_{206}, C_{207}, C_{214} open
3. R_{202}, R_{215} open

Distortion

1. $IFT_{201,202}$ adjustment faulty
2. $Q_{201,202,203}$ deteriorated
3. D_{202} deteriorated
4. R_{214} open
5. L_{203} faulty

AUDIO SECTION

No sound at all → 1. Fuse blown 2. L_{501} open 3. Switch faulty 4. C_{519} short

No sound at Lch/Rch → Voltage check of IC^{502}_{501}

- NG → $C_{501,502}$ $C_{503,504}$ short
- OK ↓

Check of $IC_{501,502}$ section

- NG → 1. $C_{505,506,517,518}$ open 2. Speaker lead (Lch)(Rch) open
- OK ↓

Check the volume

- NG → 1. Balance volume short 2. Master volume open
- OK ↓

Replace the $IC_{501,502}$

Oscillates → 1. C_{501}, C_{502}, C_{511}, C_{512}, C_{516}, C_{522} open

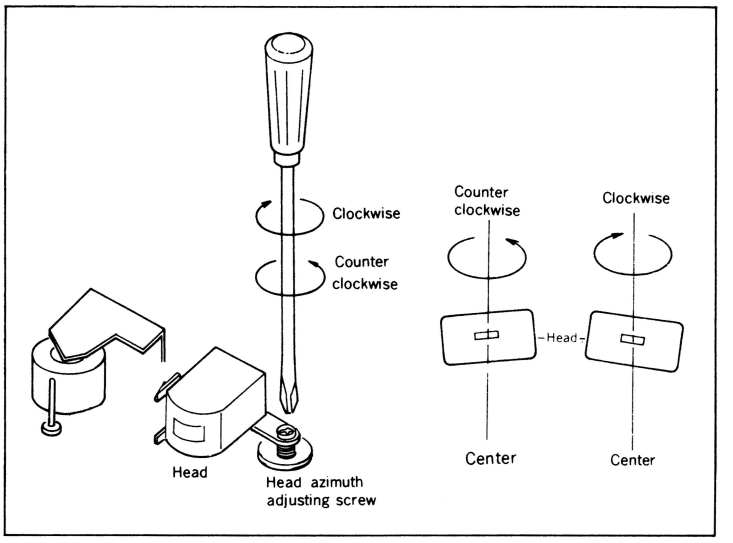
Distortion → 1. C_{519} open

■ADJUSTMENT OF TAPE:

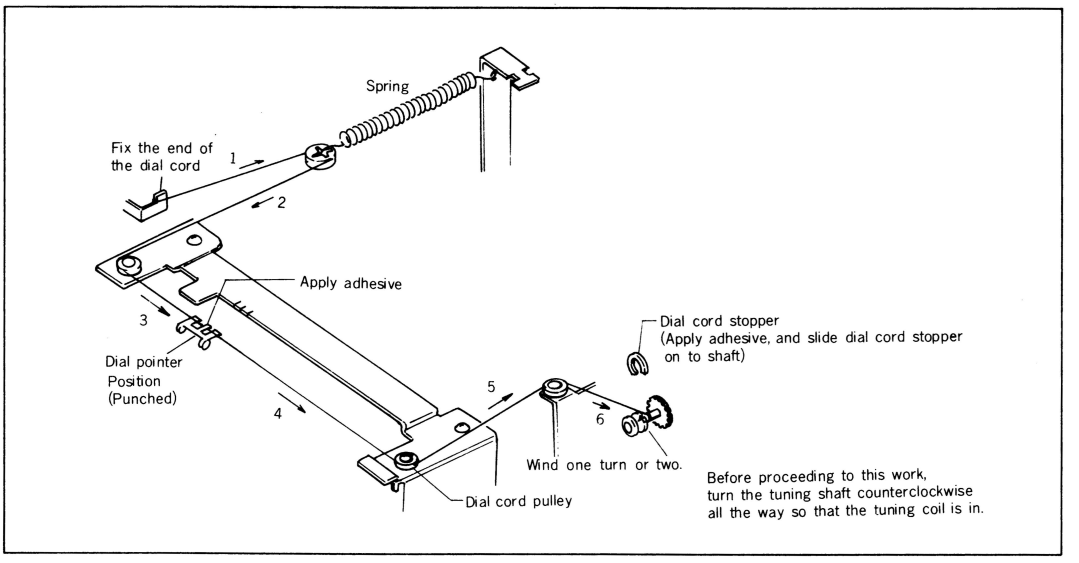
○ **Head azimuth adjustment**

Incorrect head azimuth with respect to the tape is one of the causes of bad quality of sound and crosstalk.
When the head azimuth is not correct, adjust according to the following procedure.

1) Play the test tape 333Hz—15VU, set the volume control to Max. and obtain balance by the Balance control.
2) Next play the test tape 6.3KHz—10VU and adjust by turning the head azimuth adjusting screw so that the output level becomes close to maximum.

