ORDER NO. SD81061941C8

Service Manual

DOLBY SYSTEM

FM/AM Stereo Cassette Receiver

SA-R40

[EX], [EH], [XA]

SA-R40(K)

[EX], [EH], [XA]

* The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [EX] is available in Switzerland and Scandinavia.
* [EH] is available in Holland.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

English

Specifications

Specifications are subject to change without notice for further improvent.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

■ AMPLIFIER SECTION

20 Hz–20 kHz continuous power output	
both channels driven	2×40 W (4Ω)
	2×40 W (8Ω)
40 Hz–16 kHz continuous power output	
both channels driven	2×40 W (4Ω)
	2×40 W (8Ω)
1 kHz continuous power output	
both channels driven	2×40 W(4Ω)
	2×40 W (8Ω)
Total harmonic distortion	
rated power at 1 kHz	0.007% (4Ω, 8Ω)
half power at 20 Hz–20 kHz	0.007% (8Ω)
half power at 1 kHz	0.003% (8Ω)
rated power at 40 Hz–16 kHz	0.02% (4Ω)
	0.009% (8Ω)
rated power at 20 Hz–20 kHz	0.02% (4Ω)
	0.009% (8Ω)
−26 dB power at 1 kHz	0.005% (4Ω)
50 mW power at 1 kHz	0.08% (4Ω)
Intermodulation distortion	
rated power at 250 Hz:8 kHz=4:1, 4Ω	0.02%
rated power at 60 Hz:7 kHz=4:1, SMPTE, 8Ω	0.009%
Power bandwidth	
both channels driven, −3 dB	5 Hz–50 kHz (4Ω)
Damping factor	20 (4Ω), 40 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47 kΩ
AUX	150 mV/47 kΩ
MIC	2.0 mV/22 kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV

S/N	
rated power (4Ω)	
PHONO	72 dB (IHF, A: 80 dB 8Ω)
AUX	82 dB (IHF, A: 90 dB 8Ω)
MIC	67 dB (IHF, A: 76 dB 8Ω)
−26 dB power (4Ω)	
PHONO	64 dB
AUX	66 dB
MIC	64 dB
50 mW power (4Ω)	
PHONO	62 dB
AUX	62 dB
MIC	62 dB
Frequency response	
PHONO	RIAA standard curve
	30 Hz–15 kHz (±0.5 dB)
AUX	5 Hz–50 kHz (−3 dB)
	20 Hz–20 kHz (+0 dB −1 dB)
MIC	20 Hz–20 kHz (±1.5 dB)
Tone controls	
BASS	50 Hz, +10 dB–−10 dB
TREBLE	20 kHz, +10 dB–−10 dB
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage and impedance	
REC OUT	150 mV
Channel balance, AUX 250 Hz–6,300 Hz	±1 dB
Channel separation, AUX 1 kHz	55 dB
Headphones output level and impedance	420 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω–16Ω
MAIN and REMOTE	8Ω–16Ω

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ FM TUNER SECTION

Frequency range	87.5~108.0 MHz (0.05 MHz step) 87.9~107.9 MHz (0.2 MHz step)
Sensitivity	
S/N 30 dB	1.9 μV (300Ω) 1.3 μV (75Ω)
S/N 26 dB	1.7 μV (300Ω), 1.2 μV (75Ω)
S/N 20 dB	1.5 μV (300Ω), 0.9 μV (75Ω)
IHF usable sensitivity	1.9 μV (IHF '58)
IHF 46 dB stereo quieting sensitivity	25 μV/75Ω
Total harmonic distortion at 1 kHz (normal)	
MONO	0.15%
STEREO	0.30%
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	56 dB (70 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB~−1.5 dB 20 Hz~14 kHz, +0.5 dB~−1.5 dB
Altermate channel selectivity	
normal (±400 kHz)	75 dB
super narrow (±200 kHz)	25 dB
Capture ratio (normal)	1.2 dB
Image rejection at 98 MHz	60 dB
IF rejection at 98 MHz	75 dB
Spurious response rejection at 98 MHz	82 dB
AM suppression	55 dB
Stereo separation (normal)	
1 kHz	45 dB
10 kHz	35 dB
Carrier leak	
19 kHz	−60 dB (−65 dB, IHF)
38 kHz	−70 dB (−75 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth (normal)	
IF amplifier	180 kHz
FM demodulator	800 kHz
Antenna terminals	300Ω (balanced) 75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522~1611 kHz (9 kHz step) 530~1620 kHz (10 kHz step)
Sensitivity (S/N 20 dB)	30 μV, 300 μV/m
Selectivity	55 dB
Image rejection at 999 kHz	55 dB
IF rejection at 999 kHz	45 dB

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
REC/PLAY	Sendust head
Erasing	3-gap ferrite head
Motors	Electronically controlled DC motor DC motor for real drive
Recording system	AC bias
Bias frequency	85 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec.
Frequency response	
METAL	20 Hz~20 kHz 30 Hz~18 kHz (DIN)
CrO_2	20 Hz~19 kHz 30 Hz~18 kHz (DIN)
NORMAL	20 Hz~18 kHz 30 Hz~16 kHz (DIN)
S/N (signal level=max recording level, CrO_2 type tape)	
DOLBY NR in	68 dB (above 5 kHz)
DOLBY NR out	58 dB
Wow and flutter	0.05% (WRMS) ±0.14% (DIN)
Fast Forward and Rewind Time	Approx. 90 seconds with C-60 cassette tape

■ GENERAL

Power consumption	430 W
Power supply	AC 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Batteries	DC 4.5 V (3 "AA" size batteries, Panasonic UM-3 or equivalent)
Dimensions (W×H×D)	430×118×394 mm (16-15/16"×4-11/16"×15-1/2")
Weight	11.7 kg (25.7 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Deutsch

TECHNISCHE DATEN

(Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz~20 kHz	
beide Kanäle ausgesteuert	2×40 W (4Ω) 2×40 W (8Ω)
Dauerton-Ausgangsleistung bei 40 Hz~16 kHz	
beide Kanäle ausgesteuert	2×40 W (4Ω) 2×40 W (8Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2×40 W (4Ω) 2×40 W (8Ω)
Gesamtklirrfaktor	
Nennleistung bei 1 kHz	0,007% (4Ω, 8Ω)
halbe Nennleistung bei 20 Hz~20 kHz	0,007% (8Ω)
halbe Nennleistung bei 1 kHz	0,003% (8Ω)
Nennleistung bei 40 Hz~16 kHz	0,02% (4Ω) 0,009% (8Ω)
Nennleistung bei 20 Hz~20 kHz	0,02% (4Ω) 0,009% (8Ω)
−26 dB Leistung bei 1 kHz	0,005% (4Ω)
50 mW Leistung bei 1 kHz	0,08% (4Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz=4:1, 4Ω	0,02%
Nennleistung bei 60 Hz:7 kHz=4:1, nach SMPTE, 8Ω	0,009%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	5 Hz~50 kHz (4Ω)
Dämpfungsfaktor	20 (4Ω), 40 (8Ω)
Eingangsempfindlichkeit und -Impedanz	
Phono	2,5 mV/47 kΩ
AUX	150 mV/47 kΩ
Micro (MIC)	2,0 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschabstand	
Nennleistung (4Ω)	
Phono	72 dB (nach IHF, A: 80 dB 8Ω)
AUX	82 dB (nach IHF, A: 90 dB 8Ω)
Micro (MIC)	67 dB (nach IHF, A: 76 dB 8Ω)
−26 dB Leistung (4Ω)	
Phono	64 dB
AUX	66 dB
Micro (MIC)	64 dB
50 mW Leistung (4Ω)	
Phono	62 dB
AUX	62 dB
Micro (MIC)	62 dB

Frequenzgang	
Phono	RIAA-Standardkurve 30 Hz~15 kHz (±0,5 dB)
AUX	5 Hz~50 kHz (−3 dB) 20 Hz~20 kHz (+0 dB, −1 dB)
Micro (MIC)	20 Hz~20 kHz (±1,5 dB)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB~−10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB~−10 dB
Gehörrichtige Lautstärkekorrektur (Loudness) (bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung und -impedanz	
REC OUT	150 mV
Kanalabweichung (Aux, 250 Hz~6300 Hz)	±1 dB
Übersprechdämpfung (Aux, 1 kHz)	55 dB
Kopfhörerpegel und -impedanz	420 mV/330Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4Ω~16Ω
MAIN und REMOTE	8Ω~16Ω

■ UKW-TUNERTEIL

Wellenbereich	87,50~108,00 MHz (50 kHz step) 87,9~107,9 MHz (200 kHz step)
Eingangsempfindlichkeit	
S/R 30 dB	1,9 μV (300Ω), 1,3 μV (75Ω)
S/R 26 dB	1,7 μV (300Ω), 1,2 μV (75Ω)
S/R 20 dB	1,5 μV (300Ω), 0,9 μV (75Ω)
Nutzempfindlichkeit nach IHF	1,9 μV (nach IHF '58)
Stereoumschaltschwelle bei 46 dB nach IHF	25 μV/75Ω
Gasamtklirrfaktor bei 1 kHz (normal)	
Mono	0,15%
Stereo	0,30%
Geräuschabstand	
Mono	60 dB (75 dB nach IHF)
Stereo	56 dB (70 dB nach IHF)
Frequenzgang	20 Hz~15 kHz (+0,5 dB~−1,5 dB) 20 Hz~14 kHz (+0,5 dB~−1,5 dB)
Trennschärfe bei Störsender	
normal ±400 kHz	75 dB
super narrow ±200 kHz	25 dB
Eingangverhältnis (normal)	1,2 dB
Spiegelfrequenz-Dämpfung bei 98 MHz	60 dB
ZF-Dämpfung bei 98 MHz	75 dB
Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz	82 dB
AM-Unterdrückung	55 dB
Übersprechdämpfung (normal)	
1 kHz	45 dB
10 kHz	35 dB
Trägerrest	
19 kHz	−60 dB (−65 dB nach IHF)
38 kHz	−70 dB (−75 dB nach IHF)
Kanalabweichung (250 Hz~6300 Hz)	±1,5 dB
Begrenzereinsatz	1,2 μV
Bandbreite (normal)	
ZF-Verstärker	180 kHz
UKW-Demodulator	800 kHz
Antennenanschluß	300Ω (symmetrisch) 75Ω (unsymmetrisch)

■ AM-TUNERTEIL

Wellenbereiche	522~1611 kHz (9 kHz step) 530~1620 kHz (10 kHz step)
Eingangsempfindlichkeit (S/R 20 dB)	30 μV, 300 μV/m
Trennschärfe	55 dB
Spiegelfrequenz-Dämpfung bei 1000 kHz	55 dB
ZF-Dämpfung bei 1000 kHz	45 dB

■ TONBANDTEIL

Typ	Stereo-Cassettendeck
Spurlage	4 Spuren/2 Kanäle
Tonkopfbestückung	
Aufnahme/Wiedergabe	Sendust-Tonkopf
Löschen	3-Spalt-Loschkopf aus Ferrit
Motoren	elektronisch geregelter Gleichstrommotor gleichstrombetriebener Aufwickelmotor
Aufnahmesystem	Wechselstrom-Vormagnetisierung
Vormagnetisierungsfrequenz	85 kHz
Löschsystem	Wechselstrom-Loschung
Bandgeschwindigkeit	4,8 cm/s
Leistungsbandbreite	
Metal	20 Hz~20 kHz 30 Hz~18 kHz (DIN)
CrO_2	20 Hz~19 kHz 30 Hz~18 kHz (DIN)
Normal	20 Hz~18 kHz 30 Hz~16 kHz (DIN)
Fremdspannungsabstand (Signalpegel=Vollaussteuerung; CrO_2-Band)	
mit Dolby	68 dB (über 5 kHz)
ohne Dolby	58 dB
Gleichlaufschwankungen	0,05% (bewertet) ±0,14% (DIN)
Umspulzeit	ca. 90 Sek. (für Cassette C-60)

■ ALLGEMEINE DATEN

Leistungsaufnahme	430 W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Batterien	DC 4,5 V (3 Batterien der Größe AA, Panasonic UM-3 o.ä.)
Abmessungen (B×H×T)	430×118×394 mm
Gewicht	11,7 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage HP. 3045) gemessen.

Français

CARACTERISTIQUES (Sujet à changement sans préavis.)

(DIN 45 500)

■ DIVERS

Consommation	430 W
Allmentation	CA 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Piles	4,5 V c.c. (3 pile de type "AA", Panasonic UM-3 ou équivalent)
Dimensions (L×H×Pr)	430×118×394 mm
Poids	11,7 kg

Nota:
La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz,	
les deux canaux en circuit	2×40 W (4Ω) 2×40 W (8Ω)
Puissance de sortie continue de 40 Hz~16 kHz,	
les deux canaux en circuit	2×40 W (4Ω) 2×40 W (8Ω)
Puissance de sortie continue à 1 kHz	
les deux canaux en circuit	2×40 W (4Ω) 2×40 W (8Ω)
Distorsion harmonique totale	
à puissance nominale (1 kHz)	0,007% (4Ω, 8Ω)
à demi-puissance (20 Hz~20 kHz)	0,007% (8Ω)
à demi-puissance (1 kHz)	0,003% (8Ω)
à puissance nominale (40 Hz~16 kHz)	0,02% (4Ω) 0,009% (8Ω)

à demi-puissance (20 Hz ~ 20 kHz)	0,02% (4Ω) 0,009% (8Ω)
puissance de −26 dB à 1 kHz	0,005% (4Ω)
puissance de 50 mW à 1 kHz	0,08% (4Ω)
Distorsion d'intermodulation	
à puissance nominale à 250 Hz: 8 kHz − 4:1, 4Ω	0,02%
à puissance nominale à 60 Hz: 7 kHz = 4:1, SMPTE, 8Ω	0,009%
Réponse de fréquences	
les deux canaux en circuit, −3 dB	5 Hz ~ 50 kHz (4Ω)
Coefficient d'amortissement	20 (4Ω), 40 (8Ω)
Sensibilité et impédance d'entrée	
PHONO	2,5 mV/47 kΩ
AUX (AUX)	150 mV/47 kΩ
MICRO (MIC)	2,0 mV/22 kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS)	150 mV
Signal/Bruit	
à puissance nominale (4Ω)	
PHONO	72 dB (IHF, A: 80 dB 8Ω)
AUX (AUX)	82 dB (IHF, A: 90 dB 8Ω)
MICRO (MIC)	67 dB (IHF, A: 76 dB 8Ω)
puissance de −26 dB (4Ω)	
PHONO	64 dB
AUX (AUX)	66 dB
MICRO (MIC)	64 dB
puissance de 50 mW (4Ω)	
PHONO	62 dB
AUX (AUX)	62 dB
MICRO (MIC)	62 dB
Réponse de fréquence	
PHONO	Courbe nominale RIAA 30 Hz ~ 15 kHz (±0,5 dB)
AUX (AUX)	5 Hz ~ 50 kHz (−3 dB) 20 Hz ~ 20 kHz (±0,8 dB)
MICRO (MIC)	20Hz ~ 20 kHz (±1,5 dB)
Réglage de la tonalité	
BASSES (BASS)	50 Hz, +10 dB ~ −10 dB
AIGUS (TREBLE)	20 kHz, +10 dB ~ −10 dB
Compensateur physiologique (volume à −30 dB)	50 Hz, +9 dB
Tension de sortie et impédance	
SORTIE ENREGISTREMENT (REC OUT)	150 mV
Equilibrage des canaux, AUX 250 Hz ~ 6.300 Hz	±1 dB
Séparation des canaux, AUX 1 kHz	55 dB
Niveau de sortie des casques et impédance	420 mV/330 Ω
Impédance de charge	
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)	4Ω ~ 16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)	8Ω ~ 16Ω

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	87,9 ~ 107,9 MHz (200 kHz step) 87,50 ~ 108,00 MHz (50 kHz step)
Sensibilité	
S/B 30 dB	1,9 μV (300Ω), 1,3 μV (75Ω)
S/B 26 dB	1,7 μV (300Ω), 1,2 μV (75Ω)
S/B 20 dB	1,5 μV (300Ω), 0,9 μV (75Ω)
Sensibilité utilisable IHF	1,9 μV (IHF '58)
Sensibilité stéréo au seuil de 46 dB, IHF	25 μV/75Ω
Distorsion harmonique totale (normal)	
MONO	0,15%
STEREO	0,3%
Signal/Bruit	
MONO	60 dB (75 dB, IHF)
STEREO	56 dB (70 dB, IHF)
Réponse de fréquence	20 Hz ~ 15 kHz, +1 dB ~ −2 dB 20 Hz ~ 14 kHz, +0,5 dB ~ −1,5 dB
Sélectivité alternée pare canal	
normal (±400 kHz)	75 dB
narrow (±200 kHz)	25 dB
Taux de capture (normal)	1,2 dB
Rejection d'image à 98 MHz	55 dB
Rejection FI à 98 MHz	75 dB
Rejection de réponse parasite à 98 MHz	82 dB
Suppression AM	55 dB
Séparation stéréophonique (normal)	
1 kHz	45 dB
10 kHz	35 dB
Fuite de porteuse	
19 kHz	−60 dB (−65 dB, IHF)
38 kHz	−70 dB (−75 dB, IHF)
Equilibrage de canaux (250 Hz ~ 6.300 Hz)	±1,5 dB
Point de limite	1,2 μV
Largeur de bande (normal)	
Amplificateur FI	180 kHz
Démodulateur FM	800 kHz
Bornes d'antenne	300Ω (symétrique) 75Ω (asymétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence	522 ~ 1611 kHz (9 kHz step) 530 ~ 1620 kHz (10 kHz step)
Sensibilité (S/B 20 dB)	30 μV, 300 μV/m
Sélectivité	55 dB
Réjection d'image à 999 kHz	55 dB
Réjection FI à 999 kHz	45 dB

■ PLATINE CASSETTE

Platine	Platine à cassettes stéréo
Pistes	2 voies, 4 pistes
Têtes	
Enregistrement/Lecture	Tête Sendust
Effacement	Tête ferrite 3 entrefers
Moteurs	Moteur CC à asservissement électronique Moteur CC
Système d'enregistrement	Polarisation C.A
Fréquence de Bias	85 kHz
Effacement	
Vitesse de bande	4,8 cm/sec
Réponse de fréquences	
Metal	20 Hz ~ 20 kHz 30 Hz ~ 18 kHz (DIN)
CrO_2	20 Hz ~ 19 kHz 30 Hz ~ 18 kHz (DIN)
Normal	20 Hz ~ 18 kHz 30 Hz ~ 16 kHz (DIN)
RAPPORT S/B	(Rapport S/B à niveau d'enregistrement maximum, sur bande CrO_2)
Avec DOLBY NR	68 dB (plus de 5 kHz)
Sans DOLBY NR	58 dB
Pleurage et scintillement	0,09% (WRMS) ±0,14% (DIN)
Temps de bobinage et de rebobinage	environ 90 secondes avec une cassette C-60

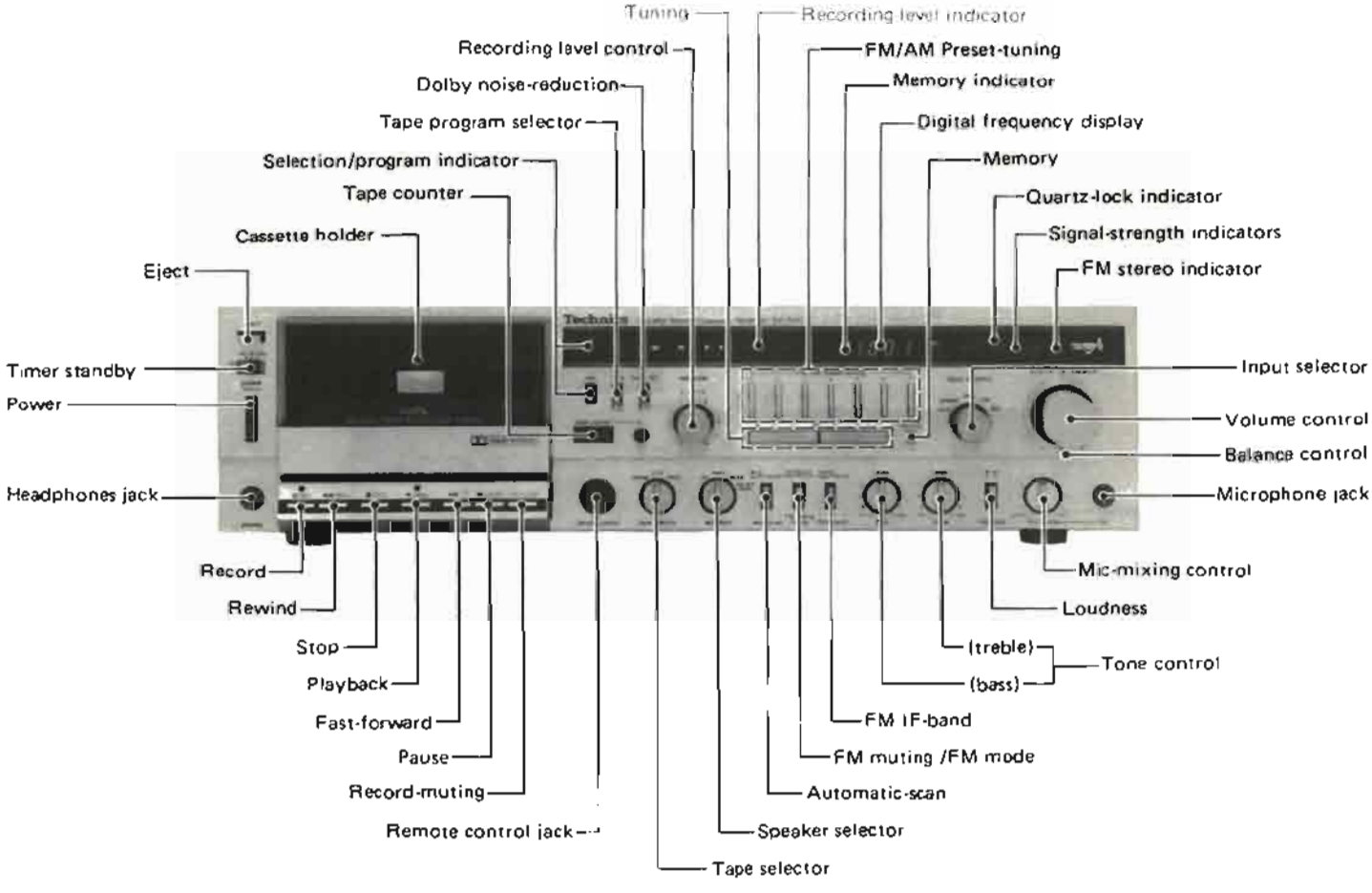
Remarque:

On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P 3045)

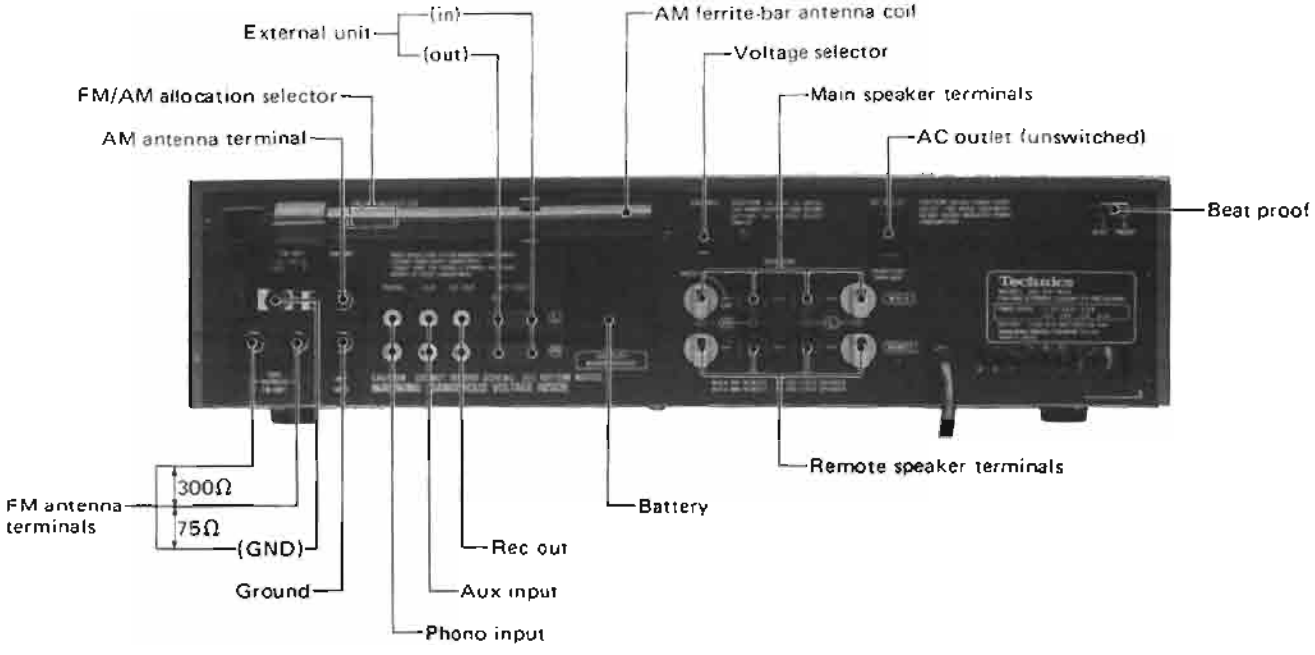
■ CONTENTS

■ LOCATION OF CONTROLS

- Front view

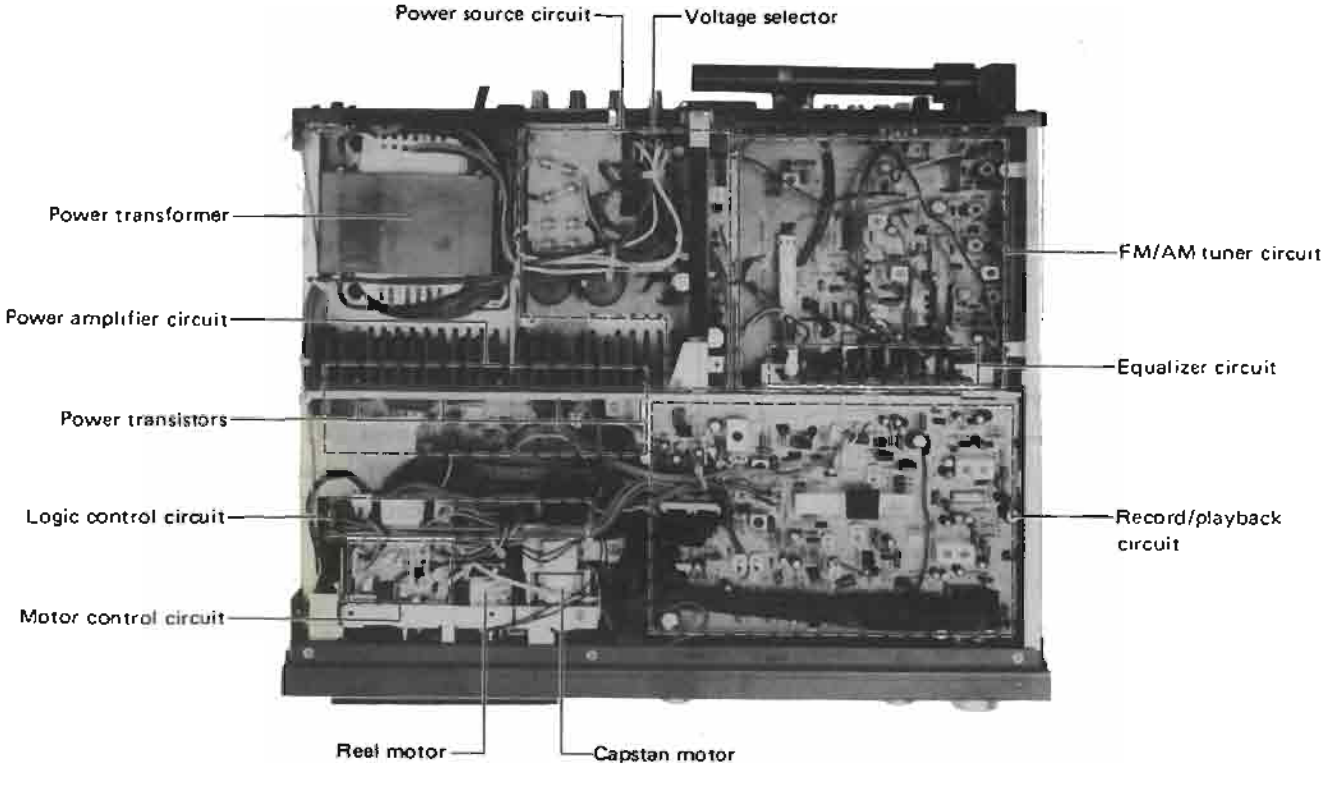


- Rear view

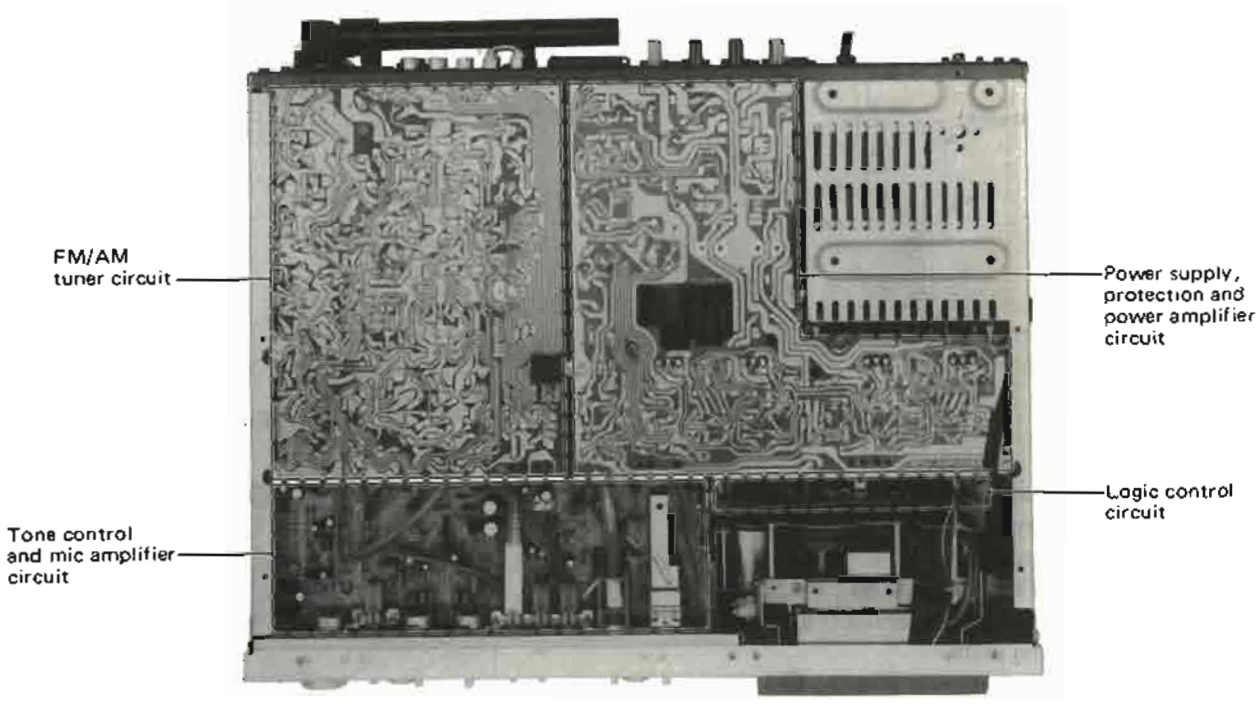


• The product for destination {XA} is equipped with AC outlet.

