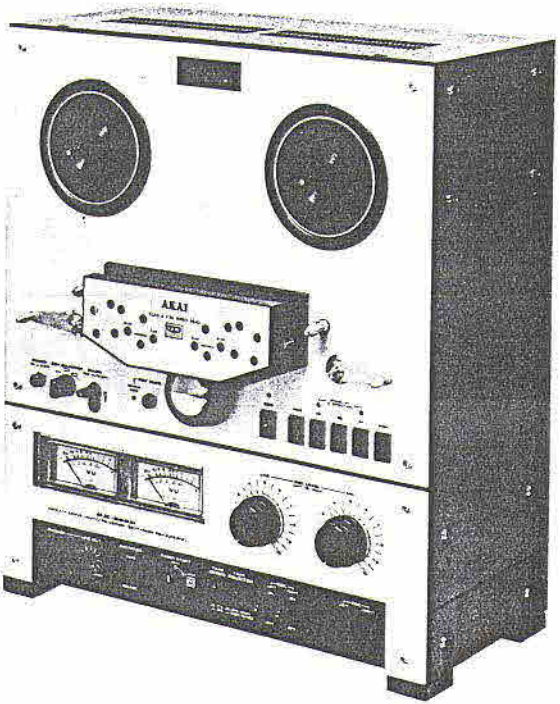
SERVICE MANUAL

PARTS LIST

MODEL GX-266D

AKAI



AKAI STEREO TAPE DECK

MODEL GX-266D

I. TECHNICAL DATA

TRACK SYSTEM	4 track 2 channel stereo/monaural system
REEL CAPACITY	Up to 7" reel
TAPE SPEED	7-1/2 and 3-3/4 ips. (±0.5%)
WOW & FLUTTER	Less than 0.06% at 7-1/2 ips. Less than 0.09% at 3-3/4 ips.
FREQUENCY RESPONSE	30 to 25,000 Hz ±3 dB at 7-1/2 ips. using LN tape 30 to 19,000 Hz ±3 dB at 3-3/4 ips. using LN tape 30 to 26,000 Hz ±3 dB at 7-1/2 ips. using WR tape 30 to 20,000 Hz ±3 dB at 3-3/4 ips. using WR tape
DISTORTION (1,000 Hz "0" VU)	Less than 0.5% at 7-1/2 ips. Less than 1.0% at 3-3/4 ips.
SIGNAL TO NOISE RATIO	Better than 56 dB (Measured via tape with peak recording level of +6 VU)
ERASE RATIO	Better than 70 dB
BIAS FREQUENCY	100 kHz
HEADS	(6): Two GX Playback Heads, Two GX Recording heads, Two Erase heads
MOTORS	(3): One AC Servo Capstan Motor Two Eddy Current Reel Motor
F.F & Rewind Time	90 sec. using 1,200 ft. tape
OUTPUT JACKS	Line (2): 0–0.775V (MAX 0 VU) required load impedance: more than 20 k ohms Phone (1): 0–100 mV/8 ohms (MAX 0 VU)
INPUT JACKS	Microphone (2): 0.25 mV/2.4 k ohms required microphone impedance: 600 ohms Line (2): 70 mV/100 k ohms
SEMICONDUCTORS	Transistors: 61, Diodes: 92
DIMENSIONS	404 (W) x 470 (H) x 250 (D)mm, (15.9 x 18.5 x 9.8") 440 (W) x 470 (H) x 250 (D)mm : With Wood Side Plate (17.3 x 18.5 x 9.8")
WEIGHT	18.3 kg (40.4 lbs.) 20.6 kg (45.5 lbs.) : With Wood Side Plate
POWER REQUIREMENTS	110/120/220/240V, 50/60 Hz Switchable

* For improvement purposes, specification and design are change without notice.

II . DISMANTLING OF UNIT

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

1

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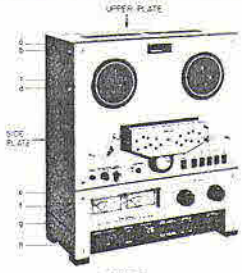

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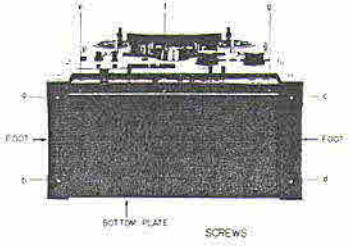

