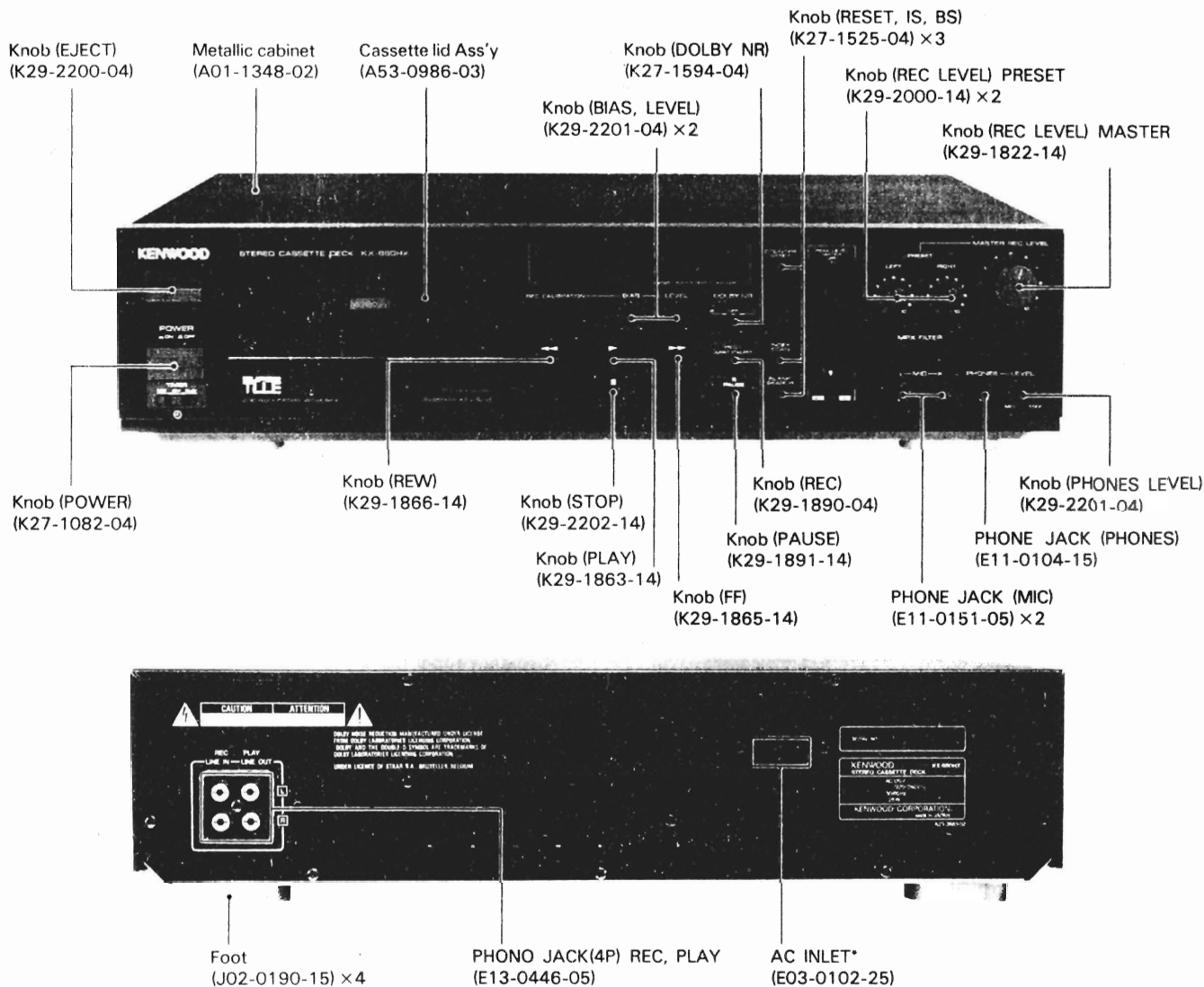


KX-880HX

SERVICE MANUAL

KENWOOD

C 1987-11 PRINTED IN JAPAN
B51-3299-00(B)1581



* Refer to parts list on page 33.

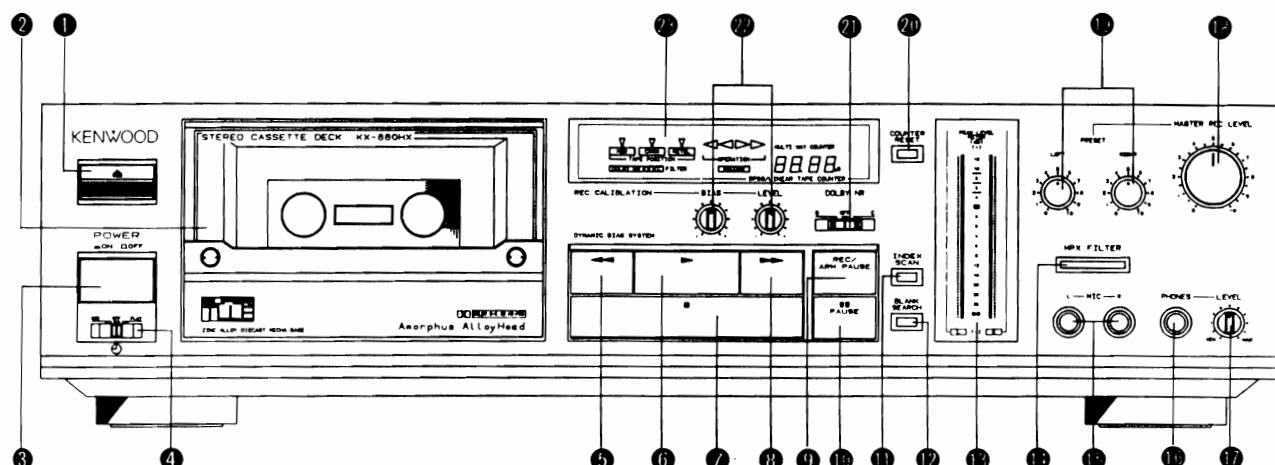
CONTENTS

CONTROLS, INDICATORS AND CONNECTORS	2
DISASSEMBLY FOR REPAIR	4
BLOCK LEVEL DIAGRAM	6
CIRCUIT DESCRIPTION	7
ADJUSTMENT	11
REGLAGE	12
ABGLEICH	13

PC BOARD (Component Side View)	15
PC BOARD (Foil Side View)	19
CIRCUIT DIAGRAM	23
EXPLODED VIEW (MECHANISM)	31
EXPLODED VIEW (UNIT)	32
PARTS LIST	33
SPECIFICATION	Back cover

CONTROLS, INDICATORS AND CONNECTORS

Numbers in front of names correspond that in the diagram.



1 Eject key (▲)

Pressing this key to open the cassette holder.

2 Cassette holder

Press the eject key is pressed, this holder opens. Press the left upper section of the holder until it locks to close it.

3 POWER switch

Press this switch to turn the power ON. Pressing again turns the power OFF.

4 TIMER stand-by switch

Use this switch along with an audio timer when an unattended recording or timer-playback is performed. Set this switch to the REC position for unattended recording, to the PLAY position for timer-playback, and **set to OFF when the timer is not used.**

5 Rewind key (◀◀)

Press this key to rewind the tape from right to left at high speed.

6 Play key (▶)

Press this key to forward the tape at fixed speed and start playback; the play indicator (▶) will light up.

7 Stop key (■)

Press this key to stop the tape travel.

8 Fast forward key (▶▶)

Press to advance the tape rapidly from left to right.

9 REC/ARM PAUSE key

Press this key to start recording. It is not necessary to press the play key simultaneously since this unit is provided with one-touch recording system. At this time, the record and play indicators light up.

When this key is pressed again during recording, about 4 seconds non-recorded section is made and the tape travel will stop temporarily.

10 PAUSE key (||)

To interrupt recording or playback momentarily, press this key. When this key is pressed during playback, the play indicator blinks and the playback is interrupted momentarily. When this key is pressed during recording, the record indicator lights up and the play indicator blinks so that the recording is interrupted. To release the play-pause mode, press the play key and to release the record-pause mode, press the REC/ARM PAUSE key.

11 INDEX SCAN key

Press this key to search the desired tune.

When this key is pressed, the beginning of each tune is played back for about 10 seconds.

12 BLANK SEARCH key

This key is used to search for blank sections of more than 1 minute between tunes or the end of the previously recorded section, etc.

13 PEAK LEVEL METERS

This indicates the peak values of the input levels when recording or output levels when playback.

14 MPX FILTER switch

Use this switch when recording FM broadcast using Dolby NR with this switch set to ON, the 19 kHz pilot signal and 38 kHz sub-carrier signal contained in the FM stereo broadcast signals are eliminated to prevent malfunctioning of the Dolby NR circuit.

15 MIC jacks (L/R)

Plug the microphones into these jacks when recording with microphones; L for left channel and R for right channel. Use low impedance (600 Ohms) microphones.

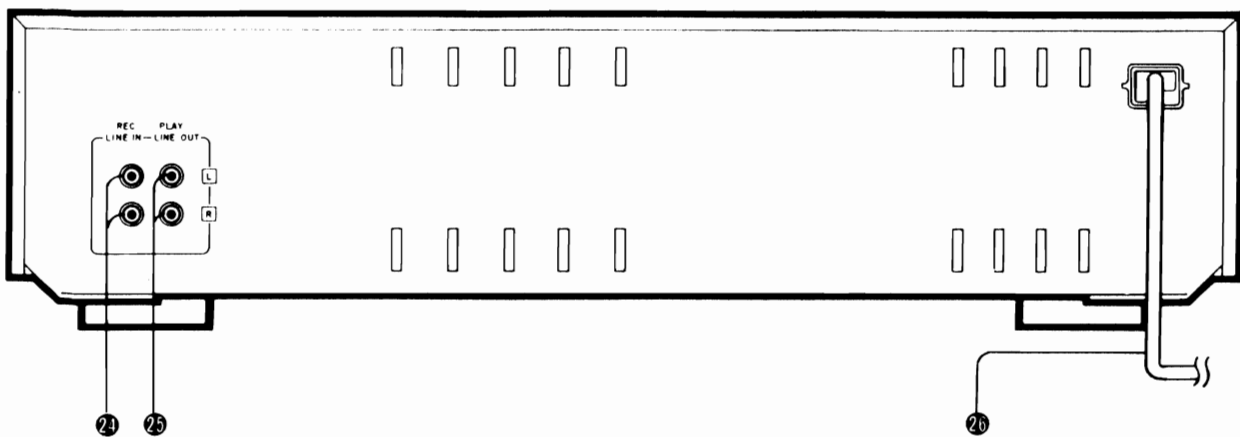
Note:

When the microphones are connected, the signal input from the LINE IN terminals are automatically cancelled. Disconnect the microphones before recording from LINE sources.

16 PHONES jack

Plug the stereo headphones into this jack to monitor recordings or tape playback.

CONTROLS, INDICATORS AND CONNECTORS



24 PHONES LEVEL knob

Adjust the volume level for the headphones regardless of the recording input level.

25 MASTER REC LEVEL control knob

Adjust the recording input level with this knob. Left and right channel levels are varied simultaneously.

26 PRESET record level knobs

The signals for the left and right channels are adjusted independently with these knobs.

27 COUNTER RESET key

Press this key to reset the linear tape counter to [:00].

28 DOLBY NR select switch

Set this switch to B or C position when playing back the tape recorded with Dolby NR circuit or when recording with Dolby NR circuit.

29 REC CALIBRATION ADJ. knob

Adjusting the recording level and bias knobs, enables recording and reproduction at a level matching the kind of the tape being used. This quality can also be demonstrated satisfactorily when using NR.

LEVEL adjustment:

This corrects the recording sensitivity response of the tape being used. First set so that the recording level is at OVU and make the recording. Then when making the reproduction, adjust the reproduction level so that it is the same as the recording level. If the reproduction level is lower than the recording level turn to (+), and if it is higher turn to (-).

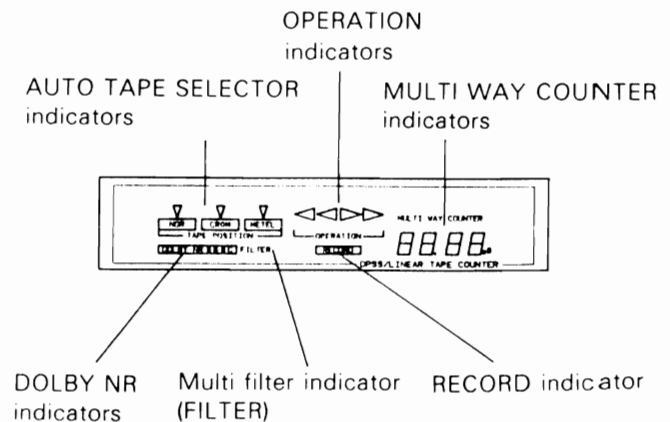
BIAS adjustment:

This corrects the recording response of the high-pitch range. Compare with the source tone and make adjustments to align with it. During reproduction, if the high-pitch range seems apt to be insufficient turn to (-), and it seems to be too much turn to (+).

The bias knob can also be adjusted and the sound quality changed in line with your preference.

28 Display window

According to the operation mode, each indicator lights up or flickers.



29 LINE IN REC terminals

Connect the Tape Rec terminals of your amplifier, etc. to these terminals using the audio cables provided.

25 LINE OUT PLAY terminals

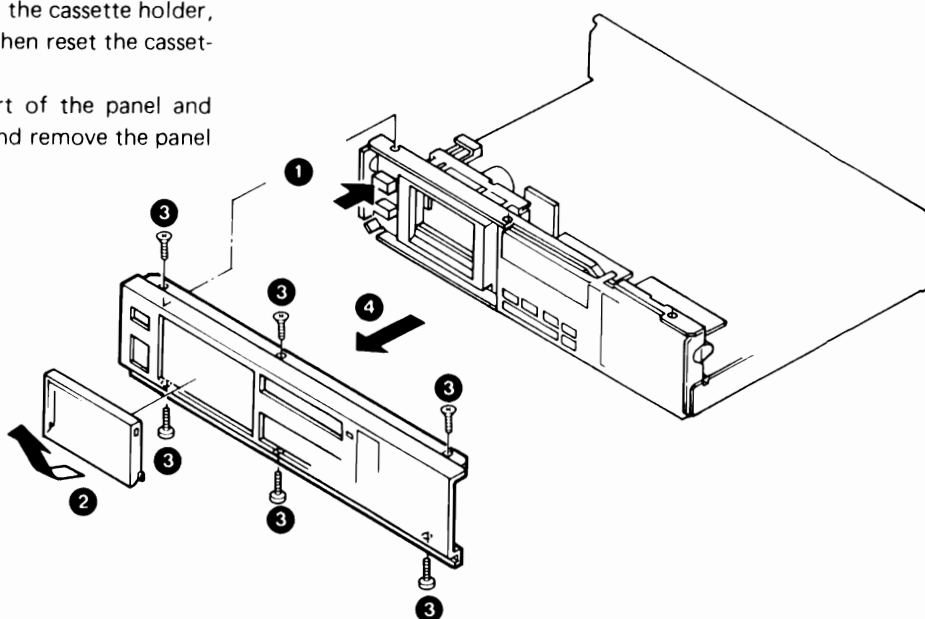
Connect the Tape Play or AUX terminals of your amplifier, etc. to these terminals using the audio cables provided.

