

Trader

SERVICE SHEET

Apart from the case and mounting, the Toshiba PC-330 and PC-4360 stereo cassette decks are electrically and mechanically identical. The PC-330 is intended for rack mounting, and therefore has handles at each end of the front fascia and a plain metal and plastic wrap-around case, whereas the PC-4360 has no handles and is housed in a wood-sided cabinet with feet for table-top or shelf mounting.

Both models are in instrument-style finish, with silver controls and brushed aluminium front panel. Each has a front-loading vertically-mounted cassette deck with a manually-lifted transparent acrylic cover, thereby affording easy access to the heads for maintenance.

Feature of the two decks include separate bias and equalisation switches for ferric and chrome tape, choice of input from line or direct from tuner or amplifier via a DIN in/out socket, and Dolby noise reduction.

Control of recording level is by two rotary concentric conds, interlocked so that once channel balance is obtained, rotation of the outer knob varies level on both channels in proportion. Other features include large peak-level indicating VU meters, input jacks for separate channel microphones, and for stereo headphone output. LED indicators show when the tape deck is in the "Record" mode and when Dolby is in use.

Brief Specification

Power supply	240V 50Hz a.c. mains			
Consumption	15W			
Fuse	Thermal cut-out (in mains transformer)			
Indicator lamp	Power On: 14V 80mA lamp			
Transistors	Record and Dolby: LED			
Integrated circuits	2 SC733-GR (seven), 2SD234-Y (two)			
Diodes	NE545B (two), TA7122AP-JA2 (four), TA7140PJA-1 (two)			
Tape speed	1D2C1 (two), 1D2Z1, 1N60 (two), 1N60-FP1 (four), 1S15555 (six), 02Z6-BA.			
Tape system	1 $\frac{7}{8}$ in (4.75cm) per second			
Record bias and erase	4-track, two channel stereo			
Frequency response	85kHz bias, a.c. erase			
Signal to noise ratio	30Hz to 16kHz*			
Distortion factor	57dB without Dolby (improved by 5dB at 1kHz and 10dB at 5kHz and above with Dolby)*			
Wow and flutter	0.9 per cent at 0dB at 400Hz			
Fast forward/rewind times	*using TDK SA tape as reference.			
Inputs	0.07 per cent weighted, rms			
	Within 105 seconds for a standard C60 cassette			
	Microphone 0.25mV into 600 ohms to 10 kilohms, via standard jack			
	Line 100mV into 50 kilohms (via phone jacks)			
	DIN in/out 40 kilohms (via DIN 5-pin socket)			
	Line OUT 0.4V into 50 kilohms			
	DIN out: via 5-pin DIN socket			
	Headphones: 0.75V into 8 ohms			
Dimensions and weights	Height	Width	Depth	Weight (approx)
(PC-330)	5 $\frac{3}{4}$ in (146mm)	17 $\frac{3}{4}$ in (450mm)	12 $\frac{1}{4}$ in (310mm)	11lb (5kg)
	(Width is 430mm, weight 5.2kg for PC-4360)			
Manufacturer	Tokyo Shibaura Electric Co Ltd, Japan			
UK Distribution and Service	Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Middlesex TW14 0PG			
	01-751 1281			

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Toshiba

PC-330

PC-4360

Stereo cassette decks



DISMANTLING

(PC-330 and PC-4360 except where stated)

(see interior view diagram)

1. Disconnect cassette deck from mains supply, unplug any audio leads fitted, check that there is no cassette loaded.

2. Access for most service requirements is by removal of the top cover plate and the screening plate for the main p.c. board underside.

Proceed as follows:

Top cover

PC-4360. Remove two upper screws A with washers from each wood end panel.

PC-330. Remove one upper screw A from each cabinet side.

Remove two screws B from rear panel.

Lift off top cover.

NOTE: if it is necessary to remove the wood ends completely from model PC-4360, note that the upper two of the four screws in each panel are longer than those at the bottom.

Bottom cover screen.

Remove five screws D from bottom. If necessary, on model PC-4360 slacken screws D to free wood end panel brackets, then ease off cover.

3. With the top cover removed, access to the component side of the main p.c. board is facilitated by also disengaging and lifting out the rear phono jack ejection panel, which slots into the cabinet rear.
4. Removal of the main p.c. board assembly, or the cassette deck mechanism, or any controls, switches, lamps or front panel jacks requires the removal of the complete front panel. Proceed as follows:
 - (a) Remove recording level and four switch control knobs.
 - (b) Remove two screws C, two Allen-type screws F, and screw J to release cassette loader.

