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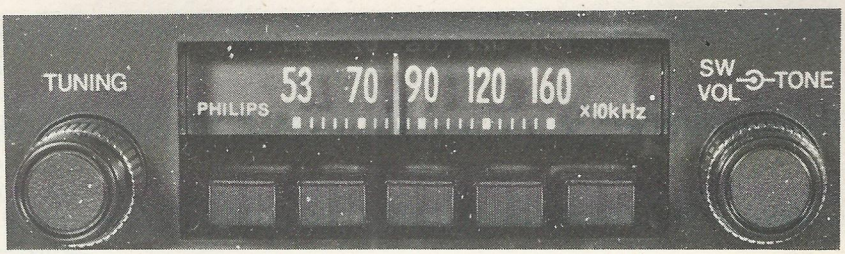


Service Manual

12 V

PRODUCED FOR AUSTRALIAN MOTOR INDUSTRIES LTD.

FOR FITMENT TO

TOYOTA CORONA

WARNING:
CONNECT POWER LEAD OF RECEIVER TO POSITIVE BATTERY TERMINAL ONLY. RECEIVER WILL BE DAMAGED IF CONNECTED TO INCORRECT POLARITY.

Subject to modification
3102 305 31761
Printed in Australia

PHILIPS

ALIGNMENT PROCEDURE

EQUIPMENT :

Signal Generator : modulated at 400 Hz
Output Meter : 4 ohm impedance
Generator Series Capacitor : 100 nF (for i.f. alignment)
Dummy Antenna : 100 pF
Aerial trimmer peaking tool. (4802 395 57002)

CONDITIONS

Receiver : top lid removed.
Volume Control : fully clockwise.
Tone Control : fully clockwise.
Output Meter : connected to receiver output (speaker disconnected).
Output Level : 50 mW Audio.
Supply Voltage : maintained at 13.2V. DC.
Polarity : Negative to receiver chassis.
Positive to receiver power lead.
Signal Generator Output : kept to minimum necessary.

I.F. ALIGNMENT

Note that, due to the inclusion of a ceramic I.F. filter in this receiver, proper peaking of the I.F. coils requires a dynamic alignment procedure. This can be achieved by the use of a wobbulator, or by simultaneously varying the signal generator frequency around 455 kHz whilst peaking the I.F. coils, until maximum output is obtained.

BROADCAST ALIGNMENT

Connect dummy antenna to antenna input socket.
Set output meter to 50 mW range, 4 ohm impedance, and connect to receiver output. (speaker disconnected).

STEP	PURPOSE	ADJUST	PROCEDURE
1	Tuning frequency range	T1	510 kHz must be received at left end of dial.
2	Tuning frequency range	C 9	1630 kHz must be received at right end of dial.
3	Repeat STEPS 1 to 2.		
4	Tracking	C1, C4	Peak at 1400 kHz.

REPLACEMENT OF OUTPUT TRANSISTORS.

The quasi - complementary output transistors are a matched pair. They have been selected for the close similarity of their operating characteristics. Accordingly, they must be replaced as a matched pair and not as separate items. Note that, the output transistor pair biasing arrangement is self - centring and does not require any manual adjustment. Consequently no quiescent current adjustment is provided.

NOTE

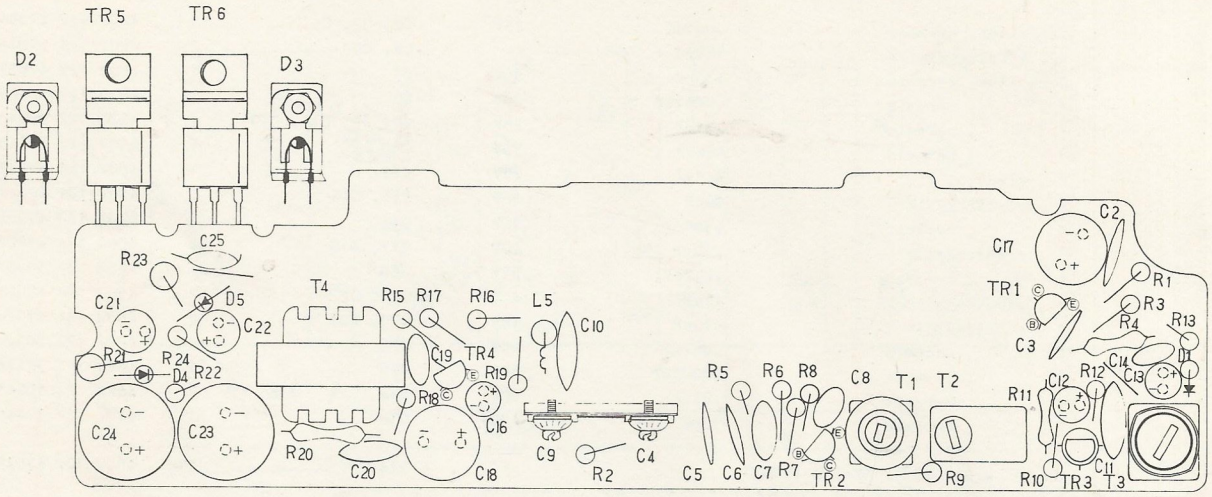
The battery lead of this receiver must be connected only to the POSITIVE terminal of a battery. Connection to incorrect polarity will damage the receiver. Connect receiver output socket only to 4 ohm load.