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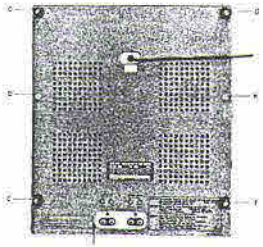

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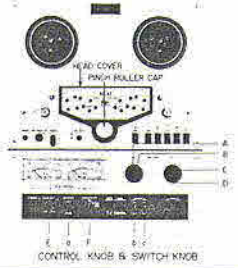

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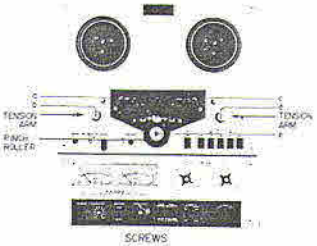

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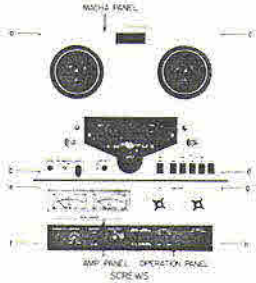

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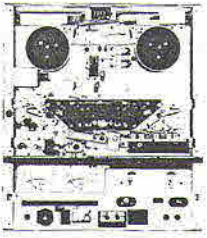
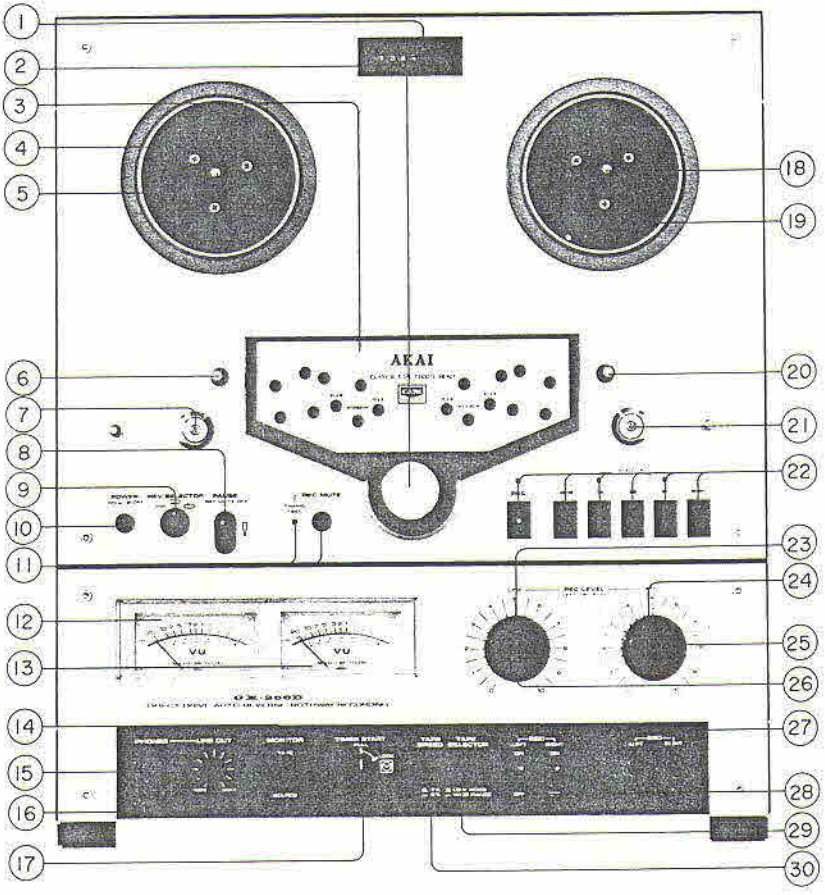
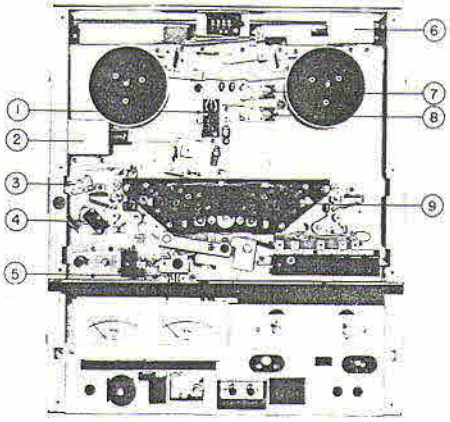


