

Service manual for KR611

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ITT



Service manual for KR611

Dimensions :	
Height :	122 mm (4¾")
Width :	220mm (8⅝")
Depth :	65mm (2½")
Weight :	1 kg. (2¼ lb) including batteries
Power Supply :	6 volts – 4 off U11
Power Consumption :	Quiescent 9 mA 50 mW 52 mA 100 mW 77 mA
Power Output :	450 mW at 10% distortion
Battery Life :	120 hours at an average listening level
Wavebands :	Medium 190m – 580m, 515kHz – 1605kHz Long 1150m – 2100m, 145kHz – 260kHz
Loudspeaker :	127mm x 77mm (5" x 3") 8Ω
Transistor Complement :	2SA – 354 – Mixer-oscillator 2SA – 12 – 1st i.f. amplifier 2SA – 12 – 2nd i.f. amplifier 2SB – 75 – Audio preamplifier 2SB – 75 – Driver 2SB – 156 (2 off) – Push-pull output
Diode Complement :	IN34A – I.F. overload protection IN34A – A.M. detector
Controls :	Volume – On/Off Tone Tuning Waveband : Medium Long

CIRCUIT DESCRIPTION

Signals induced in the ferrite rod and tuned with the gang capacitor Cv1 are coupled via L3 or L4 to the base of TX1, which is the a.m. mixer oscillator. The collector of TX1 is switched to either L7/L8 or L9/L10, the oscillator coils which are tuned by the gang capacitor Cv2 and which feed the base of TX1 through windings L3 or L4 on the ferrite rod. The i.f. signal passes to L5/L6, the first i.f. transformer, and then to TX2, the first i.f. amplifier. Diode D1 protects TX2 from being overloaded by very large signals. In the collector circuit of TX2 is L11/L12, the second i.f. transformer, which couples TX2 to TX3, the second i.f. amplifier. Capacitors C12 and C14 provide neutralizing feedback to TX2 and TX3 respectively. In the collector circuit of TX3 is L13/14, which drives the detector diode D2. The audio signal developed across R17 is then fed to the volume control. R13 and R9 feed the a.g.c. control voltage to the base of TX2, whose collector current is reduced for strong signals.

AUDIO

The signal from the volume control is fed to TX4, the audio amplifier, and is d.c. coupled to TX5, the driver. The transformer L15, L16, and L17 serves as a phase splitter to feed the output pair TX6, TX7. These transistors are transformer coupled to the loudspeaker. R29 and C30 are switched to provide a bass boost tone control, and R31 is a thermistor providing thermal stabilization for the output transistors.

OPENING THE RECEIVER FOR SERVICING

Remove the two Philips headed screws from the back of the case. Holding the back of the case in one hand, ease the bottom of the front of the case out from the back with the fingers of the other hand. The top of the front of the case is located in the top of the back by two small lugs. Slide the front of the case away from the top of the back, and pull the front out slightly. Now slide the front, with the attached tone and waveband switches, out sideways from the back of the case, being careful not to overstrain the battery leads. Lay the two halves of the case face down.

To remove the printed circuit board first remove the two round-headed Philips screws from the board face. Lift the control end until the board is clear of the speaker magnet and slide the board out from its locating slots.

