

4000DS Mk-II
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SERVICE MANUAL PARTS LIST

AKAI STEREO TAPE DECK

MODEL **4000DS Mk-II**

THIS MANUAL MUST BE USED AS A SET TOGETHER WITH
SEPARATELY PUBLISHED 4000DS SERVICE MANUAL AND PARTS
LIST.

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SECTION 1 Except for the parts which have been changed as per List 1 below, the composite parts of Model 4000DS Mk-II are identical to those of Model 4000DS. Therefore, for general repairs and adjustments, etc., please refer to 4000DS Service Manual, and GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

I. SPECIFICATIONS

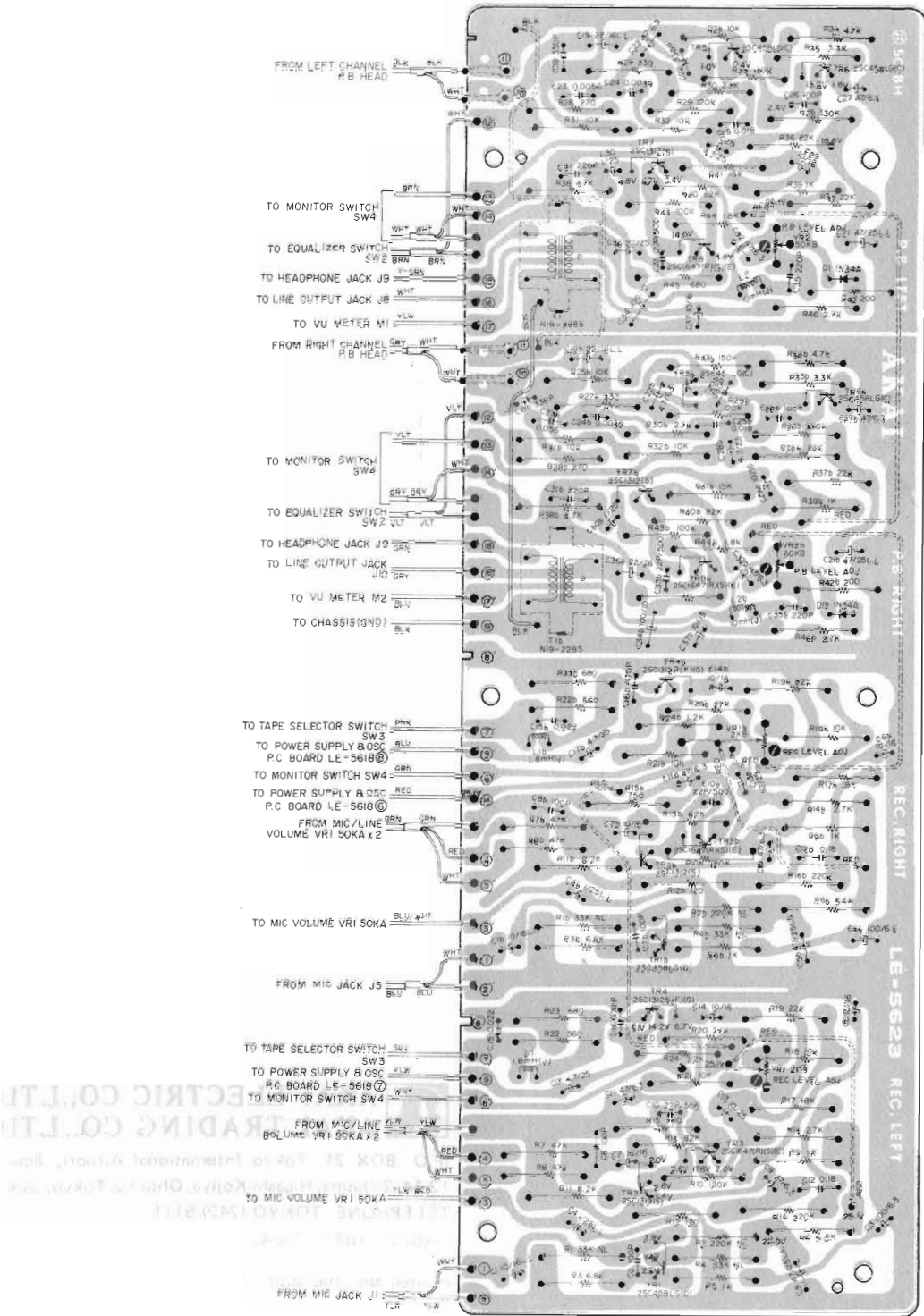
An asterisk next to a figure indicates the minimum guaranteed performance.

