



# HITACHI

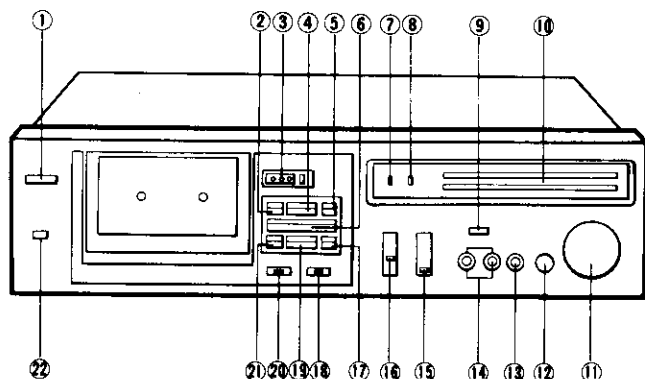
## ● SERVICE MANUAL

**TK****No. 1470E**

### D-E55

**(U, C, FS, BS, AU, W)**

Use this manual together with the D-E55 Technical Information (No. 1471) and FL-12 mechanism Technical Information (No. 1474).



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### KEY TO ILLUSTRATIONS

- |                                  |                               |
|----------------------------------|-------------------------------|
| 1. Power (Mains) switch          | 12. Recording balance control |
| 2. Rewind button                 | 13. Headphone jack            |
| 3. Tape counter                  | 14. Microphone jacks          |
| 4. Playback button               | 15. Dolby NR switch           |
| 5. Fast forward button           | 16. Tape select switch        |
| 6. Stop button                   | 17. Rec. mute button          |
| 7. Metal tape position indicator | 18. Timer switch              |
| 8. Dolby NR indicator            | 19. Pause button              |
| 9. Input select switch           | 20. Auto/memory rewind switch |
| 10. Digital peak meter           | 21. Record button             |
| 11. Recording level control      | 22. Eject button              |

### SAFETY PRECAUTION

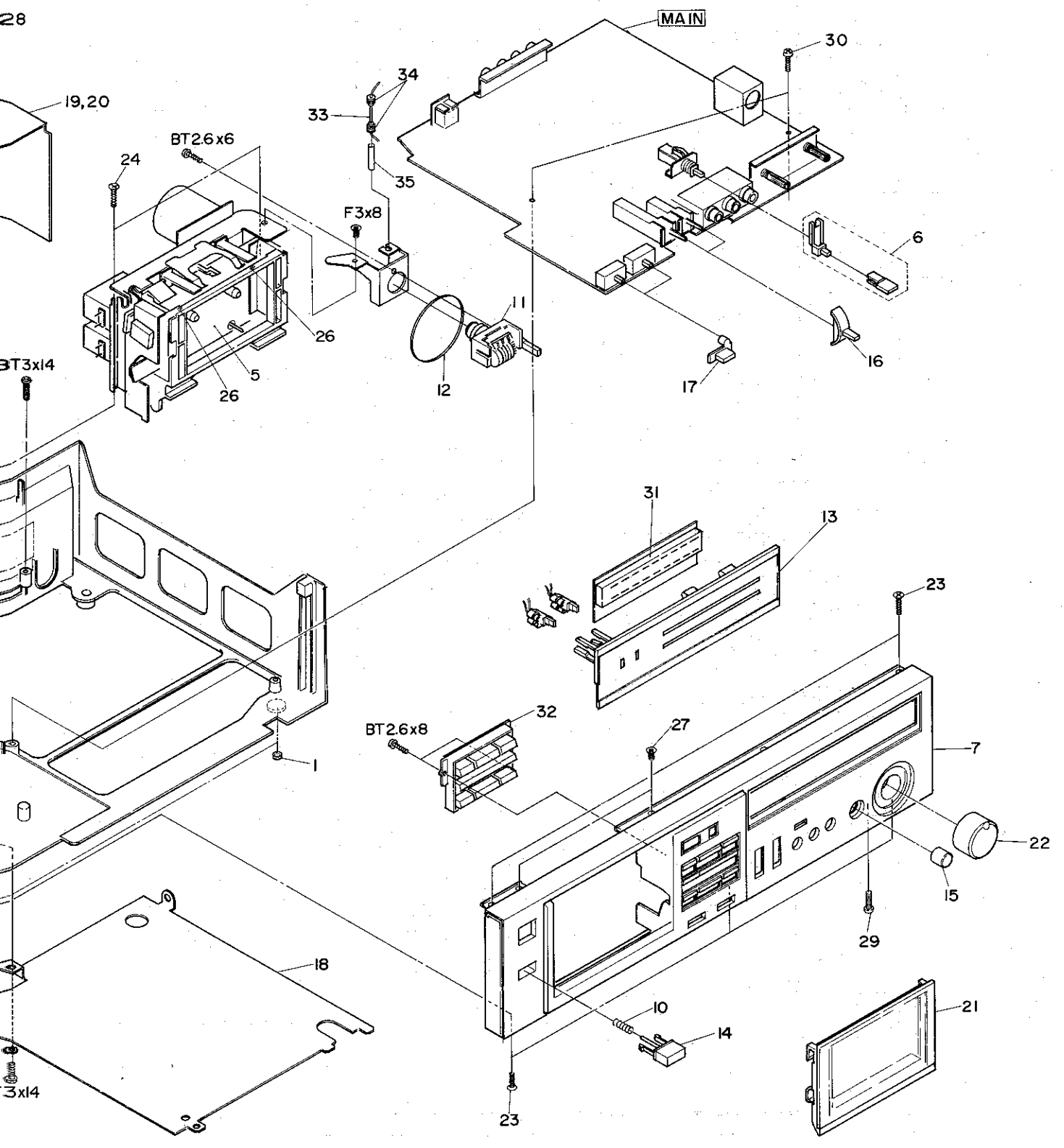
The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with  $\Delta$  in the schematic diagram and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

## STEREO CASSETTE TAPE DECK

**December 1980****TOKAI WORKS**

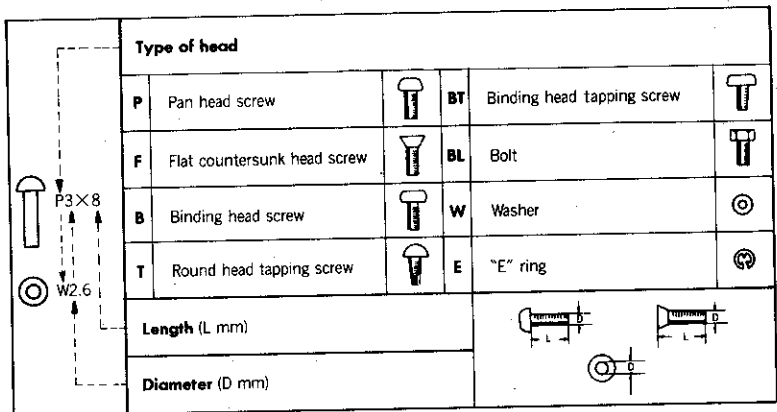


Note : Components marked without numbers in this drawing are not specified as replacement parts.

## REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
<b>CAPACITORS</b>					
△ CR1	0219902	CR PACK 120 OHM 0.0033MF 450V (U)	Q 11LR	5322621	TRANSISTOR 2SC2320E
△ CR1	0219907	CR PACK (C)	Q 12	5322621	TRANSISTOR 2SC2320E
C100	0209026	CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30	Q 13	5322621	TRANSISTOR 2SC2320E
<b>RESISTORS</b>					
RT1LR	0151808	SEMI VARIABLE RESISTOR 10K OHM	Q 14	5322621	TRANSISTOR 2SC2320E
RT2LR	0151808	SEMI VARIABLE RESISTOR 10K OHM	Q 15	5322651	TRANSISTOR 2SD667C
RT3LR	0151808	SEMI VARIABLE RESISTOR 10K OHM	Q 16LR	5322621	TRANSISTOR 2SC2320E
RT4LR	0151818	SEMI VARIABLE RESISTOR 100KOHM	Q 19	5321295	TRANSISTOR 2SC1740E
RV1	5000617	VARIABLE RESISTOR 50KOHM (A)	Q 20	5321295	TRANSISTOR 2SC1740E
RV2	5000851	VARIABLE RESISTOR 100KOHM(B)	Q 21	5322621	TRANSISTOR 2SC2320E (W,FS,BS,AU)
RV3	5000616	VARIABLE RESISTOR 10KOHM(B)	Q101	5321301	TRANSISTOR 2SC1061
<b>SEMI-CONDUCTORS</b>					
D 1LR	5330573	DIODE 1S2473	Q102	5321301	TRANSISTOR 2SC1061
D 4	5330573	DIODE 1S2473 (W,FS,BS,AU)	Q103	5320643	TRANSISTOR SILICON 2SC1162 150M
D 5	5330573	DIODE 1S2473	Q104	5322621	TRANSISTOR 2SC2320E
D 6	5330847	DIODE RD2.7E-B2	Q105	5320643	TRANSISTOR SILICON 2SC1162 150M
D 7	5330573	DIODE 1S2473	Q106	5322621	TRANSISTOR 2SC2320E
D 8	5330571	DIODE 1S2473VE	Q107	5322621	TRANSISTOR 2SC2320E
D 9	5330571	DIODE 1S2473VE	Q108	5322621	TRANSISTOR 2SC2320E
D 10	5330573	DIODE 1S2473	Q109	5322621	TRANSISTOR 2SC2320E
D101-107	5331422	DIODE SM-1A-02	Q111	5320593	TRANSISTOR 2SA673C
D108-110	5330573	DIODE 1S2473	Q201	5320643	TRANSISTOR SILICON 2SC1162 150M
D111	5330573	DIODE 1S2473	Q301	5320593	TRANSISTOR 2SA673C
D201	5331422	DIODE SM-1A-02	ZD101	5331491	ZENER DIODE HZ22-1
D202	5331422	DIODE SM-1A-02	ZD102-104	5330392	ZENER DIODE SILICON HZ6B 1MHZ 400MW
D203	5330551	ZENER DIODE HZ11A	<b>TRANSFORMERS</b>		
D204	5330847	DIODE RD2.7E-B2	△ PT	5212881	POWER TRANSFORMER (U+C)
D205LR	5330573	DIODE 1S2473	△ PT	5212882	POWER TRANSFORMER (FS)
D301	5330573	DIODE 1S2473	△ PT	5212883	POWER TRANSFORMER (BS)
D302	5330573	DIODE 1S2473	△ PT	5212884	POWER TRANSFORMER (AU)
D303	5330573	DIODE 1S2473	△ PT	5212885	POWER TRANSFORMER (W)
D500	5330712	DIODE HZ3B (W)	<b>COILS</b>		
IC 1LR	5352591	IC #NE646B	L1LR	5161666	DOLBY FILTER
IC 2	5359901	IC #PD4066C	L2LR	5120562	TRAP COIL
IC101	5365473	IC MB8844-340	L3LR	5150363	CHOKE COIL 2.2 MH
IC201	5350591	IC #PC1458C	L4	5260421	BIAS OSCILLATOR COIL
LED1	5380362	LED SLB26GG1	L5	5152125	CHOKE COIL 47MICROH
LED2	5380362	LED SLB26GG1	L6	5152073	CHOKE COIL 8.2MICROH
LED3	5380271	LED GL-9PR2	<b>MISCELLANEOUS</b>		
Q 1LR	5321295	TRANSISTOR 2SC1740E	J6	5651141	5P DIN SOCKET (W,FS,BS,AU)
Q 2LR	5321295	TRANSISTOR 2SC1740E		5658073	LED SOCKET
Q 3LR	5322621	TRANSISTOR 2SC2320E	J5	5677131	8P DIN SOCKET (REMOTE)
Q 4LR	5322621	TRANSISTOR 2SC2320E	△	5746158	POWER CORD (W,FS)
Q 6LR	5321194	TRANSISTOR 2SD467BC	△	5746342	POWER CORD (BS)
Q 7LR	5321295	TRANSISTOR 2SC1740E	△	5746442	POWER CORD (U+C)
Q 8	5322621	TRANSISTOR 2SC2320E (W,FS,BS,AU)	△	5746571	POWER CORD (AU)
Q 9	5322621	TRANSISTOR 2SC2320E (W,FS,BS,AU)	PL101	5762036	PILOT LAMP (POWER SWITCH ILLUMINATION)
Q 10LR	5321194	TRANSISTOR 2SD467BC	△ F2	5720175	FUSE 0.8A (W,FS,BS,AU)
			△ F2	5721164	FUSE 1A (U+C)
			△ F1	5721061	FUSE 1.6A (W,FS,BS,AU)