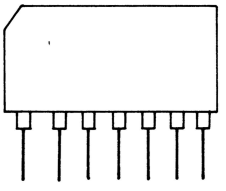


■DIAL CORD STRINGING:

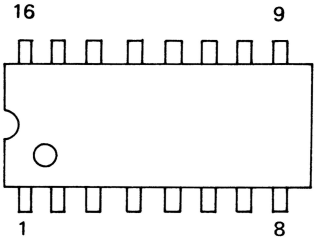


■SEMICONDUCTOR'S OUTER VIEW:

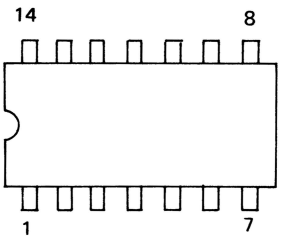
< IC >



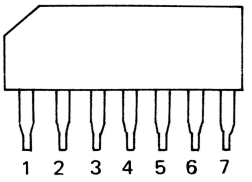
IC-101 051-0119-01 (μPC577H)



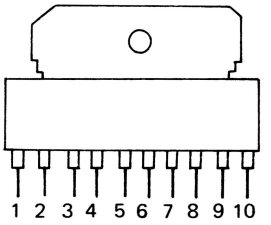
IC-102 051-0225-00 (AN101)



IC-103 051-0086-00 (μPC1026)

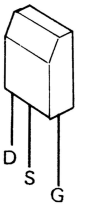


IC-301 051-0020-02
IC-302 (TA-7120P)



IC-501 051-0256-02
IC-502 TA7217AP

< FET >



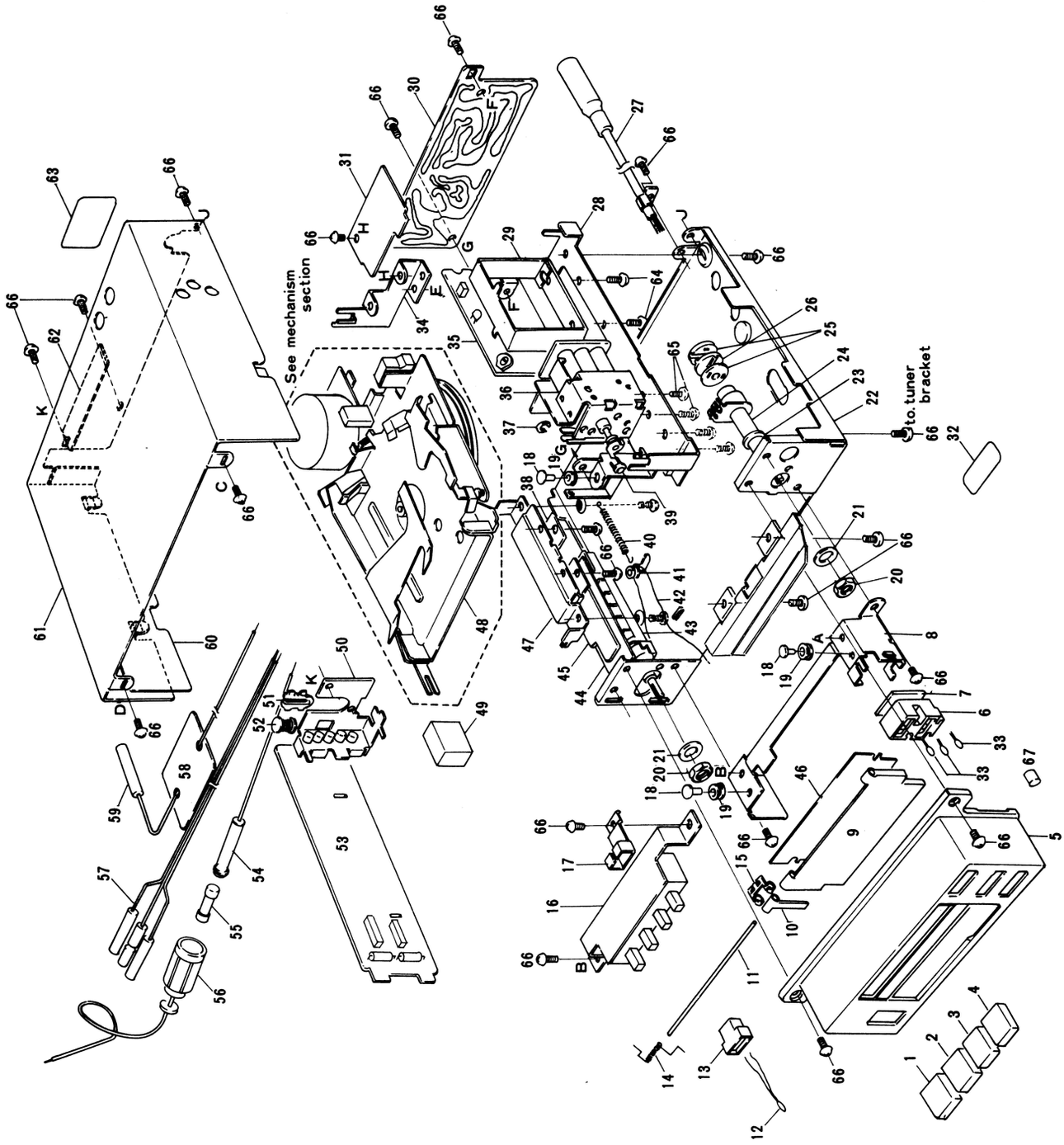
2SK55D

< TRANSISTOR >

2SC9410
2SC1675K
2SC945L
2SC460B
2SC535B
2SC1214C

■EXPLODED VIEW:

◎Main section



■PARTS LIST:

