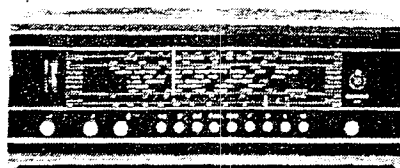




# ERT SERVICE CHART 1725



## BEOMASTER 900K, 900M, 900RG STEREO TUNER/AMPI IFIFR

Picture shows stereo tuner/amplifier Beomaster 900M. This unit is incorporated in the Beomaster 900K radio which has integral speaker enclosures with grooved baffles at the ends, and in the radiogram Beomaster 900RG. All models will accept the decoder which is available separately. Cabinets have teak or rosewood finish

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**T**ABLE RADIO tuning LW, MW, SW and VHF/FM bands. Circuit uses 24 transistors and 10 diodes. Unit is available for use with separate speaker enclosures (model 900M), with integral speakers (900K) or incorporated in radiogram model 900RG.

Mains. 110, 130, 220, 240V AC 50c/s.  
Consumption. 10W at 100mW output, 65W at maximum output.

Transistors. TR1 BF115; TR2 BF115; TR3 AF116/AF126; TR4 AF116/AF126; TR4B OC71; TR5 2N2654/AF121; TR6 AC151; TR7 AC151; TR8 AC151; TR9 AC151; TR10 AC153; TR11 AC153; TR12 AC132; TR13 AC127; TR14 AC132; TR15 AC127; TR16 AC156; TR17 AC151; TR18 2N555; TR19 BC154; TR20 BC154; TR21 AD139; TR22 AD139; TR23 AD139; TR24 AD139.

Diodes. D1 OA90; D2 2BA101; D3 OA70; D4 OA79; D5 OA79; D6 OA90; D7 OA79; D8 AA119; D9 AA119; D10 IN757A.

Wavebands. LW 2040-857m (147-350kc/s); MW 578-188m (520-1600kc/s); SW 50.4-48.4m (5.95-6.2mc/s); VHF/FM 87.5-108mc/s.

IFs. AM 468kc/s, FM 10.7mc/s.

Aerials. MW, LW internal ferrite rod.  
Pilot lamps. LP1 stereo indicator lamp 19V 0.097A; LP2, LP3 dial lamps 6.3V 0.3A.

Outlets. 5-contact DIN socket for mono and stereo recorders. Diode output 100mV at 1kc/s; playback 450mV at 1kc/s. DIN socket for two side speakers and one additional speaker on left channel.

Fuses. FS1 1A fuse link; FS2, FS3 250mA.

Output. 6W per channel continuous, 8W per channel peak.

Speakers. Model 900K, 3.2ohm impedance elliptical.

Dimensions. 900K 29½ x 5½ x 9½; 900M 15½ x 5½ x 9½in.

Manufacturer. Bang & Olufsen, Denmark.

Service Department. Eastbrook Road, Gloucester. Tel: Gloucester 21591.

### SERVICE NOTES

In model 900K, cabinet forms pressure chamber for speakers so that if chassis is removed from cabinet power fed to speakers must be limited to avoid damage to speaker cones.

### ALIGNMENT

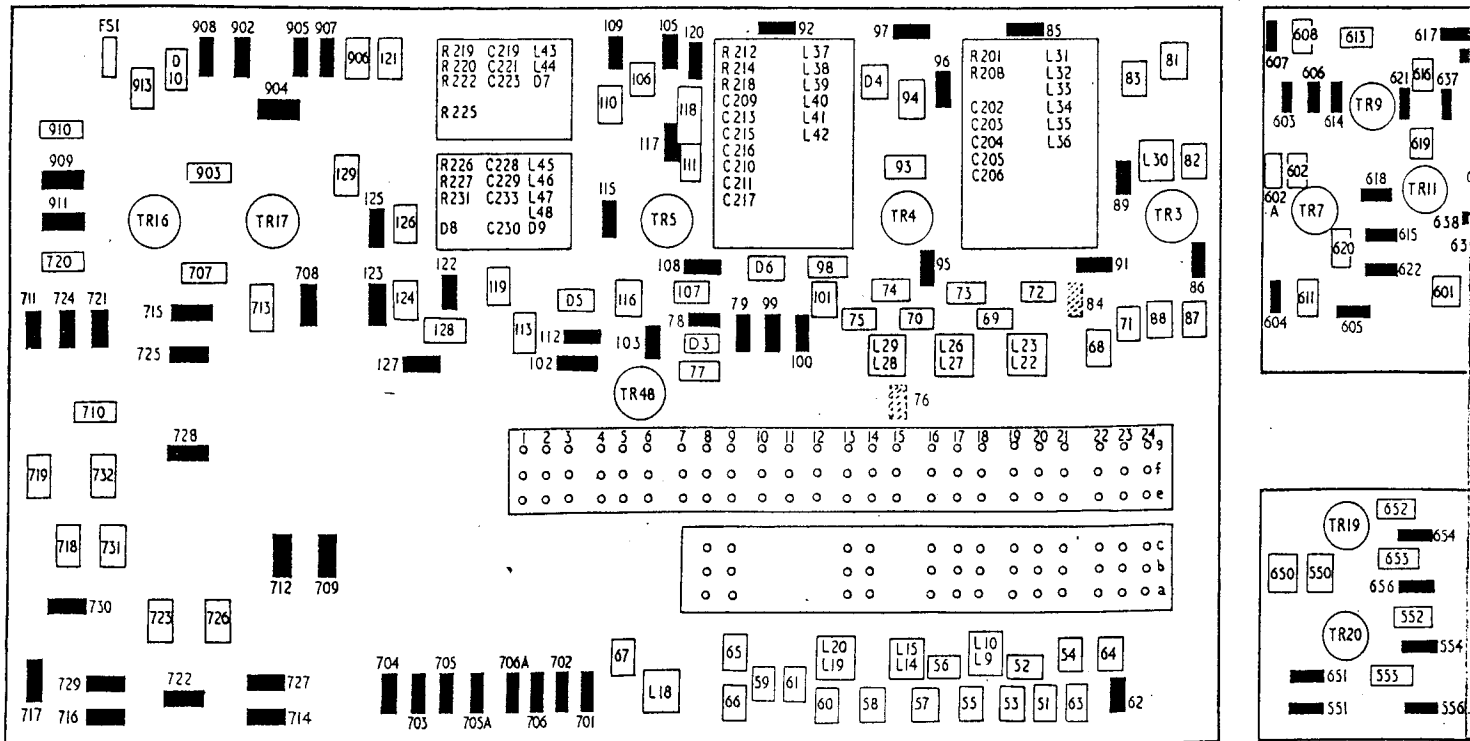
Equipment requires. AM/FM signal generator; sweep generator; oscilloscope; AF output meter; dummy aerial; 100KpF capacitor; polystyrene cement; trimming tools.