- Top view



- **Bottom view**



■ DISASSEMBLY INSTRUCTIONS

- **How to remove the cassette cover. (Fig. 1)**

1. Push the eject button to open the cassette holder.
2. Pull up the cassette cover to disengage it from the cassette holder.
3. To mount the cassette cover, fit the "claws" of the cassette cover into the notches of the cassette holder.

- **How to remove the cabinet and bottom board**

1. Remove the 8 setscrews (Fig. 2 : ❶ ~ ❽) of the cabinet.
2. Remove the 9 setscrews (Fig. 3 : ❾ ~ ⓱) of the bottom board.

- **How to remove the front panel**

1. Remove the cassette cover and cabinet.
2. Pull out the knob ⓲ of Fig. 2.
3. Remove the 7 setscrews (Fig. 2 : ⓳ ~ ㉕) of the front panel.
4. Lift up the cassette deck switch unit and pull out the front panel from the chassis.

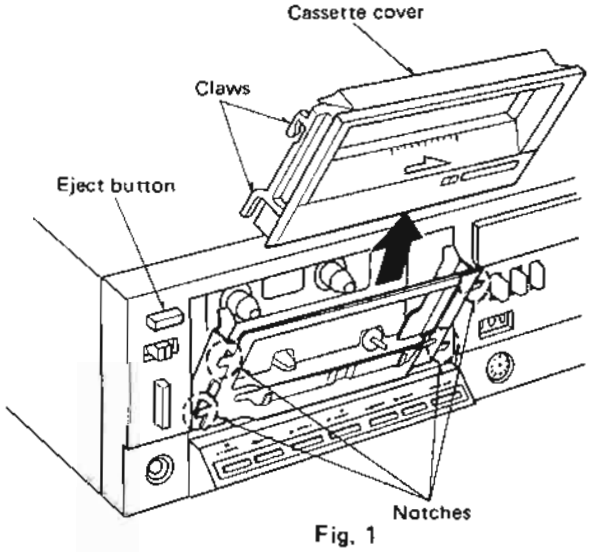


Fig. 1

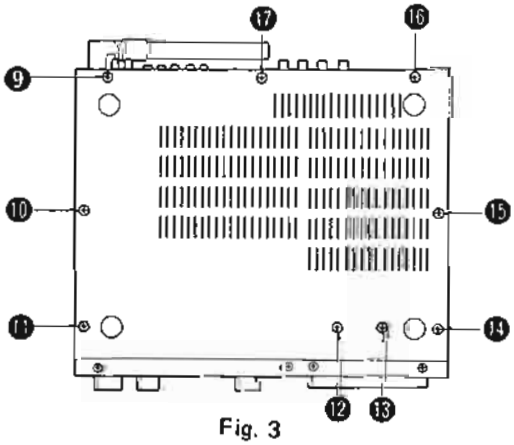


Fig. 3

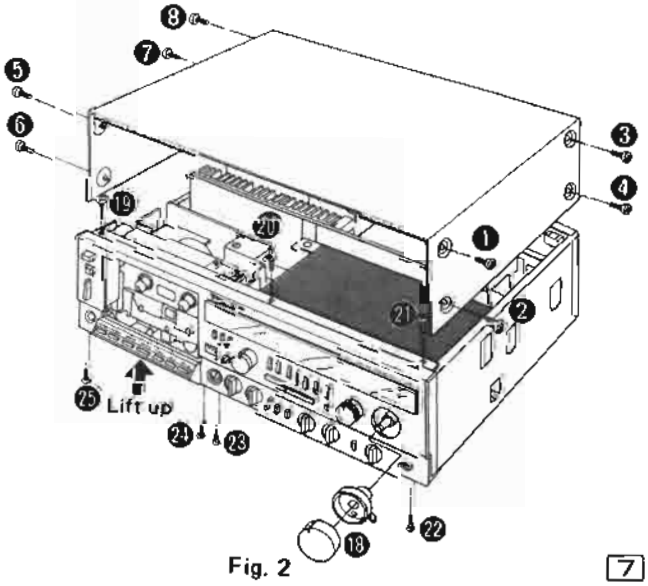


Fig. 2

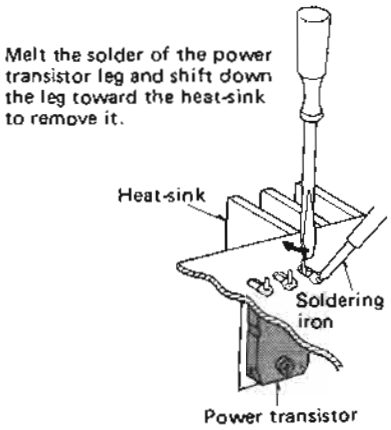


Fig. 4

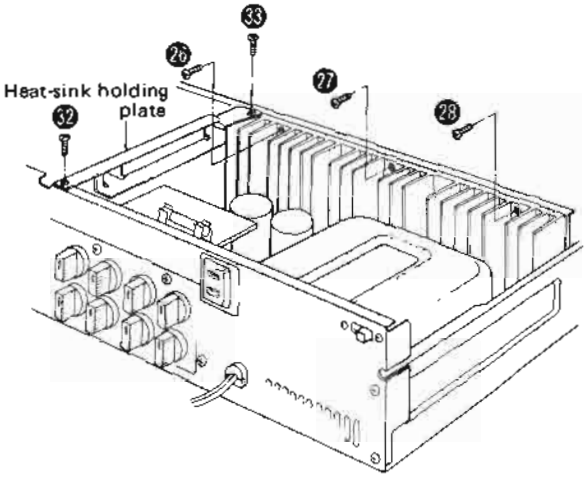


Fig. 5

- **How to remove the power transistor**

1. Remove the cabinet and bottom board.
2. Unsolder the power transistor as in Fig. 4.
3. Remove the 6 setscrews (Fig. 5 : ㉖ ~ ㉘ , Fig. 6 : ㉙ ~ ㉛) of the heat-sink and the 2 setscrews (Fig. 5 : ㉜ , ㉝) of the heat-sink holding plate.
4. Remove the power transistor setscrew (Fig. 7 : ㉞).
5. To install the power transistor, apply heat diffuser (silicone compound, etc.) on both sides of mica plate and attach it to the heat-sink with setscrews. And then, secure the heat-sink on the chassis and solder the power transistor.

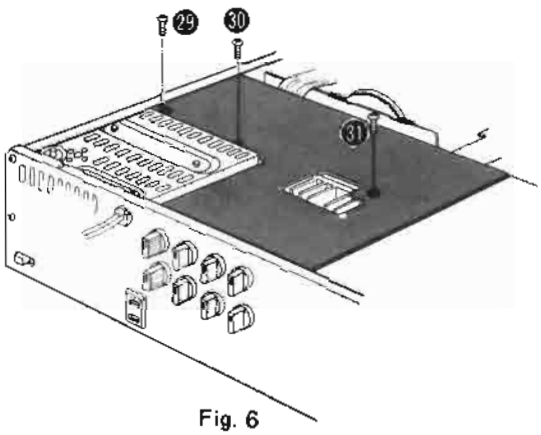


Fig. 6

- **How to remove the record/playback head and erase head**

1. Remove the cabinet.
2. Remove the cassette cover and front panel.
3. To remove the erase head, remove the setscrews ㉟ and ㊱ of Fig. 8.
4. To remove the record/playback head, remove the setscrews ㊲ and ㊳ of Fig. 8.
   (Setscrew ㊲ is an azimuth screw.)

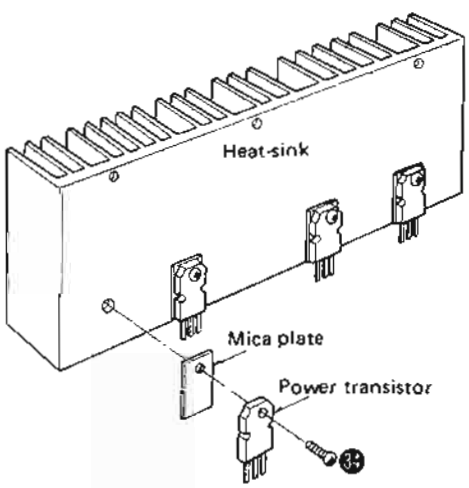


Fig. 7

- **How to remove the FL printed circuit board**

1. Remove the cabinet, cassette cover and front panel.
2. Pull out the knobs ㊴ ~ ㊸ of Fig. 9.
3. Remove the 3 setscrews (Fig. 9 : ㊶ ~ ㊺) of the printed circuit board.

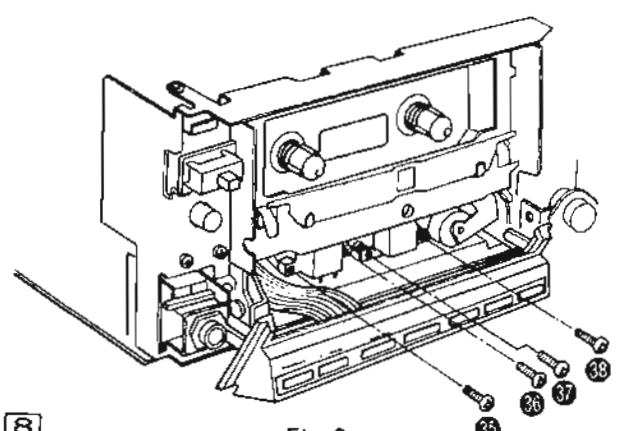


Fig. 8

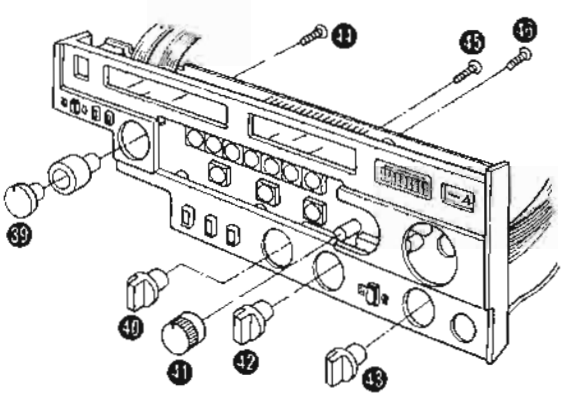


Fig. 9

- **How to remove the record/playback amplifier circuit board (How to check)**

1. Remove the cabinet.
2. Lift the printed circuit board in the direction of the arrow, and check. (Fig. 10)

- **How to remove the logic control circuit board**

1. Remove the cabinet.
2. Pull out the 6 sockets (㊼ ~ ㊷) and flat cable ㊸ of Fig. 11.
3. Remove the printed circuit board setscrew ㊹ .

   Note: The logic control circuit board is earthed to the chassis by screw ㊶ . When checking the conduction, removing the screw ㊹ , connect the printed circuit board earth terminal to the chassis by using clip-attached lead wire or the like.

- **How to remove the cassette deck**

1. Remove the cabinet and bottom board.
2. Remove the cassette cover and front panel.
3. Remove the logic control circuit board.
4. Remove the record/playback amplifier circuit board setscrew (Fig. 11 : ㊺) and TPS printed circuit board setscrews (Fig. 11 : ㊻ , ㊼).
5. Remove the timer standby switch printed circuit board setscrew (Fig. 12 : ㊽). Next, remove the 4 setscrews (Fig. 12 : ㊾ ~ ㊿) of the cassette deck.
6. Cut off the lead clamper (Fig. 13 : ㊸) and remove the cassette deck.
7. When the cassette deck is re-installed, make the clearance 1 ~ 2 mm between the tape counter magnet and Hall IC as shown in Fig. 14.

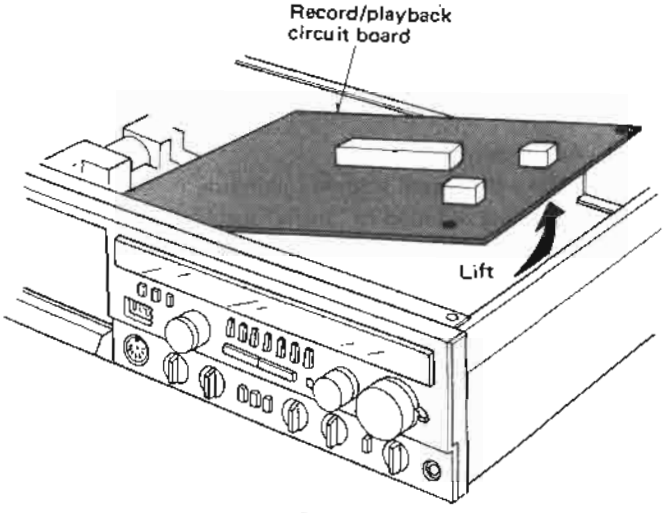


Fig. 10

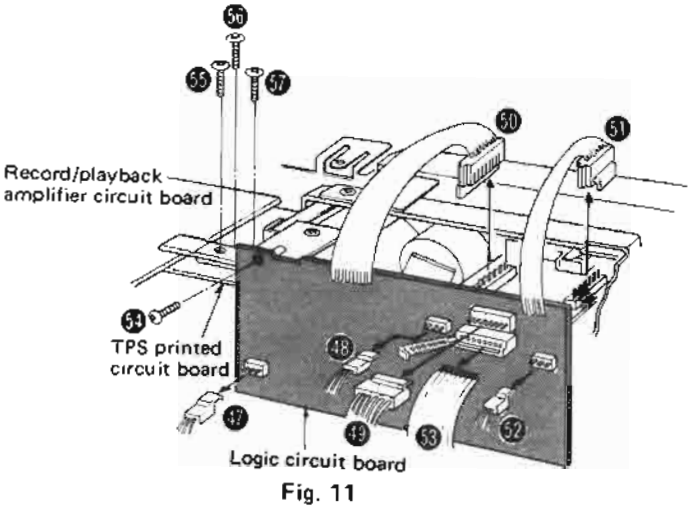


Fig. 11

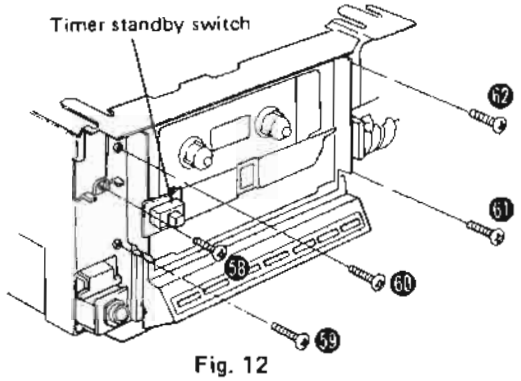


Fig. 12

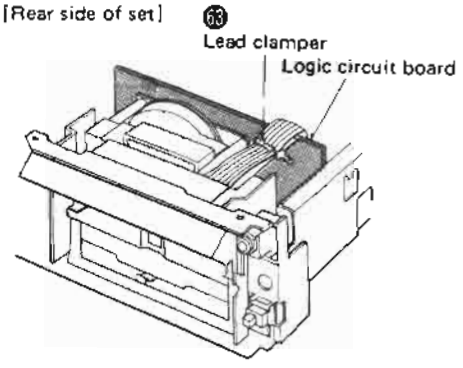


Fig. 13

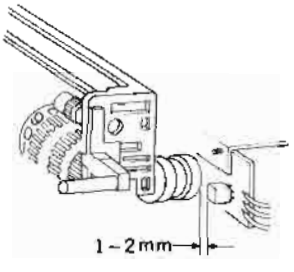


Fig. 14

■ MEASUREMENTS AND ADJUSTMENTS English

AMPLIFIER ADJUSTMENT

1. Adjustment of Icq

① Make the sound volume minimum.
② Connect 8Ω load to "main" speaker terminal.
③ Connect DC voltmeter to between TP601 and TP603 (L channel), TP602 and TP604 (R channel).
④ Adjust VR603 (L channel) and VR604 (R channel) so that the voltage is 5mV, about 1mim. after power supply ON.

2. Adjustment of distortion (Linear feedback circuit)

① Connect AC voltmeter and distortion analyser to "main" speaker terminal.
② Apply 20kHz 500mV signal to "EXT IN" terminal.
③ Regulate the sound volume so that the AC electronic voltmeter indicates 17V.
④ Adjust VR601 (L channel) and VR602 (R channel) so that the distortion of minimum.

AM ADJUSTMENT

*** Setting and Equipment used**

1. AC and DC electronic voltmeters (VTVM)
2. AM signal generator (AM-SG)
3. Set input selector to "AM" position.
4. Set FM/AM allocation selector to "0.05MHz/9kHz" position
5. Maintain line voltage at rated voltage.
6. Output of signal generator should be no higher than necessary to obtain an output reading.
7. Adjust the antenna coil (L201) position by using a screwdriver so that it is at approximatelly 45 degrees to the rear panel
8. Use a non-metal screwdriver for the adjustment.

Step No.	AM SIGNAL GENERATOR CONNECTION	AM SIGNAL GENERATOR FREQUENCY	DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	AM-IF ADJUSTMENT					
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis.(Powerful input)	450 kHz (30% Mod. with 400 Hz)	Frequency of non-interference	Connect AC VTVM or scope to "SPEAKER" terminals of the set.	T201 (1st IFT) T202 (2nd (IFT)	Adjust the input frequency and adjustment points so that the output becomes maximum.
	AM-RF ADJUSTMENT					
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	522 kHz (30% Mod. with 400 Hz)	522 kHz	Connect DC VTVM to TP201 terminal.	L202 (OSC Coil)	Adjust L202 to 1.0V ± 0.05V.
3		612 kHz (30% Mod. with 400 Hz)	612 kHz	Connect AC VTVM or scope to "SPEAKER" terminals of the set.	L201 (ANT Coil)	1. Adjust for maximum output. 2. Adjust ferrite core of L201 by screw driver.
4		1503 kHz (30% Mod. with 400 Hz)	1503 kHz	Connect AC VTVM or scope to "SPEAKER" terminals of the set.	CT201 (ANT trimmer)	1. Adjust for maximum output. 2. Repeat steps (3) and (4) until the frequency correctly matches the dial display.

FM ADJUSTMENT

*** Equipment used**

1. FM signal generator (FM-SG)
2. Stereo modulator (or separation meter)
3. Oscilloscope
4. AC and DC electronic voltmeters (VTVM)
5. Frequency counter (19 kHz and 108 MHz measurable)
6. FM 300Ω dummy antenna (Fig. 15)

*** Preparation of FM signal generator (FM-SG)**

1. Connect stereo modulator to FM-SG.
2. Apply SG output to antenna terminal of the set through 300Ω FM dummy antenna.
3. The standard input of the set is 60 dB (1mV), 400 Hz 100% 12 dB plus (IHFI. That is, when input is 60 dB, SG output is to be 72 dB.

*** Setting**

1. Set FM muting/mode switch to "off/mono" position.
2. FM IF band switch to "normal" position.
3. Set input selector to "FM" position.
4. Set Auto scan selector to "off" position
5. Other setting are the same as in AM adjustment

Step No.	FM SIGNAL GENERATOR CONNECTION	FM SIGNAL GENERATOR FREQUENCY	DISPLAY FREQUENCY BY PRESET	INDICATOR	ADJUSTMENT POINTS	REMARKS
	FM-IF ADJUSTMENT					
5	———	No-Signal	100.1 MHz	Connect DC VTVM between TP102 Ⓐ and TP102 Ⓑ through choke coil. (Refer to Fig. 16)	T102 (Discri. IFT)	Adjust T102 core so that voltage measured in signal mode is 0V in 300 mV range

	FM SIGNAL GENERATOR		DISPLAY FREQUENCY BY PRESET	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	FM-RF ADJUSTMENT					
6	———	No-Signal	87.5 MHz	Connect DC VTVM to TP1 terminal.	L4 (OSC Coil)	Adjust L4 (OSC Coil) to 3V.
7	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna.	87.9 MHz (100% Mo. with 400 Hz) weak input	87.9 MHz	Connect scope to "SPEAKER" terminals of the set.	L1 (ANT Coil) L2 (RF DET Coil, 1st) L6 (RF DET Coil, 2nd) T101 (FM IFT)	1. Add weak input so that noise is included in the output wave form. 2. Make the adjustment so that the output wave form is vertically symmetrical. (Refer to Fig. 17) 3. Repeat the steps (7) and (8) until the frequency correctly matches the dial display. 4. Check step (6) and if it is deflected readjust of L4.
8		106.1 MHz (100% Mod. with 400 Hz)	106.1 MHz	Connect scope to "SPEAKER" terminals of the set.	CT1 (OSC Trimmer)	
	SIGNAL LEVEL ADJUSTMENT					
9	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 45 dB to the set.)	100.1 MHz (100% Mod. with 400 Hz)	100.1 MHz	———	VR102 (Signal level)	Adjust VR102 so that the 5 th LED illuminate.
	MUTING LEVEL ADJUSTMENT					
10	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 21 dB to the set.)	100.1 MHz (100% Mod. with 400 Hz)	100.1 MHz	Connect scope to "SPEAKER" terminals of the set.	VR101 (Muting level)	1. Set the FM muting/mode switch to "off/mono". 2. With the FM muting/mode switch to "on/auto", adjust VR101 so that the output is given with muting condition released.
	FM MPX PILOT (VCO) ADJUSTMENT					
11	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Monaural signal)	100.1 MHz (Non-modulated)	100.1 MHz	Connect frequency counter to TP301 through resistor (100 kΩ)	VR301 (VCO)	1. Set the FM muting/mode switch to "on/auto" position. 2. Adjust VR301 to 19 kHz ± 30 Hz.
	SEPARATION ADJUSTMENT					
12	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1 MHz (100% Mod. with 1 kHz) (L or R mode)	100.1 MHz	Connect AC VTVM to "SPEAKER" terminals.	VR302 (Separation)	1. Set the FM muting/mode switch to "on/auto" position. 2. Adjust VR302 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode and that L output is minimized in R mode.

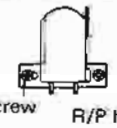
CASSETTE DECK ADJUSTMENT

• Setting

1. Set the input selector switch to "tape".
2. Set the timer standby switch to "off".
3. Set the beat proof selector switch to "A".
4. Set the TPS switch to "off".
5. Set the tape selector switch to "normal"
6. Set the Dolby NR switch to "out".
7. Set the recording level control to "0".

• Instruments and tape used

1. AC electronic voltmeter
2. Low frequency oscillator
3. QZZCFM
4. QZZSRKCT
5. Normal tape

Step No.	Adjustment	AC voltmeter connections	VR adjusted	Adjusting procedure
13	Head angle (head azimuth)	L channel Between TP803 and TP808 (each)		1. Playback the test tape (QZZCFM) at 8 kHz. 2. Turn the angle adjusting screw so that the output on the R channel becomes maximum. 3. Keep the balance between L and R channel. Lock the screw after adjustment.
		R channel Between TP804 and TP808 (earth)		
14	Playback level	L channel Between TP803 and TP808 (earch)	VR803	1. Playback the test tape (QZZCFM) at 315 Hz. 2. Adjust VR803 (L channel) and VR804 (R channel) so that the output voltage becomes 410 mV.
		R channel Between TP804 and TP808 (earth)	VR804	

	Adjustment	AC voltmeter connections	VR adjusted	Adjusting procedure
15	Record level indicator	———	VR807 (L channel) VR808 (R channel)	1. Playback the test tape (QZZCFM) at 315 kHz. 2. Adjust VR807 (L channel) and VR808 (R channel) so that 0 dB of record level indicator is lighted.
16	Playback frequency characteristic	L channel Between TP803 and TP808 (earth)	VR801	1. Playback the test tape (QZZCFM) at 315Hz (0 dB) and 8 kHz (−20 dB). 2 Adjust VR801 (L channel) and VR802 (R channel) so that the output voltage at 8 kHz is 20 dB (41 mV) lower than the output voltage at 315 Hz. 3. Set the tape selector switch to "CrO_2" and "Metal". Then make sure that the output voltage at 8 kHz is 24 dB lower than the output voltage at 315 Hz.
		R channel Between TP804 and TP808 (earth)	VR802	
17	Record bias trap	L channel Between TP805 and TP809 (earth)	L803	1 Set the unit to record mode. (Do not press the play button.) 2. Set the tape selector switch to "Metal". 3. Adjust L803 (L channel) and L804 (R channel) so that the output voltage is minimized. 4. Set the beat proof switch to "B". Adjust L803 and L804 so that the levels at A and B are nearly equal.
		R channel Between TP806 and TP810 (earth)	L804	
18	Record bias	L channel Between TP801 and TP807 (earth)	VR809	1. Set the tape selector switch to "CrO_2". 2. Adjust VR809 (L channel) and VR810 (R channel) so that the output voltage becomes 5.6 mV. 3. Set the beat proof switch to "B", and make sure the output voltage is 5.4 mV. 4. Set the beat proof switch to "A", shift the tape selector switch to "normal" and "Metal", then check the voltage to see that it is 3.6 ~ 4.2 mV at "normal" and 7.8 ~ 9.6 mV at "Metal".
		R channel Between TP802 and TP807 (earth)	VR810	
19	Record current	L channel Between TP803 and TP808 (earth)	VR805	1. Set the unit to record mode. (Do not press the play button.) 2. Set the input switch to "aux". 3. Apply 315 Hz signal to "aux" terminal by means of a low frequency oscillator. 4. Adjust the oscillator and record level volume so that output voltage becomes 410 mV. 5. Insert normal tape and start recording. (Press both record and play buttons.) 6. Next, play the recorded tape. Adjust VR805 (L channel) and VR806 (R channel) so that output voltage becomes 410 mV.
		R channel Between TP804 and TP808 (earth)	VR806	
20	Take-up torque	———	VR1	1. Insert test tape. (QZZSRKCT) 2. Rewind the tape to is starting point. 3. Switch set to "Play". 4. Read " ▶ " make of indicator on take-up side. 5. Repeat Play-Stop several times and read the averag tension. 6. The standard take-up tension should be 55 g cm. If take-up tension is not within these limits: Adjust VR1 to 55 g cm.

■ EINSTELLUNGSANWEISUNGEN — Deutsch

VERSTÄRKERJUSTIERUNG

1. Justierung von ICQ

① Die Lautstärke ganz herunterdrehen.

② 8Ω-Last an den "main"-Lautsprecheranschluß anschließen.

③ Das Gleichstrom-Voltmeter zwischen TP601 und TP603 (linker Kanal) sowie zwischen TP602 und TP604 (rechter Kanal) anschließen.

④ VR603 (linker Kanal) und VR604 (rechter Kanal) so justieren, daß die Spannung ca. 1 min. nach Einschalten der Stromzufuhr 5 mV beträgt.

