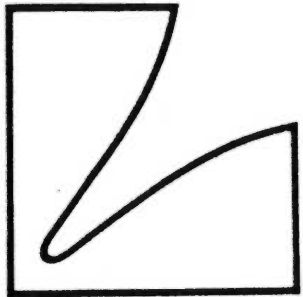


78

SERVICE MANUAL



LUXMAN STEREO CASSETTE DECK **K-15**

*IF PINCH SOLENOID IS INT, CHECK FOR STICKY
RUBBER CUSHIONS AROUND CAPSTAN BEARINGS.
(JUST REMOVE CUSHIONS)*



SPECIFICATIONS

* Heads:	Combination 3 heads Record/Playback: Erase:	sendust/sendust x 1 sendust x 1
* Drive Motor:	2 motors Capstan Drive: Reel Drive:	FG servo motor Compact DC motor
* Tape Drive:	Dual Capstan System	
* Operation:	Feather Touch Logic Control Operation	
* Amplifier:	Playback & Recording Amp DC amp configuration	
* Wow & Flutter:	no more than 0.04% (W.R.M.S.)	
* Frequency Response:	20Hz ~ 18,000Hz (30Hz ~ 16,000Hz ±3dB) . . . LH tape 20Hz ~ 19,000Hz (30Hz ~ 17,000Hz ±3dB) . . . CrO ₂ tape 20Hz ~ 20,000Hz (30Hz ~ 18,000Hz ±3dB) . . . METAL tape	
* Signal-to-Noise Ratio:	better than 63dB (Dolby on) LH tape better than 56dB (Dolby off) LH tape better than 65dB (Dolby on) CrO ₂ tape better than 58dB (Dolby off) CrO ₂ tape better than 65dB (Dolby on) METAL tape better than 58dB (Dolby off) METAL tape	
* Overall Distortion:	no more than 1.2% (LH tape, 1kHz, 0dB)	
* Input Sensitivity:	line: 100mV mic: 0.25mV (recommended microphone impedance 600 ohms ~ 10k ohms)	
* Output Level:	line: 580mV headphone: 1.5mW (8 ohms load)	
* Additional Features:	14-dot Fluorescent Peak Level Indicator with Peak Hold function, Digital Tape Counter, Bias Fine Control, Dolby NR System (with HX position), Automatic Program Repeat (A.P.R.) System, Timer Recording/Playback function, Monitor Circuit, Remote Control (available with optional remote control box.)	
* Power Consumption:	30W.	
* Dimensions:	438(W) x 126(H) x 370(D)mm (17-1/4" x 4-9/16" x 14-9/16")	
* Weight:	Net 11.5kgs (25.3 lbs.) Gross 13.0kgs (28.6 lbs.)	

