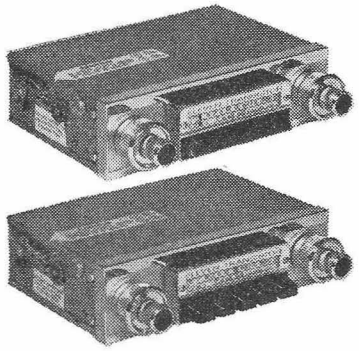
PHILIPS

RN495, RN595

Service

notes



"ROADMASTER 11"

MODELS RN495 & RN595

Both receivers are basically the same,
RN495 is manual, RN595 is push-button operation

SPECIFICATIONS

Tuning range	525-1620 KHz
Intermediate frequency	455 KHz
Power supply	12V car battery only
Battery consumption	See table below
Fuse	750mA
Dial lamp	Type 12843 (12v. 3w.)
Speaker impedance	8 ohms.
Aerial input capacitance	60 pF
Module	UF425

UNCASING INSTRUCTIONS

Top and bottom covers can be removed by unscrewing two screws for each at rear of the receiver.

To remove printed base board, unsolder C218 (250 uF/16V) from board, remove two screws fixing output transistor heat-sink bracket to case, depress two spring clips at corners of board, release from back clips and rotate complete board and module through 90°.

Refit by the reverse procedure.

LAMP REPLACEMENT

Release two mounting screws and withdraw dial scale and overlay together with spacers.
Position pointer at extreme H.F. end of scale.
Initially ease out L.H. end of dial light bracket finally withdraw complete unit.
Re-assembly is the reverse of the above. Do not over tighten dial scale screws as damage may occur.

I.F. Alignment

Open permeability tuner and connect signal generator via I.F. dummy to base of TR2. Turn volume control to maximum and tone control to treble position. Peak I.F.T. cores in the following order.

Third I.F.T.	455 KHz
Second I.F.T. primary	455 KHz
Second I.F.T. secondary	455 KHz
First I.F.T. primary	455 KHz
First I.F.T. secondary	455 KHz

Repeat this procedure then repeak primary of second I.F.T. to 452.2 KHz and secondary to 458 KHz.

R.F. Alignment

Connect signal generator to aerial terminal via dummy aerial. Fully open permeability tuner and set dial cursor to the 1620 KHz mark on the dial scale. Peak C215 to a 1620KHz signal from the generator. Set generator to 1500 KHz and tune receiver to 1500 KHz point, peak C201, C203 and C210 at this frequency.

Tune generator and receiver to 600 KHz and peak oscillator coil core whilst rocking tuner back and forth across signal.

Repeat these adjustments until no improvement is achieved.

OUTPUT TRANSISTOR ADJUSTMENT

A link is provided for the insertion of a meter to enable quiescent current to be checked. Readings should conform to the following table at no signal. The dial lamp must be open circuit.

Temp. °F.	Collector Current (mA)	Receiver Current (mA)
50–60	7.5–13.0	44–59
60–70	8.5–14.0	46–61
70–80	10.0–15.5	47–63
80–90	11.0–17.5	49–65
90–100	12.5–19.0	52–67
100–110	14.0–21.0	54–70

R218 (1.0 Ω) may remain in or be shorted out of circuit as necessary to maintain the above limits. The value of R226 may also vary to bring the current within limits. Refer circuit diagram.

