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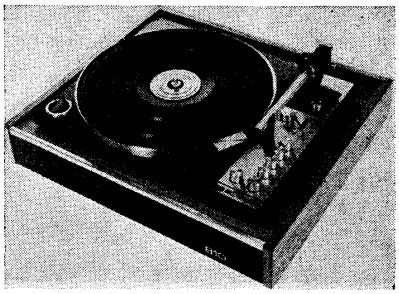
Trader SERVICE SHEET

3135

BSR 810/K3E

Record player module



An 810/K3E module comprises the BSR McDonald 810 transcription-type record deck, fitted with an ADC K3E magnetic cartridge, fully wired into a teak-finish plinth, complete with a tinted plastics dust cover. Features of the two-speed (33⅓ and 45 rpm) 810 unit include four-pivot gimbal tonearm suspension, resiliently-mounted tonearm counterweight allowing adjustment for a wide range of cartridges, continuously-variable stylus adjustment from 0 to 6 grams, a 12 inch dynamically-balanced turntable, variable pitch (turntable speed) control, dual-range (elliptical and round styli) anti-skate adjustment, viscous cueing device, choice of manual or automatic operation with stub or umbrella type spindle, strobe disc, and switch-off sound muting filter.
Output leads terminate with the unit as supplied in two phono plugs for the pick-up; the mains lead is fitted with a Continental-type 2-pin mains plug, the earth lead being run separately for bonding to an external amplifier so as to minimise hum due to earth loops.
Finish is in black and brushed aluminium trim for the deck, with the plinth in teak.

Brief Specification

Motor	4-pole synchronous induction type
Supply voltage	120 or 240V 50 or 60Hz a.c. mains
Speeds	33⅓ and 45 rpm
Turntable	12 inch (350mm) dynamically balanced, weight 7 lb (3·17kg) (approx)
Cartridge	ADC K3E (standard for module)
Output	4·5mV at 5·5cm/sec
Tracking force	1 to 2 grams
Frequency response	10Hz to 20kHz ±2·5dB
Stylus	Elliptical tip; 0·0007 x 0·0003in
Load impedance	47kΩ
Tonearm	Square-section aluminium, supported within gimbal gyroscopically-pivoted on 4 pre-loaded ballraces, counterbalanced. Fitted with mounting for slide-out cartridge carrier, wired two channels, individually screened
Controls	Pushbuttons, one each for selecting 7in, 10in, 12in records, stop, manual operation Auto/single/repeat Cueing device (lever operated) Speed selection and pitch
Accessories supplied	Automatic playing spindle (umbrella type) Stroboscope Stylus brush/stylus position indicator (interchangeable)
Deck mechanism	
Rumble	Better than −55dB relative to 1kHz at 10cm/sec
Wow	Better than 0·1 per cent*
Flutter	better than 0·05 per cent* * as measured by Gaumont Kalee meter
Dimensions of complete module, including dust cover	Height 7in (178mm) Width 17⅝in (447mm) Depth 15½in (393mm)
Manufacturer and Service Department	BSR Limited, Monarch Works, Cradley Heath, Worcester. Cradley Heath 69272

Dismantling

IMPORTANT On no account should the 810 deck mechanism be dismantled or tampered with. If a fault cannot be remedied by adjustment, then the complete unit should be returned to the Manufacturer for service.

1. Remove dust cover. Check that tonearm is locked to its rest. Fit stylus guard, and secure deck to motor board by means of transit wood screws with fibre washers. (These enter holes at centres of front and rear edges of deck.) Check that mains lead, earth bonding and pick-up leads are disconnected from supply and exterior equipment. Check, by rotating turntable manually, that mechanism is in a neutral condition.
2. Invert plinth on to blocks so that tonearm, etc is not resting on the bench; alternatively, turn the plinth on to one side so that the unit stands vertically.