2. Justierung des Klirrfaktors (Linearrückkopplungs-Schaltkreis)

① Das Wechselstrom-Voltmeter und Klirrfaktor-Meßgerät an den "main"-Lautsprecheranschluß anschließen.

② Ein Signal von 20 kHz, 500 mV an den "EXT IN"-Anschluß anlegen.

③ Die Lautstärke so einstellen, daß das Wechselstrom-Voltmeter 17V anzeigt.

④ VR601 (linker Kanal) und VR602 (rechter Kanal) so justieren, daß der Klirrfaktor minimal ist.

AM (MW)-EINSTELLUNG

• Stellungen und zu benutzende Geräte
1. Elektronische Voltmeter für Wechsel-und Gleichstrom (VTVM)
2. AM (MW)-Meßsender (AM-SG)
3. Den Eingangswähler auf die "AM"-Position stellen.
4. Den UKW/MW-Frequenzabstandswähler auf die "0,05MHz/9kHz." Position stellen.
5. Netzspannung auf ihren Sollwerthalten.
6. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute Ablesung.
7. Mittels eines Schraubenziehers die Stellung der Antennenspule (L201) so einstellen, daß sie gegen die Rückenplatte einen Winkel von ca. 45° macht.
8. Einen nichtmetallischen Schraubenzieher für die Einstellungen verwenden.

Nr.	AM (MW)-MESSENDER ANSCHLUSS	AM (MW)-MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHSPUNKTE	ABGLEICHSVERF AHREN
	AM (MW)-ZF-ABGLEICH					
1	Einen MW-Signal generator über einen 200pF Kondensator mit dem MW-Antenneneingang verbinden. Die gemeinsame Leitung mit dem Chassis verbinden. (Starker Eingang)	450kHz (400Hz Modulat., 30%)	Kein Empfang	Oszilloskop oder Wechselstrom-Voltmeter über den Lautsprecher schließen.	T201 (1. IFT) T202 (2. IFT)	Der Eingangsfrequenz und die Einstellungspunkte so adustieren, daß der Ausgang den maximalen Wert erreicht.
	AM (MW)-HF-ABGLEICH					
2	Einen MW-Signal-generator über einen 200pF kondensator mit dem MW-Antenneneingang verbinden Die gemeinsame Leitung mit dem Chassis verbinden. (Schwacher Eingang)	552kHz (400Hz Modulat., 30%)	522kHz	Zwischen TP201 und Erdung Gleichstrom-Voltmeter schließen.	L202 (Osc. Spule)	L202 so justieren, daß die vom Gleichstrom-Voltmeter gemessene
3		612kHz (400Hz Modulat., 30%)	612kHz	Oszilloskop oder Wechselstrom-Voltmeter über den Lautsprecher schließen.	L201 (Ant. Spule)	1. Auf max. Ausgang abgleichen. 2. Den Ferritkern von L201 mit einem Schraubendreher justieren.
4		1503kHz (400Hz Modulat., 30%)	1503kHz	Oszilloskop oder Wechselstrom-Voltmeter über den Lautsprecher schließen.	CT201 (Ant. Trimmer)	1. Auf max. Ausgang abgleichen. 2. Die Schritte (3) und (4) wiederholen bis die Frequenz genau mit der Skalenanzeige übereinstimmt.

FM (UKW)-EINSTELLUNG

• Verwendete Einrichtungen
1. UKW-Meßsender (FM-SG)
2. Stereo-Modulator (oder Trennmesser)
3. Oszilloskop
4. Elektronische Voltmeter für Wechsel-und Gleichstrom (VTVM)
5. Signalfrequenzmesser (meßer für 19 kHz und 108 MHz)
6. UKW 300 Ohm Kunstantenne (Abb. 1).

• Vorbereitung AM UKW-Messender (FM-SG)
1. Stereo-Modulator an FM-SG anschließen.
2. SG-Ausgang über 300-Ohm UKW Kunstantenne an den Antennen eingang des Gerätes schließen.
3. Der normale Eingang des Gerätes beträgt 60 dB (1 mV), 400 Hz 100% Modulation. (Wegen Verwendung der Kunstantenne muß der Signalausgang 12 dB plus (IHF) sein; d.h. beim Eingang von 60 dB soll der Signalausgang 72 dB sein.)

• Zustand des Gerätes
1. Den UKW-Stummabstimm-/Betriebsartenschalter auf "off/mono" stellen.
2. Den UKW-ZF-Bandbreiteschalter auf "normal" stellen.
3. Den Eingangswahlschalter auf "FM" stellen.
4. Den Sendersuchlauf-Schalter auf "off (manual)" stellen.
5. Die anderen Einstellungen entsprechen den AM (MW)-Einstellungen.

Nr.	FM (UKW) MESSENDER ANSCHLUSS	FM (UKW) MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHSPUNKTE	ABGLEICHSVERF AHREN
	UKW-ZF-ABGLEICH					
5	———	Kein Signal	100,10MHz	Ein Gleichstrom-Voltmeter zwischen TP102 Ⓐ und TP102 Ⓑ über eine Drosselspule verbinden (Siehe Abb. 2)	T102 (Diskriminator FT)	Den Kern von T102 so justieren, daß die gemessene Spannung im signallosen Modus 0V im 300mV Bereich beträgt
	UKW-HF-ABGLEICH					
6	———	Kein Signal	87,50MHz	Zwischen TP1 und Erdung Gleichstrom. Voltmeter schließen.	L4 (Osc. spule)	L4 so justieren, daß die vom Gleichstrom Voltmeter gemessene Spannung 8 ± 0,1V beträgt.

Nr.	FM (UKW)-MESSENDER ANSCHLUSS	FM (UKW)-MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHSPUNKTE	ABGLEICHSVERF AHREN
7	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87,90MHz (400Hz Modulat., 100%)	87,90MHz	Oszilloscop über den Lautsprecher schließen.	L1 (Ant. Spule) L2 (HF Det.) L6 (HF Det.) T101 (IFT)	1. Einen schwachen Eingang geben, bei dem Geräusch in der Ausgangswellenform enthalten wird. 2. So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 3) 3. Die Einstellung von (7) und (8) wiederholen, bis die Frequenz mit der Skala übereinstimmt. 4. Schritt (6) überprüfen und, falls Abweichung vorhanden, L4 erneut justieren.
8		106,10MHz (400Hz Modulat., 100%)	106,10MHz	Oszilloskop über den Lautsprecher schließen.	CT1 (Osc. Trimmer)	
	SIGNALPEGEL ABGLEICH					
9	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen (45dB inden Antenneneingang leiten.)	100,10MHz (400 Hz Modulat., 100%).	100,10MHz	———	VR102	Den einstellbaren Widerstände VR102 so einstellen, daß die fünfte Leuchtdiode (LED) auf leuchtet.
	UKW-STUMMABSTIMMUNGS PEGELANZEIGER					
10	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen (21 dB in den Antenneneingang leiten.)	100,10MHz (400 Hz Modulat., 100%)	100,10 MHz	Oszilloskop oder Wechselstrom-Voltmeter über den Lautsprecher schließen	VR101 (UKW-Muting)	1. Den UKW-Stummabstimm –/Betriebsartenschalter auf "off/mono" stellen. 2. "Muting" Schalter auf "on/FM auto" stellen. VR101 so einstellen, daß der Ausgang under Bewirken der Dämpfung gegeben wird.
	UKW-MPX-PILOTABGLEICH (VCO)					
11	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. (Mono-Signal)	100,10 MHz (Unmodulierte Welle)	100,10 MHz	Den Signalfrequenzmesser durch 100kΩ Wiederstand an Anschluß TP301 anschließen	VR301 (VCO)	1. Den UKW-Stummabstimm –/Betriebsartenschalter auf "on/auto" stellen. 2. VR301 so abgleichen, daß Ausgangsfrequenc von TP301 19 kHz ± 30 Hz
	TRENNUNG-ABGLEICH					
12	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. (Stereo-Pilotsignal 10% moduliert.)	100,10 MHz (400Hz Modulat., 100%) L- oder R-Betriebsart.)	100,10 MHz	Wechselstrom-Voltmeter über den Lautsprecher schleißen.	VR302	1. Den UKW-Stummabstimm –/Betriebsartenschalter auf "on/auto" stellen. 2. VR302 auf minimale Anzeige des R-Ausgangs bei Stereomodulator in L (L-Kanalmodulation) Modus, und auf minimale Anzeige des L-Ausgangs in R-Modus abgleichen.

JUSTIERUNG DES CASSETTENDECKS

• Einstellungen
1. Den Eingangs-Wahlschalter auf "tape" stellen.
2. Den Timer Schalter auf "off" stellen.
3. Den Oszillatorschalter auf "A" stellen.
4. Den Programmwähler (TPS) auf "off" stellen.
5. Den Bandsortenschalter auf "normal" stellen.
6. Den Dolby-Schalter auf "out" stellen.
7. Den Aussteuerungsregler auf "0" stellen.

• Zu verwendende Instrumente und Bänder
1. Elektronisches Wechselstrom-Voltmeter
2. Niederfrequenz-Oszillator
3. QZZCFM
4. Normalband

Nr.	Justierung	Anschlusse des Wechselstrom-Voltmeter	Zu justierender Drehwiderstand	Justiervorgang
13	Kopfwinkel (Kopfazimut)	Linker Kanal zwischen TP803 und TP808 (Erdung)		1. Das Testband (QZZCFM) bei 8 kHz wiedergeben. 2. Die Winkel-Justierschraube so drehen, daß die Ausgangsleistung des rechten Kanals maximal wird. 3. Die Balance zwischen dem linken und rechten Kanal beibehalten. Die Schraube nach der Justierung sichern.
		Rechter Kanal zwischen TP804 und TP808 (Erdung)		
14	Wiedergabepegel	Linker Kanal zwischen TP803 und TP808 (Erdung)	VR803	1. Das Testband (QZZCFM) bei 315 Hz wiedergeben. 2. VR803 (linker Kanal) und VR804 (rechter Kanal) so justieren, daß die Ausgangsspannung 410mV beträgt.
		Rechter Kanal zwischen TP804 und TP808 (Erdung)	VR804	

Nr.	Justierung	Anschlusse des Wechselstrom-Voltmeter	Zu justierender Drehwiderstand	Justiervorgang
15	Aufnahme-Pegelanzeige	———	VR807 (linker Kanal) VR808 (rechter Kanal)	1. Das Testband (QZZCFM) bei 315 Hz wiedergeben. 2. VR807 (linker Kanal) und VR808 (rechter Kanal) so justieren, daß 0 dB der Aufnahmepegelanzeige aufleuchtet.
16	Wiedergabe-Frequenzeigenschaften	Linker Kanal zwischen TP803 und TP808 (Erdung)	VR801	1. Das Testband (QZZCFM) bei 315 Hz (0dB) und 8 kHz (–20 dB) wiedergeben 2. VR801 (linker Kanal) und VR802 (rechter Kanal) so justieren, daß die Ausgangsspannung bei 8 kHz 20 dB (41 mV) niedriger ist, als die Ausgangsspannung bei 315 Hz 3. Den Bandsortenschalter auf "CrO_2" und "Metal" stellen. Anschließend überprufen, daß die Ausgangsspannung bei 8 kHz 24 dB niedriger ist, als die Ausgangsspannung bei 315 Hz.
		Rechter Kanal zwischen TP804 und TP808 (Erdung)	VR802	
17	Aufnahmevor-magnetisierungs-Sperrkreis	Linker Kanal zwischen TP805 und TP809 (Erdung)	L803	1. Das Gerät in den Aufnahmezustand versetzen (Die Wiedergabetaste nicht drücken.) 2. Den Bandsortenschalter auf "Metal" stellen. 3. L803 (linker Kanal) und L804 (rechter Kanal) so justieren, daß die Ausgangsspannung minimal wird. 4 Den Oszillatorschalter auf "B" stellen. L803 und L804 so justieren, daß der Pegel bei A und bei B fast gleich ist.
		Rechter Kanal zwischen TP806 und TP810 (Erdung)	L804	
18	Aufnahme-Vormagnetisierung	Linker Kanal zwischen TP801 und TP807 (Erdung)	VR809	1. Den Bandsortenschalter auf "CrO_2" stellen. 2. VR809 (linker Kanal) und VR810 (rechter Kanal) so justieren, daß die Ausgangsspannung 5,6mV beträgt. 3. Den Oszillatorschalter auf "B" stellen und überprufen, daß die Ausgangsspannung 5,4mV beträgt. 4. Den Oszillatorschalter auf "A" stellen und den Bandwahlschalter auf "normal" und "Metal" umstellen, und anschließend überprüfen, daß die Spannung bei "normal" 3,6 ~ 4,2 mV und bei "Metal" 7,8 ~ 9,6 mV beträgt.
		Rechter Kanal zwischen TP802 und TP807 (Erdung)	VR810	
19	Aufnahmestrom	Linker Kanal zwischen TP803 und TP808 (Erdung)	VR805	1. Das Gerät in den Aufnahmezustand versetzen. (Die Wiedergabetaste nicht drücken.) 2. Den Eingangswahlschalter auf "aux" stellen. 3. Ein 315 Hz-Signal an den "AUX"-Anschluß vom Niederfrequenzoszillator anlegen. 4. Den Oszillator und den Aufnahmepegelregler so einstellen, daß die Ausgangsspannung 410 mV beträgt. 5. Normalbandcassette einlegen und mit der Aufnahme beginnen. (Die Aufnahme- und die Wiedergabetaste drücken.) 6. Anschließend die Aufnahme wiedergeben. VR805 (linker Kanal) und VR806 (rechter Kanal) so justieren, daß die Ausgangsspannung 410 mV beträgt.
		Rechter Kanal zwischen TP804 und TP808 (Erdung)	VR806	
20	Aufwickel-Drehkraft		VR1	1. Testband einlegen. (QZZSRKCT) 2. Das Band zum Bandanfang zurückspulen. 3. Gerät in den Wiedergabezustand versetzen. 4. " ▶ "-Marke des Anzeigers auf der Aufwickelseite ablesen. 5. Wiedergabe/Stopp mehrmals wiederholen und die durchschnittliche Spannung ermitteln. 6. Die normals Aufwickel-Spannung sollte 55g·cm betragen. Falls die Aufwickelspannung nicht innerhalbdieser Grenzen liegt VR1 auf 55g·cm abgleichen.

■ INSTRUCTIONS DE REGLAGE — Français

REGLAGE DE L'AMPLIFICATEUR

1. Réglage de ICQ

① Diminuer au minimum le volume sonore.
② Connecter une charge de 8Ω à la prise du haut-parleur principal ("main").
③ Brancher un voltmètre à C.C. entre TP601 et TP603 (canal de gauche) et TP602 et TP604 (canal de droite).
④ Ajuster VR603 (canal de gauche) et VR604 (canal de droite) de façon à ce que la tension soit de 5mV, à peu près 1 mm, après avoir mis en marche l'alimentation.

2. Réglage de la distorsion (Circuit de réaction linéaire)

① Brancher un voltmètre à C.A. et un distorsiomètre à la prise du haut-parleur principal ("main").
② Appliquer un signal de 500mV 20kHz à la borne "EXT IN".
③ Ajuster le volume sonore de façon à ce que le voltmètre électronique à C.A. indique 17V.
④ Régler VR601 (canal de gauche) et VR602 (canal de droite) de façon à ce que la distorsion soit au minimum.

REGLAGE DE AM

• Réglage et équipement utilisé

1. Voltmètres électronique de courant alternatif et de courant continu (VTVM)
2. Générateur du signal AM (AM-SG)
3. Sélecteur d'entrée sur la position "AM".
4. Placer le sélecteur d'intervalle de fréquence FM/AM sur la position "0.05MHz/9kHz".
5. Conservel la tension du secteur à la tension nominale.
6. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire à obtenir une lecture en sortie.
7. Régler la position de la bobine (L201) de l'antenne en utilisant un tournevis de telle sorte qu'elle soit environ à 45 degrés de la plaue arrière.
8. Utiliser un tournevis non-métallique pour le réglage.

No.	AM GENERATEUR BRANCHEMENT	AM GENERATEUR FREQUENCE	FREQUENCE D'AFFICHAGE PAR PREREGLAGE	PREPARATIONS	ELEMENTS REGLES	PROCEDURE DE REGLAGE
				REGLAGE DE FI-AM		
1	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200pF. Commun au châssis. (Entrées sous puissante)	450kHz (modulé à 30% par 400Hz)	Point sans signal	Brancher un c.a. voltmètre électronique ou un oscilloscope sur les bornes de haut-parleur de l'ampli-tuner	T201 (1 transfo FI) T202 (2 transfo FI)	Régler la fréquence d'entrée et les points de réglage de telle sorte que la sortie devienne maximale
				REGLAGE DE RF-AM		
2	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200pF. Commun au châssis. (Entées faible)	522kHz (modulé à 30% par 400Hz)	522kHz	Brancher le voltmètre à courant continu entre TP201 et la prise de terre.	L202 (Bobine OSC)	Régler L202 de telle sorte que le voltage mesuré par le voltmètre à courant continu, soit de 1.0 ±0.05V.
3		612kHz (modulé à 30% par 400Hz)	612kHz	Brancher un c.a. voltmètre électronique ou un oscilloscope sur les bornes de haut-parleur de l'ampli-tuner	L201 (Bobine Ant.)	1. Régler au maximum de signal de sortie. 2. Régler le noyau ferrite de L201 à l'aide d'un tournevis
4		1503kHz (modulé à 30% par 400Hz)	1503kHz	Brancher un c.a. voltmètre électronique ou un oscilloscope sur les bornes de haut-parleur de l'ampli-tuner	CT201 (Trimmer Ant.)	1. Régler au maximum de signal de sortie. 2. Refaire les étapes (3) et (4) jusqu'à ce que le fréquence s'aligne correctement avec l'affichage du cadran.

REGLAGE DE FM

• Equipment utilisé

1. Générateur du signal FM (FM-SG)
2. Commande de réglage stéréophonique (ou vu-mètre de séparation).
3. Oscilloscope.
4. Voltmètres électronique de courant alternatif et de courant continu (VTVM).
5. Compteur de fréquence (19kHz et 108MHz mesurable).
6. Antenne fictive FM, 300 ohms (Fig. 15)

• Préparation du générateur de signal FM (FM-SG)

1. Brancher la commande de réglage stéréophonique à FM-SG.
2. Alimenter la sortie SG à la borne de l'antenne de l'appariel, par l'antenne fictive FM, 300 ohms.
3. L'entrees standard de l'appareil est de 60dB (1mV), 400Hz 100% de modulation (à cause de l'utilisation de l'antenne fictive, la sortie SG doit être de plus 12 dB (IHF). Ce qui signife que quand l'entrée est de 60dB, la sortie SG doit être de 72dB.)

• Conditions de l'appareil

1. Placer le Sélecteur de réglge silencieux FM/mode FM sur la position "off/mono".
2. Placer le Interrupteur de gamme FM-IF sur la position "normal".
3. Placer le Sélecteur d'entrée sur la position "FM".
4. Placer le Interrupteur de balayage automatique sur la position "off".
5. Les autres réglages sont les mêmes que les réglages de AM

No.	FM GENERATEUR BRANCHEMENT	FM GENERATEUR FREQUENCE	FREQUENCE D'AFFICHAGE PAR PREREGLAGE	PREPARATIONS	ELEMENTS REGLES	PROCEDURE DE REGLAGE
				REGLAGE DE FI-FM		
5	———	Sans Signal	100.10MHz	Brancher le voltmètre électronique à c.c aux bornes TP102 Ⓐ et TP102 Ⓑ (Voir la Fig. 16)	T102 (Transfo FI discri.)	Régler le noyau T102 de telle sorte que le voltage messuré dans le mode sans signal, soit de 0V dans la gamme des 300mV.
				REGLAGE DE RF-FM		
6	———	Sans Signal	87.50MHz	Brancher le voltmetre à courant continu entre TP1 et la prise de terre.	L4 (Bobin Osc.)	Régler L4 de telle sorte que le voltmètre à courant continu soit de 3 ±0.1V

No.	FM GENERATEUR BRANCHEMENT	FM GENERATEUR FREQUENCE	FREQUENCE D'AFFICHAGE PAR PREREGLAGE	PREPARATIONS	ELEMENTS REGLES	PROCEDURE DE REGLAGE
7	Branchez sur la prise d'antenne FM à traves une antenne fictive FM	87.90MHz (modulé à 100% par 400Hz)	87.90MHz	Branchez un oscill-oscope sur les bornes de hautparleur de l'amplituner.	L6 (Détecteur) L2 (Détecteur) L1 (Bobin Ant.) T1 (Transfo FI)	1. Appliquer une entrées faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie. 2. Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 17) 3. Refaire les réglages (7) et (8) jusqu'à ce que la fréquence corresponde correctement avec l'échells du cadran. 4. Vérifier l'étape (6) et si elle est déviée règler à nouveau
8		106.10MHz (modulé à 100% par 400Hz)	106.10MHz	Branchez un oscill-oscope sur les bornes de hautparleur de l'amplituner.	CT1 (Trimmer Osc.)	
	INDICATEUR DE SIGNAL					
9	Branchez sur la prise d'antenne FM à travers une antenne fictive FM (Appliquer 45dB à la borne de l'antenne.)	100.10MHz (modulé à 100% par 400 Hz)	100.10MHz	———	VR102	Régler la VR102 de telle sorte que la 5ème LED s'allume.
	REGLAGE DU SEUIL DU SILENCIEUX D'ACCORD					
10	Branchez sur la prise d'antenne FM à travers une antenne fictive FM (Appliquer 21 dB à la borne de l'antenne.)	100.10MHz (modulé à 100% par 400Hz)	100.10MHz	Branchez un oscill-oscope sur les bornes de hautparleur de l'amplituner.	VR101	1. Placer le sélecteur de réglage silencieux de FM/mode FM sur "off/mono". 2. Avec le sélecteur de mode/réglage silencieux FM réglé sur la position "on/auto", régler le VR101 de telle sorte que la sortie fournie avec le réglage silencieux en position déclenchée.
	REGLAGE (VCO) PILOTE MULTIPLEX FM					
11	Branchez sur la prise d'antenne FM à travers une antenne fictive FM (Signal monoscous-tique).	100.10MHz (Non modulé)	100.10MHz	Brancher le compteur de fréquences à la borne TP301 par l'intermédiaire d'une résistance de 100kΩ	VR301 (VCO)	1. Placer le sélecteur de réglage silencieux de FM/mode FM sur "on/auto". 2. Régler VR301 de telle sorte que la fréquence de sortie de TP301 soit de 19 kHz ± 30Hz
	REGLAGE DE LA SEPARATION DES CANAUX					
12	Branchez sur la prise d'antenne FM à travers une antenne fictive FM (Signal stéréo pilote à 10% de modulation)	100.10MHz (modulé à 100% par 400Hz) (Mode G ou D.)	100.10MHz	Branchez un oscill-oscope sur les bornes de hautparleur de l'amplituner.	VR302	1. Placer le sélecteur de réglage silencieux de FM/mode FM sur "on/auto". 2. Régler VR302 de telle sorte que la sortie droite soit minimale quand la commande d'accord stéréophonique est dans le mode gauche (modulation du canal gauche) et que la sortie gauche soit minimale dans mode droit

REGLAGE DE LA PLATINE POUR CASSETTE

*** Réglages**
1. Régler le Sélecteur d'entrée sur "tape".
2. Régler le commutateur de minuterie sur "off".
3. Régler le Interrupteur d'annulation de battements sur "A".
4. Régler le commutateur Sélecteur de programme de bande sur "off".
5. Régler le Sélecteur de band magnétique sur "normal"
6. Régler le Interrupteur de réduction de bruit Dolby sur "out"
7. Régler le Commande du niveau d'enregistrement sur "0".

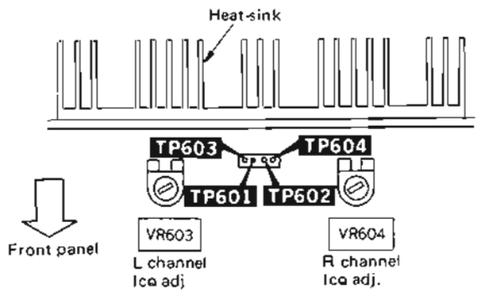
*** Appareils et bande utilisée**
1. Voltmètre électronique à C.A.
2. Oscillateur à basses fréquences
3. QZZCFM
4. Bande ordinaire

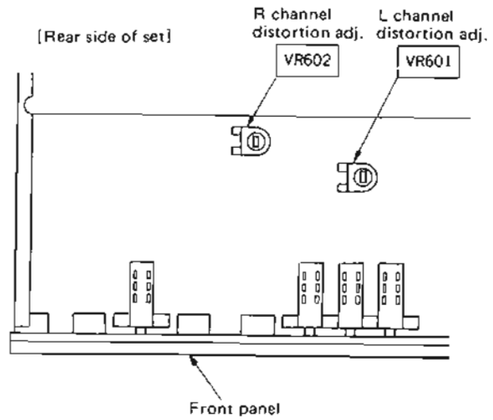
	Mise au point	Branchements du voltmètre C.A.	VR ajusté	Procédure de mises au point
13	Angle de la tête (azimuth de la tête)	Canal de gauche entre TP803 et TP808 (terre) Canal de droite entre TP804 et TP808 (terre)		1. Faire jouer la bande d'essai (QZZCFM) sur 8 kHz. 2. Tourner la vis de réglage d'angle de façon à ce que la sortie sur le canal de droite devienne maximale 3. Maintenir l'équilibrade entre les canaux de droite et de gauche. Bloquer la vis après la mise au point

Step No.	Mise au point	Branchements du voltmètre C.A.	VR ajusté	Procédure de mises au point
14	Niveau de lecture	Canal de gauche entre TP803 et TP808 (terre)	VR803	1. Faire jouer la bande d'essai (QZZCFM) sur 315 Hz. 2. Ajuster VR803 (canal de gauche) et VR804 (canal de droite) de façon à ce que la tension de sortie soit de 410 mV.
		Canal de droite entre TP804 et TP808 (terre)	VR804	
15	Indicateur du niveau d'enregistrement	———	VR807 (Canal de gauche) VR808 (Canal de droite)	1. Faire jouer la bande d'essai (QZZCFM) sur 315 Hz. 2 Ajuster VR807 (canal de gauche) et VR804 (canal de droite) de façon à ce que 0 dB de l'indicateur de niveau d'enregistrement s'éclaire.
16	Caractéristique de fréquence de lecture	Canal de gauche entre TP803 et TP808 (terre)	VR801	1. Faire jouer la bande d'essai (QZZCFM) sur 315 Hz, (0 dB) et 8 kHz (−20 dB). 2. Ajuster VR801 (canal de gauche) et VR802 (canal de droite) de façon à ce que la tension de sortie à 8 kHz soit de 20 dB (41 mV) plus basse que la tension de sortie à 315 Hz. 3. Régler le Sélecteur de band magnetique sur "CrO_2" et "Metal". Puis, s'assurer que la tension de sortie à 8 kHz soit de 24 dB plus basse que la tension de sortie à 315 Hz.
		Canal de droite entre TP804 et TP808 (terre)	VR802	
17	Eliminateur de polarisation d'enregistrement	Canal de gauche entre TP805 et TP809 (terre)	L803	1. Régler l'appareil sur le mode d'enregistrement. (Ne pas appuyer sur la touche de lecture.) 2. Régler le Sélecteur de band magnétique sur "Metal". 3. Ajuster L803 (canal de gauche) et L804 (canal de droite) de façon à ce que la tension de sortie soit diminuée au minimum. 4. Régler le Interrupteur d'annulation de battements sur "B". Ajuster L803 et L804 de façon à ce que les niveaux de A et B soient presque égaux.
		Canal de droite entre TP806 et TP810 (terre)	L804	
18	Polarisation d'enregistrement	Canal de gauche entre TP801 et TP807 (terre)	VR809	1. Régler le Sélecteur de band magnétique sur "CrO_2". 2. Ajuster VR809 (canal de gauche) et VR810 (canal de droite) de façon à ce que la tension de sortie soit de 5,6 mV. 3. Régler le Interrupteur d'annulation tements sur "B", et s'assurer que la tension de sortie soit de 5,4 mV. 4. Régler le Interrupteur d'annulation de battements sur "A", decaler le commutateur sélecteur de bande sur "normal" et "Metal", puis vérifier la tension pour observer si elle est de 3,6 ~ 4,2 mV à "normal" et de 7,8 ~ 9,6 mV à "Metal".
		Canal de droite entre TP802 et TP807 (terre)	VR810	
19	Courant de l'enregistrement	Canal de gauche entre TP803 et TP808 (terre)	VR805	1. Régler l'appareil sur le mode d'enregistrement. (Ne pas appuyer sur la touche de lecture.) 2. Régler le Sélecteur d'entrée sur "aux". 3. Appliquer un signal de 315 Hz à la borne de "AUX" au moyen de l'oscillateur à basses fréquences. 4. Ajuster le volume du niveau d'enregistrement et l'oscillateur de façon à ce que la tension de sortie soit de 410 mV. 5. Introduire une bande normale et commencer l'enregistrement. (Appuyer à la fois sur les touches d'enregistrement et de lecture.) 6. Ensuite, faire jouer la bande enregistrée. Ajuster VR805 (canal de gauche) et VR806 (canal de droite) de façon à ce que la tension de sortie soit de 410 mV.
		Canal de droite entre TP804 et TP808 (terre)	VR806	
20	Couple-d'enroulement	———	VR1	1. Insérer la bande d'essai (QZZSRKCT). 2. Rembobiner la bande à son point de départ. 3. Régler le commutateur sur "Play" (lecture) 4. Lire " ▶ " indiqué sur l'indicateur de côte de l'enrouleur 5. Répéter plusieurs fois le mode d'Audition/Arrêt et lire la tension moyenne 6. La tension normale d'enroulement devra être de 55 g. cm. Si la tension d'enroulement n'est pas en deçà de ces limites, régler VR1 sur 55 g.cm.