III . CONTROLS

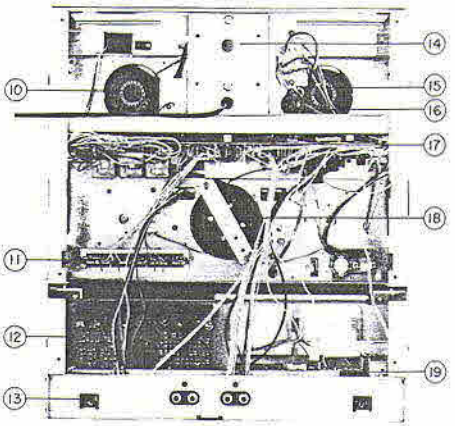


1. INDEX COUNTER AND RESET BUTTON
2. PINCH ROLLER
3. HEAD COVER
4. SUPPLY REEL TABLE
5. REEL RETAINER
6. TAPE GUIDE (SENSING POLE: FORWARD→REVERSE)
7. TENSION ARM
8. PAUSE LEVER (PAUSE)/REC MUTE OFF
9. REVERSE SELECTOR (REV SELECTOR)
10. POWER SWITCH (POWER)
11. RECORDING MUTE SWITCH/TIMING LAMP
12. VU METER (FOR LEFT CHANNEL)
13. VU METER (FOR RIGHT CHANNEL)
14. MONITOR SWITCH (MONITOR)
15. HEADPHONE JACK (PHONES)
16. LINE OUTPUT/HEADPHONE OUTPUT CONTROLS (LINE OUT-PHONES)
17. TIMER START SWITCH (TIMER START)
18. REEL RETAINER
19. TAKE-UP REEL TABLE
20. TAPE GUIDE
21. TENSION ARM (SENSING POLE: REVERSE→FORWARD)
22. OPERATION BUTTONS
23. MEMORY MARKER (FOR LINE-IN)
24. MEMORY MARKER (FOR MIC-IN)
25. MICROPHONE INPUT CONTROLS (REC LEVEL-MIC)
26. LINE INPUT CONTROLS (REC LEVEL-LINE)
27. MICROPHONE JACK (MIC)
28. RECORDING LEVER (REC)
29. TAPE SELECTOR
30. TAPE SPEED SELECTOR

IV. PRINCIPAL PARTS LOCATION



Front View



Rear View

1. PINCH ROLLER MICRO SWITCH SW-905
2. PINCH ROLLER PLUNGER SOLENOID SL-3
3. PAUSE MICRO SWITCH SW-903 & SW-907
4. TENSION MICRO SWITCH SW-904
5. MUTE SWITCH P.C BOARD NE-2228
6. BRAKE PLUNGER SOLENOID SL-901
7. BRAKE MICRO SWITCH SW-906
8. REEL MOTRO MICRO SWITCH SW-908
9. HEAD BLOCK
10. RIGHT REEL MOTOR 24XO-MR
11. OPERATION P.C BOARD NE-2239
12. MIC AMP P.C BOARD NE-5223
13. AMP P.C BOARD NE-5222
14. POWER TRANSFORMER NET-11
15. LEFT REEL MOTOR 24XO-MR
16. VOLTAGE SELECTOR
17. SYSTEM CONTROL P.C BOARD NE-1213
18. CAPSTAN MOTOR SCM2-24KJ
19. REV PLUNGER SOLENOID SL-902

V. MECHANISM ADJUSTMENT

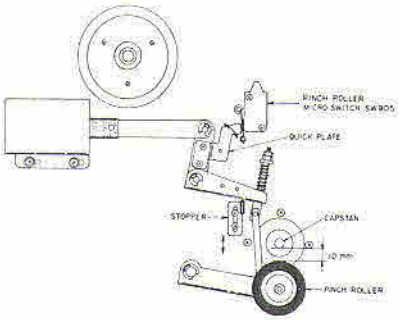


Fig. 1

1. PINCH ROLLER POSITION ADJUSTMENT AT STOP MODE (Refer to Fig. 1)

1) Remove head block.
2) Adjust Stopper so that the clearance between Pinch Roller and Capstan Shaft is 10mm.

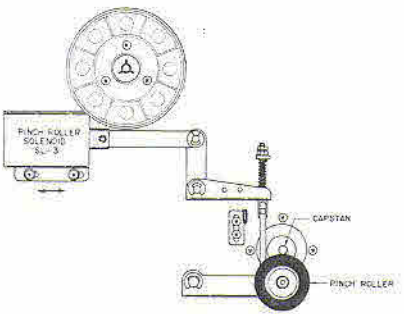


Fig. 2

2. POSITION ADJUSTMENT OF PINCH ROLLER SOLENOID SL-3 (Refer to Fig. 2)

1) Remove head block.
2) Insert a 4.2 mm gauge (a U type washer etc.) between the P Plunger Lever and P Joint (Refer to Fig. 3).
3) Set the deck to playback mode and fix Pinch Roller Solenoid at position at which the pinch Roller begins to rotate.

