

Q U A D 66

Compact Disc Player

Service Data



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INTRODUCTION

The Quad CD player is designed for the serious music listener. It has the minimum number of controls and functions on the assumption that the serious music listener wishes to hear music in the order in which it was written and will normally start from the beginning of a disc. However simple programming permits tracks to be selected and played in any sequence.

The player disc drawer will accept compact audio discs in the 'normal' and 'CD single' format without any special adapters.

The main operating controls are separated from the player and all major functions are available via a remote control unit, a compact hand held type being supplied as standard.

More than one remote control can be used and it is not necessary to point the unit at the CD player as is often the case.

Performance of the Quad CD player is as accurate as it is possible to achieve by careful design, selection of components and rigorous test procedures.

BRIEF OPERATING INSTRUCTIONS

- Switch on.
- Press drawer button. The drawer compartment will open.
- Place disc, label side up, in drawer compartment.
- Gently push front of drawer. It will close by itself.
- The disc will now start to play from the beginning.
- For full remote control operation and track programming refer to appropriate section of instruction book.

SPECIFICATION

Main Unit	Operation:	Full function by infrared remote control or simple direct to play operation without remote control.
	Number of channels:	2
	Frequency response:	20 - 20,000 Hz.
	Amplitude linearity:	+/- 0.1 dB 20 - 20,000 Hz.
	Phase linearity:	+/- 0.5 deg 20 - 20,000 Hz.
	Dynamic range:	96 dB 20 - 20,000 Hz.
	Signal/noise ratio:	96 dB 20 - 20,000 Hz.
	Channel separation:	93 dB 20 - 20,000 Hz.
	Total harmonic distortion:	0.003% 20 - 20,000 Hz.
	Wow and flutter:	Below measurement levels.
	D/A conversion:	Quadruple oversampling (176.4 kHz) with digital filter and two 16-bit D/A converters.
	Error correction system:	Cross interleaved Reed Solomon Code (CIRC).
	Audio Output:	2 V rms max. 300 mV on normal programme material. Minimum load impedance 10 kΩ.
	Optical readout system:	Laser semi-conductor A/GaA wavelength 800 nm.
	Sampling frequency:	44.1 kHz.
	Digital output:	For digital signal processors.
	Remote control Interface:	RC-5 system.
	Mains voltage:	110V,127V,220V,240V (changed by links on PCB) 50-60 Hz. See rating plate on player back.
	Power consumption:	25W approx.
	Dimensions:	Width 321 mm; height 80 mm; depth 275 mm. approx. drawer opens by 145 mm approx.
	Weight:	3.5 kg approx.

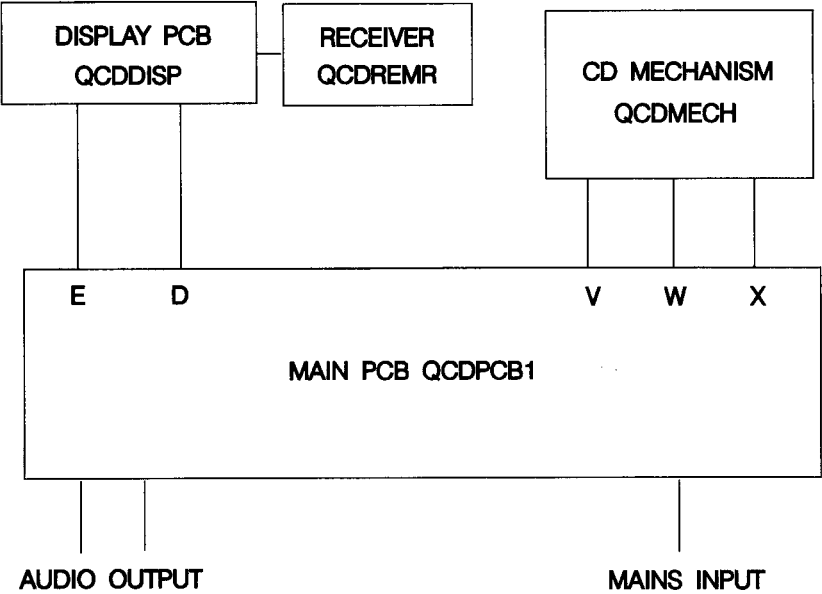
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Remote Control	System:	Infrared.
	Dimensions:	Width 48 mm; length 174 mm; thickness 22 mm approx.
	Weight:	100g (inc batteries) approx.
	Battery life:	One year approximately with normal operation, using alkaline cells.
	Battery type:	Three AAA size alkaline cells.

The right is reserved to alter performance and specifications as required.

This compact disc player complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.

CD Player
Simple Block
Diagram



SERVICE HINTS

Warning avoid direct viewing of the laser otherwise irreparable damage may occur to the eye retina.

Electrostatic Precautions (ESD)

All the IC's fitted and most of the semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can destroy them, or drastically reduce their life. When repairing, make sure you are connected to the same potential as the mass of the CD player via a wrist strap with a resistor. Also keep components and tools at this potential.

Surface mounted chip components are used in this equipment. Should any servicing be carried out at component level then the correct precautions must be observed when removing and replacing these components.

Note: Please ensure any spacing washers used are refitted on assembly.