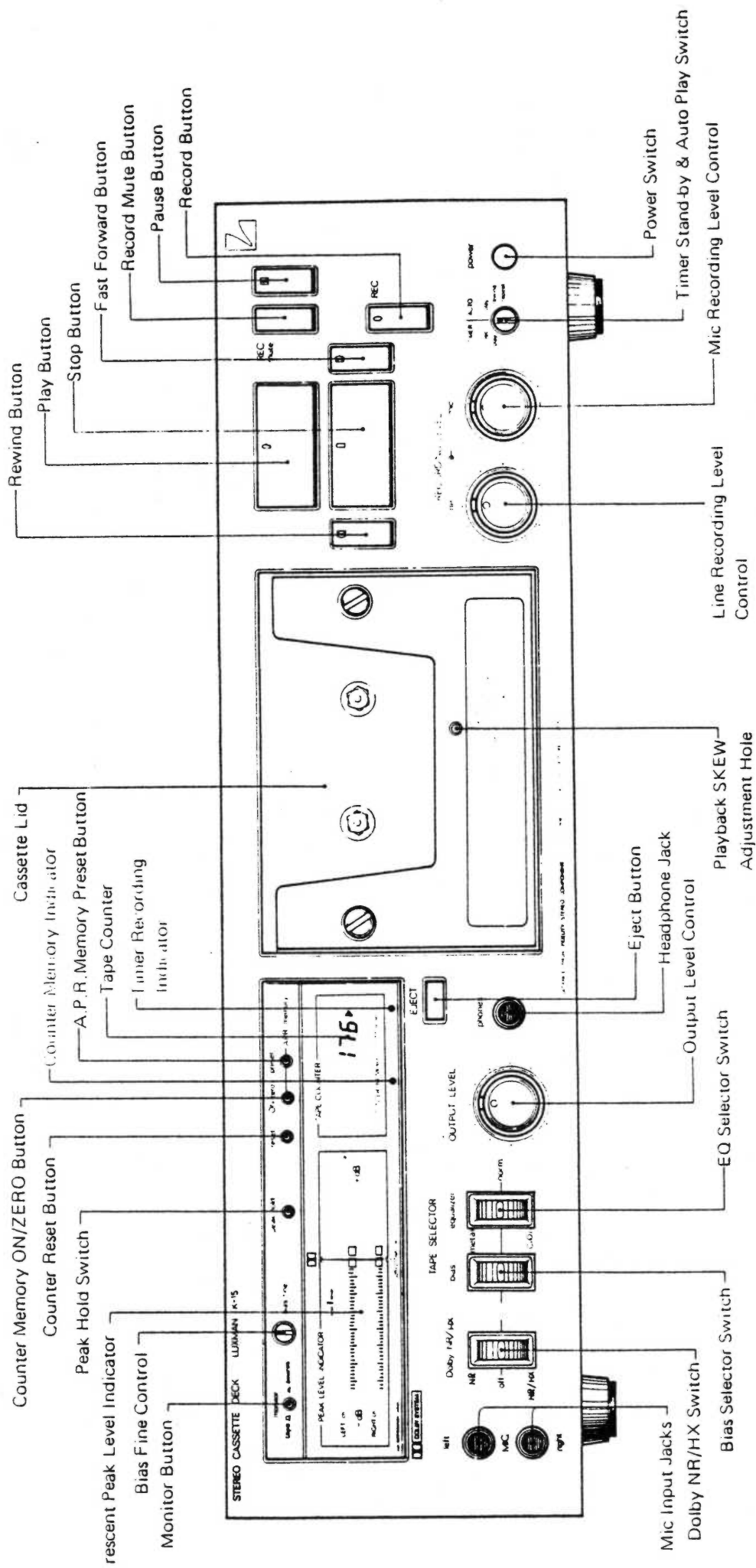
Specifications and appearance design subject to change without notice.

* NOISE REDUCTION CIRCUIT MADE UNDER LICENCE FROM DOLBY LABORATORIES. THE WORLD "DOLBY" AND THE DOUBLE-D SYMBOL ARE THE TRADE MARKS OF DOLBY LABORATORIES.