26 Power cord

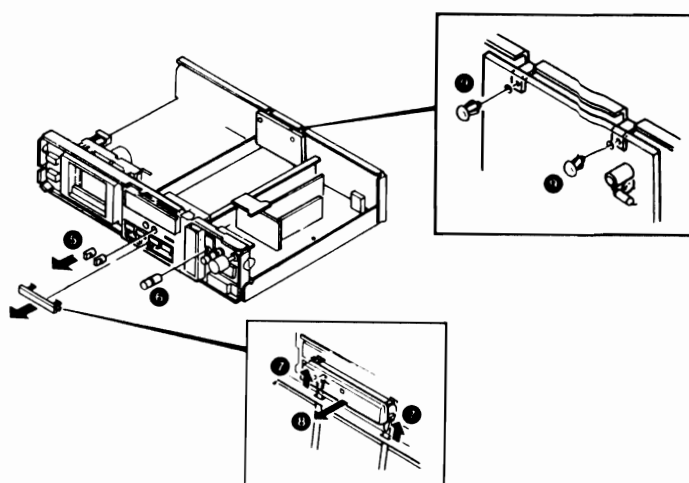
Plug this into the wall outlet or AC outlet of the amplifier, etc.

DISASSEMBLY FOR REPAIR

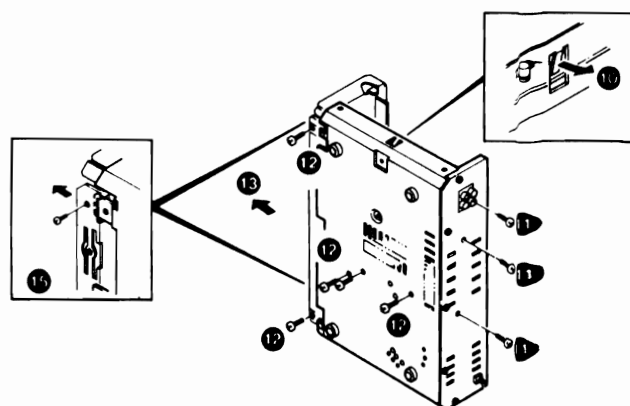
1. Press EJECT knob (❶) to pull out the cassette holder, remove the cassette lid (❷), and then reset the cassette holder.
2. Remove 3 screws on the upper part of the panel and 3 screws on the lower part (❸), and remove the panel (❹).



3. Remove 4 CALIBRATION (BIAS, LEVEL) knobs (❺) and PRESET (L) knob (❻).
4. Insert (—) screw driver to the escutcheon hole (❼), and pull out STOP knob toward you (❽).
5. Remove 2 push rivet (❾) which fix the PC board to the rear panel.

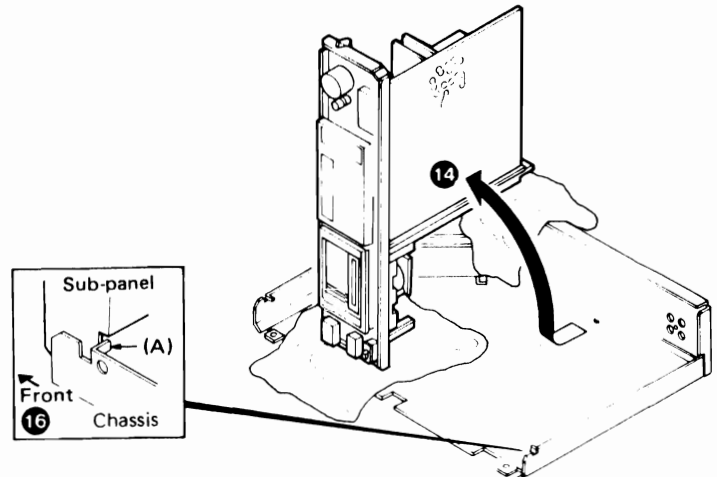


6. Bend the chassis claw outward (❿).
7. Remove 3 screws (⓫) on the rear of the panel and 5 screws (⓬) on the chassis, and then pull out the sub-panel assembly slightly toward you and set it upright (⓭ , ⓮).

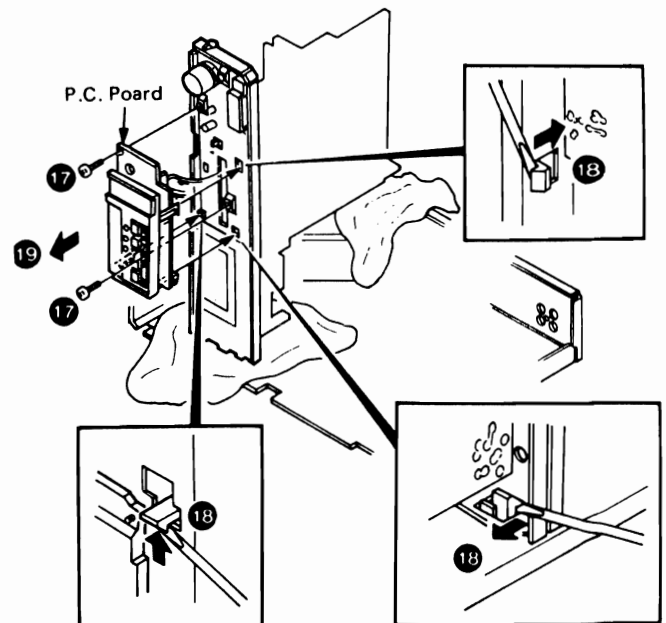


DISASSEMBLY FOR REPAIR

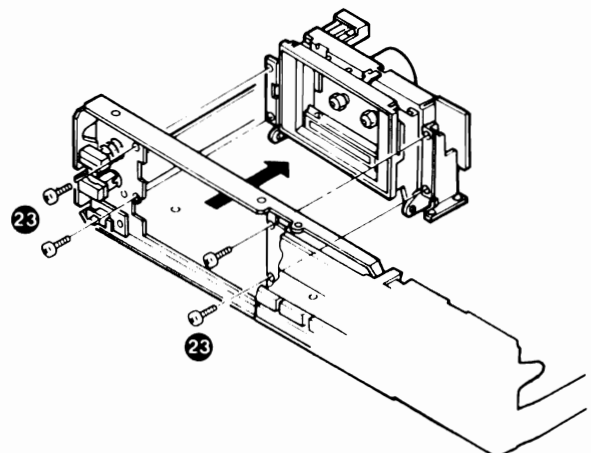
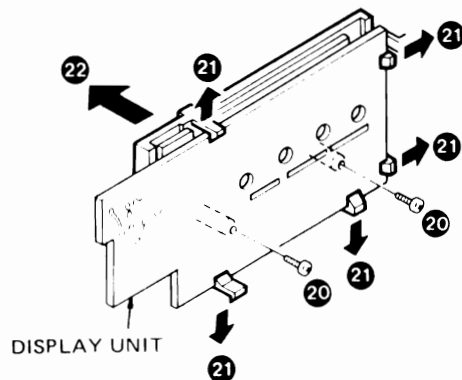
Note : When assembling the sub-panel assembly and chassis, insert the chassis's claw to the inside as shown in 15, and press the sub-panel into a projection of the chassis (A) as shown in 16.



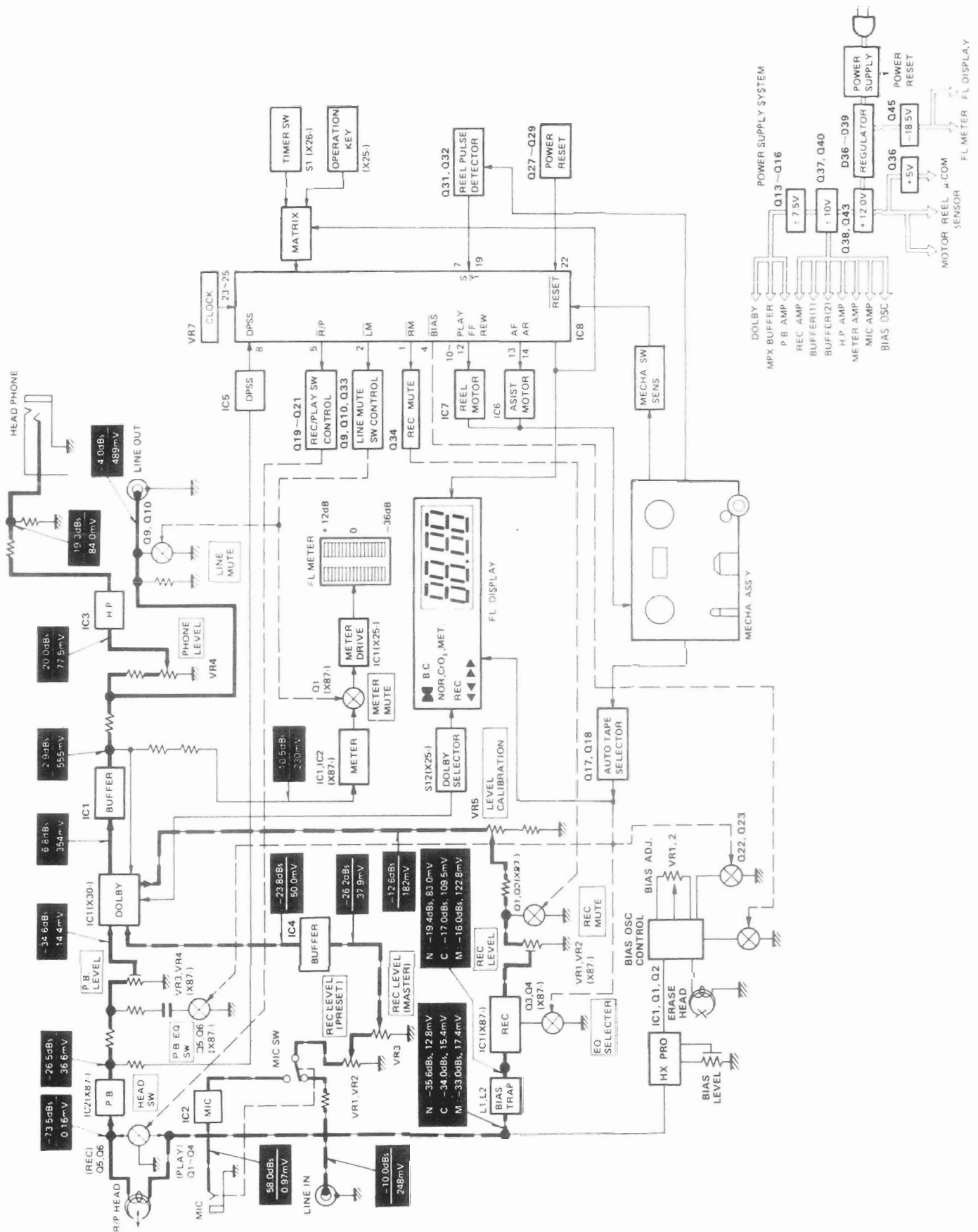
8. Remove 2 screws which fasten the display unit (17), remove 3 hooks fixed on the sub-panel (18), and then pull out the display unit toward you (19).



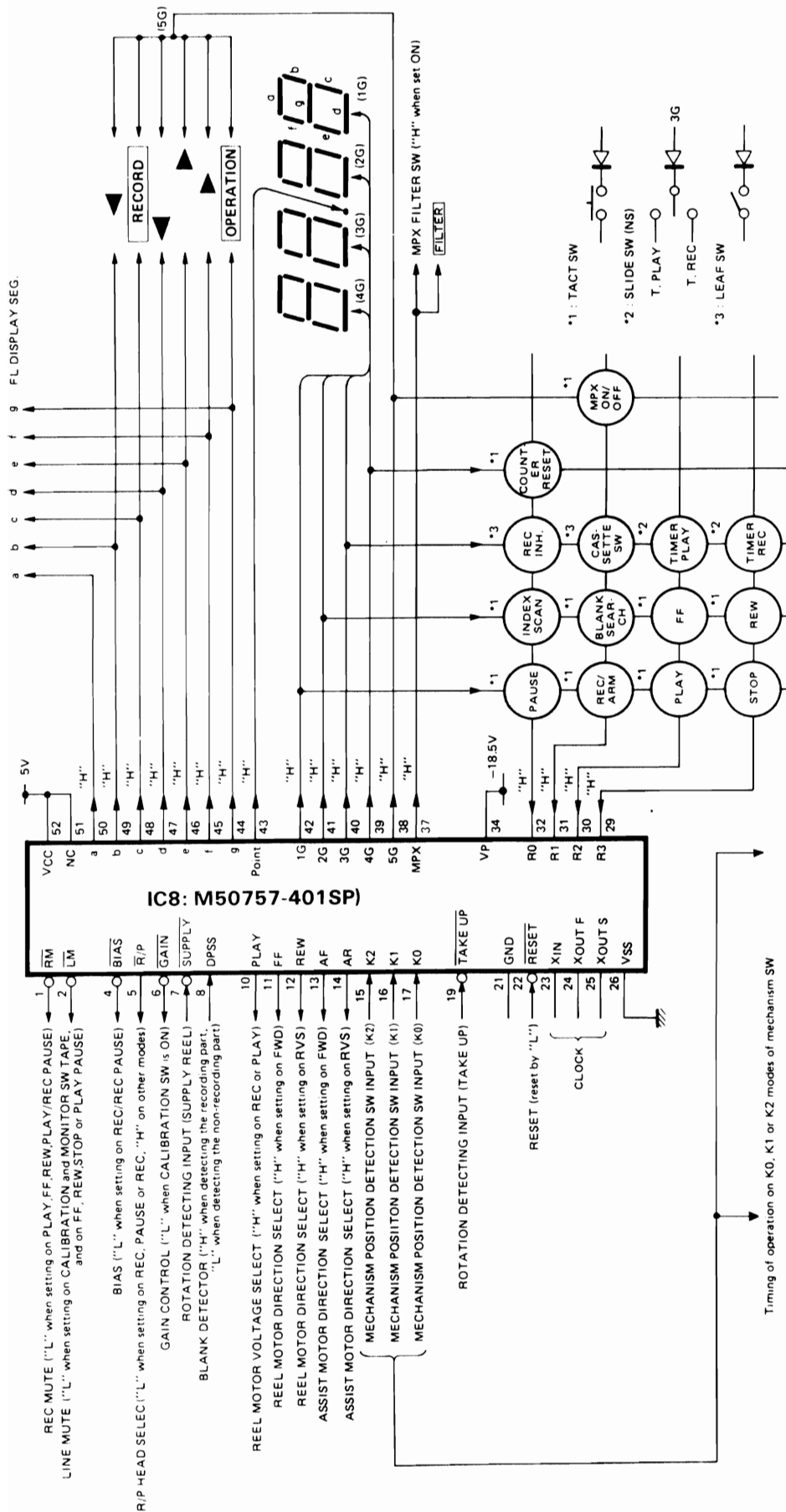
9. Remove 2 screws which fasten the display unit and escutcheon (20).
 10. Remove 5 hooks (21), and disassemble the display unit and escutcheon (22).
 11. Remove 4 screws on both ends of front side of the sub-panel (23), and remove the mechanism assembly to the rear side.