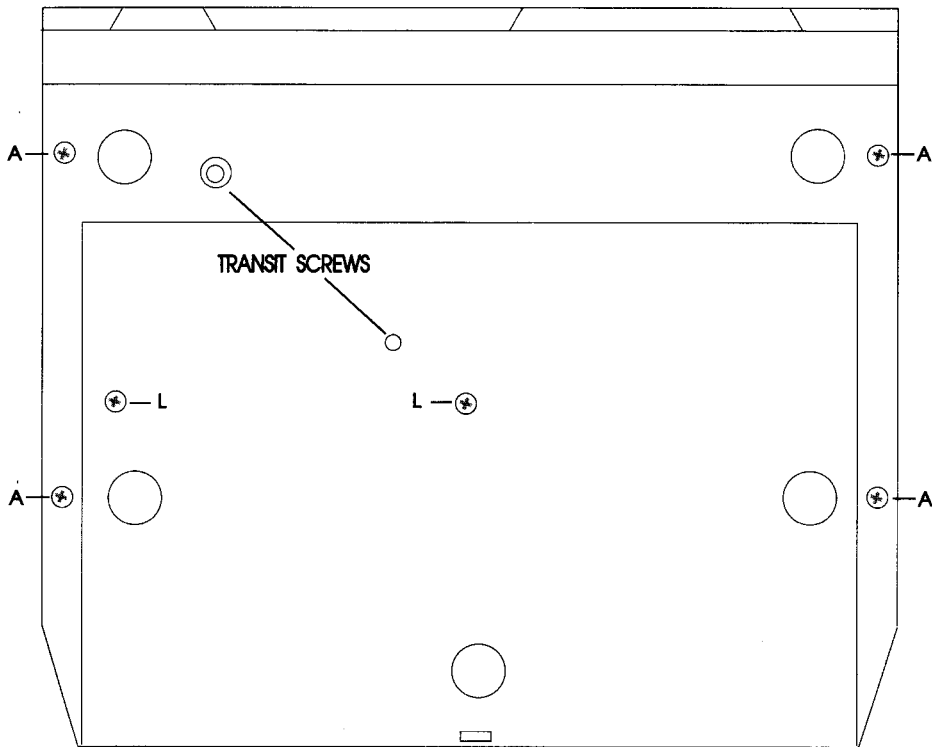
DISMANTLING FOR SERVICE

Simple servicing can be carried out by removing the top cover. To gain full access to the main assemblies and to remove the CD mechanism both the rear panel and front panel should also be removed. Disconnect from the mains supply.

Top Cover (Fig 1)

a) Remove the 4 screws marked (A) and lift off. These are accessible from beneath the unit. Note on reassembly that the cover will only fit one way round.

Fig 1. Underneath View



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- Rear Panel (Fig 2)**
- a) Remove the 2 screws (B) from the back.
 - b) Remove the 4 screws (C) from the inside, 2 to each side bracket, together with washers.
 - c) Lift the rear panel off by gently pulling it backwards.
- Front Panel (Fig 2)**
- a) Remove screw (G) through the display PCB, taking care to remove the spacing washer between the display and the front panel.
 - b) Remove the 4 screws (F), together with washers, 2 to each of the side brackets.
 - c) Lift off the panel. Note that the drawer button is loose and will come out with the panel.

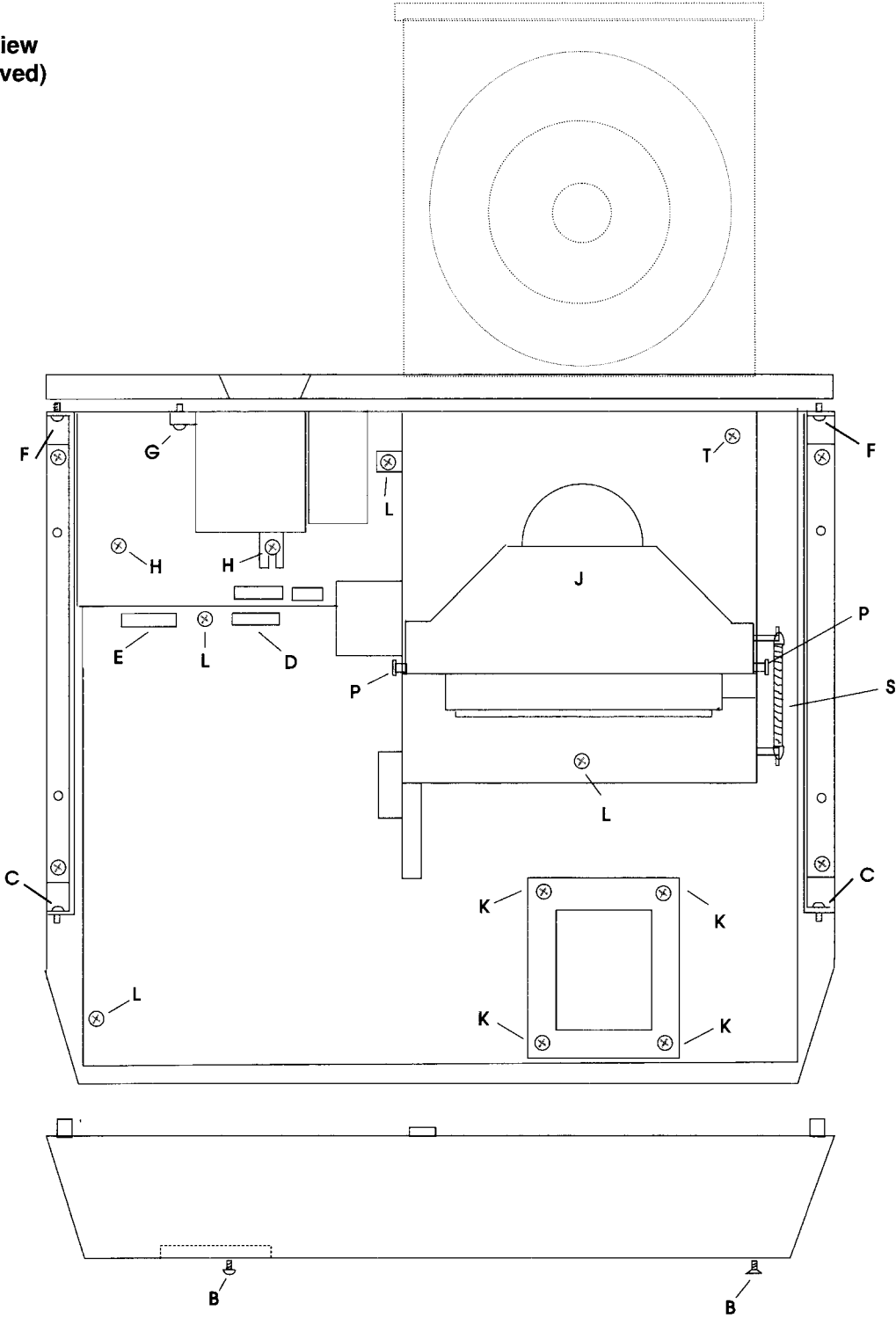
- Removing Display Board (Fig 2)**
- a) Remove top cover and front panel.
 - b) Unplug the connectors (D) and (E).
 - c) Remove 2 screws (H)
 - d) Remove spring clip (42), not fitted to early models (see exploded view)
 - e) Carefully lift out the complete display assembly, if necessary remove side rail.

Removing PCB Complete With CD Mechanism (Fig 2)

To remove the main PCB and CD mechanism (on early models) the drawer tray has to be taken out to allow access to one of the retaining screws.(T), on later versions this is accessible with the drawer fully open. If not proceed as follows:-

- a) Follow dismantling procedure as explained above.
- b) Gently slide the drawer out as far as possible.
- c) Lift flap (J) and swivel it over to allow it to lay on its back. Take care not to disengage either of the pivot points (P) or the spring (S). (note that the spring may be fitted to either side of the mechanism).
- d) Grip the drawer at the front, with the fingers underneath to prevent the disc tray from falling out, and slide it fully out, tilting it downwards once it has cleared the rear slider bearings. Remember to lay the drawer upside down otherwise the disc tray will drop out.
- e) Remove the 6 screws (L), 2 of these are accessible from underneath the unit (see Fig 1), and the 4 screws (K) through the mains transformer, also the front screw (T).
- f) The complete assembly can now be lifted out.