CONCISE DATA

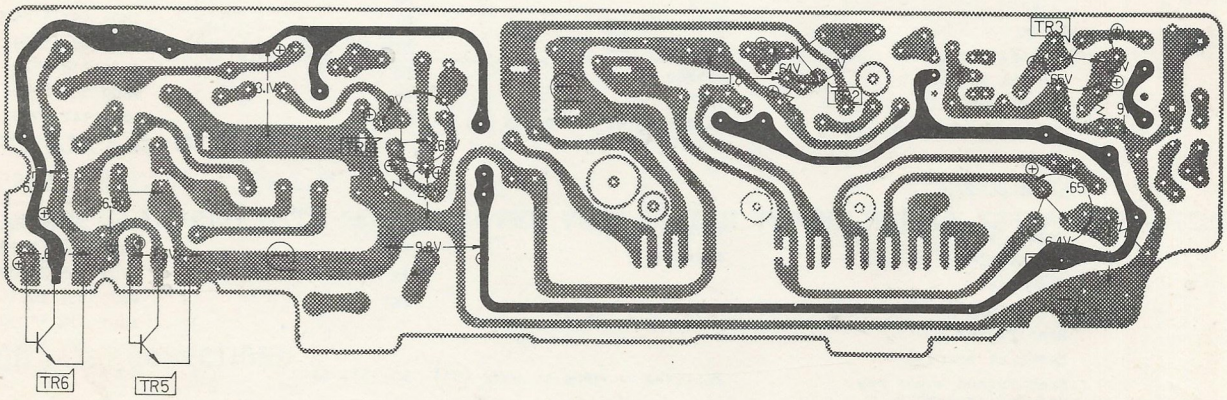
Supply voltage : 13.2 V. DC.
Minimum tuning range : 525 - 1615 kHz.
Intermediate frequency : 455 kHz.
R.F. Sensitivity : -94 dB or better (50 mW audio output).
Power output : 2 watts R.M.S. minimum.
Speaker impedance : 4 ohm.
Current consumption : approx. 110 mA excluding dial lamps.
Polarity : negative earth only.
Metal screws : I.S.O. Standard metric.
Transistor complement : 6 transistors + 6 diodes.

REMARKS : Always adjust antenna trimmer positioned on tuning control shaft (C1) with radio installed in car.