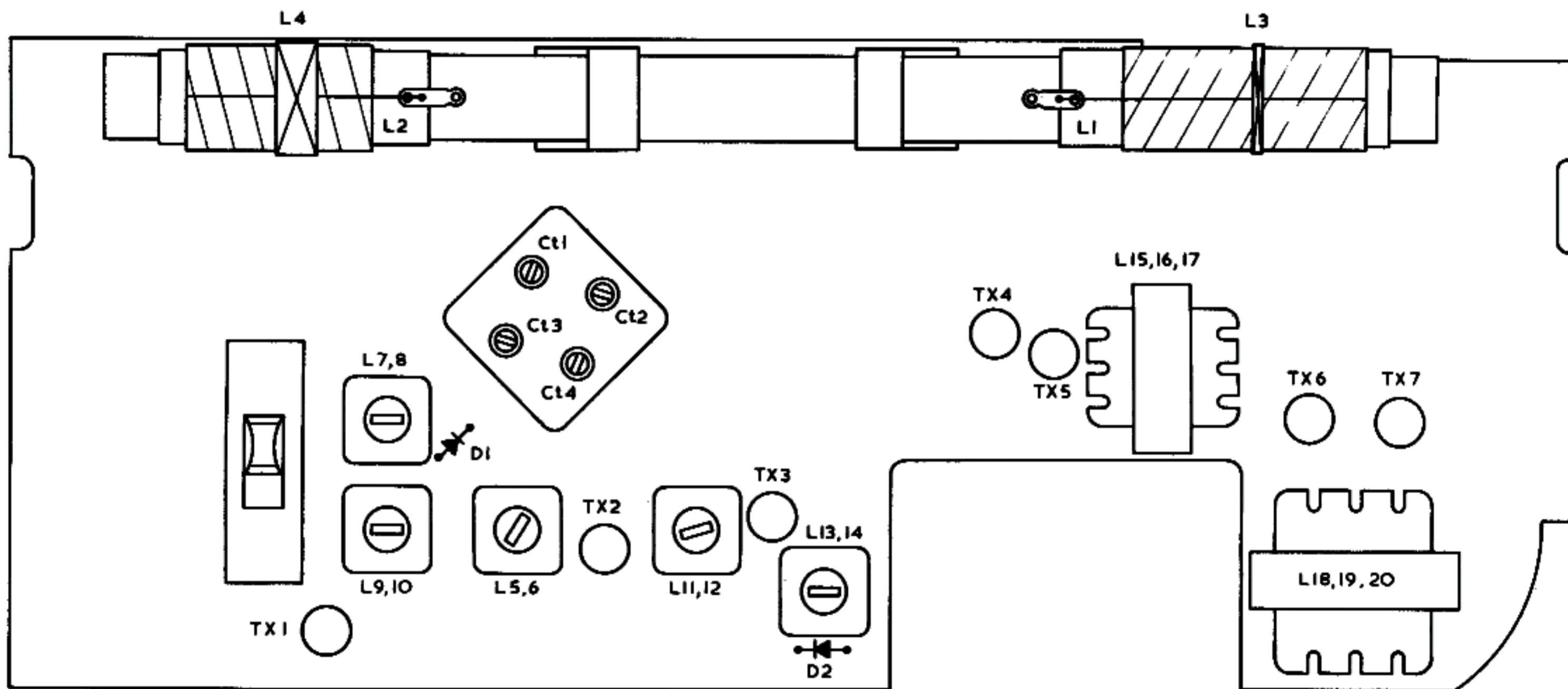
To reassemble the case locate the tone and waveband switches in the back half of the case. Bring the two halves together until it is possible to fit the socket panel. Ensure that the socket panel is fitted the correct way round, and that the wires connected to it are not trapped when the front of the case is lowered into the back. Locate the top lugs of the front of the case in the top of the back of the case, and gently press the two halves of the case together. Finally, secure the two halves with the two Philips headed screws.