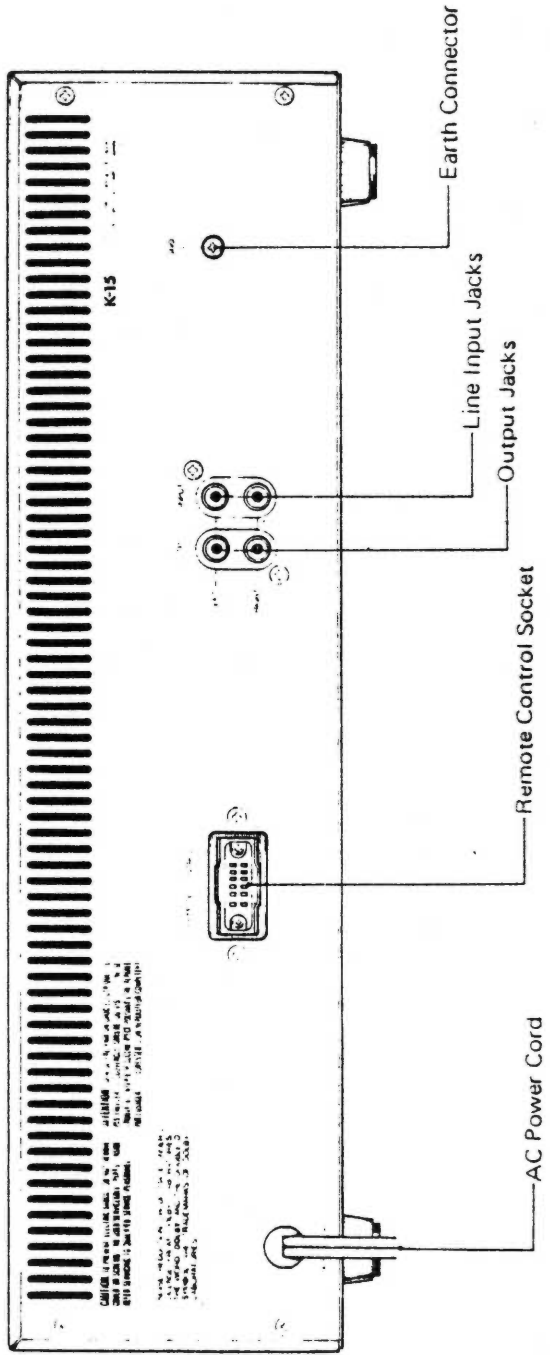
DESTINATION TABLE

MODEL K-15

Destination	SK	SK.L	SG	EK	EZ	EC	EJ
	Europe Asia	Sweden	England Austria New Zealand	Europe Asia	U. S. A.	Canada	Japan
Safety Standard	DEMCO BS SEV	SEMCO VDE	DEMCO BS SEV		UL LAA	CSA	EJA
Power Transformer	P - 0013						
Voltage Selector	P - 0014						
			Voltage Selector Plug		P2120 - A (A-0009)		
			Voltage Selector Socket		M1625 (A-0008)		
Power Switch	SDG5P - E (S - 0016)		SEMCO-Mark		SDG5P (S - 0014) UL.CSA-Mark		SDG1P (S-0033)
Primary Fuse	T315 mA 250 V (SEMCO)				61M - 1A 250 V (UL.CSA)		1A 250 V
Secondary Fuse	T315 mA 250Vx3 T1.25 A 250Vx4						
Fuse PCB	PCM - 037 Seal-1370	PCM - 038	PCM - 037 Seal-1370	PCM - 037		PCM - 037	
Fuse Holder	S - N5053 (B - 0004)						
Line Condenser	PME265MA447 - 4700P (C - 0028)						
Power Cord	C - 2 - 4610 (A - 0016)	VRF-777 (A-0025)	C-2-4610 (A-0016)	UL.CSA VW-1 (A-0026)		(A-0004)	
MIC.LIN VOL Knob	Knob Set - 3010			Knob Set - 3005			
OUTPUT VOL Knob	Knob Set - 3007	U. J		Knob Set - 3008			
Lever Switch Knob	Mold Knob - 1121			Mold Knob - 3009			



13



Adjustment Specifications

1. Scope of Description

These specifications are to illustrate in detail the adjustment procedures for the Cassette Deck K-15.

2. Test Instruments

Test instruments necessary for the adjustments are as follows:

- 1) Oscillator
- 2) Attenuator
- 3) AC voltmeter, 2ch
- 4) Frequency counter
- 5) Automatic distortion factor meter, 2ch
- 6) 1 KHz band pass filter

3. Playback Test Tapes

- 1) Azimuth adjustment : MTT-114, 10 KHz
- 2) Dolby level test : MTT-150, 400 Hz
- 3) Frequency response adjustment:
3,180 μ sec + 120 μ sec
MTT-216 (31.5 Hz - 14 KHz) or
MTT-215C (315 Hz, 10 KHz)
- 4) Frequency response test:
3,180 μ sec + 120 μ sec
MTT-216 or MTT-217L
(63 Hz, 315 Hz, 6.3 KHz, 10 KHz),
3,180 μ sec + 70 μ sec
MTT-316 (31.5 Hz - 14 KHz)

4. Recording Alignment Tapes

- 1) NORMAL position : TDK AC 222
- 2) CrO2 position : TDK AC 512
- 3) METAL position : TDK AC 702

