

Service Manual

Slim Type Cassette Deck with New Soft
Mechanism and Peak Hold FL Meters

Cassette Deck
RS-M216
(Black Face)
(Silver Face)



This is the Service Manual for the following areas.

- For all European areas except United Kingdom.
- ▢ For United Kingdom.
- ▣ For Asia, Latin America, Middle East and Africa areas.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback	Inputs:	MIC; sensitivity 0.25 mV, applicable microphone impedance 400Ω—10 kΩ
Motor:	Electrical governor motor		LINE; sensitivity 60 mV, input impedance more than 40 kΩ
Tape speed:	4.8 cm/s	Outputs:	LINE; output level 400 mV, output impedance 1.5 kΩ or less
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)		HEADPHONES; output level 80 mV (8Ω) applicable headphone impedance 8Ω—600Ω
Frequency response:	Metal tape; 20—17,000 Hz 40—16,000 Hz (DIN)	Bias frequency:	80 kHz
	CrO ₂ tape; 20—16,000 Hz 40—15,000 Hz (DIN)	Heads:	2-head system 1 MX head for record/playback 1 double-gap ferrite head for erasure
	Normal tape; 20—15,000 Hz 40—14,000 Hz (DIN)	Power requirements:	□ ... AC 220 V, 50-60 Hz ▢ ... AC 240 V, 50 Hz ▣ ... AC 110/125/220/240 V, 50-60 Hz
Signal-to-noise ratio:	Dolby* NR in; 66 dB (above 5 kHz) Dolby NR out; 56 dB (signal level = max. input level A weighted, CrO ₂ type tape)	Power consumption:	11 W
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape	Dimensions:	43 cm(W) × 10.9 cm(H) × 23.3 cm(D)
		Weight:	4.0 kg

Specifications are subject to change without notice.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

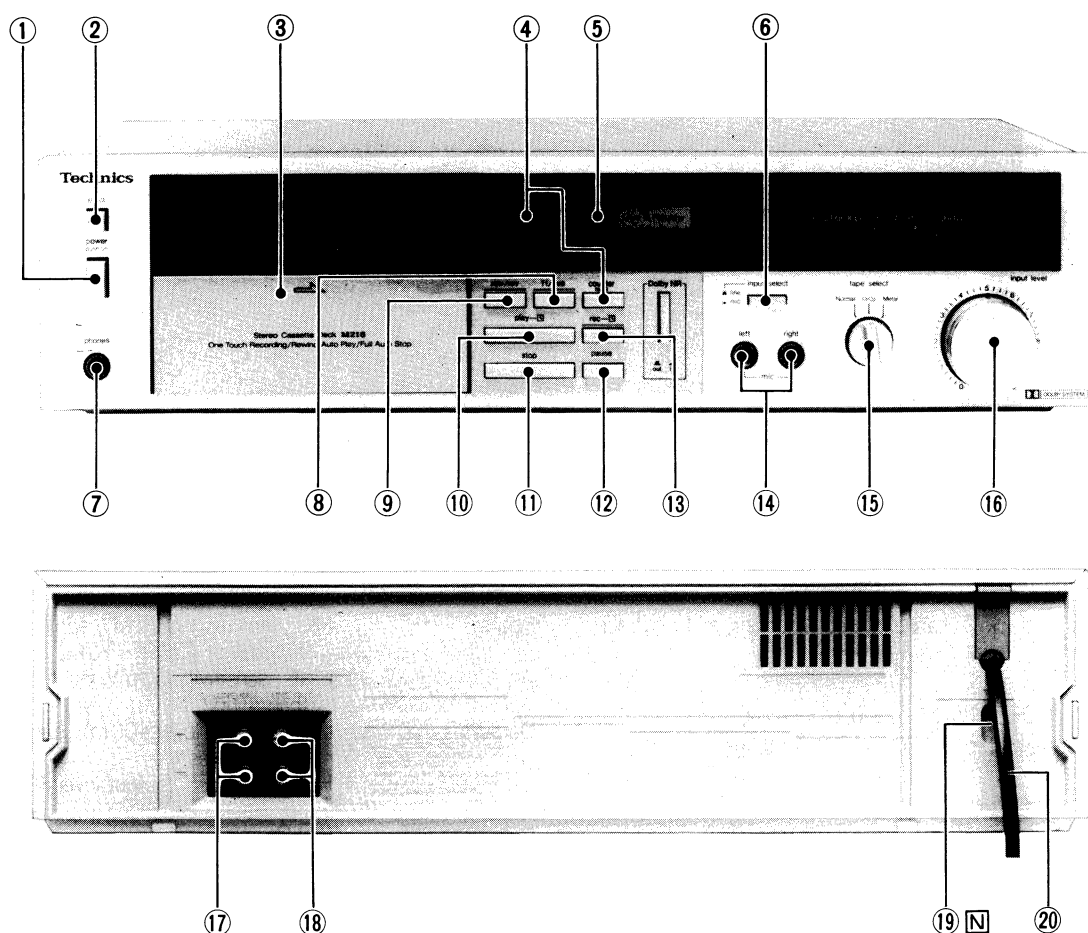
Technics

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LOCATION OF CONTROLS AND COMPONENTS



- ① Power ON/OFF switch
- ② Eject button
- ③ Cassette holder
- ④ Tape counter and Reset button
- ⑤ Recording indicator
- ⑥ Input selector
- ⑦ Headphones jack
- ⑧ Fast forward/Cue button
- ⑨ Rewind/Review button

- ⑩ Play button
- ⑪ Stop button
- ⑫ Pause button
- ⑬ Record button
- ⑭ Microphone jacks
- ⑮ Tape selector
- ⑯ Input level controls
- ⑰ Line in jacks
- ⑱ Line out jacks

- ⑲ AC power voltage selector
- * [N] ... For Asia, Latin America, Middle East and Africa areas.

- ⑳ AC power cord.

DISASSEMBLY INSTRUCTIONS

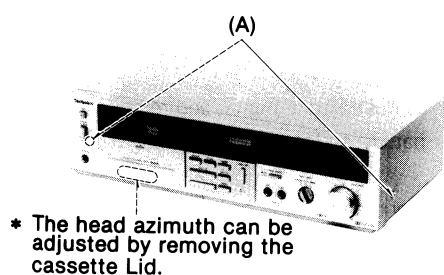


Fig. 1

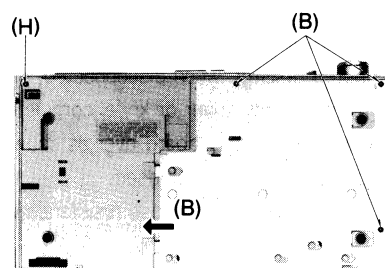


Fig. 2

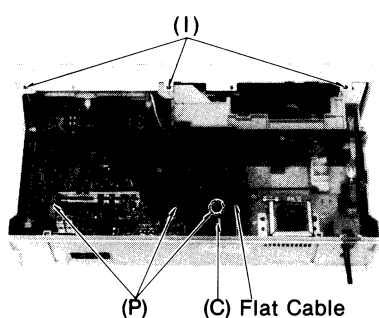


Fig. 3

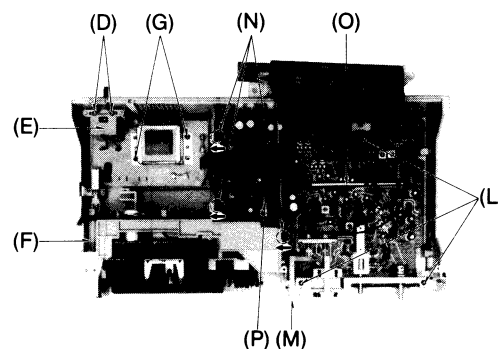


Fig. 4

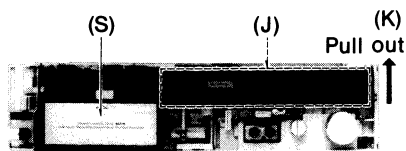


Fig. 5

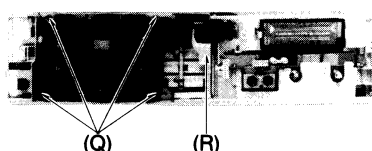


Fig. 6

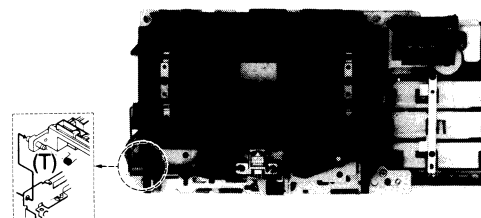
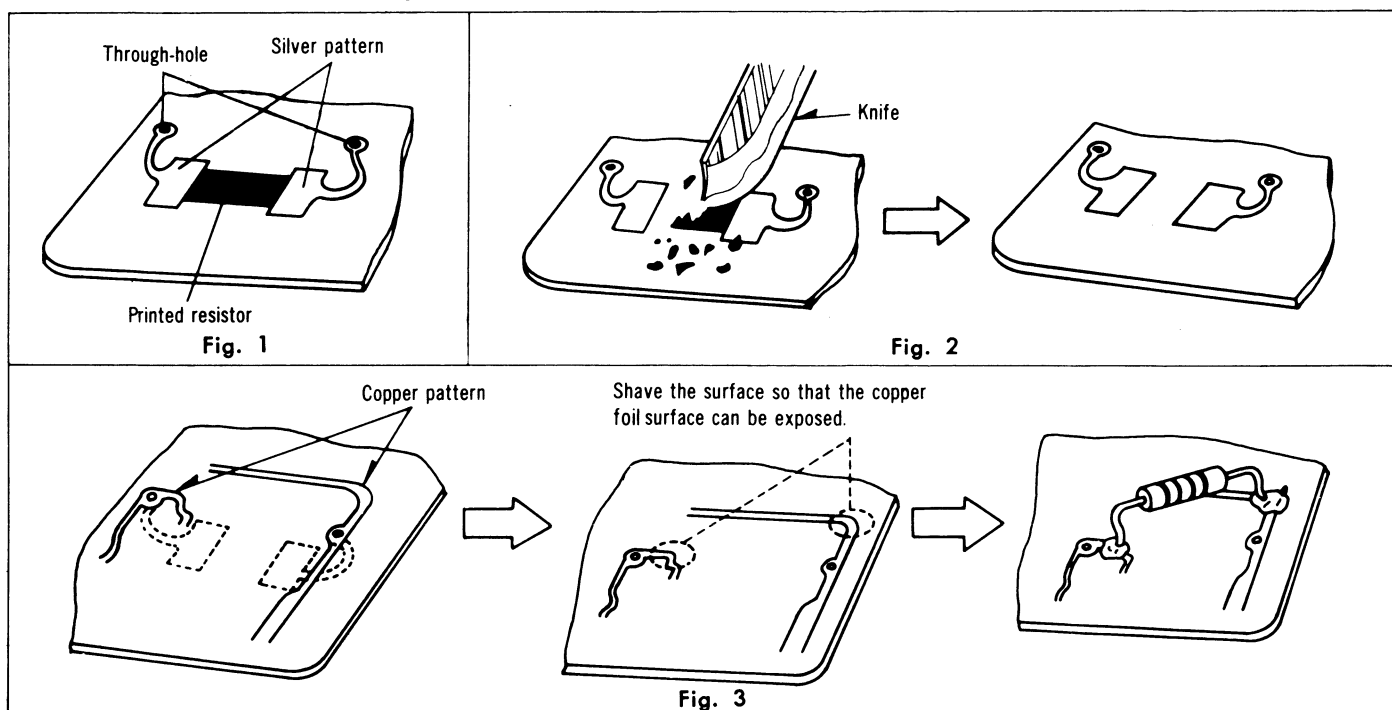


Fig. 7

Ref. No.	Procedure	To remove —	Remove —	Shown in fig. —
1	1	Case cover	• 2 screws (A)	1
2	2	Bottom cover	• 3 screws (B) (Slide in direction of arrow) (B')	2
3	1 → 3	Power supply circuit board	• Pull out the flat cable from connector [4] (C) • 2 screws (D) • Cord clasper (E) • Pull out the switch rod-C (F) • 2 red screws (G)	3 4 4 4 4
4	1 → 2 → 4	Front panel	• 1 screw (H) • 3 screws (I)	2 3
5	1 → 2 → 4 → 5	FL meter unit	• Meter cover and meter-filter (J) • Pull out the FL meter-unit (K)	5 5
6	1 → 2 → 4 → 5 → 6	Main circuit board	• 3 red screws (L) • Pull out the switch rod-B (M) • Push the claw in the direction (N) • Pull out the record/playback connection wire (O) • Pull out the flat cable from connector [4] (C) • Pull out the 4 sockets (P)	4 4 4 4 3 3, 4
7	1 → 2 → 4 → 5 → 7	Mechanism unit	• 4 red screws (Q) • Pull out the counter reset lever (R)	6 6
8	1 → 2 → 4 → 5 → 7 → 8	Cassette holder	• Cassette lid (S) • Slide in direction of arrow (T)	5 7

HOW TO REPAIR PRINTED RESISTORS

- The printed resistor is located on the printed circuit board as illustrated in Fig. 1.
(The through-holes are the points that connect the silver pattern and the pattern on the rear of the printed circuit board.)
 - Repair the printed resistor, when disconnected, in the following procedure:
 1. Using a pointed screwdriver or knife, completely scrape the printed resistor as illustrated in Fig. 2, and remove its shavings.
 2. Turning the printed circuit board over as shown in Fig. 3, scrape the copper pattern surface near the through-holes until the copper foil surface can be exposed.
 3. Solder the carbon resistor, whose resistance value is identical to the removed printed resistor, to the exposed copper foil surface.
- (Refer to the schematic diagram of the Service Manual for the resistance values of printed resistors.)



MEASUREMENT AND ADJUSTMENT METHODS

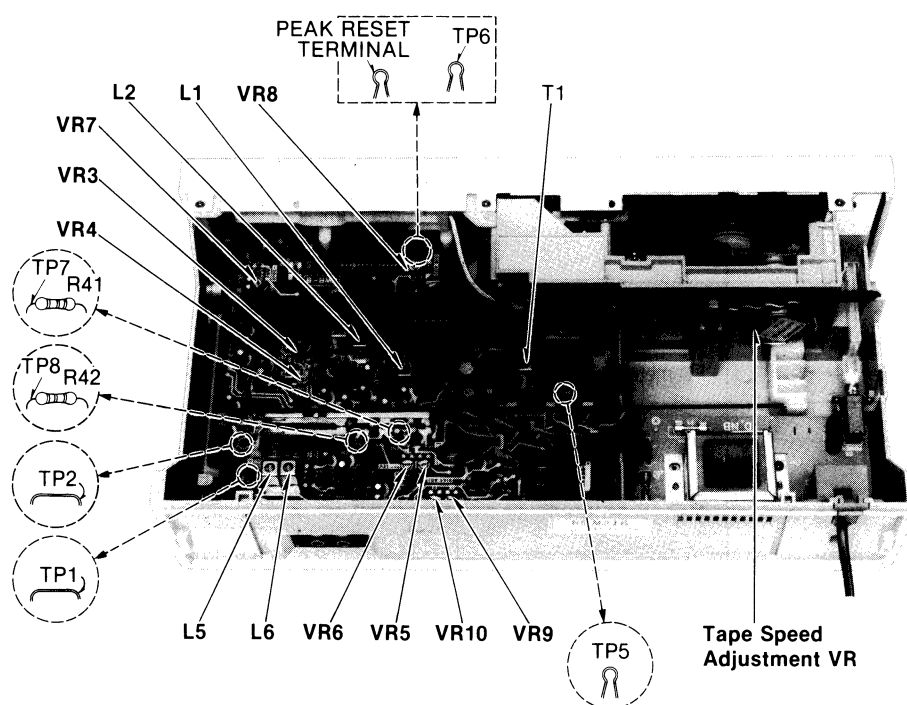
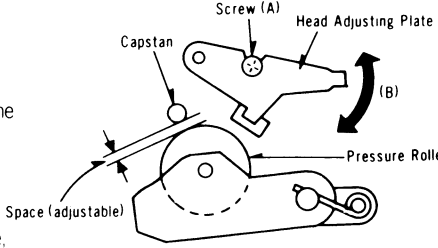
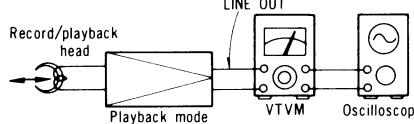
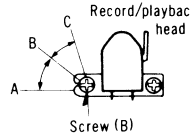
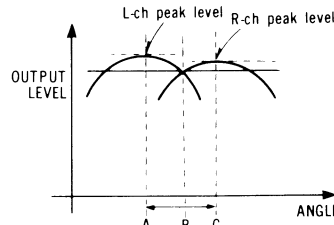
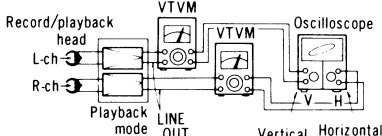
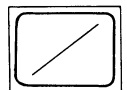
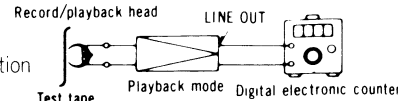
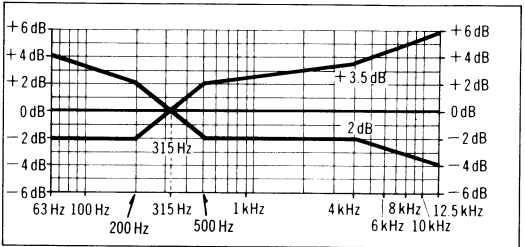
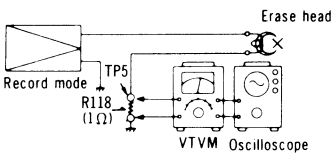
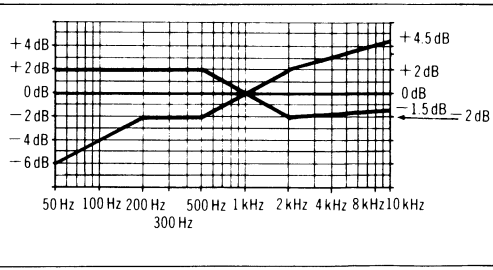


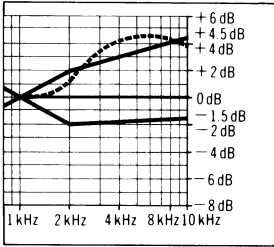
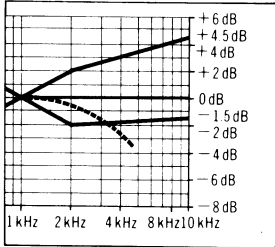
Fig. 1
— 4 —

NOTES: Keep good condition, set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: $20 \pm 5^{\circ}\text{C}$ ($68 \pm 9^{\circ}\text{F}$)
- Dolby NR switch: OUT
- Tape selector: Normal position
- Input selector: Line in
- Input level controls: Maximum

