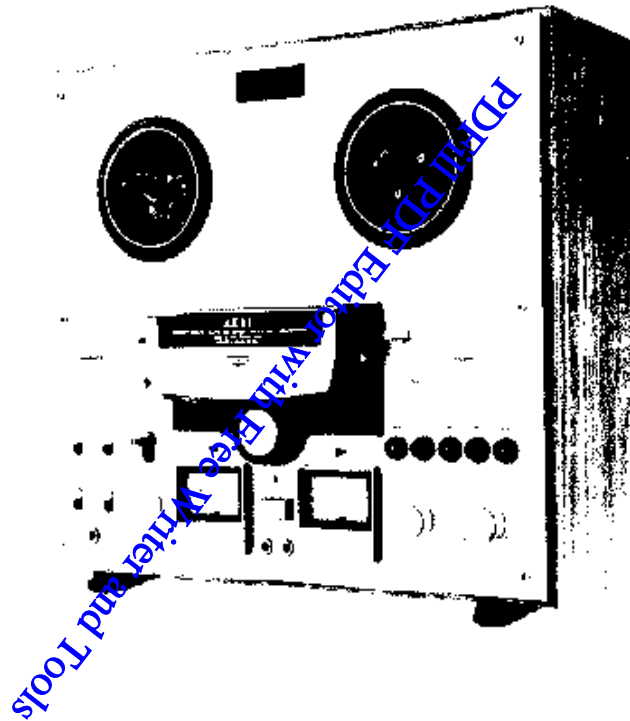


# Akai GX-265D Service Manual



## STEREO TAPE DECK

MODEL GX-265D

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# Akai GX-265D Service Manual



## SECTION I SERVICE MANUAL

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For basic adjustments, measuring methods, and operating procedures, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

# Akai GX-265D Service Manual



## I. SPECIFICATIONS

All dimensions to a figure indicates the minimum guaranteed performance.

TRACKING SYSTEM	4-track 2-channel stereo/monaural system	
TAPE SPEED	1 1/2 and 3 3/4 ips (3.81)	
SOUND OUTPUT	LINE	7.5 k ipa (2.5 cm/sec) 1.0%
	PHONO	Less than 0.005% W RMS at 7.42 ips Less than 0.005% W RMS at 3.34 ips
TOTAL SOUND FILTER	More than 0.1% RMS at 3.34 ips of W RMS More than 0.1% at 1.12 ips of W RMS	
FREQUENCY RESPONSE	LINE	20 to 21,000 Hz - 3 dB at 7.42 ips 20 to 19,000 Hz - 3 dB at 3.34 ips
	PHONO	20 to 21,000 Hz - 3 dB at 7.42 ips 20 to 19,000 Hz - 3 dB at 3.34 ips
HARMONIC DISTORTION	Less than 0.5%	
OUTPUT HARMONIC DISTORTION	*Less than 3.0% at 7.42 ips *Less than 2.0% at 3.34 ips	
SIGNAL TO NOISE RATIO	*Better than 40 dB	
TOTAL SIGNAL TO NOISE RATIO	*Better than 40 dB	
OUTPUT	LINE	20,000 mV, 50 ohm, 100 ohm, 1.5 ohm, FWD/REV
	PHONO	30,000 mV
	*Also back on a 700 Hz 100 VU pre-recorded test tape.	
INPUT	PHONO	Output Voltage at maximum More than 25 mV/5 k ohm
	LINE	More than 70 mV/150 k ohm
	BIAS	More than 3 mV
RECORDING/PLAYBACK LEVEL	At 7.42 ips output (Recording Voltage at maximum) 20,000 mV at 1.5 dB FWD/REV deviation: -1.5 dB	
CROSS TALK	Better than 40 dB Stereo Better than 55 dB monaural	
FRASE RATIO	Better than 10 dB	
BIAS FREQUENCY	443 Hz (±5%)	
BIAS LEAK	Better than 40 dB	
BROAD FREQUENCY DEVIATION	Between FWD playback channels: within 3 dB Between REV playback channels: within 4 dB Between FWD and REV: within 3.5 dB	
RECORDING TIME	At playback rate of 0.010 Hz 3.34 ips pre-recorded test tape at 3.42 ips	
FWD AND REV TIME	90 min. stereo recording at 3.34 ips using a 1,800 ft tape	
MOTOR	MAIN MOTOR	Approximately 120 sec at 50 Hz, using a 1,800 ft tape 2 speed AC w/ electronic motor Type: SCM2-2403-4 pulv Resolution: 615 rpm at 7.42 ips (19 cm/sec) 307 5 rpm at 3.34 ips (9.5 cm/sec)
	REF MOTOR	Low in pulse only current motor type Type: 2420-6H Resolution: 930 rpm at 50 Hz 1,120 rpm at 60 Hz

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HEAD	RECORDING/ERASE COMBINATION HEAD	Type: RE-40 Gap: REC HEAD: 4.0 microns ERASE HEAD: 0.0100 gap Impedance: REC HEAD: 1.4kΩ ohm (72 at 100 kHz) ERASE HEAD: 130 ohm (72 at 100 kHz) DC Resistance: REC HEAD: 5.5 ohm ERASE HEAD: 1.6 ohm
	PLAYBACK HEAD	Type: P6-202 Gap: 1.7 ± 0.5 microns Impedance: 1.4kΩ ohm (47 at 1 kHz) DC Resistance: 268 ohm
REVERSING TIME		5 to 6 sec. at 7-1/2 ips (maximum microfilm)
TRANSISTOR		7SA564Q(R) ... 7 2SC4591(G) ... 1 2SC9451(F) ... 1 2SC9451(G) ... 1
DIODE		1N34A ... 6 1N4004 ... 4 1N4003 ... 1 1S158 ... 1 1S247 ... 1
POWER REQUIREMENTS AND CONSUMPTION		120V AC 50/60 Hz, 90W (Universal models) 120V AC 50 Hz, 90W (HSI Models) 120V AC 50 Hz, 90W (CEE Models) 120V AC 60 Hz, 90W (CSA Models) 100V AC 50/60 Hz, 60/65W (JPN Models)
DIMENSIONS		440W x 160D x 200H (mm) 17 3/8" x 6 3/8" x 7 7/8" (in)
WEIGHT		1.6 kg (3.5 lbs)

- NOTE: 1. Specifications determined with SCOTCH-211 tape unless otherwise noted.  
2. Specifications subject to change without notice.