Dismantling *(continued)*

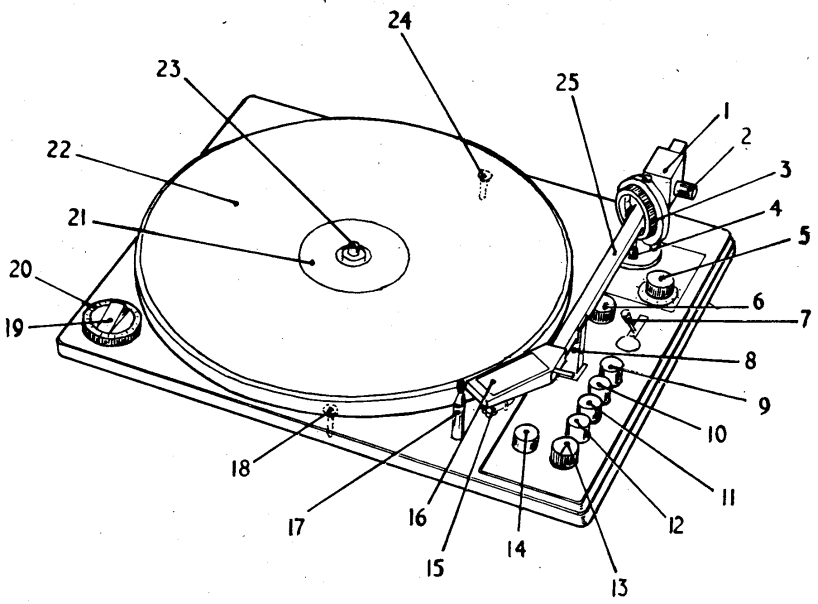
3. Unscrew bottom cover from plinth; release mains, earth and pick-up leads from clamps secured to cover. Lay cover aside.
4. *To remove deck from plinth* – remove centre spindle (single or auto), remove turntable mat and stroboscope. Ease off turntable. Lift out deck.
5. *To remove motor* – remove motor spindle grub screw, motor pulley and drive spring. Disconnect motor leads from terminal block. Withdraw circlips and remove upper washers from three grommets holding motor mounting studs, in turntable well. Pull motor clear, taking care not to mislay lower grommet washers.
6. *To remove switch unit* – remove leads and spark quench capacitor, release two screws securing switch.
7. *Removing cartridge from tonearm* – grip sides of cartridge slide, support tonearm with one hand and carefully pull out slide with the other. With the ADC K3E cartridge, fitted as standard, mounting of this to the slide is by means of two 3-48 standard American coarse thread screws; in some cases, or where an alternative cartridge has been fitted, an adaptor block, which can be moved to and fro along the slide for stylus position adjustment, is interposed between the cartridge and the slide.

Notes on re-assembly

Securing pick-up, mains lead and earth lead to base cover. Allow a minimum of 9in (mains and earth leads) and 7in (pick-up leads) between clamps and terminal blocks or sockets to ensure that leads are not strained. Note that the pick-up black plug is for the r.h. and the grey for the l.h. channel, but check that, if an alternative connector has been fitted to the pick-up lead outer end, that the channels correspond with the connector pins.

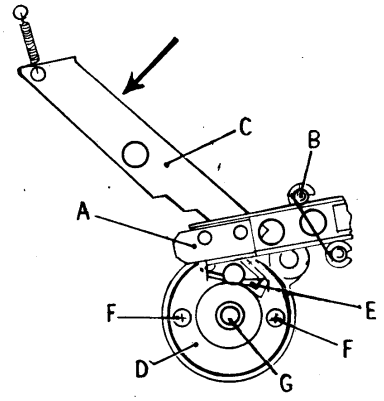
BSR 810 deck ▶

1. Counterbalance weight
2. Knurled adjusting knob
3. Stylus pressure ring
4. Pick-up height adjuster
5. Anti-skate control
6. Stylus setdown adjuster
7. Cueing device
8. Tonearm rest
9. 7in record button
10. 10in record button
11. 12in record button
12. Stop button
13. Auto/single/repeat button
14. Manual play button
15. Cartridge
16. Cartridge carrier
17. Stylus cleaning brush
18. Transit screw
19. Speed selector
20. Variable pitch (speed) control
21. Strobe disc
22. Turntable
23. Manual spindle
24. Transit screw



