

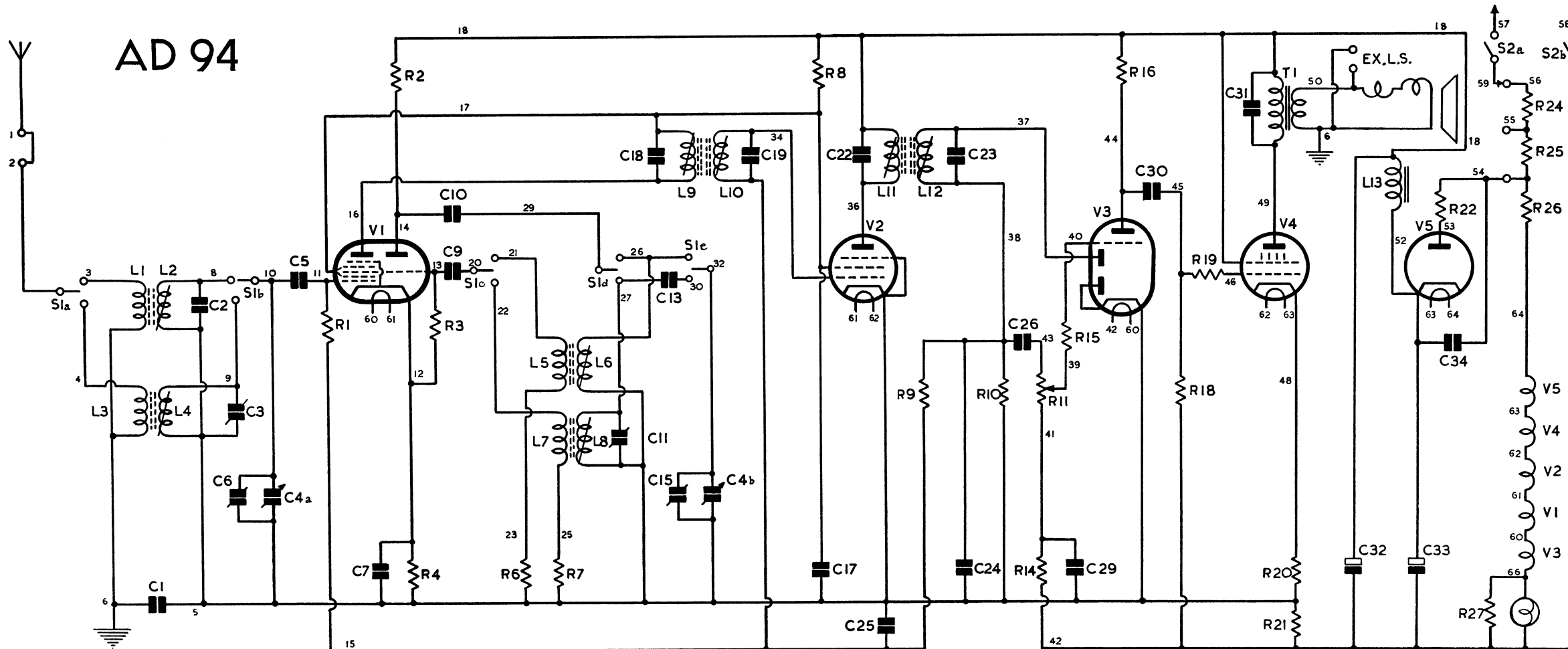
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