ITEM	MEASUREMENT & ADJUSTMENT
A Head position adjustment Condition: • Playback and pause mode	(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.) 1. Press the playback button and pause button 2. Measure the space between the pressure roller and the capstan. Standard value: $0.5 \pm 0.3\text{mm}$ 3. If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow (B) for adjustment.  Fig. 2
B Head azimuth adjustment Condition: • Playback mode Equipment • VTVM • Oscilloscope • Test tape (azimuth) ... QZZCFM	L-ch/R-ch output balance adjustment 1. Make connections as shown in fig. 3.  Fig. 3 2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 4 for maximum output L-ch and R-ch levels. When the output levels of L-ch and R-ch are not at maximum at the same time, readjust as follows. 3. Turn the screw shown in fig. 4 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate the angle B between angles A and C, i.e., a point where L-ch and R-ch output levels come together at maximum. (Refer to figs. 4 and 5.) L-ch/R-ch phase adjustment 4. Make connections as shown in fig. 6. 5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 4 so that pointers of the two VTVMs swing to maximum and a waveform as illustrated in fig. 7 is obtained on the oscilloscope.  Fig. 4  Fig. 5  Fig. 6  Fig. 7
C Tape speed Condition: • Playback mode Equipment: • Digital electronic counter or frequency counter • Test tape ... QZZCWAT	Tape speed accuracy 1. Test equipment connection is shown in fig. 8. 2. Playback test tape (QZZCWAT 3,000Hz) at middle section and supply playback signal to frequency counter. 3. Measure this frequency. 4. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%) \quad \text{where, } f = \text{measured value}$ Standard value: $\pm 1.5\%$ Adjustment method 1. Playback the test tape (middle) 2. Adjust so that frequency becomes 3,000Hz. 3. Tape speed adjustment VR shown in fig. 1.  Fig. 8

ITEM	MEASUREMENT & ADJUSTMENT
	Tape speed fluctuation Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows: $\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 (\%) \quad f_1 = \text{maximum value, } f_2 = \text{minimum value}$ Standard value: Less than 1% Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.
④ Playback frequency response Condition: • Playback mode • Tape selector ... Normal position Equipment: • VTVM • Oscilloscope • Test tape ... QZZCFM	1. Test equipment connection is shown in fig. 3. 2. Place UNIT into playback mode. 3. Playback the frequency response test tape (QZZCFM). 4. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT. 5. Make measurement for both channels. 6. Make sure that the measured value is within the range specified in the frequency response chart (shown in fig. 9). Playback frequency response chart  Fig. 9
⑤ Playback gain Condition: • Playback mode • Tape selector ... Normal position Equipment: • VTVM • Oscilloscope • Test tape ... QZZCFM	1. Test equipment connection is shown in fig. 3. 2. Playback standard recording level portion on test tape (QZZCFM 315Hz), and using VTVM measure the output level at LINE OUT. 3. Make measurement for both channels. Standard value: 0.4V ± 1 dB [around 0.42V: at test points TP3 (L-CH) and TP4 (R-CH)] Adjustment 1. If measured value is not within standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 1 on page 4). 2. After adjustment, check "Playback frequency response" again.
⑥ Erase current Condition: • Record mode • Tape selector ... Metal position Equipment: • VTVM • Oscilloscope	1. Test equipment connection is shown in fig. 10. 2. Press the record and pause buttons. 3. Set the tape selector to metal position. 4. Read voltage on VTVM and calculate erase current by following formula: $\text{Erase current (A)} = \frac{\text{Voltage across both ends of R118}}{1 (\Omega)}$ Standard value: 155 ± 15 mA (Metal position) 5. If measured value is not within standard, adjust as follows. Adjustment 1. Open the point (A) and short the point (B) on the main circuit board in the wiring connection diagram (See page 15). 2. Make measurement for erase current. 3. Make sure that the measured value is within the erase current of 140mA to 170mA. 4. If it is beyond the value, carry out the following adjustments: • If the erase current is less than 140mA, short the point (A). • If the erase current is more than 170mA, open the points (A) and (B).  Fig. 10
⑦ Overall frequency response Condition: • Record/playback mode • Tape selector ... Normal position • ... CrO₂ position • ... Metal position • Input level controls ... MAX	Note : Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response). Overall frequency response chart (Normal)  Fig. 11

ITEM	MEASUREMENT & ADJUSTMENT
Equipment * VTVM * ATT * Resistor (600Ω) * Test tape (reference blank tape) ...QZZCRA for Normal ...QZZCRX for CrO₂ ...QZZCRZ for Metal * AF oscillator * Oscilloscope	Overall frequency response adjustment by recording bias current Note 1: On RS-M216, overall frequency response is adjusted with tape selector set at Normal. Note 2: Recording equalizer is fixed. 1. Make connections as shown in fig. 12. 2. Input a 1 kHz, -24 dB signal through LINE IN. Place the set in record mode. 3. Fine adjust the attenuator to obtain 0.4 V LINE OUT output. * Make sure that the input signal level is -24 ± 4 dB with 0.4 V output voltage. 4. Set the tape selector to Normal, and load the test tape (QZZCRA). 5. Adjust the attenuator to reduce the input signal level by 20 dB. 6. Adjust the AF oscillator to generate 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz and 10 kHz signals, and record these signals on the test tape. 7. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 11). (If the curve is within the charted specifications, proceed to steps 8, 9 and 10.) If the curve is not within the charted specifications, adjust as follows: Adjustment (A): When the curve exceeds the overall frequency response chart specifications (fig. 11) as shown in fig. 13.  Fig. 13 1) Increase bias current by turning VR9 (L-CH) and VR10 (R-CH). (See fig. 1 on page 4). 2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 11.) 3) If the curve still exceeds the specifications (fig. 11), increase bias current further and repeat steps 6 and 7. Adjustment (B): When the curve falls below the overall frequency response chart specifications (fig. 11) as shown in fig. 14.  Fig. 14 1) Reduce bias current by turning VR9 (L-CH) and VR10 (R-CH). 2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 11.) 3) If the curve still falls below the charted specifications (fig. 11), reduce bias current further and repeat steps 6 and 7. 8. Switch the tape selector to CrO₂, change test tape to QZZCRX, and record 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz, 10 kHz and 12.5 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO₂ tapes (fig. 15). 9. Switch the tape selector to Metal, change test tape to QZZCRZ, and record 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz, 10 kHz and 12.5 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 15).

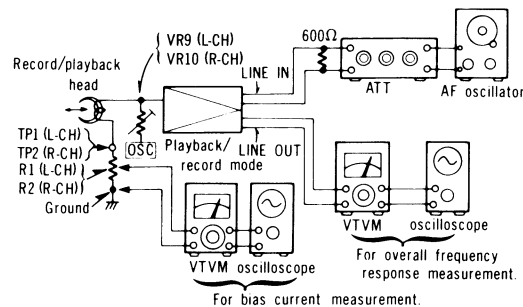


Fig. 12

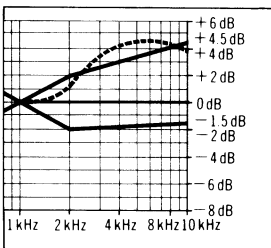


Fig. 13

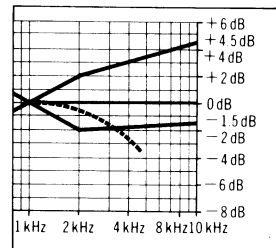


Fig. 14

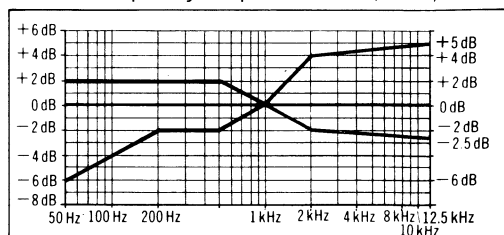
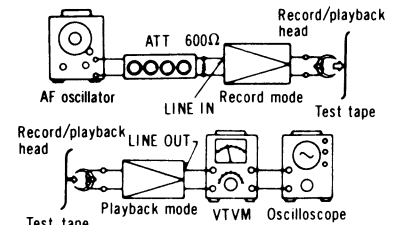
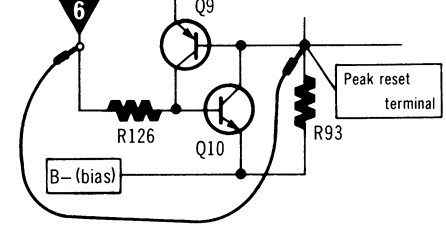
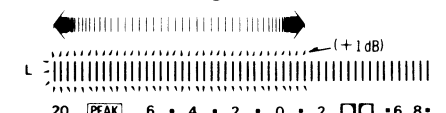
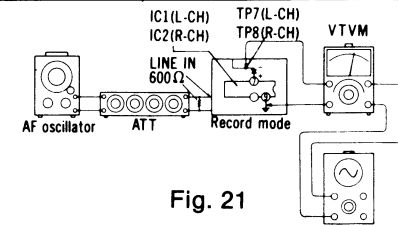
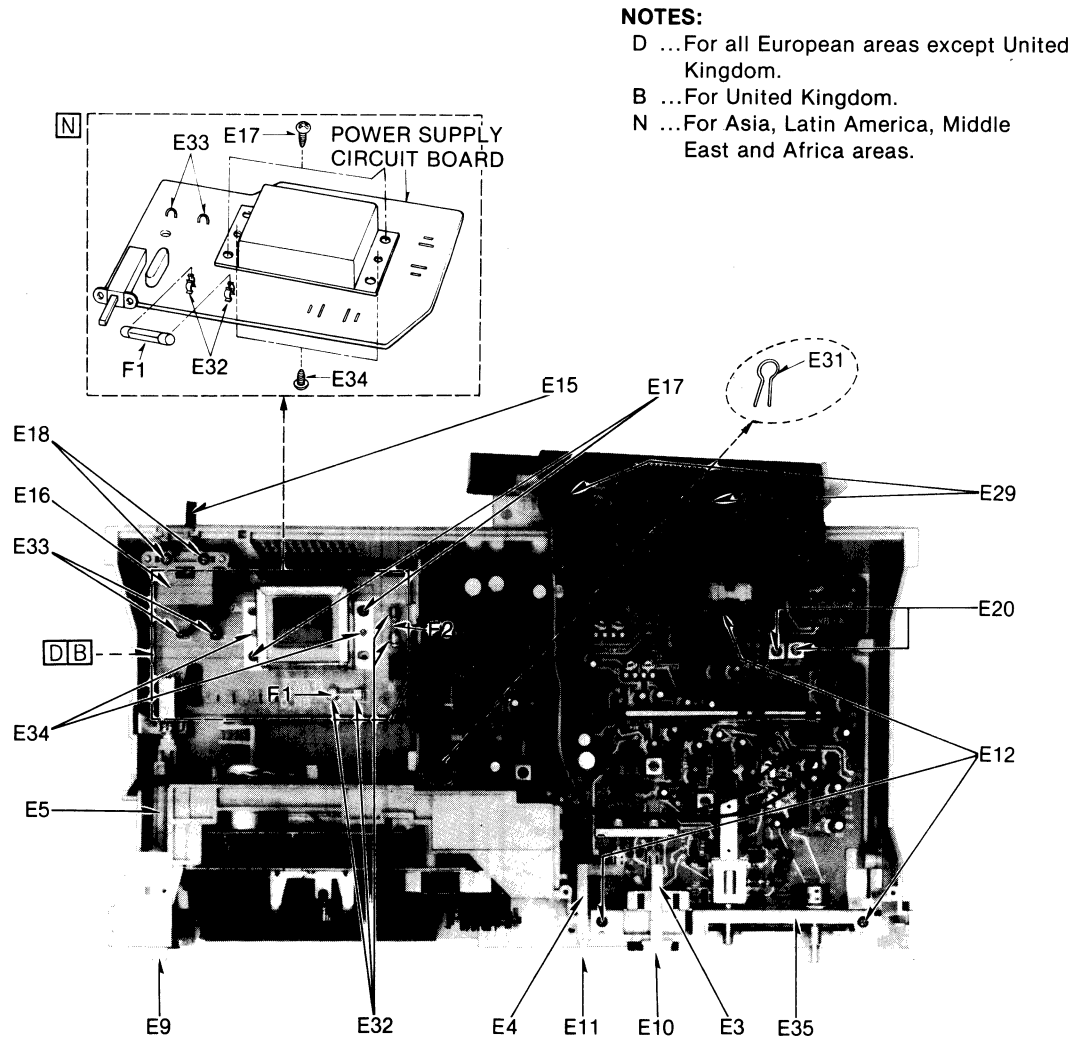
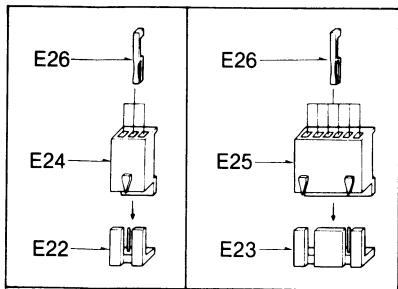
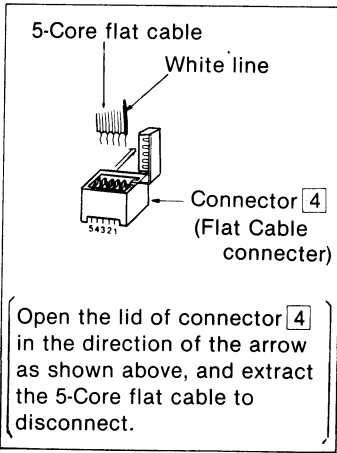
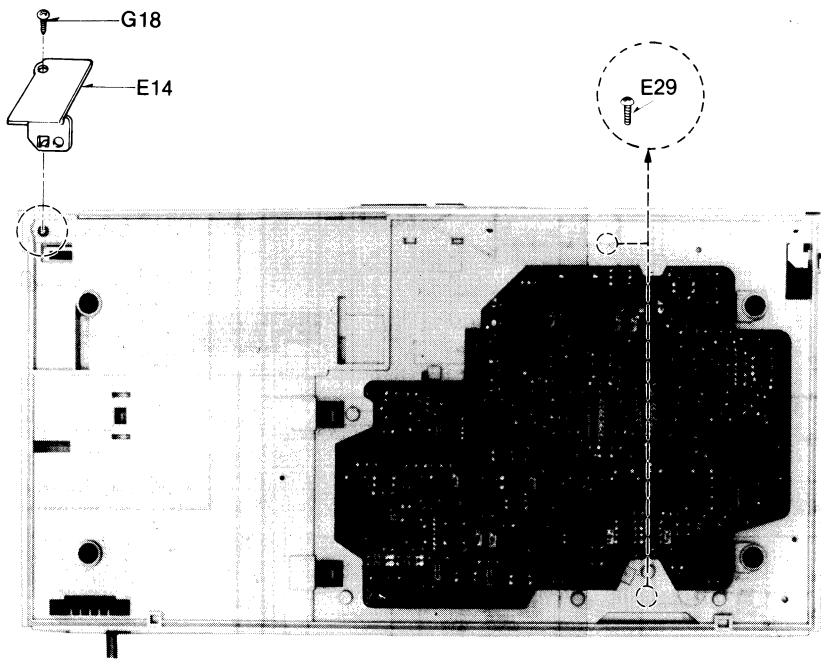
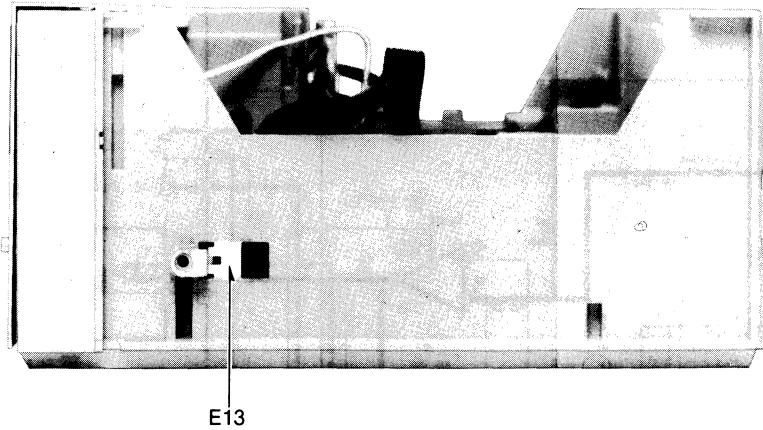
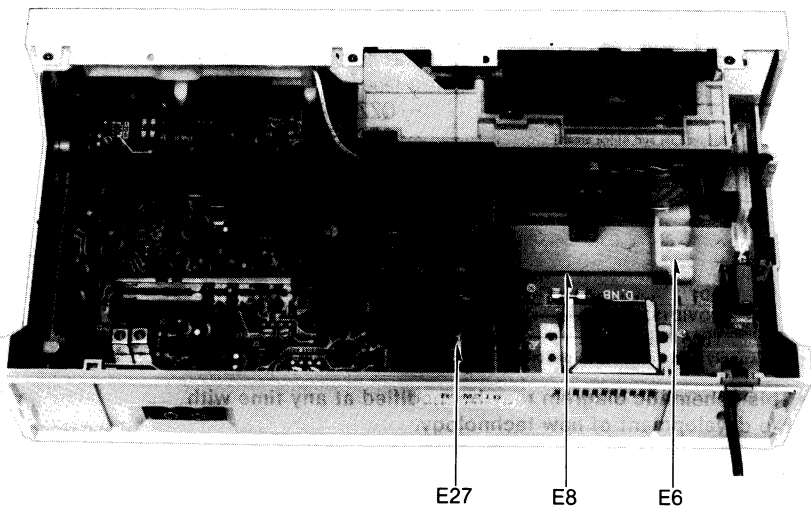
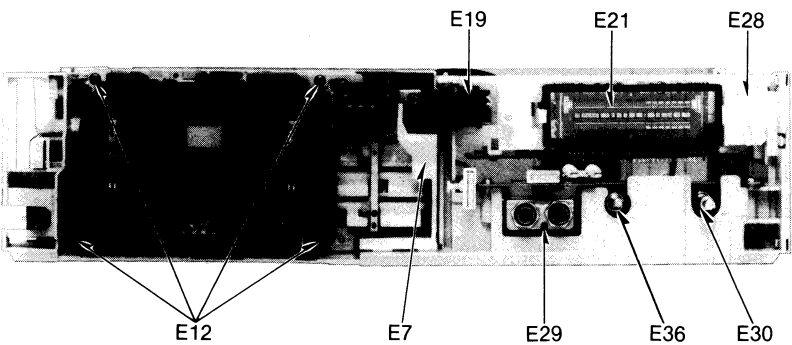
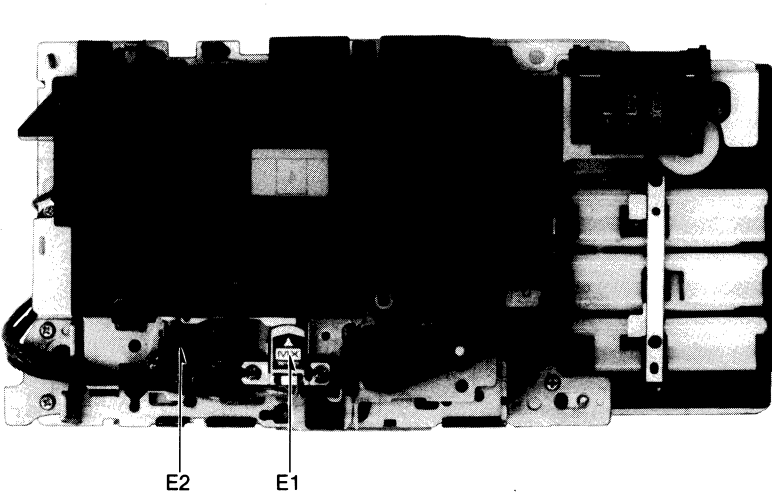
Overall frequency response chart (CrO₂, Metal)