◎Main section

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
1	380-3755-00	Push button (AM)	1
2	380-3756-00	Push button (FM)	1
3	380-3757-00	Push button (ST)	1
4	380-3761-00	Push button (LOUD)	1
5	940-2458-07	Escutcheon ass'y	1
6	335-1016-00	P.L holder	1
7	099-5227-01	P.W.B	1
8	309-0337-02	Front plate	1
9	320-0241-06	Dustproof cover	1
10	376-0828-00	Dial pointer	1
11	341-1177-00	Door shaft	1
12	017-0324-02	Pilotlamp	1
13	345-3048-00	P.L holder	1
14	750-1914-01	Spring	1
15	330-6042-00	Dial pointer holder	1
16	013-3399-01	Band select switch	1
17	330-6501-00	Bracket for pilotlamp	1
18	335-0879-01	Pulley holder	3
19	335-0460-00	Dial cord pulley	3
20	722-0231-00	Hexagon nut	2
21	745-0514-01	Flat washer	2
22	311-0950-01	Lower case	1
23	745-0514-02	Flat washer	2
24	012-3533-01	Variable resistor	1
25	335-0881-00	Universal joint A	2
26	335-0882-00	Universal joint B	1
27	092-0522-00	Antenna receptacle	1
28	330-6499-00	Tuner bracket	1
29	330-5830-01	Shield case	1
30	099-5282-01	P.W.B	1
31	099-5225-02	P.W.B	1
32	290-2768-00	Label	1
33	017-0313-01	Pilotlamp	3
34	330-6500-00	P.W.B mounting bracket	1

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
35	099-5087-01	P.W.B	1
36	933-0109-06	6 coil manual μ-tuner	1
37	746-0668-01	Stopper	1
38	051-0256-02	IC(TA7217AP)	2
39	004-1494-00	Antenna trimmer	1
40	750-1676-01	Spring	1
41	335-0894-00	Dial cord pulley	1
42	830-0500-53	Dial cord	1
43	012-3661-00	Variable resistor	1
44	347-0655-00	Insulator paper	1
45	099-5335-00	P.W.B	1
46	374-0743-00	Back plate	1
47	313-1022-00	Heat sink	1
48	930-0456-01	Tape mechanism	1
49	380-3798-01	Push button	1
50	944-0517-00	Filter ass'y	1
51	335-0580-00	Lead holder	1
52	010-1686-00	Coil	1
53	099-5415-00	P.W.B	1
54	850-1822-00	A-lead	1
55	120-0030-00	Fuse(3A)	1
56	850-1844-01	A-lead	1
57	851-2057-05	Speaker lead	1
58	285-0667-00	Guide label	1
59	852-4637-00	Extension lead	1
60	347-0755-00	Insulator paper	1
61	310-0940-02	Upper case	1
62	347-0767-00	Insulator paper	1
63	286-4272-00	Setplate	1
64	714-2604-81	Machine screw (M2.6x4)	2
65	714-3003-81	Machine screw (M3x3)	2
66	714-3004-81	Machine screw (M3x4)	25
67	345-2830-03	P.L cap	1

■PARTS LIST:

◎Tape mechanism

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
1	658-0105-03	Deck plate ass'y	1
2	630-1151-00	Safety lever	1
3	658-0104-01	Safety spring	1
4	658-0104-02	Safety collar	1
5	658-0104-03	Pack guide ass'y	1
6	658-0104-04	Eject collar	1
7	658-0104-05	Up collar	1
8	658-0104-06	Holder spring	1
9	658-0105-04	Eject lever ass'y	1
10	658-0104-08	Lock cam	1
11	658-0104-09	Cam spring	1
12	658-0104-10	Cam stopper	1