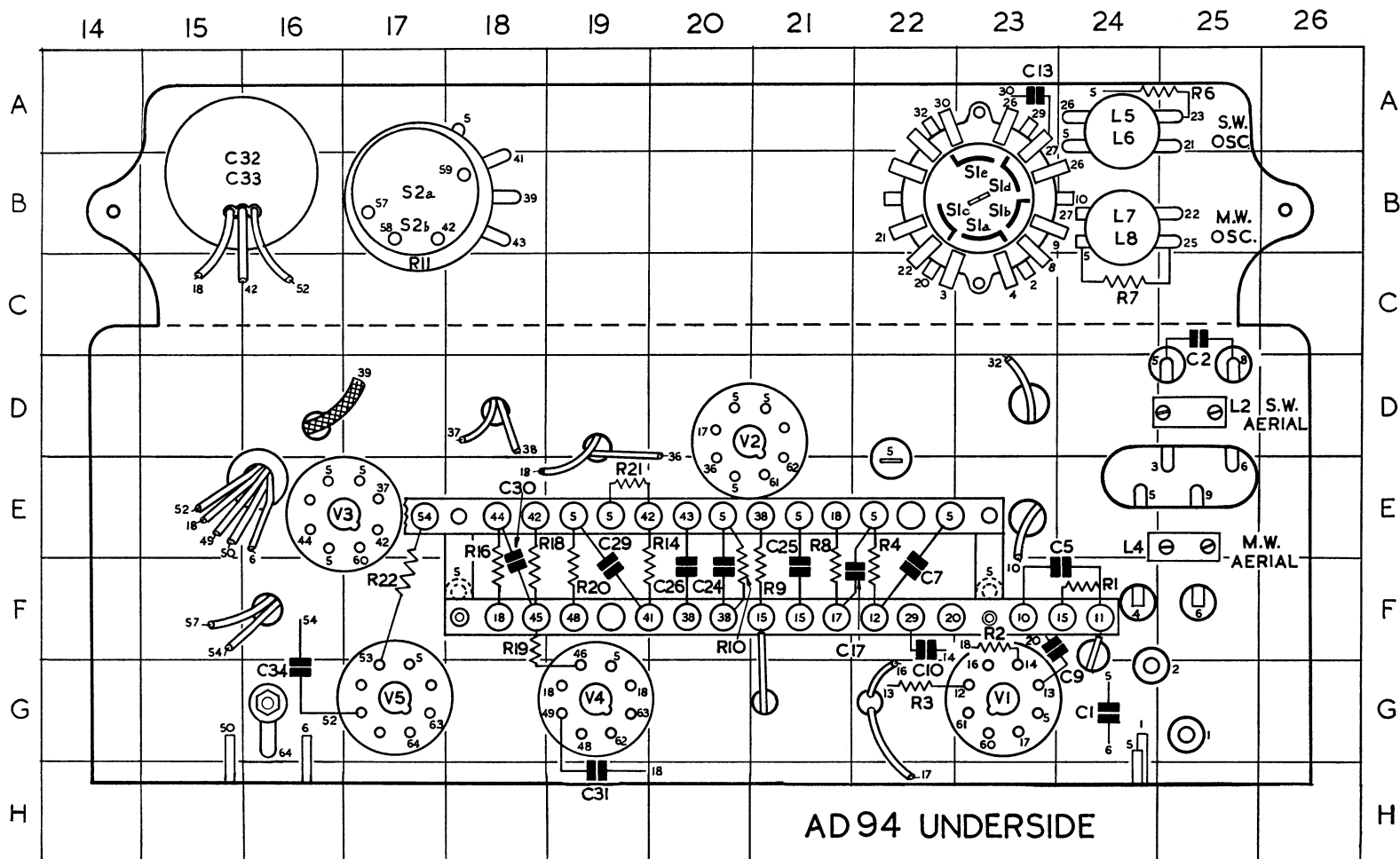
MURPHY RADIO SERVICE INSTRUCTIONS