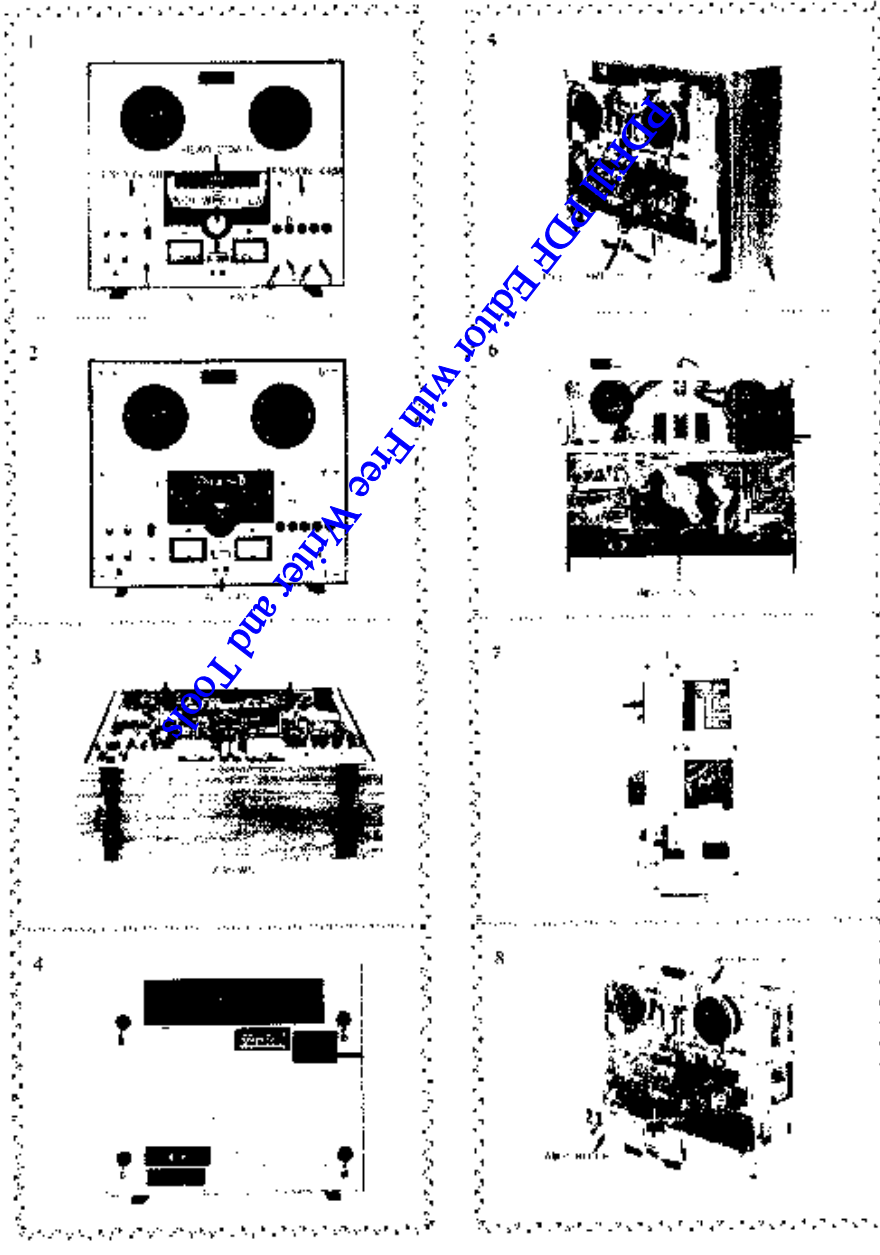
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## II. DISMANTLING OF UNIT