General. Maintain output of about 50mW with volume control fully advanced to prevent AGC action masking alignment peaks.

AM IF. Select MW and fully mesh tuning capacitor. Apply 468kc/s signal with about 20kc/s frequency swing from sweep generator through 100KpF capacitor to base of TR3. Detune coils L2, L1 and L18. Connect 'scope to AM detector stage and adjust in turn cores L43/44, L38, L37, L32, L31 for symmetry and maximum response.

Band width of 5kc/s ±0.5kc/s at 6dB should be obtained. Sensitivity at TR3 base for 50mW output, 1microvolt; at TR4 base 7microvolts; at TR5 base 230microvolts.

Transfer signal to aerial socket and adjust core of L2 for minimum response. Fully open tuning gang and adjust core of L1 for minimum response. Inject signal



Layout of components on circuit boards, showing resistors in solid black and capacitors in outline only; bottom centre, AF output board; bottom right amplifier; at left, AM tuner and IF board



# BEOMASTER 900K, 900M, 900RG

## STEREO TUNER/ AMPLIFIER

to ferrite aerial and adjust L18 for minimum response.

**AM RF.** Select LW and set tuning cursor to 155kc/s. Apply 155kc/s signal with 30 per cent AM at 400 c/s to aerial socket. Adjust core of L28 for maximum output selecting peak nearer chassis. Set receiver and signal generator to 285kc/s and adjust C74 for maximum output.

Select MW, tune receiver and signal generator to 575kc/s and adjust L26 for maximum output. Set receiver and signal generator to 1495kc/s and adjust C73 for maximum output.

Select SW and tune receiver and signal generator to 5.95mc/s. Adjust L22 for maximum output. Set receiver and signal generator to 7.45mc/s and adjust C72 for maximum output.

Select LW and tune receiver to 155kc/s. Inject 155kc/s signal to ferrite aerial and adjust position of L8 on aerial to get maximum response. Tune receiver and signal generator to 285kc/s and adjust C63 for maximum output.

Switch receiver to MW and tune to 575kc/s. Inject 575kc/s signal and adjust position of L17 on ferrite rod to get maximum output. Tune receiver and signal generator to 1495kc/s and adjust C66 for maximum.

Select LW and tune receiver to 155kc/s. Inject 155kc/s signal to aerial socket through dummy aerial and tune L9/10 for maximum output. Tune receiver and signal generator to 285kc/s and trim C25 for maximum output.

Select MW and tune set and signal generator to 575kc/s. Adjust core of L15/14 for maximum. Tune set and generator to 1495kc/s and trim C57 for maximum.

Select SW and tune receiver and generator to 5.95mc/s and adjust L19/20 for maximum. Tune receiver and generator to 7.45mc/s and trim C60 for maximum.

**FM IF.** Select FM band and position

*continued overleaf*

*Additional copies of this chart 1s. 6d. including postage. Payment with order please to ERT, Dorset House, Stamford Street, London, SE1.*

### ALIGNMENT

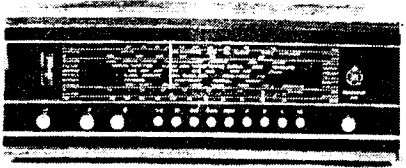
**Equipment requires.** AM/FM signal generator; sweep generator; oscilloscope; AF output meter; dummy aerial; 100KpF capacitor; polystyrene cement; trimming tools.

**General.** Maintain output of about 50mW with volume control fully advanced to prevent AGC action masking alignment peaks.

**AM IF.** Select MW and fully mesh tuning capacitor. Apply 468kc/s signal with about 20kc/s frequency swing from sweep generator through 100KpF capacitor to base of TR3. Detune coils L2, L1 and L18. Connect 'scope to AM detector stage and adjust in turn cores L43/44, L38, L37, L32, L31 for symmetry and maximum response.

Band width of 3kc/s  $\pm$  0.5kc/s at 6dB should be obtained. Sensitivity at TR3 base for 50mW output, 1microvolt; at TR4 base 7microvolts; at TR5 base 230microvolts.