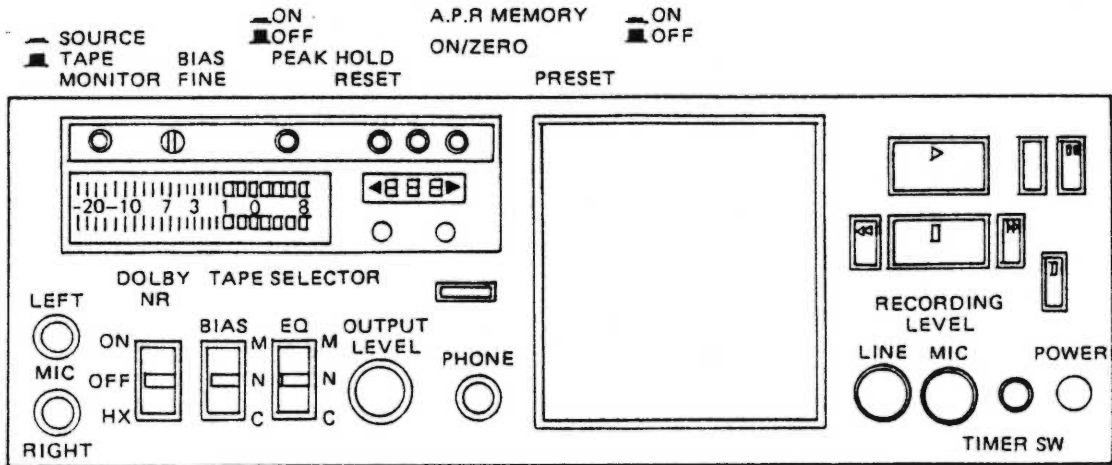
5. Test Instrument Connections

- 1) Signal source impedance is 600 ohms.
- 2) Deck output load is 47 K-ohms.
- 3) Headphone output load is 8 ohms.

