Service
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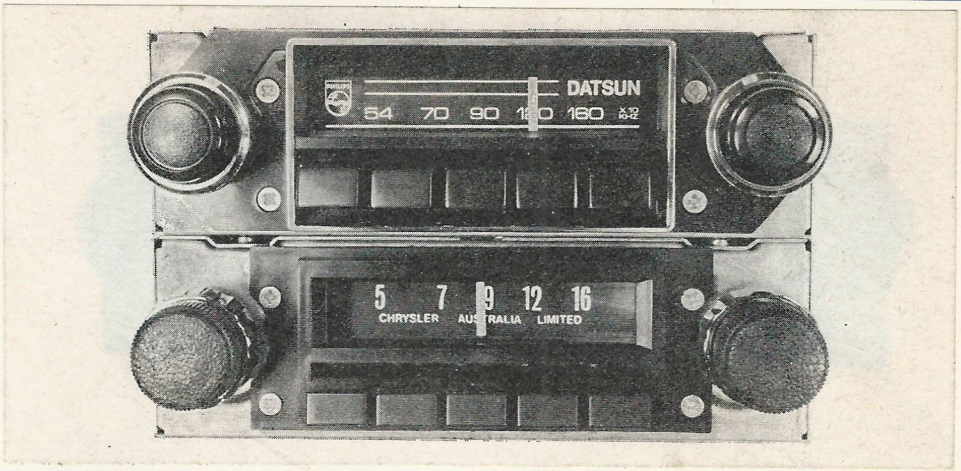

Service Manual

12 V

SPECIFICATIONS

Tuning Range	525 to 1605kHz
Intermediate Frequency	455kHz
Power Output	3 watts R.M.S.
Speaker Impedance	4 ohms
I.C.'s	1 I.C.
Transistors	3 transistors
Diodes	2 diodes
Power Input	12 V negative to earth
Current	Approx. 0.2 amp (at 0.5 W output)

WARNING

Connect power lead of receiver to positive battery terminal only.

Receiver will be damaged if connected to incorrect polarity.

Subject to modification
4802 725 17017
Printed in Australia

PHILIPS

REPLACEMENT PARTS LIST

Ref. No.	Description	Service Code
Capacitors		
C1, 2, 10, 16	.047µF 25V Ceramic	4802 122 47054
C3	390pF 500V Ceramic	4802 122 47095
C4, 20	.0047µF 50V Ceramic	4822 122 30128
C5, 13	.01µF 40V Ceramic	4822 122 30043
C6	220µF 10V Electrolytic	4802 124 47006
C7	.0068µF 50V Ceramic	4802 122 47096
C8	30pF 500V Ceramic	4802 122 47048
C9	200pF 500V Ceramic	4802 122 47047
C11, 17	4.7µF 25V Electrolytic	4802 124 47034
C12	10µF 16V Electrolytic	4802 124 47044
C14	.1µF 12V Ceramic	4802 122 47055
C15	.022µF 50V Ceramic	4802 122 47097
C18, 21	33µF 10V Electrolytic	4802 124 47013
C19	100µF 10V Electrolytic	4802 124 47002
C22	.15µF 50V Mylar	4802 121 47173
C23	330µF 16V Electrolytic	4802 124 47022
CV2	Trimmer 150P RF	4802 125 57007
CV3	Trimmer 50P Osc.	4802 125 57007
Resistors		
Note: All resistors are standard values and tolerances unless specified otherwise.		
RV1, 2, S1	5k + 10k + Switch	4802 102 27069
I.C.'s Transistors and Diodes		
IC1	Driver and Power AN214	4802 209 87019
TR1	RF Amp 2SC 710E	4822 130 44195
TR2	Converter 2SC 1047	4802 130 47109
TR3	IF Amp 2SC 380	4822 130 44154
D1	Bias of TR1, SR1K2 (0A626-200)	4802 130 37033
D2	AGC & Det 1S441 (0A92)	4822 130 30281