Transfer signal to aerial socket and adjust core of L2 for minimum response. Fully open tuning gang and adjust core of L1 for minimum response. Inject signal



Picture shows stereo tuner/amplifier Beomaster 900M. This unit is incorporated in the Beomaster 900K radio which has integral speaker enclosures with grooved baffles at the ends, and in the radiogram Beomaster 900RG. All models will accept the decoder which is available separately. Cabinets have teak or rosewood finish

**Aerials.** MW, LW internal ferrite rod.  
**Pilot lamps.** LP1 stereo indicator lamp 19V 0.097A; LP2, LP3 dial lamps 6.3V 0.3A.

**Outlets.** 5-contact DIN socket for mono and stereo recorders. Diode output 100mV at 1kc/s; playback 450mV at 1kc/s. DIN socket for two side speakers and one additional speaker on left channel.

**Fuses.** FS1 1A fuse link; FS2, FS3 250mA.

**Output.** 6W per channel continuous, 8W per channel peak.

**Speakers.** Model 900K, 3.2ohm impedance elliptical.

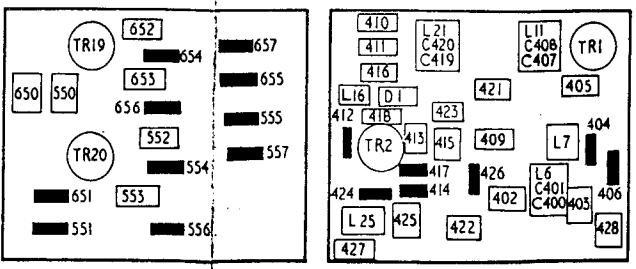
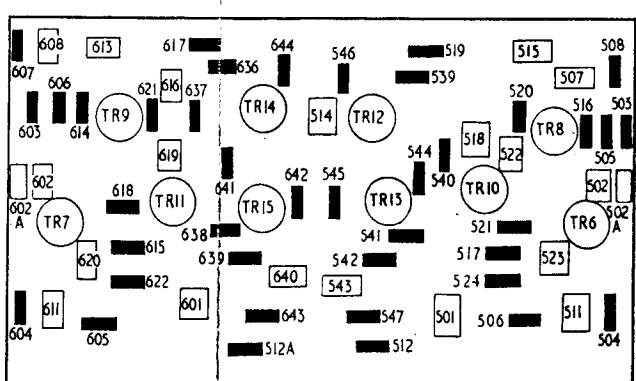
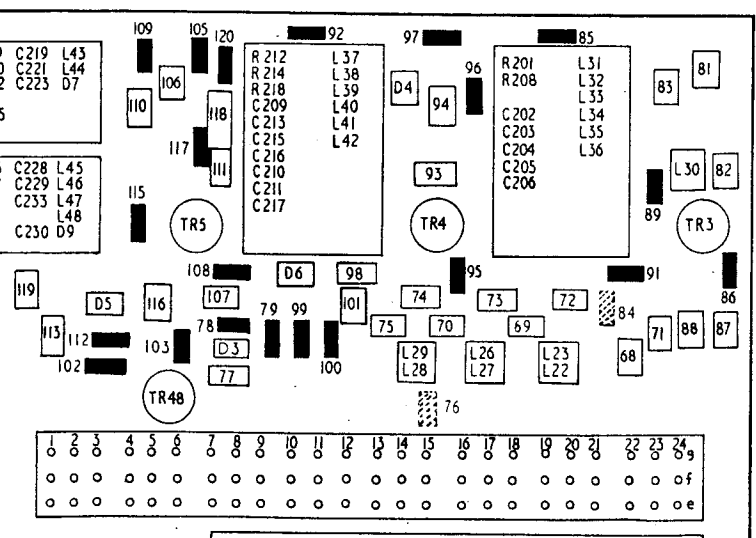
**Dimensions.** 900K 29 1/4 x 5 3/8 x 9 3/8; 900M 15 3/8 x 5 3/8 x 9 3/8 in.

**Manufacturer.** Bang & Olufsen, Denmark.

**Service Department.** Eastbrook Road, Gloucester. Tel: Gloucester 21591.

### SERVICE NOTES

In model 900K, cabinet forms pressure chamber for speakers so that if chassis is removed from cabinet power fed to speakers must be limited to avoid damage to speaker cones.



Resistors in solid black and capacitors in outline only; bottom centre, AF output board; bottom right FM RF and tuner board; top right, AF amplifier; at left, AM tuner and IF board

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to ferrite aerial and adjust L18 for minimum response.

**AM RF.** Select LW and set tuning cursor to 155kc/s. Apply 155kc/s signal with 30 per cent AM at 400 c/s to aerial socket. Adjust core of L28 for maximum output selecting peak nearer chassis. Set receiver and signal generator to 285kc/s and adjust C74 for maximum output.

Select MW, tune receiver and signal generator to 575kc/s and adjust L26 for maximum output. Set receiver and signal generator to 1495kc/s and adjust C73 for maximum output.

Select SW and tune receiver and signal generator to 5.95mc/s. Adjust L22 for maximum output. Set receiver and signal generator to 7.45mc/s and adjust C72 for maximum output.

Select LW and tune receiver to 155kc/s. Inject 155kc/s signal to ferrite aerial and adjust position of L8 on aerial to get maximum response. Tune receiver and signal generator to 285kc/s and adjust C63 for maximum output.

Switch receiver to MW and tune to 575kc/s. Inject 575kc/s signal and adjust position of L17 on ferrite rod to get maximum output. Tune receiver and signal generator to 1495kc/s and adjust C66 for maximum.