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEOUS			6	6761922	PUSH BUTTON ASSEMBLY (INPUT)
△ F1	5721161	FUSE 1.6A (U,C)	7	6672013	FRONT PANEL ASSEMBLY
△ F202	5720171	FUSE 315MA (W)	8	6290751	PUSH BUTTON ASSEMBLY (POWER) (U,C,FS,BS,AU)
△ F203	5720178	FUSE 250MA (W)	9	6290752	PUSH BUTTON ASSEMBLY (POWER) (W)
J1LR	5676261	PIN JACK ASSEMBLY (LINE IN)	10	6303115	SPRING FOR EJECT BUTTON
J2LR	5676261	PIN JACK ASSEMBLY (LINE OUT)	11	5559443	COUNTER
J3	5679731	JACK (HEADPHONE)	12	6354471	COUNTER BELT
J4LR	5679731	JACK (MIC)	13	6762852	LED FRAME ASSEMBLY
RL1	5641141	REED RELAY (W+FS+BS+AU)	14	6053532	EJECT BUTTON ASSEMBLY
S 1	5639361	SOLENOID SWITCH (REC./P.B.)	15	6288303	KNOB ASSEMBLY-12MMD (REC. BALANCE)
S 2	5634306	PUSH SWITCH (INPUT SELECTOR)	16	6299221	LEVER KNOB (TAPE,DOLBY)
S 3	5604501	LEVER SWITCH (TAPE)	17	6295611	SLIDE KNOB (AUTO/MEMORY REW, TIMER)
S 4	5604227	LEVER SWITCH (DOLBY NR)	18	6042804	BOTTOM COVER
△ S 10	5633482	PUSH SWITCH (POWER) (U,C)	19	6044231	UPPER COVER (W+FS+BS+AU)
△ S 10	5633541	PUSH SWITCH (POWER) (FS,BS+AU)	20	6044232	UPPER COVER (U,C)
△ S 10	5633641	PUSH SWITCH (POWER) (W)	21	6092963	CASSETTE DDDR ASSEMBLY
△ S 11	5605083	ROTARY SWITCH (VOLTAGE SELECTOR) (W)	22	6288183	KNOB ASSEMBLY-38MMD (RECORD LEVEL)
S101	5624281	SLIDE SWITCH (TIMER)	23	7781581	BT FLAT SCREW-3MMDX10MM
S102	5624281	SLIDE SWITCH (AUTO REW)	24	7781582	FLAT SCREW-3MMDX10MM (BLACK)
FOR ACCESSORIES			25	7781731	BT BIND SCREW-4MMDX10MM (W+FS+BS+AU)
	7740321	HEAD CLEANING STICK	26	0678312	DT SCREW-2.6MMDX12MM (BLACK)
	5894163	PATCH CORD	27	8602408	DT FLAT SCREW-3MMDX8MM
△	5662021	SOCKET ADAPTER (W)	28	8699610	BT BIND SCREW-4MMDX10MM (U,C)
MISCELLANEOUS			29	7781587	BT FLAT SCREW-3MMDX16MM
1	7740601	FELT LEG	30	8699408	BT BIND HEAD SCREW-3MMDX8MM (BLACK)
△ 2	0043793	BUSHING (U,C+AU)	31	5310491	DIGITAL PEAK METER
△ 3	6711351	BUSHING (BS)	32	5639431	FUNCTION SWITCH ASSEMBLY
△ 4	6794081	BUSHING (W+FS)	33	5641092	REED RELAY
5	6633903	CASSETTE METAL	34	6576271	RELAY CAP
			35	7575542	TUBE



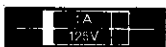
## FOR CANADA

## CAUTION AGAINST FUSE REPLACEMENT

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND SAME RATING FUSE IN ACCORDANCE WITH THE FUSE SYMBOL LABEL.

The following is indication of the fuse symbol label which is affixed adjacent to the fuse in the equipment.

## \* Example



This symbol indicates Fast Operating  
Type 1A, 125V Fuse.

## POUR LE CANADA

## PRECAUTIONS A PRENDRE POUR LE REMPLACEMENT DE FUSIBLE

Pour assurer une protection continue contre les risques d'incendie et d'électrocution, remplacer le fusible uniquement avec un modèle du même type et de même puissance en tenant compte des symboles du fusible utilisé.

Les indications suivantes représentent les symboles de fusible collés à côté du fusible installé dans l'appareil.

## \* Exemple



Ce symbole représente un fusible à réaction rapide du  
type 1A 125V.

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Codes : All Codes Used



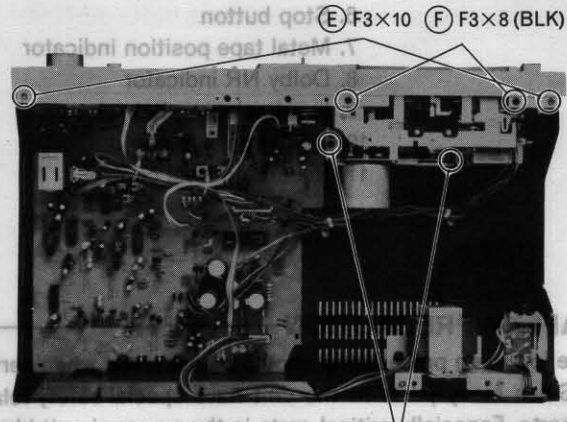
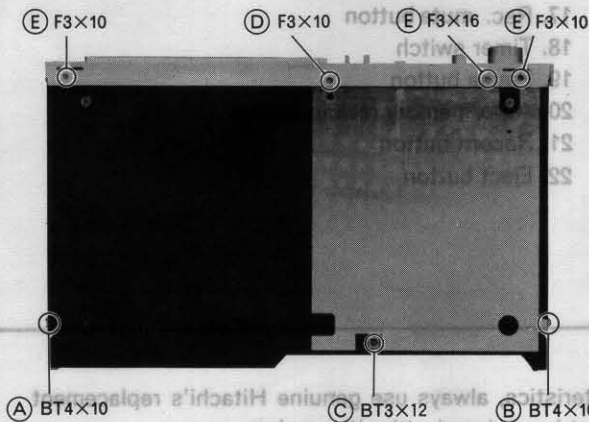
**SPECIFICATIONS**