TAPE SPEED	7-1/2 and 3-3/4 ips ±2% *7-1/2 and 3-3/4 ips (19 and 9.5 cm/sec) ±3% (7-1/2 ips 1,000 Hz speed standard tape playback)	
WOW AND FLUTTER	Less than 0.12% WRMS at 7-1/2 ips *Less than 0.22% RMS at 7-1/2 ips Less than 0.15% WRMS at 3-3/4 ips *Less than 0.30% RMS at 3-3/4 ips (3,000 Hz wow standard tape playback)	
TOTAL WOW AND FLUTTER	Less than 0.28% at 7-1/2 and 3-3/4 ips	
FREQUENCY RESPONSE	LOW NOISE TAPE	30 to 23,000 Hz ±3 dB at 7-1/2 ips *40 to 20,000 Hz ±3 dB at 7-1/2 ips 30 to 16,000 Hz ±3 dB at 3-3/4 ips *40 to 15,000 Hz ±3 dB at 3-3/4 ips 40 to 21,000 Hz ±3 dB at 7-1/2 ips 40 to 16,000 Hz ±3 dB at 3-3/4 ips (Adjust 2 kHz and 20 kHz to same response. -20 VU recording, using a Scotch #211 tape.)
	WIDE RANGE TAPE	
TOTAL DISTORTION FACTOR	Less than 1.0% at 7-1/2 and 3-3/4 ips *Less than 2.0% at 7-1/2 and 3-3/4 ips (Scotch #211 tape, 1,000 Hz 0 VU recording and playback)	
LINE OUTPUT	0.775V (0 dBm ±1 dB) (7-1/2 ips 250 Hz 0 VU standard tape playback)	
RECORDING/PLAYBACK LEVEL	0.775V (0 dBm ±1.5 dB) (Scotch #211 tape 1,000 Hz 0 VU recording/playback)	
SIGNAL TO NOISE RATIO	Better than 50 dB at 7-1/2 ips Better than 48 dB at 3-3/4 ips	
TOTAL SIGNAL TO NOISE RATIO	Better than 44 dB	
CROSS TALK	STEREO	Better than 45 dB
	MONAURAL	Better than 60 dB
ERASE RATIO	Better than 70 dB	
BIAS FREQUENCY	105 kHz ±5%	
INPUT SENSITIVITY/IMPEDANCE	MIC	More than 0.8 mV/30 k ohm
	LINE	More than 70 mV/200 k ohm
	DIN	More than 7 mV/15 k ohm
BIAS LEAK	Less than -30 VU	
HIGH FREQUENCY DEVIATION	Within 2 dB (Playback of 3-3/4 ips 8,000 Hz Angle adjustment tape at 7-1/2 ips)	
RECORDING CAPACITY	90 minutes stereo recording using an 1,800 ft tape at 7-1/2 ips)	
F.FWD AND RWD TIME	4 min and 40 sec at 50 Hz (using 1,800 ft tape)	
MOTOR	4-pole induction motor Type: SSM-1 Revolutions: 1,500/1,800 rpm 50/60 Hz	
HEAD	ERASE HEAD	Type: E4-200 Gap: 0.6 mm Impedance: 200 ohm ±5% at 100 kHz DC Resistance: 2 ohm
	RECORDING HEAD	Type: R4-150 Gap: 8 micron Impedance: 95 ohm ±15% at 1 kHz DC Resistance: 14.7 ohm
	PLAYBACK HEAD	Type: P4-150 Gap: 1 micron Impedance: 1,050 ohm ±20% at 1 kHz DC Resistance: 94.5 ohm
TRANSISTOR	2SC458LG(C) ... 4 2SC1312R(F)(G) ... 2 2SC458LG(D) ... 2 2SC1647(R)(S)(E) ... 4 2SC1096(K)(L) ... 1 2SC1648(R)(S)(E) ... 4 2SC1247A(B)(V) ... 2	
DIODE	1N34A ... 2 10D05 ... 2	
ZENER DIODE	WZ240 ... 1	