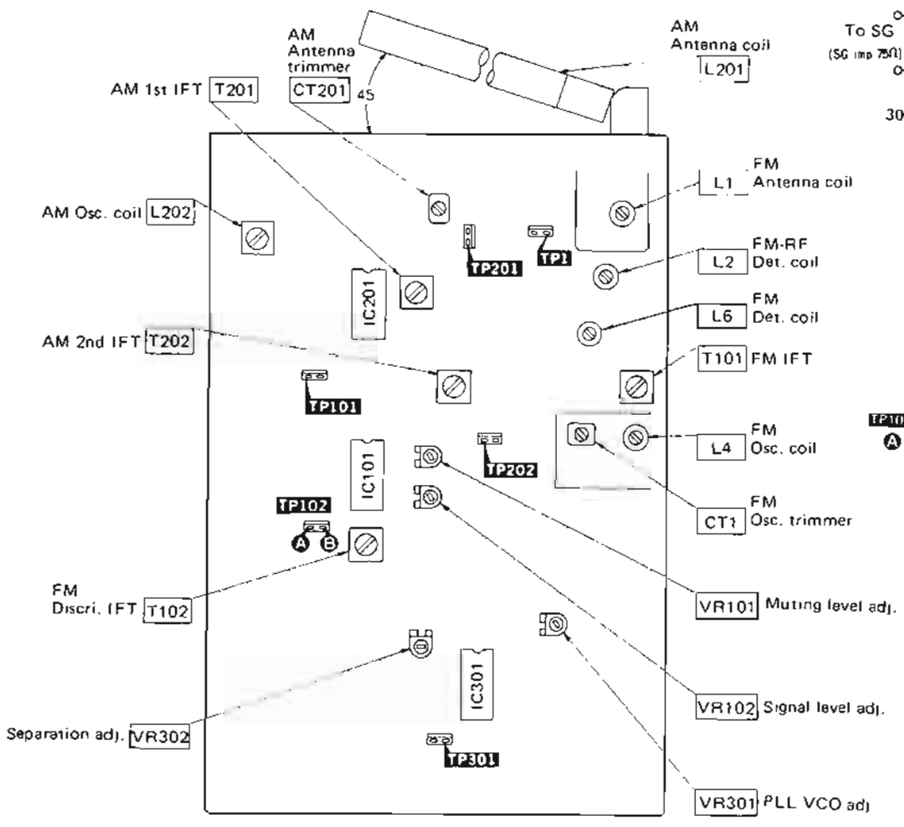
■ ADJUSTMENT POINTS

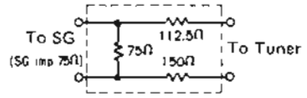
• Amplifier adjustment





• FM/AM tuner adjustment





300Ω FM Dummy antenna
Fig. 15
Abb. 1

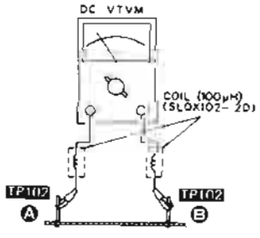
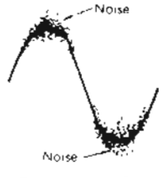


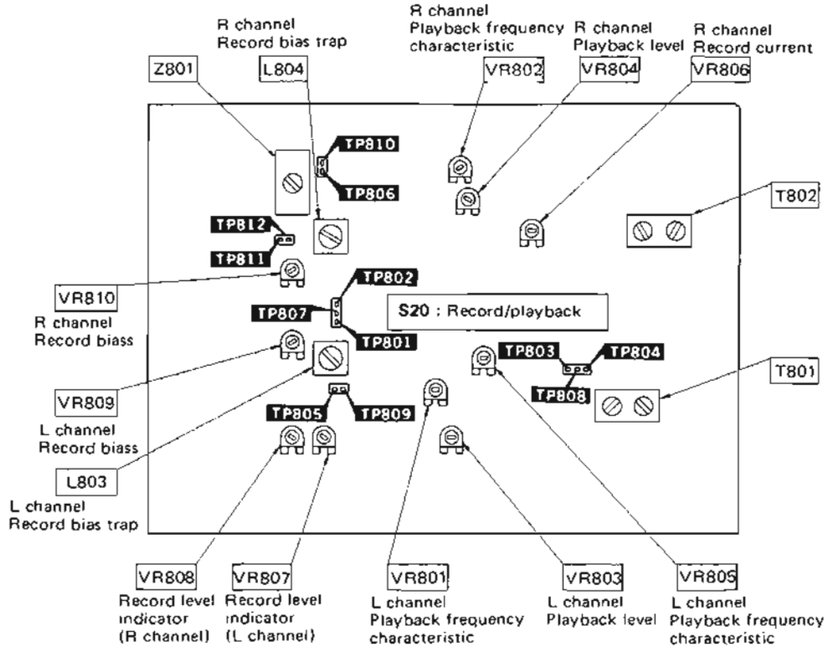
Fig. 16
Abb. 2

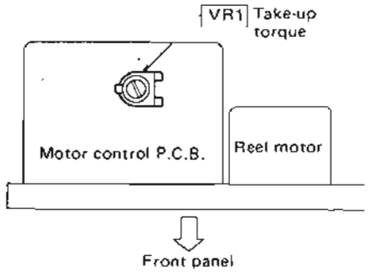


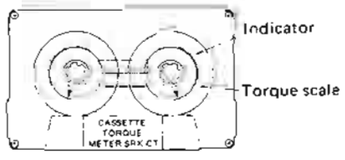
AF output waveform
Fig. 17
Abb. 3

• Cassette deck adjustment

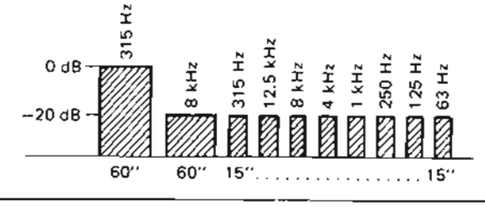
Z801, T801 and T802 have been already adjusted.
So, do not turn the core.







QZZSRKCT

Frequency level	Constructions
315 Hz . . . . . 0 dB 8 kHz. . . . . −20 dB 12.5 kHz ~ 63 Hz. . . . . −20 dB Time constant . . . 120μS ~ 3180μS Rec time . . . . . 4 min	

QZZCFM

■ REPLACEMENT PARTS LIST...Electric Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC1		SVIUPB653AC	IC, FM Pre-Scaler
IC2		SVID1703C016	IC, Frequency Synthesizer PLL
IC101		SVILA1231NS	IC, FM IF Amp & FM Detector
IC102		AN6876	IC, Signal Meter LED Driver
IC201		SVIUPC1018CF	IC, FM IF Amp. & AM Converter
IC301		SVIUPC1161C	IC, FM MPX
IC401		SVINJM4559DD	IC, Equalizer Amplifier
IC501		AN6553	IC, Mic & Mixing Amplifier
IC601, 602		AN7060F	IC, Differential Amplifier
IC701		SVITA7317P	IC, Latch and Regulator
IC801, 802		SVINE6468	IC, Dolby
IC803		AN6553	IC, Recording & Meter Amplifier
IC804		SVIHA12024	IC, TPS & LED Driver
IC805, 806		SVIHA12019	IC, Recording & LED Driver
IC807		AN6251	IC, Logic Control
IC808		SVIM53206P	IC, Invert
IC809		DN6838	IC, Stop Control
TRANSISTORS			
Q1		2SK195–H1	Transistor, FM RF Amplifier
Q2		2SC2377–C	Transistor, FM Mixer
Q3, 4, 14, 201		2SC2206–B	Transistor, FM Oscillator & Buffer AM Signal Meter Amplifier
Q5 ~ 7		2SD637	Transistor, Loop Filter
Q8, 15, 16		2SB641	Transistor, Switching
Q9 ~ 13		2SB642	Transistor, FL Meter Driver
Q101 ~ 103 202, 303		2SD636	Transistor, Switching
Q301		2SB641	Transistor, Mute Switch
Q307, 308		2SD661–S	Transistor, AM Amplifier & Mute Switch
Q401 ~ 404		2SK170–GR	Transistor, Equalizer Amplifier
Q405, 406 605, 606		2SD661–S	Transistor, MIC Amplifier & Bias
Q601, 602		2SA1124–R	Transistor, Pre Driver
Q603, 604		2SC2632–R	Transistor, Regulator
Q607, 608		2SC1980–T	Transistor, Pre Driver Pair
Q609, 610		2SA921–T	Transistor, Pre Driver Pair
Q611, 612		2SD661–S	Transistor, Bias Pair
Q613, 614		2SB745–S	Transistor, Bias Pair
Q615, 616		**2SC1567–Q**	Transistor, Driver Pair
Q617, 618		**2SA794–Q**	Transistor, Driver Pair
Q619, 620		2SD718–O	Transistor, Power Amplifier Pair
Q621, 622		2SB688–O	Transistor, Power Amplifier Pair
Q701, 702		2SC1845	Transistor, Regulator
Q703		2SA1015–Y	Transistor, Halld
Q704		2SC1815–Y	Transistor, Halld
Q705		2SD592ANC–Q	Transistor, Latch
Q706		2SD762–O	Transistor, Latch
Q707		2SD793–P	Transistor, Latch
Q801 ~ 804 811, 812		2SD661–S	Transistor, Playback Amplifier & Recording Amplifier
Q805 ~ 810, 814 815, 817 ~ 819 821 ~ 824 826 ~ 829, 831 832, 841 ~ 843 845, 847 849 ~ 851, 853 859, 855 ~ 857		2SD636	Transistor, Switching & Rec Mute Recording Amp & TPS Control Plunger Driver
Q813, 834, 858		2SD793–P	Transistor, Latch
Q816, 820, 825		2SB641	Transistor, Switching
Q830, 833		2SD592ANC–Q	Transistor, Plunger Driver
Q835 ~ 837		2SA1015–Y	Transistor, Motor Control
Q838 ~ 840, 848		2SC1815–Y	Transistor, Motor Control
Q844, 852		2SA715–D	Transistor, Switching
Q846, 854		**2SB621–PQR**	Transistor, Switching

Ref. No.		Part No.	Part Name & Description
DIODES			
D1 ~ 3, 15		MA320G1–N	Diode, FM Variable Capacitor
D4 ~ 14, 17		**MA162A**	Diode, Switching
D15		**RVDRD6R2EB**	Diode, 6.2V Zener
D101 ~ 103, 110 202, 206, 301, 302, 305 ~ 308 310 ~ 312		**MA162A**	Diode, Switching
D104 ~ 106, 107 108		LN410YP	Light, Emitting Diode, Signal Meter
D109, 309		SVDTLR205	Light, Emitting Diode, Quartz Indicator & Stereo Indicator
D201		SVDBB113	Diode, AM Variable Capacitor
D203 ~ 205		**20A90**	Diode, AM Detector
D303		SVDMZ324	Diode, 24V Zener
D304		**RVDRD6R2EB**	Diode, 6.2V Zener
D603, 604 703 ~ 705		**MA162A**	Diode, Switching
D605 ~ 612		**20A90**	Diode, Synchronous, Bias
D615		**RVDRD6R2EB**	Diode, 6.2V Zener
D701, 702		**MA162A**	Diode, Switching
D706	⚠	SVD4D4B41	Rectifier
D707, 708		SVDRD16E8	Diode, 16V Zener
D709	⚠	**RVD10DC4**	Rectifier
D710	⚠	**RVD10DC4R**	Rectifier
D713 ~ 715, 719		SVDSR1K2	Rectifier
D716		SVDMZ333B	Diode, 33V Zener
D717		MA1150A	Diode, 15V Zener
D718		SVDMZ324	Diode, 24V Zener
D801 ~ 804, 827 830, 832		**2–0A99**	Diode, Switching
D810, 811, 813 816, 824 ~ 826 828, 829, 834		**20A90**	Diode, Switching
D805		LN513YA	Diode, TPS Display
D806		MA1150A	Diode, 15V Zener
D808, 809, 812 814, 815, 822 823, 835, 836		**MA162A**	Diode, Switching
D817, 818		SVDSR1K2	Rectifier
D819		**RVDRD12FB**	Diode, 12V Zener
D820		LN221RP	Light Emitting Diode, Rec Indicator
D821		LN321GP	Light Emitting Diode, Play Indicator
D837		SVD05Z5.6Z	Diode, 5.6V Zener
COILS and TRANSFORMERS			
L1		SLAK4N2	Coil, FM Antenna
L2		SLDK4N2	Coil, FM-RF Detector
L3		**RLQY15G5–O**	Coil, Choke
L4		SLOK4N2	Coil, FM Local Oscillator
L6		SLDK4N3	Coil, FM-RF Detector
L101		SLQX180–5M	Coil, Choke
L201		SLFK2D2	Coil, MW Antenna
L202		SLO2C27–1	Coil, MW Oscillator
L301		SLMA1/3...Z	Filter
L601, 602		SLQY15G...3F	Coil, Choke
L801, 802		QLQX2422M	Coil, Choke
L803, 804		QLH2008	Coil, Choke
T101		SLI4C109	Transformer, FM-Discriminator
T102		SLI4C509–P	Transformer, FM IF
T201		SLI2C127	Transformer, AM IF
T202		SLI2C413R	Transformer, AM IF
T701	⚠	SLTK5Q2–W	Transformer, Power Source
T801, 802		SLMK122–M	Low Pass Filter
CERAMIC FILTERS			
CF101, 102		SVFE107MM–A	Ceramic Filter, FM-IF 10.7MHz Red
CF103, 104		SVFE107MZ2–A	Ceramic Filter, FM-IF 10.7MHz Red
CF201		SVFSFP450HT	Ceramic Filter, AM-IF 450 kHz

Ref. No.		Part No.	Part Name & Description
VARIABLE RESISTORS			
VR1		EWGGPA066G15	MIC Mixing Control, 100kΩ (G)
VR2		EWI8VAF22873	Volume, 250kΩ Balance Control, 125kΩ (G)
VR3		EWGGP0066C15	Treble Control, 100kΩ (C)
VR4		EWGGPY066530	Bass Control, 100kΩ (C)
VR5		EWJSBAF25A24	Recording Level Control, 20kΩ (A)
VR101, 102		**EVNM4AA00B54**	Quartz Lock & Tuning Level Adjustment, 50kΩ (B)
VR301		**EVTS3MA00B53**	PLL, VCO Adjustment, 5kΩ (B)
VR302		EVNM4AA00B55	Separation Adjustment, 500kΩ (B)
VR601, 602		**EVNM4AA00B13**	DC, Balance Adjustment, 1kΩ (B)
VR603, 604		**EVNM4AA00B53**	ICQ, Adjustment, 5kΩ (B)
VR801 ~ 804		**EVNM4AA00B24**	Playback, Signal & Level Meter Adjustment, 20kΩ (B)
VR805, 806		**EVNM4AA00B14**	Recording Current, Adjustment, 10kΩ (B)
VR807 ~ 810		**EVNM4AA00B54**	LED Level Meter & Recording Bias Adjustment, 50kΩ (B)
VARIABLE CAPACITORS			
CT1, 201		SVC1Y1218269	Tuning, Gang, FM/AM (With Trimmer)
COMPONENT COMBINATIONS			
Z1		EXRP222K102S	C–R, Combination, 1kΩ, 0.022μF
Z2		EXBP84333K	C–R, Combination, 33kΩ (x 4)
Z3		EXFP5331MW	C–C, Combination, 330pF (x 5)
Z4		EXBP87104K	R–R, Combination, 100kΩ (x 7)
Z5		EXBP85104K	R–R, Combination, 100kΩ (x 5)
Z6, 7		EXFP7331MW	C–C, Combination, 330pF (x 7)
Z101		EXF3SL04C	C–C, Combination, 0.01μF (x 3)
Z102		EXF3Y101C	C–C, Combination, 0.01μF (x 3)
Z201		EXRF203Z471S	C–R, Combination, 470Ω, 0.01μF
Z701		SXRFS203ZSM	C–C, Combination, 0.01μF (x 2)
Z801		SLOK9Z1–M	Component Combination, OSC Block
Z802		EXBT47471K	R–R, Combination, 470Ω (x 7)
Z803		EXBP86562K	R–R, Combination, 5.6kΩ (x 6)
Z804		EXBT46101K	R–R, Combination, 100Ω (x 6)
Z805, 806		EXF3YL01C	C–C, Combination, 0.01μF (x 3)
FUSES			
F1	⚠	XBA2C40TRO	Fuse, 4A (250V)
F2	⚠	XBA2C20TRO	Fuse, 2A (250V)
F3, 4	⚠	XBA2C10TRO	Fuse, 1A (250V)

Ref. No.		Part No.	Part Name & Description
FLUORESCENT DISPLAY TUBES			
FL1		SAD8T05A2	Fluorescent Display Tube
FL801		SAD8G38A2	Recording Level Display
LAMPS			
PL101		SAMR68S8	Lamp, New Class A Indicator (8V, 0.07A)
PL901		SWL71	Lamp, Power Indicator (7.5V, 0.75A)
THERMISTERS			
TH601, 602		SVTD07HL103S	Thermister, Thermal Compensation, 10kΩ
CRYSTAL			
X1		SVQ43U452	Crystal, 4.5 MHz, Counter Oscillator
RELAY			
RLY701	⚠	SVY91	Relay, Muting & Protection
SWITCHES			
S1 ~ 10		SSG1	FM/AM Preset Tuning & Up/Down Memory Switch
S11-1 ~ 11-4		SSRK10	Switche, Input Selector
S11-5 ~ 11-8		SSFK2	Switche, Selector
S12		SSG1	Switche, TPS Set
S13 ~ 19		SSG1	Switche, Rec, Rew, Stop, Play, ff, Pause, Rec Mute
S20		SSSK2	Switche, Plunger
S21		SSSK3	Switche, Timer Rec/Play
S22		SSSK4	Switche, AM Beat Proof
S23		SSHK4	Switche, TPS
S24		SSHK3	Switche, Dolby NR
S25, 26		SSHK14	Switche, Auto Scan, FM Muting
S27		SSFK3	Switche, FM IF Band
S28		SSHK12	Switche, Loudness
S29		SSRK8	Switche, Tape Selector
S30	⚠	ESB30619S	Switche, Power Source
S31		SSFK1	Switche, Speakers Selector
S34		SSS43	Switche, FM/AM Allocation
S35	⚠	ESE37200	Switche, Voltage Adjuster

• Resistors and capacitors

Ref. No.		Part No.	Part Name & Description
RESISTORS			
R1		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R2		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R3, 4		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R5		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R6		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R7		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R8		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R9		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R10		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R11		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ± 5%
R12		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R13		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R14		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
R15		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R16		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R17		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R18		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R19		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R20		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R21		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R22		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R23		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R24		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R25		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R26		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R27		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R28, 29		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%

Ref. No.		Part No.	Part Name & Description
R30, 31		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R32		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R33		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R34		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R35		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R36		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R37		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R38		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R39		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R40		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R41		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R101		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R102		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ± 5%
R103		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R104		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R105		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R106		**ERD25TJ684**	Carbon, 1/4W, 680kΩ, ± 5%
R107		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R108		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R109		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R110		**ERD25TJ183**	Carbon, 1/4W, 18kΩ, ± 5%
R111		**ERD25FJ820**	Carbon, 1/4W, 82Ω, ± 5%
R112		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R113		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R115		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R117		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R118		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%

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Ref. No.		Part No.	Part Name & Description			
R119		ERD25TJ333	Carbon,	1/4W	33kΩ,	± 5%
R120, 121		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R122		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R123		ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%
R124		ERD25TJ104	Carbon,	1/4W,	100kΩ,	± 5%
R126		ERD25FJ272	Carbon,	1/4W,	2.7kΩ,	± 5%
R201		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R202		ERD25TJ104	Carbon,	1/4W,	100kΩ	± 5%
R203		ERD25FJ102	Carbon,	1/4W	1kΩ	± 5%
R204		ERD25TJ104	Carbon,	1/4W	100kΩ,	± 5%
R206		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R207		ERD25TJ684	Carbon,	1/4W	680kΩ,	± 5%
R208		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R209		ERD25FJ391	Carbon,	1/4W,	390Ω	± 5%
R210		ERD25TJ563	Carbon,	1/4W	56kΩ,	± 5%
R211		ERD25TJ184	Carbon,	1/4W,	180kΩ	± 5%
R212		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R213		ERD25FJ472	Carbon,	1/4W	4.7kΩ,	± 5%
R214		ERD25TJ684	Carbon	1/4W	680kΩ,	± 5%
R215		ERD25TJ563	Carbon,	1/4W,	56kΩ,	± 5%
R217		ERD25TJ273	Carbon,	1/4W,	27kΩ,	± 5%
R218		ERD25FJ182	Carbon,	1/4W,	1.8kΩ	± 5%
R219		ERD25TJ223	Carbon,	1/4W,	22kΩ	± 5%
R220		ERD25TJ104	Carbon	1/4W,	100kΩ	± 5%
R223		ERD25FJ103	Carbon	1/4W,	10kΩ,	± 5%
R224		ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%
R301		ERD25FJ101	Carbon,	1/4W	100Ω	± 5%
R302		ERD25TJ104	Carbon,	1/4W	100kΩ,	± 5%
R303		ERD25FJ103	Carbon,	1/4W,	10kΩ	± 5%
R304		ERD25FJ221	Carbon,	1/4W,	220Ω	± 5%
R305, 306		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R307, 308		ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%
R309, 310		ERD25FJ332	Carbon	1/4W	3.3kΩ,	± 5%
R317		ERD25TJ333	Carbon,	1/4W,	33kΩ	± 5%
R318		ERD25TJ104	Carbon	1/4W,	100kΩ,	± 5%
R319, 320		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R321		ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%
R322		ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%
R323, 324		ERD25FJ102	Carbon,	1/4W	1kΩ,	± 5%
R325		ERD25FJ562	Carbon,	1/4W	5.6kΩ	± 5%
R326		ERD25FJ561	Carbon,	1/4W	560Ω	± 5%
R327, 328		ERD25TJ273	Carbon,	1/4W,	27kΩ	± 5%
R329	Δ	ERD50FJ121	Carbon,	1/2W,	120Ω,	± 5%
R330		ERD25FJ122	Carbon,	1/4W	1.2kΩ,	± 5%
R331		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R332		ERD25FJ102	Carbon	1/4W,	1kΩ	± 5%
R333		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R334, 335		ERD25FJ331	Carbon,	1/4W	330Ω	± 5%
R336, 337		ERD25TJ333	Carbon	1/4W,	33kΩ,	± 5%
R401, 402		ERD25TJ473	Carbon	1/4W	47kΩ,	± 5%
R403, 404		ERD25TJ220	Carbon	1/4W,	22Ω,	± 5%
R405, 406		ERD25FJ391	Carbon,	1/4W	390Ω	± 5%
R407, 408		ERD25FJ472	Carbon,	1/4W	4.7kΩ	± 5%
R409, 410		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R411, 412		ERD25FJ472	Carbon,	1/4W	4.7kΩ,	± 5%
R413, 414		ERD25FJ221	Carbon	1/4W,	220Ω	± 5%
R417, 418		ERD25FJ562	Carbon,	1/4W,	5.6kΩ,	± 5%
R419, 420		ERD25FJ121	Carbon,	1/4W,	120Ω,	± 5%
R421, 422		ERD25FJ561	Carbon,	1/4W,	560Ω,	± 5%
R423, 424		ERD25TJ334	Carbon,	1/4W,	330kΩ,	± 5%
R425, 426		ERD25FJ121	Carbon,	1/4W,	120Ω,	± 5%
R427		ERD25TJ333	Carbon,	1/4W,	33kΩ,	± 5%
R428		ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%
R429		ERD25TJ823	Carbon,	1/4W,	82kΩ	± 5%
R430		ERD25FJ471	Carbon	1/4W,	470Ω,	± 5%
R431		ERD25TJ333	Carbon,	1/4W,	33kΩ	± 5%
R432		ERD25FJ471	Carbon,	1/4W	470Ω	± 5%
R433		ERD25TJ154	Carbon	1/4W,	150kΩ,	± 5%
R434		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R435	Δ	ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%
R436		ERD25FJ682	Carbon,	1/4W,	6.8kΩ,	± 5%
R437, 438		ERD25TJ104	Carbon,	1/4W,	100kΩ,	± 5%
R503, 504		ERD25TJ273	Carbon,	1/4W,	27kΩ,	± 5%
R505, 506		ERD25TJ273	Carbon,	1/4W,	27kΩ,	± 5%
R507, 508		ERD25TJ273	Carbon,	1/4W	27kΩ,	± 5%
R509, 510		ERD25TJ104	Carbon,	1/4W,	100kΩ	± 5%
R511, 512		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R513, 514		ERD25TJ823	Carbon,	1/4W,	82kΩ,	± 5%
R515, 516		ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%
R517, 518		ERD25TJ104	Carbon,	1/4W,	100kΩ	± 5%