Coils and Transformers		
L5	Oscillator Coil	4802 153 17106
L6	Choke	4802 158 17041
T1	Transformer (Osc.)	4802 142 67009
T2	Ceramic Filter 455kHz	4802 242 77002
T3	Transformer IF	4802 153 27014
Miscellaneous Electrical		
	Tuning Shaft, incl. Antenna Trimmer	4802 528 77048
	Dial Lamp	4802 134 47039
	Light Filter	4802 480 37017
	Fuse 1a 3AG	4802 253 47004
	Fuse Holder	4802 256 47001
LP43A (Datsun)		
	Dial (Printed)	4802 331 27044
	Pointer	4802 450 87091
	Escutcheon	4802 459 57032
	Knob (Front)	4802 413 47139
	Knob (Rear)	4802 413 47138
	Tuner (if a new tuner is required for Datsun, 5 pushbuttons must also be ordered)	4802 210 17081
	Pushbuttons	4802 410 27035
LP43B (Chrysler)		
	Dial (Printed)	4802 331 27045
	Pointer	4802 450 87091
	Escutcheon	4802 459 57033
	Knob (Front)	4802 413 47141
	Knob (Rear)	4802 413 47142
	Pushbutton	4802 410 27097
	Tuner (Incl. pushbuttons and tuning shaft)	4802 210 17081