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





# Akai GX-265D Service Manual



## IV. MECHANISM ADJUSTMENT

REC. MICRO SWITCH  
SW-5

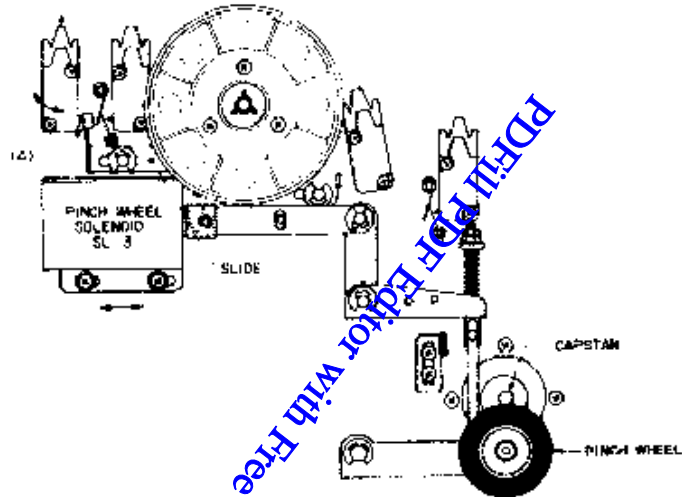


Fig. 1

PINCH WHEEL PRESSURE  
ADJUSTMENT NUT  
1.3 to 1.4 kg

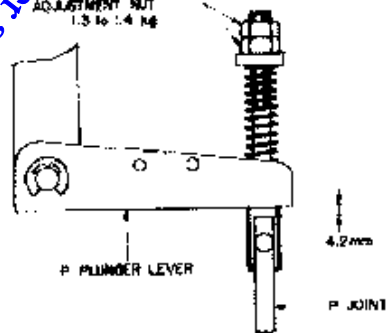


Fig. 2

# Akai GX-265D Service Manual

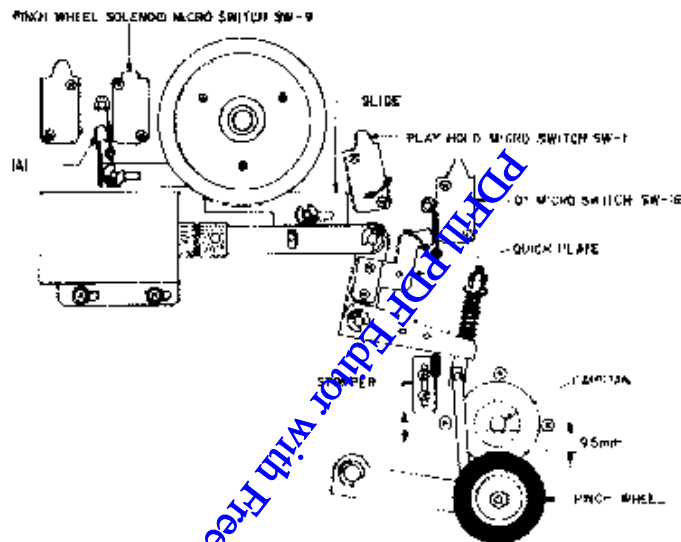


Fig. 7

## 1. POSITION ADJUSTMENT OF PINCH WHEEL SOLENOID SW-9 (Refer to Fig. 1)

- 1) Remove head block.
- 2) Insert a 4.7 mm (No. 14) U type washer steel between the P Pinch Lever and P Joint (Refer to Fig. 2).
- 3) Set the tape to playback mode and fix Pinch Wheel Solenoid at position at which the pinch wheel begins to rotate.

## 2. PINCH WHEEL POSITION ADJUSTMENT AT STOP MODE (Refer to Fig. 3)

- 1) Remove head block.
- 2) Adjust Stopper so that the clearance between Pinch Wheel and Capstan Shaft is 9.5 mm.

## 3. PINCH WHEEL PRESSURE ADJUSTMENT (Refer to Fig. 2)

Adjust Pinch Wheel Pressure Adjustment Nut so that pinch wheel pressure is 1.3 to 1.4 kg.

## 4. POSITION ADJUSTMENT OF PLAY HOLD MICROSWITCH SW-11 (Refer to Fig. 3)

Adjust Play Hold Microswitch position so that at stop mode, the Play Hold Microswitch operates properly and the Slide does not contact the body of the microswitch.

## 5. SLIDE ADJUSTMENT (Refer to Fig. 3)

Adjust part (A) of the Slide so that at stop mode, the Pinch Wheel Solenoid Microswitch operates properly and part (A) does not strongly hit against the body of the microswitch.

## 6. POSITION ADJUSTMENT OF QUICK PLATE (Refer to Fig. 3)

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

## 7. POSITION ADJUSTMENT OF RECORDING MICROSWITCH SW-5 (Refer to Fig. 1)

Adjust part (A) of the Slide so that at playback mode, the Recording Microswitch operates properly, and part (A) does not contact the body of the microswitch.



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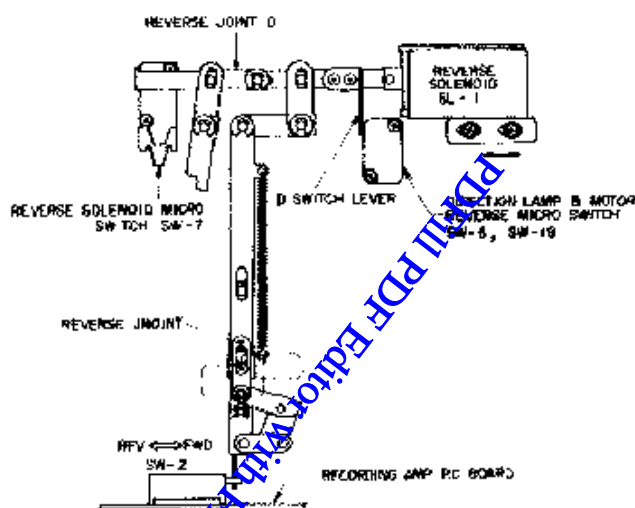


Fig. 6

## 8. POSITION ADJUSTMENT OF BRAKE SOLENOID SL-7 (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 relation.

## 9. POSITION ADJUSTMENT OF BRAKE SOLENOID MICROSWITCH SW-8 (Refer to Fig. 4)

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

## 10. BRAKE TENSION ADJUSTMENT (Refer to Fig. 4)

Adjust Spring Stuffer position so that the brake tension is 350 to 400g.

## 11. 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 Wheel and Capstan.
- 3) When making this adjustment, be careful that the clearance between Pinch Wheel 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.