Ref. No.		Part No.	Part Name & Description			
R519, 520		ERD25TJ333	Carbon	1/4W,	33kΩ,	± 5%
R521, 522		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R523, 524		ERD25TJ154	Carbon,	1/4W,	150kΩ	± 5%
R525, 526		ERD25TJ333	Carbon,	1/4W	33kΩ,	± 5%
R601, 602		ERD25TJ104	Carbon	1/4W,	100kΩ,	± 5%
R603, 604		ERD25FJ102	Carbon	1/4W,	1kΩ,	± 5%
R605, 606		ERD25TJ823	Carbon,	1/4W,	82kΩ,	± 5%
R607, 608		ERD25FJ332	Carbon	1/4W,	3.3kΩ	± 5%
R611, 612		ERD25FJ821	Carbon,	1/4W,	820Ω,	± 5%
R613, 614		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R615, 616		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R617, 618		ERD25FJ561	Carbon,	1/4W,	560Ω,	± 5%
R619, 620		ERD25TJ393	Carbon,	1/4W,	39kΩ,	± 5%
R621, 622		ERD25TJ393	Carbon,	1/4W,	39kΩ,	± 5%
R623, 624		ERD25TJ123	Carbon,	1/4W,	12kΩ,	± 5%
R627, 628		ERD25FJ821	Carbon,	1/4W,	820Ω,	± 5%
R629, 630	Δ	ERD25FJ101	Carbon,	1/4W,	100Ω,	± 5%
R631, 632	Δ	ERD25FJ560	Carbon	1/4W,	56Ω,	± 5%
R633, 634	Δ	ERD25FJ820	Carbon,	1/4W,	82Ω,	± 5%
R635, 636		ERD25TJ563	Carbon,	1/4W,	56kΩ,	± 5%
R637, 638	Δ	ERD25FJ152	Carbon,	1/4W	1.5kΩ,	± 5%
R639, 640	Δ	ERD25FJ820	Carbon,	1/4W	82Ω,	± 5%
R641, 642	Δ	ERD25FJ101	Carbon,	1/4W,	100Ω,	± 5%
R643		ERG1ANJ472	Metal Oxide	1W,	4.7kΩ,	± 5%
R645, 646		ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%
R647, 648		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R649, 650	Δ	ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R651, 652		ERD25FJ182	Carbon,	1/4W,	1.8kΩ,	± 5%
R653, 654	Δ	ERD25FJ392	Carbon,	1/4W,	3.9kΩ	± 5%
R655, 656		ERD25FJ182	Carbon,	1/4W,	1.8kΩ	± 5%
R657, 658	Δ	ERD25TJ223	Carbon,	1/4W	22kΩ,	± 5%
R659, 660	Δ	ERD25TJ223	Carbon,	1/4W,	22kΩ	± 5%
R661, 662	Δ	ERD25FJ151	Carbon	1/4W,	150Ω,	± 5%
R663, 664	Δ	ERD25FJ3R3	Carbon,	1/4W,	3.3Ω,	± 5%
R665, 666	Δ	ERD25FJ3R3	Carbon	1/4W,	3.3Ω,	± 5%
R667, 668		ERX3ANJR33	Metal Film,	3W	0.33Ω,	± 5%
R669, 670		ERX3ANJR33	Carbon,	3W,	0.33Ω,	± 5%
R671, 672		ERG1ANJ100	Metal Oxide,	1W,	10Ω	± 5%
R673, 674		ERX1ANJ6R8	Metal Film	1W	6.8Ω,	± 5%
R675, 676		ERG1ANJ331	Metal Oxide	1W,	330Ω,	± 5%
R677, 678		ERD25FJ470	Carbon,	1/4W	47Ω,	± 5%
R701, 702	Δ	ERD25FJ391	Carbon	1/4W,	390Ω,	± 5%
R703, 704		ERD25TJ104	Carbon	1/4W,	100kΩ	± 5%
R705, 706	Δ	ERD25FJ272	Carbon,	1/4W	2.7kΩ,	± 5%
R707, 708		ERD25TJ104	Carbon,	1/4W,	100kΩ,	± 5%
R709		ERD25TJ224	Carbon	1/4W,	220kΩ,	± 5%
R710		ERD25TJ333	Carbon,	1/4W,	33kΩ,	± 5%
R711		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R712		ERD25TJ154	Carbon,	1/4W,	150kΩ	± 5%
R713		ERD25TJ153	Carbon,	1/4W	15kΩ,	± 5%
R714		ERG2ANJ681	Metal Oxide	2W,	680Ω,	± 5%
R715		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R716		ERD25FJ822	Carbon,	1/4W,	8.2kΩ,	± 5%
R717		ERD25TJ473	Carbon,	1/4W,	47kΩ	± 5%
R718		ERD25FJ103	Carbon	1/4W,	10kΩ	± 5%
R719		ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%
R720		ERD25TJ333	Carbon,	1/4W,	33kΩ,	± 5%
R721, 722		ERG1ANJ102	Metal Oxide,	1W	1kΩ	± 5%
R724	Δ	ERD50FJ820	Carbon,	1/2W	82Ω,	± 5%
R725	Δ	ERD50FJ220	Carbon	1/2W,	22Ω,	± 5%
R726		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R727		ERX1ANJ2R2	Metal Film,	1W	2.2Ω,	± 5%
R728		ERD25FJ332	Carbon,	1/4W	3.3kΩ,	± 5%
R729	Δ	ERQ1CJ220	Fuse Type Metallic	1W,	22Ω,	± 5%
R730		ERD25FJ332	Carbon,	1/4W	3.3kΩ	± 5%
R731	Δ	ERD25FJ100	Carbon	1/4W	10Ω,	± 5%
R732		ERX1ANJ4R7	Metal Film	1W	4.7Ω	± 5%
R733	Δ	ERD50FJ180	Carbon	1/2W,	18Ω	± 5%
R734	Δ	ERQ12HKR22	Fuse Type Metallic	1/2W,	0.22Ω	± 10%
R801, 802		ERD25FJ100	Carbon,	1/4W,	10Ω	± 5%
R803, 804		ERD25TJ333	Carbon,	1/4W,	33kΩ	± 5%
R805, 806		ERD25FJ151	Carbon	1/4W,	150Ω	± 5%
R807, 808		ERD25FJ151	Carbon	1/4W,	150Ω,	± 5%
R809, 810		ERO25CKF1503	Metal Film,	1/4W,	150kΩ,	± 1%
R811, 812		ERD25TJ334	Carbon,	1/4W,	330kΩ,	± 5%
R813, 814		ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%
R815, 816		ERD25FJ822	Carbon	1/4W,	8.2kΩ,	± 5%
R817, 818		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R819, 820		ERD25TJ274	Carbon,	1/4W,	270kΩ,	± 5%
R821, 822		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R823, 824		ERD25TJ683	Carbon,	1/4W	68kΩ,	± 5%
R825	Δ	ERD50FJ331	Carbon,	1/2W,	330Ω,	± 5%
R826	Δ	ERD50FJ271	Carbon,	1/2W,	270Ω,	± 5%
R827, 828		ERD25FJ102	Carbon	1/4W	1kΩ,	± 5%

Ref. No.		Part No.	Part Name & Description			
R829, 830		ERD25FJ332	Carbon,	1/4W	3.3kΩ,	± 5%
R831, 832		ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%
R833, 834		ERD25TJ474	Carbon	1/4W	470kΩ,	± 5%
R835, 836		ERD25FJ181	Carbon,	1/4W,	180Ω,	± 5%
R837, 838		ERD25TJ184	Carbon,	1/4W,	180kΩ	± 5%
R839, 840		ERD25TJ274	Carbon,	1/4W,	270kΩ,	± 5%
R841, 842		ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%
R843, 844		ERD25TJ473	Carbon,	1/4W	47kΩ	± 5%
R845, 846		ERD25TJ153	Carbon,	1/4W	15kΩ,	± 5%
R847, 848		ERD25TJ223	Carbon,	1/4W	22kΩ,	± 5%
R849, 850		ERD50TJ155	Carbon,	1/2W,	1.5MΩ,	± 5%
R851, 852		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R853, 854		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R857, 858		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R861, 862		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R863, 864		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R865, 866		ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%
R867, 868		ERD25TJ334	Carbon,	1/4W,	330kΩ,	± 5%
R869, 870		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R871, 872		ERD25FJ332	Carbon,	1/4W	3.3kΩ,	± 5%
R873, 874		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R875, 876		ERD25TJ154	Carbon,	1/4W,	150kΩ,	± 5%
R877, 878		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R879, 880		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R881, 882		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R883, 884		ERD25TJ223	Carbon,	1/4W	22kΩ,	± 5%
R885	Δ	ERD50FJ470	Carbon,	1/2W,	47Ω	± 5%
R886	Δ	ERD50FJ332	Carbon,	1/2W,	3.3kΩ,	± 5%
R887		ERD25TJ223	Carbon	1/4W,	22kΩ,	± 5%
R888	Δ	ERD50FJ2R2	Carbon,	1/2W	2.2Ω,	± 5%
R889		ERD25FJ102	Carbon	1/4W,	1kΩ	± 5%
R890		ERD25FJ100	Carbon,	1/4W,	10Ω,	± 5%
R891		ERD25FJ472	Carbon,	1/4W,	4.7kΩ	± 5%
R892		ERD25FJ102	Carbon	1/4W	1kΩ,	± 5%
R893		ERD25TJ104	Carbon	1/4W	100kΩ	± 5%
R894		ERD25TJ223	Carbon	1/4W,	22kΩ,	± 5%
R895		ERD25TJ473	Carbon	1/4W,	47kΩ	± 5%
R896		ERD25FJ471	Carbon	1/4W,	470Ω	± 5%
R897		ERD25TJ394	Carbon,	1/4W,	390kΩ	± 5%
R898		ERD25TJ223	Carbon	1/4W	22kΩ	± 5%
R899		ERD25TJ123	Carbon	1/4W,	12kΩ,	± 5%
R900, 901		ERD25TJ223	Carbon	1/4W,	22kΩ,	± 5%
R902		ERD25TJ223	Carbon	1/4W,	22kΩ,	± 5%
R903		ERD25FJ152	Carbon	1/4W,	1.5kΩ,	± 5%
R904		ERD25TJ223	Carbon	1/4W	22kΩ,	± 5%
R905		ERD25TJ330	Carbon	1/4W,	33Ω,	± 5%
R906, 907		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R908		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R909		ERD25FJ332	Carbon,	1/4W	3.3kΩ	± 5%
R910		ERD25TJ153	Carbon,	1/4W,	15kΩ	± 5%
R911		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R912		ERD25TJ473	Carbon	1/4W,	47kΩ	± 5%
R913, 914		ERD25TJ334	Carbon,	1/4W,	330kΩ,	± 5%
R915		ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%
R916		ERD25FJ562	Carbon,	1/4W,	5.6kΩ	± 5%
R917		ERD25FJ103	Carbon,	1/4W	10kΩ,	± 5%
R919		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R920		ERD25FJ562	Carbon,	1/4W,	5.6kΩ,	± 5%
R921		ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%
R922		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R923		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R924		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R925		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R926		ERD25FJ332	Carbon	1/4W	3.3kΩ,	± 5%
R927		ERD25FJ472	Carbon	1/4W,	4.7kΩ,	± 5%
R928		ERD25FJ223	Carbon	1/4W,	22kΩ,	± 5%
R930	Δ	ERD50FJ101	Carbon,	1/2W,	100Ω,	± 5%
R931		ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%
R932		ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%
R933		ERD25FJ331	Carbon,	1/4W	330Ω,	± 5%
R934	Δ	ERD50FJ820	Carbon,	1/2W	82Ω,	± 5%
R935, 936		ERD25TJ474	Carbon	1/4W,	470kΩ,	± 5%
R937, 938		ERD25TJ334	Carbon	1/4W,	330kΩ	± 5%
R939		ERD25TJ153	Carbon	1/4W,	15kΩ,	± 5%
R940		ERD25TJ123	Carbon,	1/4W	12kΩ,	± 5%
R941		ERD25FJ472	Carbon	1/4W,	4.7kΩ	± 5%
R942		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R950		ERD25FJ152	Carbon	1/4W,	1.5kΩ	± 5%
R951		ERD25FJ471	Carbon,	1/4W	470Ω,	± 5%
R952		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R954		ERD25FJ103	Carbon	1/4W	10kΩ,	± 5%
R955		ERD25TJ123	Carbon	1/4W	12kΩ,	± 5%

Ref. No.		Part No.	Part Name & Description			
R956		ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%
R957, 958		ERD25FJ182	Carbon,	1/4W,	1.8kΩ,	± 5%
R959, 960		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R961, 962		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R963		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R964, 965		ERD25FJ472	Carbon	1/4W	4.7kΩ	± 5%
R966		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R967		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R968		ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%
R969, 970		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R971		ERD25FJ272	Carbon,	1/4W,	2.7kΩ,	± 5%
R972		ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%
R973		ERD25FJ332	Carbon,	1/4W,	3.3kΩ,	± 5%
R974		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R975		ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%
R976		ERD25FJ103	Carbon	1/4W,	10kΩ,	± 5%
R977		ERD25FJ471	Carbon,	1/4W	470Ω,	± 5%
R978		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R979		ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%
R980		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R981		ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%
R982		ERD25FJ682	Carbon,	1/4W,	6.8kΩ	± 5%
R983		ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%
R984		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R985		ERD25FJ471	Carbon,	1/4W	470Ω,	± 5%
R986		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R987		ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%
R988		ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%
R989		ERD25TJ153	Carbon,	1/4W,	15kΩ	± 5%
R990		ERD25TJ473	Carbon	1/4W	47kΩ,	± 5%
R991		ERD25FJ562	Carbon,	1/4W,	5.6kΩ,	± 5%
R992, 993		ERD25TJ153	Carbon	1/4W,	15kΩ,	± 5%
R994		ERD25FJ222	Carbon	1/4W,	2.2kΩ,	± 5%
R995	Δ	ERD50FJ270	Carbon,	1/2W	27Ω,	± 5%
R996		ERD25FJ562	Carbon,	1/4W	5.6kΩ,	± 5%

CAPACITORS

C1	ECKD1H222MD	Ceramic	50V	0.002[illegible]	± 20%
C2	ECEA50Z3R3	Electrolytic,	50V,	3.3μF	
C3	ECCD1H080CC	Ceramic	50V,	8pF	± 0.5pF
C4	ECKD1H102MD	Ceramic	50V,	0.001μF,	± 20%
C5	ECCD1H390KC	Ceramic	50V,	39pF	± 10%
C6	ECKD1H222MD	Ceramic	50V,	0.0022μF	± 20%
C7	ECCD1H080DC	Ceramic	50V	8pF,	± 0.5pF
C8	ECKD1H102MD	Ceramic,	50V,	0.001μF	± 20%
C9, 10	ECCD1H050CC	Ceramic,	50V	5pF,	±0.25pF
C11	ECKD1H181KB	Ceramic,	50V,	180pF,	± 10%
C12	ECKD1H222MD	Ceramic	50V,	0.0022μF,	± 20%
C13	ECCD1H020CC	Ceramic,	50V,	2pF,	±0.25pF
C14	ECKD1H102MD	Ceramic	50V,	0.001μF,	± 20%
C15	ECCD1H120KC	Ceramic	50V,	12pF,	± 10%
C16	ECCD1H390KC	Ceramic,	50V,	39pF,	± 10%
C17	ECCD1H100KC	Ceramic,	50V,	10pF	± 10%
C18	ECKD1H102MD	Ceramic	50V,	0.001μF,	± 20%
C19	ECCD1H010CC	Ceramic	50V,	1pF	±0.25pF
C20	ECCD1H100KC	Ceramic,	50V,	10pF	± 10%
C21	ECCD1H050CC	Ceramic	50V,	5pF	±0.25pF
C22, 23	ECKD1H103ZF	Ceramic,	50V,	0.01μF,	+80% −20%
C25	ECKD1H223ZF	Ceramic,	50V	0.022μF,	+80% −20%
C26	ECEA1HS470	Electrolytic	50V,	47μF	
C27	ECEA50M4R7R	Electrolytic,	50V,	4.7μF	
C28	ECEA1HS100	Electrolytic	50V,	10μF	
C30	ECKD1H103ZF	Ceramic	50V,	0.01μF	+80% −20%
C31	ECEA50Z1	Electrolytic,	50V,	1μF	
C32	ECCD1H180KC	Ceramic	50V,	18pF	± 10%
C33	ECCD1H150KC	Ceramic	50V,	15pF	± 10%
C34	ECEA1HS470	Electrolytic,	50V,	47μF	
C35	ECEA0JS471	Electrolytic,	6.3V,	470μF	
C36	ECEA1CS331	Electrolytic	16V,	330μF	
C37	ECEA1ES470	Electrolytic	25V,	47μF	
C38	ECKD1H102MD	Ceramic	50V,	0.001μF,	± 20%
C39	ECCD1H080DC	Ceramic,	50V,	8pF	± 0.5pF
C40, 41	ECKD1H102MD	Ceramic,	50V,	0.001μF,	± 20%
C42	ECCD1H150KC	Ceramic,	50V,	15pF	± 10%
C43	ECKD1H102MD	Ceramic,	50V,	0.001μF,	± 20%
C44	ECKD1H103ZF	Ceramic,	50V,	0.01μF,	+80% −20%
C101, 102	ECKD1H103ZF	Ceramic,	50V	0.01μF	+80% −20%
C103	ECEA50Z2R2	Electrolytic	50V	2.2μF	
C104	ECEA50Z3R3	Electrolytic	50V	3.3μF	
C105	ECCD1H330KC	Ceramic,	50V,	33pF,	± 10%
C106	ECEA50Z1	Electrolytic	50V,	1μF	
C107	ECKD1H223ZF	Ceramic	50V,	0.022μF,	+80% −20%
C108	ECEA1ES101	Electrolytic,	25V	100μF	
C110, 111	ECKD1H223ZF	Ceramic	50V	0.022μF,	+80% −20%

Ref. No		Part No.	Part Name & Description			
C112		**ECEA1HS100**	Electrolytic	50V	10μF	
C113		**ECEA25Z4R7**	Electrolytic,	25V,	4.7μF	
C114		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C116		ECCD1H040CC	Ceramic,	50V,	4pF,	±0.25pF
C118, 119		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C201		ECQM1H473JZ	Polyester,	50V,	0.047μF,	± 5%
C202		ECKD1H103ZF	Ceramic,	50V,	0.01μF,	+80% −20%
C203		ECQP1241JZ	Polyester,	125V,	240pF,	± 5%
C204		ECQM1H223KZ	Polyester	50V	0.022μF,	± 10%
C205		ECCD1H150KC	Ceramic,	50V,	15pF,	± 10%
C206		ECKD1H102MD	Ceramic,	50V,	0.001μF,	± 20%
C207		ECKD1H103ZF	Ceramic	50V,	0.01μF,	+80% −20%
C208		**ECEA1AS470**	Electrolytic,	10V	47μF	
C209		**ECEA1AS101**	Electrolytic,	10V,	100μF	
C210		ECCD1H330KC	Ceramic,	50V,	33pF,	± 10%
C211		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C212		ECQM1H103KZ	Polyester,	50V,	0.01μF,	± 10%
C213		ECKD1H223ZF	Ceramic,	50V	0.022μF,	+80% −20%
C214		ECQM1H103KZ	Polyester	50V,	0.01μF,	± 10%
C215		**ECEA50Z1**	Electrolytic	50V	1μF	
C216		**ECEA50Z3R3**	Electrolytic,	50V,	3.3μF	
C217		ECQM1H473KZ	Polyester,	50V,	0.047μF,	± 10%
C218		ECCD1H030CC	Ceramic,	50V,	3pF,	±0.25pF
C220		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C222		ECCD1H560K	Ceramic,	50V,	56pF	± 10%
C223, 224		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C301		**ECEA1CS471**	Electrolytic,	16V,	470μF	
C302		ECQM1H473KZ	Polyester	50V	0.047μF	± 10%
C303		ECCD1H270KC	Ceramic,	50V,	27pF	± 10%
C304, 305		ECKD1H271KB	Ceramic,	50V,	270pF,	± 10%
C306, 307		ECQM1H153KZ	Polyester,	50V,	0.015μF	± 10%
C314		**ECEA50ZR47**	Electrolytic,	50V	0.47μF	
C315		**ECEA50Z1**	Electrolytic,	50V	1μF	
C316		**ECEA50Z3R3**	Electrolytic,	50V	3.3μF	
C317		ECQP1471JZ	Polyester,	125V,	470pF,	± 5%
C318		**ECEA25Z4R7**	Electrolytic,	25V	4.7μF	
C320		**ECEA1VS221**	Electrolytic,	35V,	220μF	
C321		**ECEA1CS330**	Electrolytic,	16V,	33μF	
C322		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C323		**ECEA0JS471**	Electrolytic	6.3V,	470μF	
C326		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C327		**ECEA0JS471**	Electrolytic,	6.3V,	470μF	
C329		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C330, 331		**ECEA25Z4R7**	Electrolytic,	25V,	4.7μF,	
C401, 402		ECKD1H102MD	Ceramic,	50V,	0.001μF,	± 20%
C403, 404		ECKD1H681KB	Ceramic	50V,	680pF,	± 10%
C405, 406		**ECEA1CS331**	Electrolytic,	16V,	330μF	
C407, 408		**ECEA0JS471**	Electrolytic,	6.3V,	470μF	
C409, 410		ECQM1H473JZ	Polyester,	50V,	0.047μF,	± 5%
C411, 412		ECQM1H103JZ	Polyester	50V,	0.01μF,	± 5%
C413, 414		ECQM1H332JZ	Polyester,	50V,	0.0033μF,	± 5%
C415, 416	⚠	ECEA1EN3R3S	Non-Polar Electrolytic,	25V,	3.3μF	
C417, 418		ECQM1H472JZ	Polyester,	50V	0.0047μF,	± 5%
C419		**ECEA1ES470**	Electrolytic,	25V,	47μF	
C420		**ECEA50Z1**	Electrolytic,	50V	1μF	
C421		ECKD1H102ZF	Ceramic,	50V,	0.002μF,	+80% −20%
C422		ECCD1H101K	Ceramic	50V,	100pF,	± 10%
C423		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C424, 425		**ECEA1ES101**	Electrolytic,	25V,	100μF	
C501, 502		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C503, 504		ECCD1H220K	Ceramic,	50V,	22pF,	± 10%
C505, 506		ECCD1H180K	Ceramic,	50V,	18pF,	± 10%
C507, 508		ECKD1H471KB	Ceramic	50V,	470pF	± 10%
C509, 510	⚠	**ECEA1HN3R3S**	Non-Polar Electrolytic,	50V,	3.3μF	
C511, 512		ECQM1H473KZ	Polyester,	50V,	0.047μF	± 10%
C601, 602		**ECEA50Z3R3**	Electrolytic,	50V,	3.3μF	
C603, 604		ECCD1H080D	Ceramic	50V,	8pF,	± 20%
C605, 606		ECCD1H680K	Ceramic,	50V,	68pF,	± 10%
C607, 608		**ECEA1CS330**	Electrolytic,	16V,	33μF	
C609, 610		ECQM1H272KZ	Polyester,	50V,	0.0027μF,	± 10%
C611, 612		ECKD1H151KB	Ceramic,	50V,	150pF,	± 10%
C613, 614		ECQM1H152KZ	Polyester,	50V,	0.0015μF,	± 10%
C615, 616		ECQM1H223KZ	Polyester,	50V,	0.022μF,	± 10%
C617, 618		ECQM1H183KZ	Polyester,	50V,	0.018μF,	± 10%
C619, 620		ECQM1H104KZ	Polyester,	50V	0.1μF,	± 10%
C621, 622		**ECEA1HS100**	Electrolytic	50V	10μF	
C623, 624		ECCD1H050C	Ceramic,	50V	5pF,	±0.25pF
C625, 626		ECCD1H120K	Ceramic,	50V	12pF,	± 10%
C627, 628		ECCD1H220K	Ceramic,	50V	22pF,	± 10%
C629, 630		ECKD1H391KB	Ceramic,	50V	390pF,	± 10%
C631, 632		ECCD1H470K	Ceramic,	50V,	47pF,	± 10%
C633, 634		**ECEA1HS101**	Electrolytic	50V,	100μF	
C635, 636		**ECEA1HS470**	Electrolytic,	50V,	47μF	
C637, 638		**ECEA1HS100**	Electrolytic,	50V	10μF	

Ref. No		Part No	Part Name & Description			
C639, 640		ECQM1H182KZ	Polyester,	50V,	0.0018μF,	± 10%
C641, 642		ECQM1H182KZ	Polyester,	50V,	0.0018μF,	± 10%
C643, 644		ECQM1H473KZ	Polyester	50V,	0.047μF,	± 10%
C645		**ECEA1HS100**	Electrolytic	50V,	10μF	
C647, 648		ECQM1H152KZ	Polyester,	50V,	0.0015μF,	± 10%
C649, 650		ECKD1H821KB	Ceramic,	50V,	820pF	± 10%
C651, 652		ECCD1H220K	Ceramic	50V,	22pF,	± 10%
C653, 654		ECCD1H220K	Ceramic,	50V,	22pF,	± 10%
C701, 702	⚠	**ECEA1HN3R3S**	Non-Polar Electrolytic	50V	3.3μF	
C703	⚠	**ECEA1CN101S**	Non-Polar Electrolytic	16V,	100μF	
C704		**ECEA1CS330**	Electrolytic	16V	33μF	
C705		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C706		ECQM1H103KZ	Polyester,	50V,	0.01μF,	± 10%
C707		**ECEA50Z3R3**	Electrolytic,	50V,	3.3μF	
C708		**ECEA2AS100**	Electrolytic,	100V,	10μF	
C711, 712		ECETS45V682U	Electrolytic	45V,	6800μF	
C713, 714		**ECEA1CS221**	Electrolytic,	16V,	220μF	
C715		**ECEA1ES332**	Electrolytic,	25V,	3300μF	
C716		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C717		**ECEA1JS330**	Electrolytic,	63V,	33μF	
C718		**ECEA1VS101**	Electrolytic,	35V,	100μF	
C719		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C720		ECQM1H104KZ	Polyester,	50V,	0.1μF,	± 10%
C721, 722		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C723		**ECEA1ES101**	Electrolytic,	25V,	100μF	
C724		**ECEA1VS222**	Electrolytic,	35V,	2200μF	
C725		**ECEA1ES101**	Electrolytic,	25V,	100μF	
C726		**ECEA1HS470**	Electrolytic,	50V,	47μF	
C727, 728		**ECEA1VS221**	Electrolytic	35V,	220μF	
C729		**ECEA1AS472**	Electrolytic,	10V,	4700μF	
C730		**ECEA1AS102**	Electrolytic,	10V,	1000μF	
C801, 802		ECQM1H102JZ	Polyester,	50V,	0.001μF,	± 10%
C803, 804		**ECEA50M3R3R**	Electrolytic,	50V,	3.3μF	
C805, 806		ECKD1H102ZF	Ceramic,	50V	0.001μF,	+80% −20%
C807, 808		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C809, 810		ECCD1H101K	Ceramic,	50V,	100pF,	± 10%
C811, 812		ECQM1H123JZ	Polyester,	50V,	0.012μF	± 5%
C813, 814		**ECEA50MR47R**	Electrolytic,	50V,	0.47μF	
C815, 816		**ECEA1ES470**	Electrolytic,	25V,	47μF	
C817		**ECEA1ES221**	Electrolytic,	25V,	220μF	
C818		**ECEA1AS221**	Electrolytic,	10V,	220μF	
C819, 820		ECQM1H273JZ	Polyester,	50V,	0.027μF,	± 5%
C821, 822		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C823, 824		ECQM1H472JZ	Polyester,	50V,	0.0047μF	± 5%
C825, 826		ECQM1H562JZ	Polyester	50V,	0.0056μF,	± 5%
C827, 828		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C829, 830		**ECEA50ZR33**	Electrolytic,	50V,	0.33μF	
C831, 832		ECQM1H102KZ	Polyester	50V,	0.001μF,	± 10%
C833, 834		**ECEA1HS100**	Electrolytic	50V	10μF	
C835, 836		**ECEA50ZR33**	Electrolytic	50V,	0.33μF	
C837, 838		**ECEA50ZR1**	Electrolytic	50V,	0.1μF	
C839, 840		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C841, 842		ECQM1H473JZ	Polyester,	50V	0.047μF	
C843		**ECEA1CS221**	Electrolytic,	16V	220μF	
C845, 846		ECQM1H473KZ	Polyester,	50V,	0.047μF,	± 10%
C847, 848		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C849, 850		ECCD1H101K	Ceramic,	50V,	100pF,	± 10%
C851, 852		**ECEA1HS100**	Electrolytic	50V,	10μF	
C853, 854		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C855, 856		ECQM1H153JZ	Polyester	50V,	0.015μF	± 5%
C861, 862		ECQM1H473JZ	Polyester,	50V,	0.047μF	± 5%
C865, 866		ECQM1H273JZ	Polyester,	50V,	0.027μF	± 5%
C867, 868		ECQM1H183JZ	Polyester,	50V,	0.018μF	± 5%
C869, 870		**ECEA50Z1**	Electrolytic,	50V	1μF	
C871, 872		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C873, 874		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C875, 876		ECQM1H102KZ	Polyester,	50V,	0.001μF,	± 10%
C877, 878		ECQM1H102JZ	Polyester,	50V,	0.001μF,	± 5%
C879, 880		ECQP1391JZ	Polyester,	125V,	390pF,	± 5%
C881, 882		ECCD1H221KC	Ceramic,	50V,	220pF	± 10%
C883		**ECEA1ES101**	Electrolytic,	25V,	100μF	
C884		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C885		**ECEA0JS471**	Electrolytic,	6.3V,	470μF	
C886		**ECEA50ZR33**	Electrolytic,	50V	0.33μF	
C887		ECQM1H102KZ	Polyester	50V	0.001μF,	± 10%
C888		**ECEA1HS100**	Electrolytic	50V,	10μF	
C889		**ECEA50Z3R3**	Electrolytic	50V,	3.3μF	
C890		ECQM1H152KZ	Polyester,	50V	0.0015μF	± 10%
C891		**ECEA50ZR15**	Electrolytic,	50V,	0.15μF	
C892		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C893, 894		**ECEA1HS100**	Electrolytic	50V,	10μF	
C895		**ECEA1CS330**	Electrolytic	16V,	33μF	
C896		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C897		**ECEA1CS330**	Electrolytic,	16V,	33μF	
C898, 899		**ECEA1AS101**	Electrolytic	10V,	100μF	

Ref. No		Part No.	Part Name & Description			
C900, 901		**ECEA25Z4R7**	Electrolytic,	25V	4.7μF	
C902		**ECEA1HS100**	Electrolytic,	50V	10μF	
C903		ECKD1H223ZF	Ceramic,	50V	0.022μF,	+80% −20%
C904		ECQP1561JZ	Polyester,	125V,	560pF,	± 5%
C905, 906		ECQM1H122KZ	Polyester	50V	0.0012μF,	± 10%
C907, 908		**ECEA1HS100**	Electrolytic,	50V,	1μF	
C909		ECQM1H104KZ	Polyester,	50V,	0.1μF	± 10%
C910, 911		**ECEA50Z1**	Electrolytic,	50V,	1μF	
C912		ECKD1H223ZF	Ceramic,	50V,	0.022μF	+80% −20%
C913		**ECEA50Z1**	Electrolytic	50V,	1μF	
C950, 951		**ECEA1CS330**	Electrolytic,	16V,	33μF	
C952		**ECEA1CS330**	Electrolytic,	16V,	33μF	

Ref. No.		Part No.	Part Name & Description			
C953, 954		**ECEA1AS470**	Electrolytic,	10V,	47μF	
C955		ECKD1H223ZF	Ceramic,	50V,	0.022μF,	+80% −20%
C956		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C957		ECKD1H223ZF	Ceramic,	50V	0.022μF	+80% −20%
C958		**ECEA1CS471**	Electrolytic,	16V,	470μF	
C959, 960		ECKD1H223ZF	Ceramic,	50V	0.022μF,	+80% −20%
C961		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C962		**ECEA1ES470**	Electrolytic,	25V,	47μF	
C963		**ECEA1CS330**	Electrolytic,	16V,	33μF	
C964		**ECEA1HS100**	Electrolytic,	50V,	10μF	
C1001	⚠	ECKDKC103PF	Ceramic,	50V,	0.01μF,	+100% −0%