Fig 3. Top View
(cover removed)



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Replacing CD Mechanism (Fig 3)

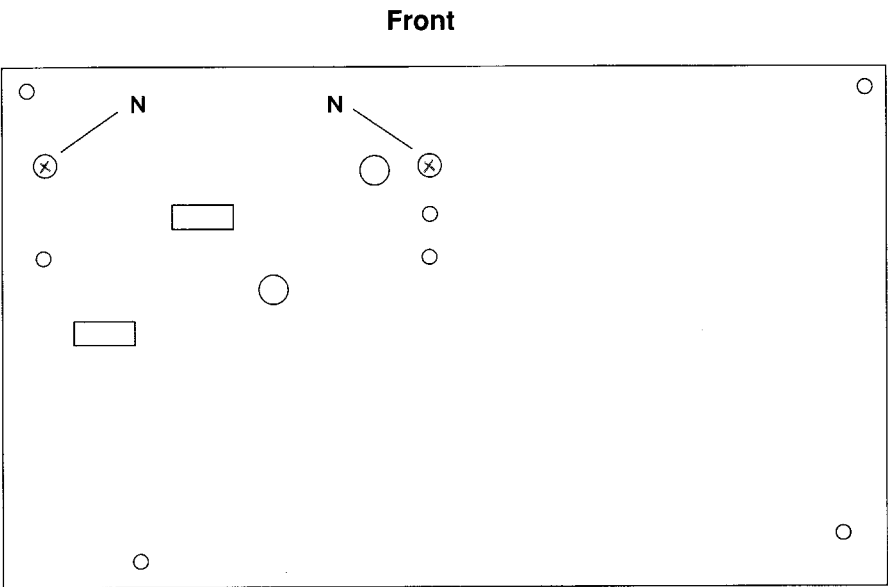
First remove the main PCB assembly complete as shown.

- a) Lay the assembly upside down and remove the 2 screws (N).
- b) Lift PCB and carefully unplug the flat cable (V) and the 2 connectors (W) and (X), (See exploded view).

Note: The socket (v) is a lockable type. Lift the outer shroud to release and push it down to lock.

- c) The CD mechanism can now be removed and, if necessary replaced. Should the CD mechanism be replaced it is important that the focus adjustment and laser current are set as shown on page (12).
- d) To replace the mechanism secure the CD mechanism to the main PCB with the two screws in the front pillars ensuring any spacing washers are correctly fitted.

Fig 3. Underside View of PCB

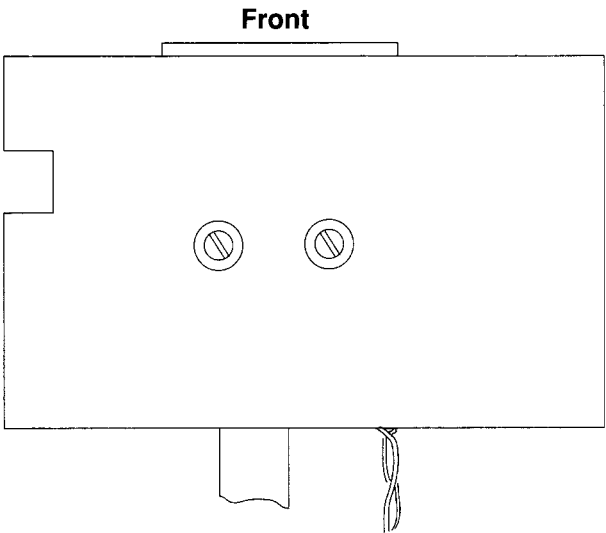


Note : When replacing the CD mechanism ensure that the switch link assembly is correctly engaged. On early units the switch rod may be glued to the plastic switch connector, to separate the switch link mechanism it may be necessary to exert a twisting pressure between the rod and connector. On later models rubber adjustment rings are fitted beneath the front screws on the CD mechanism, to allow accurate drawer alignment within the front aperture.

To Replace Display Bulbs (Fig 4)

These are accessible from the underside of the display PCB, as shown below. Turn the plastic bulb cap approximately 1/4 turn anticlockwise, to release, and lift out. These can be quite tight. When refitting please ensure both bulbs are turned 1/4 turn clockwise to engage correctly.

Fig 4. Display PCB (underside view)

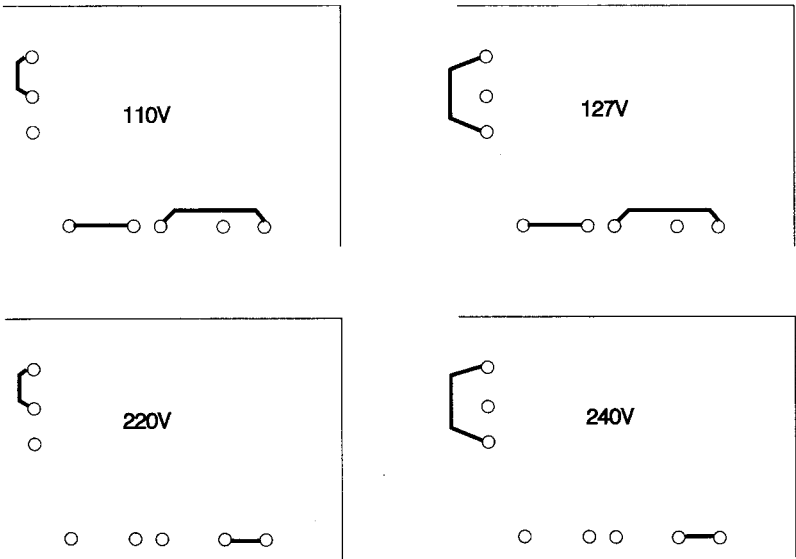


Changing Mains Voltage

The Quad CD Player is normally supplied for 220/240V ac operation. For 110/127V operation the mains transformer can be set by wire links on the main PCB, the mains input power fuse must also be replaced with the correct rating. Facilities are provided for operation from four different voltage ranges, 110V, 127V, 220V and 240V. However in practice the 127V and 240V settings are suitable for most applications but for 100V supplies (Japan) the 110V taps should be used.