## 12. POSITION ADJUSTMENT OF REVERSE SOLENOID SL-1 (Refer to Fig. 6)

- 1) Set the deck to reverse mode, and adjust Reverse Solenoid position so that Reverse Joint D activates the Reverse Solenoid Microswitch.
- 2) At this time, be careful that Reverse Joint D does not contact the body of the microswitch.

## 13. D SWITCH LEVER ADJUSTMENT (Refer to Fig. 6)

Set the deck to reverse mode, and adjust D Switch Lever so that the lever activates the Direction Indicator Lamp and Reel Motor Torque Conversion Microswitches.

## 14. INSTALLATION POSITION ADJUSTMENT OF REVERSE JOINT (Refer to Fig. 6)

Adjust Reverse Joint installation position so that when the deck is set to reverse mode, FWD → REV Slide Switch of Recording Amp PC Board (NE-5037) is completely depressed.

# Akai GX-265D Service Manual

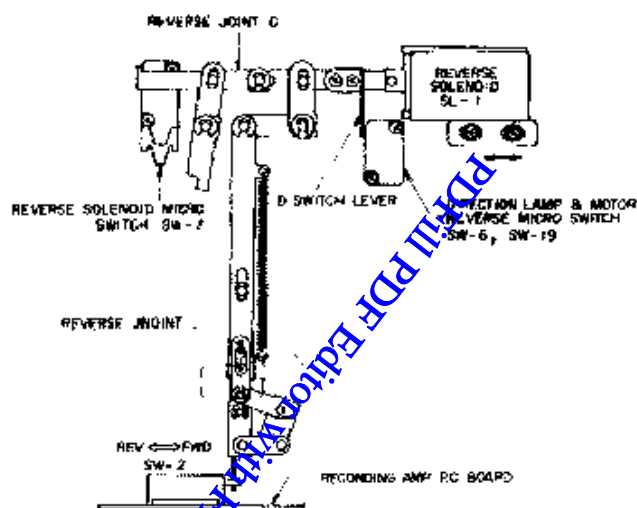


Fig. 5

## 8. 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 relatively.

## 9. POSITION ADJUSTMENT OF BRAKE SOLENOID MICROSWITCH SW-8 (Refer to Fig. 4)

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

## 10. BRAKE TENSION ADJUSTMENT (Refer to Fig. 4)

Adjust Spring Snapper position so that the brake tension is 350 to 400g.

## 11. 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 Wheel and Capstan.
- 3) When making this adjustment, be careful that the clearance between Pinch Wheel 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 QJ Levers B.

## 12. POSITION ADJUSTMENT OF REVERSE SOLENOID SL-1 (Refer to Fig. 6)

- 1) Set the deck to reverse mode, and adjust Reverse Solenoid position so that Reverse Joint D activates the Reverse Solenoid Microswitch.
- 2) At this time, be careful that Reverse Joint D does not contact the body of the microswitch.

## 13. D SWITCH LEVER ADJUSTMENT (Refer to Fig. 6)

Set the deck to reverse mode, and adjust D Switch Lever so that the lever actuates the Direction Indicator Lamp and Reel Motor Torque Converter Microswitches.

## 14. INSTALLATION POSITION ADJUSTMENT OF REVERSE JOINT (Refer to Fig. 6)

Adjust Reverse Joint installation position so that when the deck is set to reverse mode, FWD ↔ REV Slide Switch of Recording Amp PC Board (NI 5037) is completely depressed.

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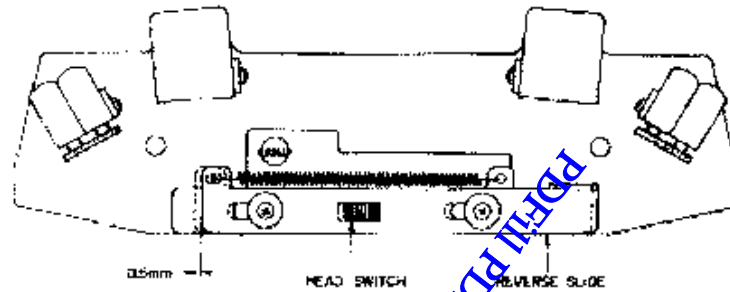