• Cassette tape deck motor control (J Printed circuit board)

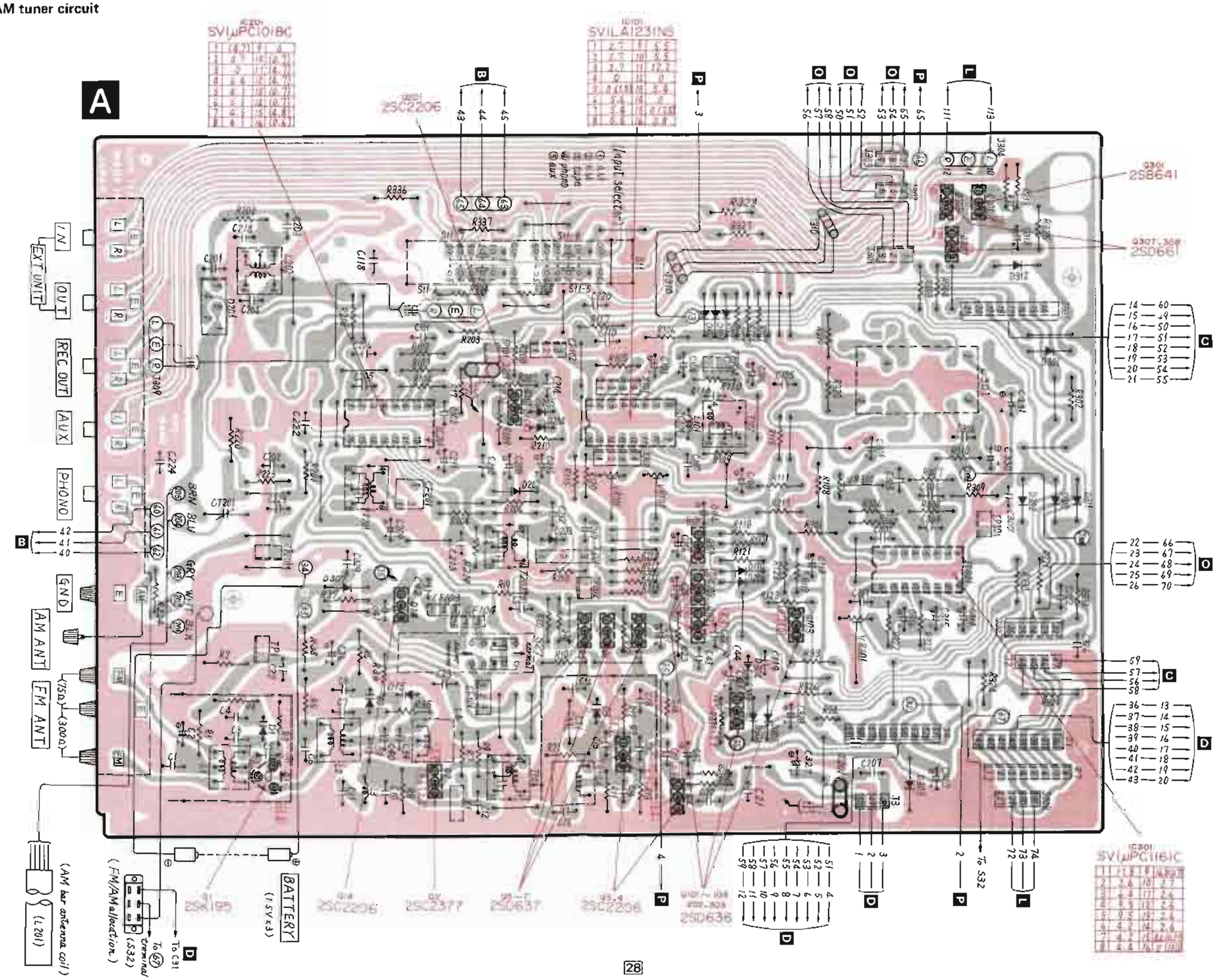
Ref. No	Part No.	Part Name & Description
CASSETTE TAPE DECK MOTOR CONTROL		
TRANSISTORS		
Q1	**2SA102-BA**	Transistor, Reel Motor Control
Q2	**2SD389A-Q**	Transistor, Reel Motor Control
DIODES		
D1, 2	**MA162A**	Diode, Reel Motor Control
D3	**SM112**	Diode, Reel Motor Control
VARIABLE RESISTOR		
VR1	**EVTSJMA00B52**	Trim-Up Torque Adjustment, 5kΩ (B)
THERMISTER		
TH1	QFI1102T406	Thermal Compensation, 500Ω

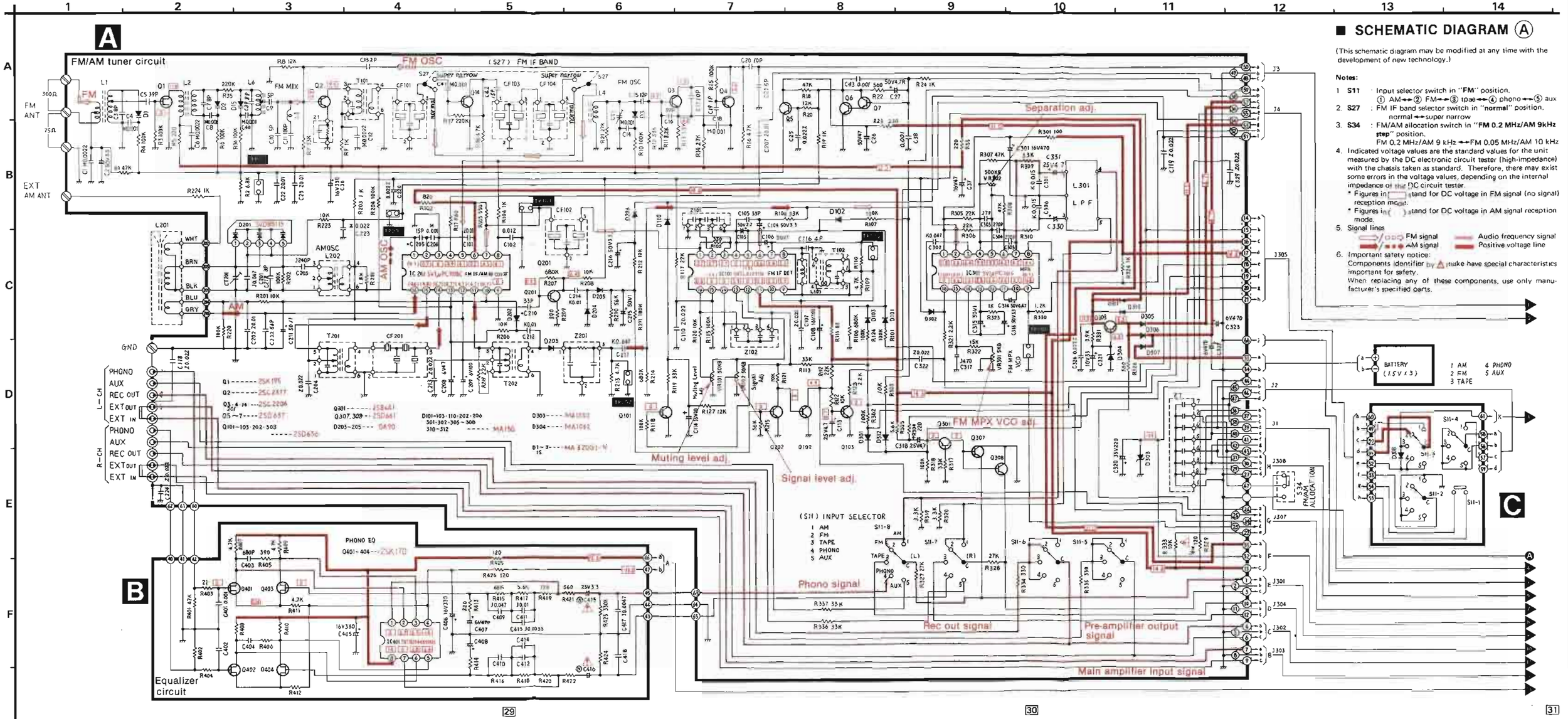
Ref. No.	Part No.	Part Name & Description			
SWITCHES					
S32, 33	SMQT1077	Switch, Cassette Half and Accidental Recording Prevention			
RESISTORS					
R1	**ERD25FJ102**	Carbon,	1/4W,	1kΩ	± 5%
R2, 3	**ERD25FJ132**	Carbon,	1/4W,	1.3kΩ	± 5%
R4	**ERX1ANJ3R9**	Metal Film,	1W,	3.9Ω	± 5%
R5	SRW15201408	Metal Film,	1W,	4.4Ω,	± 5%
R6	**ERD25FJ331**	Carbon,	1/4W	330Ω,	± 5%
R7	**ERG1ANJ161**	Metal Oxide	1W	160Ω,	± 5%
CAPACITORS					
C1	**ECEA25N4R7**	Non Polar Electrolytic	25V,	4.7μF	
C2	ECQM1H393KZ	Polyester,	50V,	0.01μF,	± 10%

■ PRINTED CIRCUIT BOARD

- FM/AM tuner circuit

Ground (Earth) lines





■ SCHEMATIC DIAGRAM (A)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

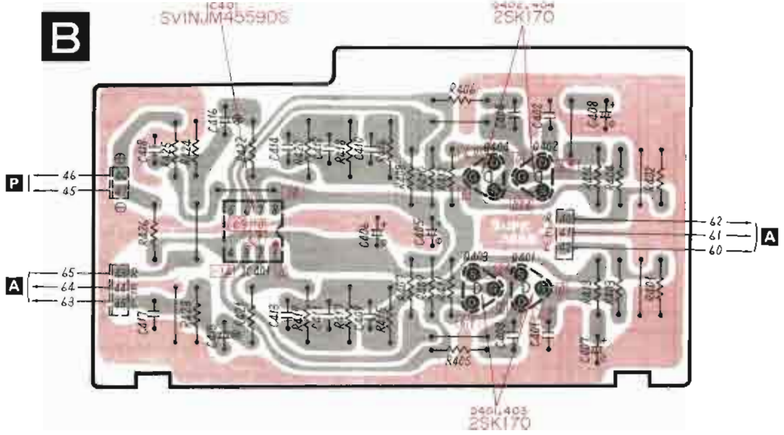
1. **S11** : Input selector switch in "**FM**" position.
   ① AM ↔ ② FM ↔ ③ tape ↔ ④ phono ↔ ⑤ aux
2. **S27** : FM IF band selector switch in "**normal**" position.
   normal ↔ super narrow
3. **S34** : FM/AM allocation switch in "**FM 0.2 MHz/AM 9kHz step**" position.
   FM 0.2 MHz/AM 9 kHz ↔ FM 0.05 MHz/AM 10 kHz
4. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
   * Figures in [ ] stand for DC voltage in FM signal (no signal) reception mode.
   * Figures in ( ) stand for DC voltage in AM signal reception mode.
5. Signal lines
   FM signal / AM signal — Audio frequency signal / Positive voltage line
6. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.

SA-R40 SA-R40

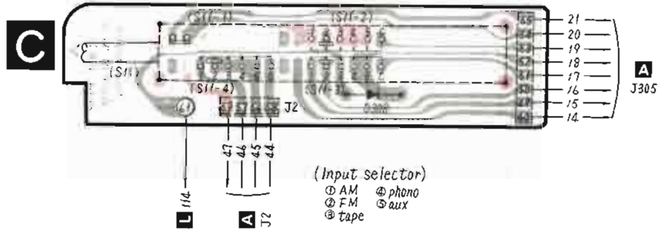
■ PRINTED CIRCUIT BOARDS

Ground (Earth) lines

• Equalizer circuit



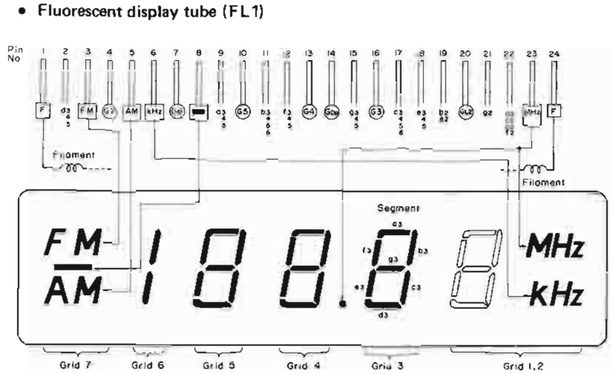
• Input selector switch



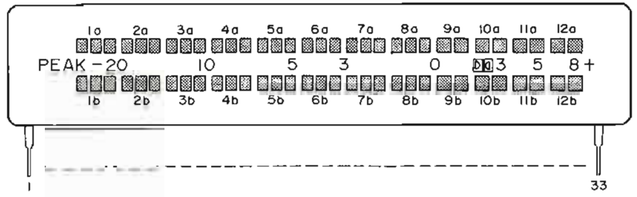
• Terminal guide of IC's and transistors

2SK170	2SB641, 2SB642 2SC2206, 2SC2377 2SD636, 2SD637 2SD667,	SVIμPC1018C SVIμPC1161C SVILA1231N SVIHA12019	SVID1703C016
2SK195	SVINJM4559DS	AN6876	SVIμPB553AC

• Fluorescent display tube (FL1)

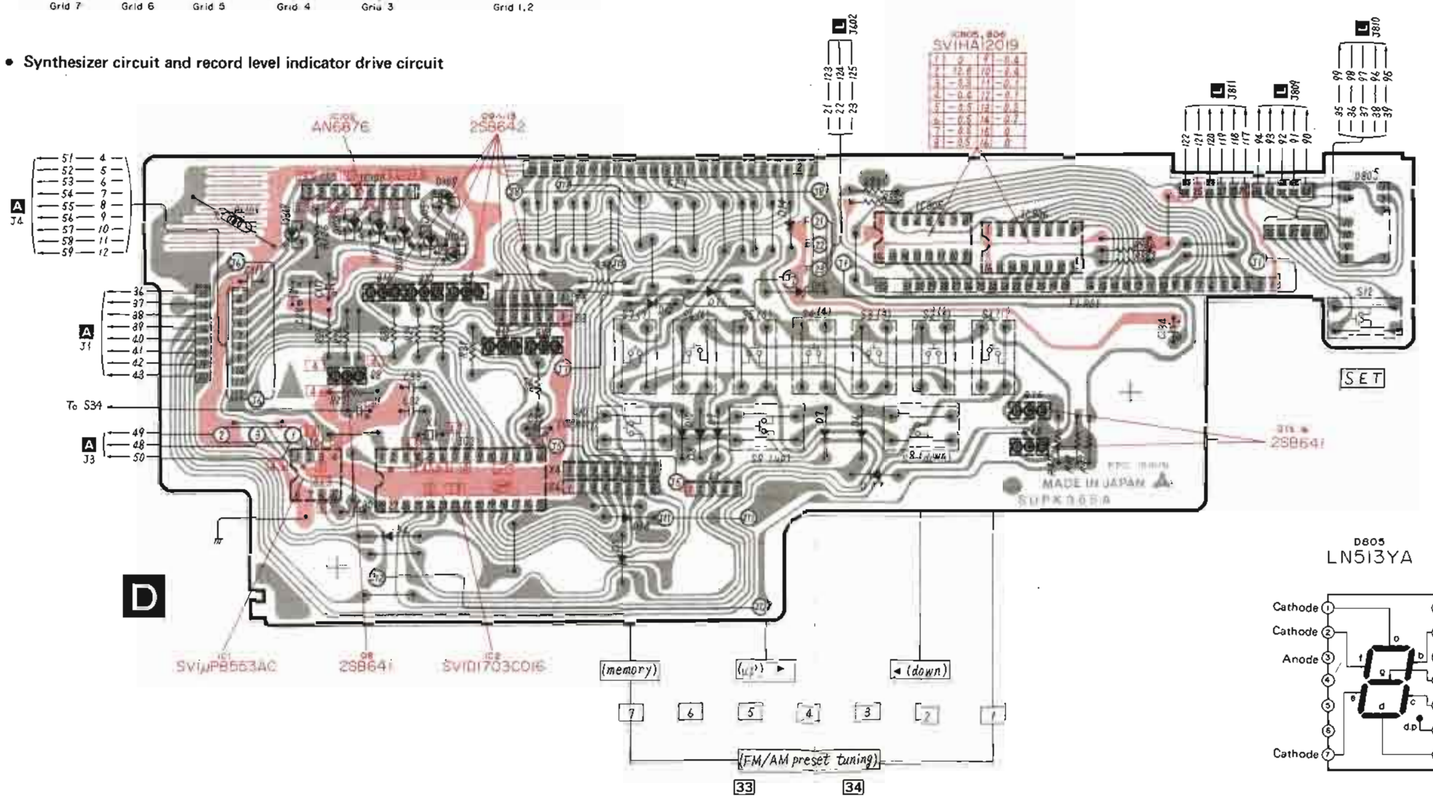


• Recording level indicator (FL801)

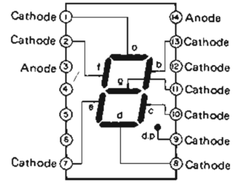


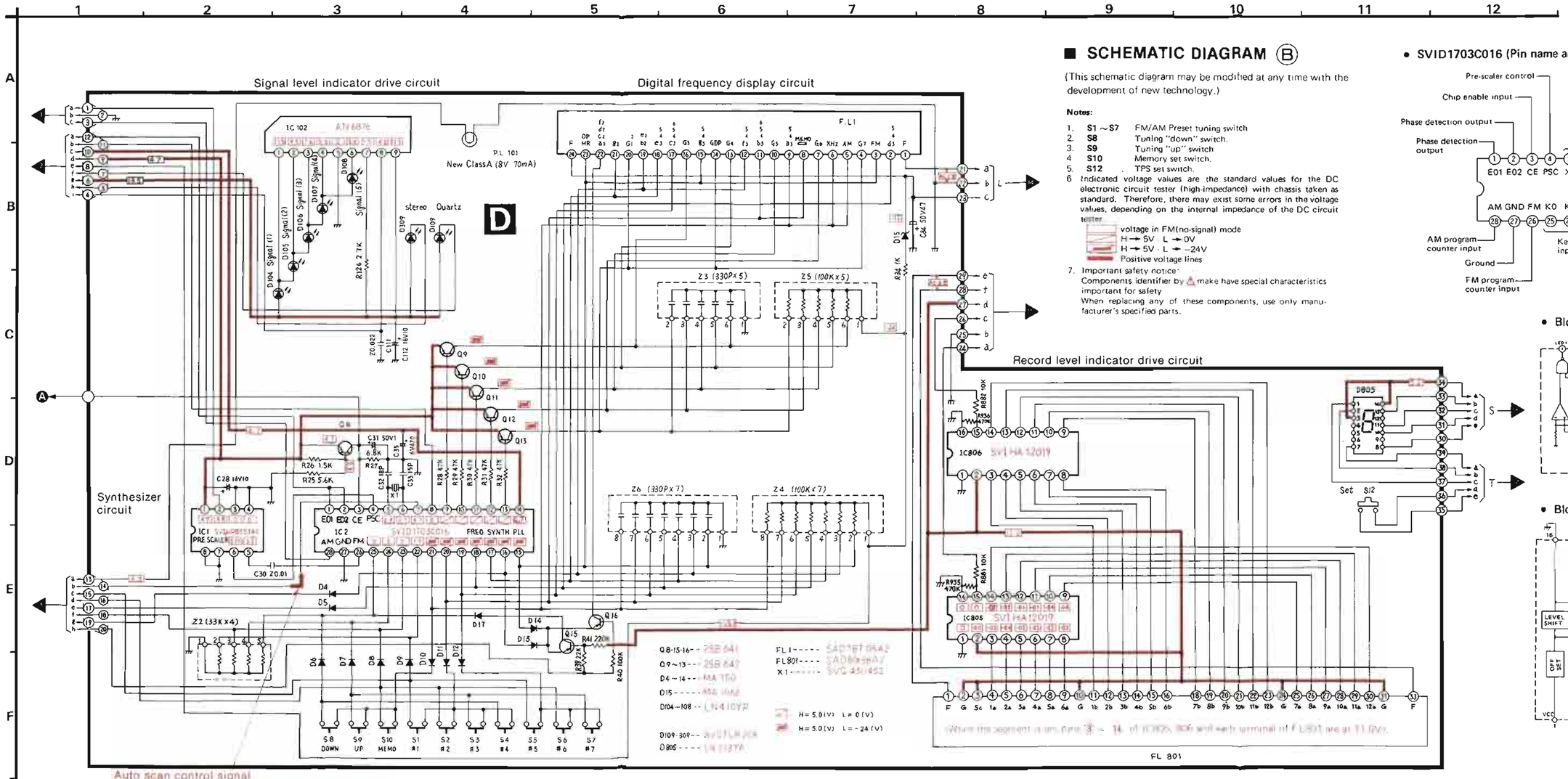
Pin NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Connection	F	G	Sc	1a	2a	3a	4a	5a	6a	G	1b	2b	3b	4b	5b	6b	Nc	7b	8b	9b	10b	11b	12b	G	7a	8a	9a	10a	11a	12a	G	Np	F

• Synthesizer circuit and record level indicator drive circuit



D805
LN513YA





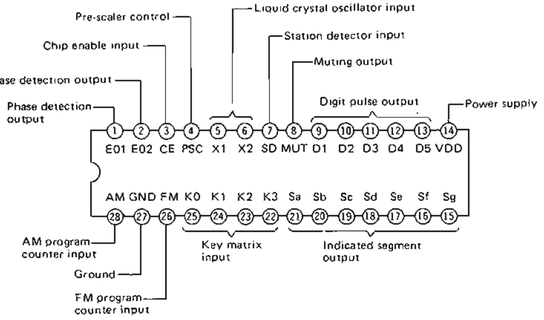
■ SCHEMATIC DIAGRAM (B)

(This schematic diagram may be modified at any time with the development of new technology.)

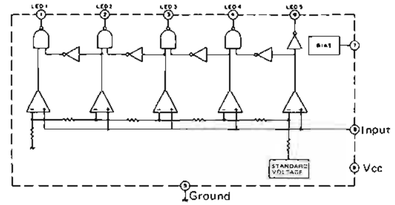
Notes:

1. **S1 ~ S7** FM/AM Preset tuning switch
2. **S8** Tuning "down" switch.
3. **S9** Tuning "up" switch
4. **S10** Memory set switch.
5. **S12** . TPS set switch.
6. Indicated voltage values are the standard values for the DC electronic circuit tester (high-impedance) with chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
   - voltage in FM(no-signal) mode
   - H → 5V L → 0V
   - H → 5V · L → −24V
   - Positive voltage lines
7. Important safety notice:
   Components identifier by ⚠ make have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.

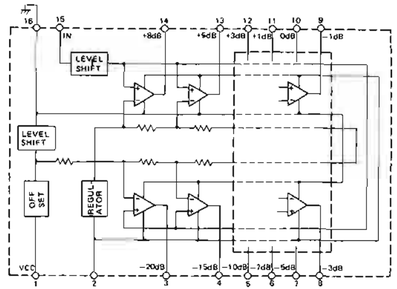
- **SVID1703C016 (Pin name and functions)**



- **Block diagram of AN6876**



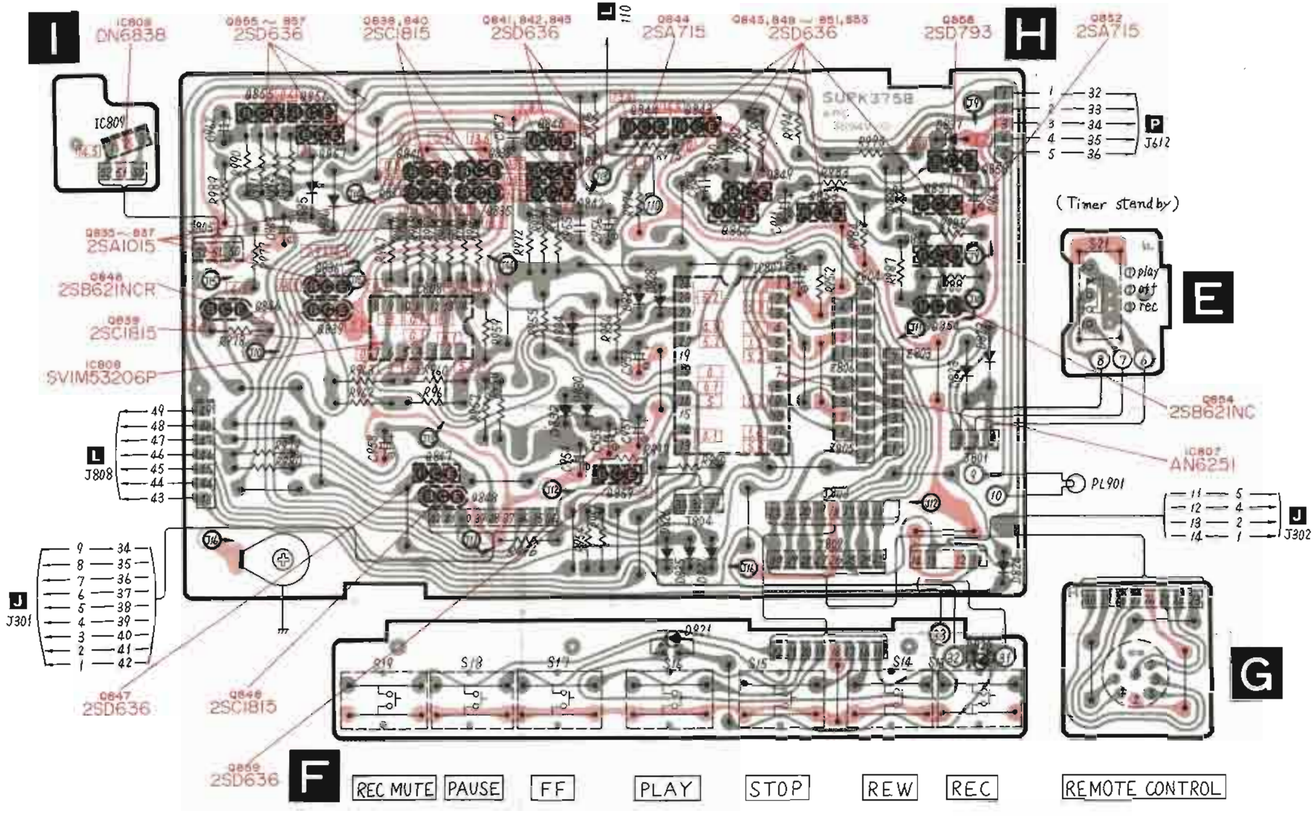
- **Block diagram of SVIHA12019**



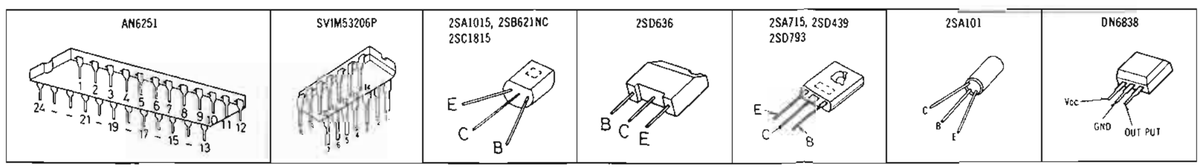
■ PRINTED CIRCUIT BOARDS

Ground (Earth) lines

• Logid control circuit

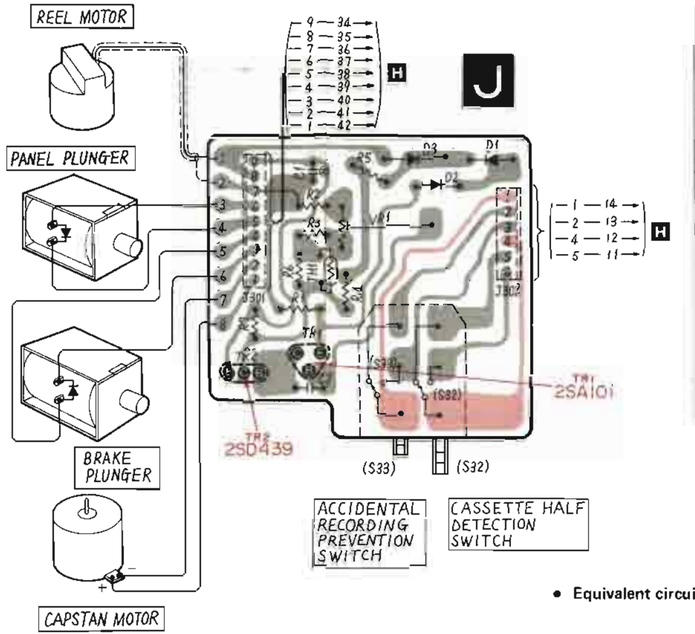


• Terminal guide of IC's and transistors



SA-R40 SA-R40

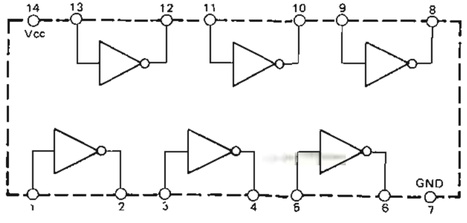
• Motor control circuit



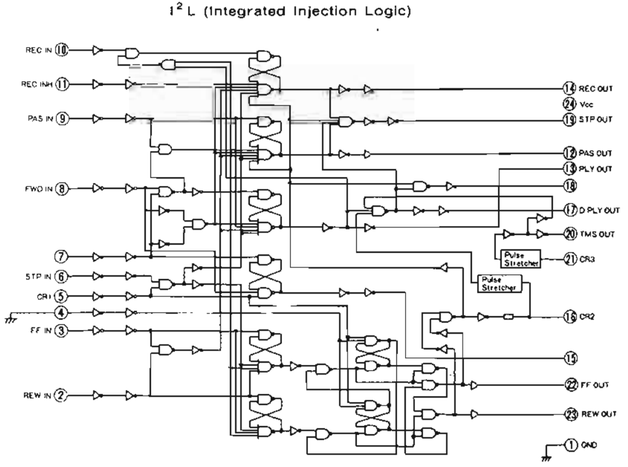
• AN6251 (pin name and operation)

