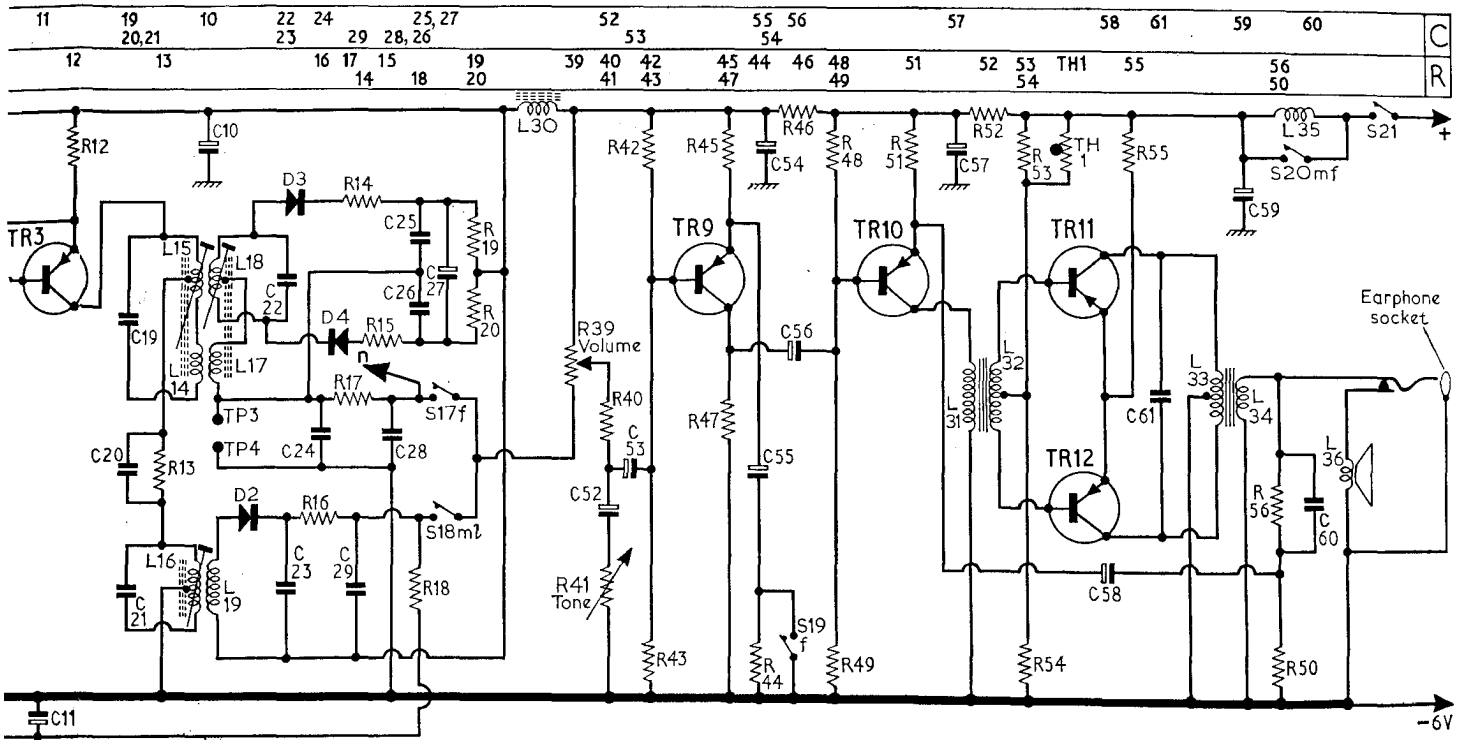