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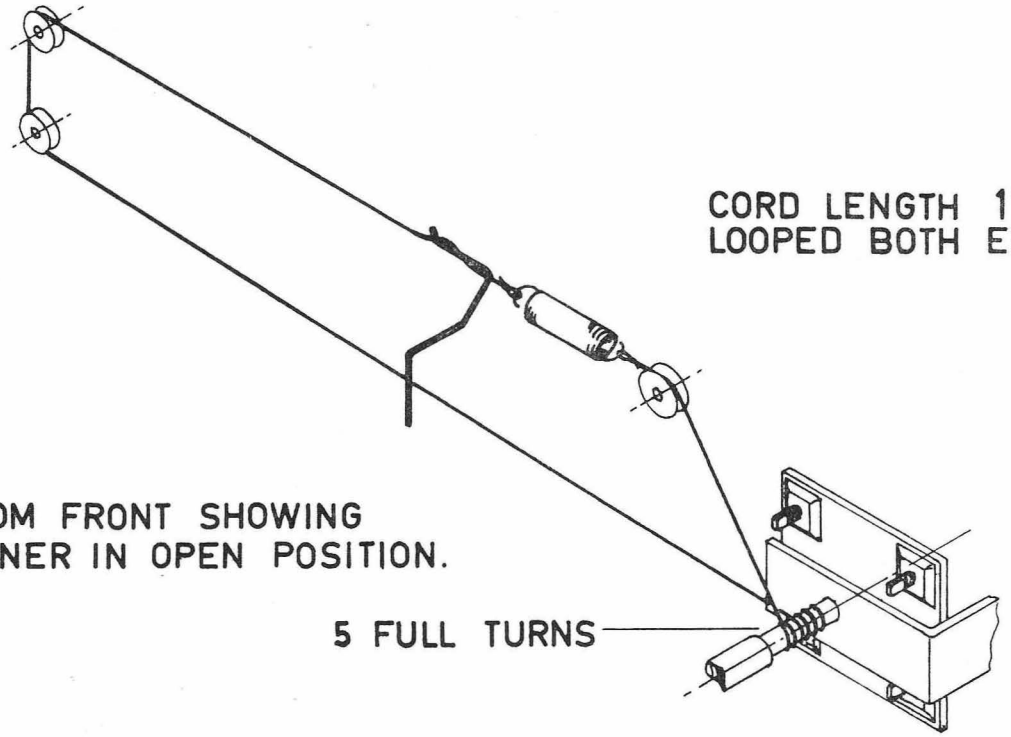
Branches in all States

DIAL CORD LAY OUT RN495



ELECTRICAL PARTS LIST

CAPACITORS

Cct. No.	DESCRIPTION	VW	TOL. ±%	TYPE or CODE No.
1	10K ceramic	25	+80—20	CZ 097 558 Ducon CDR
2	47K ceramic	25	+80—20	CZ 097 906 Ducon CDR
3	22K ceramic	25	+80—20	CZ 097 905 Ducon CDR
4	22K ceramic	25	+80—20	Ducon CDR
5	3K6 styro	63	5	C 295 AH/B3K6
6	82E ceramic	30	2	C 329 BA/C82E
8	47K ceramic	25	+80—20	Ducon CDR
9	150E styro	63	5	C 295 AH/B150E
10	3M3 tantalum	10		CZ 100 412
12	82E styro	63	5	C 295 AH/B82E
13	6M8 tantalum	10		CZ 100 413
14	47K ceramic	25	+80—20	Ducon CDR
17	10K ceramic	25	+80—20	Ducon CDR
18	22k ceramic	25	+80—20	Ducon CDR
19	10M electrolytic	16		C 426 AR/E10
201	120E mic trimmer			Ducon Type CWA/10
202	3E3 ceramic NPO	500	0.5pF	C 304 GB/L3E3
203	30E air trimmer			C 005 CC/30E
204	150E styroflex	63	5	C 285 AA/S150
205	1K2 styroflex	63	10	Ducon DFB
206	47K ceramic	25	+80—20	Ducon CDR
207	470K polyester	250	10	C 281 AB/470K
208	150K polyester	160	10	C 296 AA/A150K
209	680E styroflex	63	10	Ducon DFB
210	60E air trimmer			C 005 CC/60E
211	180E styroflex	63	5	Ducon DFB
213	1K5 styroflex	63	10	Ducon DFB
214	56E ceramic N330 (RN495)		5	CZ 096 539 Ducon CDS