Fig. 7

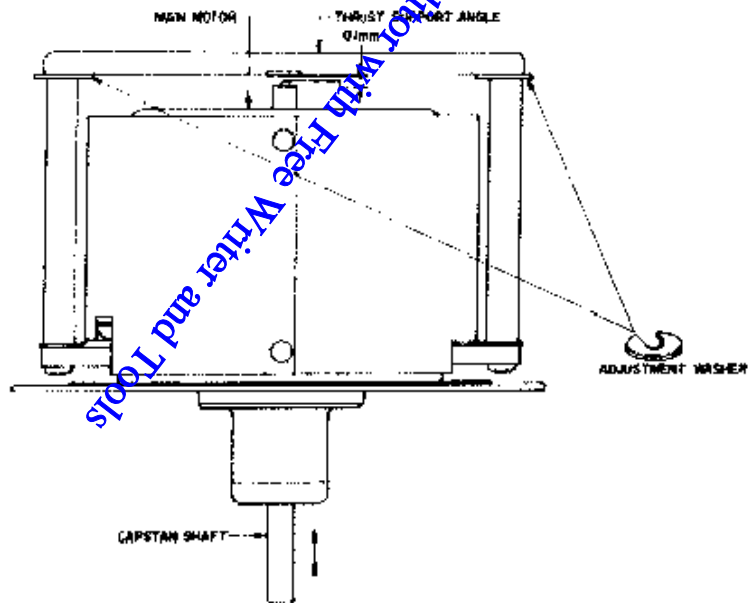


Fig. 8

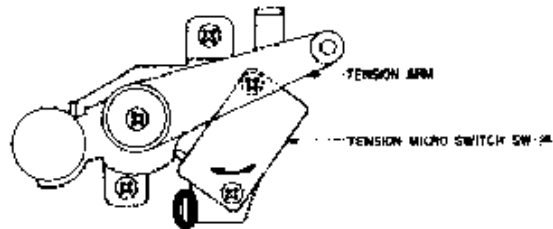


Fig. 9

# Akai GX-265D Service Manual

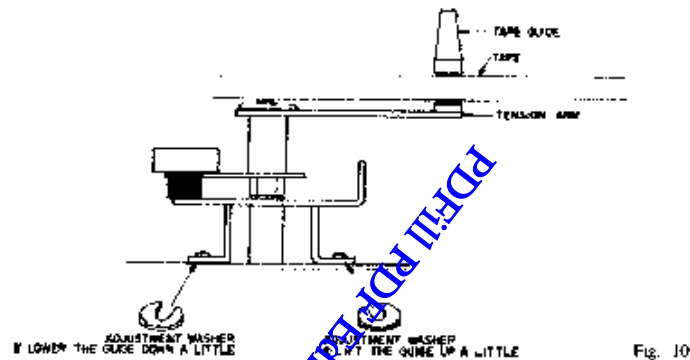


Fig. 10

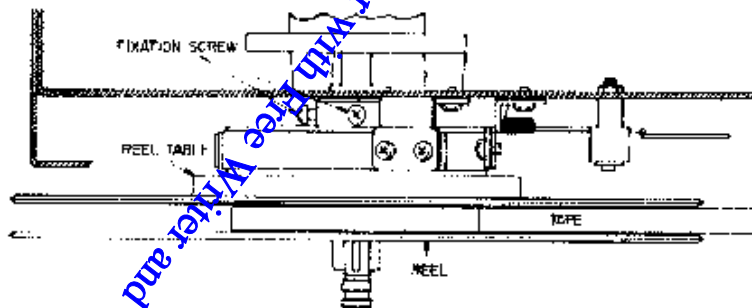


Fig. 11

## 15. INSTALLATION POSITION ADJUSTMENT OF HEAD SWITCH SW-3 (Refer to Figs. 7 and 12)

Adjust Head Switch installation position so that when the deck is set to reverse mode, the head switch which is mounted on the head block switches to the reverse side and that the reverse slide trips it about 0.5 mm.

## 16. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 8)

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

## 17. OPERATING POSITION ADJUSTMENT OF TENSION MICROSWITCH SW-14 (Refer to Fig. 9)

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

## 18. TAPE GUIDE HEIGHT ADJUSTMENT (Refer to Fig. 10)

- 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. 10, and in case it is high, adjust by inserting a washer on the left side.