Refitting turntable *(see diagram below)*

1. Remove transit woodscrews, if fitted.
2. Set speed selector to neutral position (horizontal, flat).
3. Press rubber idler wheel in towards centre of deck.
4. Check, and if necessary clean, inner edge of turntable rim.
5. Push lever A to the rear against pin B.
6. Lever E is normally in the position shown, in which case proceed with step 7. If lever E is towards the front of the unit, push lever C about ¼in in the direction indicated, *and while still holding the lever,* turn black wheel D *clockwise* until small bent arm E is as shown, with screws F lying at 9 and 3 o'clock as shown. Release lever C.
7. The turntable has two holes near the centre, one of which has a flat in its circumference. Hold the turntable over the deck bearing G with the flatted hole to the rear, and lower the turntable over the bearing.
8. Select the required speed, refit the turntable mat, and replace the strobe disc.
9. Rotate the turntable by hand 7 complete revolutions clockwise so as to render the deck mechanism neutral.



Adjustments and settings *(see diagram above)*

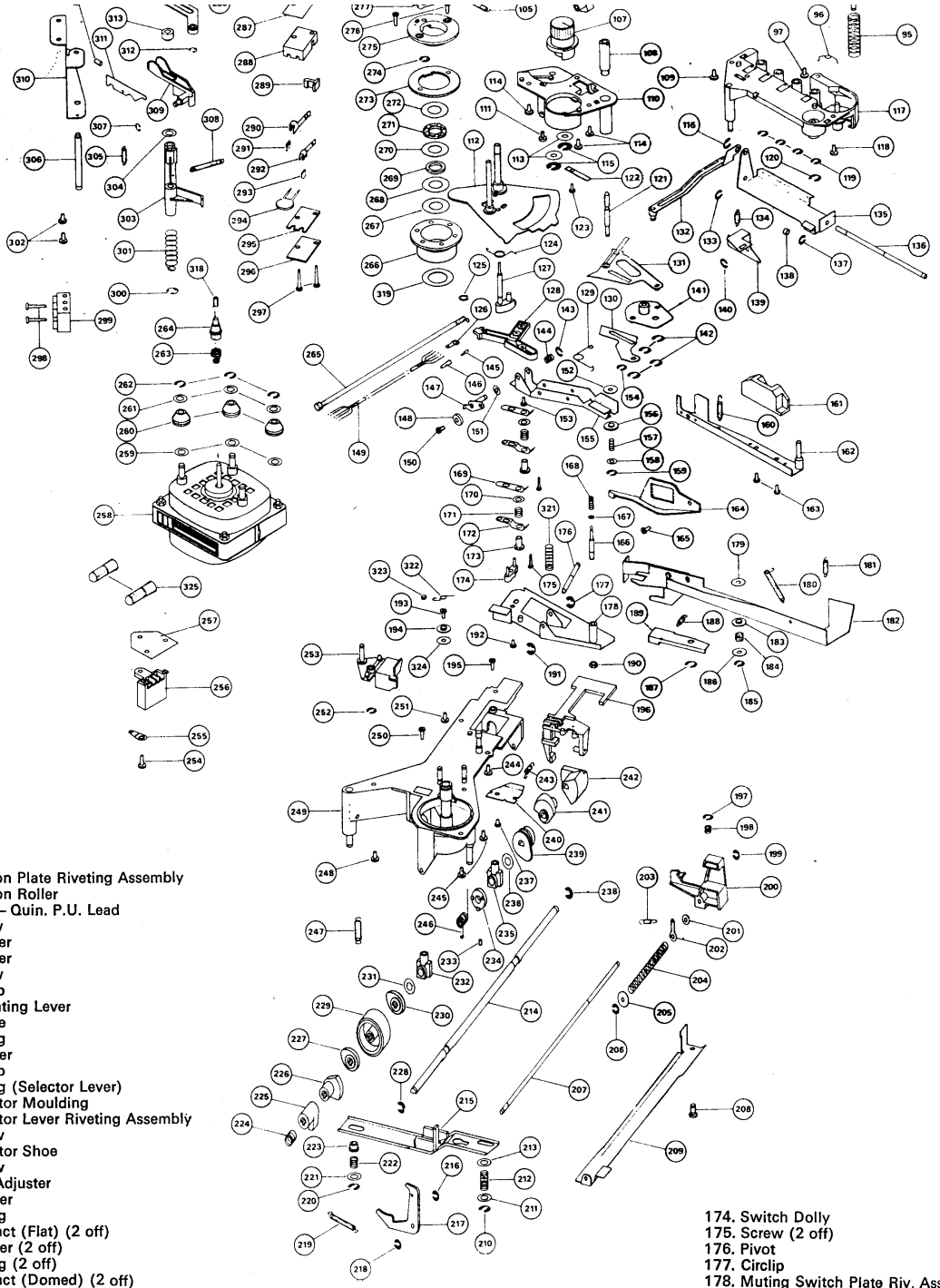
1. **Tonearm balance**
   (a) Set anti-skate control (5) to "0".
   (b) With tonearm on rest, set stylus pressure ring (3) to "0".
   (c) Gently lift tonearm (25) free of rest.
   (d) With stylus guard removed, move tonearm towards turntable centre until stylus is about 1in inside turntable mat periphery.
   (e) Adjust balance weight (1), by turning screw (2), until tonearm balances with stylus tip just clear of mat top surface.
   (f) Replace tonearm on rest.