PARTS LOCATION ON PC BOARD



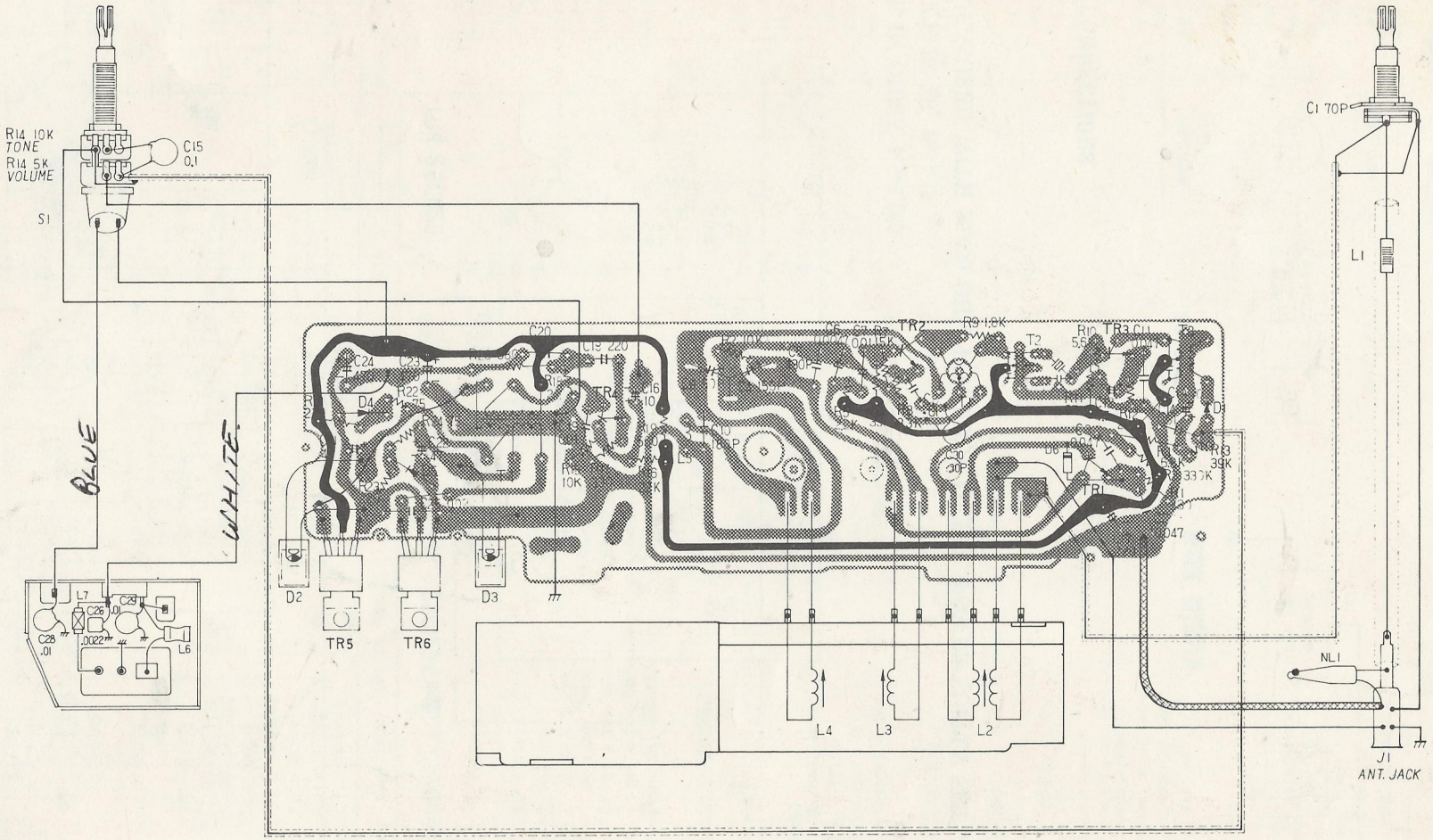
CHECK POINTS ON PC BOARD



NOTES: 1. DC VOLTAGES MEASURED WITH 25,000 OHM PER VOLT METER, POWER SUPPLY SET AT +13.2 VDC, NO SIGNAL INPUT.