<b>Semi-conductors :</b>	
Module :	1
ICs :	6
Transistors :	41 (U, C) 43 (FS, BS, AU, W)
<b>Diodes :</b>	
	27 (U, C) 29 (FS, BS, AU, W)
<b>Varistors :</b>	
LEDs :	5
Track System :	4 track 2 channel stereo
Tape :	Cassette tape (C-30, 60, 90)
Tape Speed :	4.75cm/s
<b>Recording System and</b>	
Bias Frequency :	AC bias, 85 kHz
Erasing System :	AC erase
Erase Ratio :	65 dB or more (at 1 kHz)
<b>Frequency Response :</b>	
ER/UD (NOR) :	20 Hz ~ 17 kHz 30 Hz ~ 15 kHz (± 3 dB) 30 Hz ~ 15 kHz*
EX/SX (CrO <sub>2</sub> ) :	20 Hz ~ 18 kHz 30 Hz ~ 16 kHz (± 3 dB) 30 Hz ~ 16 kHz*
<b>ME (Metal) :</b>	
	20 Hz ~ 18 kHz 30 Hz ~ 17 kHz (± 3 dB) 30 Hz ~ 17 kHz*
FeCr :	20 Hz ~ 17 kHz 30 Hz ~ 15 kHz (± 3 dB) 30 Hz ~ 15 kHz*
<b>S/N (Signal to Noise Ratio) :</b>	
Dolby NR OFF :	59 dB (Weighted A, Reference 3% THD Metal Tape) 58 dB*

Dolby NR ON :	67 dB (Weighted A, Reference 3% THD Metal Tape) 66 dB*
Wow and Flutter :	0.04% (WRMS) 0.13%*
<b>Input Sensitivity and Impedance :</b>	
Microphone :	0.3mV, 300 ohms ~ 5k ohms (U, C) 0.38mV, 300 ohms ~ 5k ohms (FS, BS, AU, W)
Line in :	60mV, 50k ohms or more
DIN (Record/Playback) :	0.3mV, 3.3k ohms (FS, BS, AU, W)
Output Level :	500mV
<b>Output Load Impedance :</b>	
Line out :	50k ohms or more
DIN (Record/Playback) :	50k ohms or more (FS, BS, AU, W)
Headphone :	8 ohms ~ 2k ohms
Distortion :	1.0% (1 kHz, -3 dB)
Crosstalk :	60 dB or more (at 1 kHz)
Channel Separation :	30 dB or more (at 1 kHz)
<b>Power Supply :</b>	
	AC 120V, 60 Hz (U, C) AC 100-110V/115-127V/ 200-220V/230-250V, 50/60 Hz (W) AC 220V, 50 Hz (FS) AC 240V, 50 Hz (BS, AU)
Power Consumption :	21W
Dimensions :	110(H) × 435(W) × 266(D)mm
Weight :	4.6kg
Motor :	Electronically controlled DC motor
Heads :	Metal SL Record/playback head Double-gap ferrite Erase head

\* According to DIN 45 500

**DISASSEMBLY**



**1. Cassette door**

Depress the eject button to open the cassette door. Lift up the cassette door to remove it.

**2. Upper cover**

Remove A and B (two) screws.

**3. Bottom cover**

Remove B, C and D (three) screws.

**4. Front panel**

1) Remove two knobs (Recording level and Recording balance).

2) Remove D, E and F (eight) screws.

**5. Cassette chassis**

Remove G and H (four) screws.

## ADJUSTMENT

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller and capstan with a head cleaning stick moistened in alcohol. Also, unless specially indicated otherwise, set the switches and controls to the positions indicated in the table.

Symbol No.	Switches and Controls	Position	Symbol No.	Switches and Controls	Position
S2	Input select switch	LINE	RV1	Recording level control	Max.
S3	Tape select switch	ER/UD (NOR)	RV2	Recording balance control	Center
S4	Dolby NR switch	OFF			

Item	Adjustments	Measuring Instrument and Connection			Check Tape	Mode	Adjusted Position	Adjusted Value	Remarks
		Measuring Instrument	Input Terminal	Output Terminal					
1	Tape speed	• Frequency counter	—	LINE OUT	MTT-111, 3000 Hz (3150 Hz*)	Playback	Semi-variable resistor in the motor	3000 Hz +30 Hz -10 Hz (3150 Hz*)	See Note 1
2	Head azimuth	• VTVM	—	LINE OUT	MTT-216, 12.5 kHz	Playback	Azimuth adjusting screw	Output Max.	See Note 2
3	Playback gain	• VTVM	—	TP1L, R	MTT-150, 400 Hz, 20m Maxwell	Playback	RT1L, R	580 mV	See Note 3
4	Digital peak meter	• Audio oscillator (400 Hz, 0 dB) • VTVM	LINE IN	TP1L, R	—	Record	RT2L, R	0 dB	See Note 4
5	Bias trap	(1) Set the tape select switch (S3) to the Metal position and set the RT4L, R to the center.							
		• Frequency counter	—	TP2, TP3	—	Record	L4	85 kHz ±0.5 kHz	See Note 5
6	Bias current	(1) Set RT3L, R to the center.							
		• Audio oscillator (1.2 kHz/12 kHz, 0 dB-20 dB) • Attenuator • VTVM	LINE IN	LINE OUT	ER/UD tape	Record/playback	RT4L, R	Output difference within 1 dB	See Note 6
7	Record level	• Audio oscillator (400 Hz) • VTVM	LINE IN	LINE OUT	ER/UD tape	Record/playback	RT3L, R	0 dB	See Note 7