- a) Remove main PCB assembly as shown in 'Dismantling For Service'.
- b) Solder links as shown below and fit correctly rated fuse:-

220/240V	160 mA delay	part number UMA16DA
110/127V	315 mA delay	part number UMA315D



Important
Ensure rating plate shows correct voltage.

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VOLTAGE MEASUREMENTS AND ADJUSTMENTS

Warning - Direct viewing of the laser to be avoided.

- a) **Equipment Required**
- 1. DVM of at least 20 k Ω /V.
 - 2. Hexagonal trimming tool for adjusting laser current and focus offset.
 - 3. Philips test disc 5.

b) **DC Power supplies voltage measurements**

Reference should be made to the circuit diagrams opposite.
All voltages with respect to ground 0V.

c) **Laser Current Adjustment (see fig 5)**

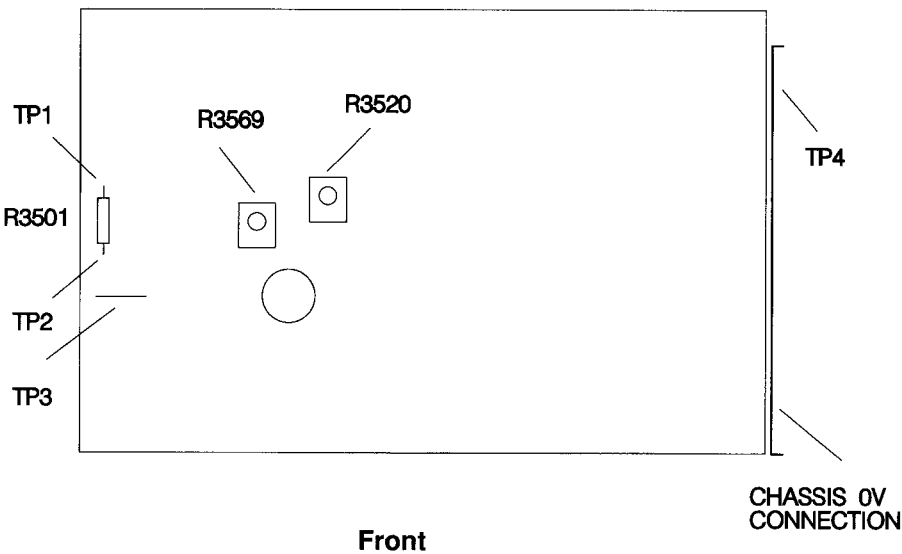
Using track 1 of the Philips test disc 5, adjust R3520 to give 50 mV DC $\pm$ 10% across R3501 (TP1 and TP2).

d) **Focus Adjustment (see fig 5)**

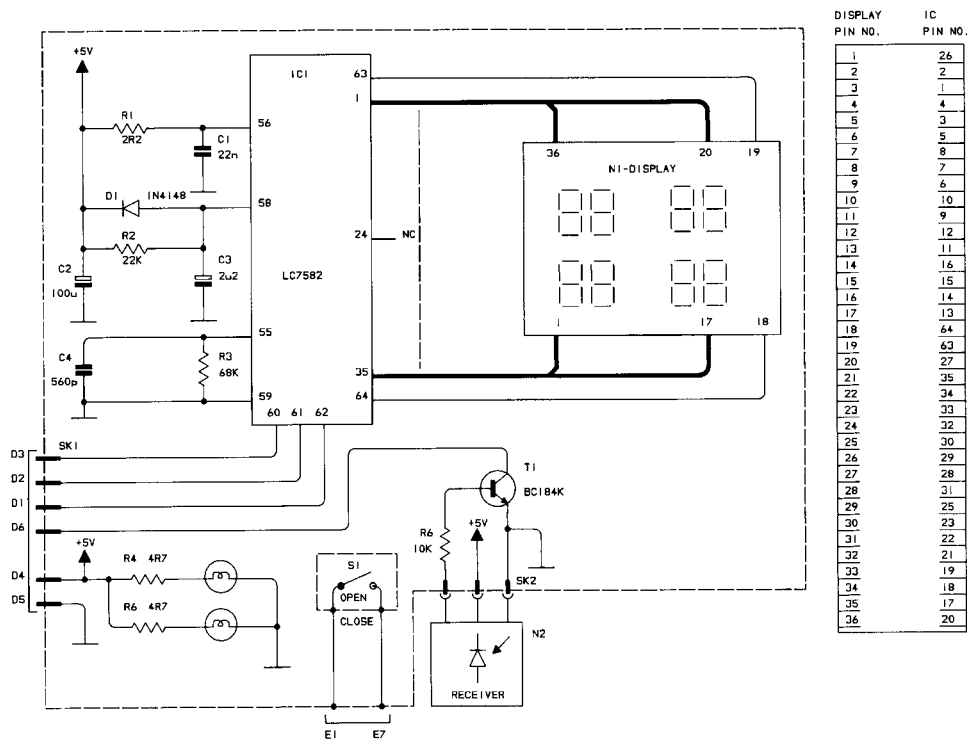
Using track 1 of Philips test disc 5, adjust R3569 to give 400mV DC $\pm$ 10% between TP3 and TP4.

This now completes all the Adjustments necessary.