2. **Stylus pressure**
   With tonearm on rest, rotate stylus pressure ring (3) to the figure corresponding to the cartridge maker's recommended pressure. If this is stated between limits (e.g. "1 to 2 gr"), set to middle of range.

3. **Anti-skate control** (5)
   Separate concentric scales are provided for elliptical and conical stylus tips. The inner of these is for elliptical styli. Turn control knob to the same setting as that given for stylus pressure.
   Check if possible using a stereo test or demonstration record which has a blank anti-skate track. Readjust if necessary.

4. **Stylus setdown**
   Stylus should set down ⅛in in from the periphery of the selected size of record. Adjust as follows:
   (a) Check that record deck is disconnected from mains supply.
   (b) Using single record spindle, place record on turntable.
   (c) Set SINGLE/AUTO control to SINGLE.
   (d) Press appropriate button for size of record.
   (e) Rotate turntable by hand until tonearm lifts and starts to move inwards.
   (f) Stop turntable when tonearm stops moving inwards but *before* it starts to lower on to record.
   (g) Turn setdown control (6) if necessary to obtain correct setdown position (clockwise to move stylus inwards, anti-clockwise to move it outwards).
   (h) Continue manually rotating turntable and check that stylus sets down correctly into record run-in groove.
   (j) Lift tonearm, move it in manually to record finishing groove, and continue rotating turntable until tonearm returns to its rest and mechanism restores to neutral condition.
   This setting will automatically be correct for the other two record sizes.

5. **Tonearm height**
   With tonearm raised fully clear of its rest, the underside of the tonearm square-section tube should clear the rest seating face by 3/32in (5·5mm). Adjust as follows, with the record deck disconnected from the mains supply:
   (a) Press 12in record selector button.
   (b) Rotate turntable manually clockwise until tonearm lifts to fullest height, then stop turntable.
   (c) Adjust knurled sleeve below arm at gimbal end to obtain correct clearance.