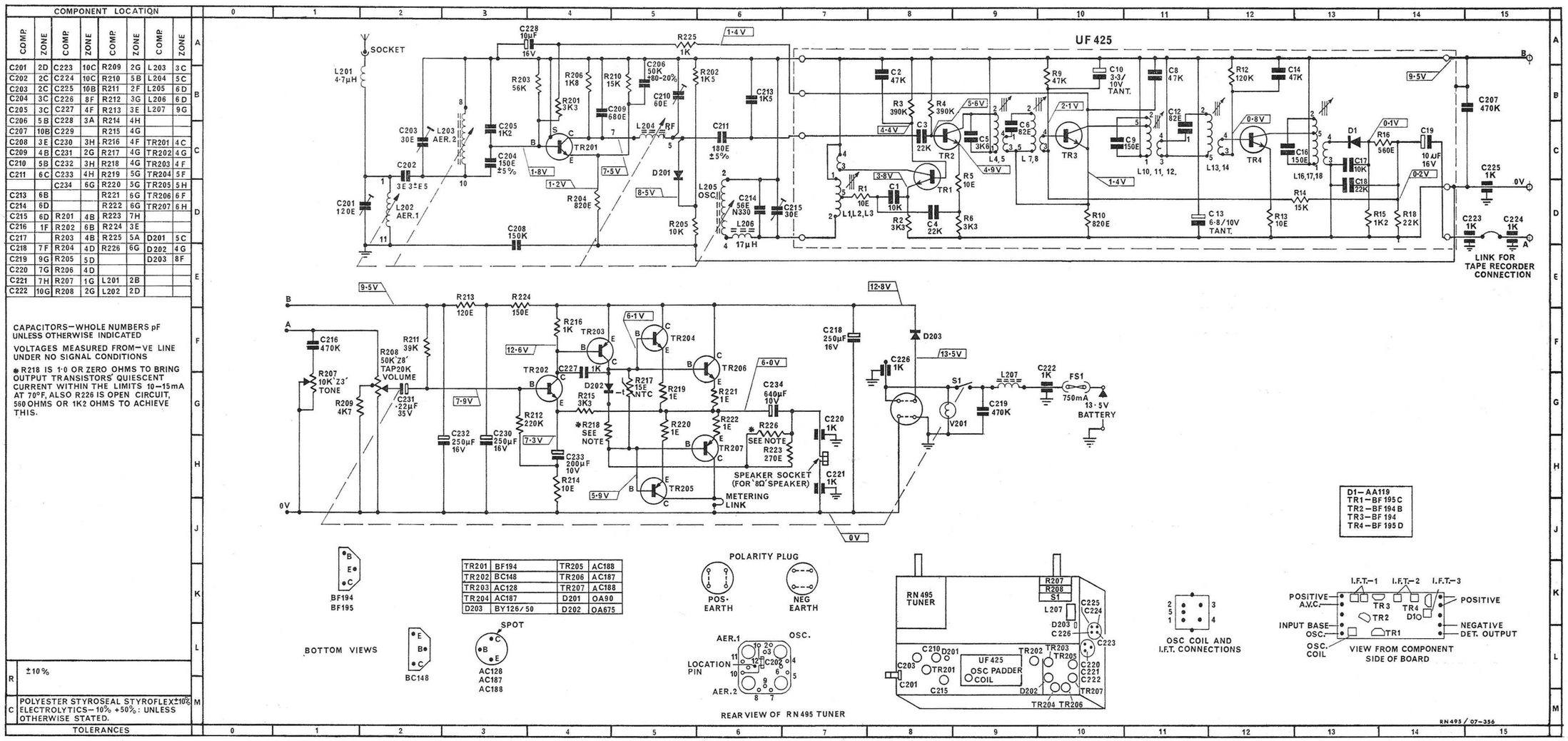
CAPACITORS (Cont.)

Cct. No.	DESCRIPTION	VW	±% TOL.	CODE No. TYPE or
214	47E ceramic N560 (RN595)		5	CZ 096 554 Ducon CDS
215	30E air trimmer			C 005 CC/30E
216	470K ceramic	3	+80—20	Ducon CDR
218	250M electrolytic	16		C 437 AR/E250
219	470K polycarbonate	250	10	C 280 AE/A470K
220	1K ceramic feed thru	500	+100—0	CZ 097 156
221	1K ceramic feed thru	500	+100—0	CZ 097 156
222	1K ceramic feed thru	500	+100—0	CZ 097 156
223	1K ceramic feed thru		+50—20	C 309 BM/H1K
224	1K ceramic feed thru		+50—20	C 309 BM/H1K
225	1K ceramic feed thru		+50—20	C 309 BM/H1K
226	1K ceramic feed thru		+50—20	C 309 BM/H1K
227	10K ceramic	25	+80—20	Ducon CDR
228	10M electrolytic	16		C 426 AR/E10
230	250M electrolytic	16		C 437 CR/E250
231	220K tantalum	35	+50—20	CZ 100 475
232	250M electrolytic	16		C 437 CR/E250
233	200M electrolytic	10		C 426 AR/D200
234	640M electrolytic	10		C 437 CB/E640