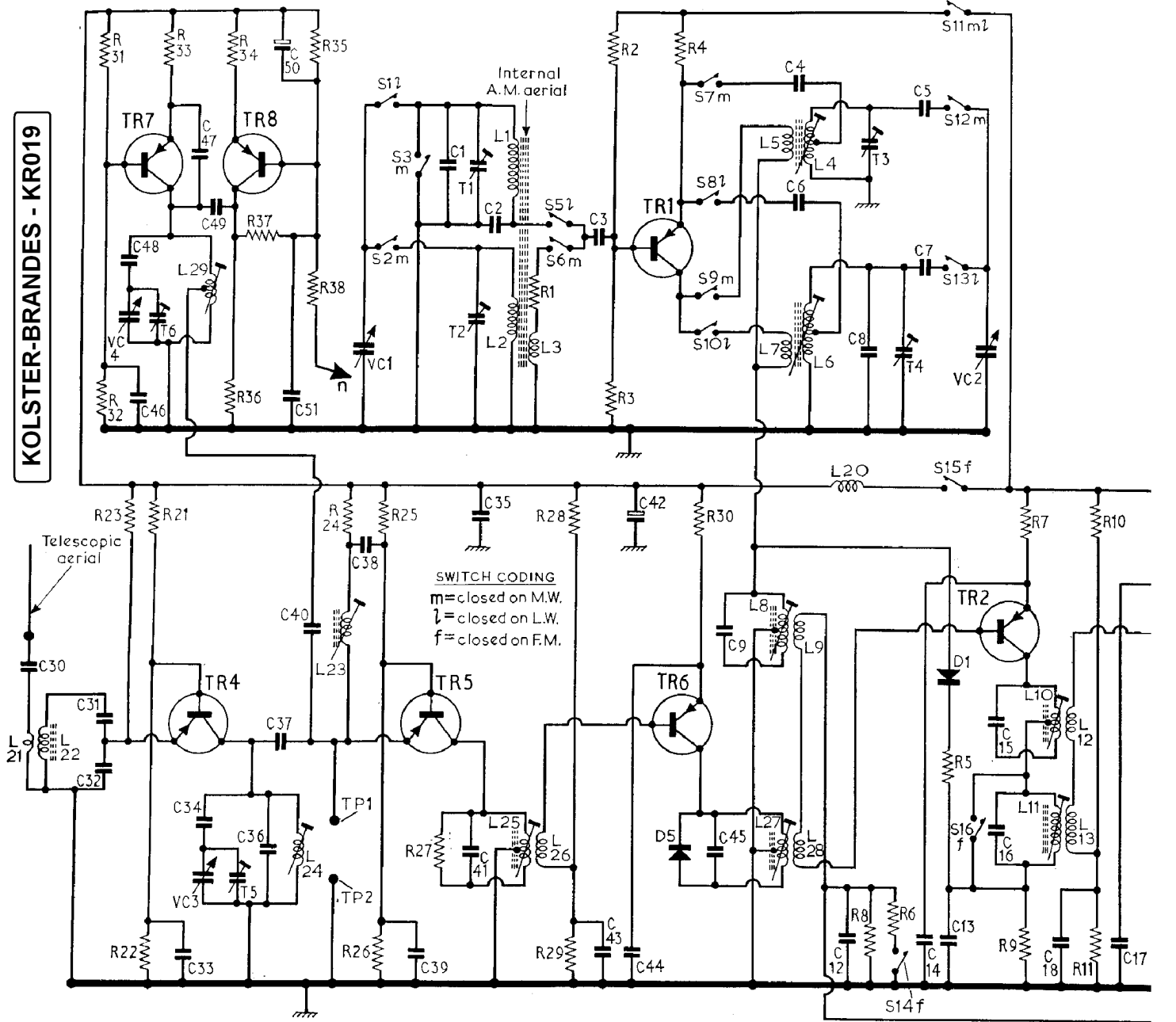