SCHEMATIC

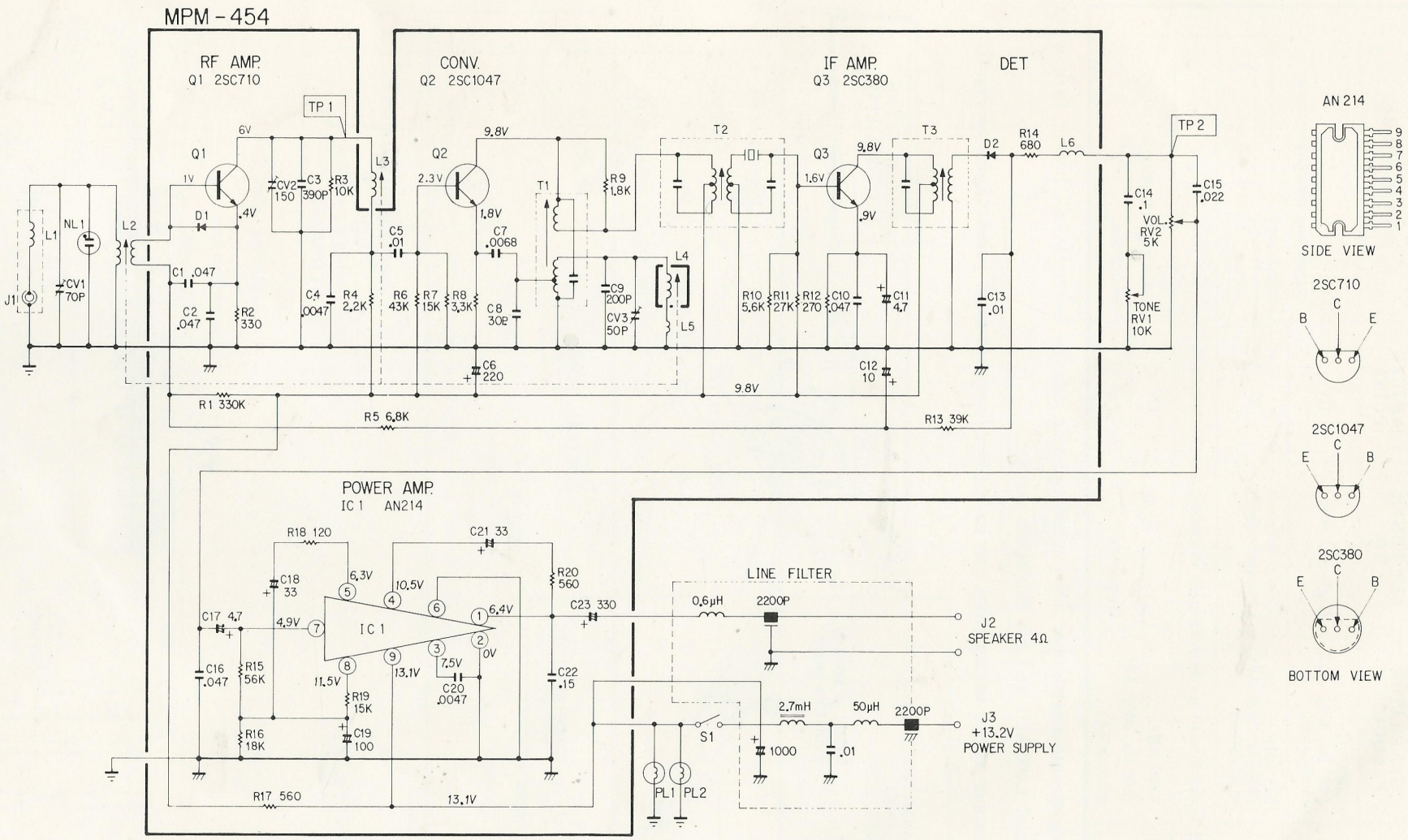

Fig. 1

NOTES:
1. All resistance in ohms, K=1000
2. All capacitance in μF, P=$\mu\mu$F
3. DC voltages against the chassis measured with 100,000 ohm per volt meter, power supply set at +13.2 VDC, no signal input.