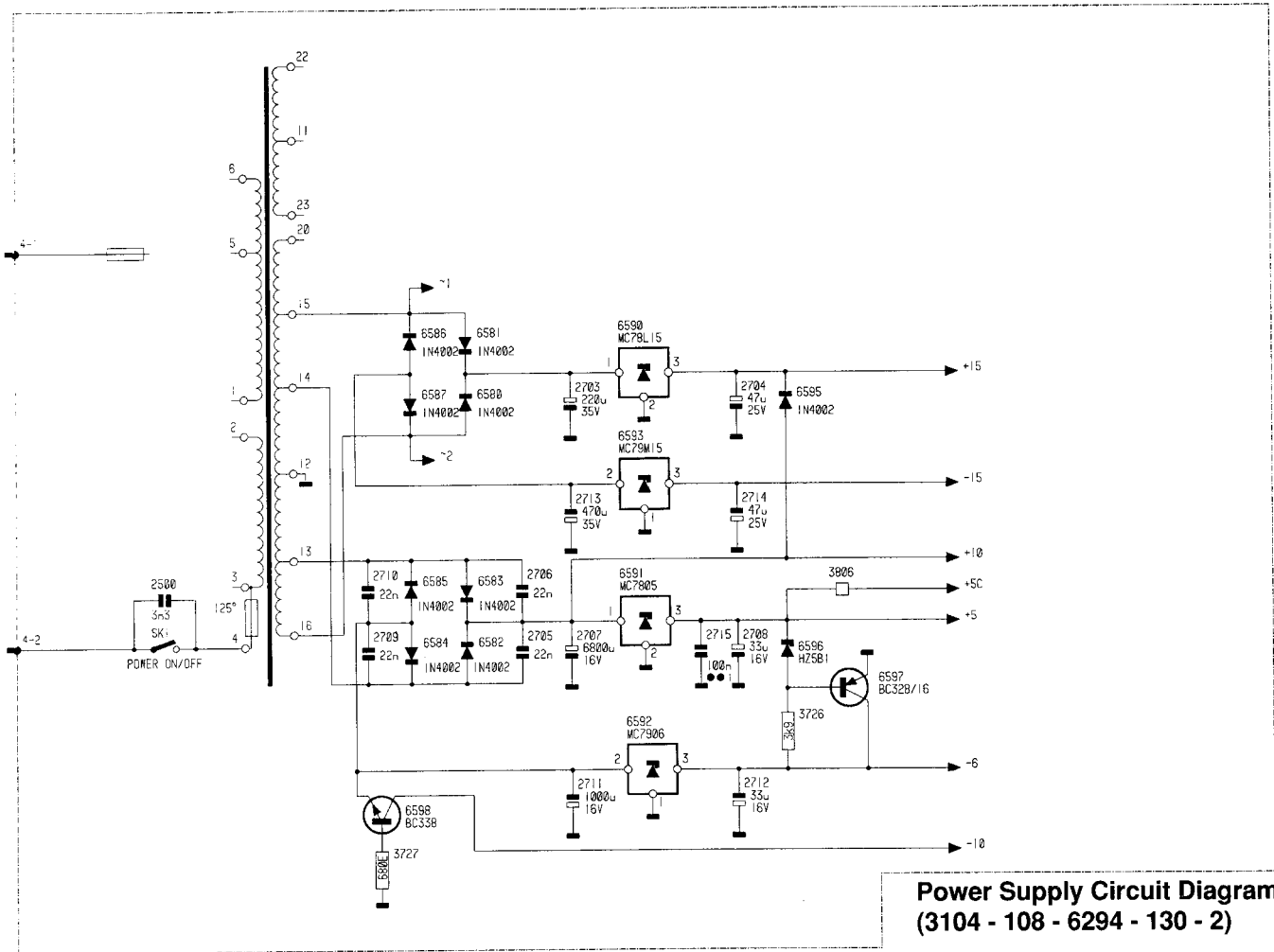
**Fig 5. Adjustment Points
Main PCB (top view)**



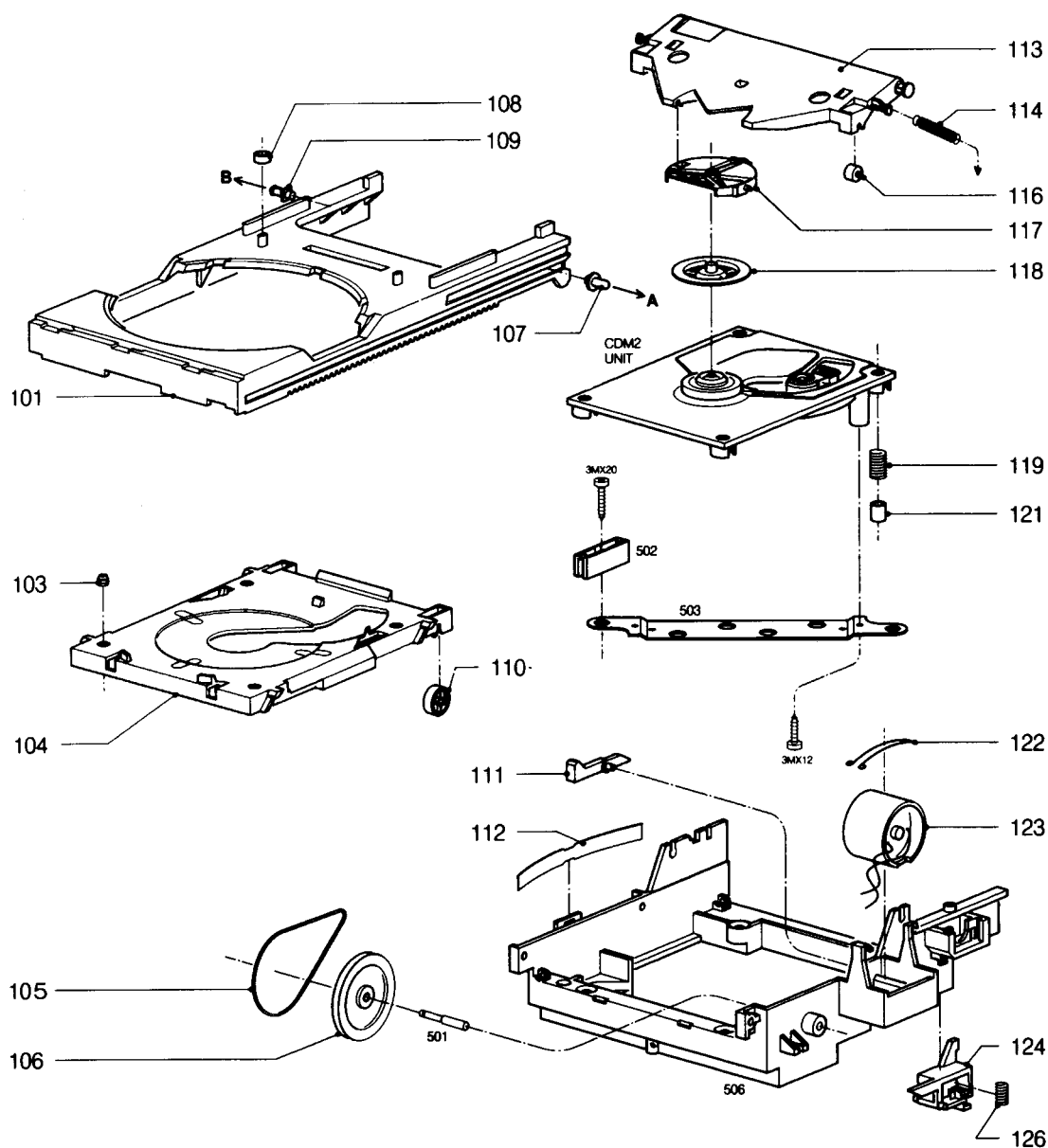
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CD Display Circuit Diagram
(2195 - 1. CD)