3. PINCH ROLLER PRESSURE ADJUSTMENT (Refer to Fig. 3)

Adjust Pinch Roller Pressure Adjustment Nut so that pinch roller pressure is 1.2 kg.

4. POSITION ADJUSTMENT OF QUICK PLATE (Refer to Fig. 1)

Adjust Quick Plate position so that at stop mode, the Pinch Roller Microswitch operates properly, and the Quick Plate does not strongly hit against the body of the microswitch.

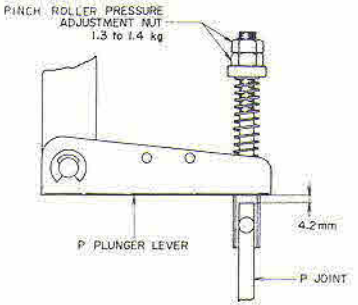


Fig. 3

5. POSITION ADJUSTMENT OF BRAKE SOLENOID SL-1 (Refer to Fig. 4)

Set the deck to playback mode, and fix Brake Solenoid at position at which the left and right brake levers display 180° angle relativity.

6. POSITION ADJUSTMENT OF BRAKE MICROSWITCH SW-906 (Refer to Fig. 4)

Set the deck to playback mode, and adjust Brake Solenoid Microswitch position so that the microswitch operates properly.

7. BRAKE TENSION ADJUSTMENT (Refer to Fig. 4)

Adjust Spring Stopper position so that the brake tension is 350 to 500g.

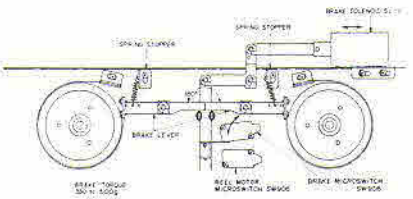


Fig. 4

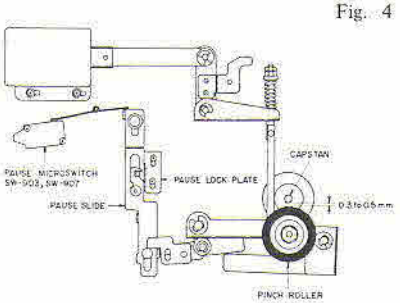


Fig. 5

8. PAUSE ADJUSTMENT (Refer to Fig. 5)

1) At playback mode, lock Pause Lever.
2) Adjust Pause Lock Plate position to obtain a 0.3 to 0.5 mm clearance between Pinch Roller and Capstan.
3) When making this adjustment, be careful that the clearance between Pinch Roller and Capstan does not exceed 0.5 mm.
4) Confirm that the Quick Tension Microswitch is pushed when the Pause Lever is depressed and if not, adjust with QT Lever B.

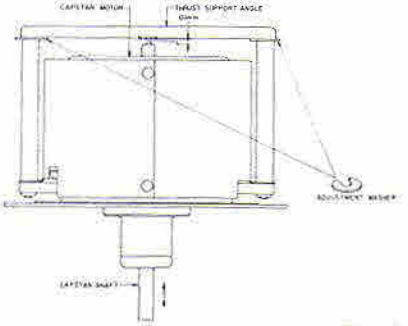


Fig. 6

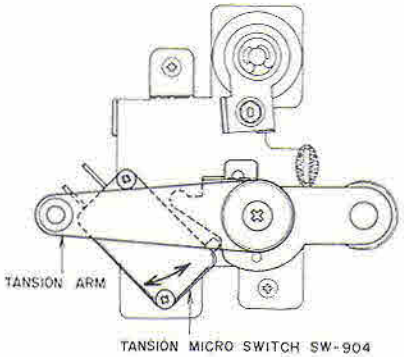


Fig. 7

9. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 6)

Adjust to obtain a clearance of ; "out 0.1 mm between the capstan shaft and thrust support angle.

10. OPERATING POSITION ADJUSTMENT OF TENSION MICROSWITCH SW-904 (Refer to Fig. 7)

Adjust Tension Microswitch position so that when the Tension Arm drops, the microswitch operates perfectly to effect stop mode.