Fig. 15

ITEM	MEASUREMENT & ADJUSTMENT
	10. Confirm that bias currents are approximately as follows when the tape selector is set at different positions. * Read voltage on VTVM and calculate bias current by following formula: $\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}$ around 410μA (Normal position) around 545μA (CrO₂ position) around 800μA (Metal position) } : measured at TP1 (L-CH) and TP2 (R-CH)
H Overall gain Condition: - Record/playback mode - Tape selector Normal position - Input level controls ... MAX - Standard input level; MIC -72 $\pm$ 4 dB LINE IN ... -24 $\pm$ 4 dB Equipment: - VTVM - AF oscillator - ATT - Oscilloscope - Resistor (600 Ω) - Test tape (reference blank tape) ... QZZCRA for Normal	- Test equipment connection is shown in fig. 16. - Place UNIT into record mode, and tape selector to normal position. - Supply 1 kHz signal (-24 dB) from AF oscillator, through ATT to LINE IN. - Adjust ATT until monitor level at LINE OUT becomes 0.4V. - Using test tape, make recording. - Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes 0.4V. - If measured value is not 0.4V, adjust VR5 (L-CH), VR6 (R-CH) (See fig. 1 on page 4.) - Repeat from step (2).  Fig. 16
I Fluorescent meter Condition: - Record mode - Tape selector Normal position - Input level controls ... MAX Equipment: - VTVM - AF oscillator - ATT	- Test equipment connection is shown in fig. 16. - As shown in fig. 17, connect the collector of Q9 and peak reset terminal. - Supply 1 kHz signal (-24 dB) to the LINE IN jack, then press the record button. - Adjust the ATT so that the output level at LINE OUT jack becomes 0.4V (The input level at this condition is termed the standard input level). - Adjustment at "-20 dB": - Adjust the ATT so that input level is -20 dB below standard recording level. - Adjust VR7 so that the -20 dB segment lights up in the -20 $\pm$ 1 dB range (L-CH ONLY) (See fig. 18). - Adjustment at "0 dB": - Adjust the ATT so that the output level at LINE OUT jack becomes 0.4V. (The input level at this condition is termed the standard input level.) - Adjust VR8 so that the +1 dB segment lights up in the 0 $\pm$ 0.2 dB range of the standard input level (See fig. 19). - Repeat twice between steps 5 and 6 above. - Adjust ATT and check that all segments light up when an input signal level is increased to 10 dB higher than the standard input level (See fig. 20).  Fig. 17  Fig. 18  Fig. 19  Fig. 20
J Dolby NR circuit Condition: - Record mode - Dolby NR switch ... IN/OUT - Input level controls ... MAX Equipment: - VTVM - AF oscillator - ATT - Oscilloscope - Resistor (600 Ω)	- Test equipment connection is shown in fig. 21. - Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain -34.5 dB at TP7 (L-CH), TP8 (R-CH) (frequency 5 kHz). - Confirm that the value at IN position is 8 ($\pm$ 2.5) dB greater than the value at OUT position of Dolby NR switch.  Fig. 21

ELECTRICAL PARTS LOCATION



REPLACEMENT PARTS LIST

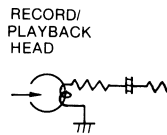
Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
ELECTRICAL PARTS					
E 1	QWY4122Z	Record/Playback Head	E 17	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$
E 2	QWY2138Z	Erase Head	E 18	XTN3 + 20B	Tapping Screw $\Phi 3 \times 20$
E 3	QMR2017	Switch Rod-A	E 19	QKJ0549	LED Holder
E 4	QMR2018	Switch Rod-B	E 20	QTS1532	Shield Plate
E 5	QMR2019	Switch Rod-C	E 21	QSIPL006F	FL Meter
E 6	QML3907	Record/Playback Lever	E 22	QJP1921TN	3 Pin Post
E 7	QML3909	Counter Reset Lever	E 23	QJP1922TN	6 Pin Post
E 8	QBS1139	Record/Playback Connection Wire	E 24	QJS1921TN	3 Pin Socket
E 9	QGO1900	Power ON/OFF Button	E 25	QJS1922TN	6 Pin Socket
E 10	QGO2051	Push Button-A	E 26	QJT1054	Contact
E 11	QGO2052	Push Button-B	E 27	QJS1961S	Flat Cable Connector
E 12	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$	E 28	QKJ0548	Meter Holder
E 13	QJC0054	Earth Plate-A	E 29	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$
E 14	QJC0057	Earth Plate-C	E 30	XNS9	Nut 9 ϕ
E 15 [D]	Δ SJA88	AC Power Cord	E 31	QJT1090	Pin Terminal-A
[For all European areas except United Kingdom.]			E 32 [DB]	Δ QTF1054	Fuse Holder
[B] Δ QFC1205			[For all European areas.]		
[For United Kingdom.]			[N] Δ QTF1060		
[N] Δ PJA522B-K			[For Asia, Latin America, Middle East and Africa areas.]		
[For Asia, Latin America, Middle East and Africa areas.]			E 33	SJT777	Pin Terminal-B
E 16 [DB]	QKJ0550K	Cord Clamper	E 34	XTN3 + 8B	Tapping Screw $\Phi 3 \times 8$
[For all European areas.]			E 35	QMA4440	Volume Angle
[N] QKJ0552K			E 36	XNS8	Nut 8 ϕ
[For Asia, Latin America, Middle East and Africa areas.]					

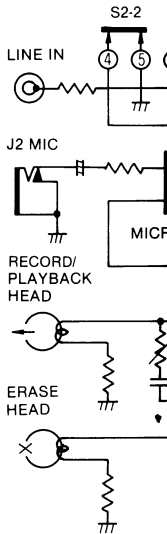
NOTES:

- D ...For all European areas except United Kingdom.
- B ...For United Kingdom.
- N ...For Asia, Latin America, Middle East and Africa areas.

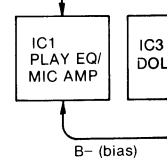
PLAYBACK



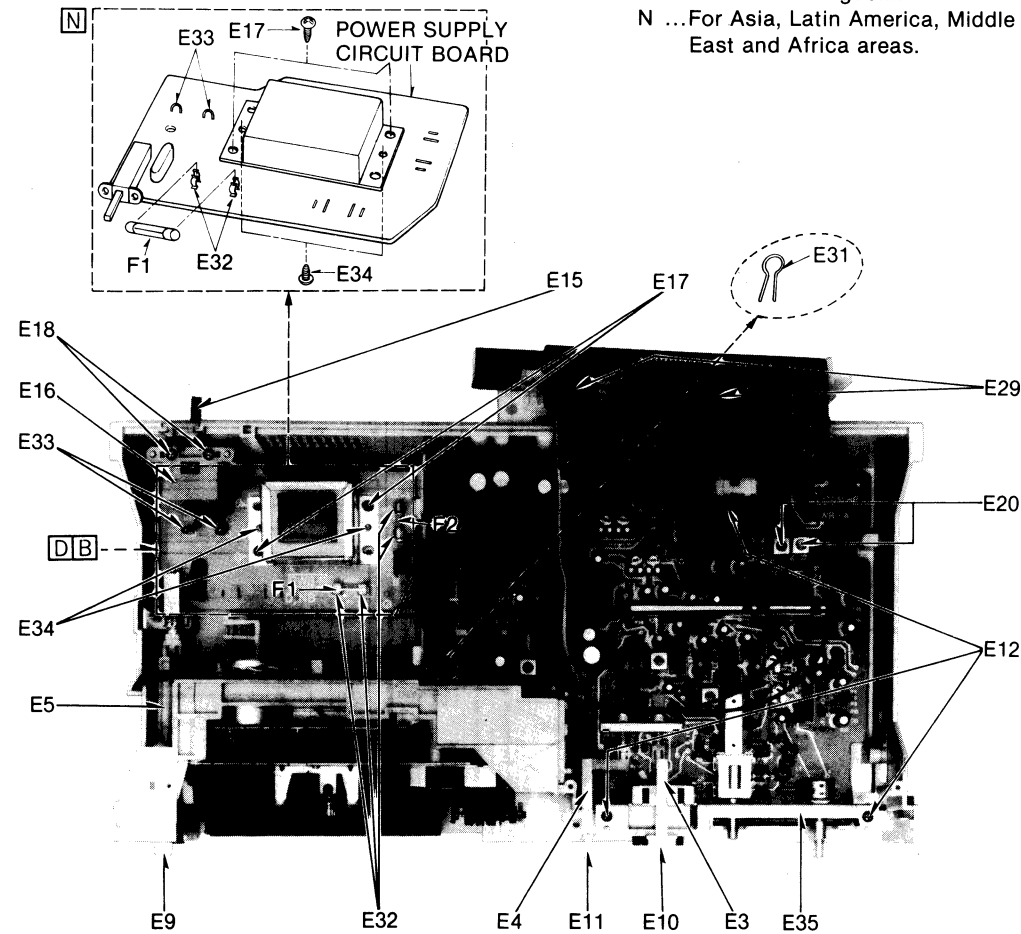
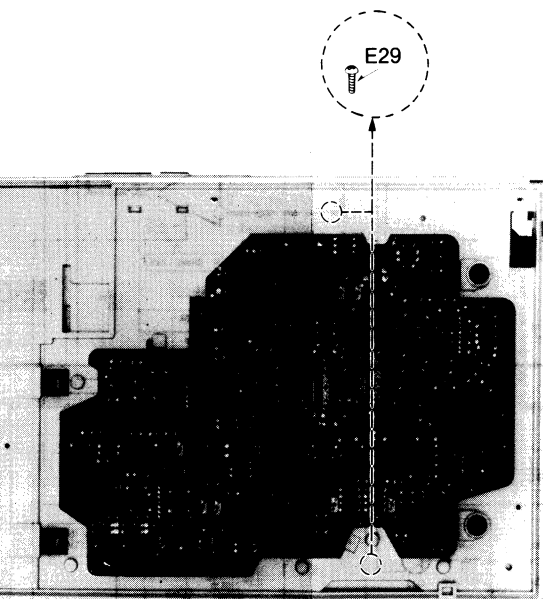
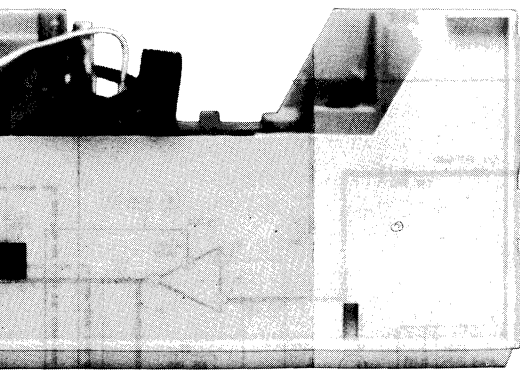
RECORD (L-C)



POWER S



NOTES:
 D ...For all European areas except United Kingdom.
 B ...For United Kingdom.
 N ...For Asia, Latin America, Middle East and Africa areas.



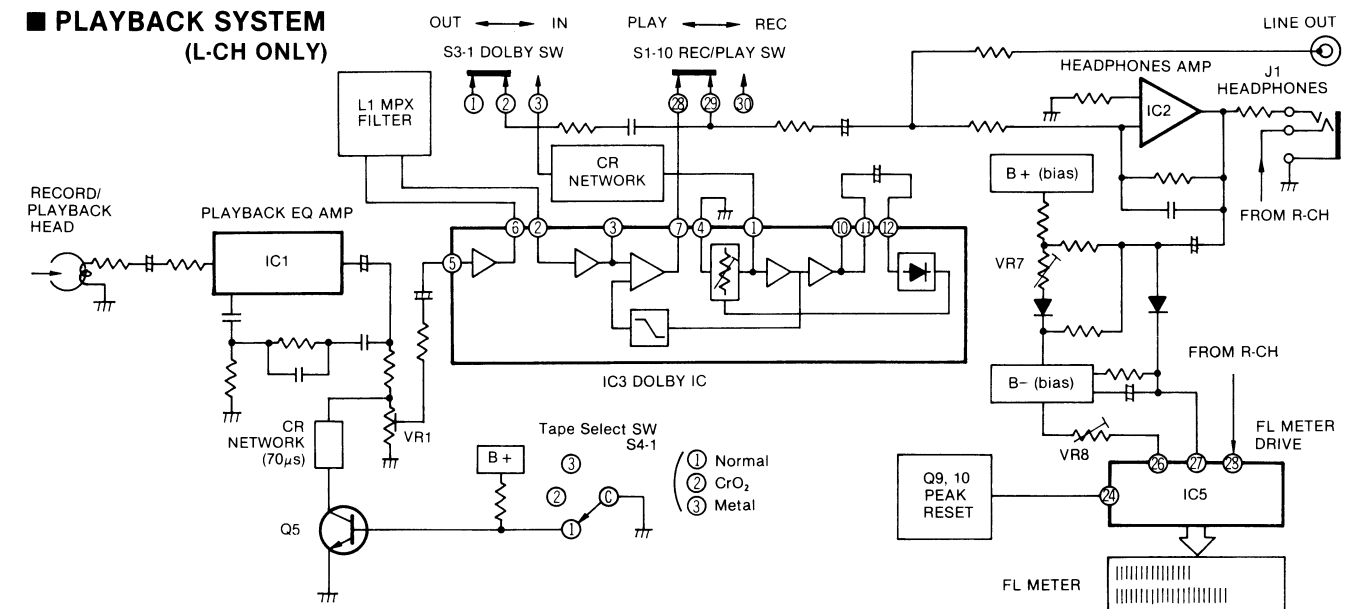
REPLACEMENT PARTS LIST

Important safety notice
 Components identified by Δ mark have special characteristics important for safety.
 When replacing any of these components, use only manufacturer's specified parts.

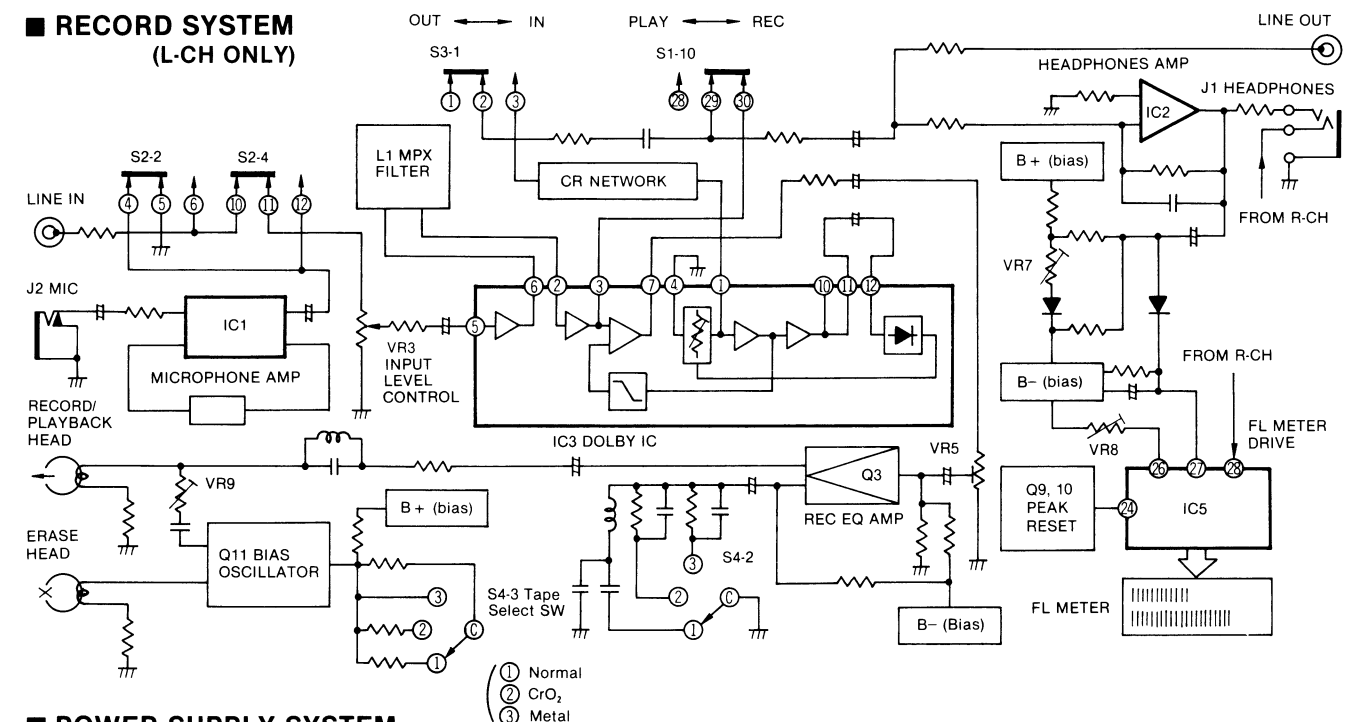
Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
ELECTRICAL PARTS					
E 1	QWY4122Z	Record/Playback Head	E 17	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$
E 2	QWY2138Z	Erase Head	E 18	XTN3 + 20B	Tapping Screw $\Phi 3 \times 20$
E 3	QMR2017	Switch Rod-A	E 19	QKJ0549	LED Holder
E 4	QMR2018	Switch Rod-B	E 20	QTS1532	Shield Plate
E 5	QMR2019	Switch Rod-C	E 21	OSIFL006F	FL Meter
E 6	QML3907	Record/Playback Lever	E 22	QJP1921TN	3 Pin Post
E 7	QML3909	Counter Reset Lever	E 23	QJP1922TN	6 Pin Post
E 8	QBS1139	Record/Playback Connection Wire	E 24	QJS1921TN	3 Pin Socket
E 9	QGO1900	Power ON/OFF Button	E 25	QJS1922TN	6 Pin Socket
E 10	QGO2051	Push Button-A	E 26	QJT1054	Contact
E 11	QGO2052	Push Button-B	E 27	QJS1961S	Fiat Cable Connector
E 12	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$	E 28	QKJ0548	Meter Holder
E 13	QJC0054	Earth Plate-A	E 29	XTN3 + 10B	Tapping Screw $\Phi 3 \times 10$
E 14	QJC0057	Earth Plate-C	E 30	XNS9	Nut $\Phi 9$
E 15 [D]	Δ SJA88	AC Power Cord [For all European areas except United Kingdom.]	E 31	QJT1090	Pin Terminal-A
	[B] Δ QFC1205	AC Power Cord [For United Kingdom.]	E 32 [DB]	Δ QTF1054	Fuse Holder [For all European areas.]
	[N] Δ PJA522B-K	AC Power Cord [For Asia, Latin America, Middle East and Africa areas.]		[N] Δ QTF1060	Fuse Holder [For Asia, Latin America, Middle East and Africa areas.]
E 16 [DB]	QKJ0550K	Cord Clamper [For all European areas.]	E 33	SJT777	Pin Terminal-B
	[N] QKJ0552K	Cord Clamper [For Asia, Latin America, Middle East and Africa areas.]	E 34	XTN3 + 8B	Tapping Screw $\Phi 3 \times 8$
			E 35	QMA4440	Volume Angle
			E 36	XNS8	Nut $\Phi 8$

BLOCK DIAGRAM

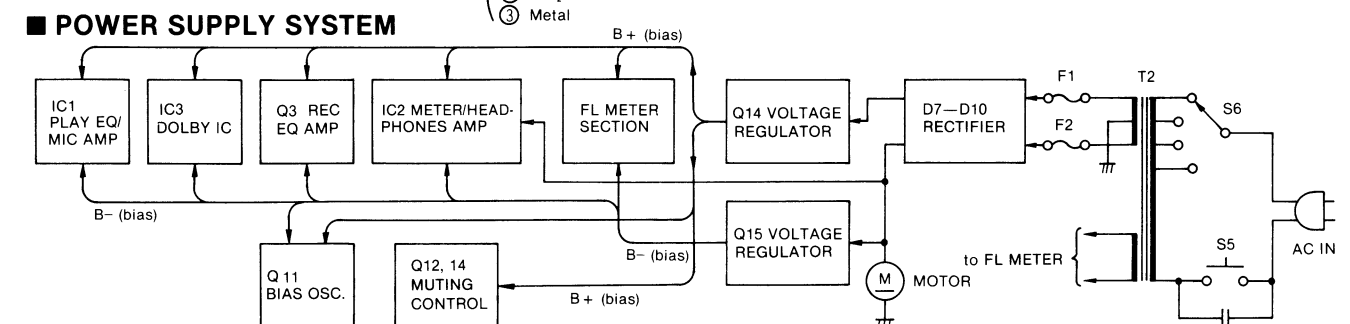
PLAYBACK SYSTEM (L-CH ONLY)