## 19. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 11)

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

# Akai GX-265D Service Manual



## V. HEAD ADJUSTMENT

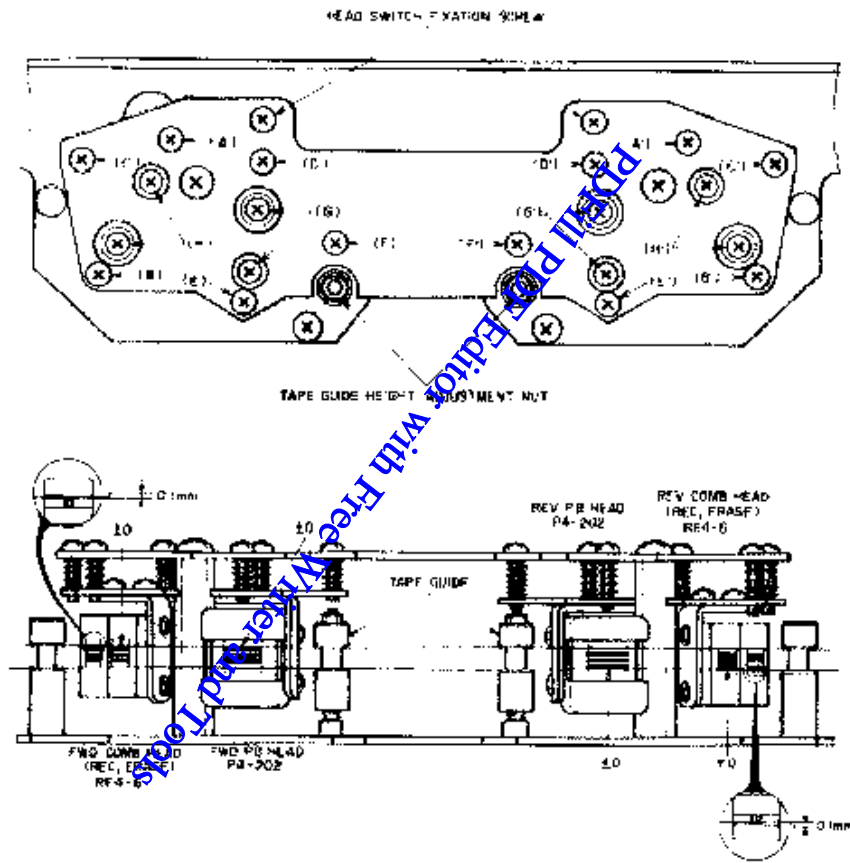


Fig. 12

# Akai GX-265D Service Manual



Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Tape Guide Height Adjustment	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not rattle. 2) Do not thread tape over tension arm.
2	FWD Comb Head Height Adjustment	Optional	FWD	(A) Pin	Upper edges of channel 1 head core and tape are the same height.
3	FWD Playback Head Height Adjustment	Optional	FWD	(B) Pin	Upper edges of channel 2 head core and tape are the same height.
4	FWD Playback Head Azimuth Alignment Adjustment	5,000 Hz 3/3/4 ips Test Tape	FWD	(F)	Maximum output, both channels.
5	FWD Playback Head Gap Alignment Adjustment	0,100 Hz 3/3/4 ips Test Tape	FWD	(G)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
6	FWD Comb Head Azimuth Alignment Adjustment	Scotch #111 Tape, 15,000 Hz - 20 dBm	REC	(C)	Maximum output, both channels.
7	FWD Comb Head Gap Alignment Adjustment	Scotch #111 Tape, 15,000 Hz - 20 dBm	REC	(H)	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 in steps 6 and 7.
  - 6) Adjustments outlined in Chart 1 are only for FWD side heads. However, adjustments for REC side heads are exactly the same.

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## VI. AMPLIFIER SYSTEM ADJUSTMENT

### 1. DC POWER SUPPLY VOLTAGE ADJUSTMENT (Refer to Fig. 13)



Fig. 13

### 2. TAPE SPEED ADJUSTMENT (Refer to Fig. 14)

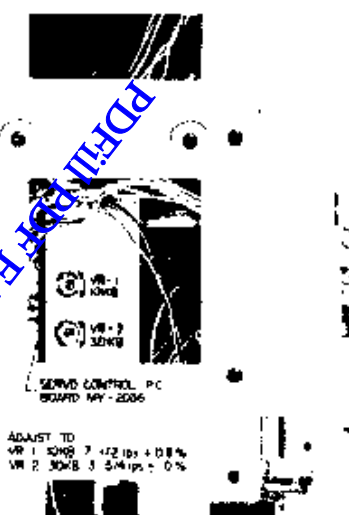


Fig. 14

### 3. RECORDING AND PLAYBACK AMPLIFIER ADJUSTMENT (Refer to Fig. 15)

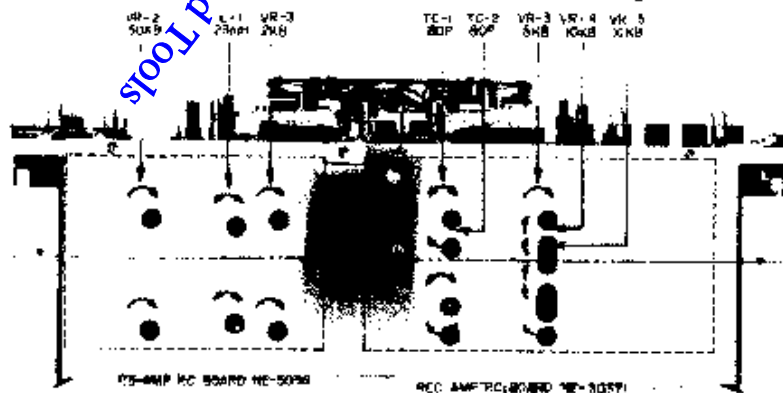


Fig. 15

# Akai GX-265D Service Manual



Step	Adjustment Item	Test Tape Supply Model	Mode	Adjustment Point	Result	Remarks
1	Playback Level Adjustment	700 Hz ± 1/2 ips 0 VU Test Tape	FWD	VR-2 50 kΩ	0 ± 1.0 dB 0L ± 0.5V	Volume: 4.5 dB at Reserve mode
2	VE Meter Sensitivity Adjustment	700 Hz ± 1/2 ips 0 VU Test Tape	FWD	VR-3 2 kΩ	1.0 V	
3	Monitor Level Adjustment	1,000 Hz -20 dBm	STOP	VR-5 5 kΩ	0.48m 10 VU	Use RTA Volume Maximum Monitor Switch "SOURCE"
4	FWD Recording Level Adjustment	Switch #211 Tape 1,000 Hz 0 VU recording	FWD RPL	VR-6 20 kΩ	0 ± 1.5 dB 0L ± 0.25V	Monitor Switch "TAPE"
5	RLV Recording Level Adjustment	Switch #211 Tape 1,000 Hz 0 VU recording	REV RPL	VR-4 50 kΩ	0 ± 1.5 dB 0L ± 0.25V	Monitor Switch "TAPE"
6	FWD Frequency Response Adjustment	Switch #211 Tape 1,000 Hz 10,000 Hz ±20 VU recording	FWD RPL	PC-2 R0P	1,000 Hz 10,000 Hz flat	Tape Speed: 1.5 x 1.5" Reverse Recording Level
7	RLV Frequency Response Adjustment	Switch #211 Tape 1,000 Hz 10,000 Hz ±20 VU recording	REV RPL	H-1 R0P	1,000 Hz 10,000 Hz 6dB	Tape Speed: 1.5 x 1.5" Reverse Recording Level
8	Bias Leak Adjustment		REV	L-1 20 mH	Less than -10 dB	

Chart 2

- NOTES: 1) Set tape speed to 1/2 ips except in Steps 6 and 7.  
 2) Tape Selection at "F0W NOISE"  
 3) Monitor Switch at "TAPE" except in Step 3.  
 4) Output Volume at maximum  
 5) New test tape should be used.  
 6) Adjustment of step 8 made from the face side of Playback Amp P.C. Board.  
 7) The letter b following an adjustment part number indicates "Right Channel".