BLOCK / LEVEL DIAGRAM



CIRCUIT DESCRIPTION



Timing of operation on K0, K1 or K2 modes of mechanism SW

Reel motor operation table

SW Mode Function	MODE SW		REEL MOTOR
	K2	K1	
STOP	OFF	ON	ON
PLAY	ON	OFF	OFF
PAUSE	ON	ON	OFF
FF/REW	OFF	ON	ON
CUE/REV	ON	OFF	ON

Assist motor operation table

	FF	REW	STOP	PAUSE	PLAY	PLAY
K0	OFF	ON	ON	OFF	ON	OFF
K1	OFF	OFF	ON	ON	ON	OFF
K2	OFF	OFF	OFF	ON	ON	ON

When shifting the current operation to one on right hand of the table, the assist motor rotates in FWD direction. When shifting to the right, the motor rotates in RVS direction.

CIRCUIT DESCRIPTION

Description of Components

Display Unit (X25-2450-01)

Components	Use/Function	Operations/Condition/Interchangeability
Q1, 2	Peak-hold reset	A flip-flop circuit is formed and, in 3 seconds, Q 2 goes ON momentarily, resetting the peak holding
IC1	FL level meter drive	2-CH dynamic

Cassette Unit (X26-1182-71)

Components	Use/Function	Operations/Condition/Interchangeability
Q1-4	Head changeover switch	OFF during REC and REC PAUSE
Q5, 6	Head changeover switch	ON during REC and REC PAUSE
Q9, 10	LINE MUTE switch	During PLAY, REC and REC PAUSE, the LM terminals at microprocessor IC8 pin 2 goes "H", turning Q33 OFF and turning Q9 and Q10 OFF
Q13, 15	+7.7 V supply	Regulated power supply for PB amp
Q14, 16	+7.7 V supply	Regulated power supply for PB amp
Q17, 18	AUTO TAPE SEL control	The statuses depend on the tape detector switch in the mechanism
		NOR CrO ₂ METAL
		Q17 OFF OFF ON
		Q18 OFF ON OFF
Q19-21	REC/PLAY control	During REC and REC PAUSE, the R/P terminal at microprocessor IC8 pin 5 goes "L", turning Q21 ON.
		REC, REC PAUSE OTHERS
		Q19 OFF ON
		Q20 OFF ON
		Q21 ON OFF
Q22, 23	Bias level control	The statuses depend on the tape detector switch in the mechanism
		NOR CrO ₂ METAL
		Q22 ON ON OFF
		Q23 ON OFF OFF
Q24-26	Bias oscillation control	During REC and REC PAUSE, the BIAS terminal at microprocessor IC8 pin 4 goes "L", turning the transistors as follows:
		REC, REC PAUSE OTHERS
		Q24 ON OFF
		Q25 OFF ON
		Q26 ON OFF
Q27-29	Microprocessor reset	Immediately after power ON
		Immediately after power OFF
		Q27 ON "L" for specified period, then OFF
		Q28 OFF for specified period, then ON
		Q29 ON OFF
Q27-29	Microprocessor reset	When turning power ON/OFF, "L" is applied to RESET at microprocessor IC8 pin 22 to reset the microprocessor.
		During REC and PLAY, goes ON setting the voltage at reel motor drive IC7 pin 4 to +4.0 V. The voltage is 5.7 to 6.2 V in other modes
Q30	Reel motor drive voltage control	5 rotation pulses per reel rotation are supplied from the mechanism. This amp shapes these pulses into a waveform suitable for the microprocessor.
Q31, 32	Rotation detector amp	Controlled by output LM from microprocessor IC8 pin 2
Q33	LINE MUTE drive	REC/PLAY/REC PAUSE OTHERS Power ON/OFF
		Q33 OFF ON ON
Q34	REC MUTE drive	During REC, output RM at microprocessor IC8 pin 1 goes "H", turning Q34 OFF. In other modes, Q34 is ON, turning Q1 and Q2 of the REC amp unit on Q12-X87-1030-04 A/2.

CIRCUIT DESCRIPTION

Components	Use/Function	Operations/Condition/Interchangeability
Q35	DPSS amp sensitivity switch	During PLAY, goes ON to increase the DPSS amp sensitivity. During CUE and REVIEW, goes OFF to decrease the DPSS amp sensitivity.
Q36	+5 V supply	Regulated power supply of HI voltage for microprocessor and FL display.
Q37-39	+9 V supply	Regulated power supply for signal amps (Q37 for control, Q39 for constant current, Q38 for error detection).
Q40-42	+9 V supply	Regulated power supply for signal amps. Together with Q37 to Q39, form the tracking power supply.
Q43, 44	+12 V supply	Regulated power supply for mechanism power and other +ve power systems.
Q45, 46	+16.5 V supply	Regulated power supply of LO voltage for FL display circuit.
IC1	Output buffer amp	
IC2	MIC amp	
IC3	P-CNES amp	
IC4	Dolby filter, buffer amp	
IC5	DPSS amp	Pin 1 outputs "L" when non-recorded blank is detected, and "H" when recorded signal is detected.
IC6	Assist motor drive	
IC7	Reel motor drive	
IC8	Microprocessor	

Dolby Unit (X30-1270-00)

Components	Use/Function	Operations/Condition/Interchangeability
Q1-4	Dolby filter ON/OFF switch	ON when filter is ON.
IC1	Dolby B/C encoder/decoder amp	

Meter Amp Unit (X87-1020-00)

Components	Use/Function	Operations/Condition/Interchangeability
Q1	METER MUTE switch	OFF during PLAY, REC and REC PAUSE, and ON in other modes.
IC1	1/2-exponential compressing amp	Outputs the DC voltage proportional to the AC input signal by 1/2 exponent.
IC2	DC amp	Amplifies the IC1 output voltage to the required level.

Record/Play Amp Unit (X87-1030-04)

Components	Use/Function	Operations/Condition/Interchangeability
Q1, 2	REC MUTE switch	During PLAY, FF, PLAY PAUSE and REC PAUSE, the RM control terminal at microprocessor IC7 (X26-1182-71) pin 1 outputs "L", turning Q34 (X26-1182-71) ON. This applies "H" to the bases of Q1 and Q2, turning Q1 and Q2 ON.
Q3, 4	Equalizer switch (for METAL)	Controlled by AUTO TAPE SEL (X26-1182-71) of Q17 and Q18. OFF with METAL tape, and ON with NORMAL and CrO ₂ tapes.
Q5, 6	Play equalizer switch	Controlled by AUTO TAPE SEL (X26-1182-71) of Q17 and Q18. OFF with NORMAL tape (120 μ s), and ON with CrO ₂ and METAL tapes (70 μ s).
IC1	Record equalizer amp	
IC2	Play equalizer amp	

BIAS OSC UNIT (X87-1190-00)

Component	Use/Function	Operation/Condition/Compatibility
IC1	HX-PRO IC	
Q1	Bias oscillator	Bias oscillator for erase head.
Q2	Bias oscillator control	Bias oscillator level control for recording.

CIRCUIT DESCRIPTION

DOLBY HX-PRO SYSTEM

Improvement of Bias with the Dolby HX-PRO System

The DOLBY HX-PRO system is designed to vary the AC bias so that the bias components which are affected by the audio signal can be compensated sequentially. This system is used to control the bias in the servo system so that the effective bias amount (consisting of the "AC bias" and "audio signal") which is actually applied to the head is controlled at a fixed level.

When this system is used, the low and high frequency adjustments, which respectively require an appropriate compromise so that the optimum recording frequency response of a single frequency is obtained, are made quite easily.

Also, the output drop due to self-bias at high frequencies is eliminated. This results in a flat response over a widened high frequency range. Fig. 1 shows an example of the improvement in the frequency response.

Outline of μ PC1297CA (X87-1190-01:IC1)

Dolby HX-PRO System and Construction/Operation of the μ PC1297CA

The system construction diagram is shown in Fig. 2 and the outline of operation is shown in Fig. 3. The effective bias is detected at the edge of the tape head. The high-frequency components (more than 10kHz) are extracted from the detected signal by the filter, and converted into a DC voltage. The resultant voltage is compared with the reference voltage for setting the bias amount, and the AC bias is controlled by the VCA (Voltage Controlled Amplifier) circuit so that a constant bias is obtained. By switching the reference voltage, the bias level can be set for each type of tape used.

Dolby HX-PRO System Circuit

The μ PC1297CA is an IC which control the effective bias amount that is applied to the recording head in the tape deck. "HX" stands for Headroom Extension. With this system, the dynamic range is greatly extended to the high frequencies, while the high frequency response range is improved.

Features

- Wider power voltage range. $V_{CC} = 8 \sim 15 \sim 18V$.
- Two-channel Dolby HX-PRO system provided.

Explanation of pin name

Pin No.	Symbol	Pin name	Pin No.	Symbol	Pin name
1	VST	Reference power supply pin	10	VIN(O)	Bias oscillator input pin
2	VR1	Comparator reference pin 1	11	VOUT22	VCA output pin 21
3	VIN(R)1	Signal input pin 1	12	VOUT21	VCA output pin 22
4	PH1	Peak hold capacitor pin 1	13	COUT2	Comparator output pin 2
5	CIN1	Comparator input pin 1	14	CIN2	Comparator input pin 2
6	COUT1	Comparator output pin 1	15	PH2	Peak hold capacitor pin 2
7	VOUT11	VCA output pin 11	16	VIN(R)2	Signal input pin 2
8	VOUT12	VCA output pin 12	17	VR2	Comparator reference pin 2
9	GNP	GNP (ground) pin	18	VCC	Power supply pin

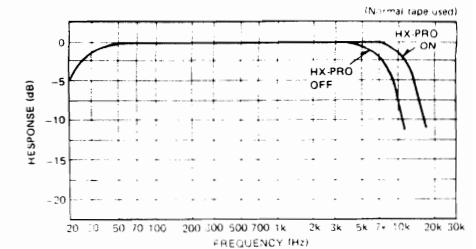


Fig. 1 Improvement example of the tape output frequency response with Dolby HX-PRO

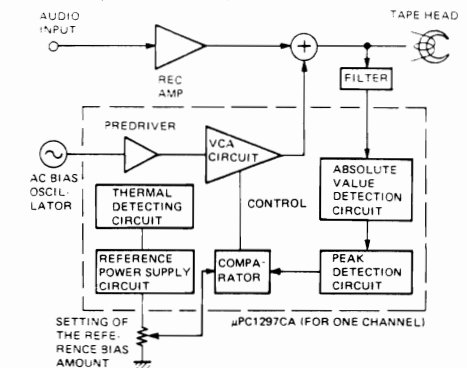


Fig. 2 System configuration of Dolby HX-PRO

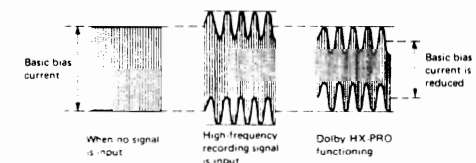


Fig. 3 Operation principle of Dolby HX-PRO

- Lower 2nd harmonics distortion. $-70dB$ TYP.
- Bias level can be set for each type of head used.
- Thermal detecting protection circuit built-in.
- Packaged in an 18-pin shrink DIP (dual inline package).