\* According to DIN 45 500



**Note :**

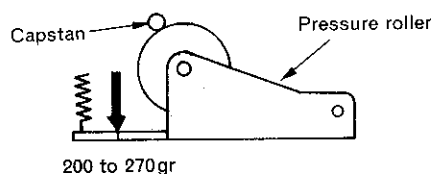
1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. When the maximum values of both channels are different, tune to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.
3. Playback a test tape (MTT-150, 400 Hz 20m Maxwell) and adjust RT1L, R so that the level of TP1L, R becomes 580mV.
4. Feed a 400 Hz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the level of TP1L, R becomes 580mV. Then, adjust RT2L, R so that the digital peak meters indicate 0 dB.
5. Set the tape select switch (S3) to the Metal position and set the RT4L, R to the center in the recording mode. Adjust L4 so that the bias frequency between TP2 and TP3 is 85 kHz±0.5 kHz.
6. 1) Set RT3L, R to the center.
- 2) Feed a 1.2 kHz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the digital peak meters indicate 0 dB. Then, adjust the attenuator to lower the output level by 20 dB.
- 3) Record the signal on ER/UD tape with the conditions of item 2), then continue to record with the audio oscillator frequency set to 12 kHz.
- 4) Playback the recorded signal and adjust RT4L, R so that the output level difference between two frequencies is within 1 dB measured at the LINE OUT jacks.
7. 1) Feed a 400 Hz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the digital peak meters indicate 0 dB.
- 2) Record the signal on ER/UD tape with the conditions of item 1).
- 3) Playback the recorded signal and adjust RT3L, R so that the digital peak meters indicate 0 dB.

**INSPECTION OF MECHANISM**

Check Item		Reference Value	Remarks
1	Pressure of pressure roller	200 to 270gr	Note 1
2	Torque	Take-up	35 to 65 gr-cm Measure in playback mode
		FF	75 to 110 gr-cm Measure in fast forward mode
		Rewind	75 to 110 gr-cm Measure in rewind mode
3	Back-tension	Take-up turntable	1.7 to 6gr-cm Measure in rewind mode with tape counter
		Supply turntable	2.5 to 4.5 gr-cm Measure in playback mode
4	Brake-torque	Take-up turntable	50 to 100gr-cm Measure in stop mode
		Supply turntable	

**Note 1. Pressure of pressure roller**

Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.



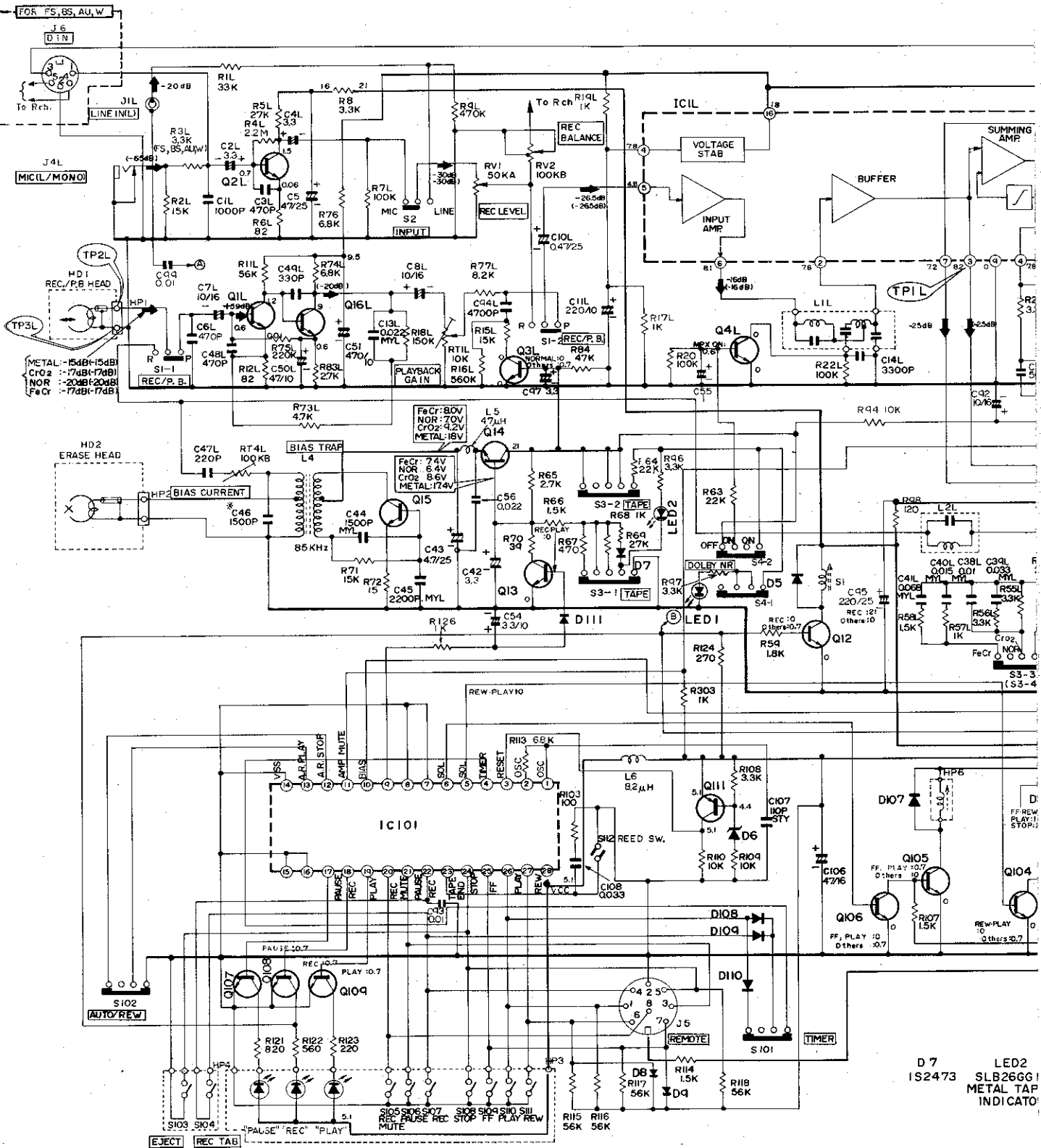
**LUBRICATIONS**

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point.  
Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use.  
Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (#1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Froil (GB-TS-1)