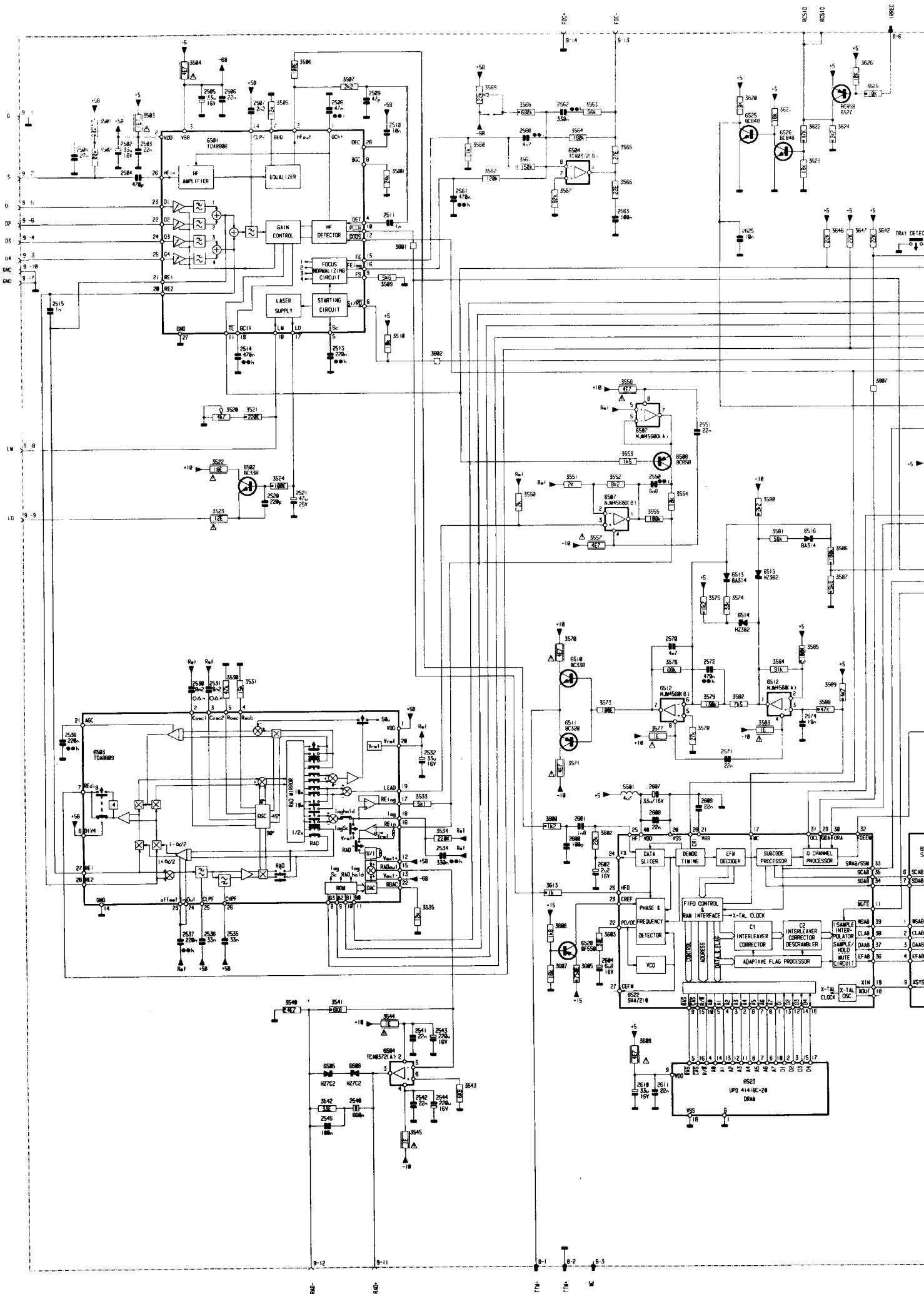
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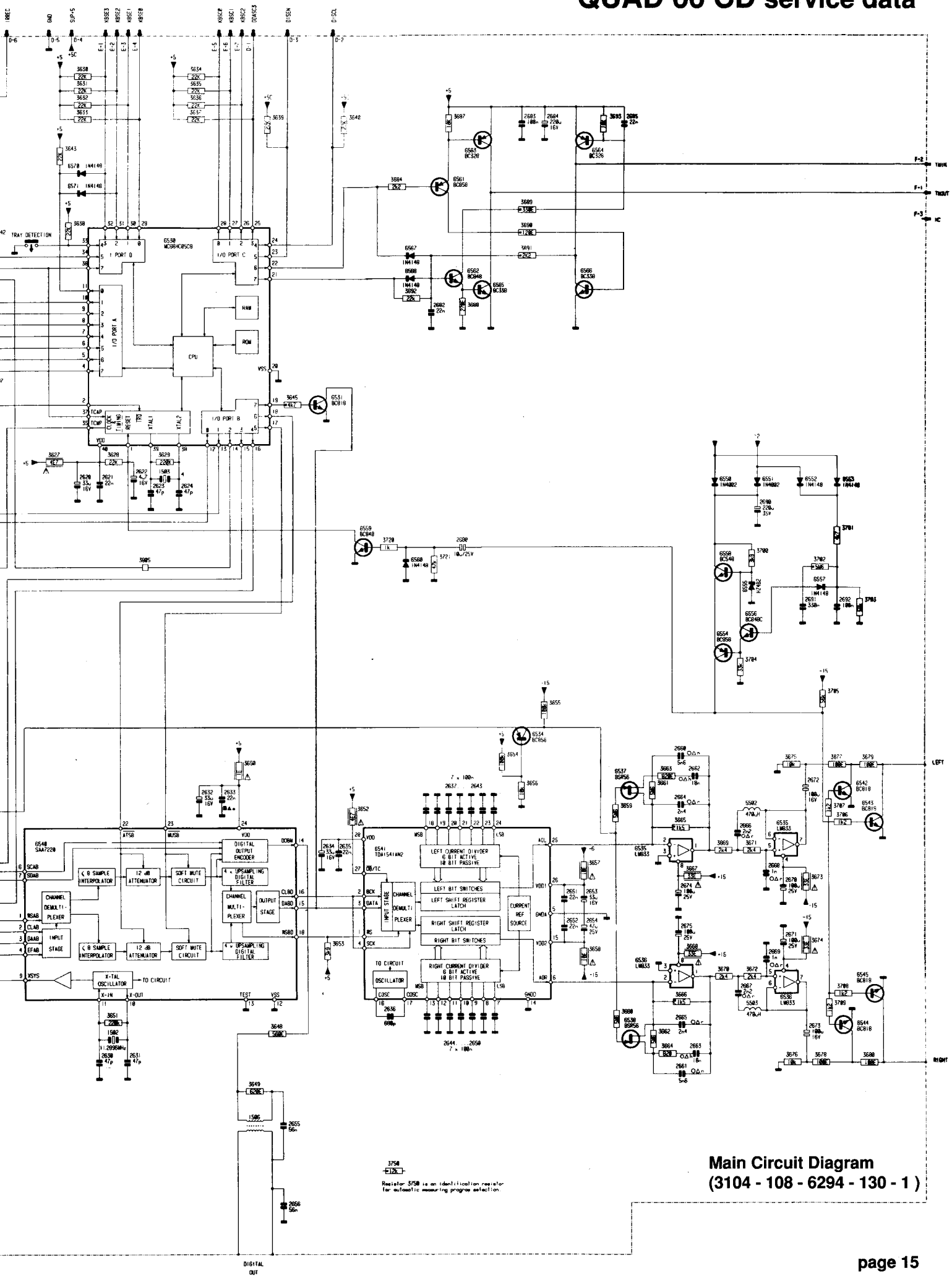
Component List