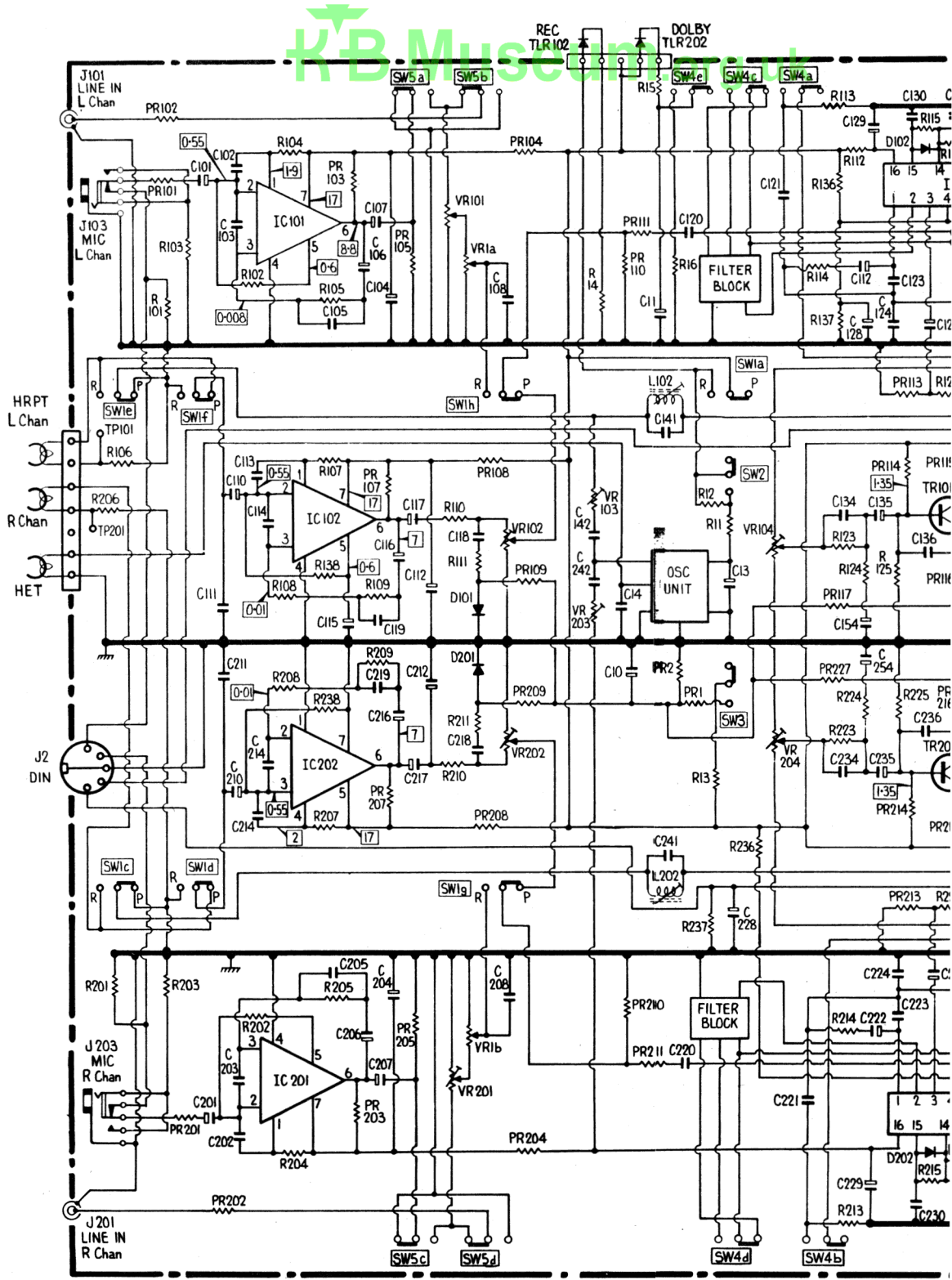
- C154 0.68µF C2
- C201 3.3µF A2
- C202 47pF A2
- C203 1000pF A2
- C204 100µF A2
- C205 100pF A2
- C206 3.3µF A2
- C207 3.3µF B2
- C208 470pF B2
- C210 3.3µF B2
- C211 680pF B2
- C212 100µF B2
- C213 47pF B2
- C214 47pF B2
- C215 47µF B2
- C216 3.3µF B2
- C217 3.3µF B2
- C218 5600pF B2
- C219 5600pF B2
- C220 0.1µF B1
- C221 5600pF B1
- C222 10µF B1
- C223 4700pF B1
- C224 0.027µF B1
- C225 3.3µF B1
- C226 10µF A1
- C227 3.3µF A1
- C228 220µF B1
- C229 100µF B1
- C230 0.33µF B1
- C231 0.1µF B1
- C232 10µF B1
- C233 0.047µF B1
- C234 2700pF C2
- C235 3.3µF C2
- C236 220pF C2
- C237 0.082µF C2
- C238 0.047µF C2
- C239 1µF C2
- C240 1500pF C2
- C241 150pF B2
- C242 100pF B2
- C243 3.3µF A2
- C244 47µF B2
- C245 47µF A2
- C246 2200pF A2
- C247 10µF A2
- C248 4700pF A2
- C249 3.3µF C1
- C250 47µF C1
- C251 10µF C1
- C252 1000pF C1
- C253 10µF C1
- C254 0.68µF C2