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	CASSETTE TAPE DECK SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
CASSETTE DECK SECTION				TAPE: NORMAL, DOLBY: OFF, INPUT: LINE, CALIBRATION: CENTER		0dBs = 0.775V	
I REC/PLAY HEAD							
1	DEMAGNETIZATION	-	-	POWER: OFF Remove the cassette door.	REC/PLAY head	Demagnetize the REC/PLAY head with a head demagnetizer.	
2	CLEANING			PLAY	REC/PLAY head erase head, capstan, pinch roller	Clean the REC/PLAY head erase head, capstan and pinch roller using a cotton swab slightly dampened with alcohol	
3	AZIMUTH	(A) MTT 114, TCC 153 10kHz, 10dB	(B)	PLAY	Azimuth adjustment screw	Maximum output.	(a)
II DC MOTOR							
1	TAPE SPEED	(A) MTT 111, TCC 110 3kHz	(B)	PLAY	Trimming potentiometer in the DC motor	Adjust the tape speed so that a 3kHz signal is produced at the center of the tape.	(b)
III PC BOARD							
<1>	PLAYBACK LEVEL	MTT-150 400Hz	(B)	PLAY	VR3 (L) VR4 (R) (X87-103 B/2)	Output level: -1.2dBs	
		MTT-256 315Hz				Output level: -4.0dBs	
		MTT-256U, TCC-160 315Hz				Output level: 0 dBs	
<2>	BIAS CURRENT	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	Adjust REC LEVEL VR (MASTER, PRESET) so that the REC monitor output becomes -24dBs at 1kHz, then record and reproduce signal of 1kHz and 10kHz in alternation.	VR1 (L) VR2 (R) (X87-119)	Adjust the bias current adjusting VR so that the playback level of the 10kHz signal is -0.5dB higher than that of the 1kHz signal when recording a 1kHz signal and a 10kHz signal alternately.	
<3>	RECORD LEVEL	(A) 1kHz, 30dBs	(B)	Record and reproduce a 1kHz signal under the conditions set in <2>	VR1 (L) VR2 (R) (X87-103 A/2)	Adjust the variable resistors so that a playback level of -24dBs is obtained.	
<4>	FL PEAK LEVEL METER	(A) 1kHz, 10dBs	(B)	REC PAUSE Adjust REC and LEVEL VR so that the monitor output is -4dBs at 1kHz	VR1 (X87-1020)	0dB LED segment is completely lit.	
IV μ -COM CLOCK ADJ							
<1>	CLOCK ADJ	-	TP3	-	VR7 (X25-118)	138Hz	(c)

REGLAGE

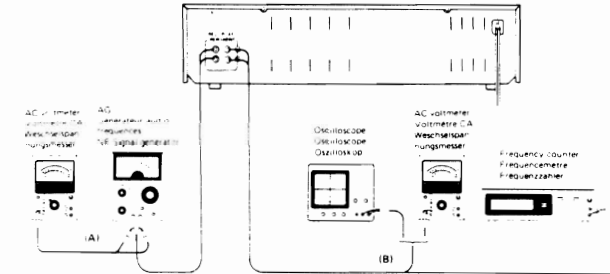
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU MAGNETO-PHONE A CASSETTE	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION DU MAGNETOPHONE		TAPE: NORMAL, DOLBY: OFF, ENTREE: LINE, CALIBRAGE: MILIEU				0dBs = 0.775V	
I TETE D'ENREGISTREMENT/LECTURE							
1	DEMAGNETISATION	-	-	POWER: OFF Eloigner la porte.	Tête D'ENREGISTREMENT/LECTURE	Demagnétiser la tête D'ENREGISTREMENT/LECTURE avec un démagnétiseur de tête.	
2	NETTOYAGE		-	PLAY	Tête D'ENREGISTREMENT/LECTURE tête d'effacement, capstan, galet presseur.	Nettoyer la tête D'ENREGISTREMENT/LECTURE la tête d'effacement, le capstan et le galet presseur avec un coton-tige légèrement imbibé d'alcool.	
3	AZIMUT	(A) MTT 114, TCC 153 10kHz, 10dB	(B)	PLAY	Vis d'azimut	Sortie maxim.	(a)
II MOTEUR CC							
<1>	VITESSE DE DEFILEMENT	(A) MTT 111, TCC 110 3kHz	(B)	PLAY	Resistance ajustable du moteur CC	Régler la vitesse de bande de façon qu'un signal de 3kHz soit produit au centre de la bande.	(b)
III PLAQUE IMPRIMEE							
<1>	NIVEAU DE LECTURE	MTT 150 400Hz	(B)	PLAY	VR3 (G) VR4 (D) (X87-103 B/2)	Niveau de sortie: -1.2dBs	
		MTT 256 315Hz				Niveau de sortie: -4.0dBs	
		MTT 256U, TCC 150 315Hz				Niveau de sortie: 0 dBs	
<2>	COURANT DE POLARISATION	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	Régler REC LEVEL VR (MASTER, PRESET) de façon que la sortie de moniteur REC soit de -24dBs à 1kHz, puis enregistrer et reproduire des signaux de 1kHz et 10kHz en alternance.	VR1 (G) VR2 (D) (X87-119)	Ajuster le courant de polarisation en ajustant VR pour que le niveau de lecture du signal 10kHz soit de -0.5dB supérieur à celui du signal 1kHz lors de l'enregistrement d'un signal 1kHz et d'un signal de 10kHz alternativement.	
<3>	NIVEAU D'ENREGISTREMENT	(A) 1kHz, -30dBs	(B)	Enregistrer et reproduire un signal de 1kHz dans les conditions précisées en <2>.	VR1 (G) VR2 (D) (X87-103 A/2)	Ajuster les résistances variables de façon à obtenir un niveau de lecture de -24dBs.	
<4>	INDICATEUR DE NIVEAU DE CRETE A FL	(A) 1kHz, -10dBs	(B)	REC PAUSE Ajuster REC et NIVEAU VR de façon à ce que la sortie moniteur soit de -4dBs à 1kHz.	VR1 (X87-102)	Le segment de FL 0dB soit complètement allumé.	
IV μ -COM MONTRE REGLAGE							
<1>	MONTRE REGLAGE	-	TP3	-	VR7 (X26-118)	138Hz	(c)

ABGLEICH

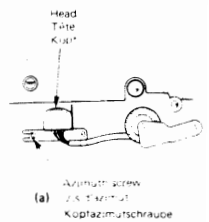
ADJUSTMENT/REGLAGE/ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	KASSETTENGERÄT-EINSTELLUNG	ABGLEICH PUNKTE	ABGLEICHEN FÜR	ABB.
CASSETTEN-DECK ABTEILUNG TAPE: NORMAL, DOLBY: OFF, EINGANG: LINE, KALIBREIUNG: MITTE 0dBs = 0,775V							
I AUFNAHME/WIEDERGABE KOPF							
(1)	ENTMAGNETISIERUNG	-	-	POWER: OFF Den Kassetteneckdeckel oben herausziehen.	AUFNAHME/WIEDERGABE Kopf	Entmagnetisierung von dem AUFNAHME/WIEDERGABE-Kopf mit einem Tonkopf Entmagnetisierungsdrössel.	
(2)	REINIGUNG	-	-	PLAY	AUFNAHME/WIEDERGABE Kopf, Löschkopf, Tonwelle, Andruckrolle.	AUFNAHME/WIEDERGABE Kopf, Löschkopf, Tonwelle und Andruckrolle mit einem leicht mit Alkohol befeuchteten Wattebausch reinigen.	
(3)	AZIMUT-EINSTELLUNG	(A) MTT-114, TCC-153 10kHz, 10dB	(B)	PLAY	Azimet Einstellschraube	Maximaler Ausgang	(A)
II GLEICHSTROMMOTOR							
(1)	BANDGESCHWINDIGKEIT	(A) MTT-111, TCC-110 3kHz	(B)	PLAY	Trimmer potentiometer am Gleichstrommotor	Die Bandgeschwindigkeit so justieren, daß ein 3kHz Signal auf der Mitte des Bands erzeugt wird.	(B)
III GEDRUCKTE SCHALTPLATTE							
<1>	WIEDERGABE-PEGEL	MTT-150 400kHz	(B)	PLAY	VR3 (L) VR4 (R) (X87-103 B/2)	Ausgangspegel: -1,2dBs	
		MTT-256 315kHz				Ausgangspegel: -4,0dBs	
		MTT-256U, TCC-160 315kHz				Ausgangspegel: 0 dBs	
<2>	LEERLAUFSTROM	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	REC PEGEL VR (MASTER, PRESET) so justieren, daß der REC Monitorausgang -24dBs bei 1kHz wird, und danach abwechselnd Signal von 1kHz und 10kHz aufnehmen und wiedergeben.	VR1 (L) VR2 (R) (X87-119)	Den Vornagnetisierungsstrom-Regelwiderstand so einstellen, daß der Wiedergabepegel des 10kHz Signals um -0,5dB höher ist als der des 1kHz Signals, wenn ein 1kHz Signal und ein 10kHz Signal abwechselnd aufgenommen wurde.	
<3>	AUFNAHMEPEGEL	(A) 1kHz, -30dBs	(B)	Ein 1kHz Signal unter den in Punkt <2> beschriebenen Bedingungen aufnehmen und reproduzieren.	VR1 (L) VR2 (R) (X87-103 A/2)	Die Regelwiderstände so justieren, daß ein Wiedergabepegel von 24dBs erzielt wird.	
<4>	FL SPITZEN-PEGELMESSER	(A) 1kHz, -10dBs	(B)	REC PAUSE REC und PEGEL VR so einstellen, daß der Monitorausgang bei 1kHz, -4dBs ist.	VR1 (X87-102D)	Die Regelwiderstände so justieren, daß das 0dB Segment vollständig leuchtet.	
IV µ-COM ÜHR ABGLEICH							
(1)	ÜHR ABGLEICH	-	TP3	-	VR7 (X26-115)	133Hz	(c)

SYSTEM CONNECTION

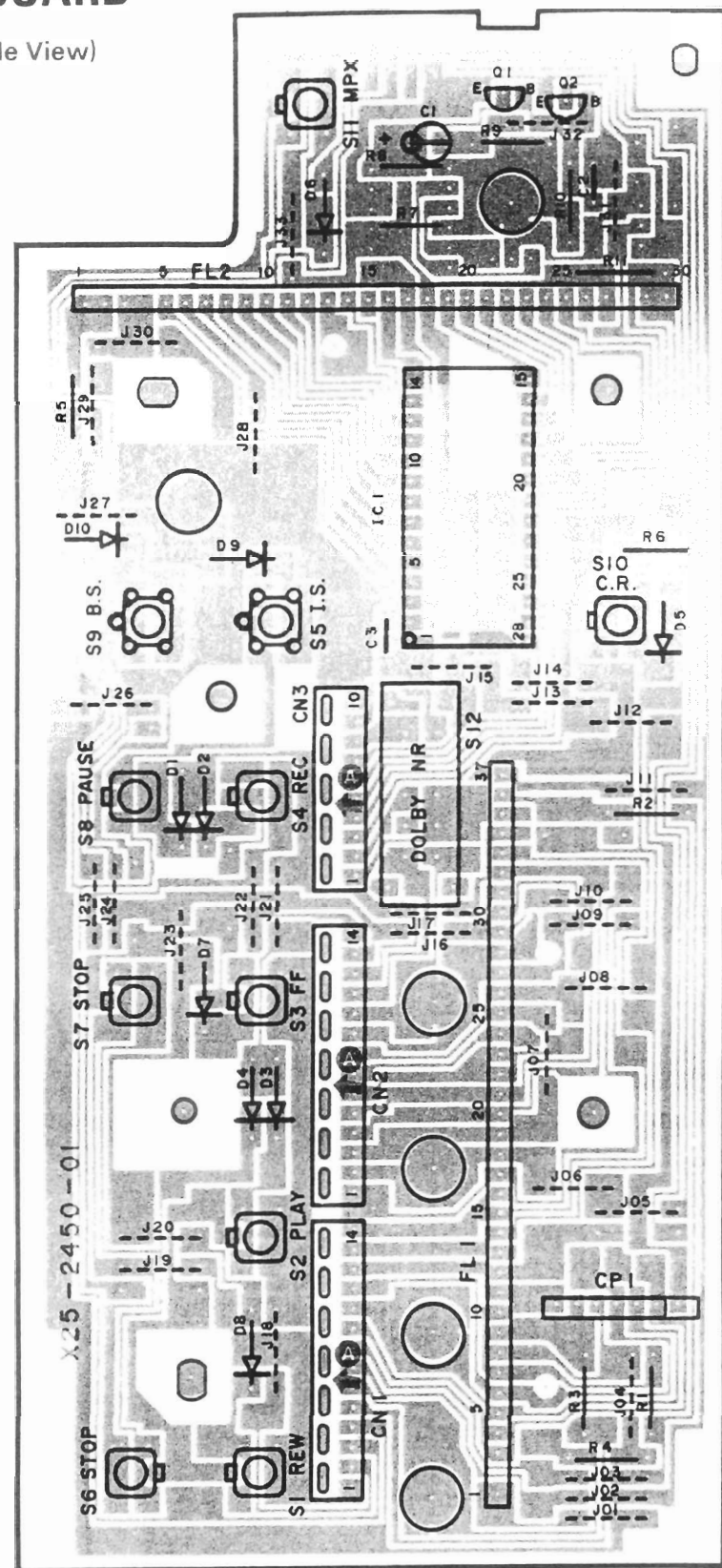


(a) AZIMUTH

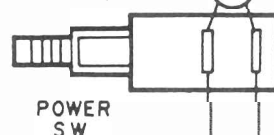


PC BOARD

(Foil Side View)