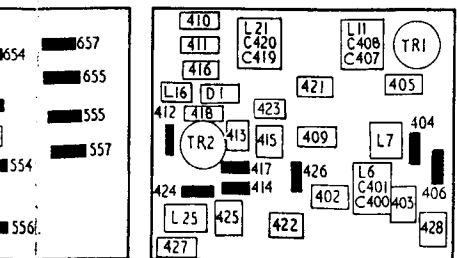
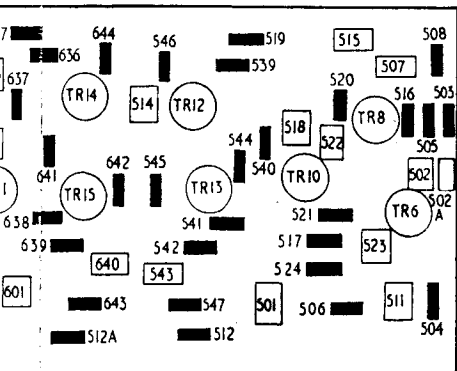
Select LW and tune receiver to 155kc/s. Inject 155kc/s signal to aerial socket through dummy aerial and tune L9/10 for maximum output. Tune receiver and signal generator to 285kc/s and trim C25 for maximum output.

Select MW and tune set and signal generator to 575kc/s. Adjust core of L15/14 for maximum. Tune set and generator to 1495kc/s and trim C57 for maximum.

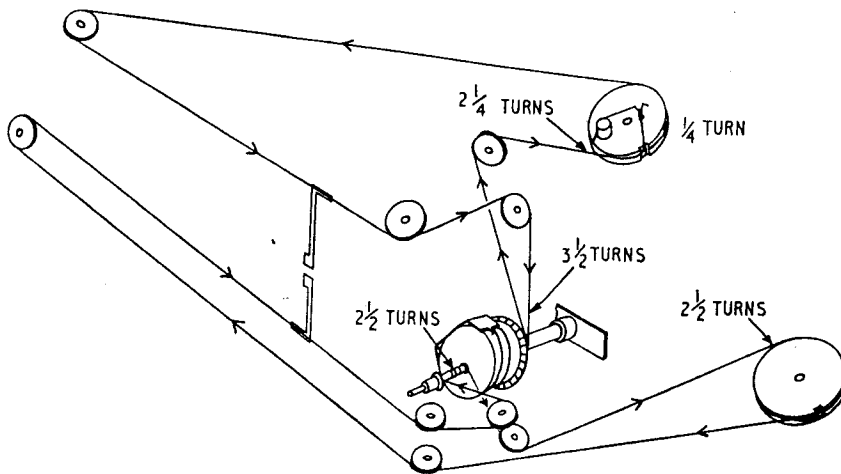
Select SW and tune receiver and generator to 5.95mc/s and adjust L19/20 for maximum. Tune receiver and generator to 7.45mc/s and trim C60 for maximum.

**FM IF.** Select FM band and position

continued overleaf

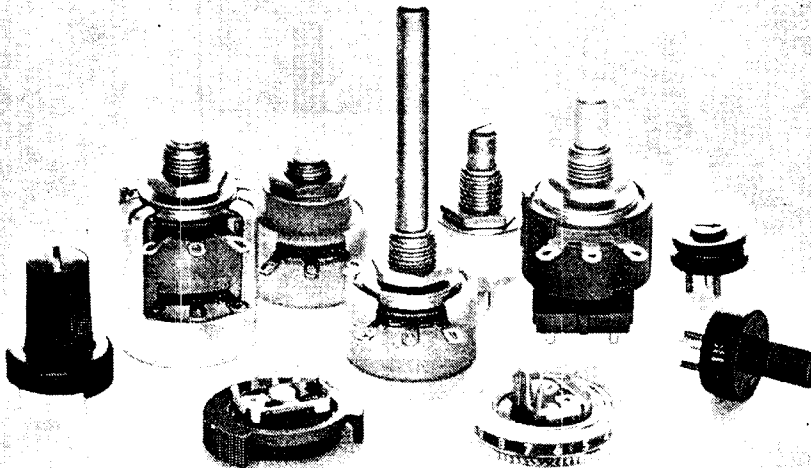


right FM RF and tuner board; top right, AF



Lacing of tuning drive cords. Upper cord needs to be about 63in. long and lower one about 55in. long, allowing for tying-off ends