RECORD SYSTEM (L-CH ONLY)



POWER SUPPLY SYSTEM



NOTES: RESISTORS

ERDCarbon
ERGMetal-oxide
ERSMetal-oxide
EROMetal-film
ERXMetal-film
ERQFuse type metallic
ERCSolid
ERFCement

CAPACITORS

ECBACeramic
ECGCeramic
ECKCeramic
ECCCeramic
ECFCeramic
ECQMPolyester film
ECQEPolyester film
ECQFPolypropylene

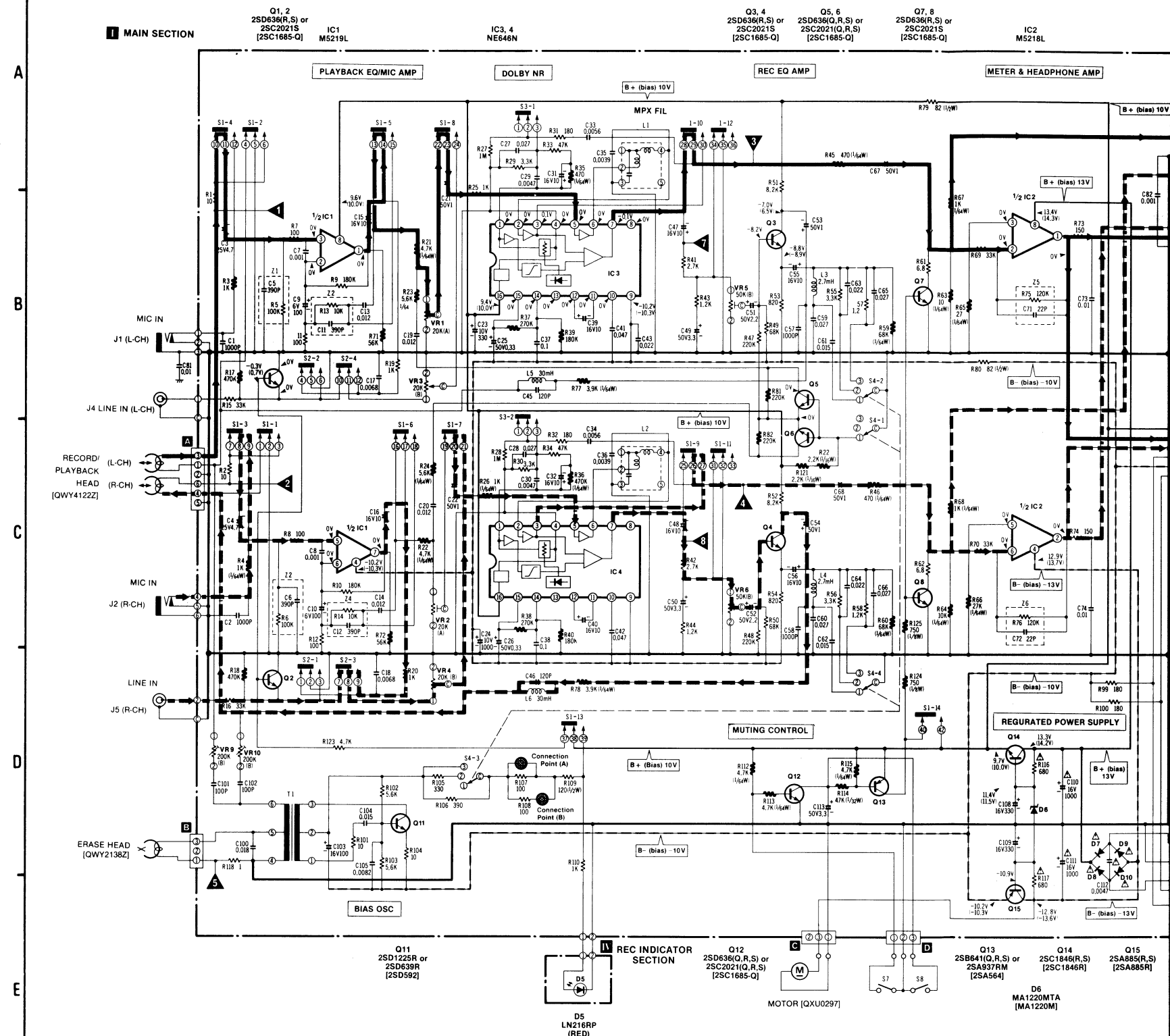
ECEElectrolytic
ECEONNon polar electrolytic
ECQSPolystyrene
ECSTantalum
QCSTantalum

REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.
RESISTORS				TRANSISTORS			
R 1, 2	ERD25FJ100	C 1, 2	ECBA1H102KBY	Z 5 (R 75 and C 71)	EXRP220K124T	DIODES & RECTIFIERS	
R 5 (100K Ω)	refer to Z 1	C 3, 4	ECEA2524R7	Z 6 (R 76 and C 72)	EXRP220K124T	D 1, 2, 3	MA161
R 6 (100K Ω)	refer to Z 2	C 5 (390pF)	refer to Z 1	INTEGRATED CIRCUITS		D 4 [DB]	MA1047
R 7, 8	ERD25FJ101	C 6 (390pF)	refer to Z 2	COILS		D 5	LN216RP
R 9, 10	ERD25FJ184	C 7, 8	ECKD1H102MD	L 1, 2	QLM929K	D 6	MA1220M
R 11, 12	ERD25FJ101	C 9, 10	ECEA1H101	L 3, 4	QLQX2721D	D 7, 8, 9, 10	Δ SM112
R 13 (10K Ω)	refer to Z 3	C 11 (390pF)	refer to Z 3	L 5, 6	QLQX0343KWA	TRANSFORMERS	
R 14 (10K Ω)	refer to Z 4	C 12 (390pF)	refer to Z 4	T 1	QLB0198K	FUSES	
R 15, 16	ERD25FJ333	C 13, 14	ECQM1H123JZ	T 2	[D] Δ QLPD68EKC	F 1 [DB] Δ XBAQ0007	Fuse (T 400mA)
R 19, 20	ERD25FJ102	C 15, 16	ECEA1H100	TRANSFORMERS		SWITCHES	
R 25	ERD25FJ102	C 17	ECKD1H682MD	T 1	QLB0198K	S 1	QSSE203
R 27, 28	ERD25FJ105	C 18	ECKD1H682MD	T 2	[D] Δ QLPD68EKC	S 2, 3	QSWX208
R 29, 30	ERD25FJ332	C 19, 20	ECQM1H123JZ	TRANSFORMERS		S 4	QSR4306
R 31, 32	ERD25FJ181	C 21, 22	ECEA1H100	T 1	QLB0198K	S 5	ESB822S
R 33, 34	ERD25FJ473	C 23	ECEA1H100	T 2	[D] Δ QLPD68EKC	S 6	[N] Δ QSR1401H
R 41, 42	ERD25FJ272	C 24	ECEA1H100	TRANSFORMERS		JACKS	
R 43, 44	ERD25FJ122	C 25, 26	ECEA1H100	T 1	QLB0198K	J 1, 2	QJA0451
R 47, 48	ERD25FJ224	C 27, 28	ECQM1H273JZ	T 2	[D] Δ QLPD68EKC	J 3	QJA0259
R 49, 50	ERD25FJ683	C 29, 30	ECQM1H273JZ	TRANSFORMERS		J 4, 5, 6, 7	QEJ5028S
R 51, 52	ERD25FJ822	C 31, 32	ECEA1H100	T 1	QLB0198K	COMBINATION PARTS	
R 53, 54	ERD25FJ821	C 33, 34	ECQM1H562JZ	T 2	[D] Δ QLPD68EKC	Z 1 (R 5 and C 5)	EXRP391K104T
R 55, 56	ERD25FJ332	C 35, 36	ECQM1H392JZ	TRANSFORMERS		Z 2 (R 6 and C 6)	EXRP391K104T
R 57, 58	ERD25FJ122	C 37, 38	ECQM1H104JZ	T 1	QLB0198K	Z 3 (R 13 and C 11)	EXRP391K103T
R 61, 62	ERD25FJ688	C 39, 40	ECEA1H100	T 2	[D] Δ QLPD68EKC	Z 4 (R 14 and C 12)	EXRP391K103T
R 69, 70	ERD25FJ333	C 41, 42	ECQM1H473JZ	TRANSFORMERS		COMBINATION PARTS	
R 73, 74	ERD25FJ151	C 43	ECKD1H223ZF	T 1	QLB0198K	Z 1 (R 5 and C 5)	EXRP391K104T
R 75 (120K Ω)	refer to Z 5	C 45, 46	ECKD1H121KB	T 2	[D] Δ QLPD68EKC	Z 2 (R 6 and C 6)	EXRP391K104T
R 76 (120K Ω)	refer to Z 6	C 47, 48	ECEA1H100	TRANSFORMERS		Z 3 (R 13 and C 11)	EXRP391K103T
R 79, 80	[DB] ERD50FJ820	C 49, 50	ECEA5023R3	T 1	QLB0198K	Z 4 (R 14 and C 12)	EXRP391K103T
[For all European areas.]		C 51, 52	ECEA5022R2	T 2	[D] Δ QLPD68EKC	COMBINATION PARTS	
[N] ERD25FJ820		C 53, 54	ECEA5021	TRANSFORMERS		Z 1 (R 5 and C 5)	EXRP391K104T
[For Asia, Latin America, Middle East and Africa areas.]		C 55, 56	ECEA1H100	T 1	QLB0198K	Z 2 (R 6 and C 6)	EXRP391K104T
R 83, 84	ERD25FJ473	C 57, 58	ECBA1H102KBY	T 2	[D] Δ QLPD68EKC	Z 3 (R 13 and C 11)	EXRP391K103T
R 85, 86	ERD25FJ683	C 59, 60	ECQM1H273JZ	TRANSFORMERS		Z 4 (R 14 and C 12)	EXRP391K103T
R 87, 88	ERD25FJ105	C 61, 62	ECQM1H153JZ	T 1	QLB0198K	COMBINATION PARTS	
R 92	ERD25FJ684	C 63, 64	ECFDD223KXY	T 2	[D] Δ QLPD68EKC	Z 1 (R 5 and C 5)	EXRP391K104T
R 97	[N] ERD25FJ181	C 65, 66	ECFDD273KXY	TRANSFORMERS		Z 2 (R 6 and C 6)	EXRP391K104T
[For Asia, Latin America, Middle East and Africa areas.]		C 67, 68	ECEA1H100	T 1	QLB0198K	Z 3 (R 13 and C 11)	EXRP391K103T
R 98, 98	ERD25FJ103	C 71 (22pF)	refer to Z 5	T 2	[D] Δ QLPD68EKC	Z 4 (R 14 and C 12)	EXRP391K103T
R 99, 100	ERD25FJ181	C 72 (22pF)	refer to Z 6	TRANSFORMERS		COMBINATION PARTS	
R 101	ERD25FJ100	C 73, 74	ECBA1C103NYY	T 1	QLB0198K	Z 1 (R 5 and C 5)	EXRP391K104T
R 102, 103	ERD25FJ562	C 75, 76, 77, 78	ECEA5021	T 2	[D] Δ QLPD68EKC	Z 2 (R 6 and C 6)	EXRP391K104T
R 104	ERD25FJ100	C 79	ECEA1H100	TRANSFORMERS		Z 3 (R 13 and C 11)	EXRP391K103T
R 105	ERD25FJ331	C 80	ECFDD473KXY	T 1	QLB0198K	Z 4 (R 14 and C 12)	EXRP391K103T
R 106	ERD25FJ391	C 81	ECBA1C103NYY	T 2	[D] Δ QLPD68EKC	COMBINATION PARTS	
R 107, 108	ERD25FJ101	C 82	ECBA1H102KBY	TRANSFORMERS		Z 1 (R 5 and C 5)	EXRP391K104T
R 109	ERD50FJ121	C 100	ECQP1183JZ	T 1	QLB0198K	Z 2 (R 6 and C 6)	EXRP391K104T
R 110	ERD25FJ102	C 101, 102	ECBA1H101JL	T 2	[D] Δ QLPD68EKC	Z 3 (R 13 and C 11)	EXRP391K103T
R 116, 117 Δ	ERD25FJ681	C 103	ECEA1ES101	TRANSFORMERS		Z 4 (R 14 and C 12)	EXRP391K103T
R 118	ERD25FJ1R0	C 104	ECQM1H153JZ	T 1	QLB0198K	COMBINATION PARTS	
R 123	ERD25FJ472	C 105	ECQM1H822JZ	T 2	[D] Δ QLPD68EKC	Z 1 (R 5 and C 5)	EXRP391K104T
VARIABLE RESISTORS				TRANSFORMERS		Z 2 (R 6 and C 6)	EXRP391K104T
VR 1	EWJS3AF22A24	C 108, 109	ECEA1CS331	T 1	QLB0198K	Z 3 (R 13 and C 11)	EXRP391K103T
VR 2	EWJS3AF22A24	C 110, 111	Δ ECEA1CS102	T 2	[D] Δ QLPD68EKC	Z 4 (R 14 and C 12)	EXRP391K103T
VR 3, 4	EVNM4AA00B24	C 112	Δ ECKD2H472PE	TRANSFORMERS		COMBINATION PARTS	
VR 5, 6	EVNM4AA00B54	C 113	ECEA5023R3	T 1	QLB0198K	Z 1 (R 5 and C 5)	EXRP391K104T
VR 7	EVNM4AA00B14	COMBINATION PARTS		T 2	[D] Δ QLPD68EKC	Z 2 (R 6 and C 6)	EXRP391K104T
VR 8	EVNM4AA00B24	Z 1 (R 5 and C 5)	EXRP391K104T	TRANSFORMERS		Z 3 (R 13 and C 11)	EXRP391K103T
VR 9	EVNM4AA00B25	Z 2 (R 6 and C 6)	EXRP391K104T	T 1	QLB0198K	Z 4 (R 14 and C 12)	EXRP391K103T
VR 10	EVNM4AA00B25	Z 3 (R 13 and C 11)	EXRP391K103T	T 2	[D] Δ QLPD68EKC	COMBINATION PARTS	

SCHEMATIC DIAGRAM



NOTES:

- S1-1—S1-14: Record/Playback select switch (shown in playback position).
- S2-1—S2-4: Input select switch (shown in LINE IN position).
- S3-1, S3-2: Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5: Tape select switch (shown in normal position).
- (1) Normal, (2) CrO₂, (3) Metal
- S5: Power ON/OFF switch (shown in OFF position).
- S6: [N] AC power voltage select switch.
- * For Asia, Latin America, Middle East and Africa areas.
- S7: Playback muting switch (shown in off position).
- S8: Fast wind muting switch (shown in off position).
- VR1, 2: Playback gain adjustment VR.
- VR3, 4: Input level controls.
- VR5, 6: Recording gain adjustment VR.
- VR7: FL meter adjustment VR (for -20dB indication).
- VR8: FL meter adjustment VR (for 0dB indication).

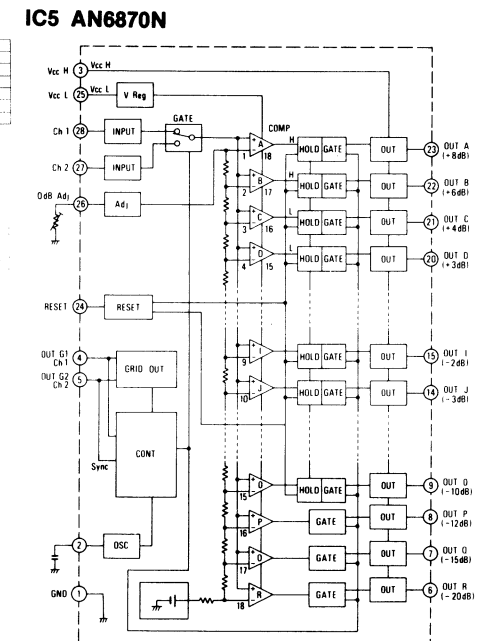
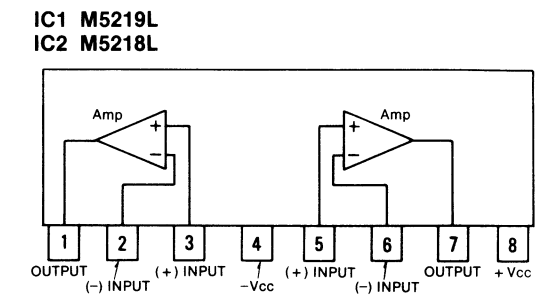
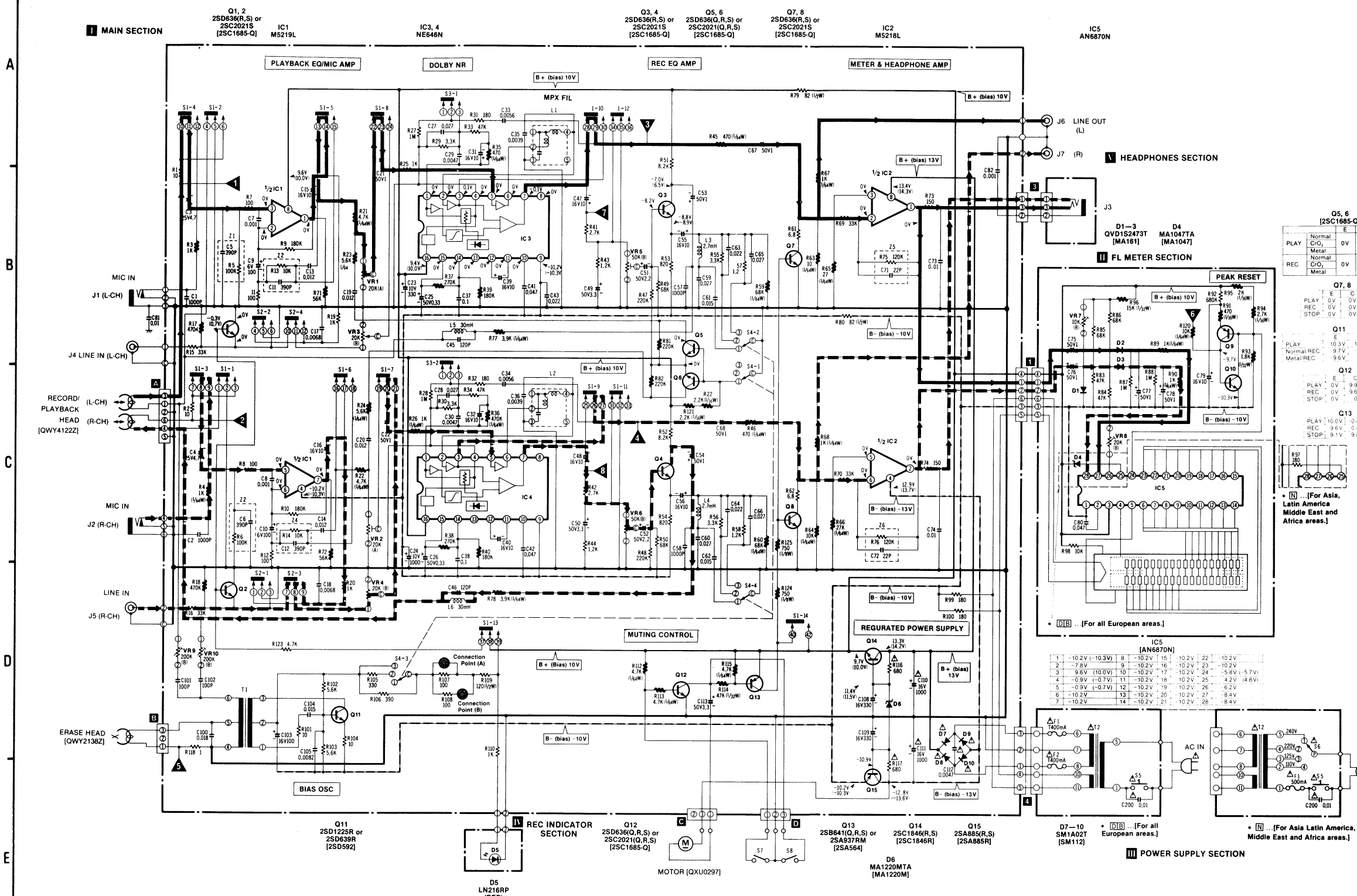
- VR9, 10: Bias current adjustment VR.
- Connection points (A) and (B): For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
- K = 1,000 Ω , M = 1,000 K Ω .
- (∇) indicates printed resistor.
- A printed resistor is printed on the printed circuit board to be part of printed patterns for circuit configuration.
- Capacity are in microfarads (μ F) unless specified otherwise.
- P = Pico-farads.
- The mark (∇) shows test point. e.g. ∇ = Test point 1.
- ($\rightarrow$) this arrow indicates the flow of the playback signal.
- ($\rightarrow$) this arrow indicates the flow of the recording signal.
- Important safety notice
- Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