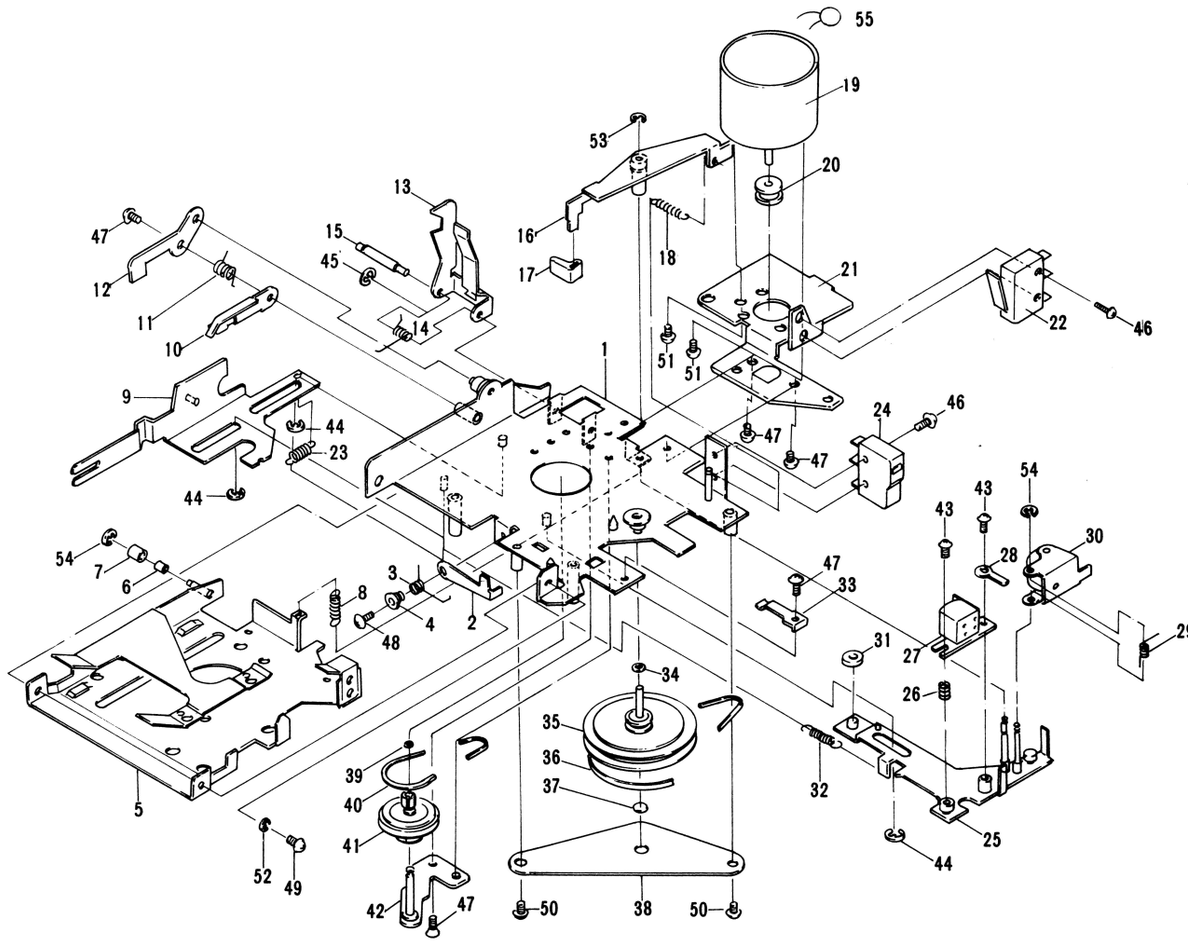
REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
13	658-0104-11	Eject arm	1
14	658-0104-12	Eject spring	1
15	658-0104-13	Shaft	1
16	658-0104-45	Sensor lever ass'y	1
17	658-0104-41	Sensor	1
18	638-0104-42	Sensor spring	1
19	020-0346-01	Motor	1
20	658-0104-16	Motor pulley	1
21	658-0105-01	Motor holder ass'y	1
22	658-0105-02	Micro switch	1
23	658-0104-38	Eject pressure spring	1
24	658-0104-43	Micro switch	1

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
25	658-0104-44	Head panel ass'y	1
26	658-0104-22	Azimuth spring	1
27	011-0254-00	Head	1
28	658-0104-23	Clamp	1
29	658-0104-24	Pinch spring	1
30	658-0104-25	Pinch roller ass'y	1
31	658-0104-26	Panel ring	1
32	630-1153-00	Panel spring	1
33	658-0104-27	Panel pressure	1
34	658-0104-28	Flat washer	1
35	658-0104-29	Flywheel	1
36	658-0104-30	Drive belt	1
37	658-0104-31	Thrust plate	1
38	658-0104-32	Flywheel holder	1
39	658-0104-33	Flat washer	1