ref	item	qty	ref	item	qty
101	Drawer	1	113	CD flap	1
103	Cushion mount	7	114	Flap spring	1
104	Tray	1	116	Roller	2
105	Drive belt	1	117	Bearing	1
106	Pulley	1	118	Tension disc	1
107	Guide pin	1	119	Spring (mount)	4
108	Cushion (drawer)	1	121	Spring guide	4
109	Guide pin	1	122	Spring(motor)	1
110	Tray roller	2	123	Tray motor	1
111	Lever	1	124	Tray lever	1
112	Tray spring	1	126	Tray lever spring	1

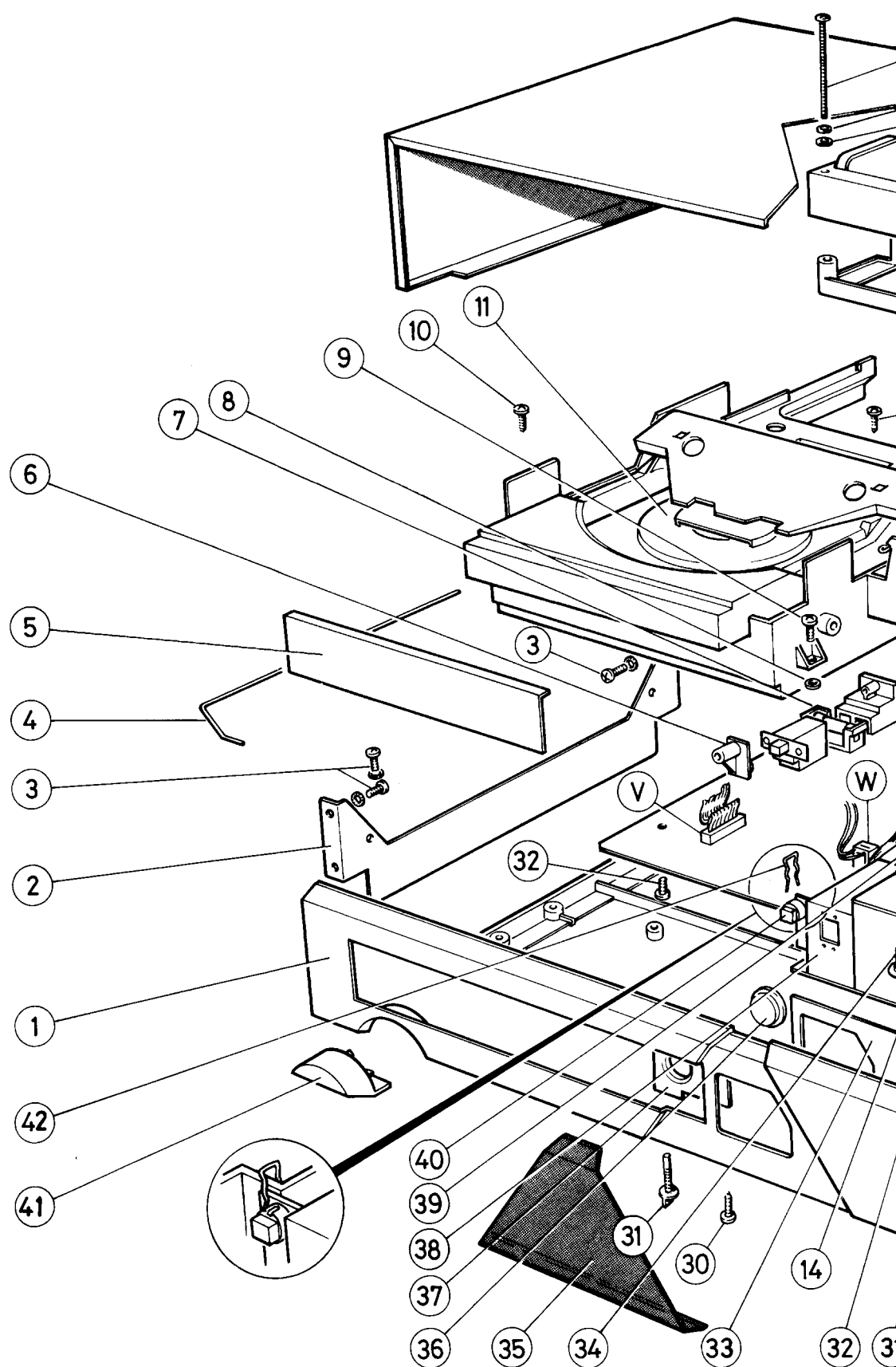
CD Mechanism
Exploded View



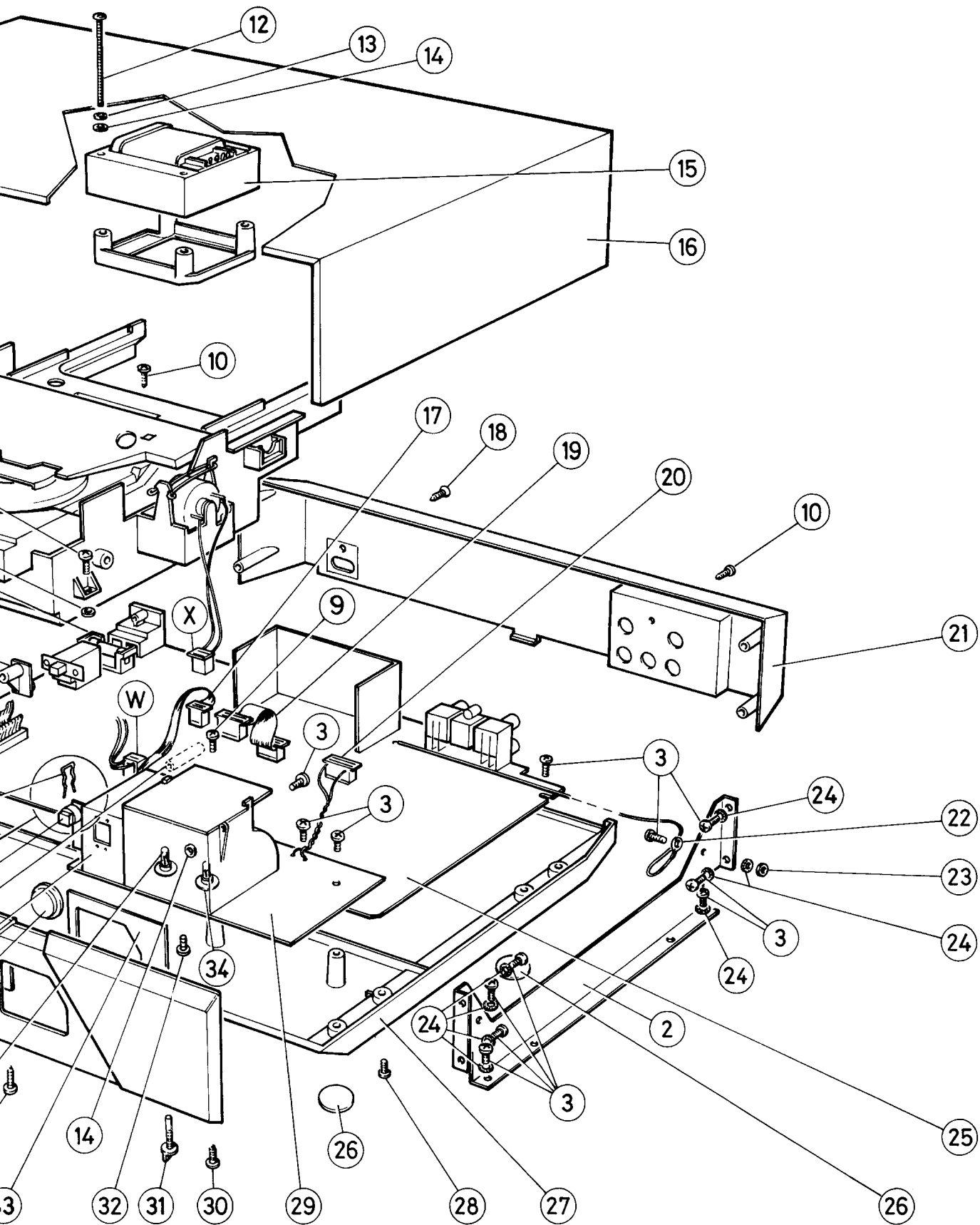
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Main Circuit Diagram
(3104 - 108 - 6294 - 130 - 1)



CD Player
Exploded View



ORDERING SPARE PARTS

To allow for modifications etc. please quote component reference, value and description as well as the part number, when ordering spares. Also product model and serial number.

MECHANICAL PARTS
(EXPLODED VIEW)

Ref	Description	Qty	Part No.
1	CD front panel assembly	1	QCDFPAG
2	Side bracket	2	M22192A
3	Screw M3x6 mm Sup Pan St	17	TM306PA
4	CD Mains switch link	1	M21551A
5	Drawer front grey	1	M21543G
6	CD mains connector	1	M45993A
7	Fuse 220/240V 160 mA delay	1	UMA16DA
	Fuse 110/127V 315 mA delay	1	UMA315D
8	Rubber adjustment ring	2	M20172M
9	Screw M3x8 mm Sup Pan St Bzp	2	TM308PA
10	Screw drive 4x10 mm AB	3	TC410PF
11	CD player mechanism	1	QCDCMECH
12	Screw M3x45 mm Pos Pan Hd Bzp	4	TM345PA
13	Belleville copper washer	4	TD73206
14	Washer 6BA Plated St Bzp	5	TDB6NPA
15	Mains transformer 110-240V	1	LXCDEUR
	Mains transformer CSA version 120V	1	LXCDCSA
16	Cover assembly (with damping)	1	Q66COVG