66. Trip Arm
67. Spring (Trip Arm Pivot)
68. Circlip
69. Washer
70. Washer
71. Circlip
72. Washer
73. Jockey Arm Assembly
74. Adjusting Screw
75. Jockey Pulley Assembly
76. Washer
77. Circlip
78. Phono Socket
79. Solder Tag
80. Screw
81. Pitch Control Knob Assembly
82. Escutcheon
83. Pivot
84. Speed Change Knob Assembly
85. Pitch Marking
86. Adaptor Clip
87. Wood Screw
88. 45 r.p.m. Turntable Adaptor
89.
90. Selector Button Final Assembly
91. Stop Button Final Assembly
92. Man/Auto Knob Assembly
93. Spring (Button)
94. Start Button Final Assembly
95. Spring (Button)
96. Spring (Man/Auto Knob)
97. Screw
98. Circlip
99. Lockwasher
100. Screw
101. Screw
102. Anti-skate Knob Final Assembly
103. Anti-skate Slide
104. Spring
105. Spring (Anti-skate)
106. Viscous Cue Cam Assembly
107. Set Down Knob Final Assembly
108. Cylinder
109. Screw
110. Cue Casting
111. Screw
112. Quadrant Assembly
113. Washer
114. Screw
115. Circlip
116. Circlip
117. Push Button Housing Riv. Assembly
118. Screw
119. Circlip
120. Circlip
121. Plunger
122. Leaf Spring
123. Screw
124. Spring (Raising Pad)
125. Circlip
126. Solder Tag
127. Raising Pad Assembly
128. Muting Switch Base
129. Spring
130. Reject Link
131. Cut-off Plate Assembly
132. Rocker Link Assembly
133. Circlip
134. Spring (Release Rocker)
135. Rocker Assembly
136. Rocker Pivot
137. Circlip
138. Sleeve
139. Release Rocker
140. Circlip
141. Pivot Plate Assembly
142. Circlip
143. Circlip
144. Spring (Operating Lever)
145. Tag (4 off)
146. Sleeve (4 off)
147. Friction Plate Riveting Assembly
148. Friction Roller
149. 14½" – Quin. P.U. Lead
150. Screw
151. Washer
152. Washer
153. Screw
154. Circlip
155. Operating Lever
156. Sleeve
157. Spring
158. Washer
159. Circlip
160. Spring (Selector Lever)
161. Selector Moulding
162. Selector Lever Riveting Assembly
163. Screw
164. Selector Shoe
165. Screw
166. Cue Adjuster
167. Washer
168. Spring
169. Contact (Flat) (2 off)
170. Washer (2 off)
171. Spring (2 off)
172. Contact (Domed) (2 off)
173. Switch Spacer (2 off)
174. Switch Dolly
175. Screw (2 off)
176. Pivot
177. Circlip
178. Muting Switch Plate Riv. Assembly
179.
246. Reset Spring
247. Spring (Feed Lever)
248. Screw
249. Sub-unit Riveting Assembly
250. Screw
251. Screw
252. Circlip
253. Drive Latch Assembly
254. Screw
255. Tag Lockwasher
256. Amp Plug Housing
257. Insulating Strip
258. F.P.30 Motor Assembly
259. Washer
260. Motor Mounting Grommet
261. Washer
262. Circlip
263. Drive Spring
264. 50Hz Motor Pulley
264. 60Hz Motor Pulley
265. Screen
266. Drive Worm
267. Washer
268. Thrust Washer
269. Damping Rubber
270. Thrust Washer
271. Ballrace
272. Thrust Washer
273. Drive Ring
274. Circlip
275. Drive Flange
276. Screw
277. Pressure Plate
278. Drive Pawl
279. Pawl Pivot
280. Spring (Pawl Pivot)
281. Spring (Switch Slide)
282. Switch Slide Assembly
283. Sleeve
284. Spring (Toggle Lever)
285. Toggle Lever
286. Toggle Lever Pivot
287. Retaining Strip
288. Switch Body
289. Switch Dolly
290. Contact (Fixed)
291. Solder Tag
292. Contact (Moving)
293. Solder Tag
294. Capacitor
295. Switch Cover
296. Switch Cover
297. Screw
298. Screw
299. Block Connector
300. Circlip
301. Spring
302. Screw
303. Speed Change Arm
304. Washer
305. Spring
306. Raising Spindle
307. Circlip
308. Spring
309. Speed Change Slide Assembly
310. Speed Change Bracket
311. Detent Lever
312. Circlip
313. Raising Sleeve
314. Pitch Slide
315. Screw
316. Mounting Stud (4 off)
317. Mounting Spring (4 off)
318. Grub Screw
319. Washer
320. Securing Rubber
321. Spring
322. Spring
323. Locking Roller
324. Washer
325. "Screw On" Connector