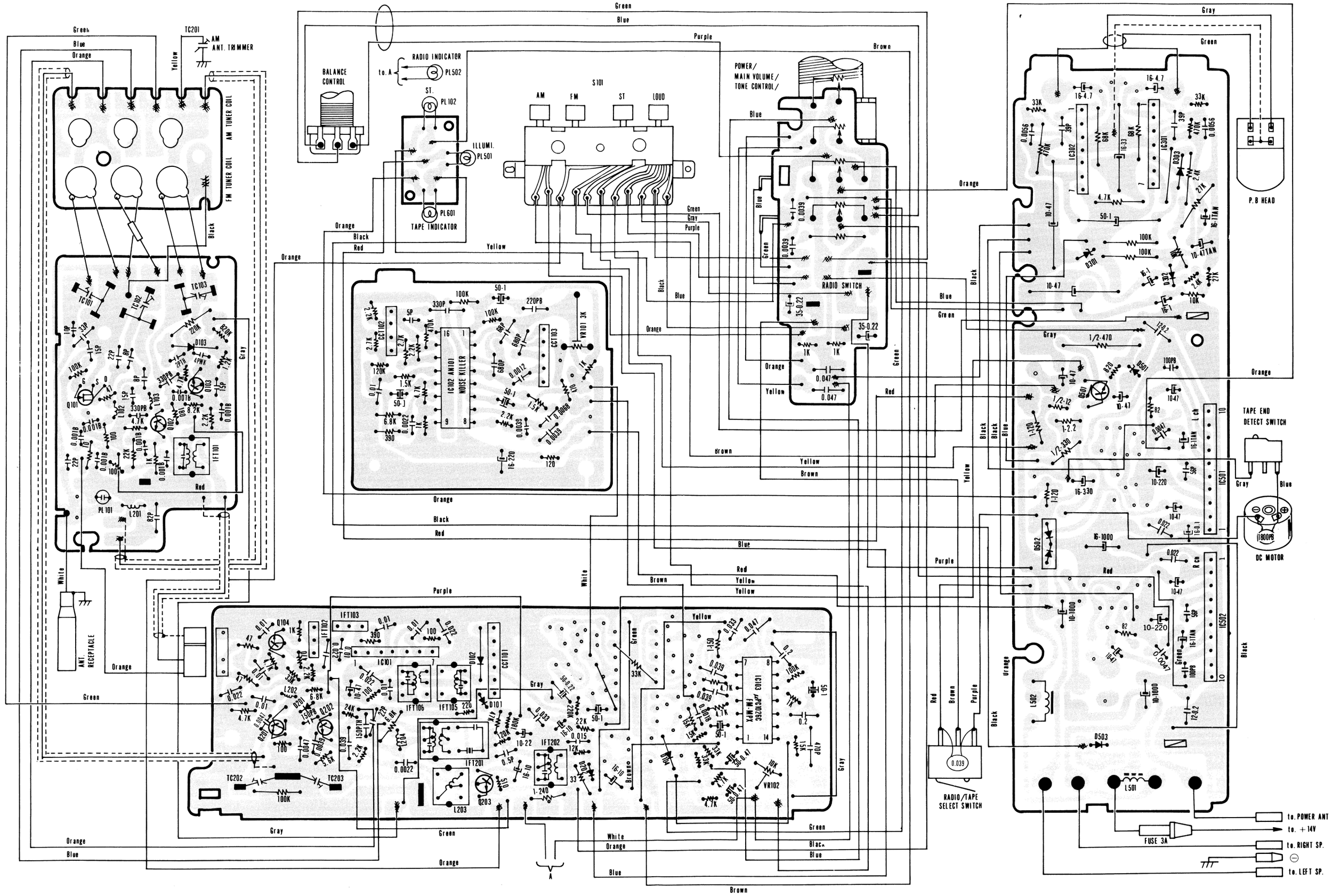
REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
40	658-0104-34	Reel belt	1
41	658-0104-35	Reel base ass'y	1
42	658-0104-46	Reel holder ass'y	1
43	714-2005-81	Machine screw	2
44	743-3000-00	E-ring	3
45	743-5000-00	E-ring	1
46	714-2310-81	Machine screw	2
47	714-2605-81	Machine screw	6
48	714-2606-81	Machine screw	1
49	714-3003-11	Machine screw	1
50	714-2604-41	Machine screw	2
51	716-0347-00	Screw	2
52	741-3000-20	Spring washer	1
53	743-1200-00	E-ring	1
54	743-2000-00	E-ring	2
55	160-1822-05	Ceramic capacitor (1800PFB)	1

■EXPLODED VIEW:

