

E R T SERVICE CHART1666

COMPACT, two-track, mains operated cassette tape recorders with automatic recording level control and all-transistor amplifiers.

Mains. 100, 127, 220, 245V AC, 50 or 60c/s.

Consumption. 15W approximately.

Transistors. TR1 BC109, TR2 BC109, TR3 BC108, TR4 BC108, TR5 AC188, TR6 AC187, TR7 AC126, TR8 AC127.

Diodes. D1, D2 automatic level control BA114, D3 level rectifier BA114, D4 metering rectifier BA114.

Inputs. SK1 Microphone; Pins 1/4 and 2, 0.25mV across 4.5Kohms. SK1 Radio (diode); Pins 1/4 and 2, 0.25mV across 4.5Kohms. SK1 Pickup; Pins 5/3 and 2, 100mV across 1.5Megohms.

Outputs. SK1 External amplifier; Pins 5/3 and 2, 1V across 18Kohms. SK2 External speaker; 1.8W, 8ohms impedance.

Output. 1.8W.

Speaker. 5in. dual cone, 8ohms impedance.

Frequency range. 60-10,000c/s \pm 6dB.

Signal/noise ratio. Better than 43dB.

Wow and Flutter. Less than 0.6 per cent peak-to-peak.

Tracks. Two track.

Tape speed. 1 $\frac{1}{2}$ in. per second.

Tape loading. Snap-in compact cassettes.

Tape width. 0.15in.

Playing time. 2 \times 30 minutes with C60 cassette.

Fast wind time. Less than 60 seconds with C60 cassette.

Tape position indicator. Three-digit, with push-button reset.

Microphone. Moving coil, cardioid response, 0.34mV/microbar at 1000c/s, 500ohms impedance.

Dimensions. 14 $\frac{1}{2}$ \times 8 \times 3 $\frac{1}{2}$ in.

Weight. 8lb. approximately.

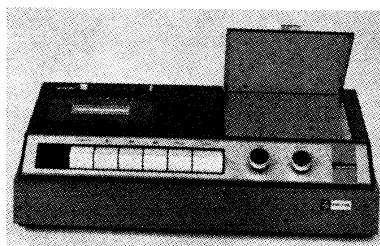
Manufacturer. Philips Electrical Ltd.

Service Department. Combined Electronic Services Ltd, Queensway, Waddon Factory Estate, Croydon, CR9 4DR. Tel: spare parts, 01-686 7311; service enquiries, 01-688 7722. After hours recorded messages on both lines.

DISMANTLING

Chassis removal. Pull off volume and tone control knobs and remove four screws from corners of cabinet base. Top section of case can now be lifted enough to allow unclipping of modulation meter from its aperture. Top section can now be withdrawn to extent of speaker leads.

To remove chassis and amplifier with-



Philips version of mains two-track cassette recorder in teak case with grey polystyrene top and base, piano-key push-button controls and adjustable sound deflector above speaker