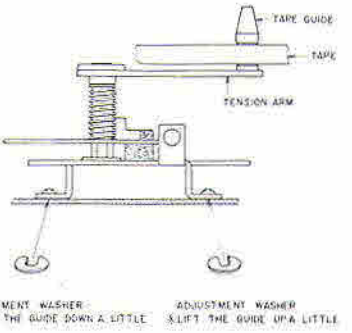


Fig. 8

11. TAPE GUIDE HEIGHT ADJUSTMENT (Refer to Fig. 8)

1) Adjust Tape Guide height so that the tape does not curl between tape guides on Head Base.
2) In case the tape guide is low, adjust by inserting a U Type Washer on the right side in Fig. 8, and in case it is high, adjust by inserting a washer on the left side.

12. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 9)

1) Load a tape and set the deck to F.FWD and REV modes. Adjust Reel Table height so that the tape winds on the center of the reels at both modes.
2) Tape should wind on center of reel regardless of type of reel used.

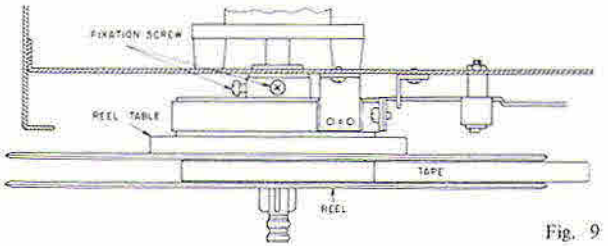


Fig. 9

VI. HEAD ADJUSTMENT

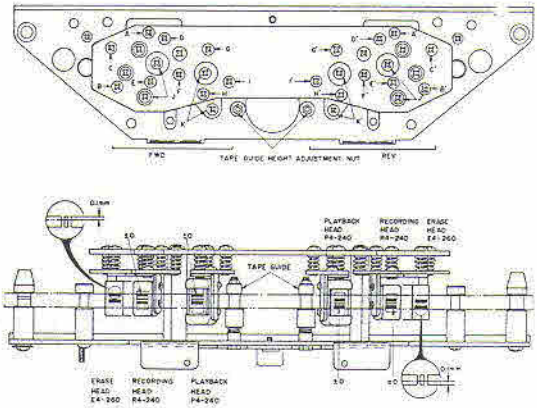


Fig. 10

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Tape Guide Height	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not twist. 2) Do not thread tape over tension arm.
2	FWD Erase Head Height	Optional	FWD	(A)(B)(C)	Upper edge of channel 1 head core is 0.1mm higher than upper edge of tape.
3	FWD Recording Head Height	Optional	FWD	(D)(E)(F)	Upper edges of channel 1 head core and tape are the same height.
4	FWD Playback Head Height	Optional	FWD	(G)(H)(I)	Upper edges of channel 1 head core and tape are the same height.
5	FWD Playback Head Azimuth Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(I)	Maximum output, both channels.
6	FWD Playback Head Gap Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(K)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
7	FWD Recording Head Azimuth Alignment	Scotch #211 Tape, 15,000 Hz −20 dBm	REC	(F)	Maximum output, both channels.
8	FWD Recording Head Gap Alignment	Scotch #211 Tape, 15,000 Hz −20 dBm	REC	(J)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.

Chart 1

NOTES:
1) As perfect head adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.
2) Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3) Use only new tape as level variation is likely to occur when using old tape.
4) Demagnetize heads with head demagnetizer before and after head adjustment.
5) Set tape speed to 7-1/2 ips except.
6) Adjustments outlined in Chart 1 are only for FWD side heads. However, adjustments for REV side heads are exactly the same.