# SCHEMATIC DIAGRAM

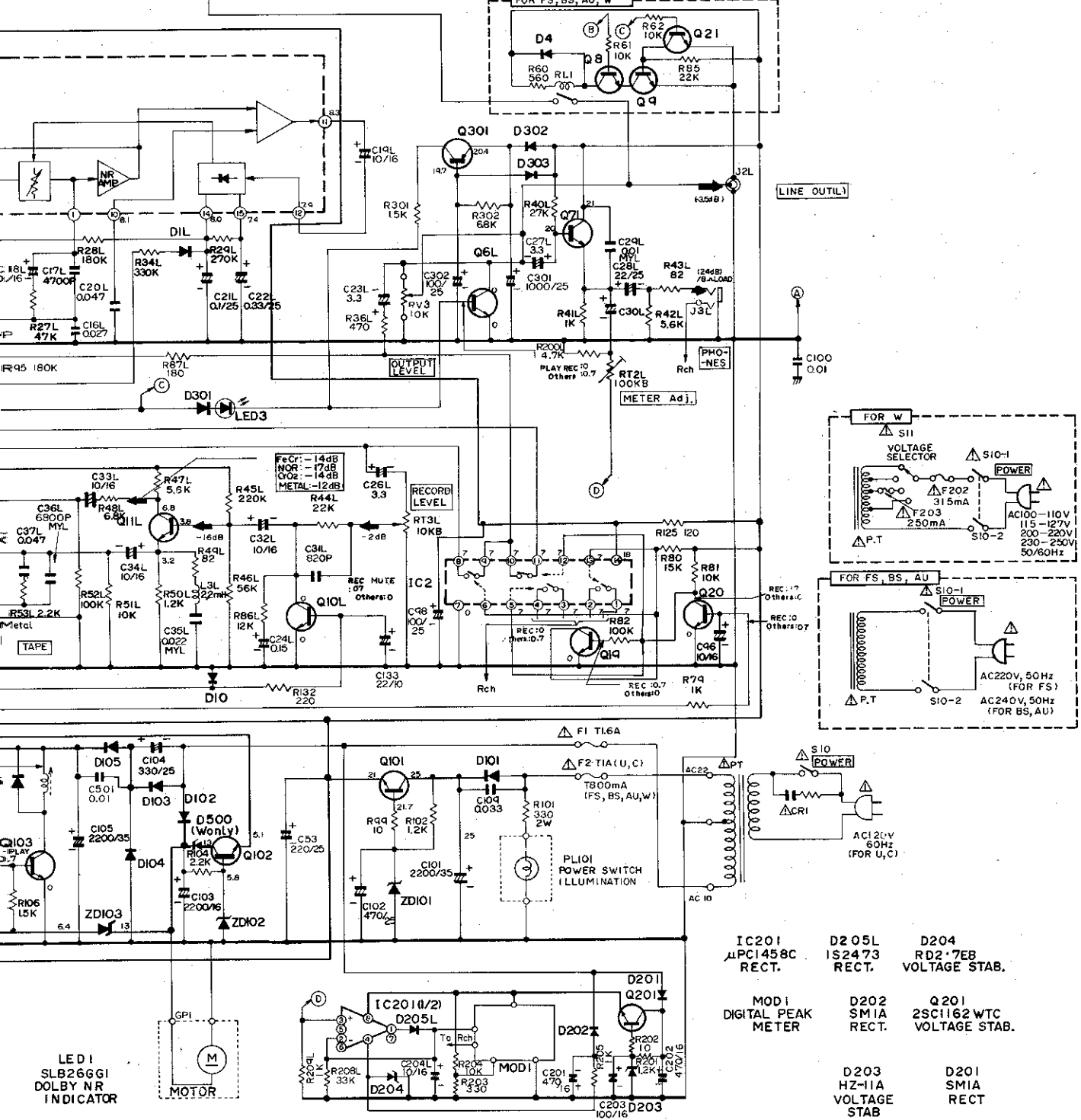
- Q2L  
2SC1740LNE  
MIC AMP.
- Q1L  
2SC1740LNE  
PRE AMP.
- Q16L  
2SC2320  
PRE AMP.
- Q3L  
2SC2320  
PLAYBACK EQ. DOLBY NR
- IC 1L  
NE 64 6B
- Q4L  
2SC2320E  
MPX SWITCHING
- Q15  
2SD667  
BIAS OSC.
- Q14  
2SC1741R  
TAPE SELECTION SWITCHING
- Q13  
2SC1741R  
TAPE SELECTION SWITCHING
- Q12  
2SC2320  
SOLENOID DRIVE



- IC101  
MB8844  
FUNCTION CONTROL
- Q107~109  
2SC2320  
SWITCHING
- Q111  
2SA673  
SWITCHING
- D6  
DS27E  
SWITCHING PROT.
- D108~D110  
IS2473H  
PROT.
- D8,9  
IS2473x2  
PROT.
- ZD103  
HZ-6B  
LEVEL SHIFT
- Q106  
2SC2320  
SWITCHING
- Q105  
2SC162WTC  
SOLENOID DRIVE
- D107  
5M1A  
PROT. SW

D5 S2473 PROT. DIL IS2473 SWITCHING REC. AMP. Q11L 2SC2320E PROT. D10 IS2473 PROT. Q10L 2SD467 MUTING D301 IS2473 PROT. LED3 GL-9PR2 LEVEL SHIFT. Q6L 2SD467 MUTING Q7L 2SC1740E HEADPHONE AMP Q14 2SC1740E SWITCHING

D111 IS2473 LEVEL SHIFT IC2 μPD4066 SWITCHING Q20 2SC1740E SWITCHING D4 IS2473 PROT. Q8,9 2SC2320 SWITCHING Q21 2SC2320 SWITCHING