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1	47pF	—	99	—	18K	405	1KpF	—	424	—	68	515A	—
2	22pF	—	100	—	68K	406	—	680	425	3K3	—	516	—
3	22pF	—	101	10KpF	—	407	12pF	—	426	—	100K	517	—
4	10KpF	—	102	—	4K7	408	1-9pF	—	427	1KpF	—	518	100mF/80mF
5	1KpF	—	103	—	10K	409	gang	—	428	1KpF	—	519	—
6	33pF	—	105	—	470K	410	4.7pF	—	501	160mF/64mF	—	520	—
7	gang	—	106	6.4mF	—	411	22pF	—	502	10mF	—	521	—
8	gang	—	107	100KpF	—	412	—	1K	502A	330pF	—	522	1K5pF
9	125mF	—	108	—	820	413	220pF	—	503	—	47K	523	125mF/100mF
10	—	100	109	—	470	414	—	—	504	—	68K/120K	524	—
11	—	100K	110	10KpF	—	415	1KpF	—	505	—	5K6	539	—
12	10KpF	—	111	12pF	—	416	5.6pF	—	506	—	4K7	540	—
13	—	47	112	—	47K	417	—	10K	507	125mF/100mF	—	541	—
14	—	10	113	10KpF	—	418	100pF	—	508	—	22	542	—
15	1000mF	—	115	—	470	419	12pF	—	511	2.5mF/1.6mF	—	543	100mF/80mF
16	—	47K	116	8.2pF	—	420	1-9pF	—	512	—	470	544	—
17	—	47K	117	—	2K2	421	gang	—	512A	—	470	545	—
18	800mF	—	118	10KpF	—	422	10KpF/1KpF	—	514	80mF/64mF	—	546	—
19	800mF	—	119	100mF	—	423	8.2pF	—	515	2.5mF/1.6mF	—	547	—
51	68pF	—	120	—	10K	—	—	—	—	—	—	—	—
52	22pF	—	121	22KpF	—	—	—	—	—	—	—	—	—
53	60pF	—	122	—	2K	—	—	—	—	—	—	—	—
54	3K3pF	—	123	—	18K	—	—	—	—	—	—	—	—
55	33pF	—	124	4mF	—	—	—	—	—	—	—	—	—
56	2.2pF	—	125	—	18K	—	—	—	—	—	—	—	—
57	60pF	—	126	4mF	—	—	—	—	—	—	—	—	—
58	4K7pF	—	127	—	1M	—	—	—	—	—	—	—	—
59	68pF	—	128	100KpF	—	—	—	—	—	—	—	—	—
60	60pF	—	129	6.4mF	—	—	—	—	—	—	—	—	—
61	820pF	—	201	—	47K	—	—	—	—	—	—	—	—
62	—	560K	202	180pF	—	—	—	—	—	—	—	—	—
63	20pF	—	203	180pF	—	—	—	—	—	—	—	—	—
64	1K5pF	—	204	20pF	—	—	—	—	—	—	—	—	—
65	4K7pF	—	205	180pF	—	—	—	—	—	—	—	—	—
66	20pF	—	206	47KpF	—	—	—	—	—	—	—	—	—
67	150pF	—	207	180pF	—	—	—	—	—	—	—	—	—
68	220pF	—	208	—	270	—	—	—	—	—	—	—	—
69	360pF	—	209	180pF	—	—	—	—	—	—	—	—	—
70	68pF	—	210	8pF	—	—	—	—	—	—	—	—	—
71	82pF	—	211	180pF	—	—	—	—	—	—	—	—	—
72	60pF	—	212	—	100K	—	—	—	—	—	—	—	—
73	60pF	—	213	47pF	—	—	—	—	—	—	—	—	—
74	22pF	—	214	—	270	—	—	—	—	—	—	—	—
75	20pF	—	215	180pF	—	—	—	—	—	—	—	—	—
76	—	10	216	4K7pF	—	—	—	—	—	—	—	—	—
77	10KpF	—	217	180pF	—	—	—	—	—	—	—	—	—
78	100K	100K	218	—	330	—	—	—	—	—	—	—	—
79	—	100K	219	2K2pF	—	—	—	—	—	—	—	—	—
81	180pF	—	220	—	33K	—	—	—	—	—	—	—	—
82	180pF	—	221	3K3pF	—	—	—	—	—	—	—	—	—
83	47KpF	—	222	—	1K2	—	—	—	—	—	—	—	—
84	—	47K	223	2K2pF	—	—	—	—	—	—	—	—	—
85	—	680	224	—	10K	—	—	—	—	—	—	—	—
86	—	220	225	—	1K2	—	—	—	—	—	—	—	—
87	10KpF	—	226	—	270	—	—	—	—	—	—	—	—
88	10KpF	—	227	—	47	—	—	—	—	—	—	—	—
89	—	15K	228	47pF	—	—	—	—	—	—	—	—	—
91	—	10K	229	100pF	—	—	—	—	—	—	—	—	—
92	—	1K2	230	100pF	—	—	—	—	—	—	—	—	—
93	47KpF	—	231	—	1K	—	—	—	—	—	—	—	—
94	100 KpF	—	400	12pF	—	—	—	—	—	—	—	—	—
95	—	220	401	1-9pF	—	—	—	—	—	—	—	—	—
96	—	470	402	gang	—	—	—	—	—	—	—	—	—
97	—	500	403	1KpF	—	—	—	—	—	—	—	—	—
98	8.2pF	—	404	—	1K	—	—	—	—	—	—	—	—