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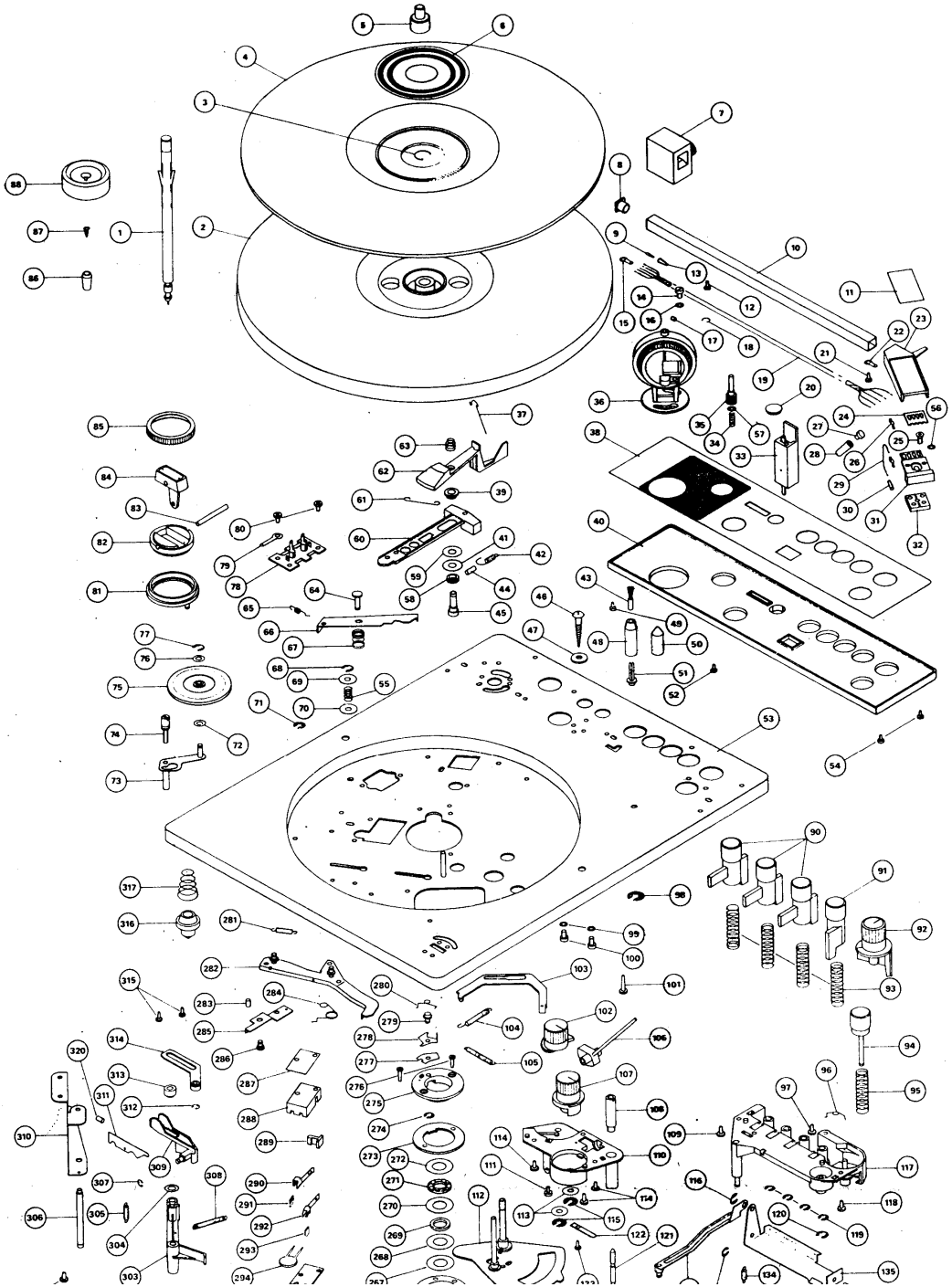
1. Centre Spindle
2. Turntable
3. Circlip
4. Turntable Mat
5. Stub Spindle
6. T.T. Centre Disc (50Hz)
6. T.T. Centre Disc (60Hz)
7. P.U. Weight Assembly
8. Tube End
9. Tag (4 off)
10. P.U. Tube
11. P.U. Head Trim
12. Screw
13. Sleeve (4 off)
14. Screw
15. Solder Tag
16. Washer
17. Securing Rubber
18. Circlip
19. 14½" – Quin. P.U. Lead
20. Screw Cover
21. Screw
22. Solder Tag
23. P.U. Head
24. Tag Strip
25. Screw
26. Contact (8 off)
27. Cap
28. Cue Knob
29. 1½" – Quad. P.U. Lead
30. Sleeve (4 off)
31. Mounting Slide
32. Adaptor
33. P.U. Rest Assembly
34. Spring (P.U. Raising Spindle)
35. Height Adjuster
36. P.U. Hinge and Pedestal Assembly
37. Spring (Friction Link)
38. Escutcheon Trim
39. Support Sleeve
40. Escutcheon
41. Washer
42. Spring (Actuating Pawl)
43. Stylus Cleaning Brush
44. Pin
45. Actuating Bush Assembly
46. Wood Screw (2 off)
47. Washer (2 off)
48. Stylus Brush Holder
49. Screw
50. Stylus Position Indicator
51. Locating Stud
52. Screw
53. Mainplate Riveting Assembly
54. Screw
55. Spring (Drive Latch)
56. Washer
57. Washer
58. Pivot Ring
59. Washer
60. Actuating Pawl Assembly
61. Limit Wire
62. Friction Link
63. Spring (Actuating Bush)
64. Trip Arm Pivot
65. Spring (Trip Arm)
66. Trip Arm
67. Spring (Trip Arm Pivot)
68. Circlip
69. Washer
70. Washer
71. Circlip
72. Washer
73. Jockey Arm Assembly
74. Adjusting Screw
75. Jockey Pulley Assembly
76. Washer
77. Circlip
78. Phono Socket
79. Solder Tag