VII . ELECTRICAL ADJUSTMENT

1. DC POWER SUPPLY AND TAPE SPEED ADJUSTMENT

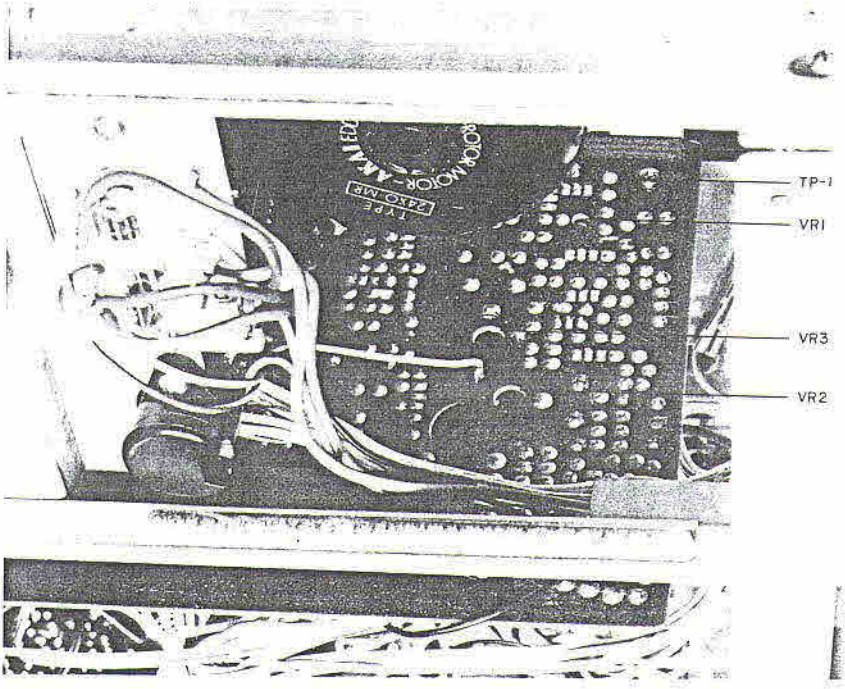


Fig. 11

VR–1 1 kB DC Voltage Adj.
VR–2 50 kB 3–3/4 ips Tape Speed Adj.
VR–3 10 kB 7–1/2 ips Tape Speed Adj.

Step	Adjustment Item	Mode	Adjustment Point	Result	Remarks
1	DC Voltage	Stop	VR-1 1 kB	24.0V	Measured at TP-1 on Sys. Con P.C Board
2	3-3/4 ips Tape Speed	FWD	VR-2 50 kB	500 Hz ±0.5%	1,000 Hz, 7-1/2 ips Test Tape. Tape Speed 3-3/4 ips.
3	7-1/2 ips Tape Speed	FWD	VR-3 10 kB	1,000 Hz ±0.5%	1,000 Hz, 7-1/2 ips Test Tape. Tape Speed 7-1/2 ips.