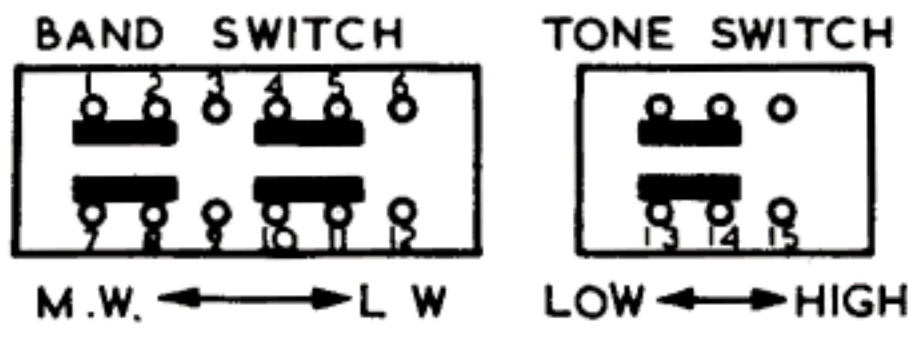
ALIGNMENT INSTRUCTIONS

Connect a signal generator, modulated at 1kHz to a depth of 30%, to a shielded test coil (85 turns of enamel covered wire on a 2" diameter former). Position the test coil so that it is coaxially in line with, and a few inches from the m.w. end of the ferrite rod. Follow the instructions set out below and adjust for maximum output.

Operation	Waveband	Dial Pointer	Input Frequency	Adjustment
1	M.W.	188m	470kHz	L13, L14
2	M.W.	188m	470kHz	L11, L12
3	M.W.	188m	470kHz	L5, L6
4	M.W.	Right hand of scale	505kHz	L7, L8
5	M.W.	Left hand of scale	1650kHz	Ct3
6	M.W.	500m	600kHz	L1, L3
7	M.W.	215m	1400kHz	Ct2
8	L.W.	Right hand of scale	140kHz	L9, L10
9	L.W.	Left hand of scale	270kHz	Ct4
10	L.W.	1950m	155kHz	L2, L4
11	L.W.	1180m	255kHz	Ct1

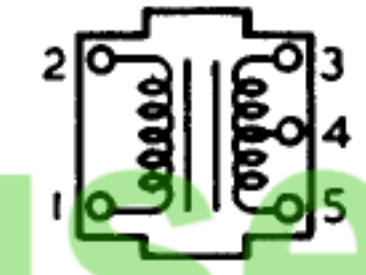
ALIGNMENT LAYOUT



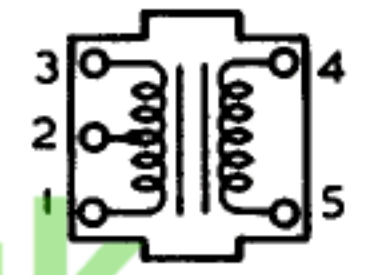


ALL VOLTAGES ARE NEGATIVE AND ARE MEASURED WITH AN AVO 8 ON AN APPROPRIATE RANGE WITH RESPECT TO THE POSITIVE BATTERY TERMINAL.

ALL RESISTORS ARE 10% 1/4W.