WIRING ON PC BOARD

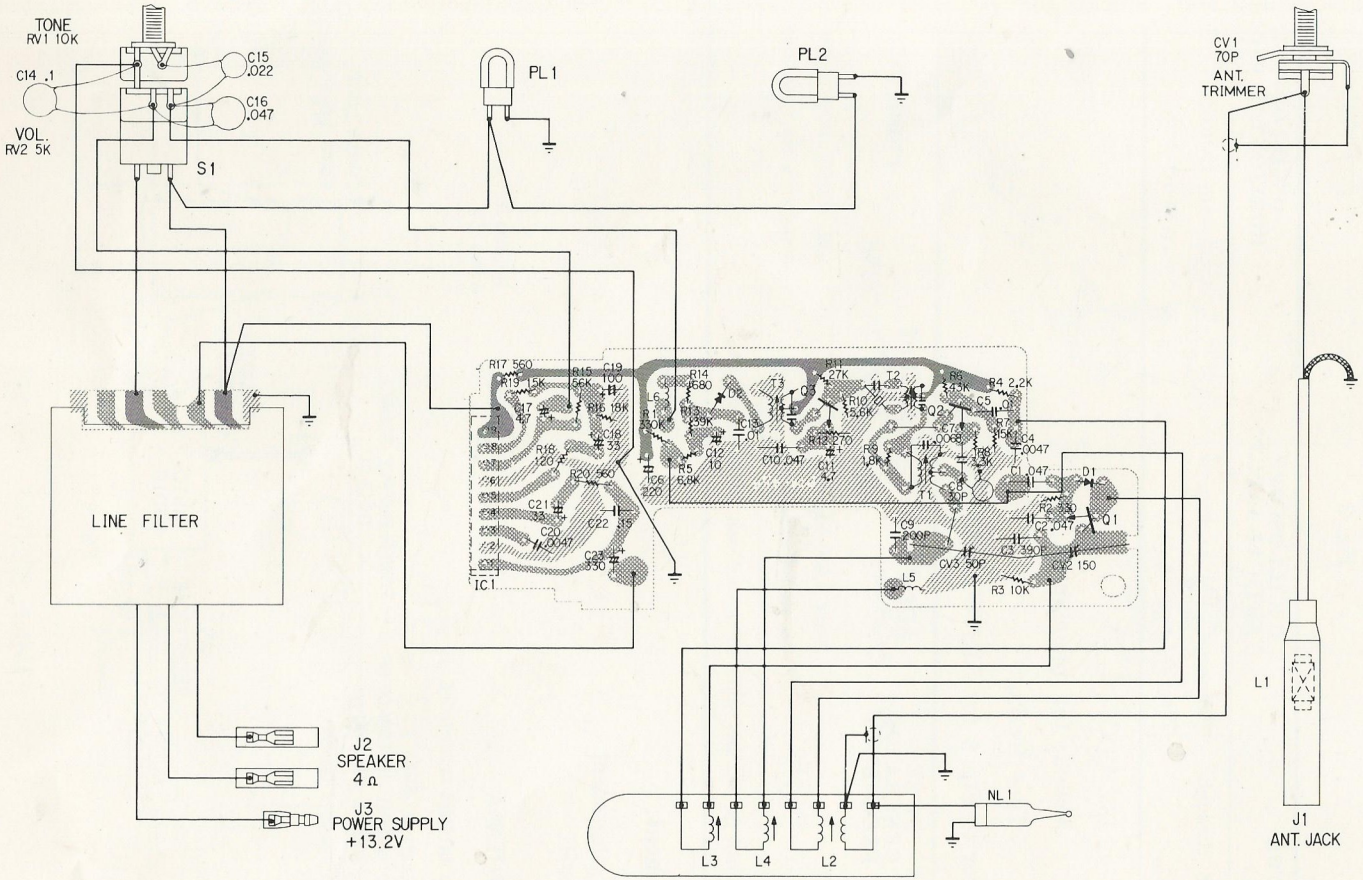

Fig. 2

	Q 1	Q 2	Q 3
Emitter	.4V	1.8V	.9V
Collector	6V	9.8V	9.8V
Base	1V	2.3V	1.6V

IC \ Pin No.	1	2	3	4	5	6	7	8
IC 1	6.4V	0V	7.5V	10.5V	6.3V	0V	4.9V	11.5V

CHECKING SERVICEABILITY OF I.C.

Integrated circuits are inherently reliable devices and can be expected to give long life in normal service. DO NOT, therefore, assume that the I.C. is responsible for a reported malfunction until you have carried out the following check:

CAUTION - Great care must be taken to ensure that the pins of the I.C. are not shorted together or to frame during this check.

- Check current drawn by receiver. With serviceable lamps, reading should be approximately 150-mA (with no signal input).
- Turn VOLUME control fully up. When the wiper of the VOLUME control is touched, corresponding crackles should be heard from speaker.
- Measure D.C. voltage on Pin 1 of the I.C. This should be approximately 6 - 7 volts.

If the above checks are satisfactory, the I.C. is likely to be serviceable. If there is still doubt, check the sensitivity by injecting a 5.0-mV audio signal at the wiper of VOLUME control. Power output with 4-ohm load should be approximately 50-milliwatts.

CHANGING FAULTY I.C.

- Apply a soldering iron to each pin of the I.C. in turn, removing as much solder as possible. Carefully note connections and orientation of I.C.
- Withdraw the I.C.
- Fit new I.C., ensuring that orientation is correct. Solder connection as before, applying heat for minimum time necessary to obtain well-soldered joints.

ALIGNMENT

〔1〕 IF Alignment

(1) Preparations for alignment

a. Connections

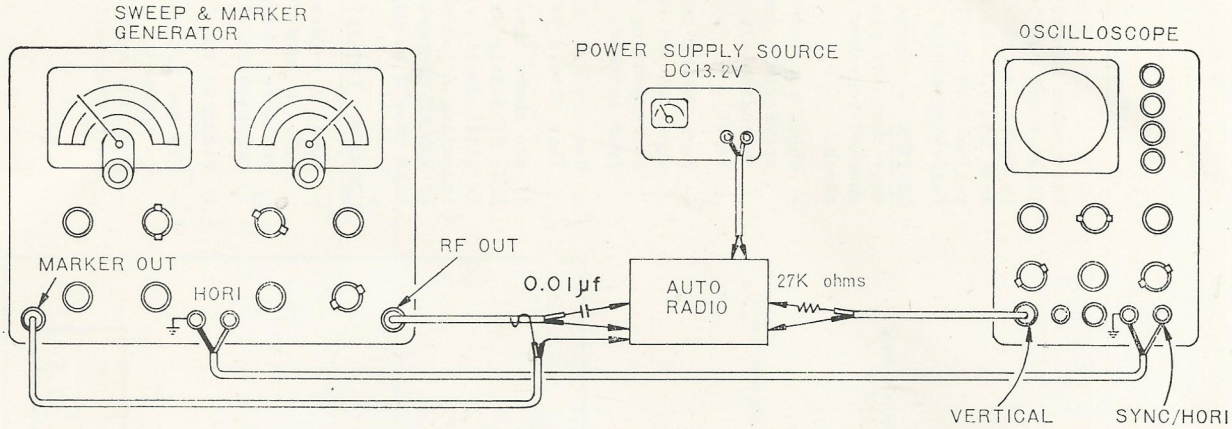

Fig. 3

SWEEP GENERATOR OUTPUT	OSCILLOSCOPE VERTICAL INPUT	OSCILLOSCOPE HORIZONTAL INPUT
Connect TP1 in Fig. 6 through 0.01 μF capacitor	Connect TP2 in Fig. 6 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

b. Power supply : 13.2 VDC

c. controls : Volume for minimun

Tone for high

(2) Alignments (Refer to Fig. 6 for ADJUST POINTS.)