- Transistors**
- Tr1 2SD234-Y C2
 - Tr2 2SC733-GR C2
 - Tr3 2SD234-Y C2
 - Tr4 2SC733-GR C2
 - Tr101 2SC733-GR C2
 - Tr102 2SC733-GR C1
 - Tr103 2SC733-GR C1
 - Tr201 2SC733-GR C2
 - Tr202 2SC733-GR C1
 - Tr203 2SC733-GR C1

- Integrated circuits**
- IC101 TA7122AP-JA2 A2
 - IC102 TA7122AP-JA2 B2
 - IC103 NE545B B1
 - IC104 TA7140PJA-1 A2
 - IC201 TA7122AP-JA2 A2
 - IC202 TA7122AP-JA2 B2
 - IC203 NE545B B1
 - IC204 TA7140PJA-1 A2

- Diodes**
- D1 1D221 C2
 - D2 1D2C1 C2
 - D3 1D2C1 B2
 - D4 1S1555 C2
 - D5 1S1555 C2
 - ZD1 0226.8A C2
 - D101 1S1555 B2
 - D102 1N60 B1
 - D103 1S1555 C2
 - D104 1N60-FD1 C1
 - D105 1N60-FD1 C1
 - D201 1S1555 B1
 - D202 1N60 B1
 - D203 1S1555 C2
 - D204 1N60-FD1 C1
 - D205 1N60-FD1 C1

C		101	102	103		105	107	104	117	118	108		142	14	141	11	120	13		121	134	112	128	129	130	136
R		106	PR102		104	107	PR103	PR107	VR101	VR1a	VR102	PR104		VR103	PR110	15	12		VR104		114	136	124	125	PR113	12
L		206	101	PR101	103	108	138	105	109	PR105	110	111	PR108	PR109	VR203	PR111	16	11		PR117	123	137	112	PR114	115	P



C		201	203		205	206	207	204	217	218		10	241		228		221	234	254	235	236					
R		201	203	202	208	238	205	209	PR207	201	210	211	VR202	PR209	PR210	PR2	PR1	13	236	VR204	223	214	224	225	PR213	1
L		PR201	PR202	204	204	207	PR203	PR205	VR201	VR1b	PR208	PR204	PR211	C220	PR211	C220	237		PR227	213	PR214	221	215			

Bias Leak

Connect meter across left hand test point **TP103**, set record level controls to maximum, Dolby switch to OUT. Set Bias and Equalisation switches to NORMAL, input selector switch to LINE IN. Select "record" and adjust trap coil **L102** for minimum meter reading.

Repeat for right hand channel, connect meter across **TP203** and adjust trap coil **L202** for minimum.