C	30	31,48,46	47,34,49	50,51	VC1	1	T1,35,2	3	42	9	4	T3	T4,5	VC2,15
R	31	21,33	34	37	35	25	1	28	2	4	6	12	8	16
	32	23,22	36	38	24	26	27	29	3	30		8	6	5

# KOLSTER-BRANDES - KR019



## Resistors

R1	150Ω	A1
R2	4.7kΩ	A1
R3	15kΩ	A1
R4	2.2kΩ	A1
R5	3.3kΩ	A2
R6	18kΩ	A2
R7	1kΩ	B2
R8	75kΩ	A2
R9	2.2kΩ	A2
R10	4.7kΩ	A2
R11	10kΩ	A2
R12	1kΩ	B2
R13	22kΩ	B3
R14	1kΩ	A2
R15	1kΩ	A2
R16	470Ω	A3
R17	2.2kΩ	B3
R18	4.7kΩ	A3
R19	10kΩ	A2
R20	10kΩ	A2
R21	3.3kΩ	C1
R22	6.8kΩ	C1
R23	1kΩ	C1
R24	470Ω	B1
R25	3.3kΩ	B1
R26	27kΩ	B1
R27	—	B1
R28	4.7kΩ	B2

R29	10kΩ	B2
R30	1kΩ	B2
R31	3.3kΩ	C2
R32	6.8kΩ	C1
R33	470Ω	B2
R34	100Ω	C2
R35	47kΩ	C2
R36	10kΩ	C1
R37	150kΩ	C2
R38	100kΩ	C2
R39	—	A3
R40	1kΩ	C3
R41	—	A3
R42	4.7kΩ	C3
R43	27kΩ	C3
R44	100Ω	C3
R45	1kΩ	C3
R46	100Ω	C3
R47	5.6kΩ	C3
R48	3.9kΩ	C3
R49	47kΩ	C2
R50	10Ω	C2
R51	100Ω	C2
R52	100Ω	C3
R53	240Ω	C3
R54	5.6kΩ	C2
R55	2.2Ω	C3
R56	560Ω	C2

## Capacitors

C1	55pF	B1
C2	2,500pF	A1
C3	0.02μF	A1
C4	5,000pF	B1
C5	310pF	B1
C6	0.01μF	B1
C7	140pF	B1
C8	120pF	B1
C9	—	B1
C10	100μF	A1
C11	5μF	A2
C12	0.02μF	B2
C13	0.02μF	A2
C14	0.02μF	B2
C15	—	B2
C16	—	A2
C17	0.02μF	B2
C18	0.02μF	A2
C19	30pF	B2
C20	500pF	B3
C21	—	B3
C22	—	B2
C23	0.02μF	A3
C24	2,000pF	B3

C25	1,000pF	A2
C26	1,000pF	A2
C27	10μF	A2
C28	5,000pF	B3
C29	0.02μF	A3
C30	10pF	C1
C31	20pF	C1
C32	25pF	C1
C33	1,000pF	C1
C34	160pF	B1
C35	0.04μF	C1
C36	18pF	C1
C37	3pF	C1
C38	600pF	B1
C39	1,000pF	B1
C40	7pF	B1
C41	—	B1
C42	30μF	C1
C43	0.01μF	B1
C44	0.01μF	B2
C45	—	B2
C46	1,000pF	B1
C47	7pF	B2
C48	160pF	B2
C49	10pF	B2
C50	5μF	C2
C51	0.02μF	C2
C52	0.2μF	C3
C53	1μF	C3
C54	100μF	C3
C55	30μF	C3
C56	1μF	C3
C57	100μF	C3
C58	30μF	C2
C59	100μF	C3
C60	0.02μF	C2
C61	0.04μF	C2
VC1	—	B2
VC2	—	
VC3	—	
VC4	—	
T1	—	A1
T2	—	B2
T3	—	A1
T4	—	A1
T5	—	B1
T6	—	B1

## Coils\*

L1	10.0	A1
L2	1.6	C1
L3	—	C1
L4	2.7	B1
L5	—	B1

L6	4.5	B1
L7	—	B1
L8	6.8	B1
L9	—	B1
L10	—	B2
L11	6.4	A2
L12	—	B2
L13	—	A2
L14	—	A2
L15	—	B2
L16	6.5	B3
L17	—	B2
L18	—	B2
L19	—	B3
L20	1.2	B1
L21	—	C1
L22	—	C1
L23	—	B1
L24	—	C1
L25	—	B1
L26	—	B1
L27	—	B2
L28	—	B2
L29	—	B2
L30	13.2	A2

L31	320.0	C2
L32	220.0	C2
L33	8.9	C2
L34	—	C2
L35	—	C3
L36	8.0	†

## Miscellaneous

D1	OA90	A2
D2	OA90	A3
D3	OA90	A3
D4	OA90	A2
D5	OA90	B1
S1-S3	—	A1
S5-S20	—	A1
S21	—	A3
TH1	5D300	C3

\* Approximate d.c. resistance in ohms.