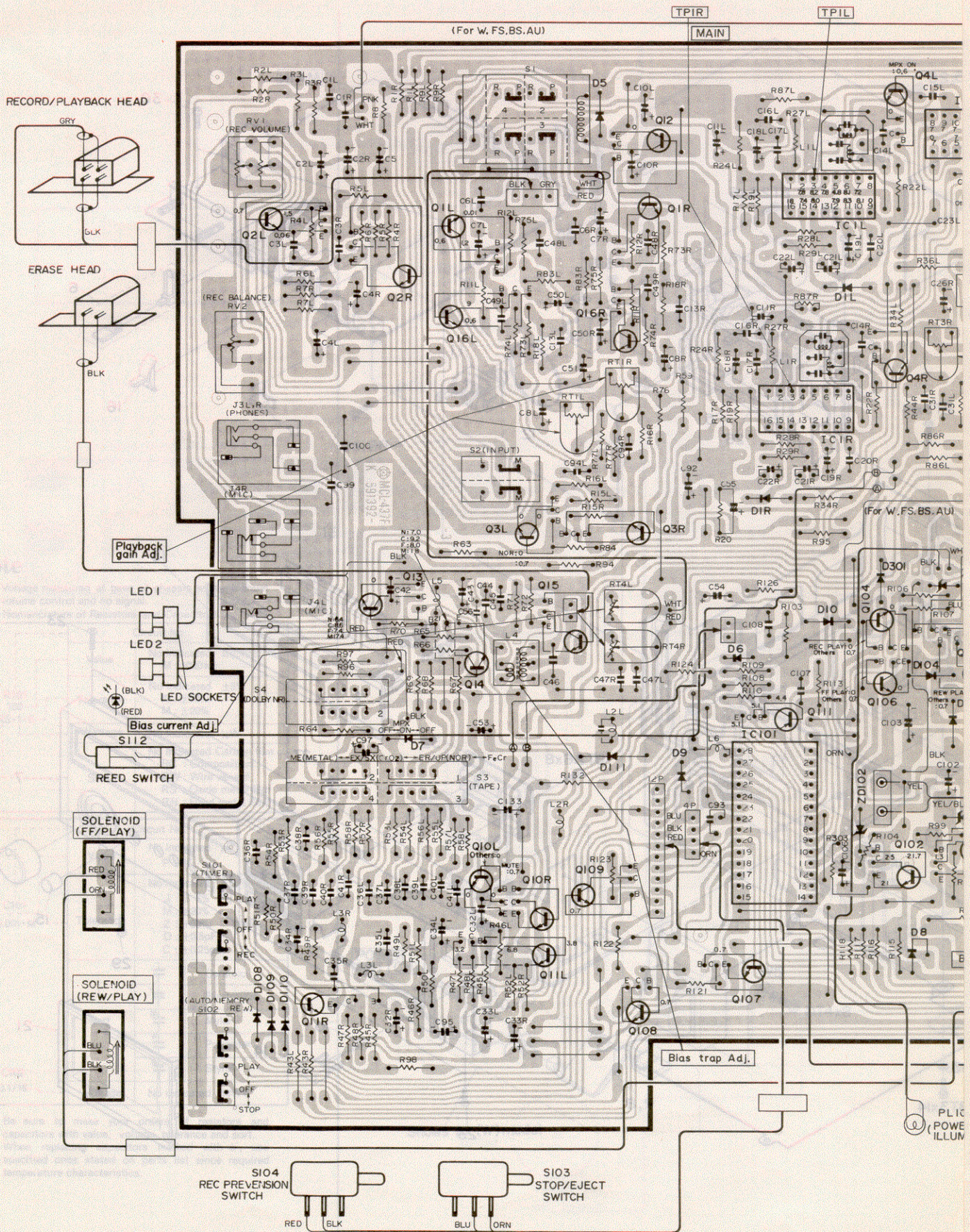
IC201 μPCI458C RECT. MOD1 DIGITAL PEAK METER D201 SMIA RECT D202 HZ-11A VOLTAGE STAB D203 HZ-11A VOLTAGE STAB D204 (W only) HZ-3 D205L IS2473 RECT. Q201 2SC1162 WTC VOLTAGE STAB. D202 SMIA RECT. Q201 2SC1162 WTC VOLTAGE STAB.

Q104 2SC1162WTC SWITCHING DRIVE Q103 2SC1162WTC SOLENOID DRIVE D106 SMIA PROT. D102-105 SMIA PROT. Q102 2SC1061C VOLTAGE STAB. ZD102 HZ-6B VOLTAGE STAB. Q101 2SC1061C VOLTAGE STAB. ZD101 HZ-22 VOLTAGE STAB. D101 SMIA RECT. Q301 2SA673 SWITCHING D302 IS2473 PROT. D303 IS2473 PROT. D500 (W only) HZ-3 PROT. FOR Q101



# CIRCUIT BOARD DIAGRAM

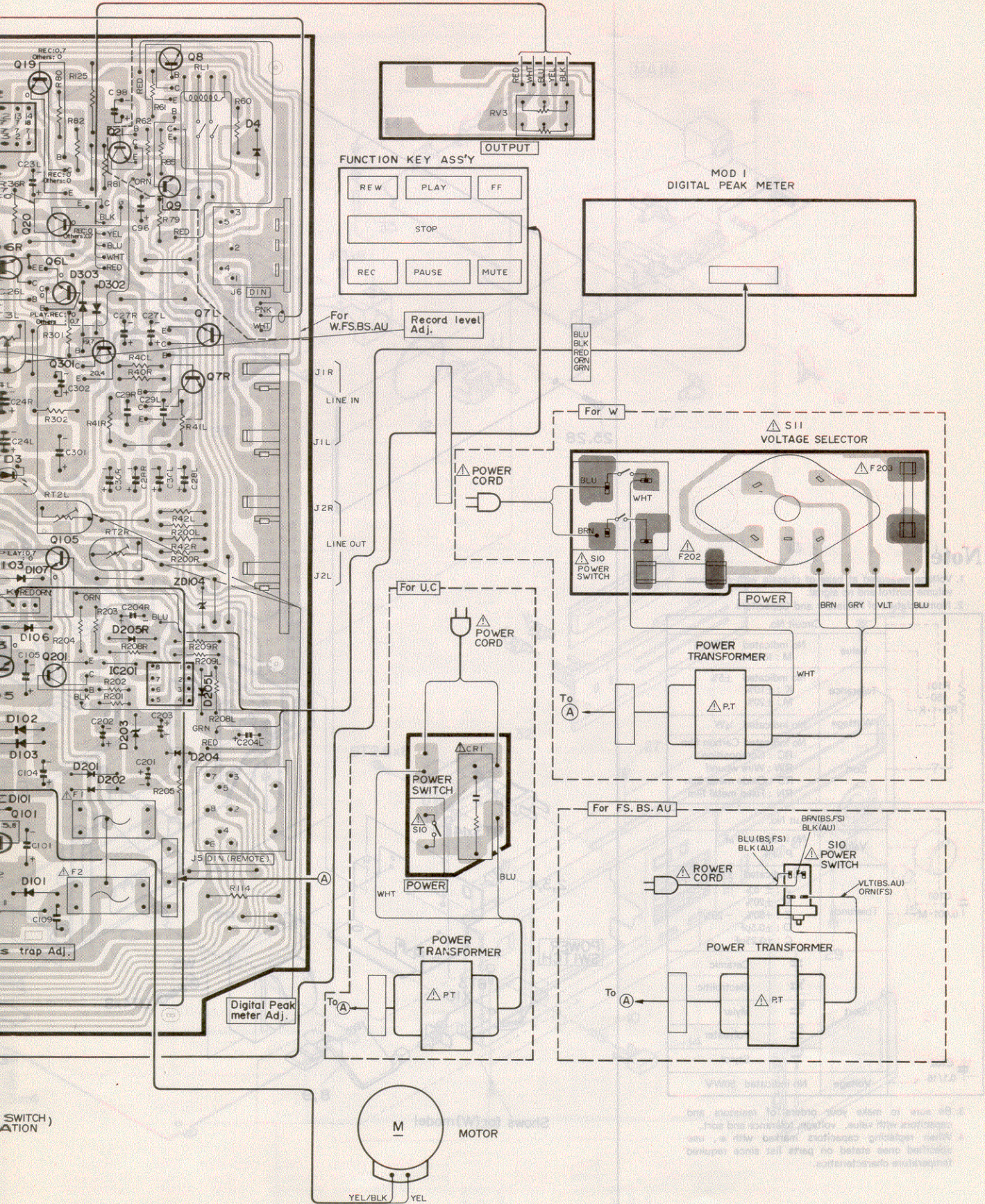
EXPLODED VIEW (OPTIONAL)