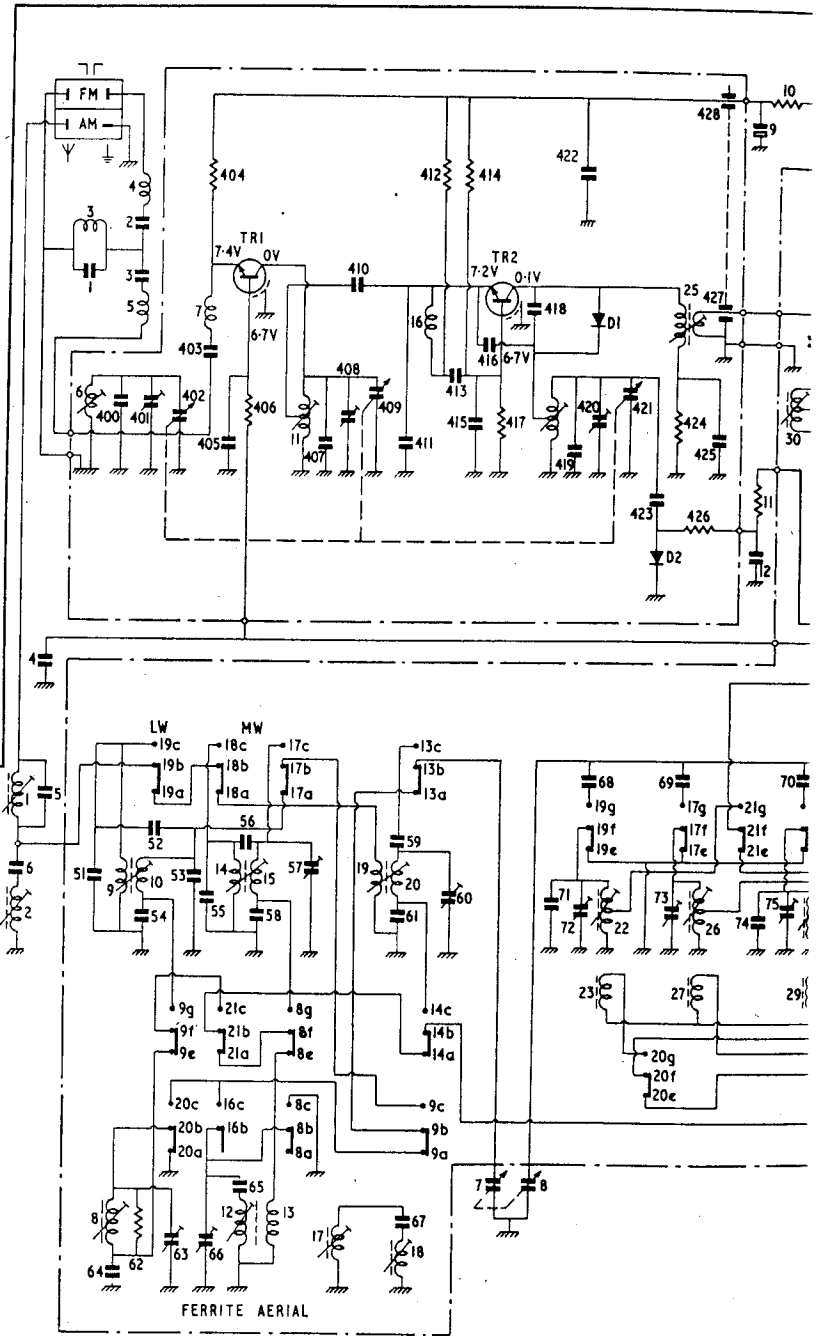
tuning cursor at 97mc/s mark. Connect 'scope to TR5 collector through diode probe. Disable AFC and inject 10.7mc/s signal with about 1mc/s swing from sweep generator to aerial socket. Adjust in turn cores of L30, L35, L36, L41 and L42 to get maximum response and symmetrical curve; bandwidth 250kc/s ± 30kc/s at 6dB.

Transfer 'scope to FM detector stage and inject signal from sweep generator without diode probe. Adjust L47 and L46 for maximum response and symmetrical curve. Adjust R122 for best noise suppression.

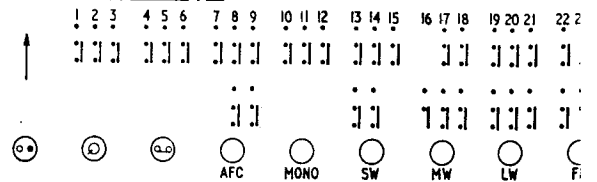
FM RF. Set receiver tuning pointer to 89mc/s and inject 89mc/s signal with 22.5kc/s deviation at 400c/s to aerial socket. Adjust L21 core for maximum output. Tune receiver and signal generator to 106mc/s and trim C420 for maximum output.

Tune receiver and signal generator to 89mc/s and adjust core of L11 for maximum. Tune set and generator to 106mc/s and trim/C403 and C404 for maximum output.

Circuit diagram for chassis common to Beomaster 900M, 900K and 900RG. Voltages shown are negative with respect to chassis and were measured under no signal conditions