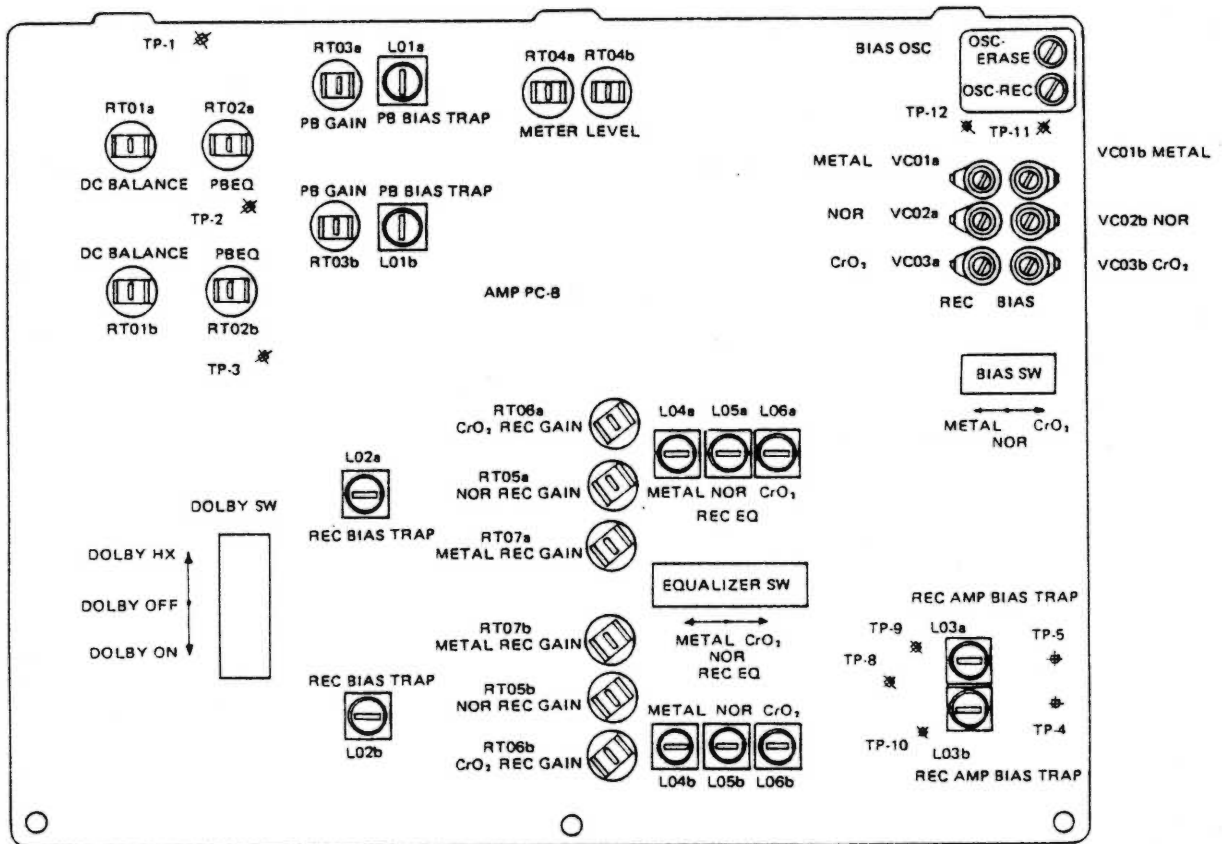
6. Decibel Definition

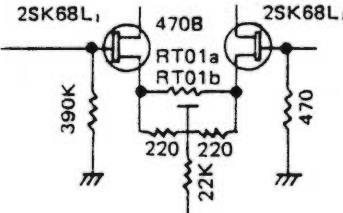
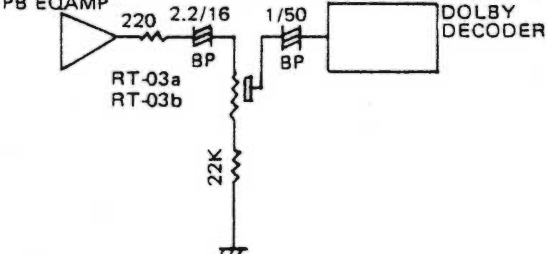
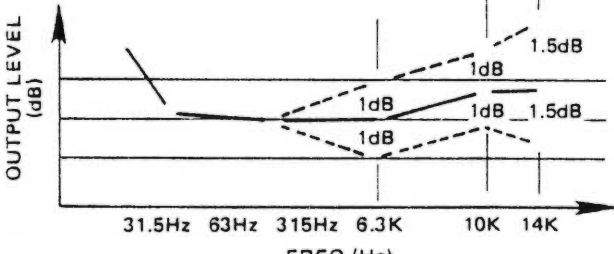
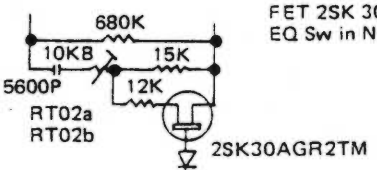
Zero dB is defined as 0.775 V.

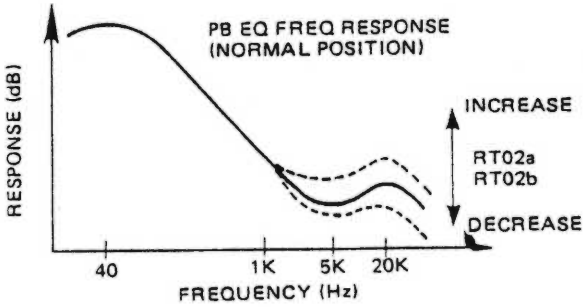
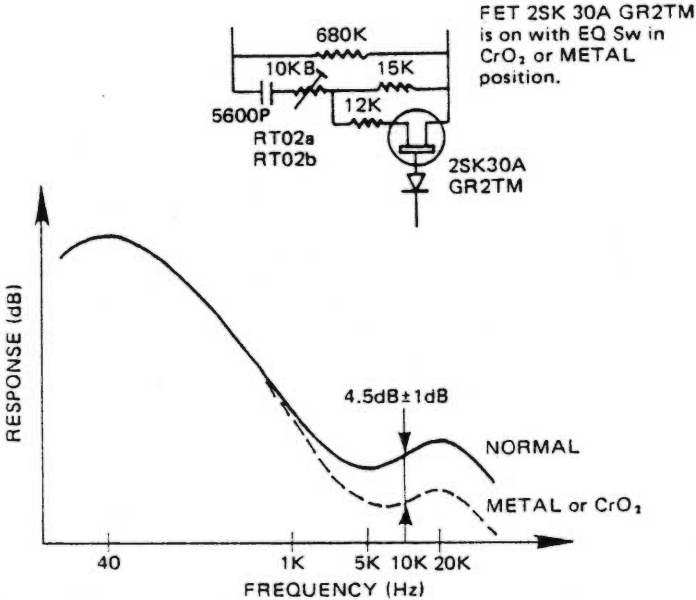
7. Deck Controls