† Speaker

## Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1	2SA103	4.0*	3.8*
TR2	2SA70	2.9	2.7
TR3	2SA70	2.9	2.6
TR4	2SA71	3.0	2.7
TR5	2SA71	2.6	3.3
TR6	2SA70	2.9	2.7
TR7	2SA71	2.9	2.7
TR8	2SA100	4.0	3.8
TR9	2SB32	3.6	3.4
TR10	2SB33	4.7	4.5
TR11, 12	2SB33	6.0	5.8

\* Switch to a.m. for these measurements only.

Circuit diagram of the chassis employed in K.B.KR019 and Regentone TR419 portable radio receivers. On f.m., separate oscillator and mixer stages are used (TR7 and TR5) with an additional transistor (TR8) providing automatic frequency control of the oscillator

## CIRCUIT ALIGNMENT

**Equipment Required.**—An a.m./f.m. signal generator covering the range 140-1,630kc/s a.m., modulated 30 per cent at 1,000c/s, and 10.7-105Mc/s f.m., an audio output meter with an impedance to match 8Ω; a shielded r.f. coupling coil (85 turns of enamelled copper wire on a 2 in. diameter former); a 5,000pF capacitor and suitable trimming tools.

During alignment, the signal input level should be adjusted to maintain receiver output of approximately 50mW.

## A.M. CIRCUITS

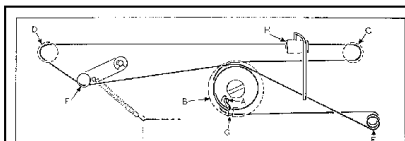
- 1.—Connect the audio output meter to the receiver via the earphone socket using the correct type of plug. Connect the signal generator to the coupling coil and place the coil co-axially with the ferrite rod, five inches from the m.w. winding.
- 2.—Set the volume control at maximum and the tone control at maximum high frequency response. Turn the tuning gang to the fully closed position and check that the cursor lines up with the "L" of "Light" on the f.m. scale.
- 3.—Switch receiver to m.w. and fully open the tuning gang. Feed in a 470kc/s a.m. modulated signal and adjust L16, L11 and L8 for maximum output. Repeat.
- 4.—Fully close the tuning gang. Feed in a 509kc/s signal and adjust L4 for maximum output.
- 5.—Fully open the tuning gang. Feed in a 1,630kc/s signal and adjust T3 for maximum output.
- 6.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust L2 (slide

former along ferrite rod) for maximum output.

- 7.—Tune receiver to 214m. Feed in a 1,400kc/s signal and adjust T2 for maximum output.
- 8.—Repeat operations 4, 5, 6 and 7.
- 9.—Switch receiver to l.w. and fully close the tuning gang. Feed in a 140kc/s signal and adjust L6 for maximum output.
- 10.—Fully open the tuning gang. Feed in a 270kc/s signal and adjust T4 for maximum output.
- 11.—Tune receiver to 1,875m. Feed in a 160kc/s signal and adjust L1 (slide former along ferrite rod) for maximum output.
- 12.—Tune receiver to 1,200m. Feed in a 250kc/s signal and adjust T1 for maximum output.
- 13.—Repeat operations 9, 10, 11 and 12.

## F.M. CIRCUITS

- 1.—Connect the audio output meter to the receiver via the earphone socket using the correct type of plug. Connect the signal generator via a 5,000pF capacitor to the red wire test point.
- 2.—Switch receiver to f.m., turn the volume control to maximum and the tone control to maximum high frequency response.
- 3.—Feed in a 10.7Mc/s signal, f.m. deviation  $\pm 25$ kc/s at 1,000c/s, and adjust L15, L10, L27 and L25 for maximum output. Adjust L23 for minimum output.



Drive cord assembly, drawn as seen when the tuning gang is fully open.

**KOLSTER-BRANDES  
KR019**