17	Flex connector 3 way	1	QCDCAB3
18	Screw drive 4x10 mm Csk Pos	1	TC410CB
19	Flex connector 6 way	1	QCDCAB6
20	Flex connector 7 way	1	QCDCAB7
21	Rear panel (screened)	1	MCDRPS1
22	Solder tag M3	1	FTM331A
23	Nut M3 Hex St Bzp	1	TM3FHPA
24	Shakeproof washer M3 St Int	13	TDM3NLA
25	Main PCB	1	QCDCPCB1
26	Plain rubber insert for foot	4/5	M20172A
27	CD chassis	1	M21505A
28	Cover screw M3x10 mm sup pan	4	TM310PA
29	Display assembly (complete PCB)	1	QCDDISP
30	Screw drive 4x6 mm pan black	2	TC406PA
31	Transit screw RH thread (silver)	2	M22111A
	Transit screw LH thread (gold)	2	M22111X
32	Screw drive 6Ax6 mm pan black	2	TC606PB
33	Window mask	1	M22291A
34	Bulbs (backlit display)	2	BB515MB
35	Window (front panel)	1	MCDDWIP
36	Drawer open/close button	1	M21153C
37	Escutcheon (open/close Button)	1	MCDDW2S
38	Receiver assembly	1	QCDCREMR
39	Receiver retainer (early models)	1	AT0503A
40	Drawer open/close switch	1	S44INPA
	Drawer open/close switch inc PCB	1	QCDCPCBS
41	Mains on/off button	1	M21374A
42	Clip (switch PCB assy to CD mech.)	1	FC0021A

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ACCESSORIES

Ref	Description	Qty	Part No.
1	Remote control unit (R1)	1	QCDREMA
2	Battery 1.5V AAA size	3	N1V5AAA
3	Mains lead (0.6m) as supplied	1	QSPRSO6
4	Mains lead (1.5m) free end	1	QRS1M5A
5	Signal lead Phono (0.5m) as supplied	1	QP2P2SA
6	Signal lead Phono (1m)	1	QP2P21A

MISCELLANEOUS

Ref	Description	Qty	Part No.
1	Screw kit (inc cover screws)	1	QCDSCR2
2	Carton 66/CD	1	ZC6CD1A
3	CD Eperan pack (Polystyrene)	1	ZXCD1AA
4	Instruction booklet (English)	1	OICD1EC
5	Service manual	1	OSCD1EC