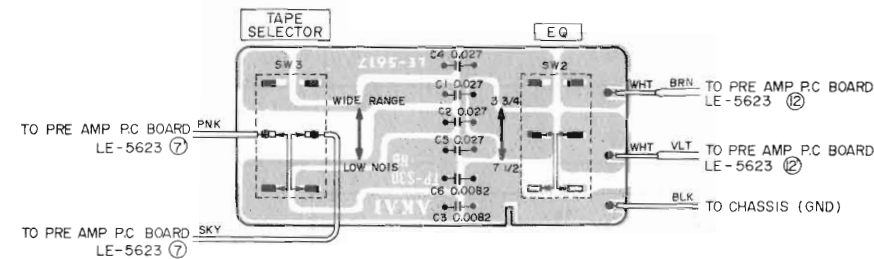
POWER REQUIREMENTS	JPN	100V AC 50/60 Hz
	CSA	120V AC 60 Hz
	CEE, VDE	220V AC 50 Hz
	BSI	240V AC 50 Hz
	UNIVERSAL	110 to 240V AC 50/60 Hz
POWER CONSUMPTION	40W	
DIMENSIONS	407(W) x 314(H) x 196(D) mm (16.2" x 12.6" x 7.8")	
WEIGHT	11.1 kg (24.4 lbs.)	

NOTE: Specifications subject to change without notice.