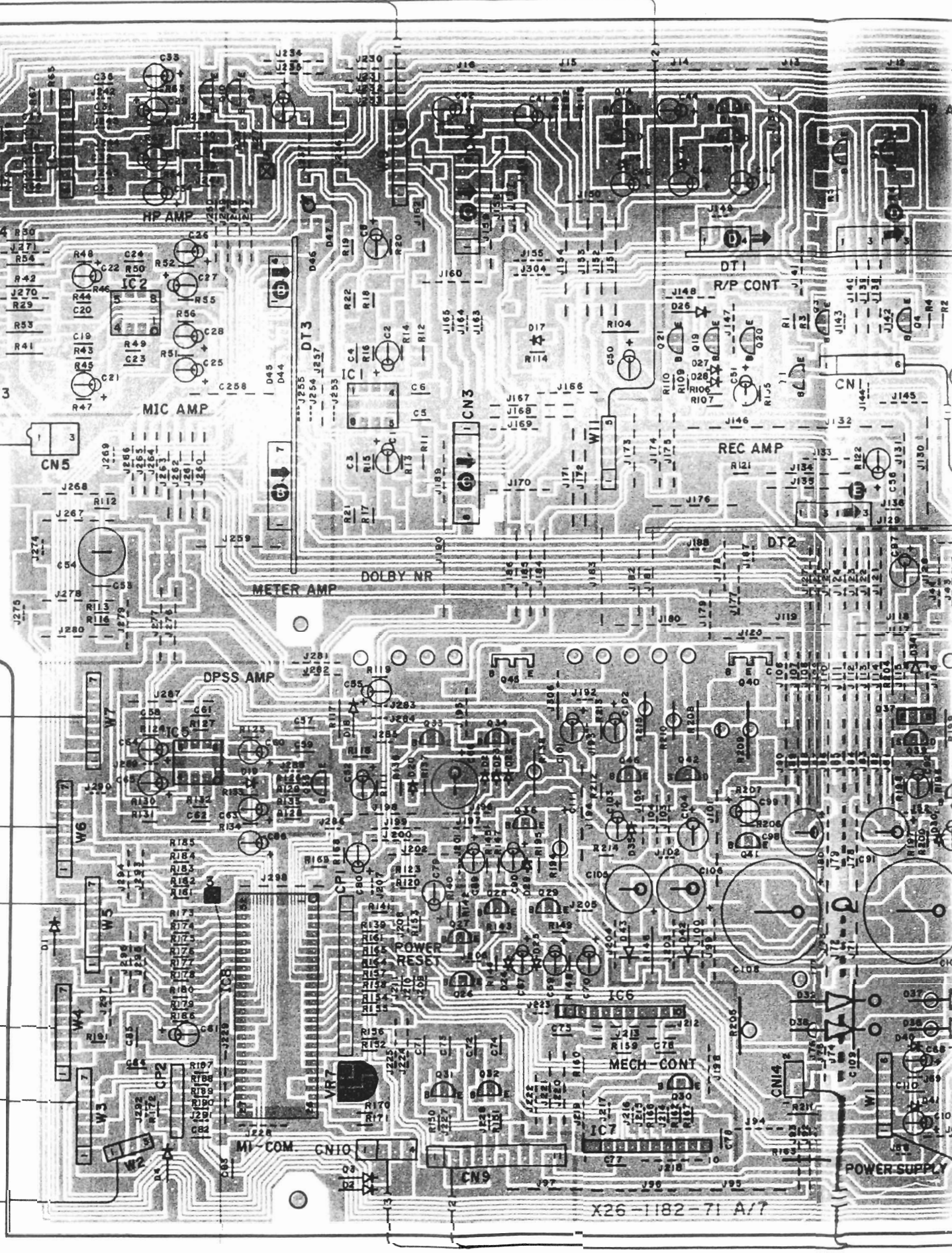
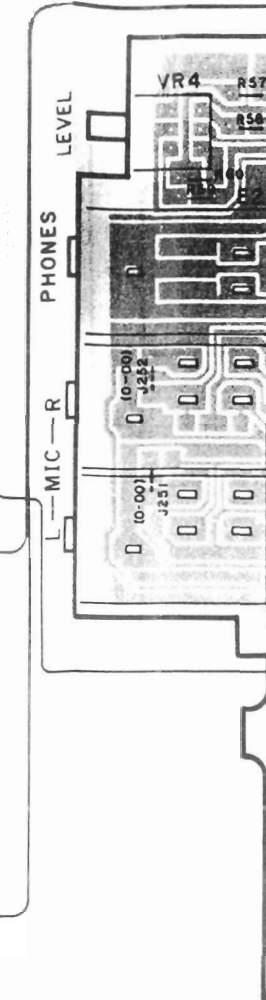
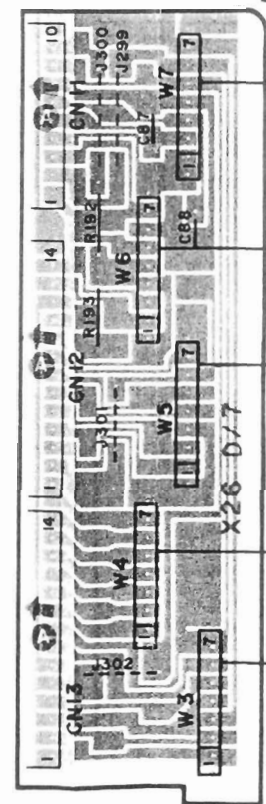
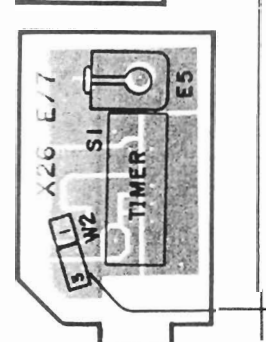
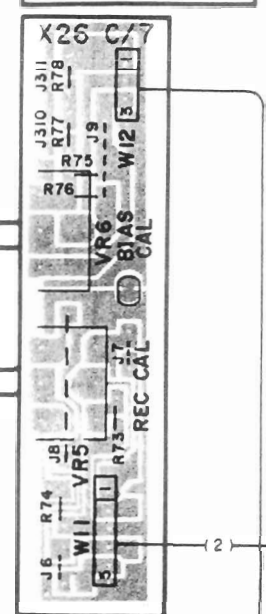
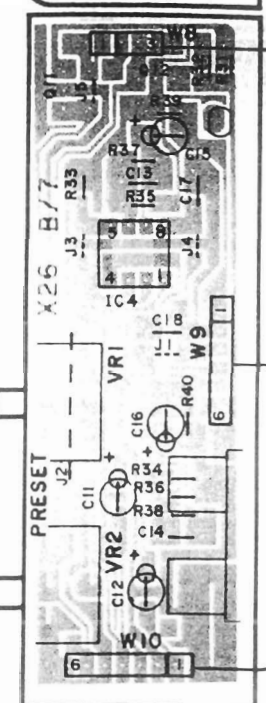
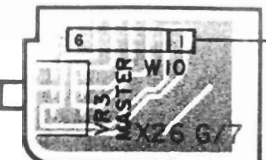
FRONT



MASTER
REC LEVEL

PRESET
RIGHT LEFT

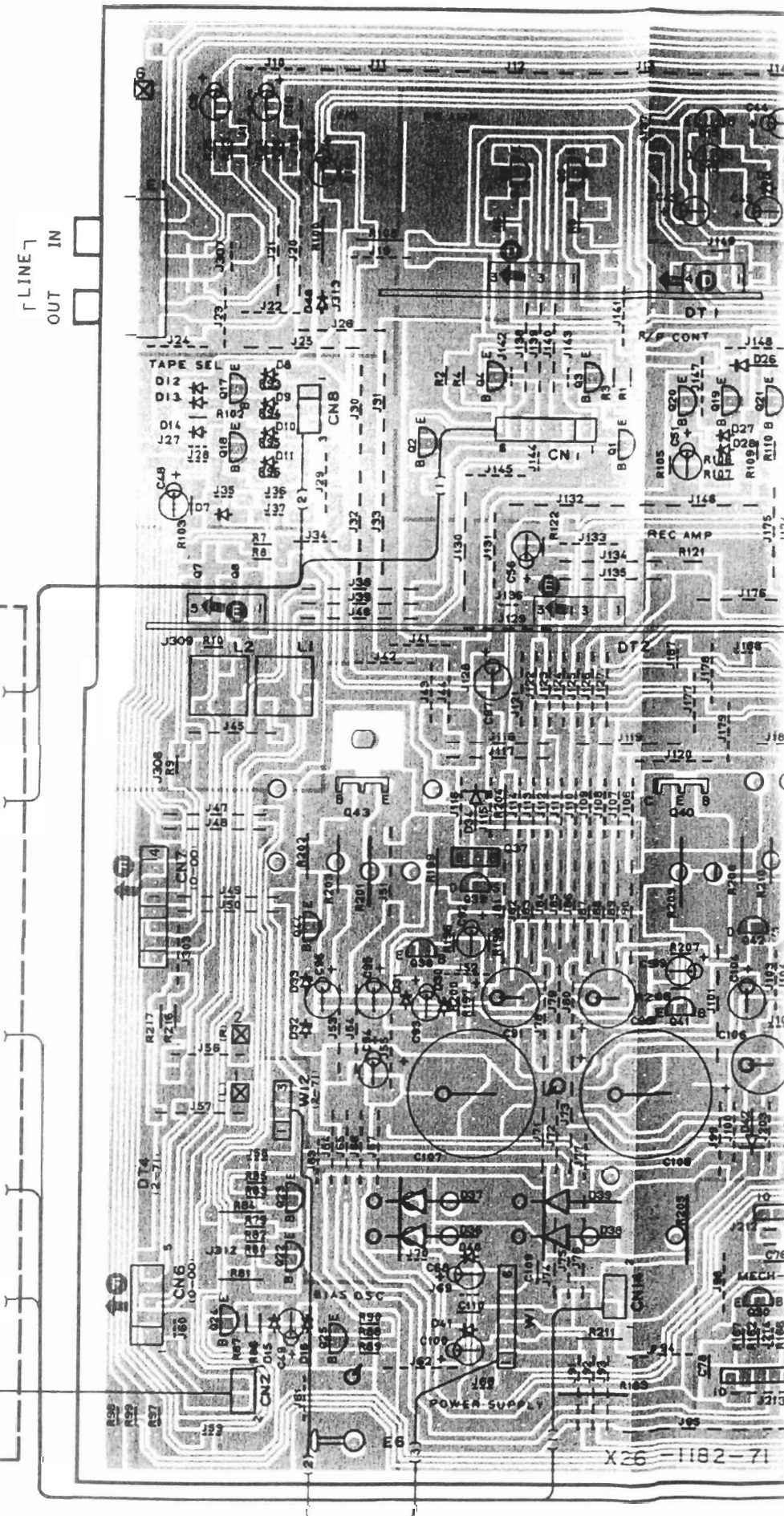
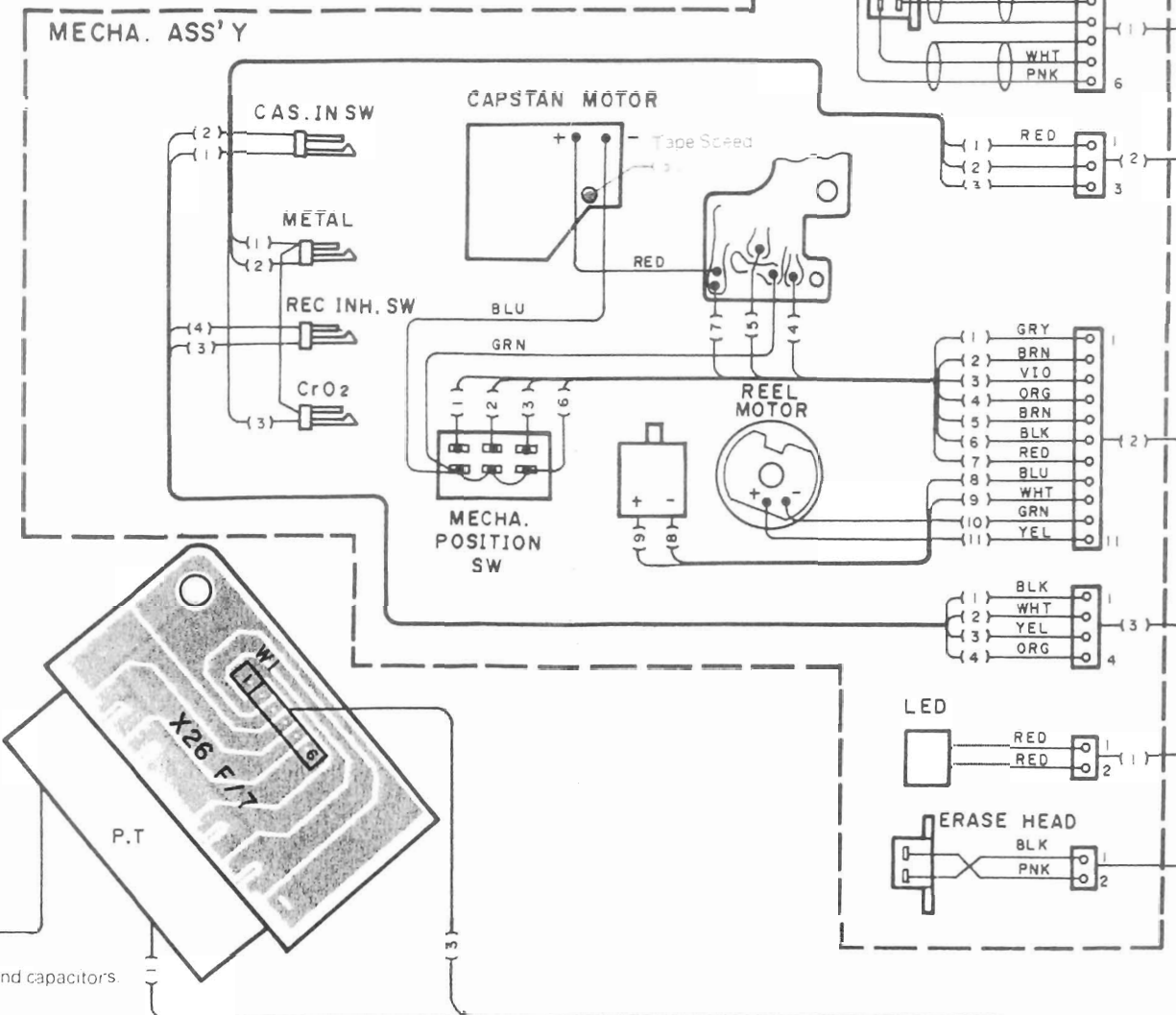
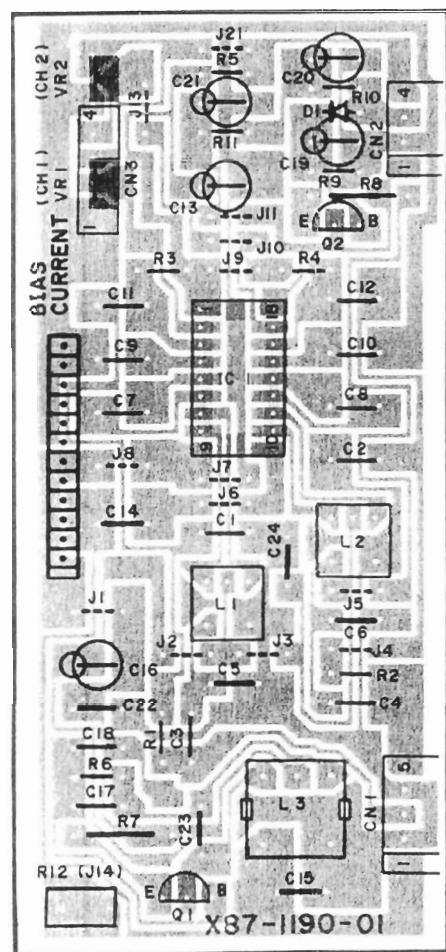
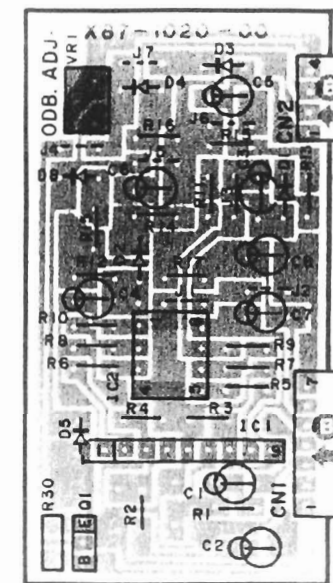
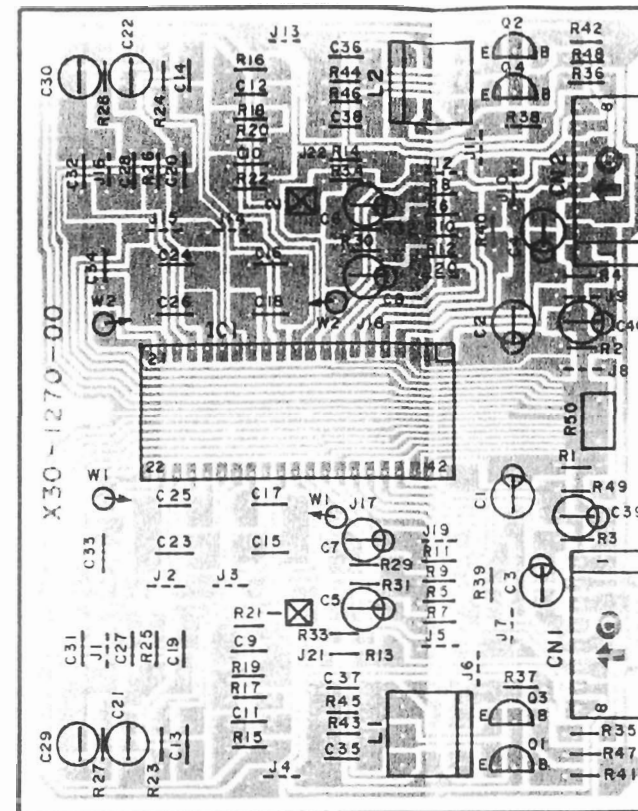
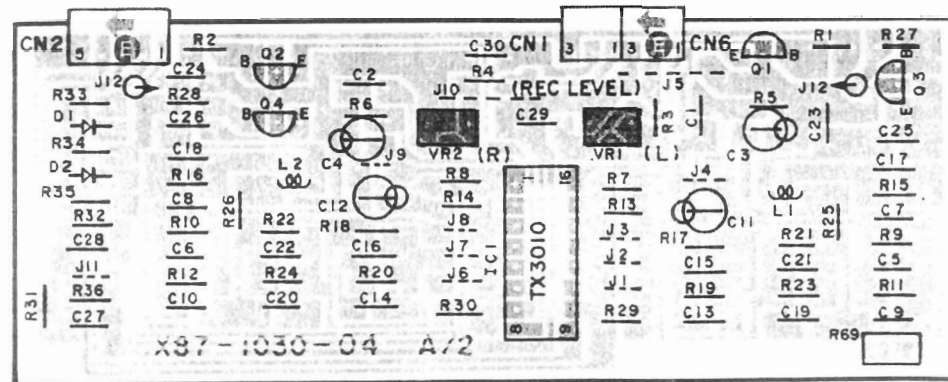
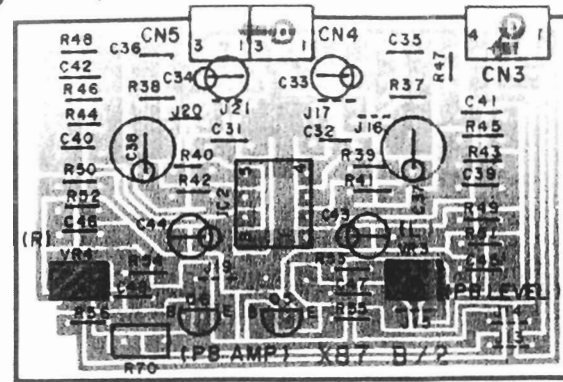
BIAS
LEVEL