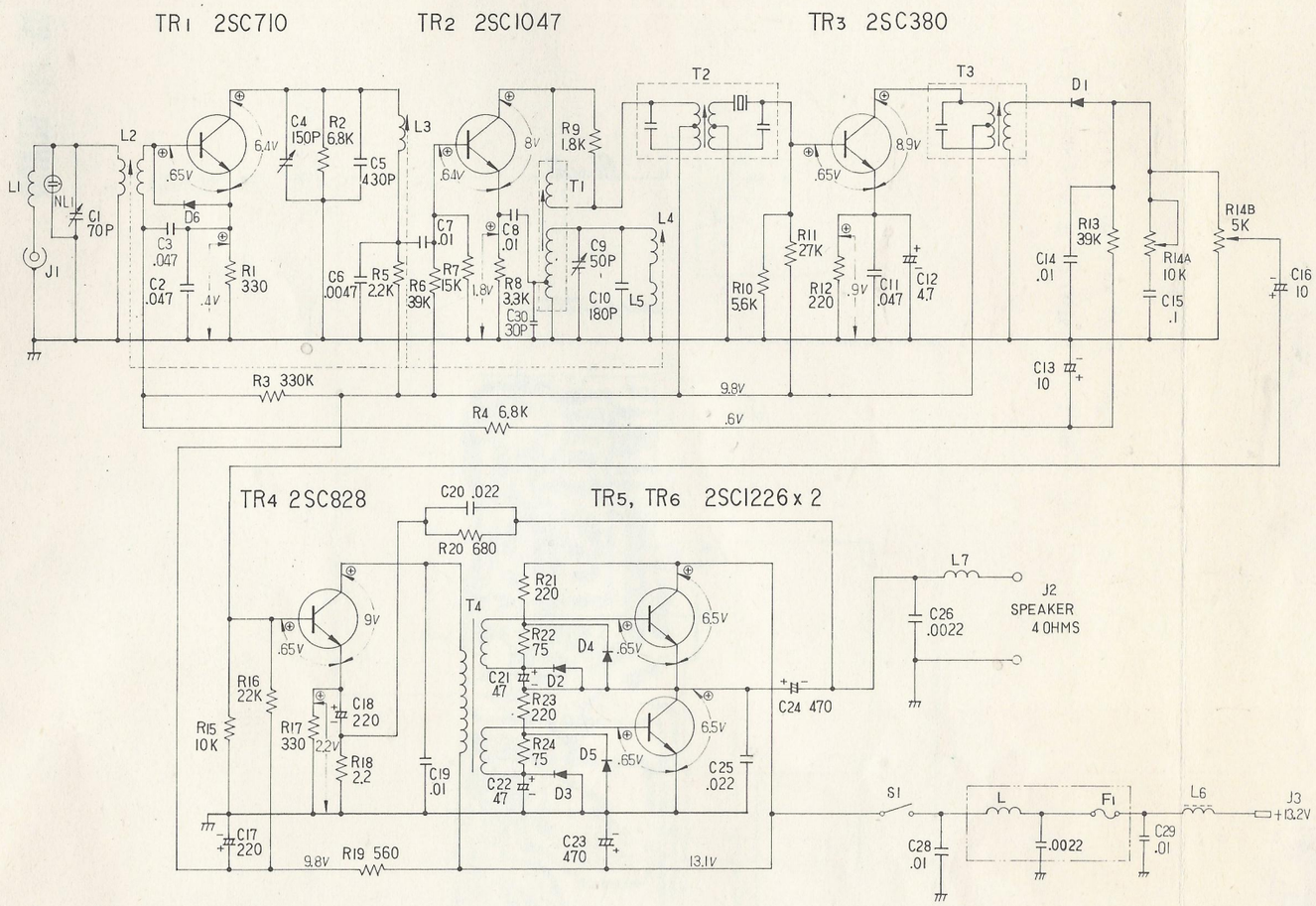
2. ⊕ DENOTES POSITIVE POLARITY OF THE TESTER.

WIRING ON PC BOARD



NOTES: 1. ALL RESISTANCE IN OHMS, K=1,000.

2. ALL CAPACITANCE IN μF, P=$\mu\mu$F.



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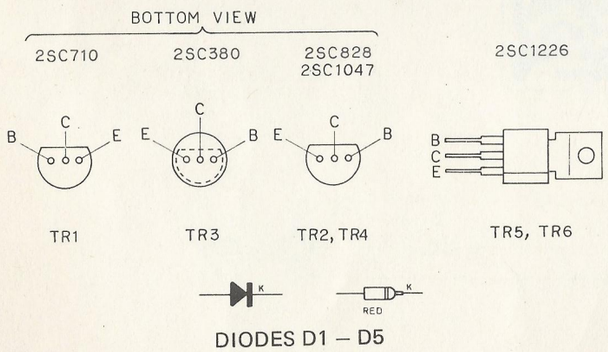
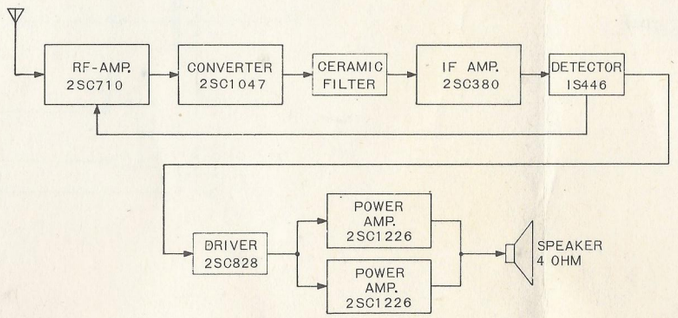
TRANSISTOR BASE CONNECTIONS