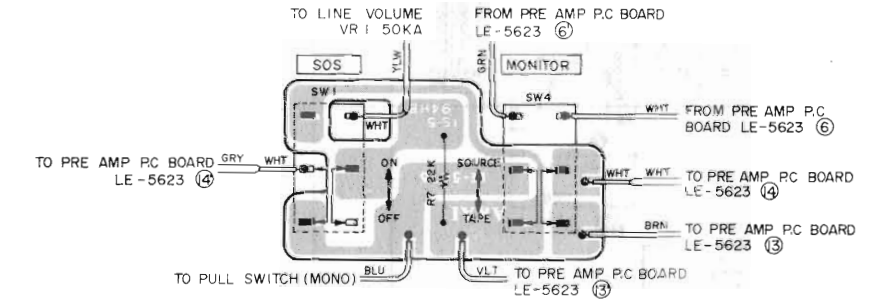
1. PRE AMP. P.C. BOARD LE-5623



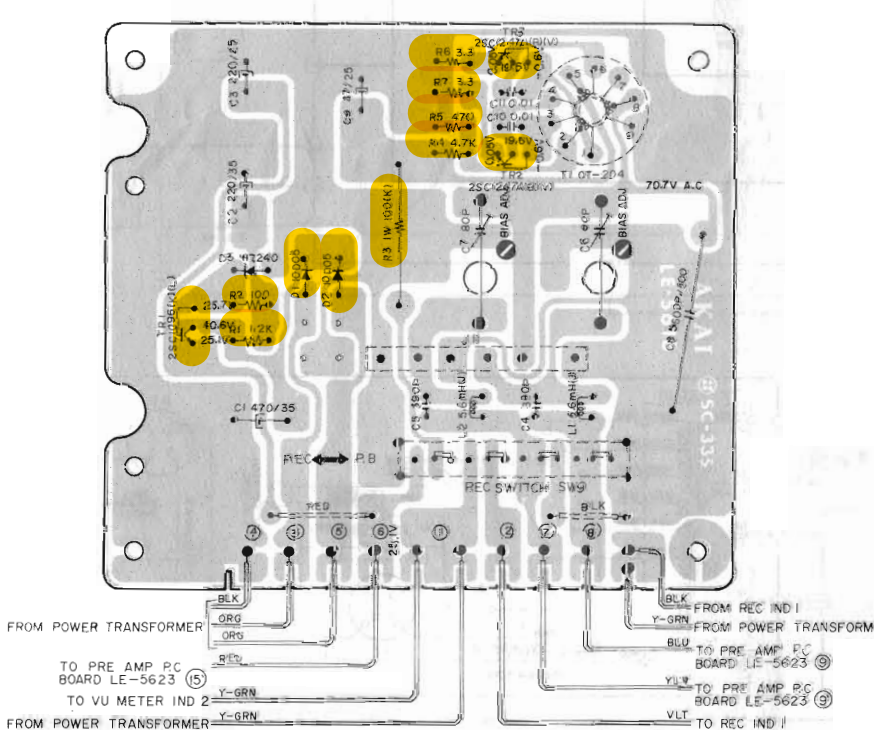
2. EQUALIZER P.C. BOARD LE-5617



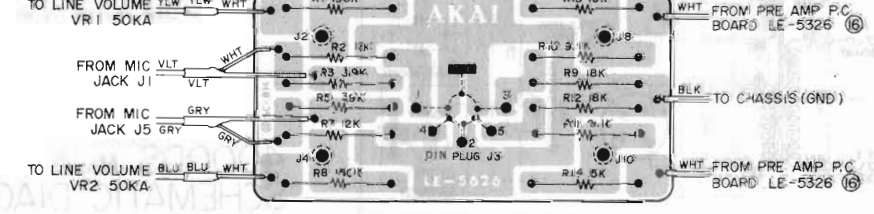
3. SWITCH P.C. BOARD LE-5616



4. POWER SUPPLY & OSC P.C. BOARD LE-5618