X26-1182-71 A/7

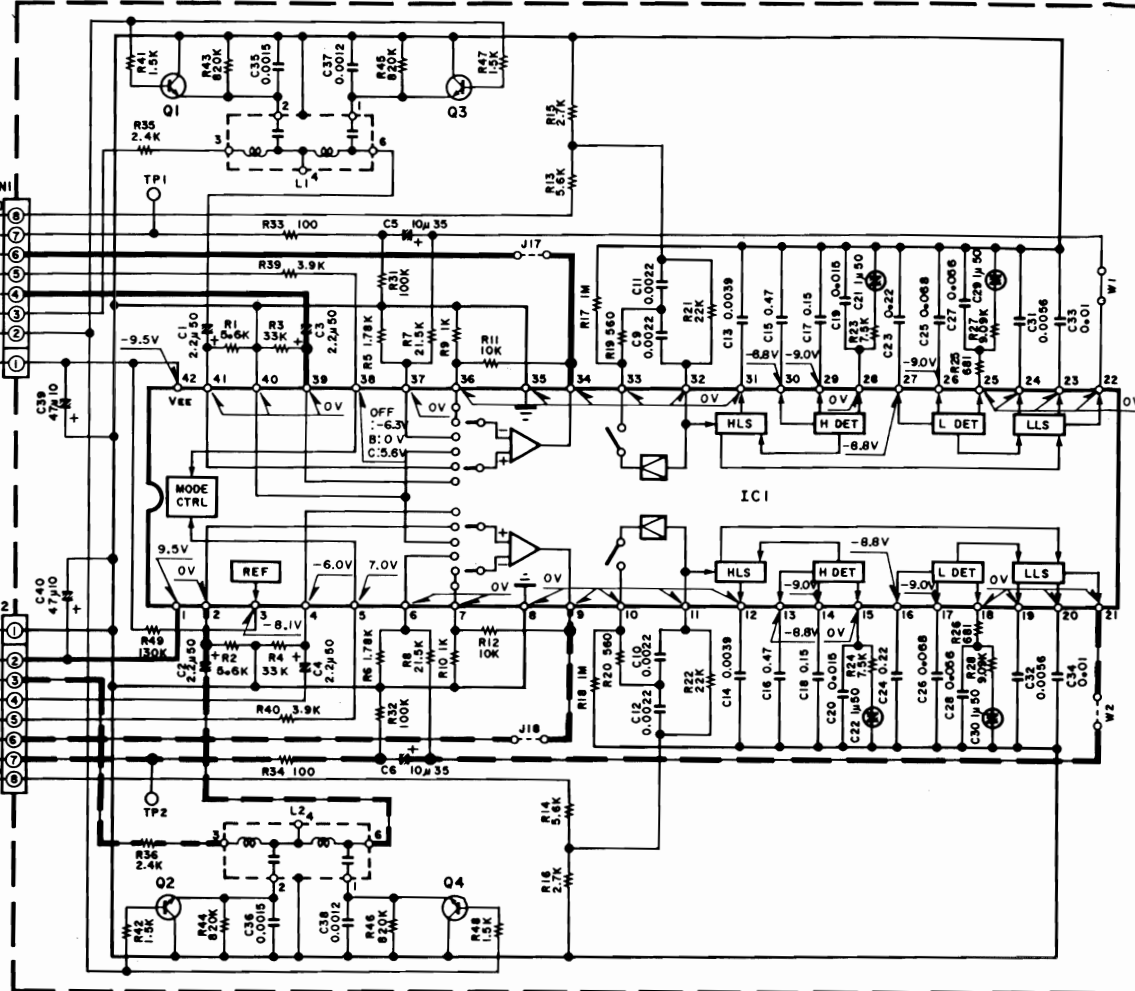


PC BOARD (Component Side View)



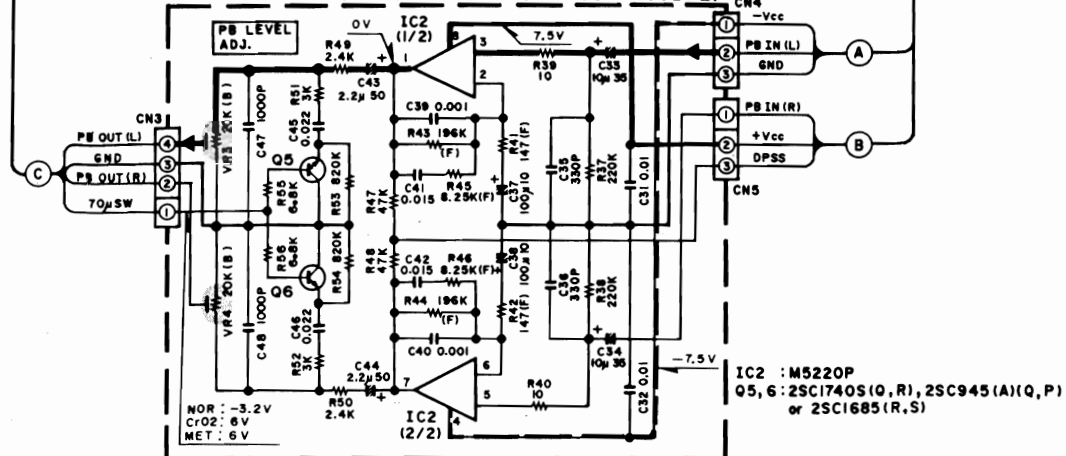
Refer to the schematic diagram for the values of resistors and capacitors.

DOLBY NR UNIT (X30-1270-00)

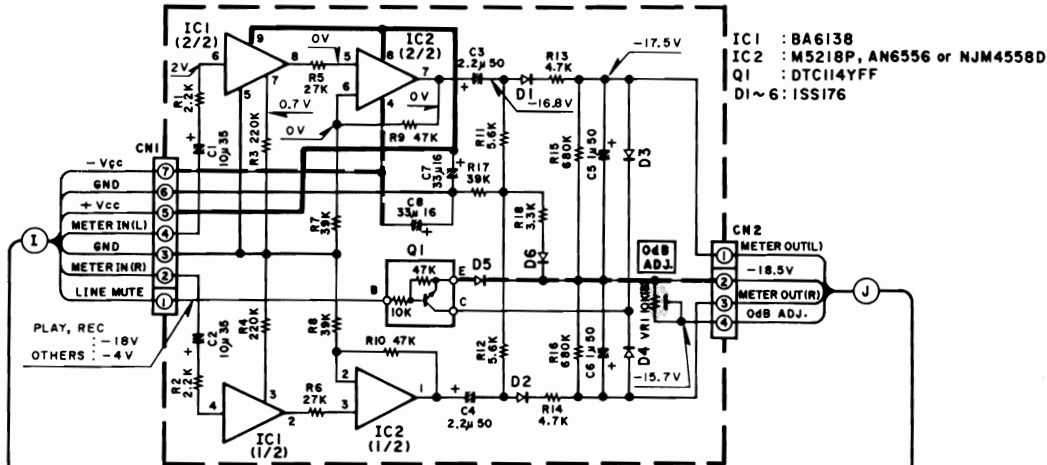


IC1 : CX20188
Q1~4 : 2SC1740S(Q,R) or 2SC945(A)(Q,P)

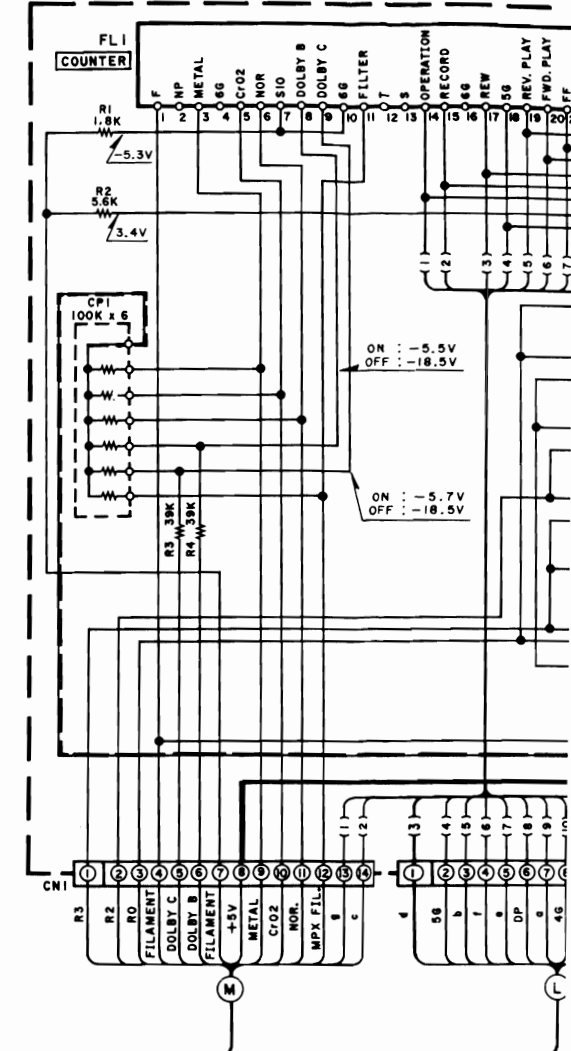
REC/PLAY AMP UNIT (PB AMP) (X87-1030-04) (B/2)



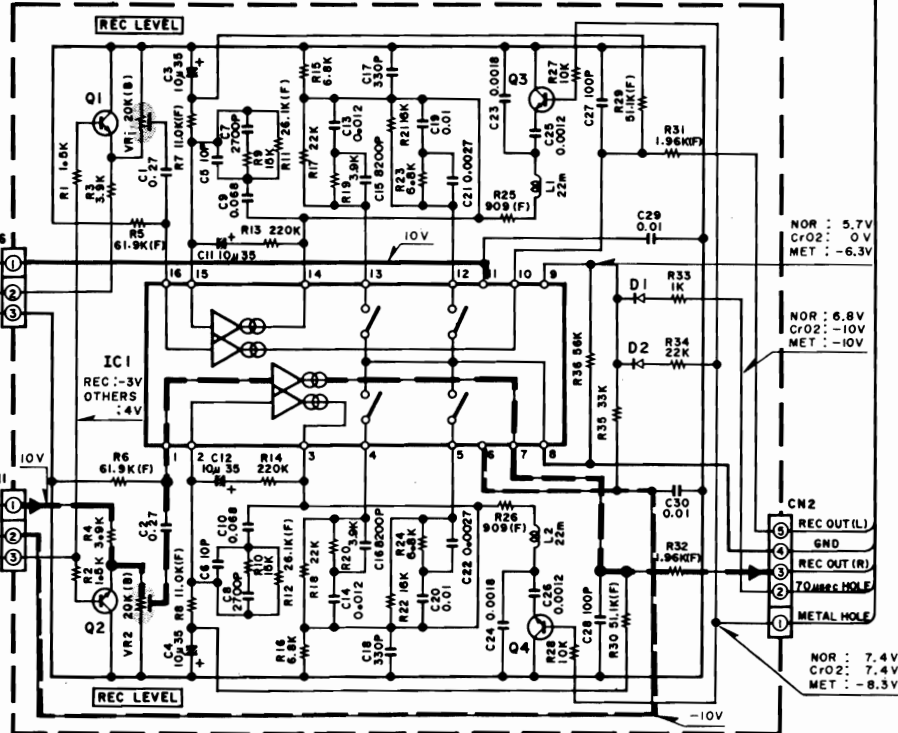
METER AMP UNIT (X87-1020-00)



DISPLAY UNIT (X25-2450-01)