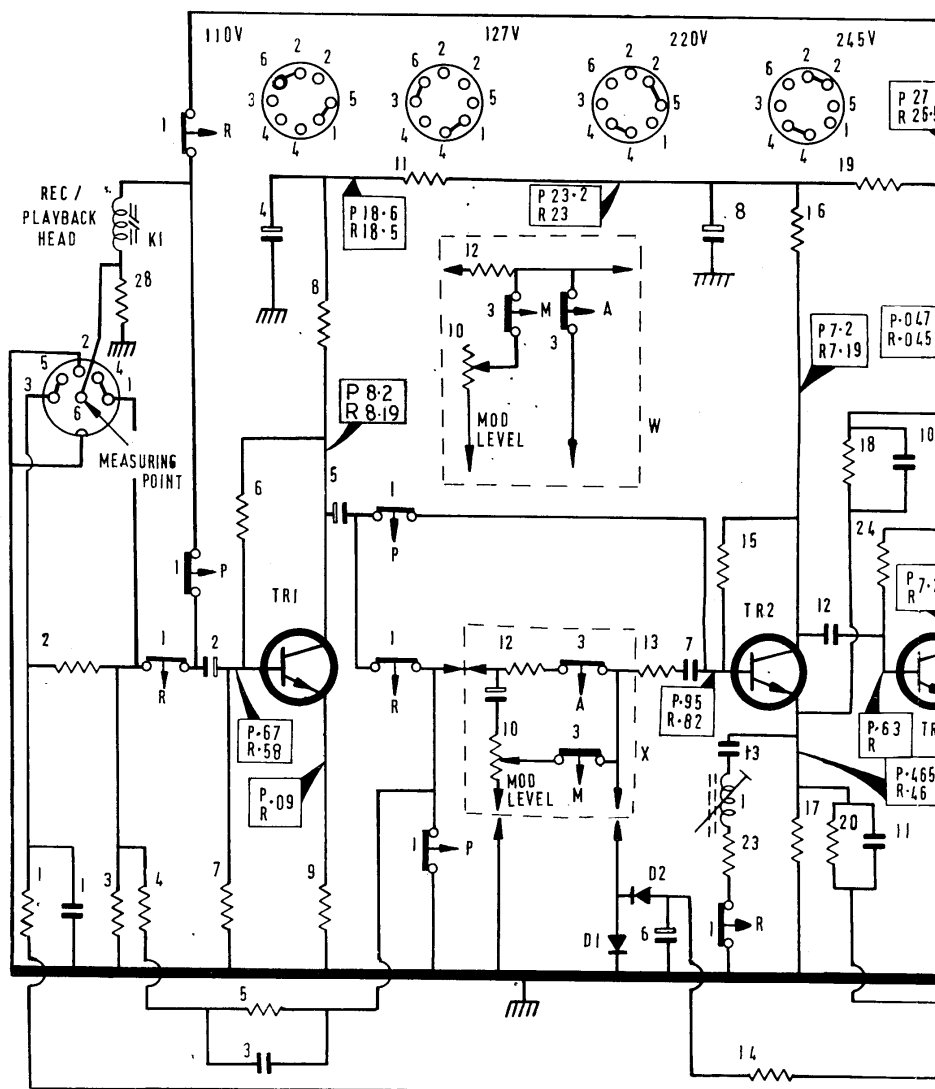
PHILIPS EL3310A STELLA ST9111A TAPE RECORDERS

Additional copies of this chart price 1s. 6d. post free. Payment with order please to E R T, 33-39 Bowling Green Lane, London EC1.

draw four screws from chassis corners. Take out two screws holding volume and tone control bracket and remove lead

compartment cover by taking out its two fixing screws. Complete chassis assembly may now be withdrawn.

R	1	2	3	28	4	7	6	5	8	9		11	10	12		13	15	23	14	16	17	20	18	24	19	21
C																										
L																										



Circuit diagram showing alternative recording supply circuit shown overleaf. Voltages wi

RESISTORS				CAPACITORS			
R1	18K	B3	R27	12K	B2	R53	220K
R2	1M or 1M5	A3	R28	47	A3	R201	33K
R3	18K	B3	R29	470	C	R202	100K
R4	22K	A/B3	R30	22K	A2	R203	47
R5	1M	B3	R31	5K6	C	R301	2K2
R6	910K	B3	R32	2K2	A2	R302	100
R7	100K	B3	R33	5K6	A1	R303	1K
R8	22K	B3	R34	1K5	A1		
R9	200	B3	R35	330	A2		
R10	22K	B3	R36	22K	A1		
R11	10K	B3	R37	2K2	B1		
R12	2K	B3	R38	3K3	A2		
R13	22K	B3	R39	1K	A1		
R14	10K	B2	R40	10K	A2		
R15	1M8	B3	R41	3K3	A1		
R16	7K5	B3	R42	270	B1		
R17	240	B3	R43	270	C7		
R18	82K	A3	R44	Thermistor	C8		
R19	1K6	B2	R45	30	C9		
R20	39K	B3	R46	68K	A1		
R21	100	B2	R47	2.2	B1		
R22	4.7	B2	R48	2.2	B1		
R23	910K	B2	R49	220K	B1		
R24	12K	A3	R50	15	B1/2		
R25	6K8	B2	R51	680K	A2		
			R52	3K3	B1		