- All voltage values shown in circuitry are Unless otherwise specified, voltage measurements are in ohms (Ω), 1/4 watt unless specified otherwise.
- REC: Voltage at record mode
- PLAY: Voltage at playback mode
- REC/PLAY: Voltage at record/playback mode
- Normal: Voltage at Normal tape mode
- CrO₂: Voltage at CrO₂ tape mode
- Metal: Voltage at Metal tape mode
- Described in the schematic diagram are parts number and production parts number. One type of number is used for supply parts number when they are identical.

e.g. Q1
{ 2SB745(TMG, UMG) — Product
{ 2SB745T — Supply

SCHEMATIC DIAGRAM

EQUIVALENT CIRCUIT



		E	C	B
PLAY	Normal	0V	0V	0V
	CrO ₂			0.7V
	Metal			0.7V
REC	Normal	0V	0V	0V
	CrO ₂			0.7V
	Metal			0.7V

	E	C	B
PLAY	0V	0V	03V
REC	0V	0V	-04V
STOP	0V	0V	07V

	Q11		
	E	C	B
PLAY	10.3V	10.3V	10.3V
Normal/REC	9.7V	-3.5V	10.0V

	E	C	B
PLAY	0V	9.9V	0V
REC	0V	9.6V	0V

STOP	0V	0V	0.7V
G13			
PLAY	10.0V	-0.4V	9.9V
REC	9.6V	-0.4V	9.6V

* [N] ...[For Asia,
Latin America
Middle East and

Middle East and Africa areas.]

1

11

C200 0.01

[For Asia Latin America,
East and Africa areas.]

D1S2473T ———— Product

161]_____Supply
parts number is described as

plement of new techn

14 —

NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-4.....Input select switch (shown in LINE IN position).
- S3-1, S3-2.....Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5.....Tape select switch (shown in normal position).
(①) ..Normal, (②) ..CrO₂, (③) ..Metal
- S5.....Power ON/OFF switch (shown in OFF position).
- S6.....[N] AC power voltage select switch.
* For Asia, Latin America, Middle East and Africa areas.
- S7.....Playback muting switch (shown in off position).
- S8.....Fast wind muting switch (shown in off position).
- VR1, 2.....Playback gain adjustment VR.
- VR3, 4.....Input level controls.
- VR5, 6.....Recording gain adjustment VR.
- VR7.....FL meter adjustment VR (for -20dB indication).
- VR8.....FL meter adjustment VR (for 0dB indication).
- VR9, 10.....Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
K = 1,000Ω, M = 1,000 KΩ.
- () indicates printed resistor.
A printed resistor is printed on the printed circuit board to be part of printed patterns for circuit configuration.
- Capacity are in microfarads (μF) unless specified otherwise.
P = Pico-farads.
- The mark () shows test point. e.g.  = Test point 1.
- () this arrow indicates the flow of the playback signal.
- () this arrow indicates the flow of the recording signal.
- Important safety notice
Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's

- All voltage values shown in circuitry are under no signal condition. Unless otherwise specified, voltage measurement conditions are that tape travels is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
 - REC Voltage at record mode.
 - PLAY Voltage at playback mode.
 - REC/PLAY Voltage at record/playback mode.
 - Normal Voltage at Normal tape mode.
 - CrO₂ Voltage at CrO₂ tape mode.
 - Metal Voltage at Metal tape mode.
- Described in the schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.

e.g. Q1
 { 2SB745(TMG, UMG)——Production parts number
 { [2SB745T] ——Supply parts number

- D1
{ QVID1S2473T ———— Production parts number
{ [MA161] ————— Supply parts number
- The supply parts number is described alone in the replacement parts list.
 - This schematic diagram may be modified at any time with the development of new technology.

NOTES: RESISTORS

ERDCarbon
ERGMetal-oxide
ERSMetal-oxide
EROMetal-film
ERXMetal-film
ERQFuse type metallic
ERCSolid
ERFCement

CAPACITORS

ECBACeramic
ECGCeramic
ECKCeramic
ECOCeramic
ECFCeramic
ECQMPolyester film
ECQEPolyester film
ECQFPolypropylene

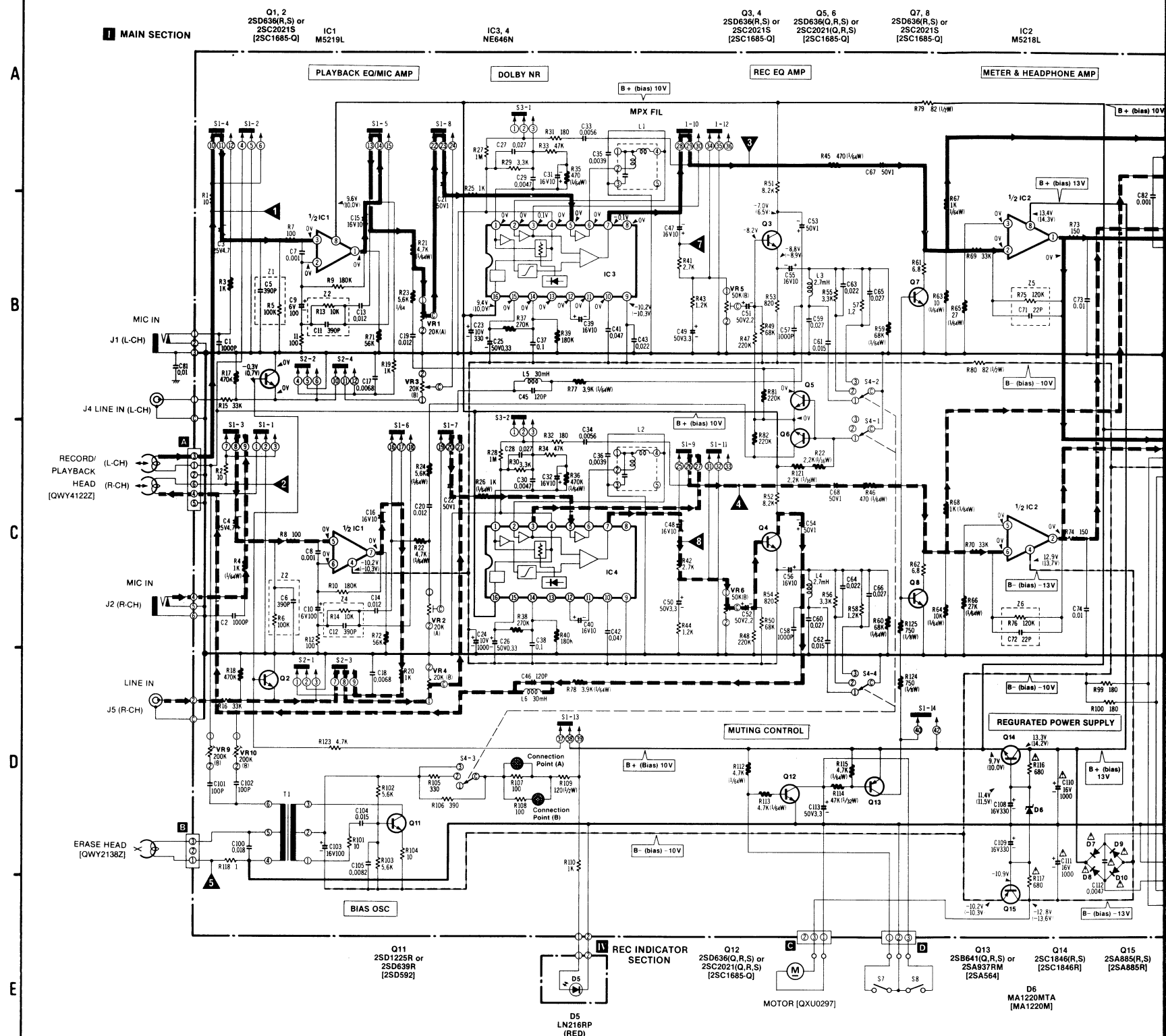
EECDElectrolytic
EECDNNon polar electrolytic
ECQSPolystyrene
ECSDTantalum
QCSTantalum

REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.
RESISTORS				TRANSISTORS			
R 1, 2	ERD25FJ100	C 1, 2	ECBA1H102KBY	Z 5 (R 75 and C 71)	EXRP220K124T	DIODES & RECTIFIERS	
R 5 (100K Ω)	refer to Z 1	C 3, 4	ECEA25Z4R7	Z 6 (R 76 and C 72)	EXRP220K124T	D 1, 2, 3	MA161
R 6 (100K Ω)	refer to Z 2	C 5 (390pF)	refer to Z 1	INTEGRATED CIRCUITS		D 4 [DB]	MA1047
R 7, 8	ERD25FJ101	C 6 (390pF)	refer to Z 2	COILS		D 5	LN216RP
R 9, 10	ERD25TJ184	C 7, 8	ECKD1H102MD	L 1, 2	QLM929K	D 6	MA1220M
R 11, 12	ERD25FJ101	C 9, 10	ECEA1AS101	L 3, 4	QLQX2721D	D 7, 8, 9, 10	Δ SM112
R 13 (10K Ω)	refer to Z 3	C 11 (390pF)	refer to Z 3	L 5, 6	QLQX0343KWA	TRANSFORMERS	
R 14 (10K Ω)	refer to Z 4	C 12 (390pF)	refer to Z 4	T 1	QLB0198K	FUSES	
R 15, 16	ERD25TJ333	C 13, 14	ECQM1H123JZ	T 2	[D] Δ QLPD68EKC	F 1 [DB] Δ XBAQ0007	Fuse (T 400mA)
R 19, 20	ERD25FJ102	C 15, 16	ECEA1HS100	SWITCHES		JACKS	
R 25	ERD25FJ102	C 17	ECKD1H682MD	S 1	QSSE203	J 1, 2	QJA0451
R 27, 28	ERD25TJ105	C 18	ECKD1H682MD	S 2, 3	QSWX208	J 3	QJA0259
R 29, 30	ERD25FJ332	C 19, 20	ECQM1H123JZ	S 4	QSR4306	J 4, 5, 6, 7	QEJ5028S
R 31, 32	ERD25FJ181	C 21, 22	ECEA1HN010	S 5	Δ ESB822S	VARIABLE RESISTORS	
R 33, 34	ERD25TJ473	C 23	ECEA1AS331	S 6	[N] Δ QSR1401H	VR 1	EWJS3AF22A24
R 41, 42	ERD25FJ272	C 24	ECEA1AS102	COMBINATION PARTS		VR 2	EWJS3AF22A24
R 43, 44	ERD25FJ122	C 25, 26	ECEA1HSR33	Z 1 (R 5 and C 5)	EXRP391K104T	VR 3, 4	EVNM4AA00B24
R 47, 48	ERD25TJ224	C 27, 28	ECQM1H273JZ	Z 2 (R 6 and C 6)	EXRP391K104T	VR 5, 6	EVNM4AA00B54
R 49, 50	ERD25TJ683	C 29, 30	ECQM1H472JZ	Z 3 (R 13 and C 11)	EXRP391K103T	VR 7	EVNM4AA00B14
R 51, 52	ERD25FJ822	C 31, 32	ECEA1HS100	Z 4 (R 14 and C 12)	EXRP391K103T	VR 8	EVNM4AA00B24
R 53, 54	ERD25FJ821	C 33, 34	ECQM1H562JZ			VR 9	EVNM4AA00B25
R 55, 56	ERD25FJ332	C 35, 36	ECQM1H392JZ			VR 10	EVNM4AA00B25
R 57, 58	ERD25FJ122	C 37, 38	ECQM1H104JZ				
R 61, 62	ERD25FJ6R8	C 39, 40	ECEA1HS100				
R 69, 70	ERD25TJ333	C 41, 42	ECQM1H473JZ				
R 73, 74	ERD25FJ151	C 43	ECKD1H223ZF				
R 75 (120K Ω)	refer to Z 5	C 45, 46	ECKD2H121KB				
R 76 (120K Ω)	refer to Z 6	C 47, 48	ECEA1HS100				
R 79, 80	[DB] ERD50FJ820	C 49, 50	ECEA50Z3R3				
[For all European areas.]		C 51, 52	ECEA50Z2R2				
[N] ERD25FJ820		C 53, 54	ECEA50Z1				
[For Asia, Latin America, Middle East and Africa areas.]		C 55, 56	ECEA1HS100				
R 83, 84	ERD25TJ473	C 57, 58	ECBA1H102KBY				
R 85, 86	ERD25TJ683	C 59, 60	ECQM1H273JZ				
R 87, 88	ERD25TJ105	C 61, 62	ECQM1H153JZ				
R 92	ERD25TJ684	C 63, 64	ECFDD223KXY				
R 97	[N] ERD25FJ181	C 65, 66	ECFDD273KXY				
[For Asia, Latin America, Middle East and Africa areas.]		C 67, 68	ECEA1HN010				
R 98, 98	ERD25FJ103	C 71 (22pF)	refer to Z 5				
R 99, 100	ERD25FJ181	C 72 (22pF)	refer to Z 6				
R 101	ERD25FJ100	C 73, 74	ECBA1C103NYY				
R 102, 103	ERD25FJ562	C 75, 76, 77, 78	ECEA50Z1				
R 104	ERD25FJ100	C 79	ECEA1HS100				
R 105	ERD25FJ331	C 80	ECFDD473KXY				
R 106	ERD25FJ391	C 81	ECBA1C103NYY				
R 107, 108	ERD25FJ101	C 82	ECBA1H102KBY				
R 109	ERD50FJ121	C 100	ECQP1183JZ				
R 110	ERD25FJ102	C 101, 102	ECBA1H101JL				
R 116, 117 Δ	ERD25FJ681	C 103	ECEA1ES101				
R 118	ERD25FJ1R0	C 104	ECQM1H153JZ				
R 123	ERD25FJ472	C 105	ECQM1H822JZ				
		C 108, 109	ECEA1CS331				
		C 110, 111	Δ ECEA1CS102				
		C 112	Δ ECKD2H472PE				
		C 113	ECEA50Z3R3				

SCHEMATIC DIAGRAM



NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-4Input select switch (shown in LINE IN position).
- S3-1, S3-2.....Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5Tape select switch (shown in normal position).
- (1).....Normal, (2).....CrO₂, (3).....Metal
- S5.....Power ON/OFF switch (shown in OFF position).
- S6.....[N] AC power voltage select switch.
- * For Asia, Latin America, Middle East and Africa areas.
- S7.....Playback muting switch (shown in off position).
- S8.....Fast wind muting switch (shown in off position).
- VR1, 2Playback gain adjustment VR.
- VR3, 4Input level controls.
- VR5, 6Recording gain adjustment VR.
- VR7FL meter adjustment VR (for -20dB indication).
- VR8FL meter adjustment VR (for 0dB indication).

- VR9, 10Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. K = 1,000 Ω , M = 1,000K Ω .
- (∇) indicates printed resistor.
- A printed resistor is printed on the printed circuit board to be part of printed patterns for circuit configuration.
- Capacity are in microfarads (μ F) unless specified otherwise. P = Pico-farads.
- The mark (∇) shows test point. e.g. ∇ = Test point 1.
- ($\rightarrow$) this arrow indicates the flow of the playback signal.
- ($\leftarrow$) this arrow indicates the flow of the recording signal.
- Important safety notice
- Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

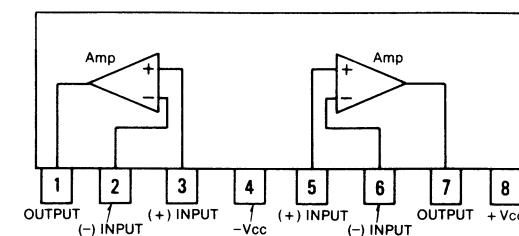
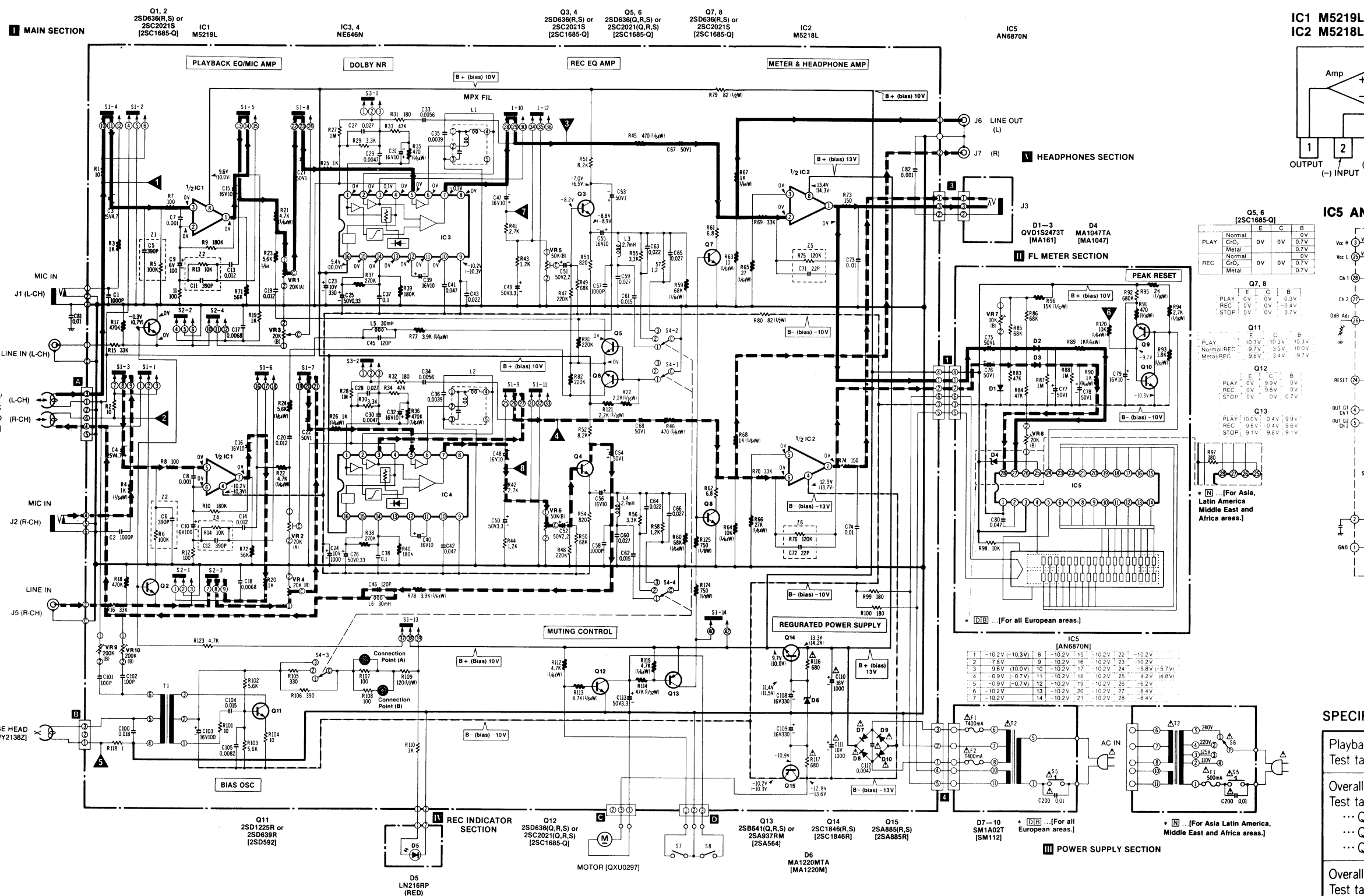
- All voltage values shown in circuitry are Unless otherwise specified, voltage measurements are at STOP, tape mode at NORM.
- RECVoltage at record mode
- PLAYVoltage at playback mode
- REC/PLAYVoltage at record/playback mode
- NormalVoltage at Normal tape mode
- CrO₂Voltage at CrO₂ tape mode
- MetalVoltage at Metal tape mode
- Described in the schematic diagram are parts number and production parts number. One type of number is used for supply parts number when they are identical.