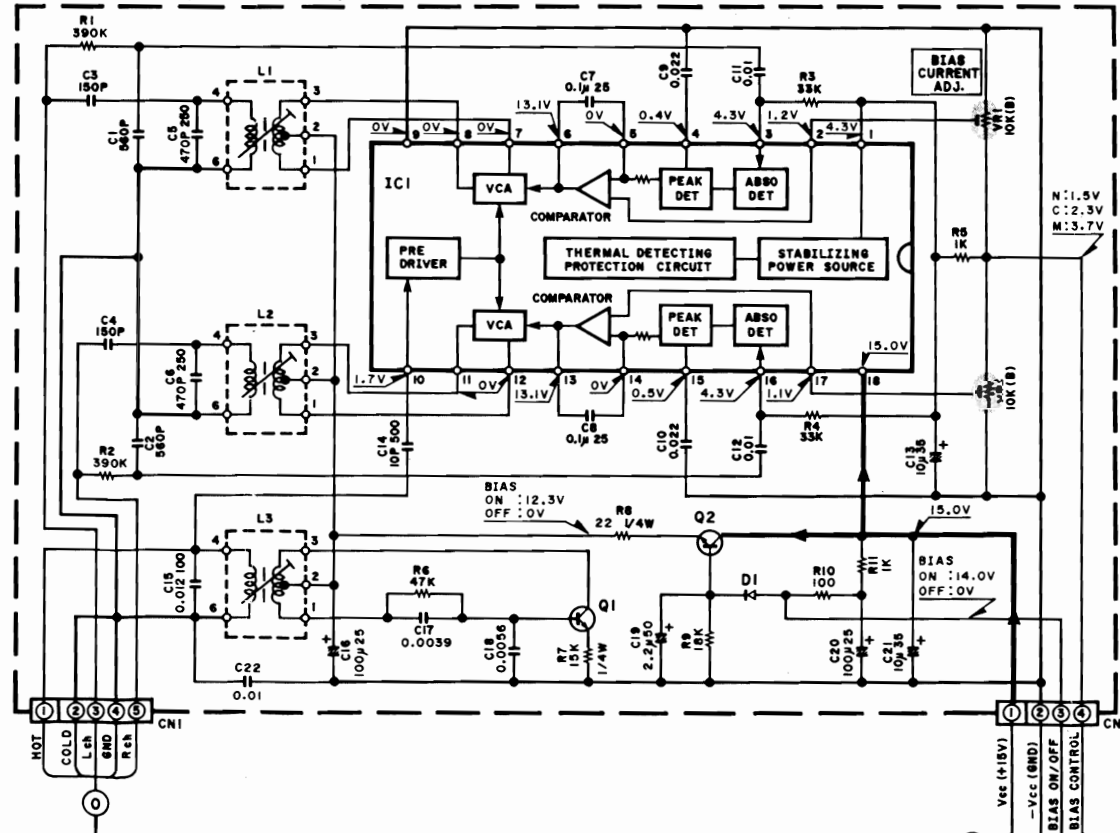


REC/PLAY AMP UNIT (REC AMP) (X87-1030-04) (A/2)

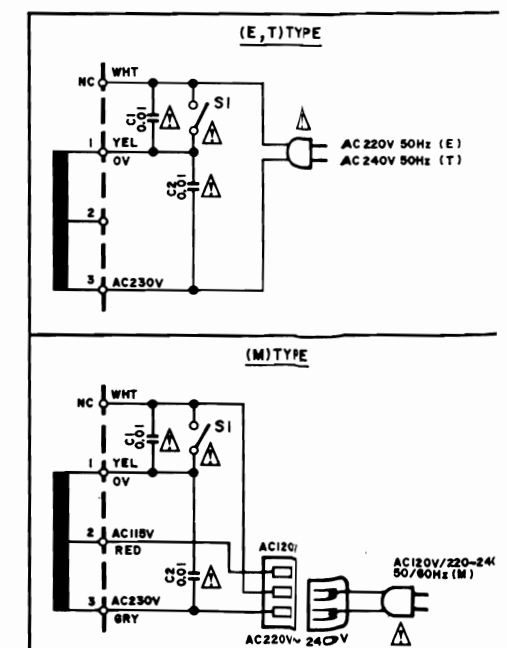


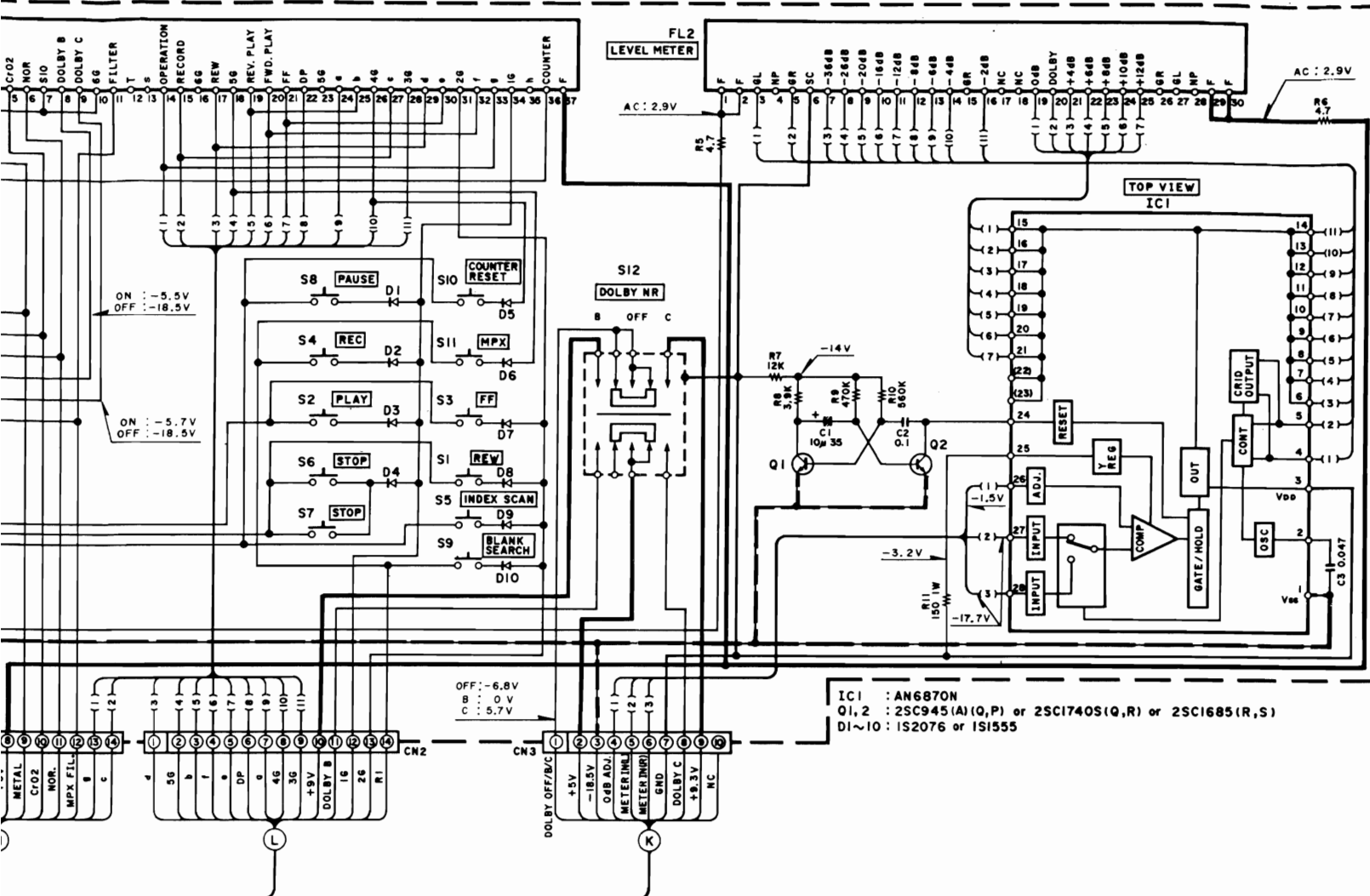
IC1 : TX3010N
Q1~4 : 2SC1740S(Q,R) or 2SC945(A)(Q,P) or 2SC1685(R,S)
D1,2 : ISS176

BIAS OSC UNIT (X87-1190-01)

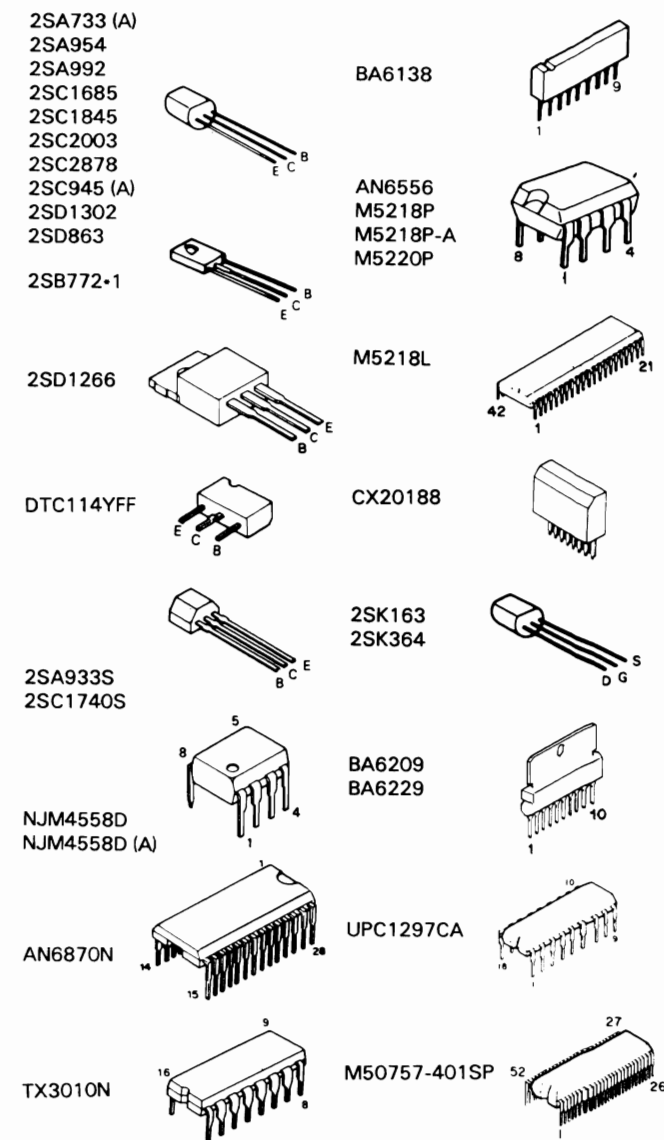
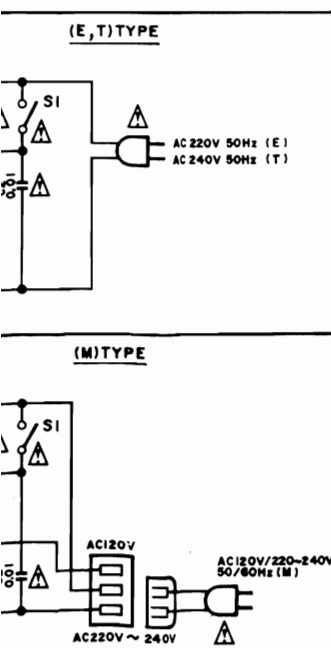


IC1 : PC1297CA
Q1,2 : 2SD863 (E,F)
D1 : ISS176 or ISS133





— SIGNAL LINE
 — RECORDING LINE
 — GND LINE
 — + B LINE
 — - B LINE



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode de lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

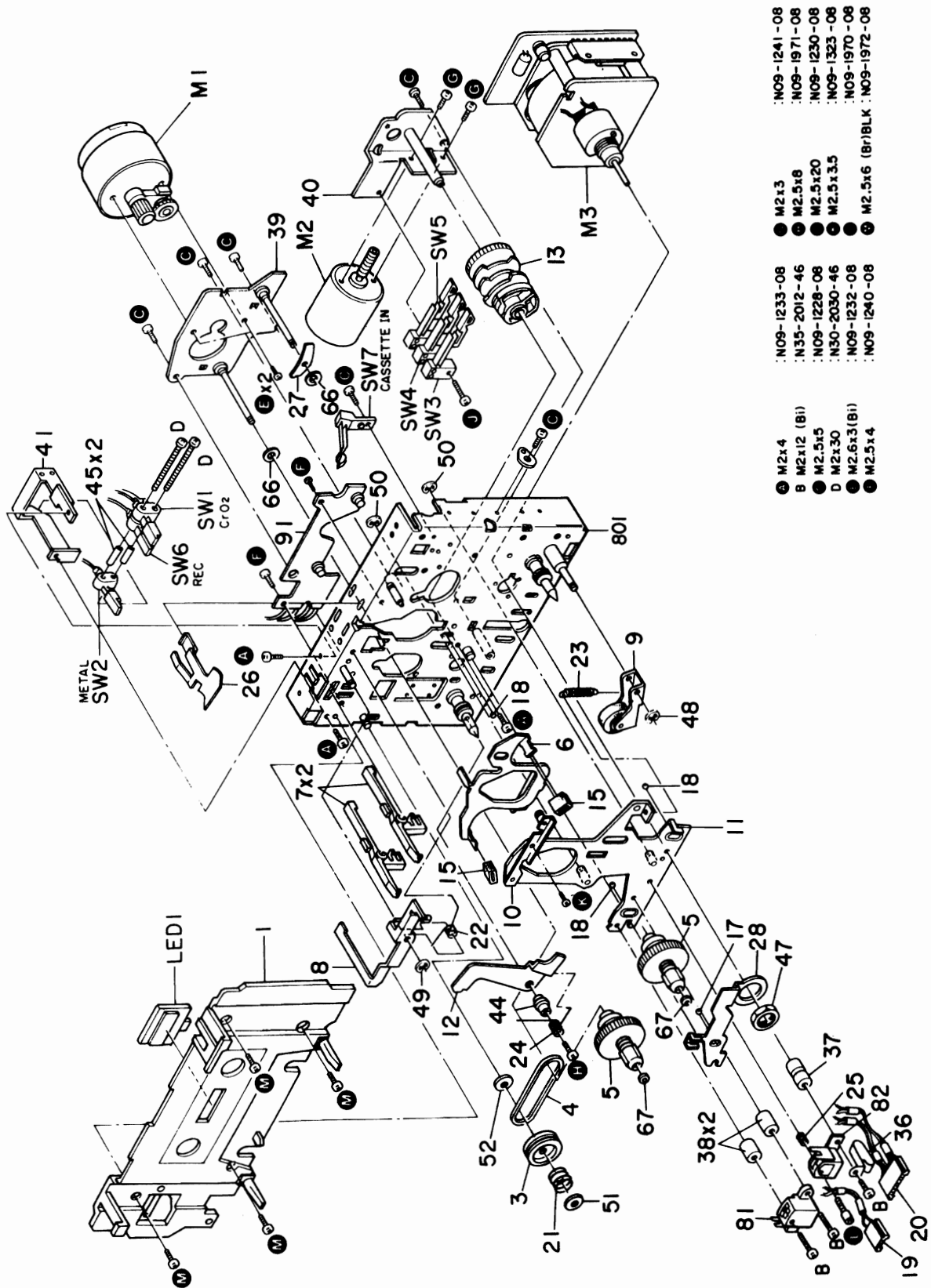
Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KX-880HX
KENWOOD