MAINS SUPPLY:	200 to 250 volts D.C. 200 to 250 volts A.C., 25 to 100 cycles.
WAVE RANGES:	16.7 to 50 metres. 200 to 550 metres.
INTERMEDIATE FREQUENCY:	465 Kc/s.
VALVES:	Mazda TH233, VP133, HL133DD, PEN383, U403.
PILOT LAMP:	3.5 volt, 0.15 amp. globular clear.
SPEECH COIL IMPEDANCE:	4 ohms.
TOTAL WEIGHT:	13 lb.
CONSUMPTION:	Approx. 60 watts on 230 volts.
CABINET DIMENSIONS:	$13\frac{5}{8}'' \times 12\frac{5}{8}'' \times 6\frac{3}{4}''$.

ISSUED BY
MURPHY RADIO LTD, WELWYN GARDEN CITY
TELEPHONE: WELWYN GARDEN 800



AD94										TABLE OF COMPONENTS										AD94				
Code	Value	Test	Pts	Square	Code	Value	Test	Pts	Square	Code	Value	Test	Pts	Square	Code	Value	Test	Pts	Square					
C1	.007 mfd.	6	5	24 J	C25	.05 mfd.	15	5	21 F	R14	1 meg.	41	42	20 F	L7	*	22	25	24 B					
C2	15 pf.	8	5	25 C	C26	.025 mfd.	38	43	20 F	R15	.27 meg.	39	40	10 D	L8	1.3	27	5	24 B					
C3	5-35 pf.	9	5	2 C	C29	.1 mfd.	41	5	19 F	R16	47,000	18	44	18 F	L9	6	17	16	6 H					
C4a	Gang	10	5	5 F	C30	.025 mfd.	44	45	18 F	R18	.47 meg.	45	42	18 F	L10	6	34	15	6 G					
C4b	Gang	32	5	5 D	C31	.025 mfd.	18	49	19 H	R19	47,000	45	46	18 F	L11	6	18	36	9 E					
C5	500 pf.	10	11	24 F	C32	16 mfd.	18	42	16 B	R20	140	48	5	19 F	L12	6	37	38	8 D					
C6	Trimmer	10	5	4 F	C33	16 mfd.	52	42	16 B	R21	20	42	5	19 E	L13	900	52	18	L.S.F.					
C7	.05 mfd.	12	5	22 F	C34	.04 mfd.	52	54	16 G	R22	47	53	54	17 F	* Less than 1 ohm.									
C9	200 pf.	13	20	23 F	R1	1 meg.	11	15	24 F	R24	84.5	56	55	12 G						T1 Pri.	270	18	49	12 E
C10	100 pf.	14	29	22 F	R2	15,000 lw.	18	14	23 F	R25	84.5	55	54	12 G	L.S. Sp. Coil									
C11	5-35 pf.	27	5	2 B	R3	22,000	13	12	22 G	R26	405	54	64	12 G						4				
C13	700 pf.	27	30	23 A	R4	300	12	5	22 F	R27	15 lw.	42	66	10 C	50									
C15	Trimmer	32	5	4 D	R6	47	23	5	25 A	L1	*	3	6	25 D						6				
C17	.05 mfd.	17	5	22 F	R7	470	25	5	24 C	L2	*	8	5	25 D	5									
C18	139 pf.	16	17	5 H	R8	5,100 lw.	18	17	21 F	L3	*	4	6	25 E						5				
C19	150 pf.	34	15	6 G	R9	2.2 meg.	38	15	21 F	L4	*	9	5	25 E	5									
C22	139 pf.	36	18	8 E	R10	.47 meg.	38	5	20 F	L5	2	21	23	24 A						5				
C23	150 pf.	37	38	9 D	R11	1 meg.	43	41	17 B	L6	*	26	5	24 A	5									
C24	200 pf.	38	5	20 F																				



AD94		TABLE OF VOLTAGES			AD94	
Valve	Type	Electrode	Test Point	Square	Voltage	
V1	Mazda TH233	Heptode Anode	16	23 G	100	
		Heptode Screen	17	23 G	100	
		Triode Anode	14	23 G	M.W. 75	
		Cathode	12	23 G	S.W. 65	
					2.5	
V2	Mazda VP133	Anode	36	20 E	130	
		Screen	17	20 D	100	
		Cathode	5	20 E	0	
V3	Mazda HLI33DD	Anode	44	16 E	65	
		Cathode	5	16 E	0	
V4	Mazda PEN383	Anode	49	19 G	120	
		Screen	18	19 G	130	
		Cathode	48	19 G	6	
V5	Mazda U403	Cathode	52	17 G	190	

All voltages were taken with the receiver operating on A.C. mains at 240 volts, using a meter with a resistance of 1000 ohms per volt on the 500 volt range, except the cathode readings of V1 to V4 which were taken on the 50 volt range. All readings were taken from chassis.