e.g. Q1

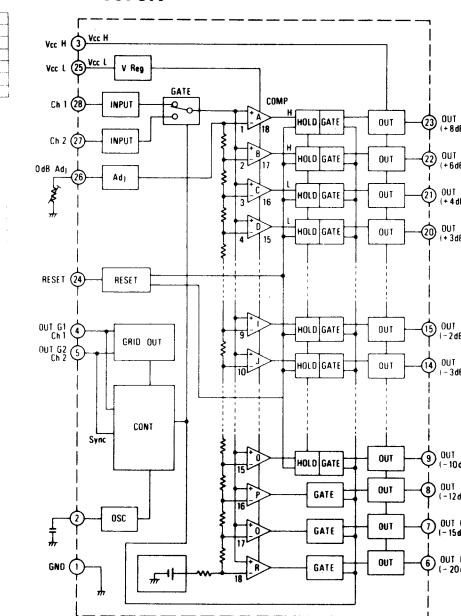
{ 2SB745(TMG, UMG) — Product
{ 2SB745T — Supply

SCHEMATIC DIAGRAM

EQUIVALENT CIRCUIT



IC5 AN6870N



SPECIFICATIONS • Input level controls...MAX

Playback S/N ratio Test tape... QZZCFM	Greater than 45 dB (without NAB filter)
Overall distortion Test tape ... QZZCRA for Normal ... QZZCRX for CrO ₂ ... QZZCRZ for Metal	Less than 4%
Overall S/N ratio Test tape... QZZCRA	Greater than 43 dB

RECORD/PLAY HEAD

S7: PLAY SWITCH S8: FF/REWIND SWITCH

LUG TERMINAL

ERASE HEAD

MOTOR

CONNECTOR A

1	REC SIGNAL OUT (R-CH)
2	GROUND
3	PLAY SIGNAL IN (R-CH)
4	REC SIGNAL OUT (L-CH)
5	GROUND
6	PLAY SIGNAL IN (R-CH)

B+ (bias) 10V

B- (bias) -10V

B+ (bias) 10V

B- (bias) -10V

B+ (bias) 13V

B- (bias) 13V

III POWER SUPPLY CIRCUIT BOARD

T2: AC POWER TRANSFORMER

F1 T400mA

F2 T400mA

S5: POWER ON/OFF SWITCH

AC POWER CORD

CONNECTOR B

1	SIGNAL IN (L-CH)
2	SIGNAL IN (R-CH)
3	B- (bias) -10V
4	B+ (bias) +10V
5	AC VOLTAGE (to FILAMENT)
6	

I MAIN CIRCUIT BOARD

B- (bias) -10V

Connection Point (B)

Connection Point (A)

IV REC INDICATOR CIRCUIT BOARD

V FL METER CIRCUIT BOARD

VI HEADPHONES CIRCUIT BOARD

B- (bias) -10V

B+ (bias) 10V

* [DB] ...[For all European areas.]

* [N] ...[For Asia, Latin America, Middle East and Africa areas.]

IC1 [M5219L]

1	0V
2	0V
3	0V
4	-10.2V (-10.3V)
5	0V
6	0V
7	0V
8	9.6V (10.0V)

IC2 [M5218L]

1	0V
2	0V
3	0V
4	-12.9V (-13.7V)
5	0V
6	0V
7	0V
8	13.4V (14.3V)

NOTES:

- BLKBlack
- BLUBlue
- BRNBrown
- GRYGray
- GRNGreen
- L. BLU ...Light Blue
- NILNo Color Mark
- ORGOrange
- PNKPink
- REDRed
- SLDShield Wire
- VLTViolet
- WHT.....White
- YEL.....Yellow

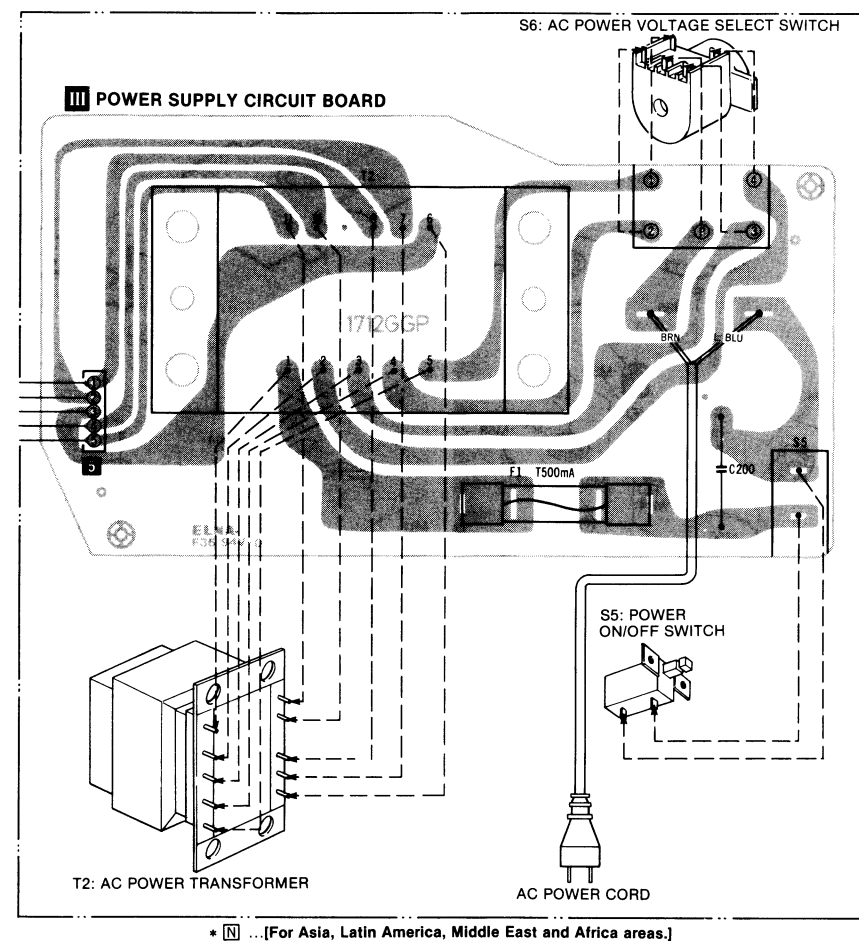
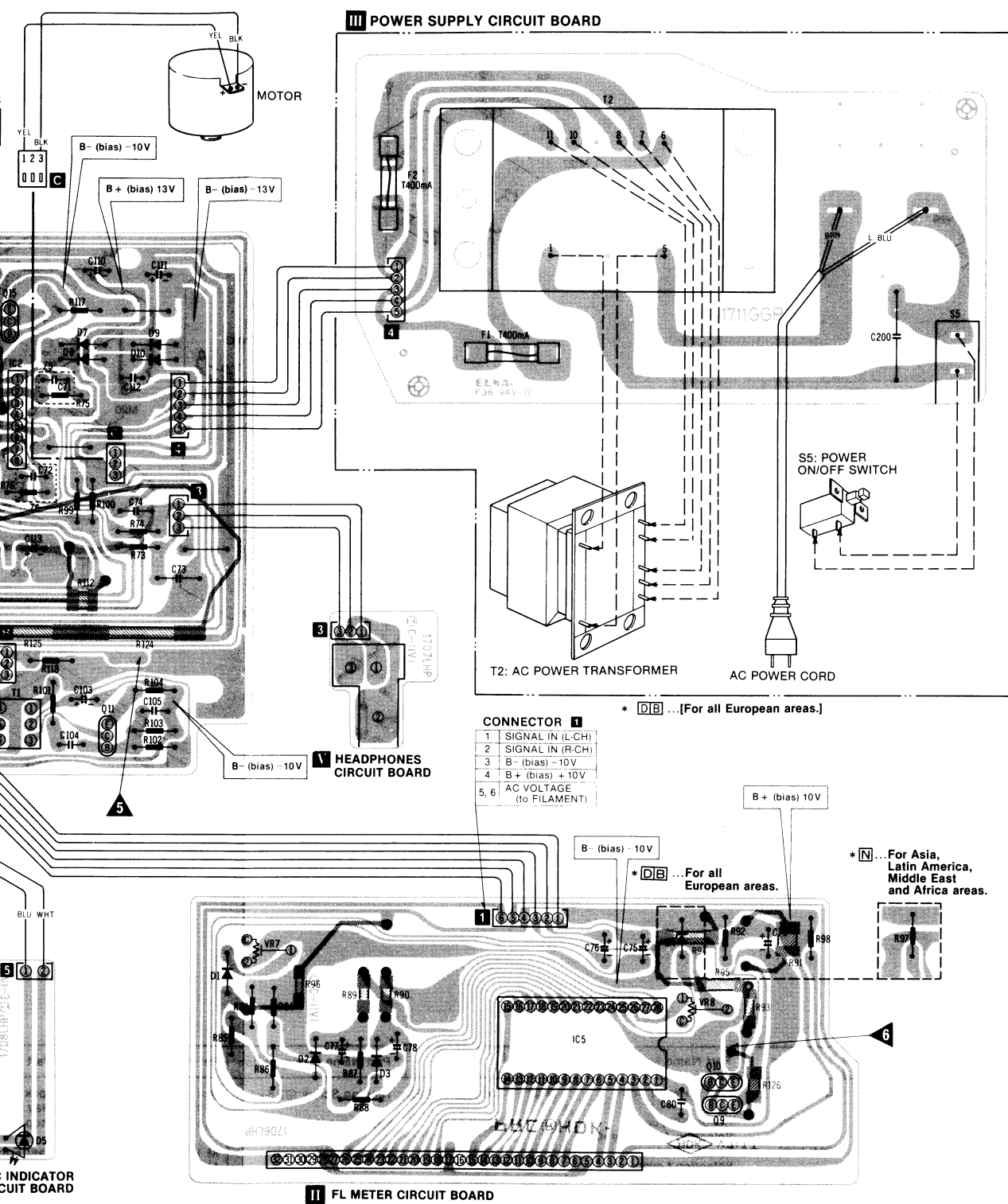
RECVoltage at record mode.
PLAYVoltage at playback mode.
REC/PLAYVoltage at record/playback mode.
NormalVoltage Normal tape mode.
CrO₂Voltage at CrO₂ tape mode.
MetalVoltage at Metal tape mode.
or measurement, use VTVM.

The supply parts number is described alone in the replacement parts list.

• This circuit board diagram may be modified at any time with the development of new technology.

IC1, 2	IC3, 4	IC5	D1—3	D5	D4, 6	D7—10
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RAM



Q1, 2
[2SC1685-Q]

	E	C	B
PLAY	0V	0V	0.7V
REC	0V	0V	-0.3V

Q13
[2SA564]

	E	C	B
PLAY	10.0V	-0.4V	9.9V
REC	9.6V	-0.4V	9.6V
STOP	9.1V	9.8V	9.1V

Q3, 4
[2SC1685-Q]

	E	C	B
PLAY	-8.9V	-6.5V	-8.2V
REC	-8.8V	-7.0V	-8.2V

Q14
[2SA1846R]

	E	C	B
PLAY	10.0V	14.2V	11.5V
REC	9.7V	13.3V	11.4V

Q5, 6
[2SC1685-Q]

	E	C	B
PLAY	Normal	0V	0V
	CrO ₂	0V	0.7V
	Metal	0V	0.7V
REC	Normal	0V	0V
	CrO ₂	0V	0.7V
	Metal	0V	0.7V

Q15
[2SA885R]

	E	C	B
PLAY	-10.3V	-13.6V	-10.9V
REC	-10.2V	-12.8V	-10.9V

Q7, 8
[2SC1685-Q]

	E	C	B
PLAY	0V	0V	-0.3V
REC	0V	0V	-0.4V
STOP	0V	0V	0.7V

IC1
[M5219L]

1	0V
2	0V
3	0V
4	-10.2V (-10.3V)
5	0V
6	0V
7	0V
8	9.6V (10.0V)

IC3, 4
[NE646N]

1	0V
2	0V
3	0.1V
4	0V
5	0V
6	0V
7	-0.1V
8	0V
9	-10.2V (-10.3V)
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	9.4V (10.0V)

IC2
[M5218L]

1	0V
2	0V
3	0V
4	-12.9V (-13.7V)
5	0V
6	0V
7	0V
8	13.4V (14.3V)

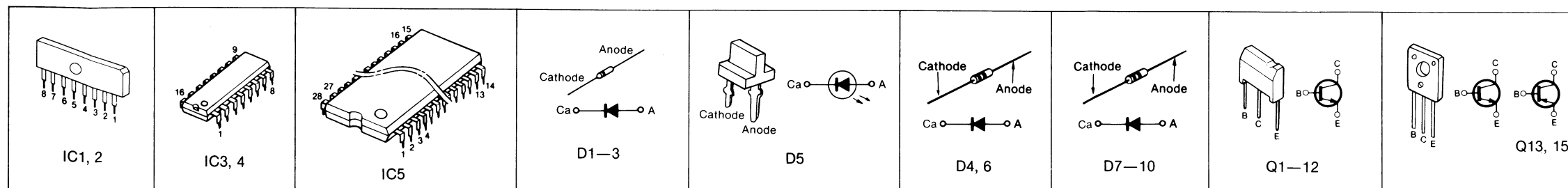
Q11
[2SD592]

	E	C	B
PLAY	-10.3V	-10.3V	-10.3V
Normal/REC	-9.7V	-3.5V	-10.0V
Metal/REC	-9.6V	+3.4V	-9.7V

Q12
[2SC1685-Q]