Record/playback frequency characteristic

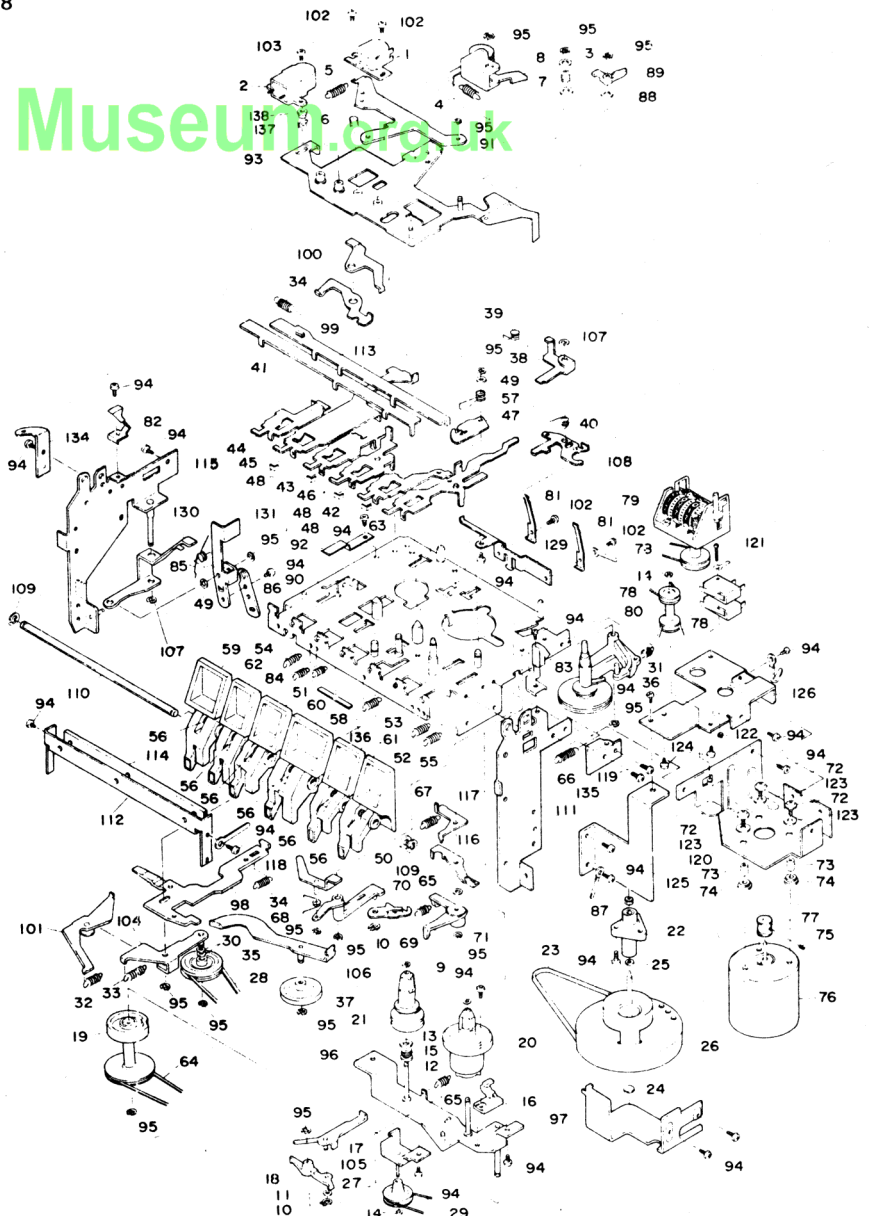
Connect meter across left hand LINE OUT jack **J102**, set Dolby switch to OUT. Set recording level controls to maximum, Bias and Equalisation switches to NORMAL, input selector switch to LINE IN. Using blank cassette, record first a 400Hz and then a 10kHz signal, level -20dBV injected via the left hand LINE IN jack **J101**. Play back the tape and adjust **VR103** until the difference between the outputs at 400Hz and 10kHz is within ± 1 dB.

Repeat for right hand channel, connecting meter across the right hand LINE OUT jack **J202**, and adjusting preset **VR203**.

Record/playback sensitivity

Set recording level controls to maximum, Dolby switch to OUT. Set Bias and Equalisation switches to NORMAL, input selector switch to LINE IN. Inject 400Hz signal, level -20dBV via left hand LINE IN jack **J101** and record on blank cassette. Play back the tape and adjust preset **VR104** until the left hand VU meter registers +3dB.

Repeat for right hand channel, injecting signal via right hand LINE IN jack **J202**, adjusting **VR204** until right hand VU meter registers +3dB.



Cassette deck exploded view
(numbers not listed not supplied as spares)