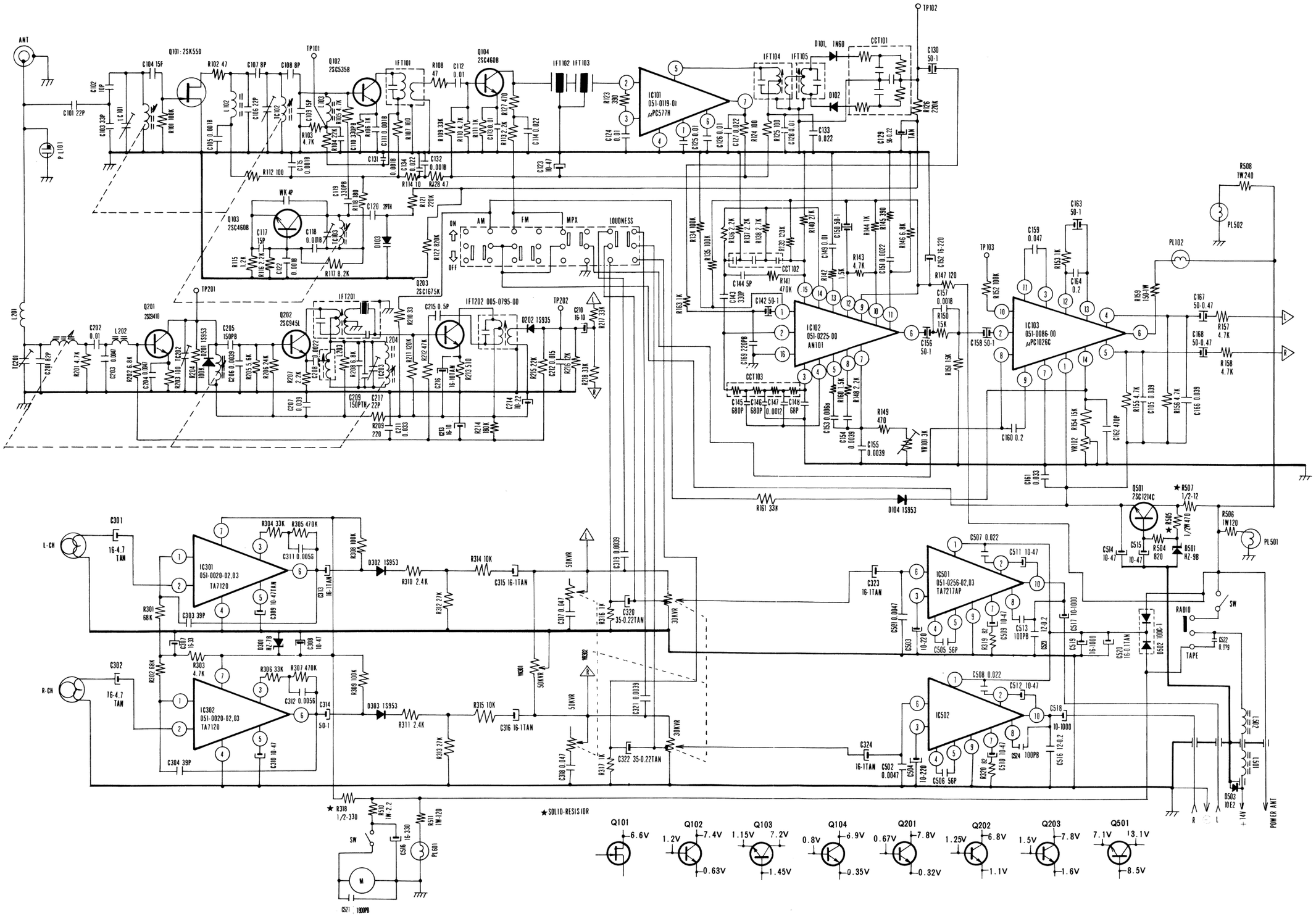
◎Mechanism section

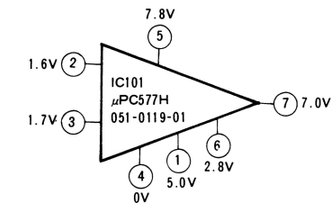


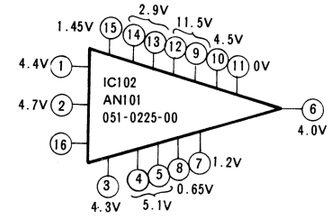
■PRINTED WIRING BOARD:

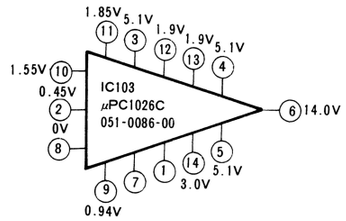


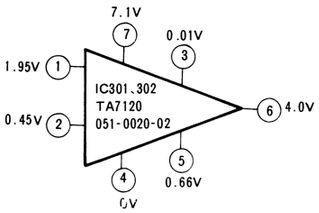
■CIRCUIT DIAGRAM:

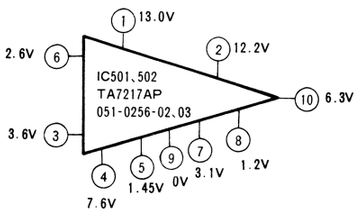












PU-695A

■PARTS LIST:

◎Electrical section

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
$D_{101,102}$	001-0020-00	Diode(1N60)	2
D_{502}	001-0072-00	Diode(10DC-1)	1
D_{301}	001-0099-01	Diode(HZ7B)	1
D_{501}	001-0101-01	Diode(HZ9B)	1
D_{103}	001-0231-00	Diode(ITT410)	1
$D^{104,201,202}_{302,303}$	001-0151-00	Diode(1S953)	5
D_{503}	001-0186-00	Diode(10E2)	1
TC_{103}	004-1494-00	Trimmer	1
$TC_{101,102}$	004-1496-00	Trimmer	2
TC_{201}	004-1502-00	Trimmer	1
$TC_{202,203}$	004-1505-01	Trimmer	1
IFT_{101}	005-0698-00	IF-transformer	1
IFT_{201}	005-0709-00	IF-transformer	1
$IFT_{102,103}$	005-0724-00	IF-transformer	2
IFT_{105}	005-0741-00	IF-transformer	1
IFT_{104}	005-0766-00	IF-transformer	1
IFT_{202}	005-0795-00	IF-transformer	1
L_{502}	009-0603-00	Choke	1
L_{201}	010-0930-00	Coil	1
L_{102}	010-1180-00	Coil	1
$L_{103,202}$	010-1570-01	Coil	2
L_{501}	010-1686-00	Coil	1
L_{203}	010-1729-00	Coil	1
L_{204}	010-1730-00	Coil	1
VR_{101}	012-2700-00	Variable resistor (3KΩ)	1
VR_{102}	012-3394-00	Variable resistor (10KΩ)	1
VR_{301}	012-3533-01	Variable resistor (Balance)	1
VR_{302}	012-3661-00	Variable resistor (Volume, Tone)	1
S_{101}	013-3399-01	Band select switch	1
PL_{101}	017-0321-01	Pilotlamp	1
PL_{502}	017-0324-02	Pilotlamp	1
$PL_{102,501,601}$	017-0313-01	Pilotlamp	3
CCT_{101}	050-0010-00	Component circuit	1
CCT_{102}	050-0069-00	Component circuit	1
CCT_{103}	050-0070-00	Component circuit	1
$IC_{301,302}$	051-0020-02	IC(TA7120)	2
$IC_{501,502}$	051-0256-02	IC(TA7217AP)	2
IC_{103}	051-0086-00	IC(μPC1026C)	1
IC_{101}	051-0119-01	IC(μPC577H)	1
IC_{102}	051-0225-00	IC(AN101)	1
$Q_{103,104}$	102-0460-02	Transistor (2SC460B)	2
Q_{102}	102-0535-02	Transistor (2SC535B)	1
Q_{202}	102-0945-12	Transistor (2SC945L)	1
Q_{201}	102-0941-15	Transistor (2SC9410)	1
Q_{501}	102-1214-03	Transistor (2SC1214C)	1
Q_{203}	102-1675-11	Transistor (2SC1675K)	1
Q_{101}	108-0055-04	FET(2SK55D)	1
R_{507}	110-1201-42	Solid resistor (½W12Ω)	1