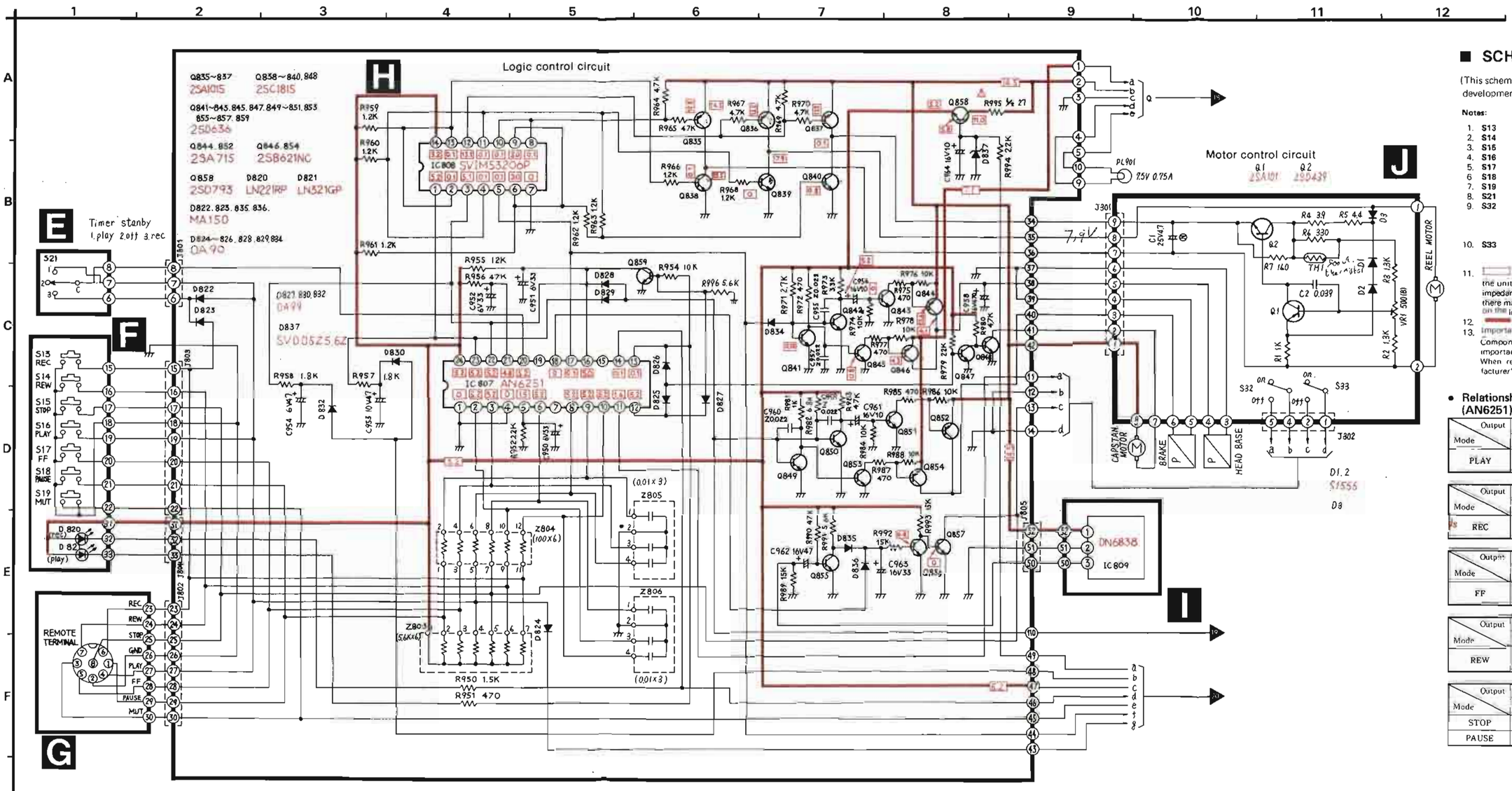
Pin No.	Mark	Operation	Pin No	Make	Operation
①	GND	Earth	⑬	PLAY OUT	Playback mode output
②	REW IN	Rewind instruction input	⑭	REC OUT	Record mode output
③	FF IN	FF instruction input	⑮	CAP OUT	Capstan rotating direction output
④	EBR IN	Electric brake reset input	⑯	CR2	D-PLY time constant
⑤	CR1	Reset input with power ON	⑰	D-PLY OUT	Playback operation output
⑥	STP IN	Stop instruction input	⑱	BRK OUT	Brake releasing output
⑦	REV IN	Reverse playback instruction input	⑲	STP OUT	Stop mode output
⑧	FWD IN	Forward playback instruction input	⑳	TMS OUT	Timer start output
⑨	PAS IN	Pause instruction input	㉑	CR3	Timer start time constant
⑩	REC IN	Record instruction input	㉒	FF OUT	FF mode output
⑪	REC INH	Record inhibiting instruction input	㉓	REW OUT	Rewind mode output
⑫	PAS OUT	Pase mode output	㉔	Vcc	Power supply terminal

• Block diagram of SVIM53206P



• Equivalent circuitry of AN6251





■ SCHEMATIC DIAGRAM Ⓒ

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. S13 : Record switch.
2. S14 : Rewind switch.
3. S15 : Stop switch.
4. S16 : Playback switch.
5. S17 : Fast forward switch.
6. S18 : Pause switch.
7. S19 : Rec mute switch.
8. S21 : Timer standby switch.
9. S32 : Accidental recording prevention switch.
   * The switch turns OFF when the safety lug of cassette is broken OFF, and ON when it is in its position.
10. S33 : Cassette half detection switch.
    * The switch turns ON when the cassette has been completely set.
11. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
12. Positive voltage lines
13. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.

- **Relationship of each operation mode with output (AN6251)**

Mode \ Output	㉒ FF	㉓ REW	⑯ PLY	⑰ D-PLY	⑱ PAS	⑲ STP	⑳ REC	㉑ BRK
PLAY	'H.	'H.	'L.	'L.*	'H.	'H.	'H.	'L.

★ Delay

Mode \ Output	㉒ FF	㉓ REW	⑯ PLY	⑰ D-PLY	⑱ PAS	⑲ STP	⑳ REC	㉑ BRK
REC	'H.	'H.	'H.	'H.	'H.	'H.	'L.	'H.

Mode \ Output	㉒ FF	㉓ REW	⑯ PLY	⑰ D-PLY	⑱ PAS	⑲ STP	⑳ REC	㉑ BRK
FF	'L.	'H.	'H.	'H.	'H.	'H.	'H.	'L.

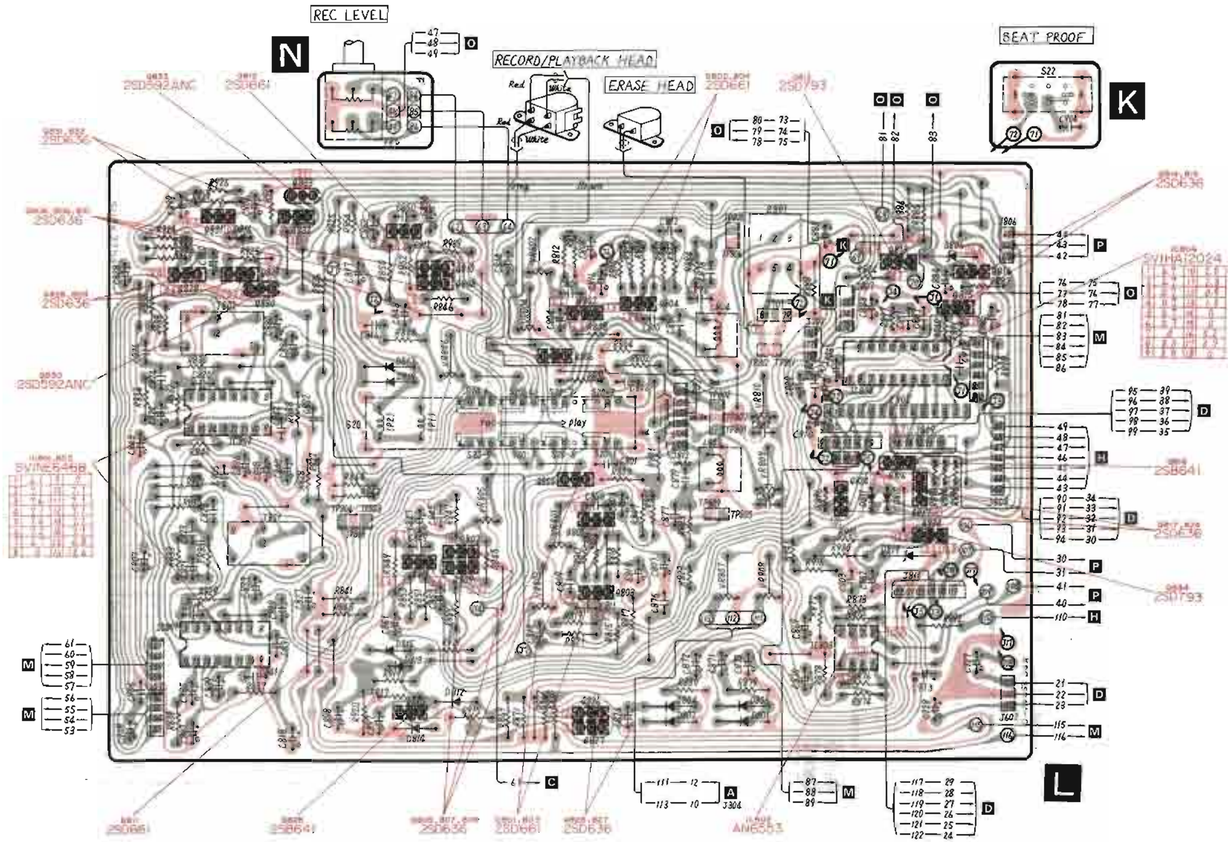
Mode \ Output	㉒ FF	㉓ REW	⑯ PLY	⑰ D-PLY	⑱ PAS	⑲ STP	⑳ REC	㉑ BRK
REW	'H.	'L.	'H.	'H.	'H.	'H.	'H.	'L.

Mode \ Output	㉒ FF	㉓ REW	⑯ PLY	⑰ D-PLY	⑱ PAS	⑲ STP	⑳ REC	㉑ BRK
STOP	'H.	'H.	'H.	'H.	'H.	'L.	'H.	'H.
PAUSE	'H.	'H.	'H.	'H.	'L.	'H.	'H.	'H.

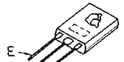
■ PRINTED CIRCUIT BOARDS

Ground (Earth) lines

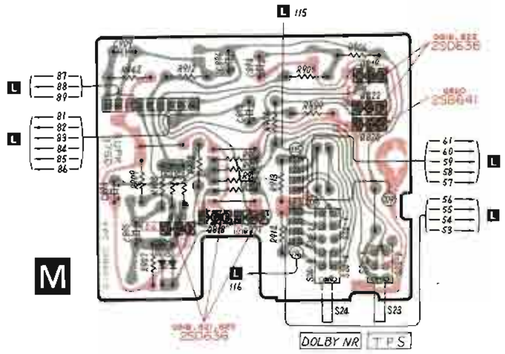
• Record/playback amplifier circuit



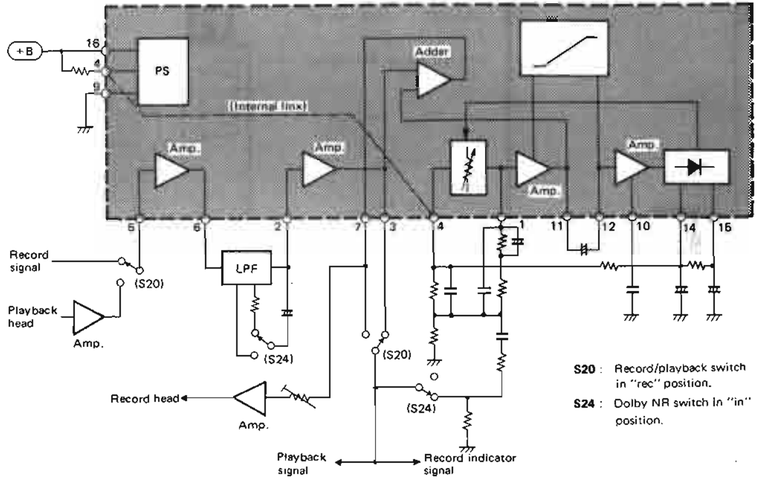
• Terminal guide of IC's and transistors

SVIHA12024	SVINE646B	AN6553	2SD793	2SB641, 2SD636 2SD661	2SD762	2SD592ANC
						

• TPS circuit

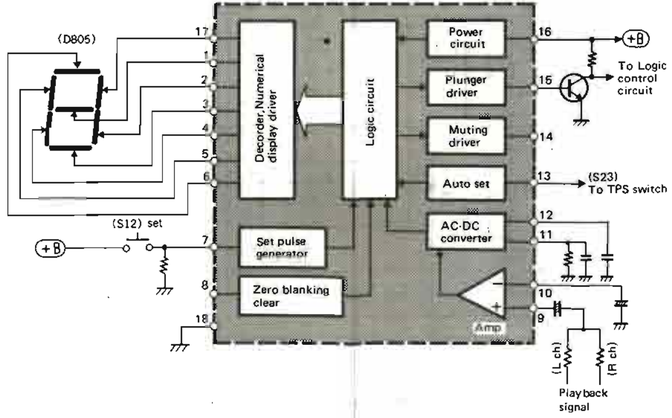


• Block diagram of SVINE646B



S20 : Record/playback switch in "rec" position.
S24 : Dolby NR switch in "in" position.

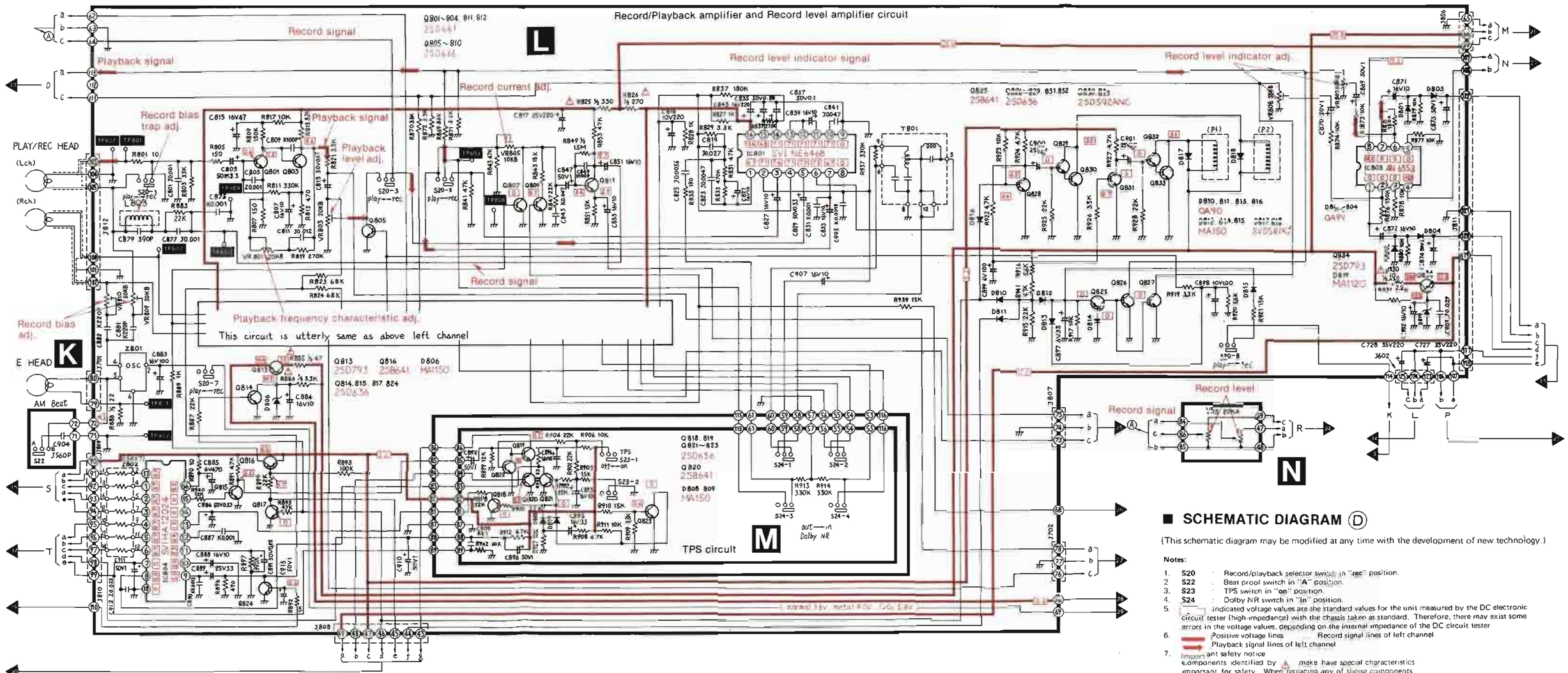
• Block diagram of SVIHA12024



(SVIHA12024)

Numerical Display	Output terminal						
	17	1	2	3	4	5	6
Blank	H	H	H	H	H	H	H
0	L	H	L	L	L	L	L
1	L	H	L	H	H	H	H
2	L	L	H	L	L	H	L
3	L	L	L	L	H	H	L
4	L	L	L	H	H	L	H
5	H	L	L	L	H	L	L
6	H	L	L	L	L	L	L
7	L	H	L	H	H	H	L
8	L	L	L	L	L	L	L
9	L	L	L	L	H	L	L

H → 3.7V L → 0.7V


Record/Playback amplifier and Record level amplifier circuit
L
Record signal
Playback signal
Record current adj.
Record level indicator signal
Record level indicator adj
Record bias trap adj.
Playback level adj.
Playback frequency characteristic adj.
This circuit is utterly same as above left channel
PLAY/REC HEAD
(Lch)
(Rch)
E HEAD
K
AM Beat
Q801~804, 811, 812
2SD641
Q805~810
2SD636
Q813 Q816 D806
2SD793 2SB641 MA150
Q814.815. 817 824
2SD636
Q818, 819
Q821~823
2SD636
Q820
2SB641
D808 809
MA150
TPS circuit
M
Record level
Record signal
N
R
S
T
Q825
2SB641
Q826~829 831,832
2SD636
Q830 833
2SD592ANC
Q834
2SD793
D811
MA1120
D810, 811, 813, 816
QA90
D812, 814, 815
MA150
D817 818
SVD5R1K
D840~804
QA94
IC801 SVI NE646B
IC803 AN 6553
SVI M1402
J806
J807
J702
J808
J810
J812
J813
J814
J816
J817
J818
J819
J820
J821
J822
J823
J824
J825
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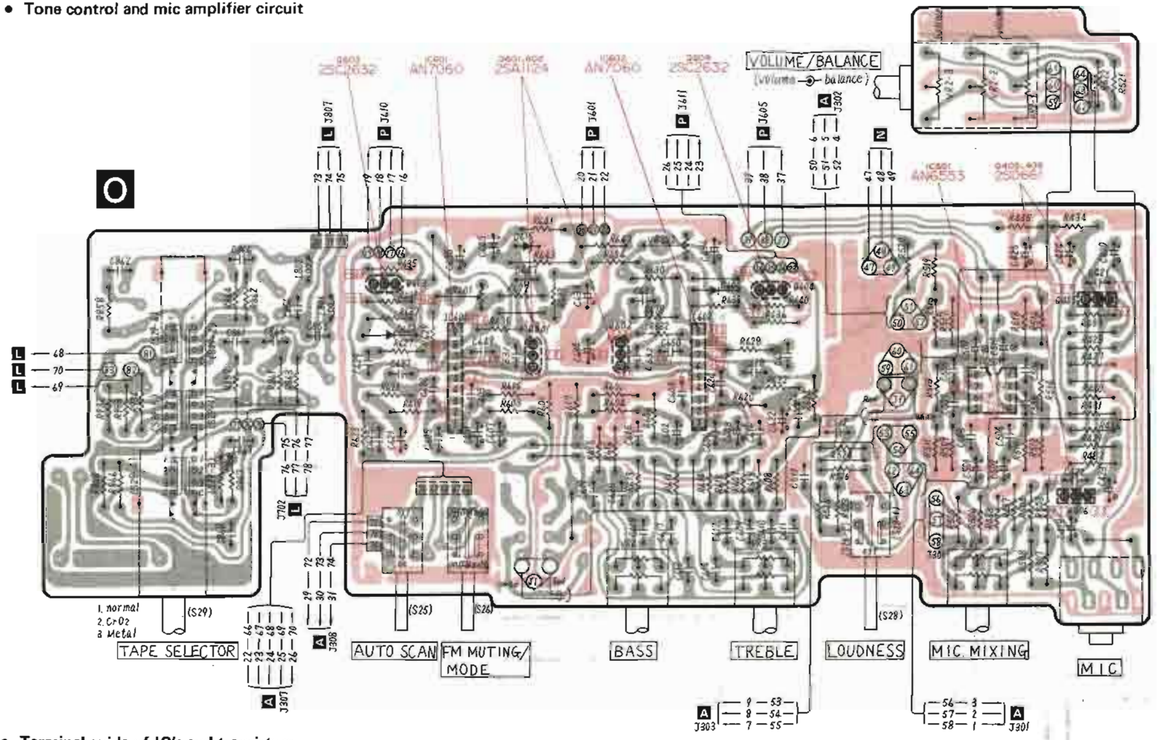
J845
J846
J847
J848
J849
J850
J851
J852
J853
J854
J855

SA-R40 SA-R40

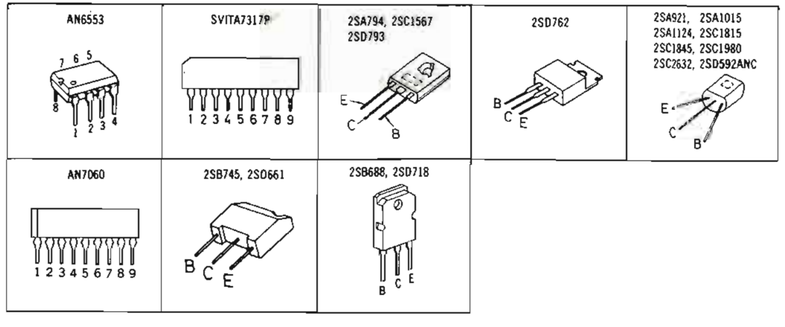
■ PRINTED CIRCUIT BOARDS

Ground (Earth) lines

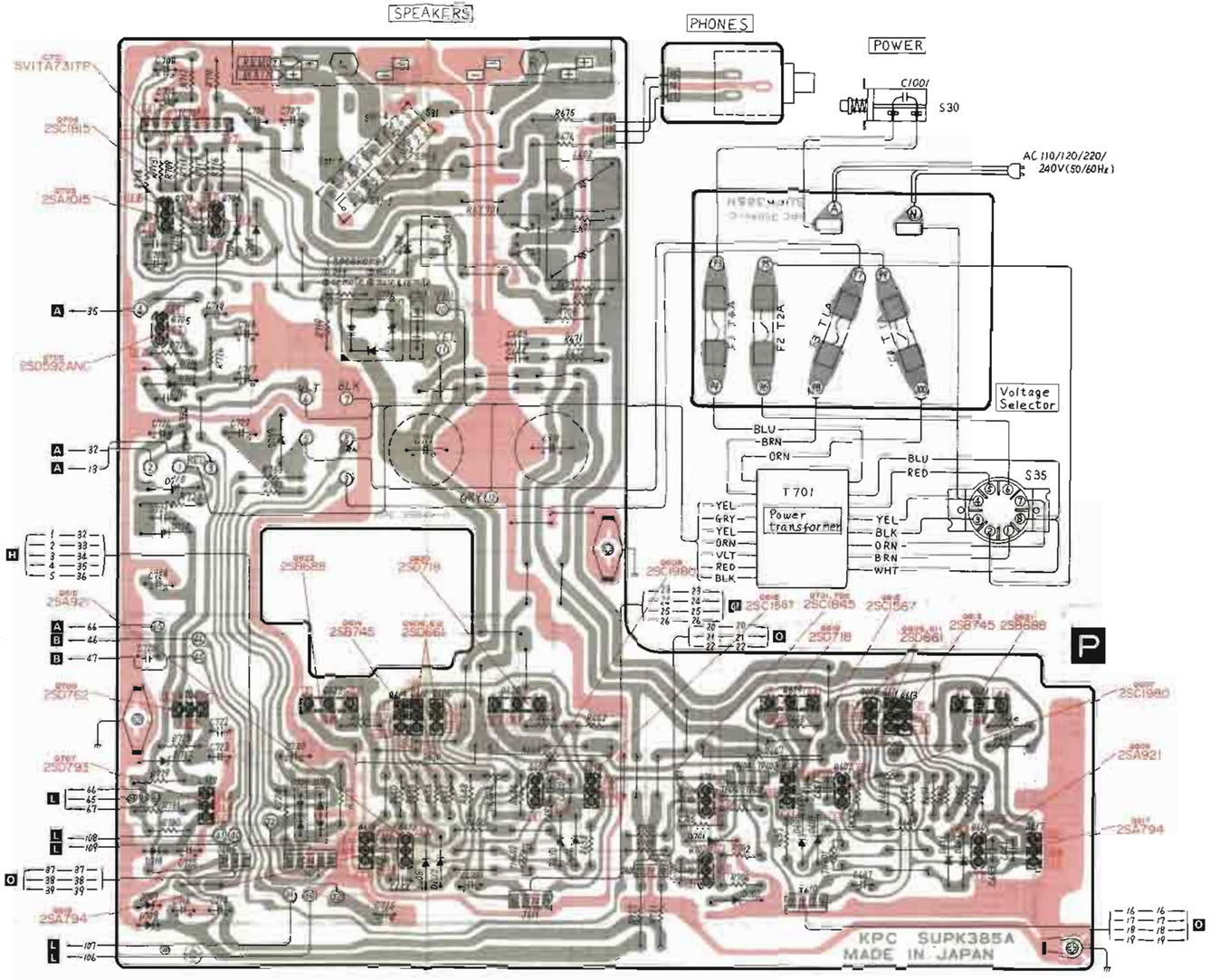
- Tone control and mic amplifier circuit

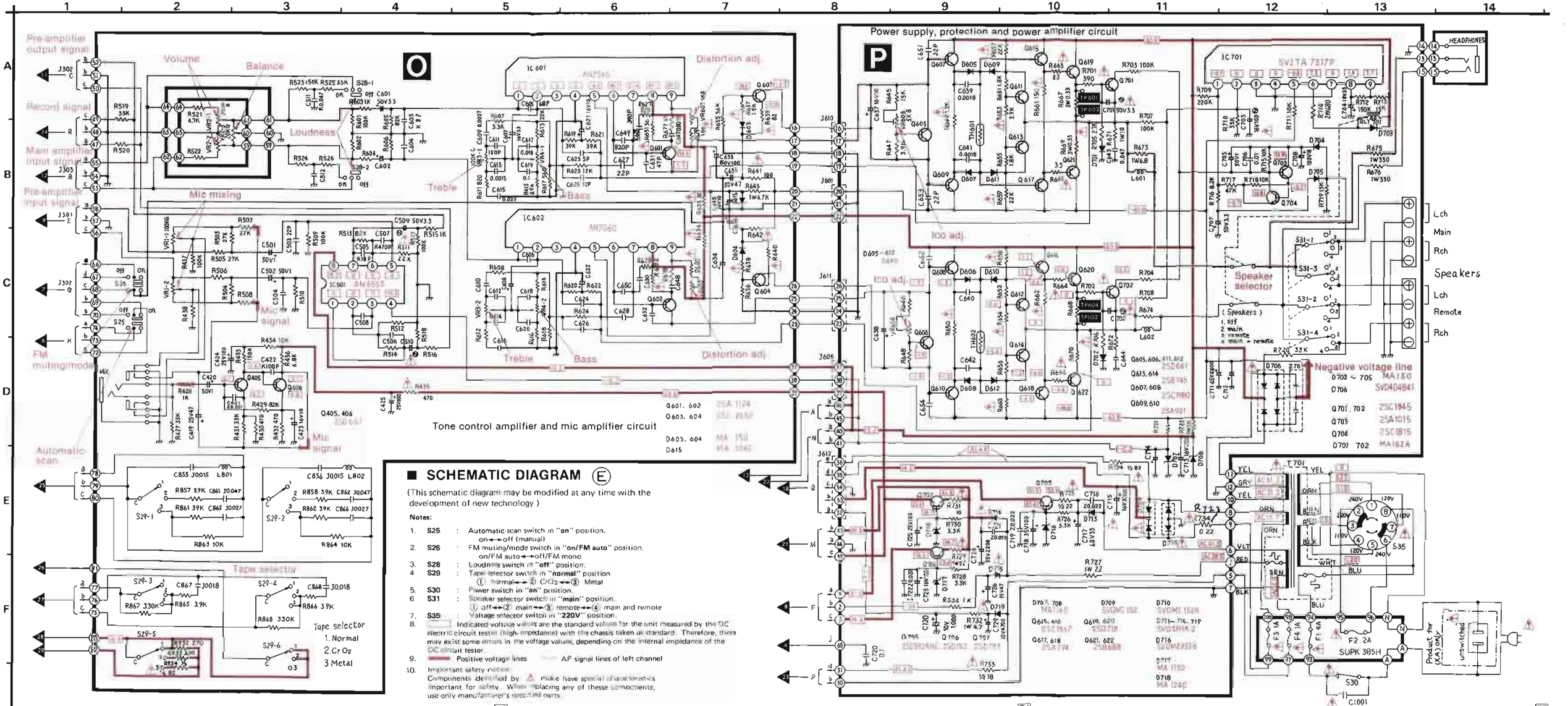


- Terminal guide of IC's and transistors



- Power supply, protection and power amplifier circuit





■ SCHEMATIC DIAGRAM (E)