BLOCK DIAGRAM



DESCRIPTION	VALUE	VOLTS	SYMBOL NUMBER	QTY	SERVICE SPARES CODE NUMBER
Capacitor, ceramic	.047uF	25V	C2, C3, C11	3	4802 122 47054
RF. & Osc. trimmer	150pF + 50pF	–	C4, C9	2	4802 125 57024
Capacitor, ceramic	430pF	50V	C5	1	4802 122 47037
" , ceramic	.0047uF	50V	C6	1	4822 122 30128
" , ceramic	.01uF	25V	C7, C8, C14, C19	4	4822 122 30043
" , ceramic	180pF	50V	C10	1	4822 122 30113
" , electrolytic	4.7uF	25V	C12	1	4802 124 47034
" , electrolytic	10uF	16V	C13, C16	2	4802 124 47044
" , ceramic	.1uF	12V	C15	1	4802 122 47055
" , electrolytic	220uF	10V	C17, C18	2	4802 124 47006
" , ceramic	.022uF	25V	C20	1	4822 122 30103
" , electrolytic	47uF	6.3V	C21, C22	2	4802 124 47061
" , electrolytic	470uF	16V	C23, C24	2	4802 124 47024
" , ceramic	.022uF	25V	C25	1	4822 122 30103
" , ceramic	.0022uF	50V	C26	1	4822 122 30114
" , ceramic	.01uF	50V	C28, C29	2	4822 122 30043
" , ceramic	30pF	500V	C30	1	4802 122 47048
Contr. W/SW (VOL) 5K+10K (TONE)		–	R14	1	4802 102 47045
TRANSISTORS & DIODES					
RF. Amp. Silicon	2SC 710 (BF494)		TR1	1	4822 130 44195
Converter Silicon	2SC 1047 (BF198)		TR2	1	4802 130 47109
IF. Amp. Silicon	2SC 380 (BF199)		TR3	1	4822 130 44154
Driver, Silicon	2SC 828 (BC547)		TR4	1	4822 130 40965
Power, Output Silicon	2SC 1226 (BD235)		TR5, TR6	2	4822 130 40918
AGC and Detector Germanium	IS 446 (OA91)		D1	1	4822 130 30281
Bias of TR5 & TR6 Varistor	KB162 C4		D2, D3	2	4822 130 37089
Bias of TR5 & TR6 Varistor	KB262		D4, D5	2	4802 130 37091
Protector, TR1 Silicon	SR1K2 (OA636-1000)		D6	1	4802 130 37022
COILS & TRANSFORMERS					
Choke & coil oscillator, series	6.2uH		L1, L5	2	4802 157 47046
Choke	50uH		L6	1	4802 158 17042
Choke	0.6uH		L7	1	4802 157 57047
Transf. oscillator			T1	1	4802 156 37043
Ceramic filter	455kHz		T2	1	4802 218 17011
Transformer, IF	455kHz		T3	1	4802 153 27014
Transformer, driver	2K Ohm prim. 40/40 Ohm sec.		T4	1	4802 142 47024
MISCELLANEOUS					
Fuse	1 AMP.		F1	1	4802 253 47004
Receptacle	Antenna		J1	1	4802 320 17019
Connector			J2	1	4802 268 27006
Neon Lamp			NL1	1	4822 134 20016
Line Filter				1	4802 218 17012
Terminal board				1	4802 265 37004
Push button tuner asy. and Coil assembly.	Includes antenna trimmer (C1)		L2, L3, L4	1	4802 210 17059
Pointer, dialplate				1	4802 450 87059
Supporter, D2 and D3				1	4802 255 47019
Dial lamp asy.				1	4802 404 27039
Lamps				2	4802 134 47046
Filter				2	4802 381 27003
Lead asy.				1	4802 321 27111
Connector				1	4802 264 37016
Dial printed				1	4802 331 37015
Screw M3 x 6mm				2	4822 502 10657
Knobs front				2	4802 413 37114
Knobs rear				2	4802 413 97123
Antenna trimmer tool				1	4802 395 57002
Speaker 7" x 5"				1	4802 240 27016

NOTE :- RESISTORS ARE ⅛ WATT, 5%, TYPE 'C'
EXCEPT R21 & R23 ½ WATT, 10%, TYPE 'S'.