Trimming

THE trimming of this receiver, though critical, should remain constant in normal use, and unless a fault develops in any of the tuned circuits, necessitating the replacement of a component, only very small re-adjustments need be made from time to time to maintain the optimum performance of the receiver.

APPARATUS REQUIRED

The following equipment is required for carrying out trimming adjustments:

1. *Signal Generator*, with modulated output, accurately calibrated scales on I.F., M.W., and S.W. ranges, and dummy aerial.
2. *Output Meter*. A rectifier type A.C. voltmeter with a range of 0 to 3 or 0 to 5 volts is suitable for this purpose.
3. Trimming screwdriver.
4. Damping Unit, for I.F. trimming, consisting of a .1 mfd. condenser and a 20,000 ohms (quarter watt) resistor wired in series, with a crocodile clip at each end for connecting to the receiver.

The alignment should be carried out in the following order:

- I.F. 465 Kc/s.
- S.W. 16.7 to 50 metres.
- M.W. 200 to 550 metres.

THE I.F. CIRCUITS—TUNED TO 465 Kc/s

Unless an oscilloscope is used for the alignment, it is essential to damp one of each pair of tuned circuits, while the other one is being adjusted, otherwise an uneven "double humped" resonance curve is likely to be obtained. The output meter reading should not exceed 1 volt, and the generator output should be reduced as the circuits are brought into resonance.

The I.F. circuits are tuned by variable inductances, and the following procedure should be adopted:

1. Connect the signal generator, tuned to

465 Kc/s. between V2 control grid (test point 34, square 6E) and chassis via a .1 mfd. condenser. Connect the output meter across the Ext. L.S. sockets. Turn volume control to maximum.

2. Connect the damping unit between V2 anode (test point 36, square 20 E) and chassis, and adjust L12 (square 8 D) for maximum reading on the output meter.

3. Transfer the damping unit to V3 diode anode (test point 37, square 17 E) and chassis, and adjust L11 (square 9 E) for maximum reading.

4. Connect the signal generator and .1 mfd. condenser to the control grid of V1 (test point 11, square 4 G).

5. Transfer the damping unit to V1 heptode anode (test point 16, square 23 G) and chassis, and adjust L10 (square 6 G) for maximum output.

6. Connect the damping unit to V2 control grid (test point 34, square 6 E) and chassis, and trim L9 (square 6 H) for maximum gain.

Before commencing the alignment of the R.F. circuits, see that the pointer is opposite the

marks at the end of the scale when the gang condenser is at maximum.

S.W. CIRCUITS

1. Connect the signal generator to the aerial and earth sockets via a dummy aerial of 400 ohms. Tune the generator and receiver to 49 metres and adjust L6 (square 3 B) to correct any calibration errors and L2 (square 25 D) for maximum output.

2. Tune the generator and receiver to 17 metres, and trim C15 (square 4 D) to correct any calibration errors and C6 (square 4 F) for maximum gain.