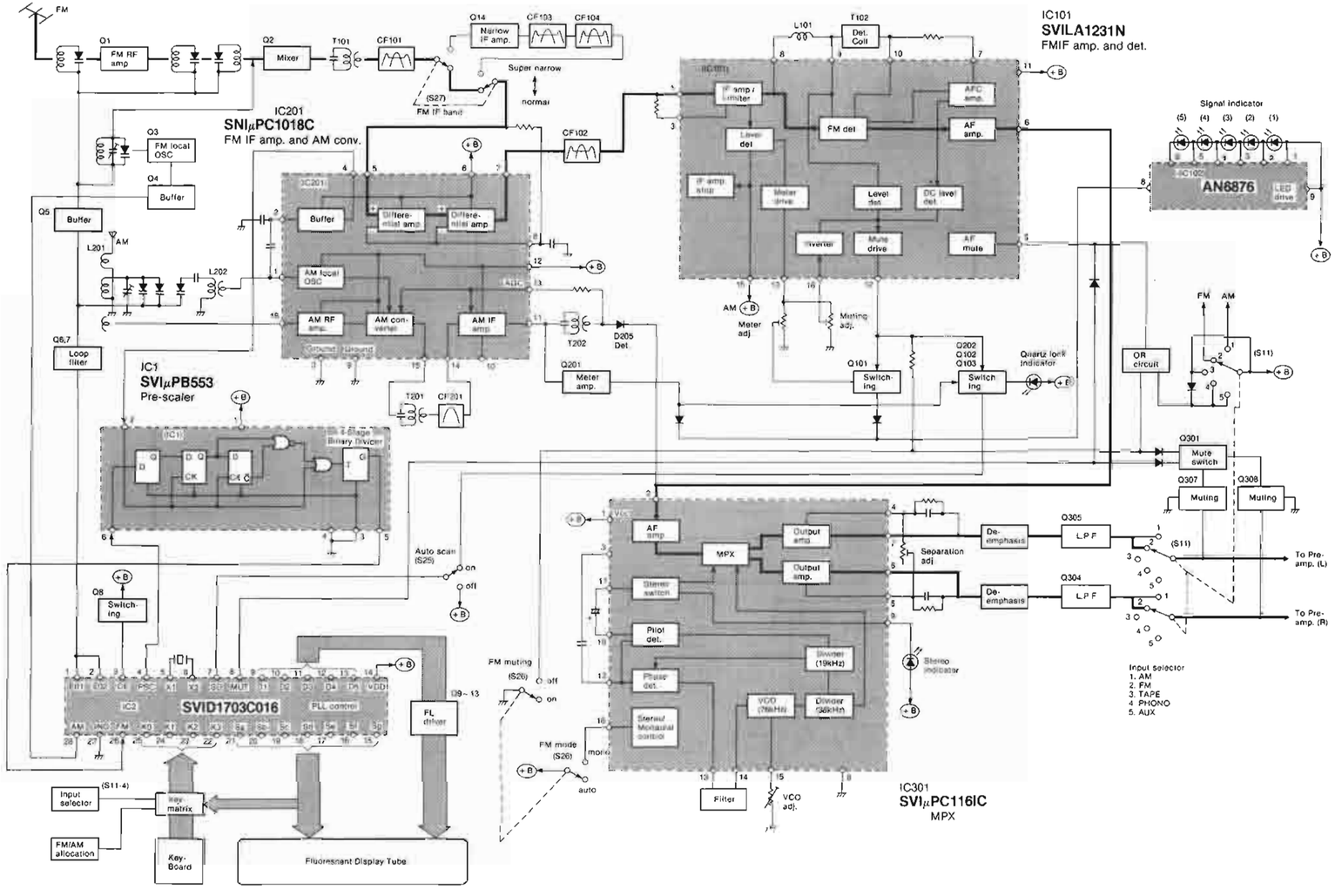
(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. S25 : Automatic-scan switch in "on" position. on ↔ off (manual)
2. S26 : FM muting/mode switch in "on/FM auto" position. on/FM auto ↔ off/FM mono
3. S28 : Loudness switch in "off" position.
4. S29 : Tape selector switch in "normal" position. ① Normal ↔ ② CrO2 ↔ ③ Metal
5. S30 : Power switch in "on" position.
6. S31 : Speaker selector switch in "main" position. ① off ↔ ② main ↔ ③ remote ↔ ④ main and remote
7. S35 : Voltage selector switch in "220V" position.
8. Indicated voltage values are the standard values for the unit measured by the DC electric circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
9. Positive voltage lines — AF signal lines of left channel
10. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

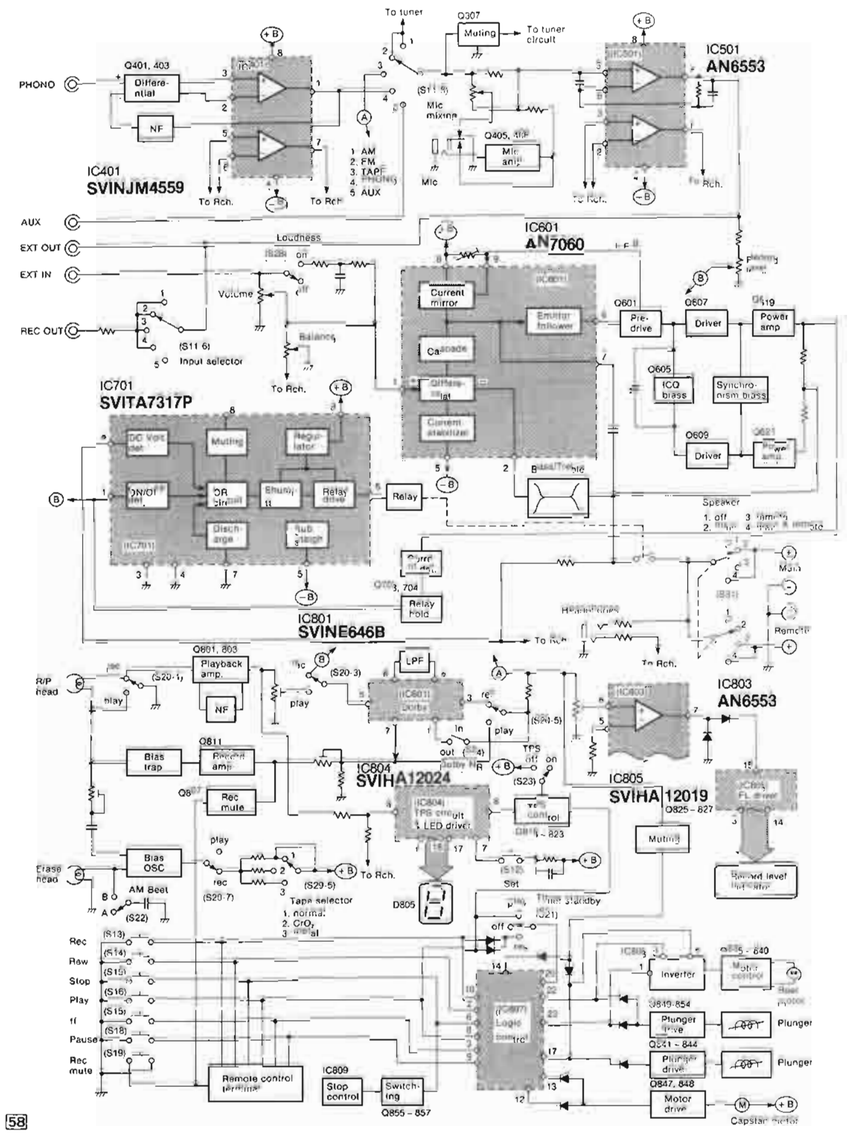
■ BLOCK DIAGRAMS

- FM/AM tuner circuit



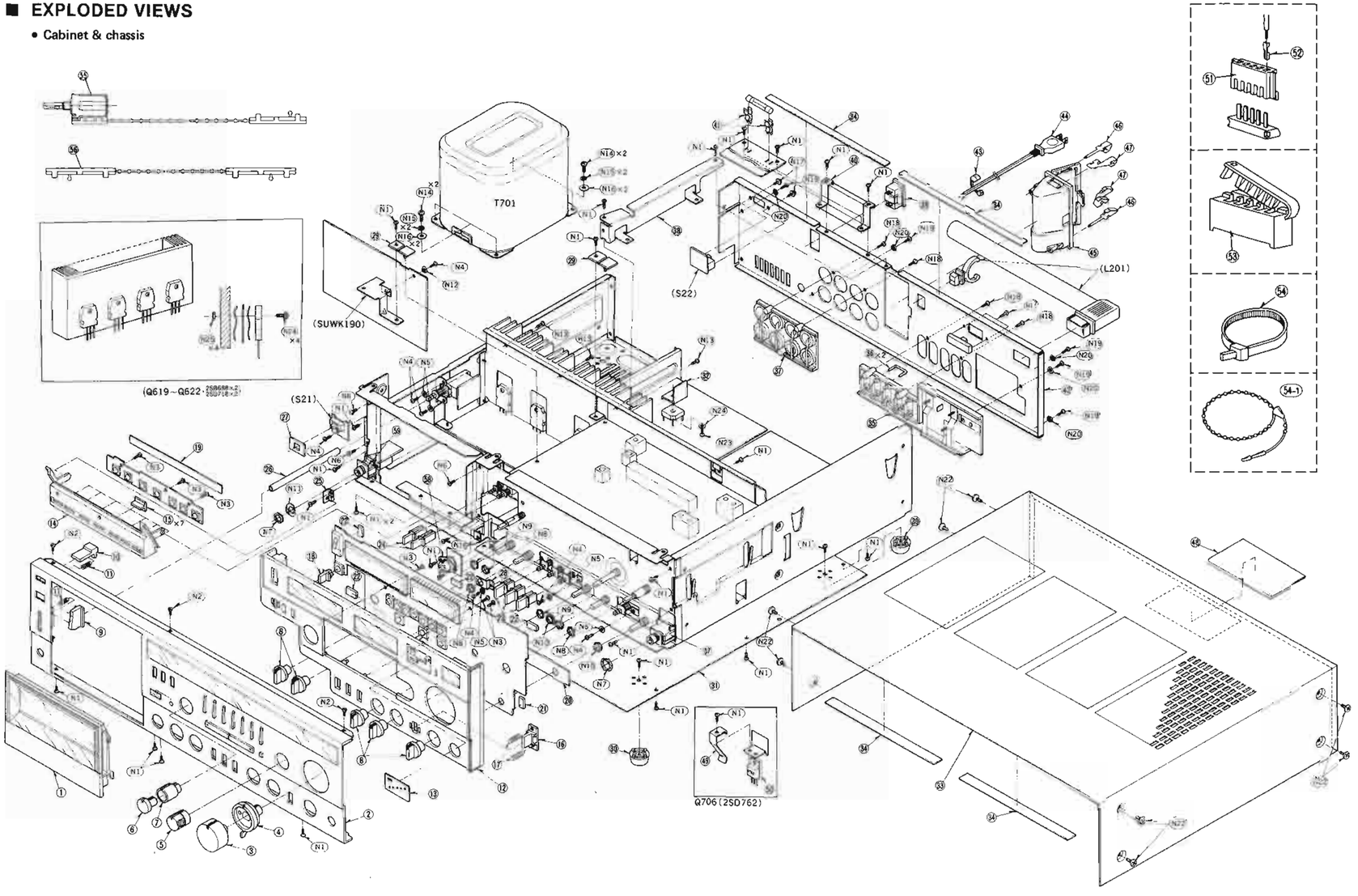
SA-R40

- Amplifier and Cassette deck circuit



■ EXPLODED VIEWS

• Cabinet & chassis



■ REPLACEMENT PARTS LIST..... Cabinet and Chassis Parts

Notes:
1. Part numbers are indicated on most mechanical parts Please use this part number for parts orders
2. Important safety notice: Components indentified by △ make have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. ⓚ-marked parts are used for black type only, while ○-marked parts are for silver type only.
4. Parts other than ⓚ and ○ marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. . SA-R40 (K)

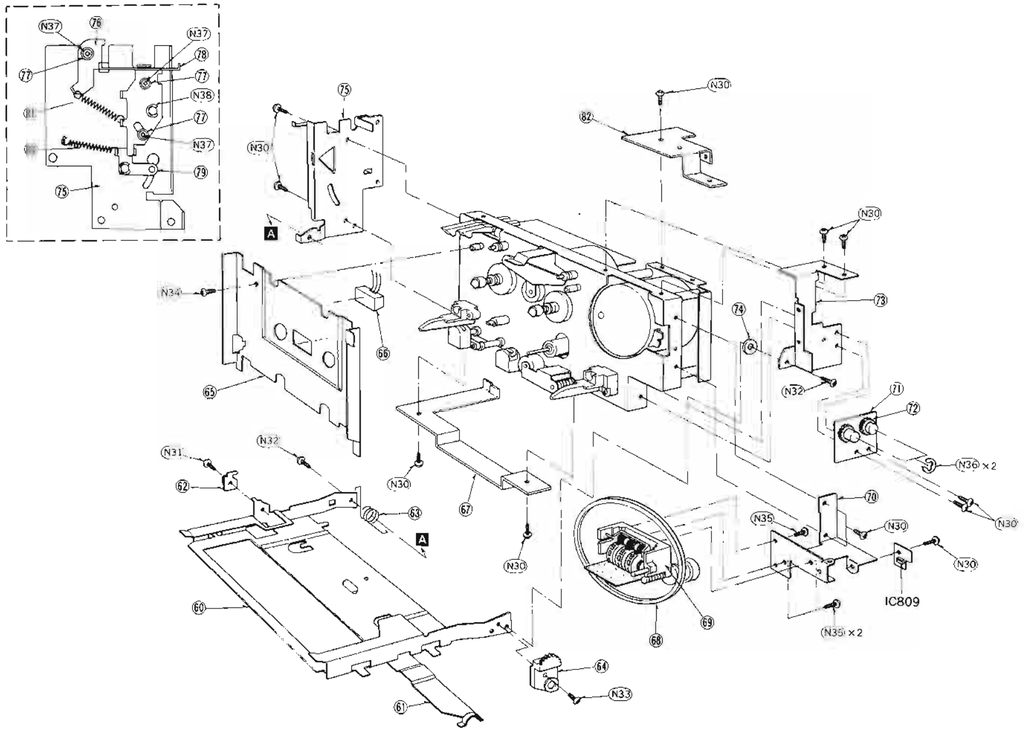
Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SYEK24	Cassette Lid Hold
1	ⓚ	SYEK27	Cassette Lid Holding Plate (Black)
2		SYWK110	Panel Front Assy
2	ⓚ	SYWK130	Panel Front Assy (Black)
3		SBNK37	Knob, Volume
4		SBNK36	Knob, Balance
5		SBNK38	Knob, Input Selector
6		SBNK39	Knob, Function
7		SBNK28	Knob, Tape (1)
8		SBNK27	Knob, Mic Mixing, Treble, Bass & Speaker, Tape Selector
9		SKCK19-2	Button, Power
10		SKCK21-1	Button, Eject
11		SJS119	Sensor, Power, Eject Button
12		SYEK29	Panel Front Sub Assy
12	ⓚ	SYEK28	Panel Front Sub Assy (Black)
13		SGKK29-2	Filter, Level Indicator Window
13	ⓚ	SGKK29-1	Filter, Level Indicator Window (Black)
14		SGXK47	Cassette Button Board
14	ⓚ	SGXK32	Cassette Button Board (Black)
15		BCK20	Button, Rec Mute, Rewind, FF, Play, Stop, Rec Mute
16		SKCK26	Button, Loudness
17		SKCK16	Spring, Loudness Button
18		BCK29	Button, Eject
19		SKCK45-1	Fiber, Cassette Button Board
20		SMXK23-1	Sheet, BBD, F.C.B.
21		HGK381	Sheet, BBD, F.C.B.
22		HGK462	Sheet, BBD, F.C.B.
23		SKCK27	Button, Stereo, Tuner, FM Mode, Auto Scan
24		SKCK28	Button, Tape, Dolby NR
25		UWK140	Bracket, Cassette Button Board
26		SUK4	Switch, Connector
27		SHRK91-1	Tuner, Switch Cover
27	ⓚ	SHRK91-1	Tuner, Switch Cover (Black)
28		SUWK240	Bracket, Switch M'tg
29		SMEK8	Holder, Fuse, P.C.B. M'tg
30		SKL181-1	Fuse, 3A
31		NKUK80	Bottom Board
32		SMY327	Heat Sink (D706)
33		SKCK40S2	Cabinet
33	ⓚ	SKCK40B2	Cabinet (Black)
34		SHS2457	Rubber, Cabinet Foot
35		SJ-1N	Terminal and Input
36		SJP9206	Short Pin
37		SJF4813-1	Terminal, Speaker
38		SUWK210	Bracket, Rear Panel
39 [XA]	△	SJSA61-2	Socket, AC Input
40		SUWK240	Bracket, Fuse, P.C.B. M'tg
41		SJT340	Holder, Fuse
42		SGPK102-2A	Rear Panel
42 [XA]		SGPK102-1A	Rear Panel
43		SHR122	Bushing, AC Cord
44	△	SJA88	AC Cord
44 [XA]	△	SJA111	AC Cord
45		SWBK4	Battery Case
46		JC7	Battery Spring, (–) Side
47			Battery Spring, (+) Side
48		MXK17	Speaker, F.C.B.
49		SUS161	Bracket, Speaker M'tg
(50)		MXK18	Speaker, F.C.B.
51		SJS117	Socket, 2 Pin
51		SJS213	Socket, 3 Pin
51		SJS617	Socket, 4 Pin
51		SJS615	Socket, 5 Pin
51		SJS621	Socket, 6 Pin
51		SJS618	Socket, 8 Pin
51		SJS605	Socket, 9 Pin
52		SJT779	Terminal
53		SJS627	Connector, Lead Wire, 2 Pin
53		SJS619	Connector, Lead Wire, 3 Pin
53		SJS627	Connector, Lead Wire, 4 Pin
53		SJS624	Connector, Lead Wire, 5 Pin
53		SJS620	Connector, Lead Wire, 6 Pin
54		SHRK44	Lead Clamper
54-1		SHR-A130	Lead Clamper
55		K12	Wire Harness Connector (Speaker, Select)
56		SWK2	Wire Remote Control (Select)
56		SWK4	Wire Remote Control (FM, IF Band)
57		SJJK14	Jack Microphone
58		SJSK2	Socket, Remote Control
59		SJJK16	Jack Headphone

Areas

- [EX] is available in Switzerland and Scandinavia.
- [EH] is available in Holland.
- [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

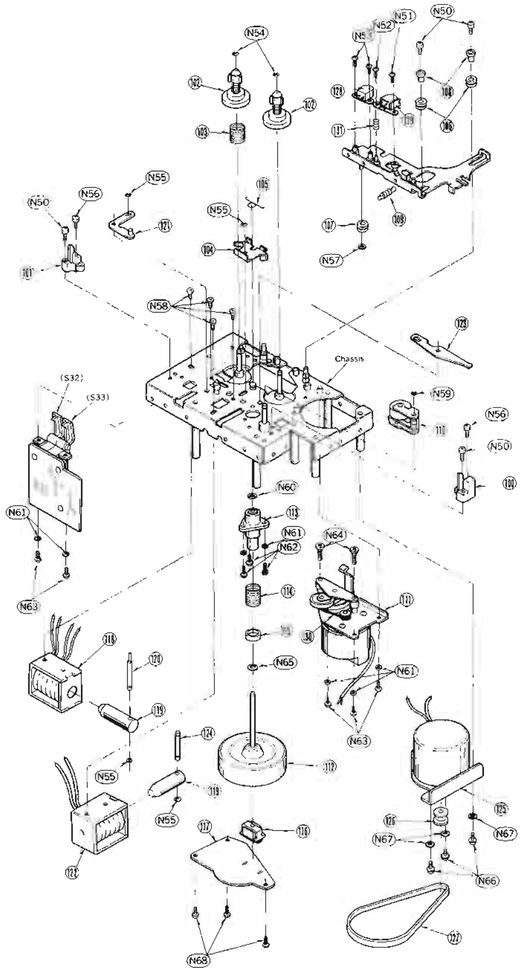
■ EXPLODED VIEWS

- Cassette deck



- Cassette deck (body)

SJD23-3



SA-R40

■ REPLACEMENT PARTS LIST . . . . . Cassette Deck, Accessories and Packing Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders
2. Important safety notice: Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Ref. No.		Part No.	Part Name & Description
CASSETTE TAPE DECK			
60		SGKK30	Cassette Lid
61		SMQK6001	Spring, Cassette Lid
62		SMQK3008	Bracket, Cassette Lid
63		SMQK6002	Spring, Cassette Lid
64		SMQK4001	Gear, Cassette Lid
65		SGXX31	Mechanism Cover
66		SGLK3	Lamp Cover
67		SMWK200	Bracket, Cassette Mechanical
68		SMQK2002	Counter Belt
69		SMQK2001	Tape Counter
70		SMQK3009	Bracket, Tape Counter
71		SMQK1003	Bracket, Gear
72		SUE19	Dump, Gear
73		SMQK3002–1	Bracket, Cassette Guide (R)
74		RDR13	Spacer, Cassette Lid
75		SMQK1001	Bracket, Cassette Guide (L)
76		SMQK3006	Bracket, Switch M'tg
77		SMQK5002	Shaft
78		SMQK3003	Bracket, Eject
79		SMQK1002	Arm Eject
80		SMQK6003	Spring, Arm Eject
81		SMQK6004	Spring, Switch M'tg
82		SUWK190	Bracket, Cassette P.C.B.
100		SMQT1003	Cassette Guide (R)
101		SMQT1005	Cassette Guide (L)
102		SMQT1007	Rod Ass'y
103		SMQT1009	Spring
104		SMQT1011	Brake Arm Ass'y
105		SMQT1013	Spring Brake Arm
106		SMQ2082	Guide Roller (A)
107		SMQ2084	Guide Roller (B)
108		SMQ2086	Guide Roller
109		SMQT1025	Head Panel Section
110		SMQT1025	Pinch Roller Arm Ass'y
111		SMQT1011	Drive Unit Ass'y
112		SMQT1029	Flywheel Capstan
113		SMQT1031	Flywheel Metal
114		SMQT1033	Thrust Pressure, Spring
115		SMQT1035	Thrust Pressure
116		SMQT1037	F.L. Damper
117		SMQT1039	F.L. Hold Plate
118		SMQT1057	Panel Plunger Coil Ass'y
119		SMQT1061	Plunger
120		SMQT1017	Plunger Shaft (L)
121		SMQT1041	PL. Lever Ass'y
122		SMQT1069	Brake Plunger Coil Ass'y
123		SMQT1045	RC. Lever
124		SMQT1047	Brake Pin
125		SMQT1049	Main Motor Ass'y
126		SMQT1051	Motor Pulley
127		SMQT1053	Main Belt
128		SJH11	R Head
129		SJHK5	R/P Head
130		SMQT1065	Belt
131		SMQT1063	Azimuth Spring
SCREWS, NUT and WASHERS			
N1		**XTB3+8B**	Screw, Tapping + 3 x 8
N2		**XTS3+6B**	Screw, Tapping + 3 x 6
N3		**XTN26+6B**	Screw, Tapping + 2.6 x 6
N4		**XSN3+6S**	Screw + 3 x 6
N5		**XWA3B**	Washer, Spring, φ3
N6		**XSN3+8S**	Screw + 3 x 8
N7		**XNS12**	Nut, M12
N8		**XNS9**	Nut, M9
N9		**XNS8**	Nut, M8

Ref. No.		Part No.	Part Name & Description
N10		SNE402S	Nut, M6
N11		SNE59–1	Washer, φ12
N12		**XWC3B**	Washer, φ3
N13		**XTB3+10BFN**	Screw, Tapping + 3 x 10
N14		**XSN4+10BVS**	Screw + 4 x 10 (Black)
N15		**XWA4BFZ**	Washer, Spring, φ4 (Black)
N16		**XWG4FZ**	Washer, φ4 (Black)
N17		XYN26+C5FZ	Screw & Washer + 2.6 x 5 φ2.6
N18		**XTB3+10BFZ**	Screw, Tapping + 3 x 10 (Black)
N19		**XTB3+8BFZ**	Screw, Tapping + 3 x 8 (Black)
N20		**XWC3B**	Washer, Spring, φ3 (Black)
N21		**XTB4+8BFN**	Screw, Tapping + 4 x 8
N21	K	**XTB4+8BFZ**	Screw, Tapping + 4 x 8 (Black)
N22		**XTV3+12BFN**	Screw, Tapping + 3 x 12
N23		**XWG3**	Washer, Spring, φ3
N24		**XSN3+14S**	Screw, + 3 x 14
N25		**XNG3ES**	Nut, M3
N30		**XTB3+6BFZ**	Screw, Tapping + 3 x 6
N31		**XTN26+6BFZ**	Screw, Tapping + 2.6 x 6
N33		SHD3X1F–1	Screw
N33		**XTS3+8B**	Screw, Tapping + 3 x 8
N34		**XSN26+4BV**	Screw, + 2.6 x 4
N35		**XTN26+6B**	Screw, Tapping + 2.6 x 6
N36		**XUC4FT**	Circlip, φ4
N37		**XTN26+6B**	Screw, Tapping + 2.6 x 6
N38		**XUC3FT**	Circlip, φ3
N50		XNS23+8FZ	Screw + 2.3 x 8
N51		**XSN2+5**	Screw + 2 x 5
N52		**XSN2+6**	Screw + 2 x 6
N53		**XSN2+14**	Screw + 2 x 14
N54		XUC12FZ	Circlip, φ12
N55		**XUC15FT**	Circlip, φ15
N56		XSN23+12FZ	Screw + 2.3 x 12
N57		**XUC2FT**	Circlip, φ2
N58		SMQT1059	Screw
N59		**XUC25FT**	Circlip, φ25
N60		SMQT1055	Nylon Washer, φ2.5 x φ7 x t0.5
N61		**XWA23B**	Washer, Spring, φ2.3
N62		XSN23+5	Screw + 2.3 x 5
N63		XSN23+4	Screw + 2.3 x 4
N64		XSS2+5FZ	Screw + 2 x 5
N65		SMQT1057	Nylon Washer, φ2.5 x φ5 x t0.8
N66		**XSN26+5**	Screw + 2.6 x 5
N67		**XWA26B**	Washer, Spring, φ2.6
N68		**XSS26+5**	Screw + 2.6 x 5
ACCESSORIES			
A1		SSA267	Cord, FM Indoor Antenna
A2 [XA]	△	SJP5213–1	Plug Adaptor, Power Source
A2 [XA]	△	SJP5215	Plug Adaptor, Power Source
A3 [XA]		SPB1065	Plug Bag
PACKING PARTS			
P1		SPGK71	Carton Box
P1 [XA]		SPGK73	Carton Box
P2		SPSK22–2	Pad, Front Side
P3		SPSK22–1	Pad, Rear Side
P4		SPJ15	Arc, Cord Polyethylene Bag
P5		SPPK39	Polyethylene Bag
P6		SQFK5032	Instruction Book Printed Matter
P6 [XA]		SQFK5033	Instruction Book Printed Matter
P7	K	SGK1413	Carton Box Black Level

Areas

- [EX] is available in Switzerland and Scandinavia.
- [EH] is available in Holland.
- [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

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