# Akai GX-265D Service Manual



## VII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	SCM124KI	Between BLU-RED: 100 ohm Between YLW-GRN: 190 ohm Pick-up Coil: 635 ohm
Reel Motor	21X03MR	Between BLU-RED: 74 ohm Between YLW-GRN: 1,660 ohm
Pinch Wheel Solenoid	1660 P11F3	700 ohm
Brake Solenoid	1240 P11F	500 ohm
Reverse Solenoid	1240 P11F1	370 ohm $\pm 10\%$
Reverse Rotas	MY4413-AHS-1874Y	650 ohm
Headphone Output Transformer	TA-535S	Primary: 565 ohm $\pm 15\%$ Secondary: 0.95 ohm $\pm 15\%$
Oscillator Coil	OT-204	Between 1-3: 0.3 ohm Between 4-6: 0.7 ohm Between 7-9: 8.2 ohm
Playback Head	P4-202	208 ohm
Recording/Erase Combination Head	HP-4.6	Recording: 5.5 ohm Erase: 1.8 ohm

Chart 3

NOTE: The resistance values shown in this chart are average values.

# Akai GX-265D Service Manual



## VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

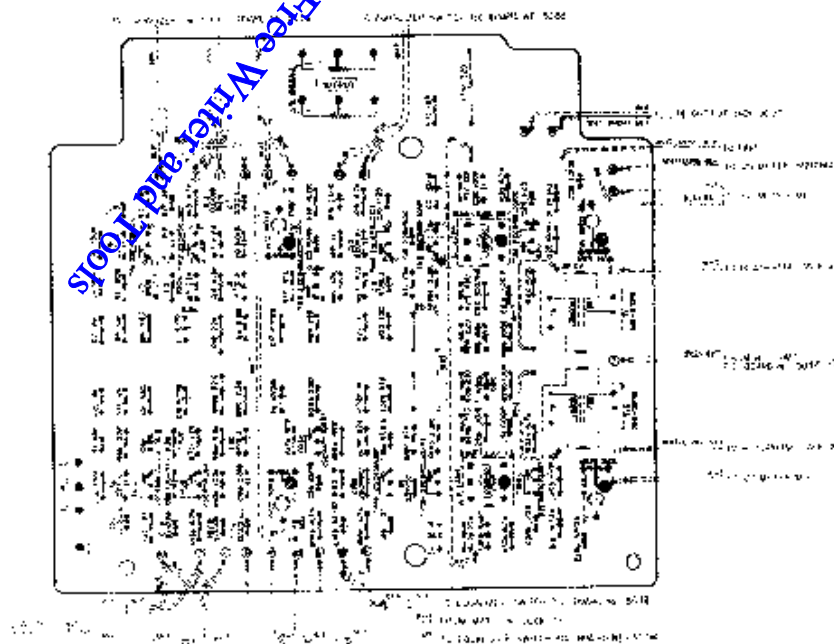
### 1. RELATION OF P.C BOARD TITLE AND NUMBER

P.C Board Title	P.C Board Number
Resistor P.C Board	NE-1046
Detection Indicator Lamp P.C Board	NE-1047
Power Supply P.C Board	NE-1048
SA P.C Board	NE-1034
Playback Amp P.C Board	NE-5036
Recording Amp P.C Board	NE-5037
Equalizer Switch P.C Board	NE-5038
Servo Control P.C Board	MY-2036
Transistor P.C Board	MY-2054

Chart 4

### 2. COMPOSITION OF VARIOUS P.C BOARDS

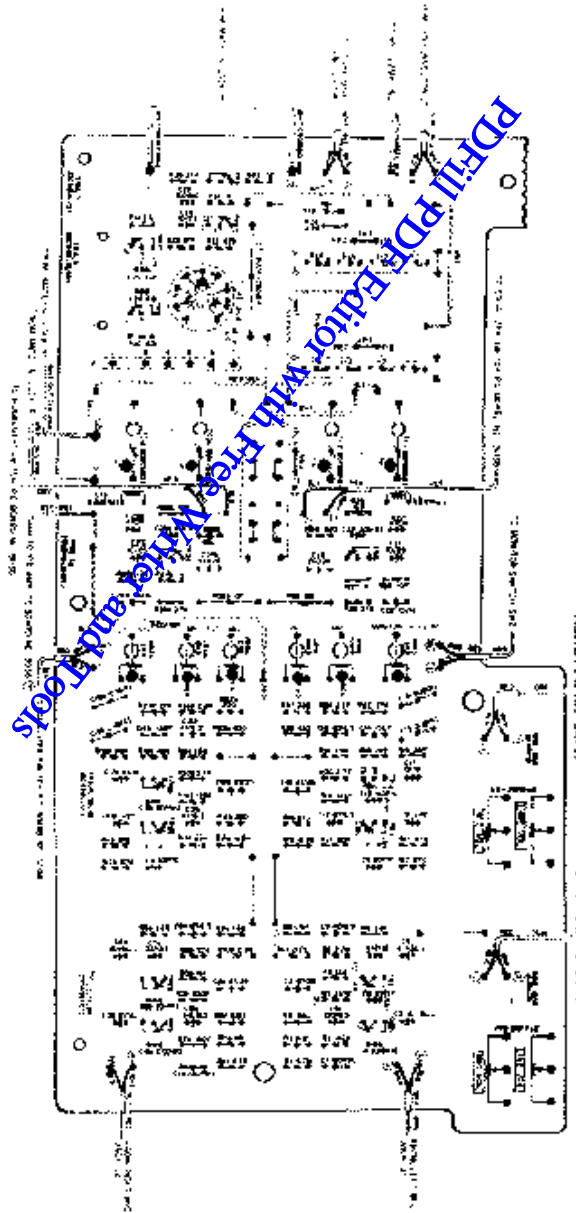
#### 1) P.B AMP P.C BOARD (NE-5036)