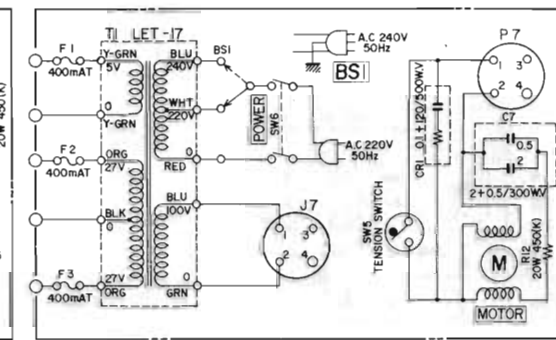
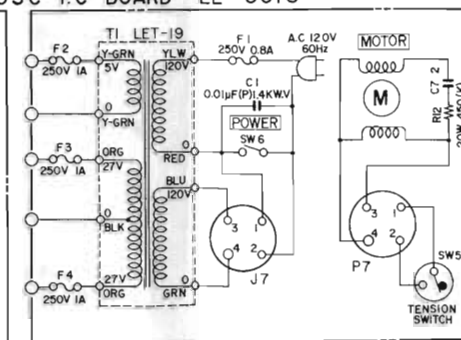
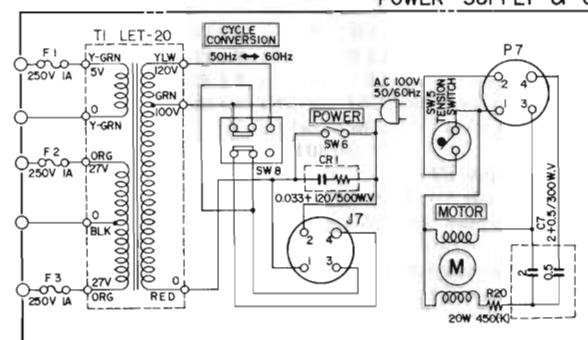
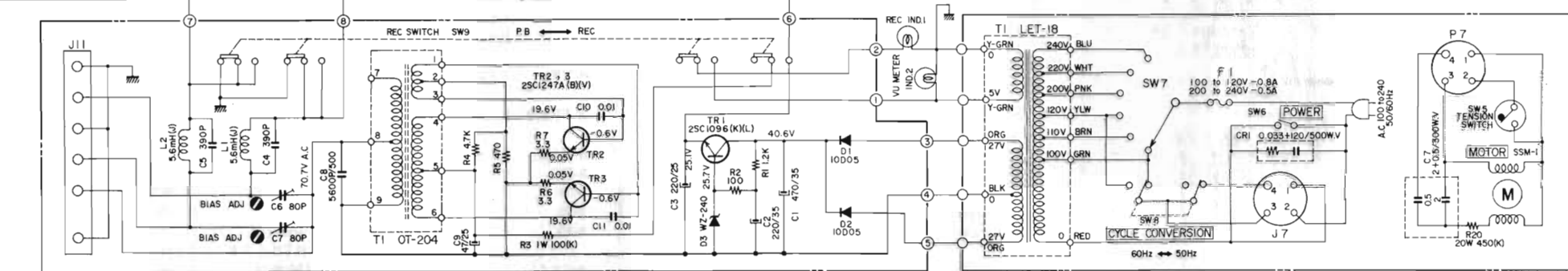
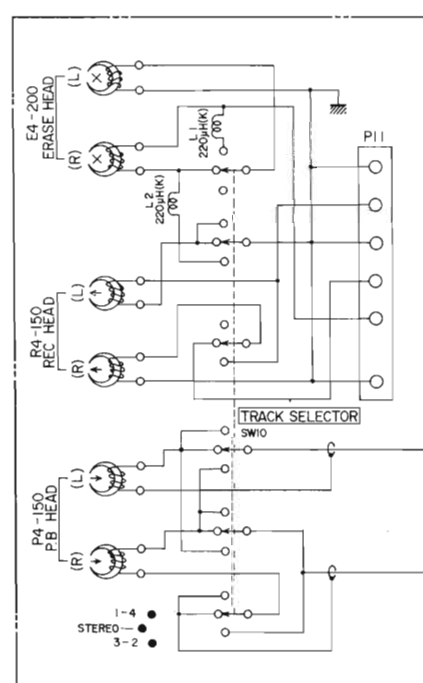
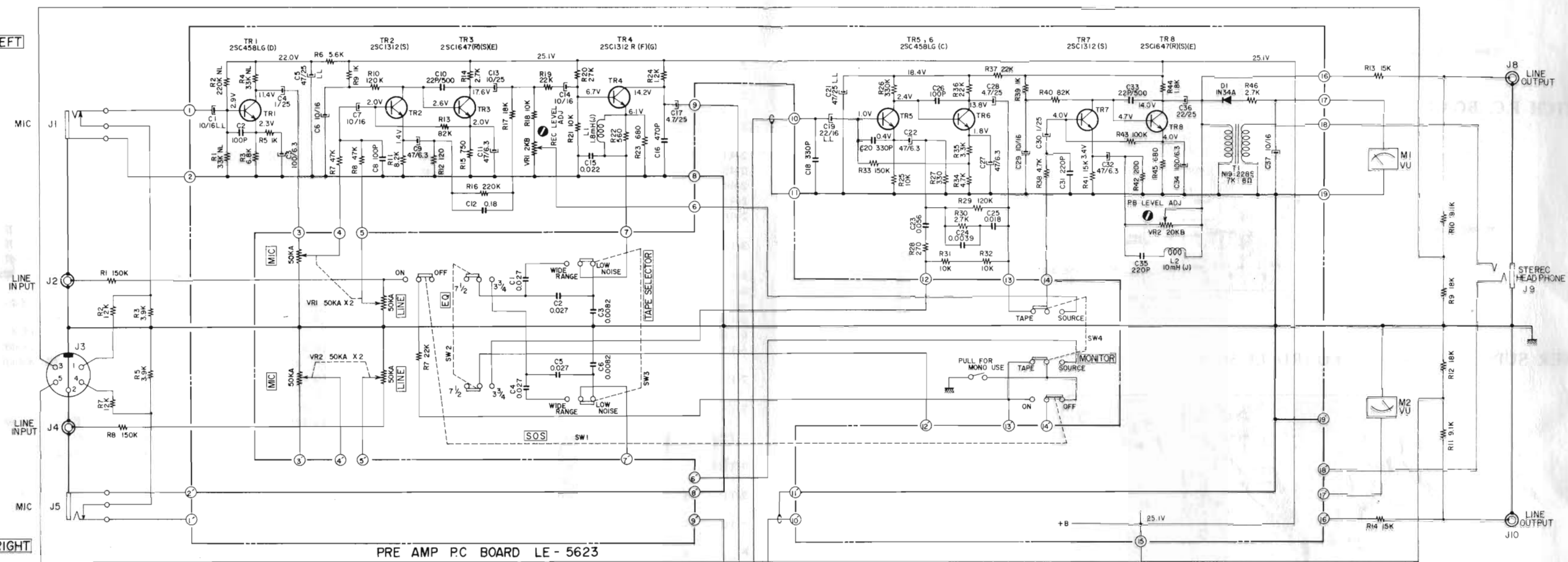
5. JACK PLATE P.C. BOARD LE-5626