RESISTORS

R. No.	DESCRIPTION	W	TOL. ±%	TYPE or CODE No.
1	10E carbon	1/2	10	B8 031 05A/10E
2	3K3 carbon	1/2	10	B8 031 05A/3K3
3	390K carbon	1/2	10	B8 031 05A/390K
4	390K carbon	1/2	10	B8 031 05A/390K
5	10E carbon	1/2	10	B8 031 05A/10E
6	3K3 carbon	1/2	10	B8 031 05A/3K3
9	47K carbon	1/2	10	B8 031 05A/47K
10	820E carbon	1/2	10	B8 031 05A/820E
12	120K carbon	1/2	10	B8 031 05A/120K
13	10E carbon	1/2	10	B8 031 05A/10E
14	15K carbon	1/2	10	B8 031 05A/15K
15	1K2 carbon	1/2	10	B8 031 05A/1K2
16	560E carbon	1/2	10	B8 031 05A/560E
18	22K carbon	1/2	10	B8 031 05A/22K
201	3K3 carbon	1/2	10	B8 031 05A/3K3
202	1K5 carbon	1/2	10	B8 031 05A/1K5

RN495, RN595



TR201	BF194	TR205	AC188
TR202	BC148	TR206	AC187
TR203	AC128	TR207	AC188
TR204	AC187	D201	OA90
D203	BY126/50	D202	OA675

RESISTORS (Cont.)

R. No.	DESCRIPTION	W	TOL. ±%	TYPE or CODE No.
203	56K carbon	1/2	10	B8 031 05A/56K
204	820E carbon	1/2	10	B8 031 05A/820E
205	10K carbon	1/2	10	B8 031 05A/10K
206	1K8 carbon	1/2	10	B8 031 05A/1K8
207	10K carbon potentiometer law Z3 (Tone)			CZ 034 164 Dual concentric
208	50K carbon potentiometer law Z8 tap 20K (volume) with DPST push push switch (on/off)			Ducon PDK
209	4K7 carbon	1/2	10	B8 031 05A/4K7
210	15K carbon	1/2	10	B8 031 05A/15K
211	39K carbon	1/2	10	B8 031 05A/39K
212	220K carbon	1/2	10	B8 031 05A/220K
213	120E carbon	1/2	10	B8 031 05A/120E
214	10E carbon	1/2	10	B8 031 05A/10E
215	3K3 carbon	1/2	10	B8 031 05A/3K3
216	1K carbon	1/2	10	B8 031 05A/1K
217	15E disc NTC		10	E 201 BC/A15E
218	1E carbon	1/2	10	B8 031 05A/1E
219	1E carbon	1/2	10	B8 031 05A/1E

RESISTORS (Cont.)

No.	DESCRIPTION	W	TOL. ±%	TYPE or CODE No.
220	1E carbon	1/2	10	B8 031 05A/1E
221	1E carbon	1/2	10	B8 031 05A/1E
222	1E carbon	1/2	10	B8 031 05A/1E
223	270E carbon	1/2	10	B8 031 05A/270E
224	150E carbon	1/2	10	B8 031 05A/150E
225	1K carbon	1/2	10	B8 031 05A/1K
226	560E carbon	1/2	10	B8 031 05A/560E

INDUCTORS

L. No.	DESCRIPTION	TYPE or CODE No.
1, 2, 3	Oscillator coil	CZ 652 004
4, 5, 6	Primary 1st I.F.T.	CZ 651 004
7, 8, 9	Secondary 1st I.F.T.	CZ 651 001
10, 11, 12	Primary 2nd I.F.T.	CZ 651 023
13, 14, 15	Secondary 2nd I.F.T.	CZ 651 024
16, 17, 18	3rd I.F.T.	CZ 651 017
201	Aerial choke 4·7uH	CZ 122 707
202-205	Push button perm. tuner RN595	CZ 109 021
202-205	Manual perm tuner RN495	CZ 109 017
206	Oscillator choke 17uH	CZ 324 386
207	Filter coil assy.	CZ 340 449