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
R_{318}	110-3311-42	Solid resistor (½W330Ω)	1
R_{505}	110-4711-41	Solid resistor (½W470Ω)	1
R_{114}	111-1001-22	Film resistor (¼sW10Ω)	1
$R^{107,112,124}_{125,203}$	111-1011-22	Film resistor (¼sW100Ω)	5
$R^{106,111,153}_{316,317}$	111-1021-22	Film resistor (¼sW1KΩ)	5
R_{163}	111-1021-31	Film resistor (¼W1KΩ)	1
R_{144}	111-1021-32	Film resistor (¼W1KΩ)	1
$R_{314,315}$	111-1031-22	Film resistor (¼sW10KΩ)	2
$R_{152,204,308,309}$	111-1041-21	Film resistor (¼sW100KΩ)	4
R_{101}	111-1041-22	Film resistor (¼sW100KΩ)	1
$R_{134,135}$	111-1041-32	Film resistor (¼W100KΩ)	2
R_{147}	111-1211-32	Film resistor (¼W120Ω)	1
R_{115}	111-1221-22	Film resistor (¼sW1.2KΩ)	1
R_{216}	111-1231-21	Film resisto, (¼sW12KΩ)	1
R_{211}	111-1241-22	Film resistor (¼sW120KΩ)	1
R_{139}	111-1241-32	Film resistor (¼W120KΩ)	2
$R_{142,160}$	111-1521-32	Film resistor (¼W1.5KΩ)	2
$R_{150,151,154}$	111-1531-22	Film resistor (¼sW15KΩ)	3
R_{118}	111-1811-22	Film resistor (¼sW180Ω)	1
R_{214}	111-1841-22	Film resistor (¼sW180KΩ)	1
R_{209}	111-2211-22	Film resistor (¼sW220Ω)	1
$R_{113,116,207}$	111-2221-22	Film resistor (¼sW2.2KΩ)	3
$R_{136,137,148}$	111-2221-32	Film resistor (¼W2.2KΩ)	3
$R_{104,215}$	111-2231-22	Film resistor (¼sW22KΩ)	2
R_{126}	111-2241-21	Film resistor (¼sW220KΩ)	1
R_{121}	111-2241-22	Film resistor (¼sW220KΩ)	1
R_{206}	111-2431-22	Film resistor (¼sW24KΩ)	1
R_{138}	111-2721-31	Film resistor (¼W2.7KΩ)	1
R_{312}	111-2731-22	Film resistor (¼sW27KΩ)	1
R_{140}	111-2731-32	Film resistor (¼W27KΩ)	1
R_{146}	111-6821-32	Film resistor (¼W6.8KΩ)	1
R_{311}	111-2421-21	Film resistor (¼sW2.4KΩ)	1
R_{313}	111-2731-21	Film resistor (¼sW27KΩ)	1
R_{210}	111-3301-22	Film resistor (¼sW33Ω)	1
R_{310}	111-2421-22	Film resistor (¼sW2.4KΩ)	1
$R^{109,161,217}_{218,304,306}$	111-3331-22	Film resistor (¼sW33KΩ)	6
R_{159}	114-1511-51	Film resistor (1W150Ω)	1
R_{123}	111-3911-22	Film resistor (¼sW390Ω)	1
R_{145}	111-3911-32	Film resistor (¼W390Ω)	1
$R_{102,108,128}$	111-4701-22	Film resistor (¼sW47Ω)	3
R_{127}	111-4711-22	Film resistor (¼sW470Ω)	1
R_{149}	111-4711-32	Film resistor (¼W470Ω)	1
$R_{103,303}$	111-4721-21	Film resistor (¼sW470Ω)	2
$R^{105,110,155}_{156,157,158,201}$	111-4721-22	Film resistor (¼sW4.7KΩ)	7
R_{143}	111-4721-32	Film resistor (¼W4.7KΩ)	1
R_{212}	111-4731-22	Film resistor (¼sW47KΩ)	1
$R_{506,511}$	114-1211-51	Film resistor (1W120Ω)	2