EXPLODED VIEW (MECHANISM UNIT)



PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
KX-880HX						
201	1D		A01-1348-02	METALLIC CABINET		
202	2D	*	A20-5375-03	PANEL ASSY		
203	2D	*	A53-0986-03	CASSETTE LID ASSY		
204	1E		A53-0629-33	CASSETTE HOLDER ASSY		
208	2D		B07-1411-02	ESCUTCHEON (L MTR, DISP, KNBB)		
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-03	WARRANTY CARD	T	
-		*	B50-8588-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B50-8589-00	INSTRUCTION MANUAL (FRENCH)	PME	
-		*	B50-8590-00	INSTRUCTION MANUAL (SPANISH)	M	
-		*	B50-8591-00	INSTRUCTION MANUAL (G.D.I)	E	
△ C1 .2			C91-0023-05	CERAMIC 0.01UF AC250V	M	
△ C1 .2			C91-0647-05	CERAMIC 0.01UF P	PTE	
213	1E		D10-1764-04	LEVER		
214	1E		D39-0172-05	DAMPER ASSY		
△ 217	1E		E03-0102-25	AC INLET	M	
218	1E		E30-0505-05	AUDIO CORD		
△ 219	1F		E30-0459-05	AC POWER CORD	E	
△ 219	1F		E30-0780-05	AC POWER CORD	P	
△ 219	1E		E30-1305-15	AC POWER CORD (INLET)	M	
△ 219	1F		E30-1416-05	AC POWER CORD	T	
223	1E		G01-1741-04	TORSION COIL SPRING (LEVER)		
224	1E		G01-1742-04	TORSION COIL SPRING (CASET HOLD)		
-		*	H01-7701-04	ITEM CARTON CASE		
-		*	H10-1827-12	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-1828-12	POLYSTYRENE FOAMED FIXTURE		
-			H20-0417-14	PROTECTION COVER (460X370X360)	M	
-			H25-0224-04	PROTECTION BAG (800X400X0.03)	PTE	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
229	2E, 2F		J02-0190-15	FOOT		
230	2F		J19-2536-05	UNIT HOLDER (PCB)		
232	2E		J21-3326-05	JACK MOUNTING HARDWARE (PHONES)		
△ 235	1F		J42-0083-05	POWER CORD BUSHING	PTE	
-			J61-0307-05	WIRE BAND		
239	2D		K27-1082-04	KNBB (BUTTON) POWER		
240	2D		K27-1594-04	KNBB (BUTTON) DOLBY NR		
242	2E		K27-1525-04	KNBB (BUTTON) COUNTER RESET		
243	2D		K29-1822-14	KNBB (BUTTON) MASTER REC LEVEL		
244	2D		K29-1863-14	KNBB (BUTTON) PLAY		
245	2E		K29-1865-14	KNBB (BUTTON) FF		
246	2D		K29-1866-14	KNBB (BUTTON) REV		
247	2E		K29-1890-04	KNBB (BUTTON) REC		
248	2E		K29-1891-14	KNBB (BUTTON) PAUSE		
249	2D		K29-2000-14	KNBB (BUTTON) PRESET		
250	2D		K29-2200-04	KNBB (BUTTON) EJECT		
251	2D		K29-2201-04	KNBB (BUTTON) SLAG LEVEL		
252	2E		K29-2202-14	KNBB (BUTTON) STOP		
253	2D		K29-2203-04	KNBB (BUTTON) MPX FILTER		

E: Scandinavia & Europe K: USA

P: Canada

U: PX (Far East, Hawaii) T: England

M: Other Areas

UE: AAFES (Europe)

X: Australia

△ indicates safety critical component.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R209 R210 R211 R215 VR1 .2	2E	RS14KB3D150J RD14AB2E331J R92-0228-05 RS14DB3A182J R01-4032-05	FL-PR86F RS 15 J 2W FL-PR86F RD 330 J 1/4W FUSE RESIST 100 G 1/4W FL-PR86F RS 1.8K J 1W POTENTIOMETER (50K) REC LVL. PRES		
VR3 VR4 VR5 VR6 VR7	2E	R10-5020-05 R10-3023-05 R06-2015-05 R01-3043-05 R12-3126-05	POTENTIOMETER (100KX2) REC LVL. POTENTIOMETER (10KX2) PHANFS LVL. POTENTIOMETER (5KX2) BTAS-CAL (BR) POTENTIOMETER (10K) BTAS TRIMMING POT. (10K) CLOCK ADJ.		
S1	2D	S31-2062-15	SLIDE SWITCH (TIMER)		
D1 -4 D1 -4 D5 .6 D5 .6 D7 -11		1SS133 1SS176 HZ58. 2S(B2) RD8. 2JS(B2) 1SS133	DIODE DIODE ZENER DIODE ZENER DIODE DIODE		
D7 -11 D13 -22 D13 -22 D23 D23		1SS176 1SS133 1SS176 HZ55. 1N(B2) RD5. 1ES(B2)	DIODE DIODE DIODE ZENER DIODE ZENER DIODE		
D24 -28 D24 -28 D29 D29 D30		1SS133 1SS176 HZ55. 6N(B2) RD5. 6ES(B2) HZ55. 1N(B2)	DIODE DIODE ZENER DIODE ZENER DIODE ZENER DIODE		
D30 D31 D31 D32 D32		RD5. 1ES(B2) 1SS133 1SS176 HZ58. 2N(B2) RD8. 2ES(B2)	ZENER DIODE DIODE DIODE ZENER DIODE ZENER DIODE		
D33 D33 D34 D34 D35		HZ55. 6N(B2) RD5. 6ES(B2) HZ53. 9N(B) RD3. 9ES(B) HZ55. 1N(B2)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE		
D35 D36 -39 D40 .41 D40 .41 D42 .43		RD5. 1ES(B2) GP20DLN 1SS131 1SS178 DSM1A1	ZENER DIODE DIODE DIODE DIODE DIODE		
IC1 IC2 IC2 IC3 IC4		MS218P MS218P-A NJM4558D(A) MS218L MS218P-A	IC (8P AMP X2) IC (8P AMP X2) IC (8P AMP X2) IC (8P AMP X2) IC (8P AMP X2)		
IC4 IC5 IC5 IC6 IC7		NJM4558D(A) MS218P NJM4558D BA6209 BA6229	IC (8P AMP X2) IC (8P AMP X2) IC (8P AMP X2) IC (MOTOR DRIVER) IC (MOTOR DRIVER)		
IC8 Q1 -6 Q9 .10		MS0757-4015P 2SC1845(F,E) 2SC2878(B)	IC (MICROPROCESSOR) TRANSISTOR TRANSISTOR		

E: Scandinavia & Europe K: USA P: Canada
 U: PX(Far East, Hawaii) T: England M: Other Areas
 UE: AAFES(Europe) X: Australia

▲ indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
Q9 .10 Q13 Q13 Q14 Q14		2SD1302(S,T) 2SC1740S(O,R) 2SC945(A)(O,P) 2SA733(A)(O,P) 2SA933S(O,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q15 .16 Q15 .16 Q17 -19 Q17 -19 Q20		2SK163(M,N) 2SK364(BL,V) 2SA733(A)(O,P) 2SA933S(O,R) 2SA992(F,E)	FET FET TRANSISTOR TRANSISTOR TRANSISTOR		
Q21 Q21 Q22 -25 Q22 -25 Q26		2SA733(A)(O,P) 2SA933S(O,R) 2SC1740S(O,R) 2SC945(A)(O,P) 2SA733(A)(O,P)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q26 Q27 -32 Q27 -32 Q33 .34 Q33 .34		2SA933S(O,R) 2SC1740S(O,R) 2SC945(A)(O,P) 2SA733(A)(O,P) 2SA933S(O,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q35 Q35 Q36 Q37 Q38		2SC1740S(O,R) 2SC945(A)(O,P) 2SD863(E,F) 2SD1266(O,P) 2SC2003(L,K)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q39 Q39 Q40 Q41 Q42		2SK163(M,N) 2SK364(BL,V) 2SB772*1(O,P) 2SA954(L,K) 2SK163(M,N)	FET FET TRANSISTOR TRANSISTOR FET		
Q42 Q43 Q44 Q44 Q45		2SK364(BL,V) 2SD1266(O,P) 2SC1740S(O,R) 2SC945(A)(O,P) 2SB772*1(O,P)	FET TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q46		2SA954(L,K)	TRANSISTOR		
DOLBY NOISE REDUCTION UNIT (X30-1270-00)					
C1 -4 C5 .6 C9 -12 C13 .14 C15 .16		CE04KW1H2R2M CE04KW1U100M CF92FV1H222J CF92FV1H392J CF92FV1H474J	ELECTR ELECTR MF MF MF	2.2UF 10UF 2200PF 3900PF 0.47UF	50WV 50WV J J J
C17 .18 C19 .20 C21 .22 C23 .24 C25 .26		CF92FV1H154J CF92FV1H153J C90-1349-05 CF92FV1H224J CF92FV1H683J	MF MF NP-ELEC MF MF	0.15UF 0.015UF 1UF 0.22UF 0.068UF	J J 50WV J J
C27 .28 C29 .30 C31 .32 C33 .34 C35 .36		CF92FV1H563J C90-1349-05 CF92FV1H562J CF92FV1H103J CF92FV1H152J	MF NP-ELEC MF MF MF	0.056UF 1UF 5600PF 1000PF 1500PF	J 50WV J J J
C37 .38 C39 .40		CF92FV1H122J CE04KW1A479M	MF ELECTR	1000PF 47UF	J 50WV

E: Scandinavia & Europe K: USA P: Canada
 U: PX(Far East, Hawaii) T: England M: Other Areas
 UE: AAFES(Europe) X: Australia

▲ indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
9	2D		D10-1616-08	PINCH ARM		
10	2A		D10-0321-08	ARM ASSY		
11	2B	*	D10-2100-08	HEAD BASE CALKED ASSY		
12	1A		D10-0312-08	LOCK PLATE		
13	2C		D13-0080-08	GEAR (CAM)		
15	1A, 2B		D30-0012-08	BRAKE (RUBBER)		
17	2A		D90-0012-04	STEEL BALL (Ø3)		
18	2A, 2B		D90-0020-04	STEEL BALL (Ø2)		
19	2A	*	E31-4369-08	CONNECTING WIRE (2P) HEAD		
20	2A	*	E31-3776-08	CONNECTING WIRE (6P) R/P HEAD		
21	2A	*	G01-2199-08	COMPRESSION SPRING (LOCK PLATE)		
22	2A		G01-1919-08	TENSION COIL SPRING		
23	2B		G01-0483-08	TENSION SPRING (R/P HEAD)		
24	2A	*	G01-2200-08	TENSION SPRING		
25	2A	*	G01-2198-08	COMPRESSION SPRING (AZIMUTH)		
26	1B		G02-0095-08	FLAT SPRING (CASSETTE)		
27	1C		G02-0096-08	FLAT SPRING (BACK TENSION)		
28	2A		G02-0386-08	FLAT SPRING (HEAD)		
36	2A		J11-0059-08	CLAMPER		
37	2A		J13-0213-08	SPACER (R/P HEAD)		
38	2A		J13-0214-08	SPACER (E HEAD)		
39	1C		J21-3176-08	MOUNTING HARDWARE (FEL DISK)		
40	1C		J21-3177-08	MOUNTING HARDWARE (LOCK LVR)		
41	1B		J21-3785-08	MOUNTING HARDWARE (FAF SW)		
44	2A		J31-0269-08	COLLAR		
45	1B		J31-0268-08	COLLAR		
			J61-0307-05	WIRE BAND		
47	2A		N10-2090-46	HEXAGON NUT (M9)		
48	2B		N24-3020-45	E TYPE RETAINING RING (PR ASSY)		
49	1A		N24-3025-45	E TYPE RETAINING RING		
50	1B		N24-3030-45	E TYPE RETAINING RING		
51	2A	*	N19-1123-08	FLAT WASHER		
52	2A	*	N19-1122-08	FLAT WASHER		
66	1B, 1C		N19-0335-08	FLAT WASHER (Ø3.1)		
67	2A		N19-0334-08	FLAT WASHER (Ø1.8) REEL DISK		
A	1B, 2B		N09-1233-08	SCREW (M2X4)		
C	1C		N09-1228-08	SCREW (M2.5X5)		
E	1C		N09-1232-08	SCREW (M2.6X3)		
F	1B		N09-1240-08	SCREW (M2.5X4)		
G	1C, 2C		N09-1241-08	SCREW (M2X3)		
H	2A	*	N09-1971-08	SCREW (M2.5X8) LOCK PLATE		
J	2C		N09-1230-08	SCREW (M2.5X20)		
K	2A		N09-1323-08	SCREW (M2.5X3.5)		
L	2A	*	N09-1970-08	SCREW (M2) AZIMUTH		
M	1A	*	N09-1972-08	SCREW (M2.5X8) DRESSING PLATE		
SW1, 2	1B		S46-1051-08	LEAF SWITCH (CRØ2, METAL)		
SW3 -5	1C		S46-1017-08	LEAF SWITCH (POSITION)		
SW6	1B		S46-1051-08	LEAF SWITCH (REC)		
SW7	1C		S46-1019-08	LEAF SWITCH (CASSTTE IN)		
B1	2A		T32-0304-05	ERASE HEAD		
B2	2A		T34-0318-05	REC/PLAY HEAD		
M1	1C	*	T42-0467-08	REEL MOTOR ASSY		
M2	1C		T42-0017-08	MOTOR ASSY		

E: Scandinavia & Europe K: USA P: Canada
 U: PX(Far East, Hawaii) T: England M: Other Areas
 UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
M3	2C	*	T43-0054-08	DD MOTOR (PAD)		
91	1B	*	W02-0905-08	SENSOR ASSY		

E: Scandinavia & Europe K: USA P: Canada
 U: PX(Far East, Hawaii) T: England M: Other Areas
 UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.