MECHANICAL PARTS LIST

Dial cord — RN495 only 17" required	CE 085 91
Dial cursor — RN495 only	CR 480 722
Dial drive spring — RN495 only	CS 200 074
Dial overlay	CS 412 056
Dial scale — RN495 N.S.W./QLD.	CS 412 057
Dial scale — RN495 VIC./TAS.	CS 412 058
Dial scale — RN495 S.A./W.A.	CS 412 059
Dial scale — RN595 N.S.W./QLD.	CS 412 060
Dial scale — RN595 VIC./TAS.	CS 412 061
Dial scale — RN595 S.A./W.A.	CS 412 062
Dial, mounting screw, x2	CS 261 909
Escutcheon, front — RN495	CR 520 051
Escutcheon, front — RN595	CS 431 128
Fuse Holder Assembly (MSP 36546)	CZ 371 116
Knob-tuning	CR 524 502
Knob-volume, x2 (1 active, 1 dummy) (front)	CR 524 500
Knob-tone, (rear)	CR 524 501
Light Assembly Bracket	CR 262 587
Polarity change-over — plug	CZ 365 328
Polarity change-over — socket	CZ 370 527
Socket, aerial	CZ 369 951
Spacer, dial scale, x2	CS 284 129
Spacer, knob, x2	CS 284 087
Speaker plug (C/F No. 691-5-1)	CZ 365 108
Speaker socket (C/F No. 733-16-22)	CZ 370 149
Speaker plug and socket cap, x2 (MSP 65366)	CS 105 206

RN495, RN595

COMP.	ZONE	COMP.	ZONE	COMP.	ZONE	COMP.	ZONE
C201	2D	C223	10C	R209	2G	L203	3C
C202	2C	C224	10C	R210	5B	L204	5C
C203	2C	C225	10B	R211	2F	L205	6D
C204	3C	C226	8F	R212	3G	L206	6D
C205	3C	C227	4F	R213	3E	L207	9G
C206	5B	C228	3A	R214	4H		
C207	10B	C229		R215	4G		
C208	3E	C230	3H	R216	4F	TR201	4C
C209	4B	C231	2G	R217	4G	TR202	4G
C210	5B	C232	3H	R218	4G	TR203	4F
C211	6C	C233	4H	R219	5G	TR204	5F
		C234	6G	R220	5G	TR205	5H
C213	6B			R221	6G	TR206	6F
C214	6D			R222	6G	TR207	6H
C215	6D	R201	4B	R223	7H		
C216	1F	R202	6B	R224	3E		
C217		R203	4B	R225	5A	D201	5C
C218	7F	R204	4D	R226	6G	D202	4G
C219	9G	R205	5D			D203	8F
C220	7G	R206	4D				
C221	7H	R207	1G	L201	2B		
C222	10G	R208	2G	L202	2D		