SECTION 2 The composite parts of Model 4000DS-Mk-II, except for those which have been changes as per the list below, are identical to those of Model 4000DS. Therefore, when ordering parts for this tape deck, please utilize Model 4000DS Parts List.

Ref. No.	Parts No.	Description	Schematic No.	Q'ty	Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-1x	BH624383	Head Block Comp.	LE-6	1	9-126x	EF238634	Fuse 400MAT (T Type) (CEE)		3
1-46x	HZ393974	I-MK Head Terminal Plate	RC-89	1	9-127x	EF563651	Fuse 1A 250V (JPN)	39-1-50	3
2-1x	BR589206	Supply Reel Table Block Comp.	LE-3,4,6	1	9-128x	ZW273851	Earth Lug M4 (CEE)		1
2-2x	BR657180	Take-up Reel Table Block Comp.	LE-3,4,6	1	9-129x	EA615655	Fuse P.C. Board LE	LE-5312	1
2-7	ZG227553	Spring G-2 (L)	900-230	1	9-130x	EJ624036	2-through Jack	31-2-57	1
2-21	MT292386	Reel Metal Mt. Parts, XR, w/metal	XR-191	1	9-131x	EJ376604	Mic. Jack 3PMJ1	31-2-17	1
2-27	ZS434171	Set Screw, hexagon Socket 4x7 (cup/p.)		1	9-132x	MZ628290	REC. Slider	LE-5603	1
2-36	ZG434092	Spring F4-B	LP-2004	1	9-133x	ZG456186	Lock Lever Spring	CC-1119	1
2-38	MT228598	Set Sleeve B	CD-66	1	9-134x	BA628356	EQ. P.C. Board	LE-5617	1
2-39	ZS434160	Set Screw, hexagon Socket 3x3 (cup/p.)		1	9-135x	ES603696	Seesaw SW. 2C-2P (w/earth)	25-2-36	1
2-41	MT368684	Reel Table Disk A	XR-101	1	9-136x	ES603707	Seesaw SW. 2C-2P (w/earth)	25-2-37	1
2-43x	MT253420	Reel Retainer	3R-102	1	9-137x	ES603707	Seesaw SW. 2C-2P (w/earth)	25-2-37	2
2-44x	ZG255633	Reel Spring	3R-109	1	9-138x	EA628367	SW. P.C. Board	LE-5616	1
2-45x	MT255565	Reel Shaft Ring	XR-177	1	9-139x	EV480565	Double Vol. 10A 50Kx2	36-3-41	1
2-46x	ZW270088	'E' Ring 1.9M	6-1-9	1	9-140x	EV601134	Double Vol. (w/sw.) V24LSDS A50Kx2	36-12-7	1
3-1x	BM624407	Motor Block Comp.	LE-6	1	9-141x	EJ603145	Lamp Terminal Plate B	33-2-37	2
6-1x	BZ636996	Tape Guide Block Comp.	LE-6, 1722W/L	1	9-142x	EL591186	Lamp 6.3V 150MA	28-2-35	2
6-5	MV447491	Bearing 63R-1950ZZD52		1	9-143x	EM480778	VU Meter B-1914R	46-1-57	2
6-108	SB258478	REC. Button (Red)	900-167	1	9-144x	SE486865	Lamp Mask B	LE-5035	2
6-119	MC479968	Counter MP491-28	9-1-23	1	10-1x	BD588745	Mech. Panel Block Comp.	LE-3,6	1
6-116	ML628244	Idle Wheel C	LE-2604	1	10-3x	BD624240	Mech. Panel Block Comp. (CEE)	LE-6	1