Components marked with numbers in this drawing are not specified as replacement parts.

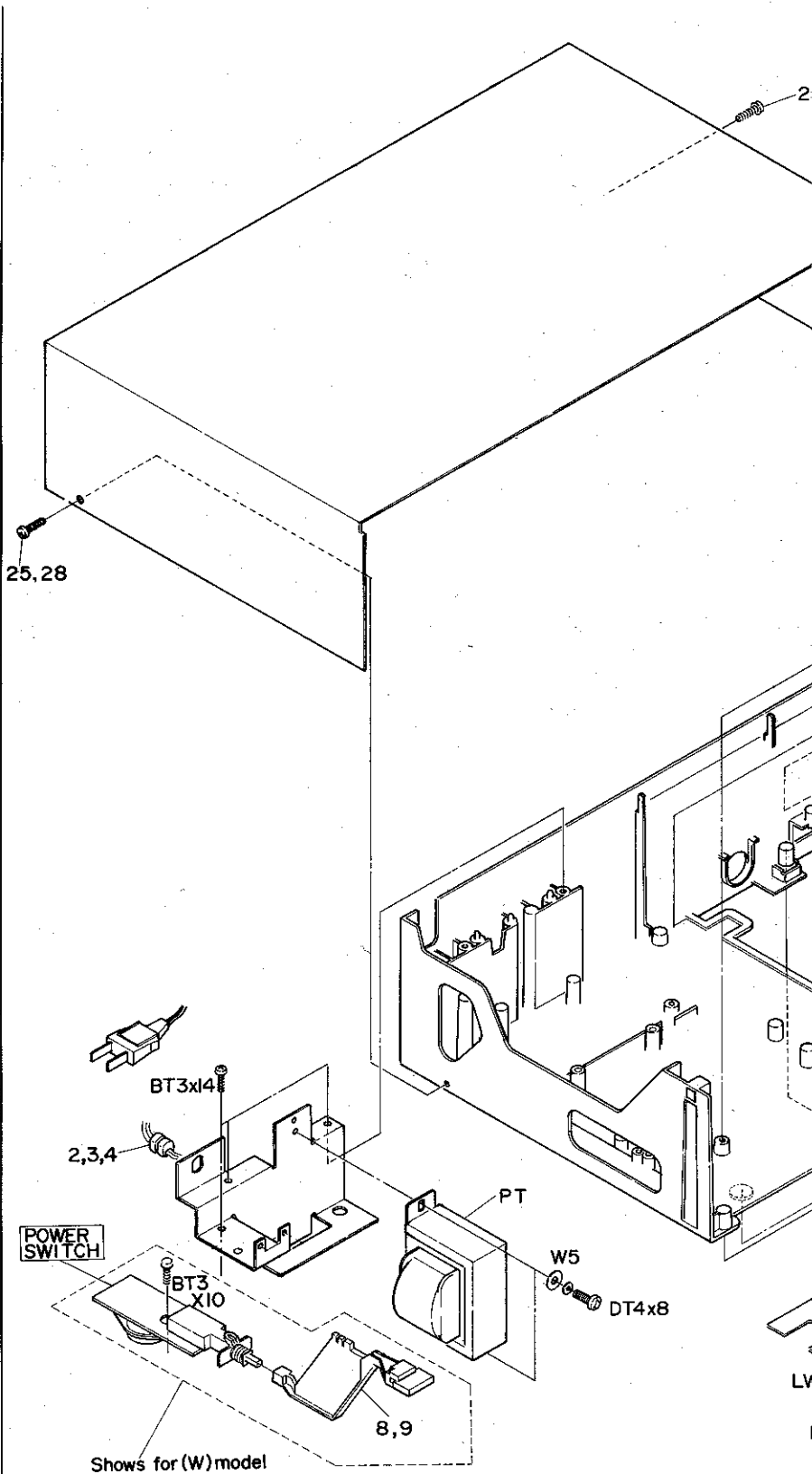


EXPLODED VIEW (CARPET)





EXPLODED VIEW (Cabinet)



Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

		Circuit No.	
	Value	No indicated	Ω(Ohm) M : 1000kΩ
	Tolerance	No indicated	±5% K : ±10% M : ±20%
	Wattage	No indicated	¼W
	Sort	No indicated	Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film

		Circuit No.	
	Value	No indicated	μF P : PF
	Tolerance	No indicated	±10% J : ± 5% M : ±20% Z : +80%, - 20% D : ±0.5pF C : ±0.25pF
	Sort		Ceramic
			Electrolytic
		Mylar	
		Polyester	
		Styrol	
	Voltage	No indicated	50WV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with \*, use specified ones stated on parts list since required temperature characteristics.