	E	C	B
PLAY	0V	9.9V	0V
REC	0V	9.6V	0V
STOP	0V	0V	0.7V

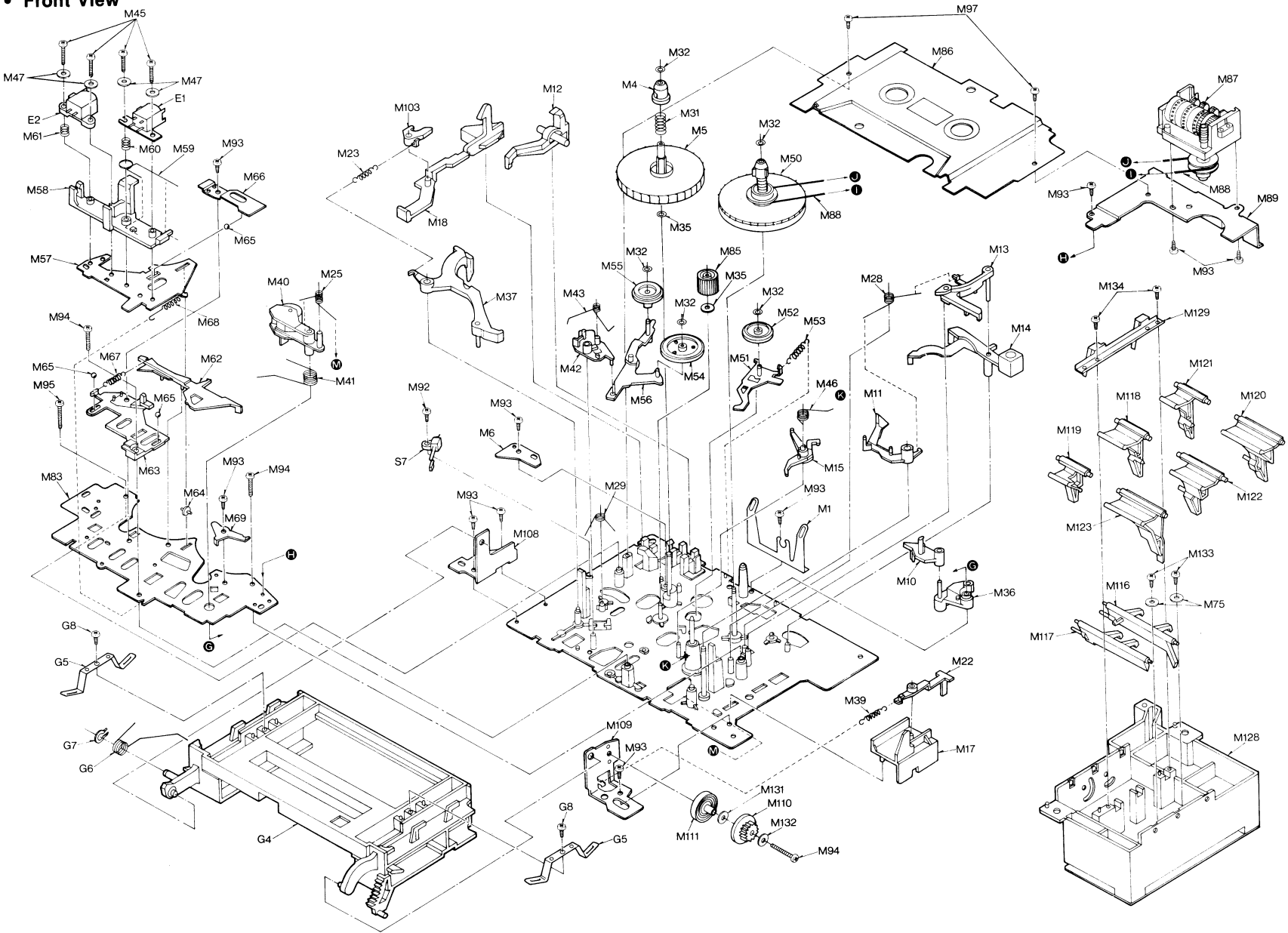
TERMINATIONS



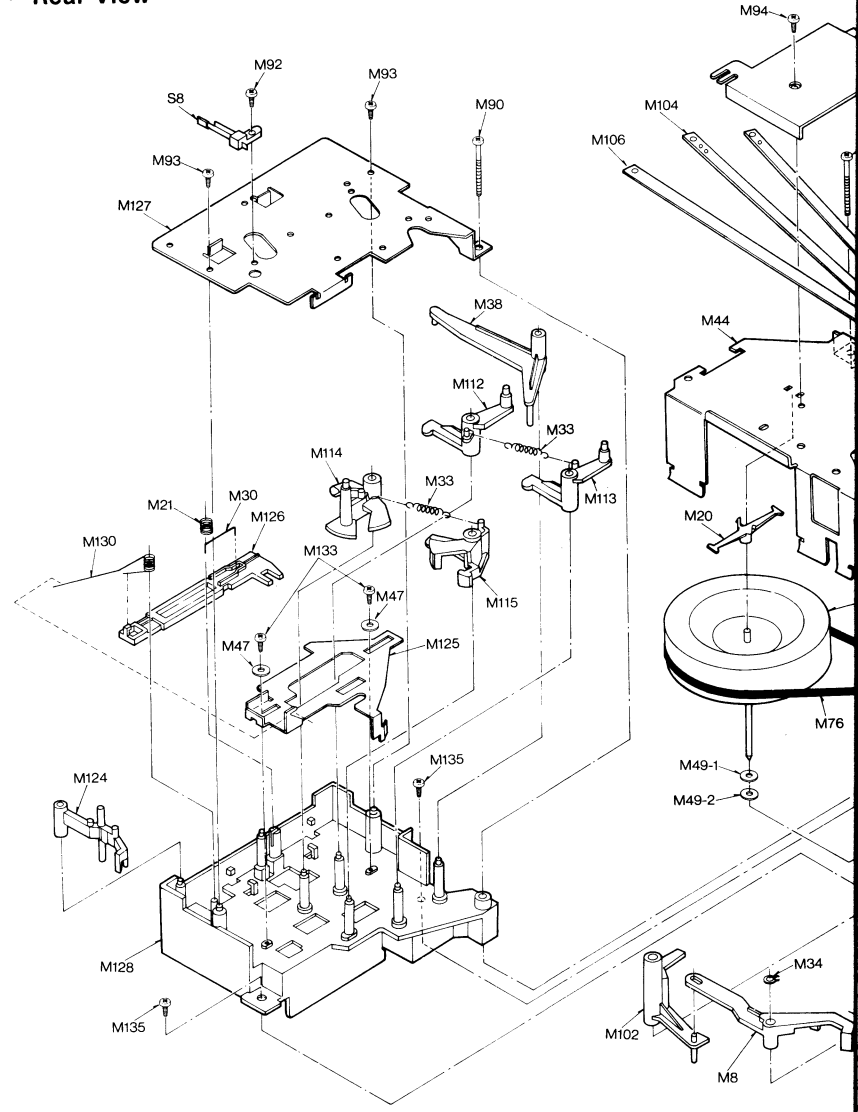
MECHANICAL PARTS LOCATION

A
B
C
D
E
F

• Front View



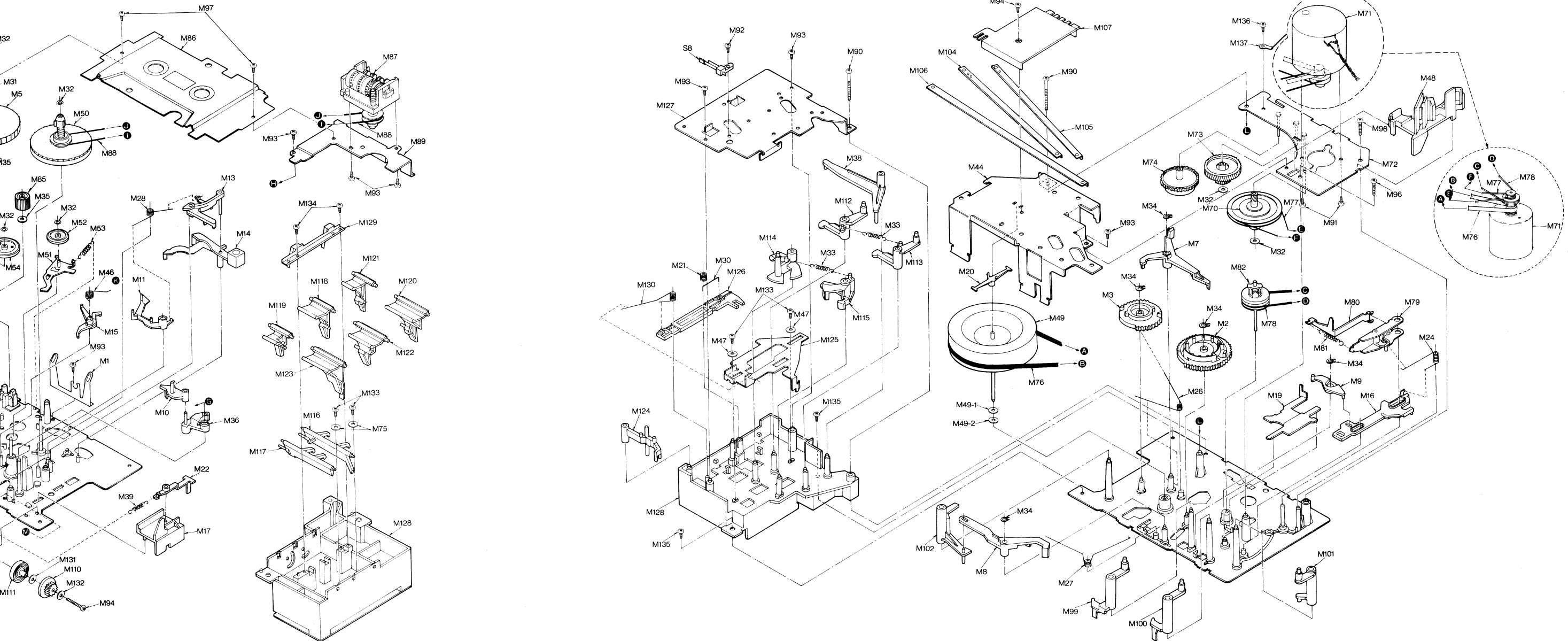
• Rear View



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
MECHANICAL PARTS			M 20	QMZ1283	Flywheel Thrust Retainer	M 40	QXL1381	Pressure Roller Assembly	M 57	QMK1840	Head Base Plate	M 78	QDB0273	Fast Forward Belt	M 97	XTN26 + 5BFZ	Tapping Screw @2.6×5
M 1	QBP1874	Cassette Pressure Spring	M 21	QBC1357	Lock Pin Pressure Spring	M 41	QBN1743	Pressure Roller Spring	M 58	QMZ1241	Head Spacer	M 79	QXL1360	Record/Playback Selection Arm Assembly	M 99	QML3885	Fast Forward Driving Lever
M 2	QDG1201	Main Gear	M 22	QML3896	Auto-Stop Selection Lever	M 42	QML3588	Fast Forward Lever	M 59	QBN1740	Head Pressure Spring	M 80	QML3580	Record/Playback Selection Lever	M 100	QML3886	Rewind Driving Lever
M 3	QDG1202	Sub Gear	M 23	QBT1962	Main Lever Spring	M 43	QBN1748	Fast Forward Spring	M 60	QBC1278	Head Spring	M 81	QBT1895	Record/Playback Selection Lever Spring	M 101	QML3887	Record Driving Lever
M 4	QMB1336	Supply Reel Table Hub	M 24	QBN1739	Selection Lever Spring	M 44	QMA4410	Flywheel Retainer	M 61	QBCA0008	Head Spring	M 82	QXP0607	Record/Playback Selection Lever Spring	M 102	QML3897	Play Changing Lever
M 5	QDR1139	Supply Reel Table	M 25	QBN1742	Pressure Roller Release Spring	M 45	XSN2 + 10	Screw @2×10	M 62	QML3591	Brake Arm	M 83	QMR2007	Fast Forward Connection Pulley Assembly	M 103	QML3901	Eject Obstruction Lever
M 6	QMF2118	Fast Forward Arm Bracket	M 26	QBN1744	Sub Gear Spring	M 46	QBN1741	Change Lever Spring	M 63	QMN2550	Sub Head Base Plate	M 84	QMA4411	Fast Forward Connection Plate	M 104	QMR2007	Fast Forward Connection Plate
M 7	QML3899	Sub Control Lever	M 27	QBN1897	Main Gear Spring	M 47	XWG2B	Washer 2ø	M 64	QMN2550	Roller	M 85	QMA4439	Upper Base Plate	M 105	QMR2008	Rewind Connection Plate
M 8	QML3898	Main Control Lever	M 28	QBN1746	Auto-Stop Lever Spring	M 48	QMZ1254	Cord Clamp	M 65	QDK1017	Steel Ball 2ø	M 86	QXH0408	Fast Forward Pulley	M 106	QMR2009	Record Connection Plate
M 9	QML3900	Record Operation Lever	M 29	QBN1747	Connection Spring	M 49	QXF0199	Flywheel Assembly	M 66	QBP1873	Head Base Plate Pressure Spring	M 87	QDC0126	Chassis Cover Assembly	M 107	QMZ1288	Connection Plate Retainer
M 10	QML3586	Head Base Plate Lift Lever	M 30	QBS1137	Pause Lock Pin	M 49-1	QBW2049	Poly Washer	M 67	QBT1597	Brake Arm Spring	M 88	QDB0169	Tape Counter	M 108	QMA4411	Holding Angle-L
M 11	QML3594	Auto-Stop Release Arm	M 31	QBC1372	Reel Table Spring	M 49-2	QBW2026	Snap Ring	M 68	QBT1892	Head Release Spring	M 89	QMA4439	Counter Belt	M 109	QMA4412	Holding Angle-R
M 12	QML3603	Erase Safety Lever	M 32	QBW2008	Poly Washer	M 50	QXD1143	Takeup Reel Table Assembly	M 69	QMA3858	Head Adjustment Plate	M 90	XTN3 + 24B	Counter Angle	M 110	QDG1254	Damper Gear
M 13	QML3604	Auto-Stop Driving Lever	M 33	QBT1961	Operating Change Lever	M 51	QXL1382	Idle Lever Assembly	M 70	QZK0241	Takeup Gear Assembly	M 91	XSN26 + 3	Tapping Screw @3×24	M 111	QDP1920	Damper Retainer
M 14	QML3605	Auto-Stop Detection Lever	M 34	XUB3FT	Stop Ring 3ø	M 52	QX10111	Takeup Idler Assembly	M 71	QXU0297	Motor Assembly	M 92	XTN2 + 6B	Screw @2.6×3	M 112	QML3878	Fast Forward Change Lever
M 15	QML3592	Change Lever	M 35	QBW2012	Poly Washer	M 53	QBT1893	Takeup Idler Spring	M 72	QXK2286	Sub Chassis Assembly	M 93	XTN26 + 6B	Tapping Screw @2×6	M 113	QML3879	Rewind Change Lever
M 16	QMR2013	Record Rod	M 36	QXL1354	Sub Lever Assembly	M 54	QX10113	Fast Forward Idler Assembly	M 73	QDG1199	Auto-Stop Gear	M 94	XTN26 + 10B	Tapping Screw @2.6×6	M 114	QML3880	Record Change Lever
M 17	QMR2011	Auto-Stop Connection Rod	M 37	QXL1355	Main Lever Assembly	M 55	QX10112	Rewind Idler Assembly	M 74	QDG1200	Cam Gear	M 95	XTN26 + 12B	Tapping Screw @2.6×10	M 115	QML3881	Play Change Lever
M 18	QMR2014	Eject Rod	M 38	QML3882	Pause Change Lever	M 56	QXL1383	Fast Forward Arm Assembly	M 75	XWG2	Washer 2 ø	M 96	XTN3 + 10B	Tapping Screw @2.6×12	M 116	QML3883	Lock Arm-A
M 19	QMR2012	Control Rod	M 39	QBT1682	Lock Retainer Spring				M 76	QDB0324	Capstan Belt						
									M 77	QDB0274	Takeup Belt						

• Rear View



Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
40	QXL1381	Pressure Roller Assembly	M 57	QMK1840	Head Base Plate	M 78	QDB0273	Fast Forward Belt	M 97	XTN26 + 5BFZ	Tapping Screw $\varnothing 2.6 \times 5$	M 117	QML3884	Lock Arm-B
41	QBN1743	Pressure Roller Spring	M 58	QNZ1241	Head Spacer	M 79	QXL1360	Record/Playback Selection Arm Assembly	M 99	QML3885	Fast Forward Driving Lever	M 118	QML3888	Play Lever
42	QML3588	Fast Forward Lever	M 59	QBN1740	Head Pressure Spring	M 80	QML3580	Record/Playback Selection Lever	M 100	QML3886	Rewind Driving Lever	M 119	QML3889	Stop lever
43	QBN1748	Fast Forward Spring	M 60	QBC1278	Head Spring	M 81	QML3591	Record/Playback Selection Lever	M 101	QML3887	Record Driving Lever	M 120	QML3890	Fast Forward Lever
44	QMA4410	Flywheel Retainer	M 61	QBCA0008	Head Spring	M 82	QBT1895	Record/Playback Selection Lever Spring	M 102	QML3897	Play Changing Lever	M 121	QML3891	Rewind Lever
45	XSN2 + 10	Screw $\varnothing 2 \times 10$	M 62	QML3591	Brake Arm	M 83	QXP0607	Fast Forward Connection Pulley Assembly	M 103	QML3901	Eject Obstruction Lever	M 122	QML3892	Record Lever
46	QBN1741	Change Lever Spring	M 63	QNZ1240	Sub Head Base Plate	M 84	QXK0408	Upper Base Plate	M 104	QMR2007	Fast Forward Connection Plate	M 123	QML3893	Pause Lever
47	XWG2B	Washer 2 ϕ	M 64	QMN2550	Roller	M 85	QDP1828	Fast Forward Pulley	M 105	QMR2008	Rewind Connection Plate	M 124	QML3894	Muting Lever
48	QNZ1254	Cord Clamper	M 65	QDK1017	Steel Ball 2 ϕ	M 86	QXK0408	Chassis Cover Assembly	M 106	QMR2009	Record Connection Plate	M 125	QMR2006	Fast Wind Rod
49	QXF0199	Flywheel Assembly	M 66	QBP1873	Head Base Plate Pressure Spring	M 87	QDC0126	Tape Counter	M 107	QML1288	Connection Plate Retainer	M 126	QMR2010	Pause Rod
49-1	QBW2049	Poly Washer	M 67	QBT1597	Brake Arm Spring	M 88	QDB0169	Counter Belt	M 108	QMA4411	Holding Angle-L	M 128	QKJ0537	Operating Button Plate
49-2	QBW2026	Snap Ring	M 68	QBT1892	Head Release Spring	M 89	QMA4439	Counter Angle	M 109	QMA4412	Holding Angle-R	M 129	QBP1953	Operating Button Frame
50	QXD1143	Takeup Reel Table Assembly	M 69	QMA3858	Head Adjustment Plate	M 90	XTN3 + 24B	Tapping Screw $\varnothing 3 \times 24$	M 110	QDG1254	Damper Gear	M 130	QBN1898	Fast Wind Rod Spring
51	QXL1382	Idle Lever Assembly	M 70	QZK0241	Takeup Gear Assembly	M 91	XSN26 + 3	Screw $\varnothing 2.6 \times 3$	M 111	QDP1920	Damper Retainer	M 131	QBW2020	Washer
52	QX10111	Takeup Idler Assembly	M 71	QXU0297	Motor Assembly	M 92	XTN2 + 6B	Tapping Screw $\varnothing 2 \times 6$	M 112	QML3878	Fast Forward Change Lever	M 132	XWG26	Washer 2.6 ϕ
53	QBT1893	Takeup Idler Spring	M 72	QXK2286	Sub Chassis Assembly	M 93	XTN26 + 6B	Tapping Screw $\varnothing 2.6 \times 6$	M 113	QML3879	Rewind Change Lever	M 133	XTN2 + 5B	Tapping Screw $\varnothing 2 \times 5$
54	QX10113	Fast Forward Idler Assembly	M 73	QDG1199	Auto-Stop Gear	M 94	XTN26 + 10B	Tapping Screw $\varnothing 2.6 \times 10$	M 114	QML3880	Record Change Lever	M 134	XTN2 + 4BFZ	Tapping Screw $\varnothing 2 \times 4$
55	QX10112	Rewind Idler Assembly	M 74	QDG1200	Cam Gear	M 95	XTN26 + 12B	Tapping Screw $\varnothing 2.6 \times 12$	M 115	QML3881	Play Change Lever	M 135	XTN3 + 6B	Tapping Screw $\varnothing 3 \times 6$
56	QXL1383	Fast Forward Arm Assembly	M 75	XWG2	Washer 2 ϕ	M 96	XTN3 + 10B	Tapping Screw $\varnothing 3 \times 10$	M 116	QML3883	Lock Arm-A	M 136	XTN3 + 12B	Tapping Screw $\varnothing 3 \times 12$
			M 76	QDB0324	Capstan Belt							M 137	QJT0015	Lug Terminal
			M 77	QDB0274	Takeup Belt									

When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

SPECIFICATIONS

Pressure of pressure roller	350 $\pm$ 50 g
Takeup tension * Use cassette torque meter ... QZZSRKCT	45 $\pm$ 15 - 15 g-cm
Wow and flutter; (JIS) * Use test tape ... QZZCWAT	Less than 0.08% (WRMS)

Motor Unit Disassembly

1. Remove screw (A) and connection plate retainer (M107). The remove fast forward connection plate (M104), rewind connection plate (M105) and record connection plate (M106) (see Fig. 1).
2. Remove three screws (B) and remove operation button unit (see Fig. 2).
3. Remove two screws (C) and hook at section (D) to dismount flywheel retainer (M44) (see Fig. 2).
4. Remove hook at section (E) and cord clamber (M48) (see Fig. 2), and then remove two screws (F) (see Fig. 3) to dismount motor unit.

Precautions for Mechanism Unit Assembly

Before installing the operation button unit in the mechanism unit, pull the play changing lever (M102) of the mechanism unit in the direction of the arrow until it is locked, and set the pause, F.F. and rewind buttons of the operation button unit to OFF. At this time, check that all parts are installed at their proper positions at sections (G), (H) and (I) (see Fig. 2).