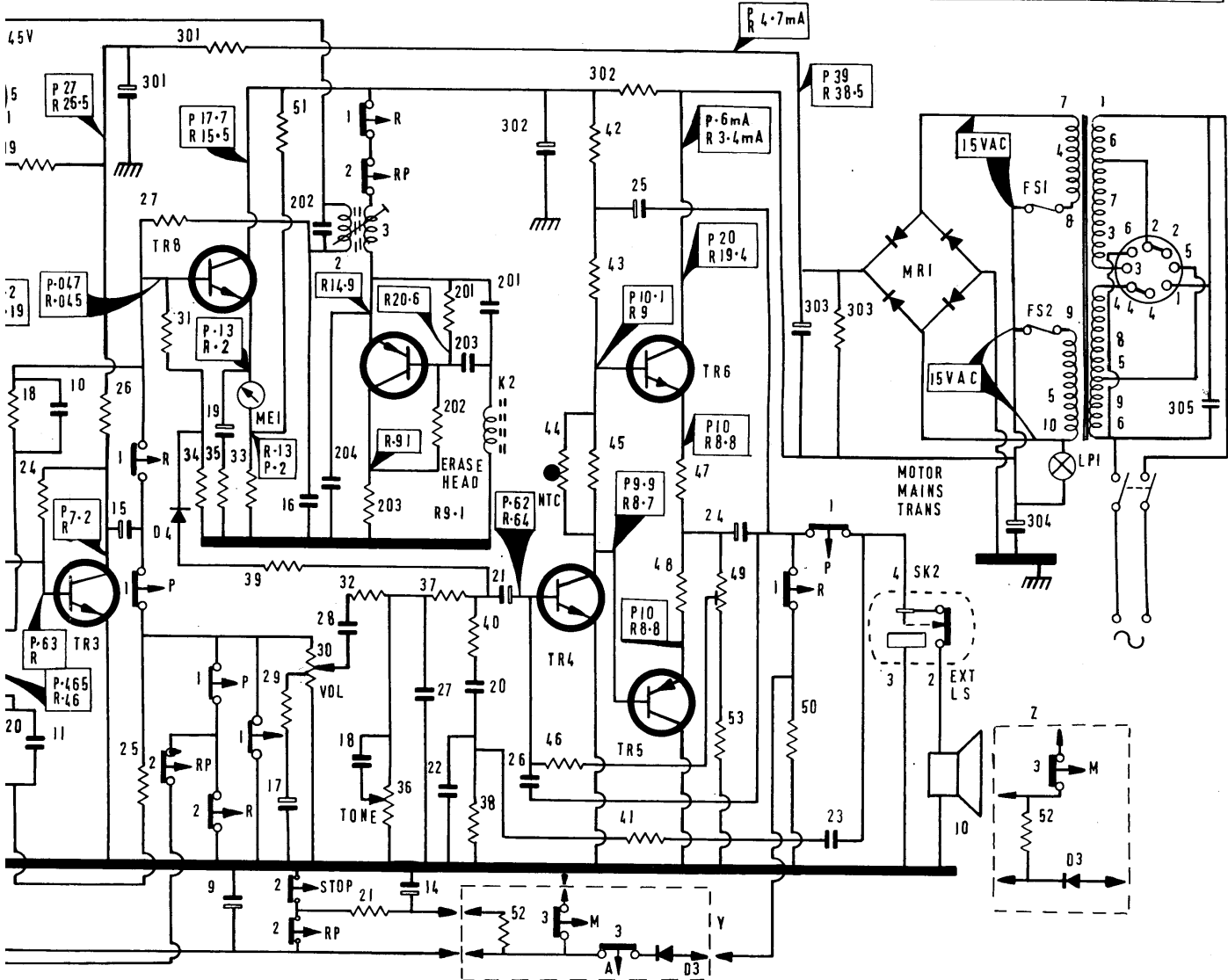
TRANSISTOR VOLTAGES

No.	Type	Function	E	B	C
TR1	BC109	audio pre-amplifier	0.09/0.09	0.67/0.58	8.2/8.19
TR2	BC109	audio amplifier	0.465/0.46	0.95/0.82	7.2/7.19
TR3	BC108	audio amplifier	0.0/0.0	0.63/0.63	7.2/7.2
TR4	BC108	driver	0.0/0.0	0.62/0.64	9.9/8.7
TR5	AC188	output pair	10.0/8.8	9.9/8.7	0.0/0.0
TR6	AC187	output pair	10.0/8.8	10.1/9.0	20.0/19.4
TR7	AC126	bias oscillator	14.9	20.6	0.91
TR8	AC127	meter amplifier	0.13/0.2	0.047/0.045	17.7/15.5

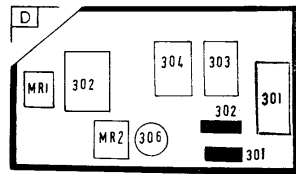
Voltages taken with respect to chassis using 100Kohm/volt meter, mains input 240V AC to 245V tap.