8. Adjusting and Test Points



Adjustment and Check Items	Adjusting Procedure	Adjusting Point/Mode
Playback Equalizer, Amp, and DC Balance Adjustments	<p>Connect a DC oscillator, DC vacuum-tube volt-meter, or multi-meter to the test points, Lch (H) TP-1, Lch(E) TP-2, Rch(H) TP-3, Rch(E) TP-2, and adjust the semi-fixed resistors, Lch RT01a and Rch RT01b so that the drift center will fall within $\pm 50\text{mV}$. After all adjustments, check DC balance and adjust as necessary.</p> 	<p>[Adjusting Point]</p> <p>Lch RT01a Rch RT01b</p>
Playback Dolby Level Adjustment	<p>Set a Dolby level test tape MTT-150 (400Hz, 200nWb/m), and adjust the semi-fixed resistors, Lch RT03a and Rch RT03b so that the line output will reach 580mV ($-2.5\text{dB} \pm 0.5\text{dB}$) during playback.</p> 	<p>[Adjusting Point]</p> <p>Lch RT03a Rch RT03b</p> <p>[Mode]</p> <p>PLAY BUTTON ON OUTPUT VOL MAX MON SW TAPE EQ SW NOR DOLBY SW OFF</p>
Playback Frequency Response Adjustment (NOR MODE)	<p>Set a test tape MTT-215C (3,180μsec + 120μsec, 315Hz · 10KHz, -10dB), and adjust the semi-fixed resistors, Lch RTO2a and Rch RTO2b so that frequency response will be 0dB \pm 1dB up at 10KHz with 315Hz as a reference. Next, set a test tape MTT-216 (3,180μsec + 120μsec), and check to see that the f-response falls within the range shown in the graph. If the f-response falls outside the range, readjust the semi-fixed resistors. Note that low-frequency f-response should be 31.5Hz +4.0/-0 dB, 63-250Hz \pm 2.0dB for 315Hz. A test tape MTT-217L (3,180μsec + 120μsec, 315Hz, 10KHz, 6.3KHz, 63Hz) may be used as a substitute.</p>   <p>FET 2SK 30A is off with EQ Sw in NOR position.</p>	<p>[Adjusting Point]</p> <p>Lch RTO2a Rch RTO2b</p> <p>[Mode]</p> <p>PLAY BUTTON ON OUTPUT VOL MAX MON SW TAPE EQ SW NOR DOLBY SW OFF</p>

Adjustment and Check Items	Adjusting Procedure	Adjusting Point/Mode
	 <p>PB EQ FREQ RESPONSE (NORMAL POSITION)</p> <p>RESPONSE (dB)</p> <p>FREQUENCY (Hz)</p> <p>INCREASE</p> <p>RT02a</p> <p>RT02b</p> <p>DECREASE</p>	
<p>PB Frequency Response Check (CrO₂ or METAL position)</p>	<p>Set a test tape MTT-114 (3,180μsec + 120μsec, 10KHz, -10dB) and check to see that moving the EQ SW from NORMAL to METAL or CrO₂ will cause 10KHz output to decrease by 4.5dB ±1dB. A test tape MTT-215C (3,180μsec + 120μsec, 10KHz, 315Hz, -10dB) may be used as a substitute.</p>  <p>FET 2SK 30A GR2TM is on with EQ Sw in CrO₂ or METAL position.</p> <p>680K</p> <p>10KB</p> <p>15K</p> <p>5600P</p> <p>RT02a</p> <p>RT02b</p> <p>12K</p> <p>2SK30A GR2TM</p> <p>RESPONSE (dB)</p> <p>4.5dB ± 1dB</p> <p>NORMAL</p> <p>METAL or CrO₂</p> <p>FREQUENCY (Hz)</p>	<p>[Mode]</p> <p>PLAY BUTTON ON</p> <p>OUTPUT VOL MAX</p> <p>MON SW TAPE</p> <p>DOLBY SW OFF</p> <p>EQ SW NOR/CrO₂ or METAL</p>
<p>PB Muting Check</p>	<p>By playing back then stopping a blank tape, check to see that the line output will not produce any hiss and click.</p>	<p>[Mode]</p> <p>PLAY BUTTON ON/OFF</p> <p>OUTPUT VOL MAX</p> <p>MON SW TAPE</p> <p>EQ SW NOR</p> <p>DOLBY SW OFF</p>