2. AMPLIFIER ADJUSTMENT

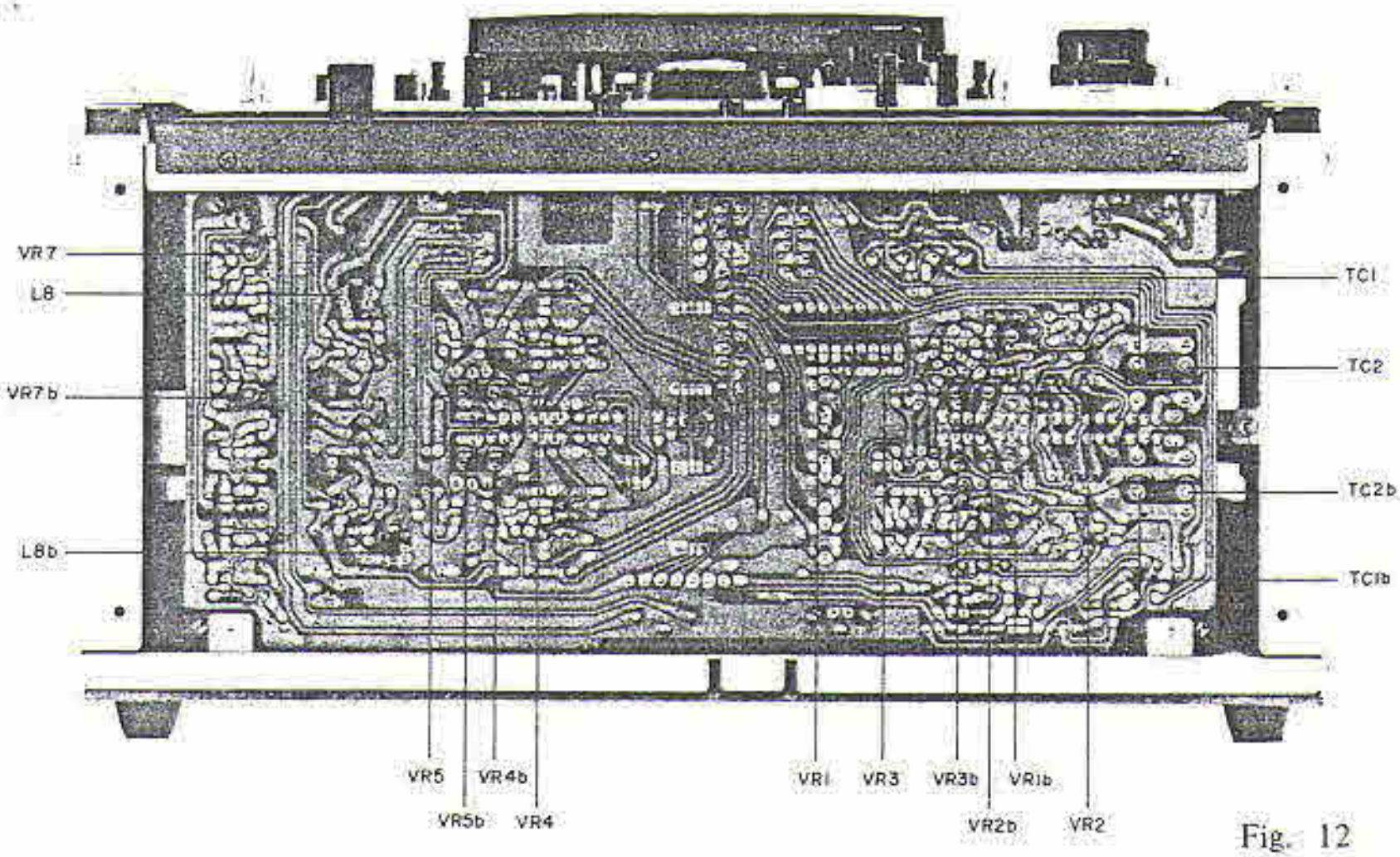


Fig. 12

VR–4	50 kB	FWD Playback Level Adj.
VR–5	50 kB	REV Playback Level Adj.
VR–7	1 kB	VU Meter Sensitivity Adj.
VR–1	1 kB	Monitor Level Adj.
VR–2	10 kB	FWD Recording Level Adj.
VR–3	10 kB	REV Recording Level Adj.
TC–2	80 PF	FWD Frequency Response Adj.
TC–1	80 PF	REV Frequency Response Adj.
L–8	23 mH	BIAS Leak Adj.

* The letter "b" following an adjustment part number indicates "RIGHT CHANNEL".

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Item	Result	Remarks
1	FWD Playback Level	700 Hz 7-1/2 ips 0 VU Test Tape	FWD	VR4 50 kB	0 ±0.5 dB (0.775V)	
2	REV Playback Level	700 Hz 7-1/2 ips 0 VU Test Tape	REV	VR5 50 kB	0 ±0.5 dB (0.775V)	
3	VU Meter Sensitivity	700 Hz 7-1/2 ips 0 VU Test Tape	FWD	VR7 1 kB	0 VU	
4	Monitor Level	1,000 Hz −21 dB (70 mV) Signal to Line Input	STOP	VR1 5 kB	0 dB (0 VU)	Line REC Volume maximum. Monitor Switch "SOURCE".
5	FWD Recording Level	Scotch #211 Tape 1,000 Hz 0 VU recording	FWD–REC	VR2 10 kB	0 ±0.5 dB (0.775V)	Monitor Switch "TAPE".
6	REV Recording Level	Scotch #211 Tape 1,000 Hz 0 VU recording	REV–REC	VR3 10 kB	0 ±0.5 dB (0.775V)	Monitor Switch "TAPE".
7	FWD Frequency Response	Scotch #211 Tape 1.5 kHz, 15 kHz −20 VU recording	FWD–REC	TC2 80 PF	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
8	REV Frequency Response	Scotch #211 Tape 1.5 kHz, 15 kHz −20 VU recording	REV–REC	TC1 80 PF	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
9	Bias Leak		REC	L8 23 mH	Less than −30 dB	Mic, Line Volume at Max.

Chart 3

NOTES:
1) Set tape speed to 7-1/2 ips except in Steps 7 and 8.
2) Tape Selector at "LOW NOISE"
3) Monitor Switch at "TAPE" except in Step 4.
4) Output Volume at maximum.
5) New test tape should be used.