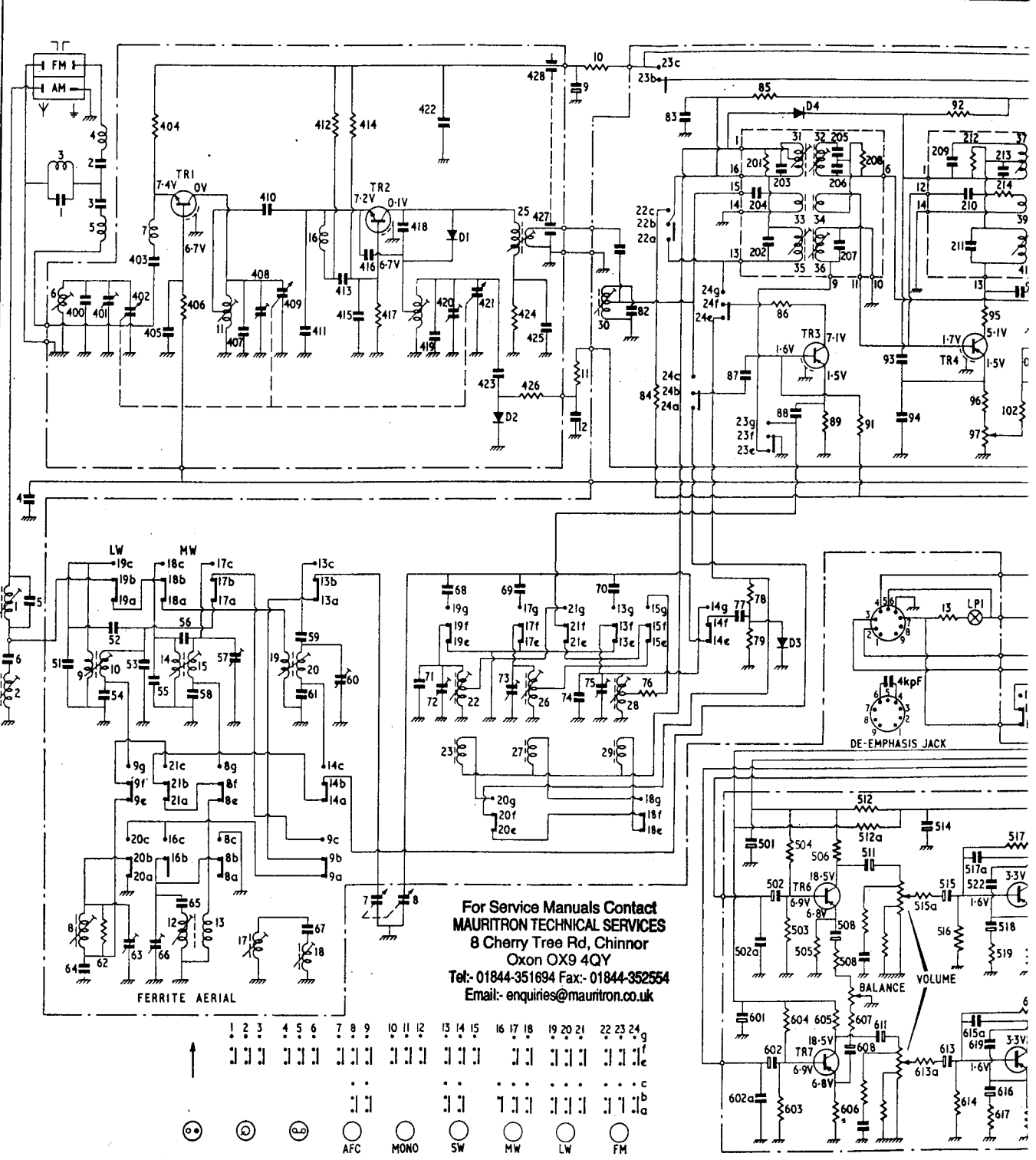


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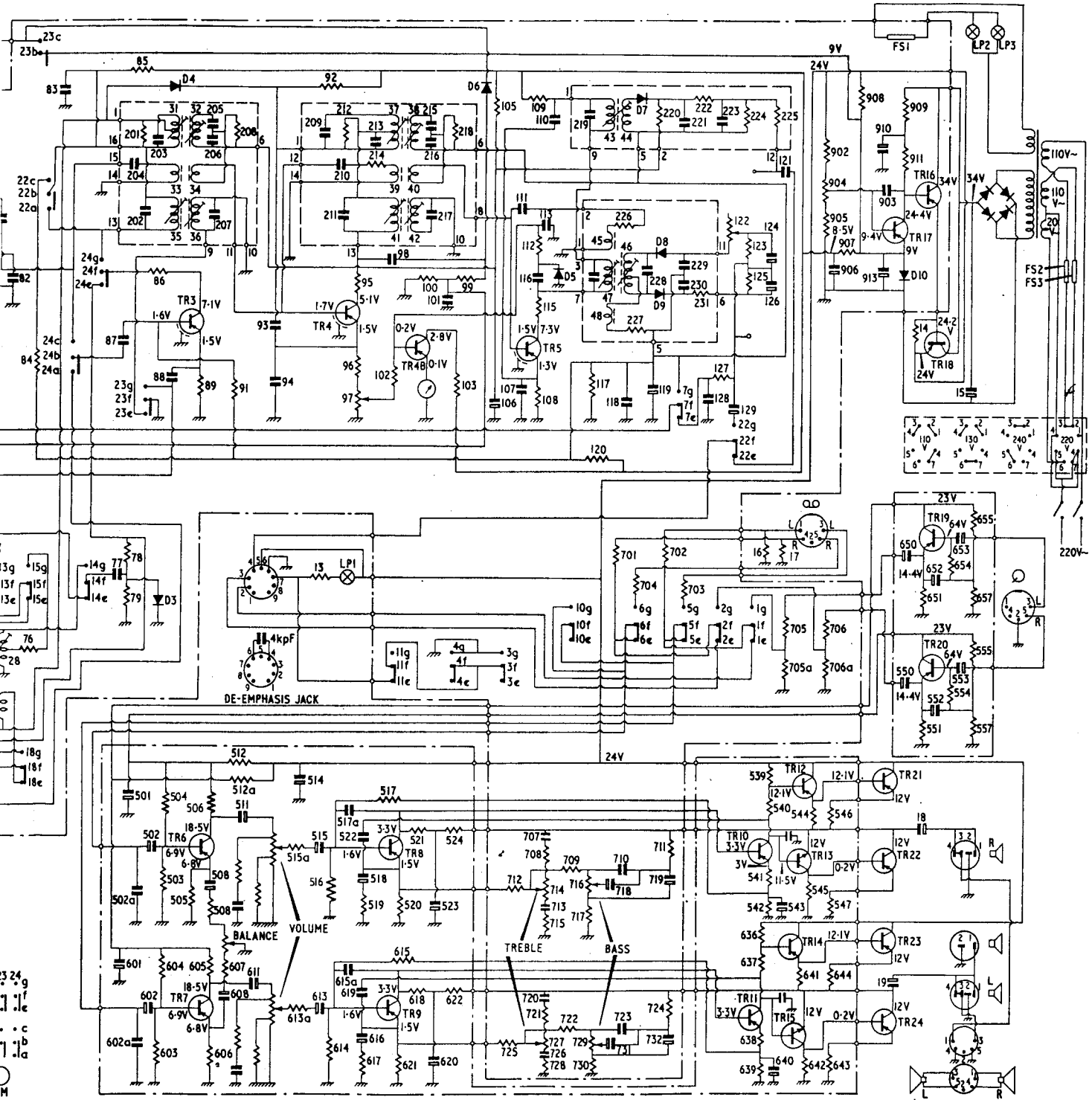
- 18K
- 68K
- 10KpF
- 4K7
- 10K
- 470K
- 5.4mF
- 100KpF
- 820
- 470
- 10KpF
- 12pF
- 47K
- 3.2pF
- 2K2
- 10KpF
- 100mF
- 10K
- 22KpF
- 2K
- 18K
- 18K
- 1M
- 47K
- 180pF
- 180pF
- 20pF
- 180pF
- 17KpF
- 180pF
- 3pF
- 180pF
- 17pF
- 100K
- 270
- 80pF
- 1K7pF
- 80pF
- 1K2pF
- 1K3pF
- 1K2pF
- 10K
- 1K2
- 270
- 47
- 17pF
- 100pF
- 100pF
- 1K
- 2pF
- 9pF
- gang
- 1KpF
- 1K