6-126	SB485741	Start Button C	MIS-1002	1	10-4	SE578204	Mech. Panel A-1	LE-6001	1
7-1x	BA624418	Pre-Amp. P.C. Board Comp. (LE-5623A)	LE-6	1	10-10	SE330895	Counter Escutcheon, MR	MR-646	1
7-TR2	ET623722	Transistor 2SC1648(R)(S)(E)	45-1-178	2	10-11	BC624238	Case Block Comp.	LE-6	1
7-TR3	ET623733	Transistor 2SC1647(R)(S)(E)	45-1-179	2	10-32	SC695823	Head Cover	LE-6030	1
7-TR4	ET539987	Transistor 2SC1312(F)(G)	45-1-133	2	10-35	SK485551	Head Change Knob C	LE-6027	1
7-TR7	ET623722	Transistor 2SC1648(R)(S)(E)	45-1-178	2	10-48x	SP485730	Mech. Panel C (CEE)	LE-6001	1
7-TR8	ET623733	Transistor 2SC1647(R)(S)(E)	45-1-179	2	10-49x	ZS434160	Set Screw, hexagon socket 3x3 (cup/p.)		1
7-L1	EO380554	Ferrite Inductor FL7H 1.8 MH(J)	23-1-3	2					
7-VR1	EV561442	Semi-fixed/Vol. V10K8-4-2 (4US) 2 kΩ	36-10-254	2					
8-1x	BA624341	OSC. Power Supply P.C. Board Comp.	LE-5618	1					
8-TR1	ET453614	Transistor 2SC1096(L)(K)(Z Type)	45-1-109	1					
8-TR2,3	ET511920	Transistor 2SC1347A (B)(V)	45-1-131	2					
8-D1,2	ED494533	Silicon Diode 10D05	45-2-42	2					
8-D3	ED511918	Zener Diode WZ-249	45-6-38	1					
8-7x	EZ623413	Heat-sink Plate	LE-5619	1					
8-8x	ES494392	Slide SW. CL104B	25-3-79	1					
8-9x	EZ624071	Pin For V Connector, w/Case RTB-1.5-6	32-1-60	1					
8-C6,7	EC558202	Trimmer/C. TR-80A	24-2-26	2					
9-116x	BT624058	Power Trans. LET-48	38-4-318	1					
9-117x	BT624115	Power Trans. LET-17(CEE)	38-4-321	1					
9-118x	BT624126	Power Trans. LET-19(CSA)	38-4-322	1					
9-119x	BT624137	Power Trans. LET-20(JPN)	38-4-323	1					
9-120x	EJ233370	Socket (Volt. Selector) S-18C10	40-2-3	1					
9-121x	ES479485	Slide SW. S-1	25-3-66	1					
9-122x	ES641992	Slide SW. JE07 (JPN)	25-3-115	1					
9-123x	ES480557	Seesaw SW. TV-3 JA-07, w/Case hole	25-2-29	1					
9-124x	ES653534	Seesaw SW. JA-02 (CEE)	25-2-43	1					
9-125x	EF575932	Fuse 0.8A 250V	39-1-50	1					

LEFT



- NOTE 1. UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN Ω / $1/4W$ (J)
ALL CAPACITORS IN μF 50WV (J)
2. L.L. INDICATES LOW LEAKAGE CAPACITORS
3. N.L. INDICATES NOISELESS RESISTORS
4. POWER TRANSFORMER BLOCK AND MOTOR BLOCK
ARE DIFFERENT ACCORDING TO AREA

4000DS Mk-II
SCHEMATIC DIAGRAM
No. 1501422 A

IN BSI MODEL POWER VOLTAGE IS 240V
AND USING 3 CORE POWER CORD