CAPACITORS—WHOLE NUMBERS pF UNLESS OTHERWISE INDICATED

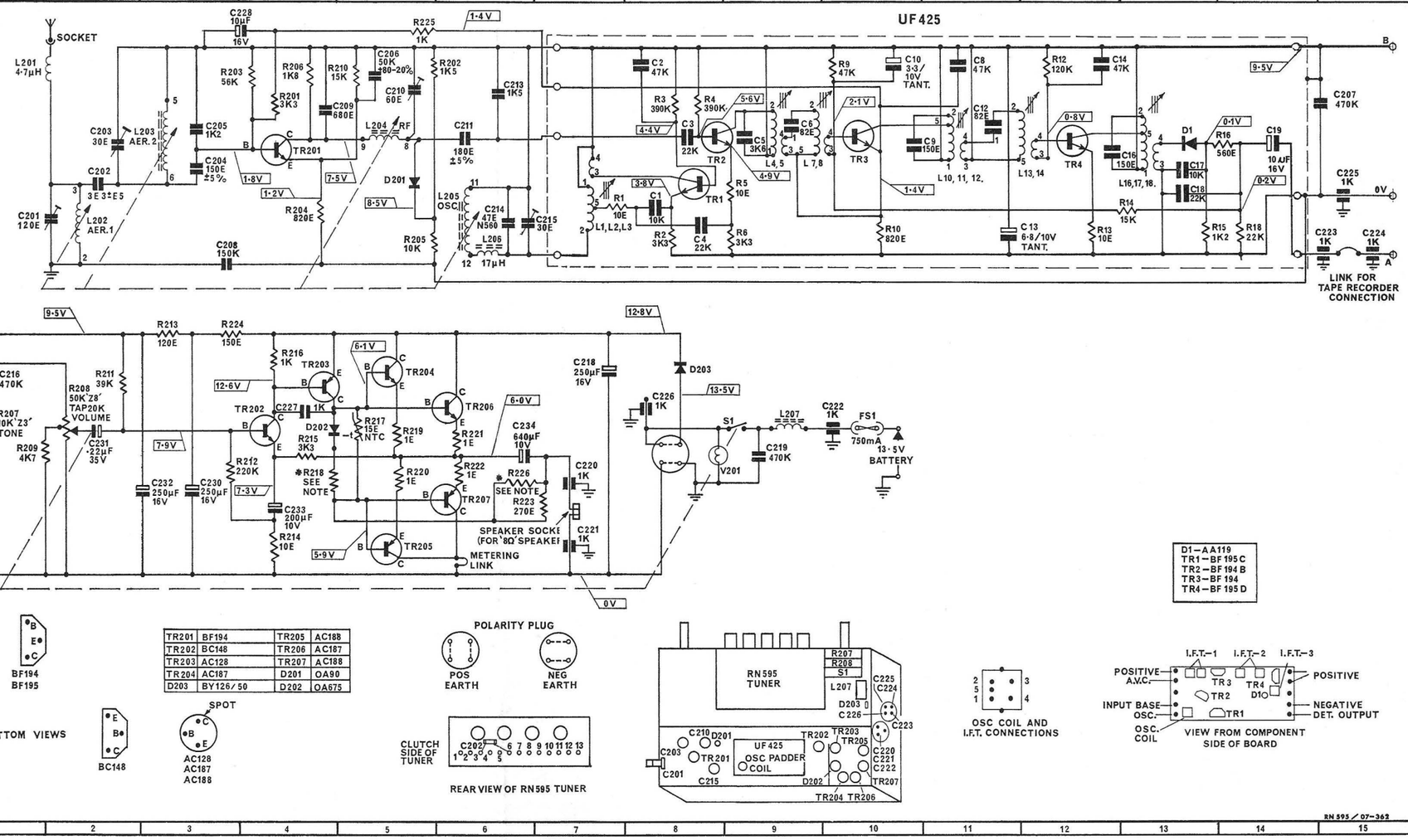
VOLTAGES MEASURED FROM—VE LINE UNDER NO SIGNAL CONDITIONS

* R218 IS 1·0 OR ZERO OHMS TO BRING OUTPUT TRANSISTORS' QUIESCENT CURRENT WITHIN THE LIMITS 10—15mA AT 70°F, ALSO R226 IS OPEN CIRCUIT, 560 OHMS OR 1K2 OHMS TO ACHIEVE THIS.

R ±10%

C POLYESTER STYROSEAL STYROFLEX ±10% ELECTROLYTICS— 10% +50%: UNLESS OTHERWISE STATED.

TOLERANCES



D1—AA119
TR1—BF195C
TR2—BF194B
TR3—BF194
TR4—BF195D

BF194
BF195

TR201	BF194	TR205	AC188
TR202	BC148	TR206	AC187
TR203	AC128	TR207	AC188
TR204	AC187	D201	OA90
D203	BY126/50	D202	OA675

POLARITY PLUG

BOTTOM VIEWS

BC148

AC128
AC187
AC188

CLUTCH SIDE OF TUNER

REAR VIEW OF RN595 TUNER

OSC COIL AND I.F.T. CONNECTIONS

VIEW FROM COMPONENT SIDE OF BOARD