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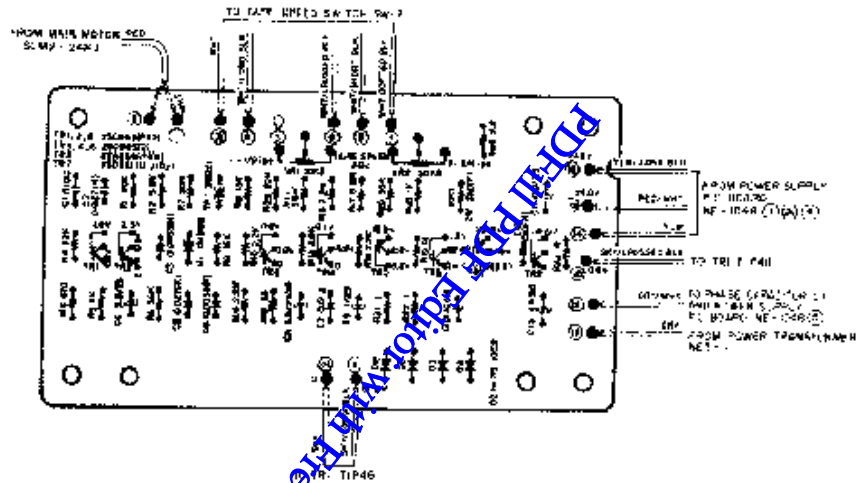
2) REC AMP PCB BOARD (NE-5037)



# Akai GX-265D Service Manual



## 3) SERVO CONTROL P.C BOARD (MY-2036)



## 4) POWER SUPPLY P.C BOARD (NE-1048)

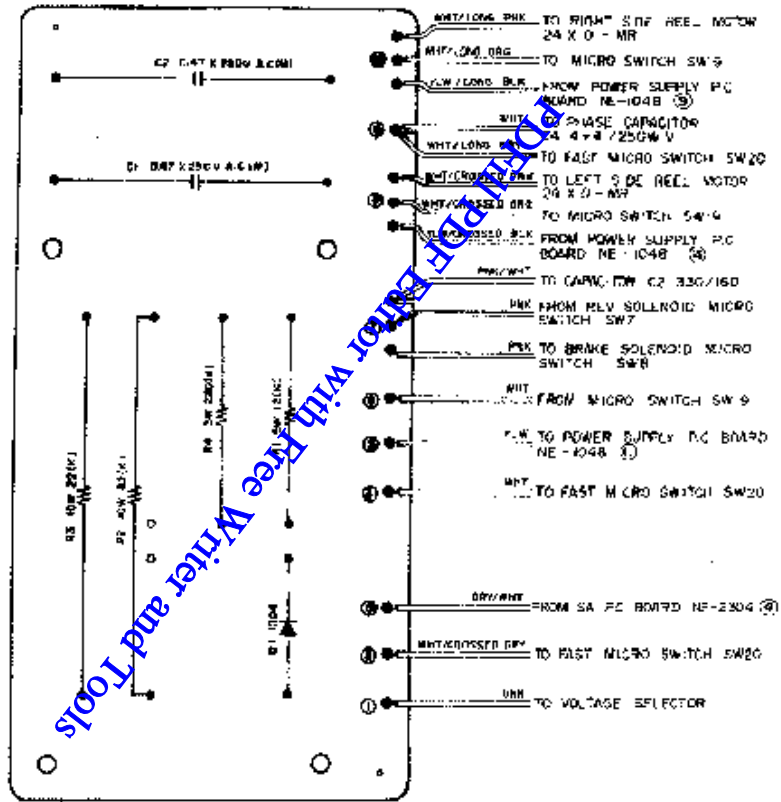




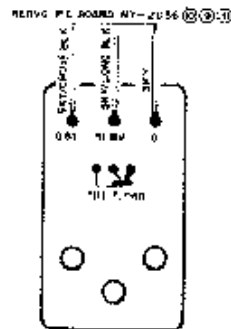
# Akai GX-265D Service Manual



## 6) RESISTOR P.C BOARD (NE-1046)



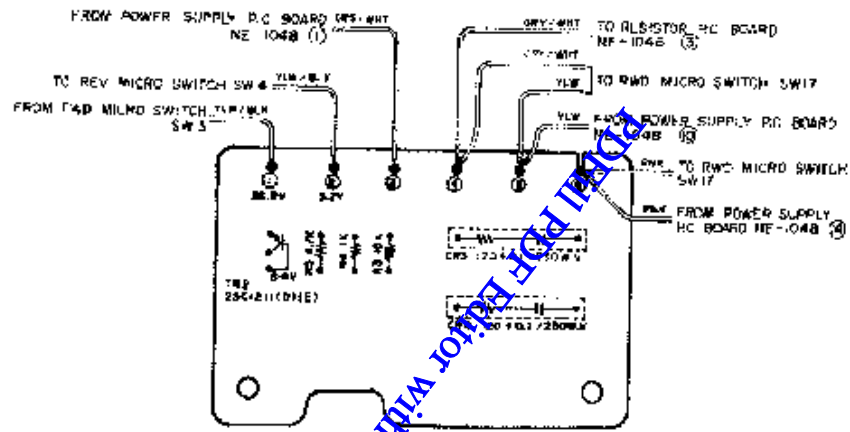
## 7) TRANSISTOR P.C BOARD (MY-2054)



# Akai GX-265D Service Manual



## 8) SA P.C. BOARD (NE-1044)



## 9) DIRECTION INDICATOR LAMP P.C. BOARD (NE-1047)