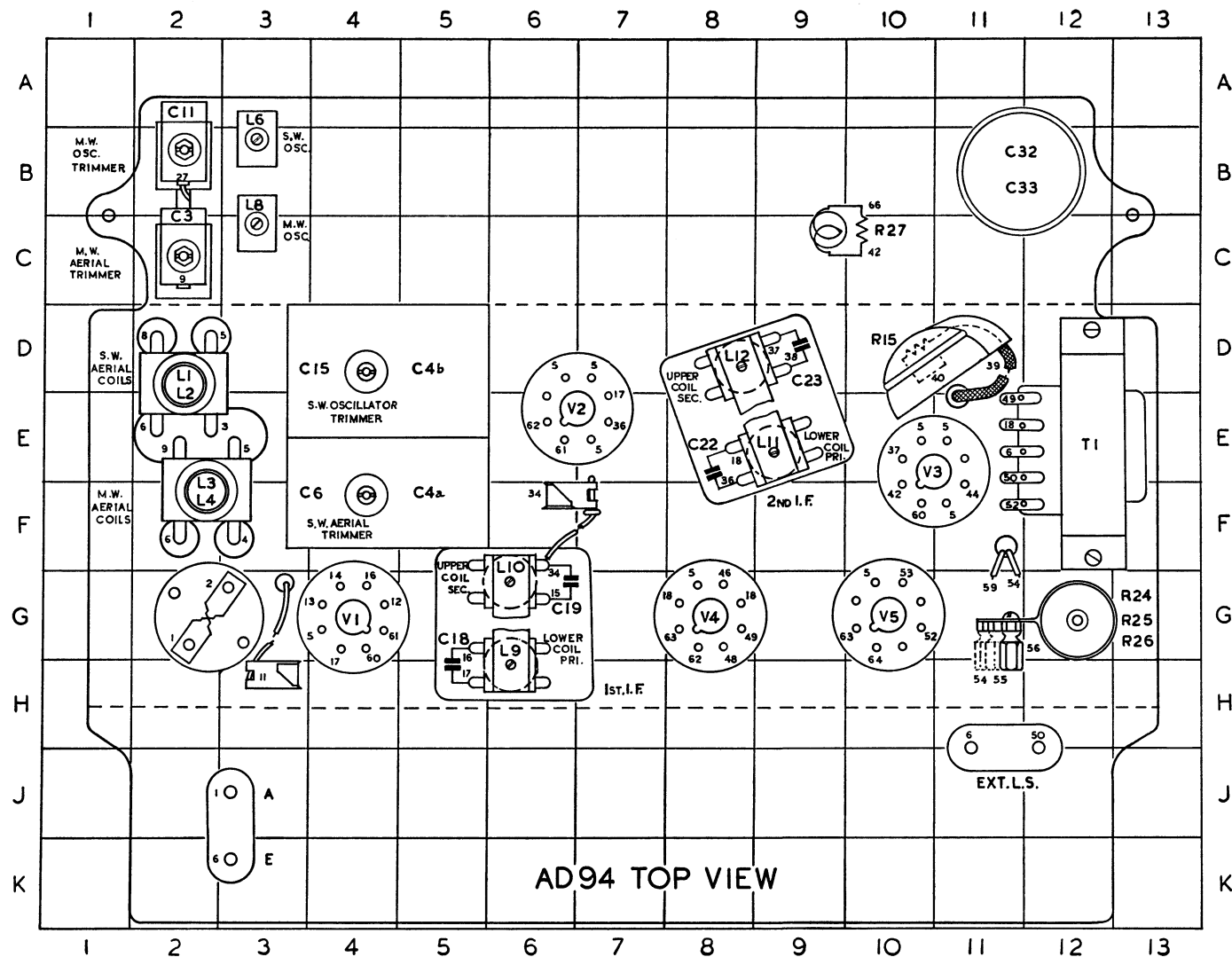
Repeat these adjustments until the optimum settings at 17 and 49 metres are found.

M.W. CIRCUITS

1. Connect the signal generator via the usual dummy aerial, and tune both generator and receiver to 500 metres. Adjust L8 (square 3 C) to correct any calibration errors and L4 (square 25 E) for maximum gain.

2. Tune the generator and receiver to 200 metres, and adjust C11 (square 2 B) to correct any calibration errors, and C3 (square 2 C) for maximum gain.

Repeat these adjustments until the optimum settings at 200 and 500 metres are found.



AD94 TOP VIEW