180. Spring (Rocker Pivot)
181. Spring (Auto-Man Slide)
182. Auto-Man Slide Assembly
183. Sleeve
184. Spring
185. Circlip
186. Washer
187. Circlip
188. Spring (Stop Catch)
189. Stop Catch
190. Nut
191. Circlip
192. Screw
193. Screw
194. Sleeve
195. Screw
196. Drive Plate Assembly
197. Circlip
198. Spring (Cut-off Link)
199. Circlip
200. Cut-off Rocker
201. Washer
202. Solder Tag
203. Spring (Reset)
204. Spring
205. Washer
206. Circlip
207. Cut-off Spindle
208. Overload Pin
209. Cut-off Link
210. Circlip
211. Washer
212. Spring (Feed Lever)
213. Washer
214. Cam Spindle
215. Feed Lever Assembly
216. Circlip
217. Switch Rocker
218. Circlip
219. Spring (Switch Rocker)
220. Circlip
221. Washer
222. Spring
223. Sleeve
224. Spring (Cam Spindle)
225. Switch Cam
226. Feed Lock Cam
227. Feed Cam
228. Circlip
229. Drive Gear
230. Feed Cam
231. Shim Washer
232. Bearing
233. Grub Screw
234. Reset Cam
235. Bearing
236. Shim Washer
237. Screw
238. Circlip
239. Cut-off Cam
240. Retainer
241. Traverse Cam
242. Raise and Selector Cam
243. Spring (Drive Plate)
244. Screw
245. Screw
246. Reset Spring
247. Spring (Feed Lever)
248. Screw
249. Sub-unit Riveting Assembly
250. Screw
251. Screw
252. Circlip
253. Drive Latch Assembly
254. Screw
255. Tag Lockwasher
256. Amp Plug Housing
257. Insulating Strip
258. F.P.30 Motor Assembly
259. Washer

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