- | | | |
|-------------------------------|---------------------------------|---------------------------|
| 1 Head, Record/Playback | 35 Rewind Pulley Assembly | 68 Spring, ASO Select |
| 2 Head, Erase | 36 Take-up Pulley Assembly | 69 Lever, ASO |
| 3 Washer, 30 | 37 Fast-forward Idler Assembly | 70 Lever, Release |
| 4 Spring, Pressure Roller | 38 Lever, Erase Prevention | 71 Lever, Bias |
| 5 Spring, Head Chassis | 39 Spring, Lever | 72 Screw (PAN), 2.6 x 8mm |
| 6 Spring, Head | 40 Spring, Prevention Lever | 73 Spacer, Motor |
| 7 Spring, Head Chassis | 41 Slider, Lock | 74 Cushion, Motor |
| 8 Pressure Roller Ass'y | 42 Operation Plate Fast-forward | 75 Screw, 2.60 x 4mm |
| 9 E Washer, Reel Plate | 43 Operation Plate, Rewind | 76 DC Motor |
| 10 G Washer | 44 Operation Plate, Stop | 77 Pulley, Motor |
| 11 Spacer, Push Lever | 45 Operation Plate, Record | 78 Belt, Counter |
| 12 Nylon Washer, Reel Plate | 46 Operation Plate, Play | 79 Tape Counter |
| 13 Washer, Reel Plate | 47 Lock Plate, Pause | 80 Middle Pulley Assembly |
| 14 Washer, Middle Pulley | 48 Cushion, Push Button | 81 Spring, Cassette Hold |
| 15 Spring, Back Tension | 49 Nylon Washer | 82 Pawl Assembly, Left |
| 16 Lever, Guide | 50 Nylon Washer | 83 Pawl Assembly, Right |
| 17 Lever, Detection | 51 Spring | 84 Spring |
| 18 Cam-wheel Ass'y | 52 Spring | 85 Spring, Record Lever |
| 20 Reel Plate, Take-up | 53 Spring | 86 Holder, Spring |
| 21 Reel Plate, Supply | 54 Spring | 87 Gear, Waiting |
| 22 Holder, Capstan | 55 Spring | 88 Washer, Waiting Lever |
| 23 Belt, Drive | 56 Spring, Push Lever | 89 Lever, Waiting |
| 24 Washer, Flywheel | 57 Spring, Pause Lock Plate | 94 Screw, 20 x 4mm |
| 25 Washer, Capstan Shaft | 58 Push Button, Play | 95 E. Washer, 20 |
| 26 Flywheel Assembly | 59 Push Button, Stop | 102 Screw, 20 x 4mm |
| 27 Pulley, Middle | 60 Push Button, Rewind | 103 Screw, 20 x 4mm |
| 28 Belt, Rewind | 61 Push Button, FF/Pause | 113 Slider, Lock |
| 29 Belt, Middle Pulley | 62 Push Button, Record | 119 Screw, 2.60 x 4mm |
| 30 Washer, Rewind Lever | 63 Operation Plate, Pause | 121 Screw, 20 x 16mm |
| 31 Spring, Take-up Lever | 64 Belt, Cam-wheel | 122 Nut, 20 |
| 32 Spring, Fast-forward Lever | 65 Spring, Reel Chassis | 123 Washer, 2.60 |
| 33 Spring, Rewind Lever | 66 Spring | 137 Sleeve, Erase Head |
| 34 Spring, Lock Slider | 67 Spring, ASO Lever | 138 Spring, Erase Head. |

- (c) Remove three screws K from front panel top rail, and three corresponding screws D from the panel bottom rail.
- (d) The panel can now be removed.

(e) To separate the cassette mechanism from the p.c. board, the spring connecting the mechanism to record/playback switch S1 must be disconnected.

- 5. Mains transformer T1 is secured by two screws G, and the mains cable by a clamp at the cabinet rear.

Electrical Adjustments

Equipment required:

Electronic meter (VTVM)

Audio signal generator

Attenuator

Test tape providing 10kHz and 400Hz signals.

(See interior diagram for locations of presets and test points)

Record/playback head azimuth

Connect meter across left hand LINE OUT jack J102, set Bias and Equalisation switches to NORMAL, Dolby switch to OUT. Play back a 10kHz signal from the test tape, and adjust head azimuth screws to give maximum reading on meter.

Repeat with meter connected across right hand LINE OUT jack J202, checking that overall difference between maximum outputs per channel are within 2dB.

Playback sensitivity

Connect meter across left hand test point TP102. Set Bias and Equalisation switches to NORMAL, Dolby switch to OUT. Play back the 400Hz signal from the test tape, and adjust VR102 for 580mV.

Repeat for right hand channel, connecting meter across TP202 and adjusting VR201 for 580mV.

Recording sensitivity

Connect meter across left hand test point TP102. Set both channel recording lever controls to maximum. Set Bias and Equalisation switches to NORMAL, Dolby switch to OUT. Inject 400Hz signal from generator, attenuated to -20dBV, via the left hand LINE IN jack J101. Using a blank cassette (preferably of UK origin), record the signal. Play back the

recording and adjust preset VR101 for 580mV.

Repeat for right hand channel, injecting signal via LINE IN jack J201, connecting meter across TP202 and adjusting VR201 for 580mV.

VU meters

Set record level controls to maximum, Dolby switch to OUT. Set Bias and Equalisation switches to NORMAL, input selector switch to LINE IN. Inject 400Hz signal, attenuated to -20dBV, via left hand LINE IN jack J101, and select "Record". Adjust preset VR105 until left hand VU meter registers +3dB. Repeat for right hand channel, injecting signal via right hand LINE IN jack J201, and adjusting VR205 until right hand VU meter registers +3dB.

Interior view