STEP	PURPOSE	SWEEP GENERATOR FREQUENCY	SET TUNER TO	ADJUST POINTS	PROCEDURE
1	IF	455 kHz	Near 1,000 kHz no signal exists	T_2 to T_5	Get maximum IF curve and best symmetry on both sides.
2	Repeat STEP 1 until no further gain in output can be obtained.				

〔2〕 Tracking Alignment

(1) Preparations for alignment

a. Connections

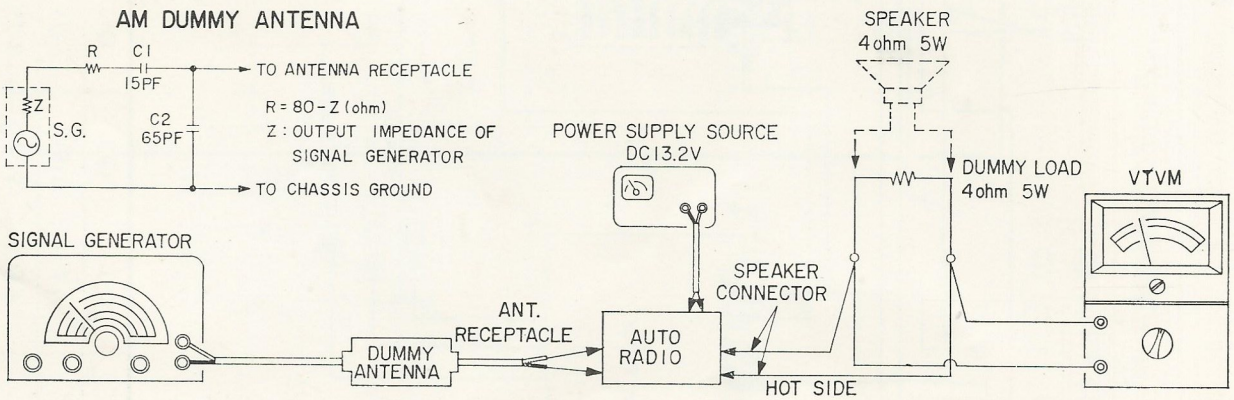

Fig. 4

b. Power supply : 13.2 VDC

c. Controls : Volume for maximum

Tone for high

(2) Alignment (Refer to Fig. 6 for ADJUST POINTS.)

STEP	PURPOSE	GENERATOR FREQUENCY	SET TUNER TO	ADJUST POINTS	PROCEDURE
1	Tuning range	1,630 kHz (400 Hz, 30%, AM modulated)	High-end stop	CV_3	Adjust for maximum meter indication.
2		515 kHz (400 Hz, 30%, AM modulated)	Low-end stop	T_1	
3	Repeat STEP 1 and 2 until no further gain in output can be obtained.				
4	Tracking	1,400 kHz (400 Hz, 30%, AM modulated)	Just tune in SG frequency	CV_2	Adjust for maximum meter indication.
5				CV_1	

NOTE: Always readjust antenna trimmer CV_1 when radio or antenna is reinstalled, tuning in a weak station around 1,400 kHz and get maximum volume.

Antenna trimmer at the tuning shaft can be easily adjusted at front panel. (Refer to Fig. 5)