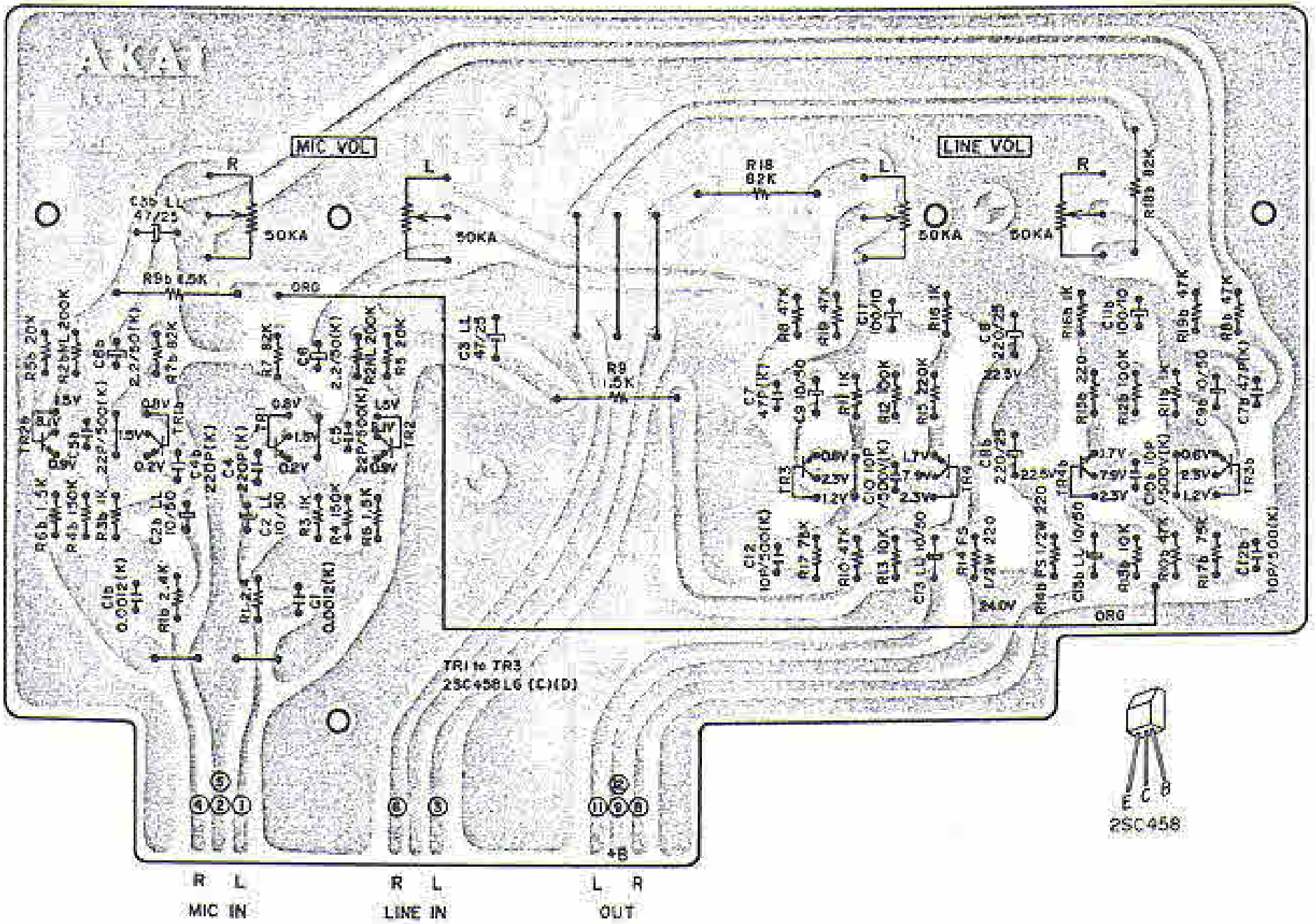
VIII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	SCM2–24KJ	Between BLU-RED: 100 ohms Between YLW-GRN: 180 ohms Pick-up Coil: 635 ohms
Reel Motor	24XO–MR	Between BLU-RED: 74 ohms Between YLW-GRN: 1,660 ohms
Pinch Roller Solenoid	1660PTHT3	700 ohms
Brake Solenoid, REV Solenoid	1240PHT	590 ohms
Relay	L-24	1,600 ohms
Relay	MY4-0-US-AD4 DC24V	650 ohms
Oscillator Coil	0T–204	Between 1–3: 0.3 ohms Between 4–6: 0.7 ohms Between 7–9: 8.2 ohms
Erase Head	E4–260	3.5 ohms
Recording Head	R4–240	6.2 ohms
Playback Head	P4–240	220 ohms

Chart 4

* The resistance values shown in this chart are average values.

3) MIC AMP P.C BOARD NE–5223



SECTION 2

PARTS LIST

TABLE OF CONTENTS

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.