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
R_{307}	111-4741-21	Film resistor (¼sW470KΩ)	1
R_{305}	111-4741-22	Film resistor (¼sW470KΩ)	1
R_{141}	111-4741-32	Film resistor (¼W470KΩ)	1
R_{213}	111-5111-22	Film resistor (¼sW510Ω)	1
R_{205}	111-5621-22	Film resistor (¼sW5.6KΩ)	1
R_{122}	111-8241-22	Film resistor (¼sW820KΩ)	1
$R_{319,320}$	111-8201-32	Film resistor (¼W82Ω)	2
$R_{202,208}$	111-6821-22	Film resistor (¼sW6.8KΩ)	2
$R_{301,302}$	111-6831-21	Film resistor (¼sW68KΩ)	2
R_{504}	111-8211-32	Film resistor (¼W820Ω)	1
R_{117}	111-8221-22	Film resistor (¼sW8.2KΩ)	1
R_{508}	114-2412-51	Film resistor (1W240Ω)	1
R_{510}	114-2292-52	Film resistor (1W2.2Ω)	1
$C^{112,113,124,125}_{126,128,149,202}$	141-1033-10	Polyester capacitor (50V0.01μF)	8
C_{147}	141-1223-10	Polyester capacitor (50V0.0012μF)	1
C_{157}	141-1823-10	Polyester capacitor (50V0.0018μF)	1
C_{212}	141-1533-10	Polyester capacitor (50V0.015μF)	1
$C_{151,208}$	141-2223-10	Polyester capacitor (50V0.0022μF)	2
$C^{507,508}_{114,127,133,134}$	141-2233-10	Polyester capacitor (50V0.022μF)	6
$C_{161,211}$	141-3333-10	Polyester capacitor (50V0.033μF)	2
$C^{154,155,206}_{319,321}$	141-3923-10	Polyester capacitor (50V0.0039μF)	5
$C_{165,166,207}$	141-3933-10	Polyester capacitor (50V0.039μF)	3
$C^{203,204}_{501,502}$	141-4723-10	Polyester capacitor (50V0.0047μF)	4
$C_{159,317,318}$	141-4733-10	Polyester capacitor (50V0.047μF)	3
$C_{311,312}$	141-5623-10	Polyester capacitor (50V0.0056μF)	2
C_{153}	141-6823-10	Polyester capacitor (50V0.0068μF)	1
$C_{505,506}$	144-5602-10	Mica capacitor (50V56PF)	2
$C_{145,146}$	143-6812-10	Polystylen capacitor (680PF)	2
C_{143}	144-3312-10	Mica capacitor (50V330PF)	1
C_{162}	144-4712-10	Mica capacitor (50V470PF)	1
C_{102}	150-1002-13	Ceramic capacitor (10PFCH)	1
$C_{104,109,117}$	150-1502-13	Ceramic capacitor (15PFCH)	3
C_{209}	150-1512-50	Ceramic capacitor (150PFTH)	1
$C_{513,524}$	160-1012-05	Ceramic capacitor (100PFB)	2
C_{522}	160-3934-02	Ceramic capacitor (0.039μFYG)	1
C_{521}	160-1822-05	Ceramic capacitor (1800PB)	1

REF.NO.	PART NO.(ORDER NO.)	DESCRIPTION	Q'TY
$C_{101,106,217}$	150-2202-13	Ceramic capacitor (22PFCH)	3
C_{103}	150-3302-13	Ceramic capacitor (33PFCH)	1
$C_{303,304}$	150-3902-13	Ceramic capacitor (39PFCH)	2
C_{120}	150-2096-50	Ceramic capacitor (2PFTH)	1
C_{116}	150-4096-70	Ceramic capacitor (4PFWK)	1
C_{144}	150-5096-13	Ceramic capacitor (5PFCH)	1
C_{148}	150-6802-13	Ceramic capacitor (68PFCH)	1
$C_{107,108}$	150-8097-13	Ceramic capacitor (8PFCH)	2
C_{201}	150-8202-13	Ceramic capacitor (82PFCH)	1
$C^{105,111,115}_{122,131,132,118}$	160-1022-05	Ceramic capacitor (0.001μFB)	7
C_{205}	160-1512-05	Ceramic capacitor (150PFB)	1
C_{169}	160-2212-05	Ceramic capacitor (220PFB)	1
$C_{110,119}$	160-3312-05	Ceramic capacitor (330PFB)	2
$C^{160,164}_{516,523}$	043-0020-00	Ceramic capacitor (12V0.2μF)	4
C_{215}	043-0088-00	Ceramic capacitor (50V0.5PF)	1
$C_{517,518}$	042-0153-00	Electrolytic capacitor (10V1000μF)	2
$C_{320,322}$	042-0184-00	Electrolytic capacitor (35V0.22TAN)	2
C_{216}	042-0176-00	Electrolytic capacitor (16V10μF TAN)	1
C_{519}	042-0178-00	Electrolytic capacitor (16V1000μF)	1
C_{309}	042-0200-00	Electrolytic capacitor (10V47μF TAN)	1
$C^{313,315,316}_{323,324}$	042-0239-00	Electrolytic capacitor (16V1μF TAN)	5
C_{314}	180-1054-61	Electrolytic capacitor (50V1μF)	1
$C^{130,142,150,156}_{158,163}$	180-1054-62	Electrolytic capacitor (50V1μF)	6
$C_{210,213}$	180-1064-32	Electrolytic capacitor (16V10μF)	2
C_{520}	042-0248-00	Electrolytic capacitor (16V0.1μFTAN)	1
C_{152}	180-2274-32	Electrolytic capacitor (16V220μF)	1
C_{214}	180-2264-22	Electrolytic capacitor (10V22μF)	1
C_{307}	180-3364-31	Electrolytic capacitor (16V33μF)	1
C_{516}	180-3374-32	Electrolytic capacitor (16V330μF)	1
$C_{167,168}$	180-4744-62	Electrolytic capacitor (50V0.47μF)	2
$C_{301,302}$	042-0174-00	Electrolytic capacitor (16V4.7μFTAN)	2
$C_{503,504}$	042-0219-00	Electrolytic capacitor (10V220μF)	2
$C_{308,310}$	180-4764-21	Electrolytic capacitor (10V47μF)	2
$C^{123,509,510}_{511,512,514,515}$	180-4764-22	Electrolytic capacitor (10V47μF)	7
C_{129}	042-0140-00	Electrolytic capacitor (50V0.22μF)	1