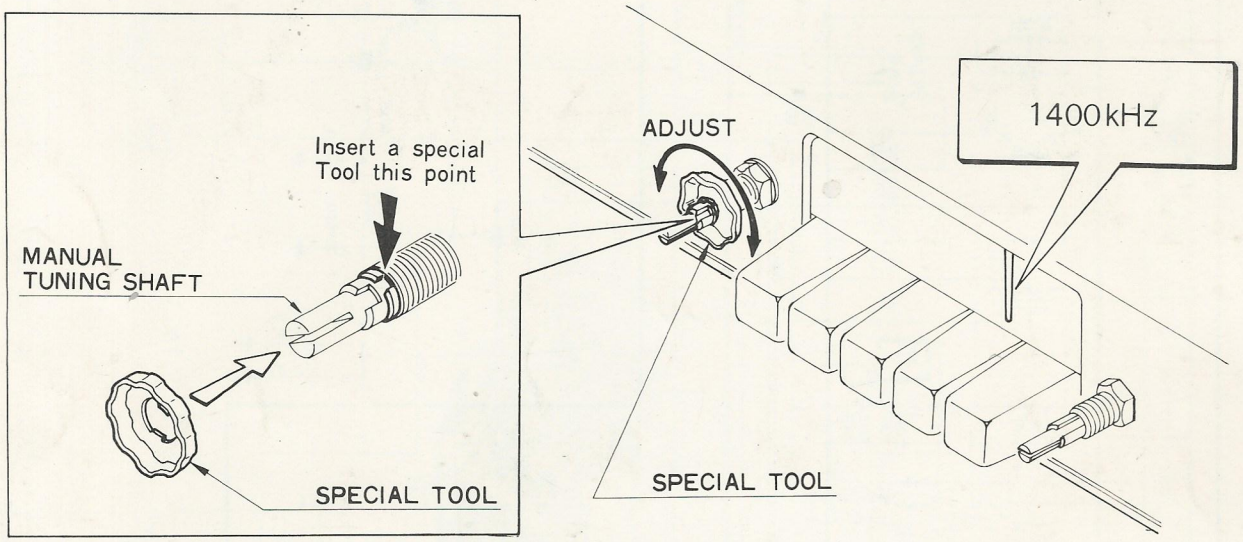

Fig. 5

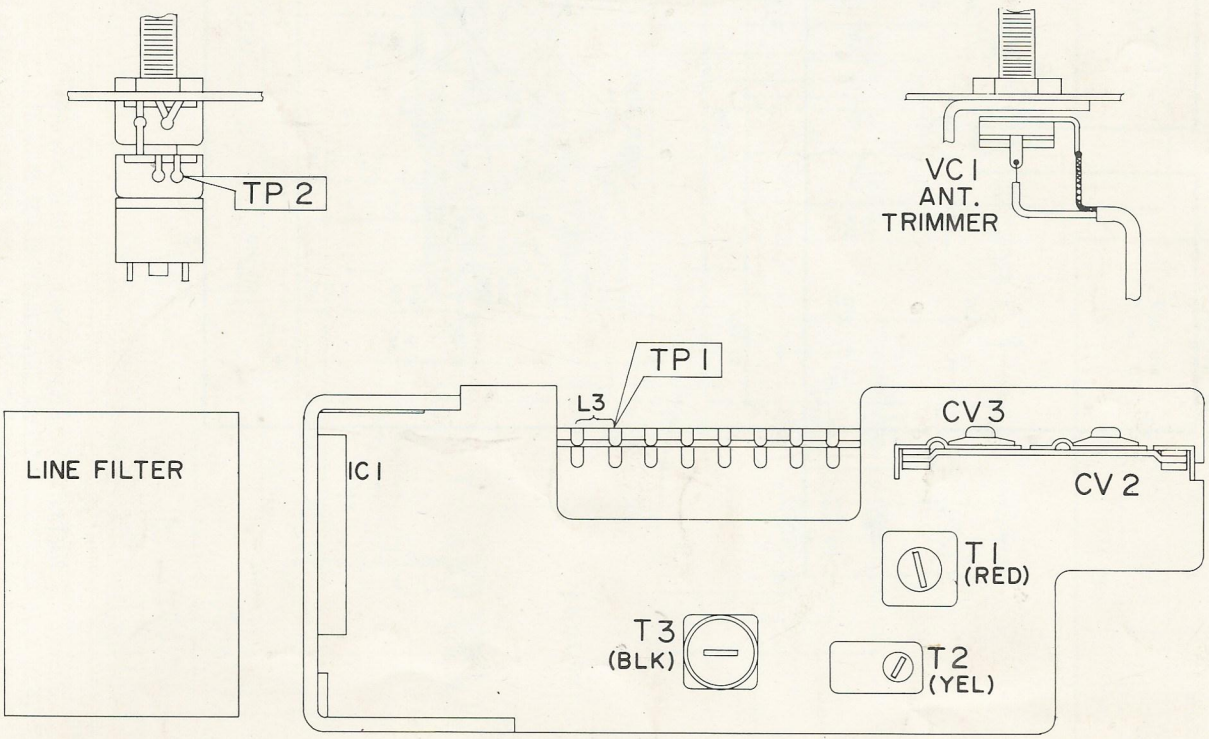

Fig. 6 ADJUST POINTS