First figures relate to Play function, second figures to Record.

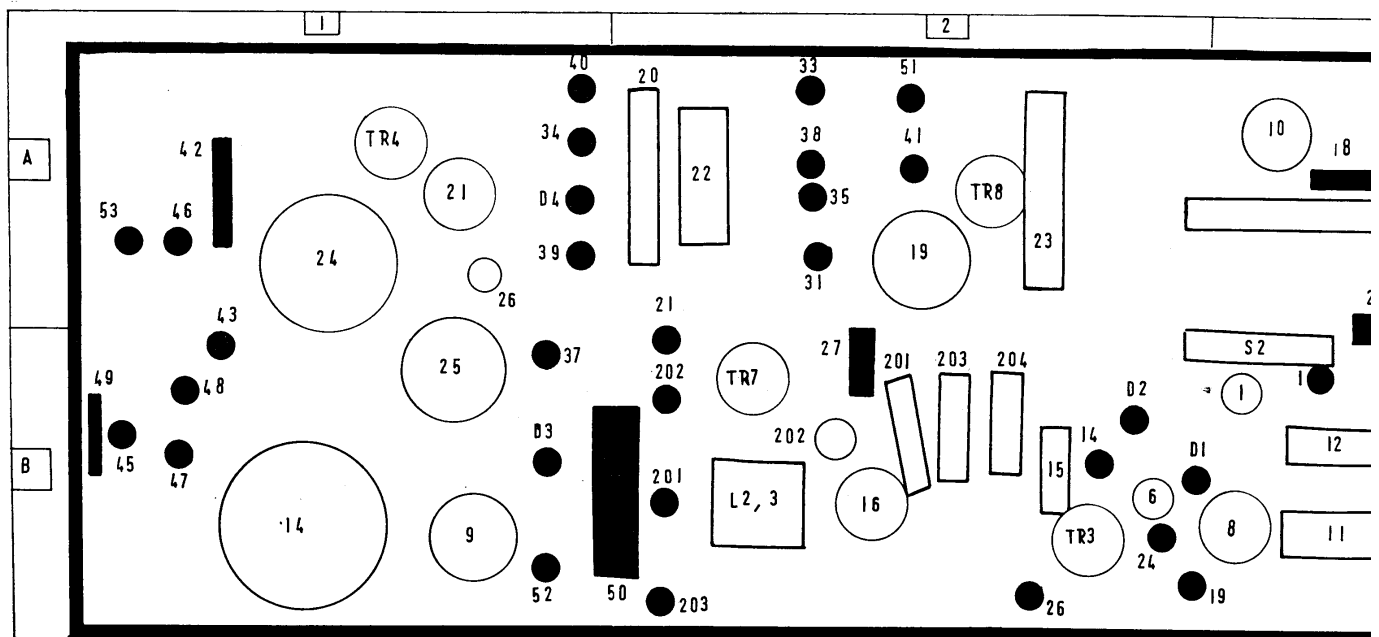
24	19	26	25	31	3027	301	34	35	51	33	39	29	21	32	36	203	37	202	201	40	38	52	46	41	42	302	43	44	45	47	48	49	53	50	303	52					
10	11	15	301	19	9	17	16	202	204	28	18	14	27	22	20	203	201	302	21	26	25	24	23	303	304																305
										2	3	K2																				4	5	6	7	8	9				



tive recording level control circuits used in earlier machines, W and Z, inset. Later power outages with respect to chassis using 100Kohm/volt meter and 240V mains input to 245V tap

[illegible]

Set S3 to 'MAN' and adjust generator output to 100mV. Following voltages should be measured using AC voltmeter with 10K resistor in series with 'live' probe: TR1 base 0.25mV, TR1 collector



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