405	1KpF	—	424	—	68	515A	—	1K	550	10mF	—	613A	—
406	—	680	425	3K3	—	516	—	39K	551	—	4K7	614	—
407	12pF	—	426	—	100K	517	—	39K	552	100mF	—	615	—
408	1-9pF	—	427	1KpF	—	518	100mF/80mF	—	553	640KpF	—	615A	330pF
409	gang	—	428	1KpF	—	519	—	220	554	—	33K	616	100mF/8mF
410	4.7pF	—	501	160mF/64mF	—	520	—	3K9	555	—	22K	617	—
411	22pF	—	502	10mF	—	521	—	15K/10K	556	—	2K2	618	—
412	—	1K	502A	330pF	—	522	1K5pF	—	557	—	47K	619	1K5pF
413	220pF	—	503	—	47K	523	125mF/100mF	—	601	160mF/64mF	—	620	125mF/100mF
414	—	3K3	504	—	68K/120K	524	—	4K7	602	10mF	—	621	—
415	1KpF	—	505	—	5K6	539	—	1K5	602A	330pF	—	622	—
416	5.6pF	—	506	—	4K7	540	—	50	603	—	47K	636	—
417	—	10K	507	125mF/100mF	—	541	—	10	604	—	68K/120K	637	—
418	100pF	—	508	—	22	542	—	330	605	—	4K7	638	—
419	12pF	—	511	2.5mF/1.6mF	—	543	100mF/80mF	—	606	—	5K6	639	—
420	1-9pF	—	512	—	470	544	—	100	607	—	22	640	100mF/40mF
421	gang	—	512A	—	470	545	—	100	608	125mF/100mF	—	641	—
422	10KpF/1KpF	—	514	80mF/64mF	—	546	—	0.4	611	2.5mF/1.6mF	—	642	—
423	8.2pF	—	515	2.5mF/1.6mF	—	547	—	0.4	613	2.5mF/1.6mF	—	643	—



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K	550	10mF	—	613A	—	1K	644	—	0.4	650	10mF	—	710	470KpF	—
K	551	100mF	4K7	614	—	39K	715	—	68	651	—	47K	711	—	680
K	552	640KpF	—	615	—	39K	716	—	10K	652	100mF	—	712	—	330
20	553	—	—	615A	330pF	—	717	—	1000	653	640KpF	—	713	220KpF	—
9	554	—	33K	616	100mF/8mF	—	718	125mF	—	654	—	33K	714	—	10K
1	555	—	22K	617	—	220	719	4mF	—	655	—	22K	902	—	3K9
1	556	—	2K2	618	—	15K/10K	720	22KpF	—	556	—	2K2	903	100KpF	—
1	557	—	47K	619	1K5pF	—	721	—	220	667	—	47K	904	—	2K2
7	601	160mF/64mF	—	620	125mF/100mF	—	722	—	330	701	—	220K	905	—	1K8
5	602	10mF	—	621	—	3K9	723	470KpF	—	702	—	150K	906	125mF	—
5	602A	330pF	—	622	—	4K7	724	—	680	703	—	220K	907	—	100
10	603	—	—	622	—	1K5	725	—	330	704	—	220K	908	—	1K8
10	604	—	68K/120K	637	—	50 NTC	726	220KpF	—	705	—	5K6	909	—	560
00	605	—	—	638	—	10	727	—	10K	705A	—	4K7	910	50mF	—
00	606	—	—	639	—	330	728	—	68	706	—	5K6	911	—	560
1.4	607	—	—	640	100mF/40mF	—	729	—	10K	706A	—	4K7	912	—	—
1.4	608	125mF/100mF	—	641	—	100	730	—	100	707	22KpF	—	913	125mF	—
	611	2.5mF/1.6mF	—	642	—	100	731	125mF	—	708	—	—	—	—	—
	613	2.5mF/1.6mF	—	643	—	0.4	732	4mF	—	709	—	330	—	—	—



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