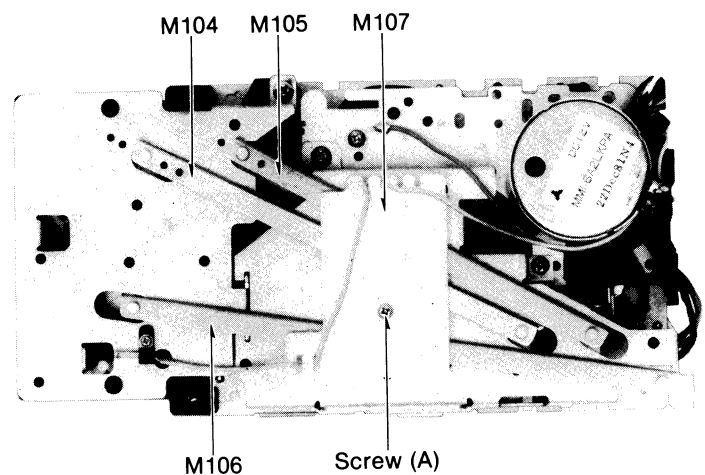


Fig. 1

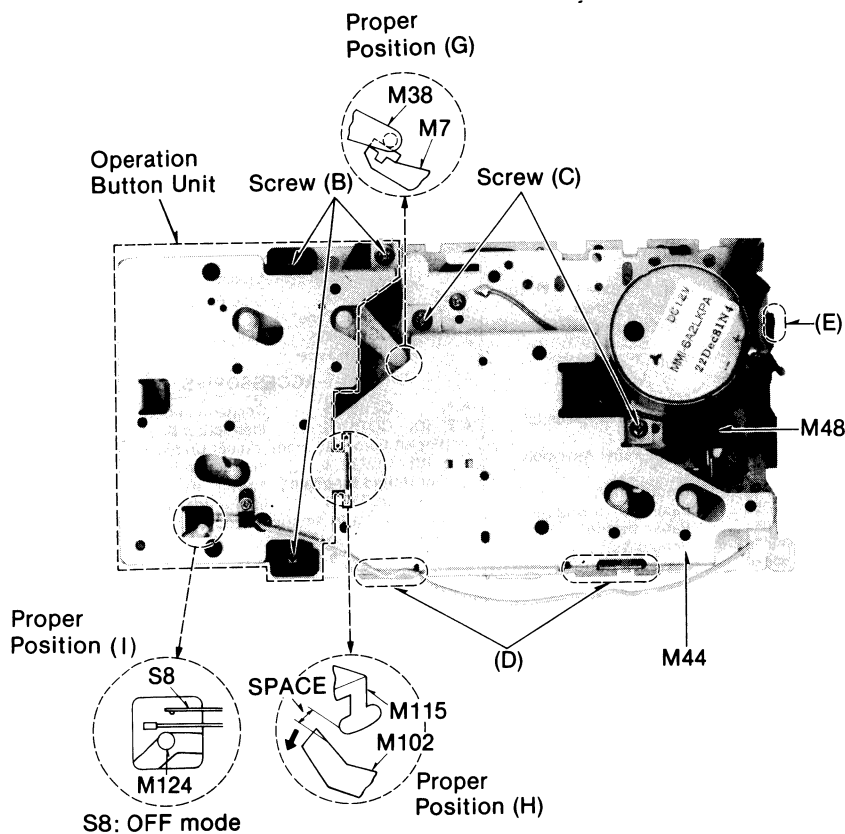


Fig. 2

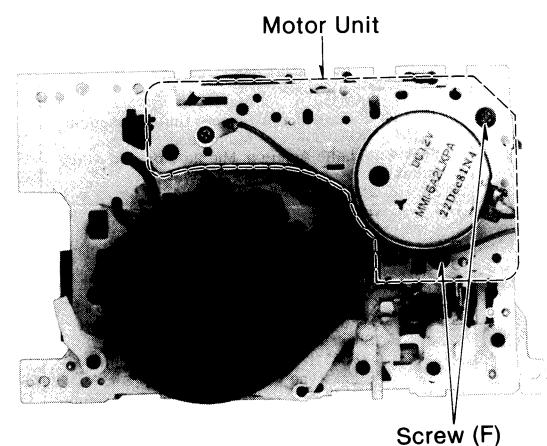
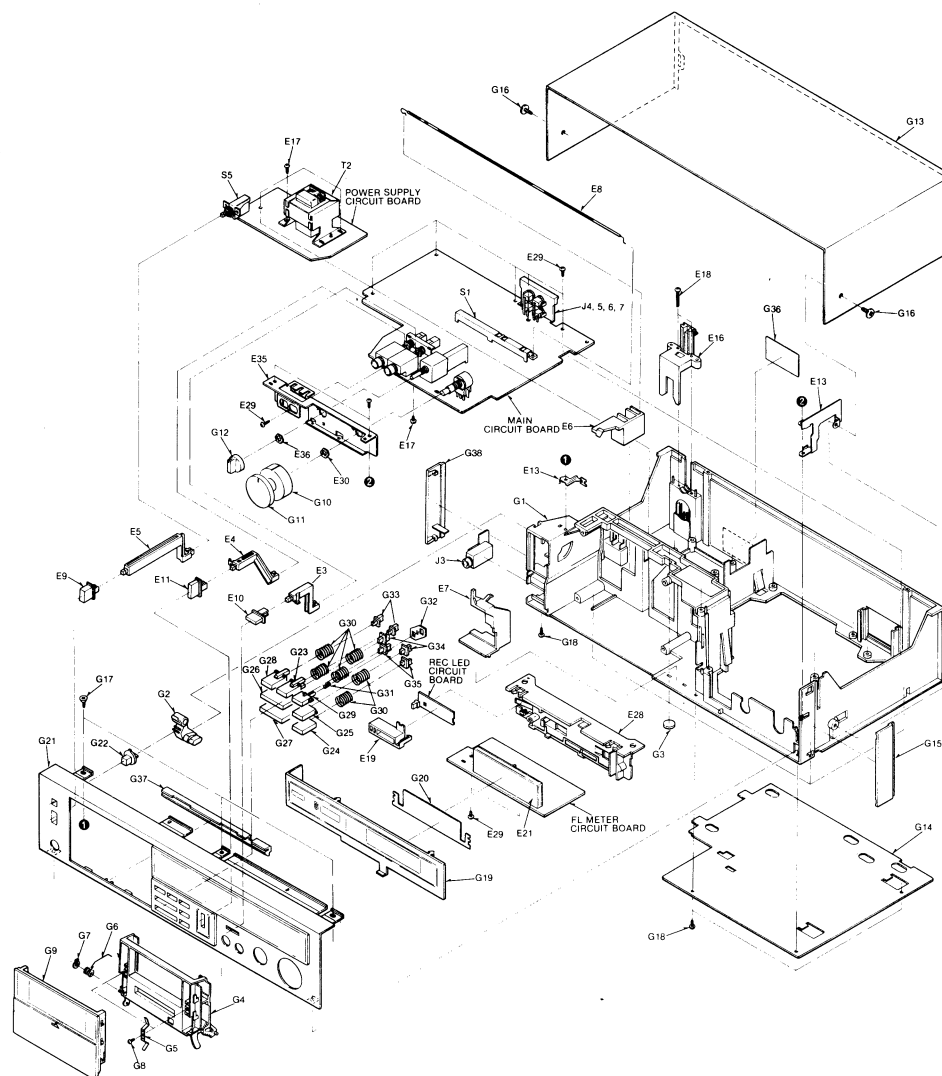


Fig. 3

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
CABINET PARTS			G 16	QH01324	Screw		[N] QGS2990	Main Name Plate
G 1	[D] QKM1521K	Main Case [For all European areas except United Kingdom.] [N] QKM1530K Main Case [For Asia, Latin America, Middle East and Africa areas.]		"Silver Type"			[For Asia, Latin America, Middle East and Africa areas.]	
				QH01324K	Screw	G 37	QGK3259K	Space
			G 17	XTS3 + 10B	Tapping Screw @3×10	G 38	QGK3286	Side Panel-L
			G 18	XTN3 + 10B	Tapping Screw @3×10		"Silver Type"	
G 2	QML3908	Eject Lever	G 19	QXG3263	Meter Cover		QGK3286K	Side Panel-L
G 3	QKA1081	Rubber Foot		"Silver Type"			"Black Type"	
G 4	QKF2105	Cassette Holder		QGK3263Y	Meter Cover	ACCESSORIES		
G 5	QBP1923	Holder Spring	G 20	QGL1177	Meter Filter	A 1	QEB0125	Connection Cord
G 6	QBN1893	Eject Spring	G 21	QYP1108	Front Panel Assembly	A 2	[D] QQT3263	Instruction Book
G 7	XUB5FT	Stop Ring 5ø		"Silver Type"			[For all European areas except United Kingdom.]	
G 8	XTN26 + 5BFZ	Tapping Screw @2.6×5		QYP1108K	Front Panel Assembly		[B] QQT3264	Instruction Book
G 9	QYF0551	Cassette Lid Assembly		"Black Type"			[For United Kingdom.]	
	"Silver Type"		G 22	QGO2059	Eject Button		[N] QQT3296	Instruction Book
	QYF0551K	Cassette Lid Assembly	G 23	QGO2053	Fast Foward Buttom		[For Asia, Latin America, Middle East and Africa areas.]	
	"Black Type"		G 24	QGO2054	Pause Button	PACKINGS		
G 10	QYT0647	Volume Knob-R Assembly	G 25	QGO2055	Record Button	P 1	[DB] QPN4314	Inside Carton
G 11	QYT0648	Volume Knob-L Assembly	G 26	QGO2056	Playback Button		[For all European areas.]	
G 12	QGT1591	Tape Selector Knob	G 27	QGO2057	Stop Button		[N] QPN4325	Inside Carton
G 13	QGC1231	Case Cover	G 28	QGO2058	Rewind Button		[For Asia, Latin America, Middle East and Africa areas.]	
	"Silver Type"		G 29	QGO2060	Counter Reset Button		P 2	QPA0675
	QGC1231K	Case Cover	G 30	QBC1414	Button Spring			Cushion-R
	"Black Type"		G 31	QBC1187	Idler Spring			QPA0676
G 14	QGC1232	Bottom Cover	G 32	QKJ0547	Spring Holder			Cushion-L
G 15	QGK3260	Side Panel-R	G 33	QKJ0544	Button Rod-A	P 3	QPA0676	Cushion-L
	"Silver Type"		G 34	QKJ0545	Button Rod-B	P 4	QPS0434	PAD
	QGK3260K	Side Panel-R	G 35	QKJ0546	Button Rod-C	P 5	QPC0072	Poly Sheet
	"Black Type"		G 36	[B] QGS2989	Main Name Plate			(for AC Power Cord)
			[For United Kingdom.]			P 6	XZB40X60A02	Poly Bag (for UNIT)

Parts Change Notice

(D)...For all European areas except United Kingdom. (N)...For Asia, Latin America, Middle East and Africa areas. (A)...For Australia.

(B)...For United Kingdom.

(F)...For Asian PX.

(J)...For European PX.

Model No.

RS-M216

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change		*The circled item indicates the reason. If no marking, see the Notes in the bottom column.			
1. Improve performance					
2. Change of material or dimension					
3. To meet approved specification					
4. Standardization					
5. Addition					
6. Deletion					
7. Correction					
8. Other					
Interchangeability Code		**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.			
Parts		Set Production			
A	Original		Early	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	
	New		Late		
B	Original		Early	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.	
	New		Late		
C	Original		Early	New parts only may be used in early or late production sets. Stock new parts.	
	New		Late		
D	Original		Early	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.	
	New		Late		
E Other					
Part Number					
Model No.	Ref. No.	Original Part No.	New Part No.	Notes (* - **)	Part Name & Descriptions
RS-M216	S6 (N)	QSR1401H	QSR1410H	7	Rotary Switch(AC Power Voltage Selector)
"	G3	QKA1081	QKA1093	2-C	Rubber Foot
"	G6	QBN1893	QBN1937	1-C	Eject Spring
"	R7 (D/B/N/A)	_____	QPA0683	5-C	Speacer
NOTE: • 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					

File this Parts Change Notice with your copy of the Service Manual.

Original Service Manual is Model No. RS-M216(D/B/N) Order No. ARD82040133C8-11.

(F/J) Order No. ARD82060156A4-01.

(A) Order No. ARD82060155A3-01.

Technics
National / Panasonic

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan

Printed in Japan

Service Manual

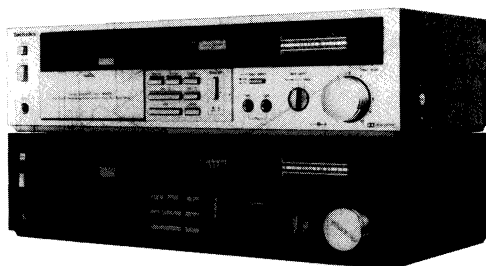
Cassette Deck

RS-M216

(Black Face)
(Silver Face)

Supplement-1

Slim Type Cassette Deck with New Soft Mechanism and Peak Hold FL Meters



This is the Service Manual for the following areas.

- D** For all European areas except United Kingdom.
- B** For United Kingdom.
- N** For Asia, Latin America, Middle East and Africa areas.
- A** For Australia.
- F** For Asian PX.
- J** For European PX.

Please use this manual together with the service manual for model No. RS-M216 (Original) order No. ARD82040133C8-11.

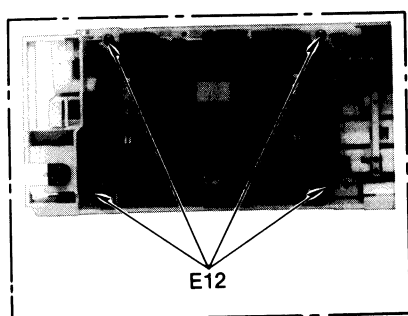
PARTS COMPARISON TABLE :

Please revise the original parts list in the Service Manual RS-M216 (of the black type model for **N** mark areas) to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

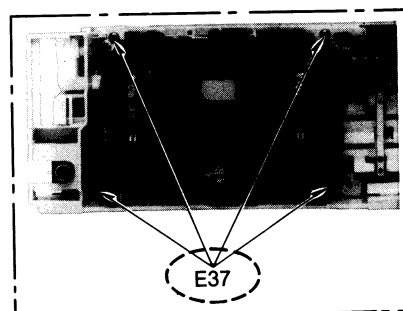
Important safety notice.
Components identified by **Δ** mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part Name & Description	Part Numbers		Remarks
		Former Type	New Type	
E15 N Δ	AC Power Cord	(P)JA52ZB-K	RJA52ZB-K	Corrected
E17	Tapping Screw	XTN3+10B	XTV3+8BFZ	
E37	Tapping Screw $\oplus 3 \times 12$	—————	XTS3+12B	Added
R61, 62	Resistors	ERD25FJ6R8 (6.8Ω)	ERD25FJ3R3 (3.3Ω)	
C44	Capacitor	—————	ECEA50Z1	Added
P4	Pad	QPS0434	—————	Deleted

ELECTRICAL PARTS LOCATION (DIFFERENCE)



Former Type



New Type

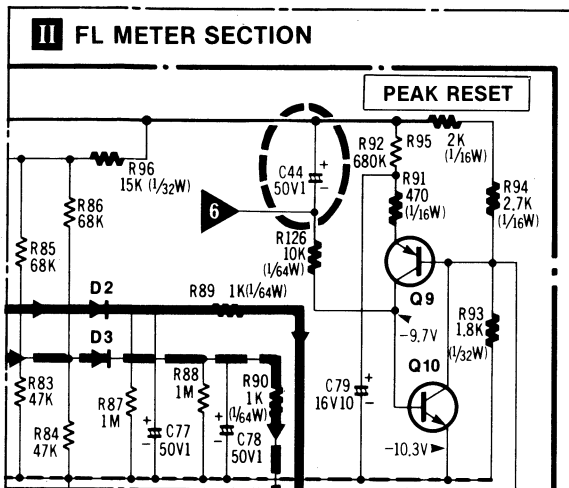
* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

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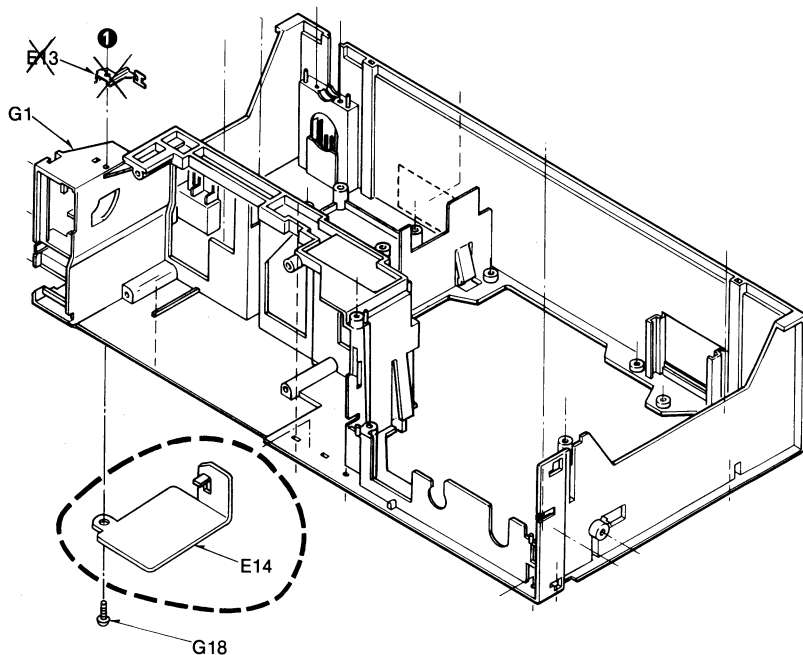
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P.O. Box 288, Central Osaka Japan

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan

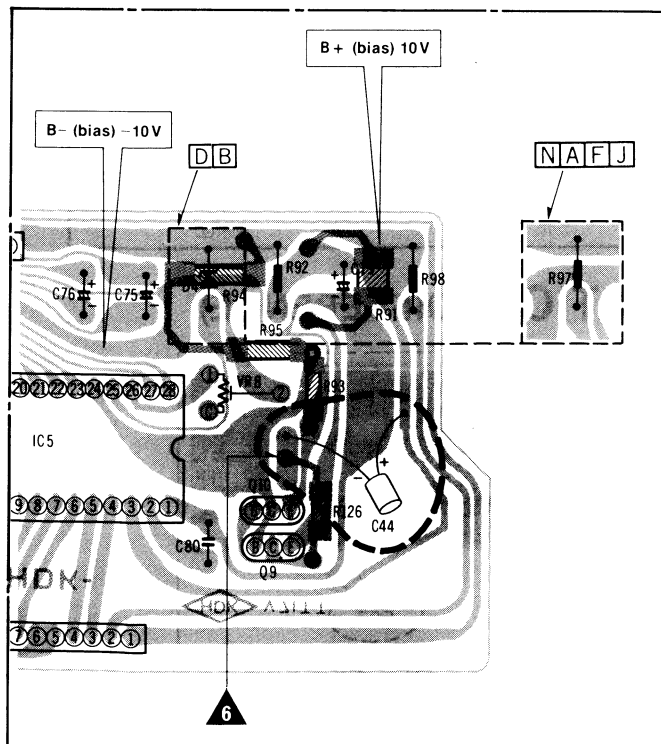
SCHEMATIC DIAGRAM (ADDITION)



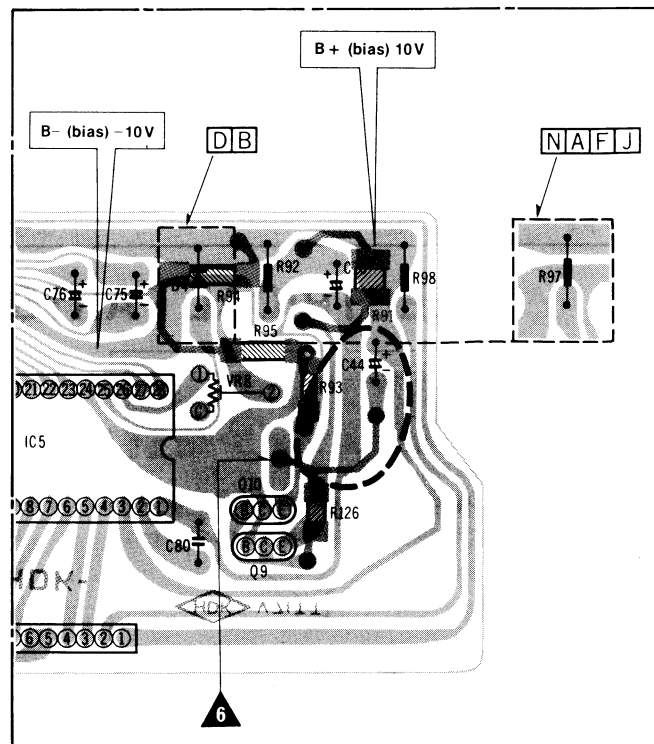
CABINET PARTS LOCATION (CORRECTION)



CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (ADDITION)



Former Type



New Type