RESISTANCE OF L15 PINS 1-2 IS 350Ω
RESISTANCE OF L16 PINS 3-4 IS 80Ω
RESISTANCE OF L17 PINS 4-5 IS 80Ω



RESISTANCE OF L18 PINS 2-3 IS 35Ω
RESISTANCE OF L19 PINS 1-2 IS 3Ω
RESISTANCE OF L20 PINS 4-5 IS LESS THAN 1Ω

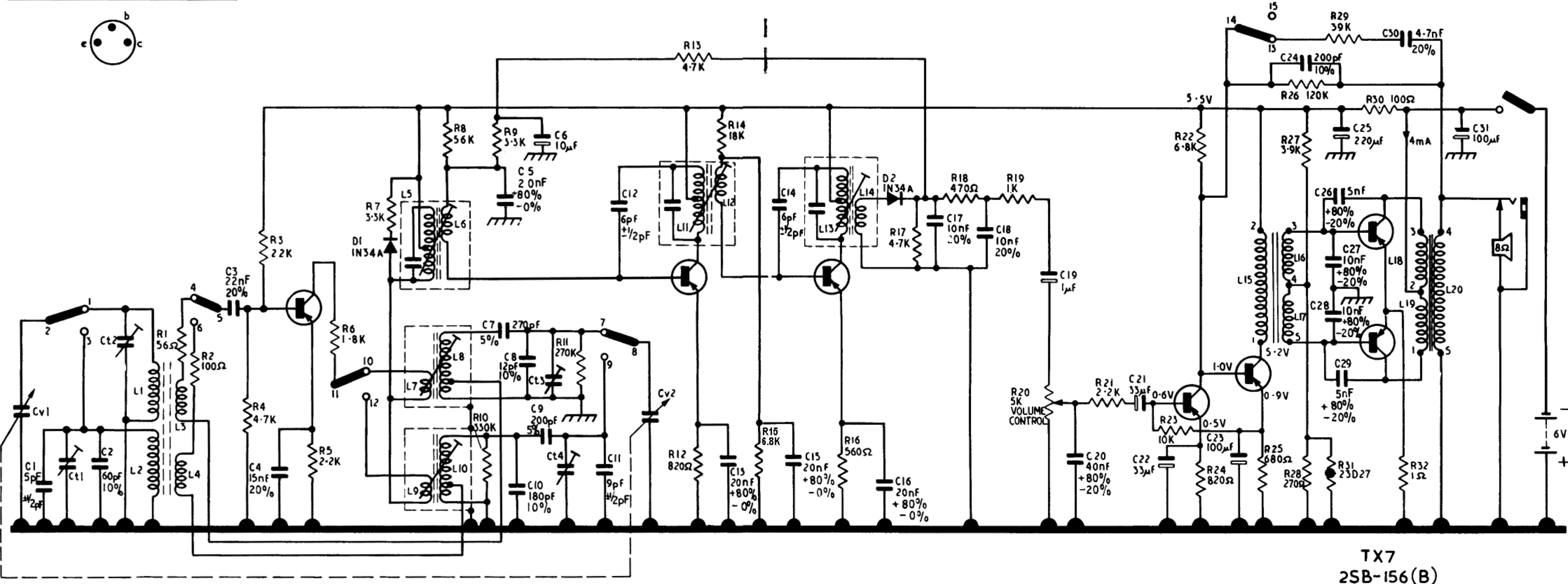
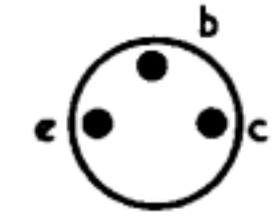
TX1
2SA-354 (A)

TX2
2SA-12 (C)

TX3
2SA-12 (A)

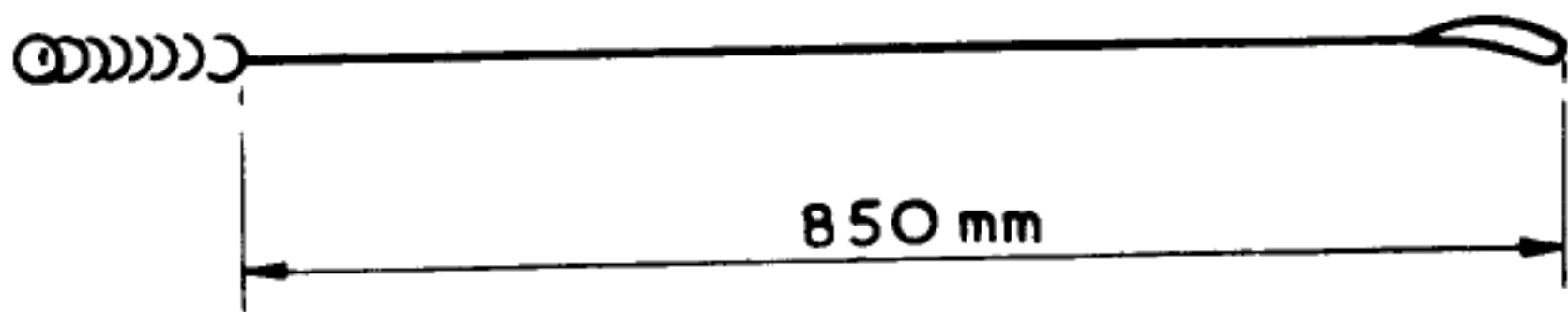
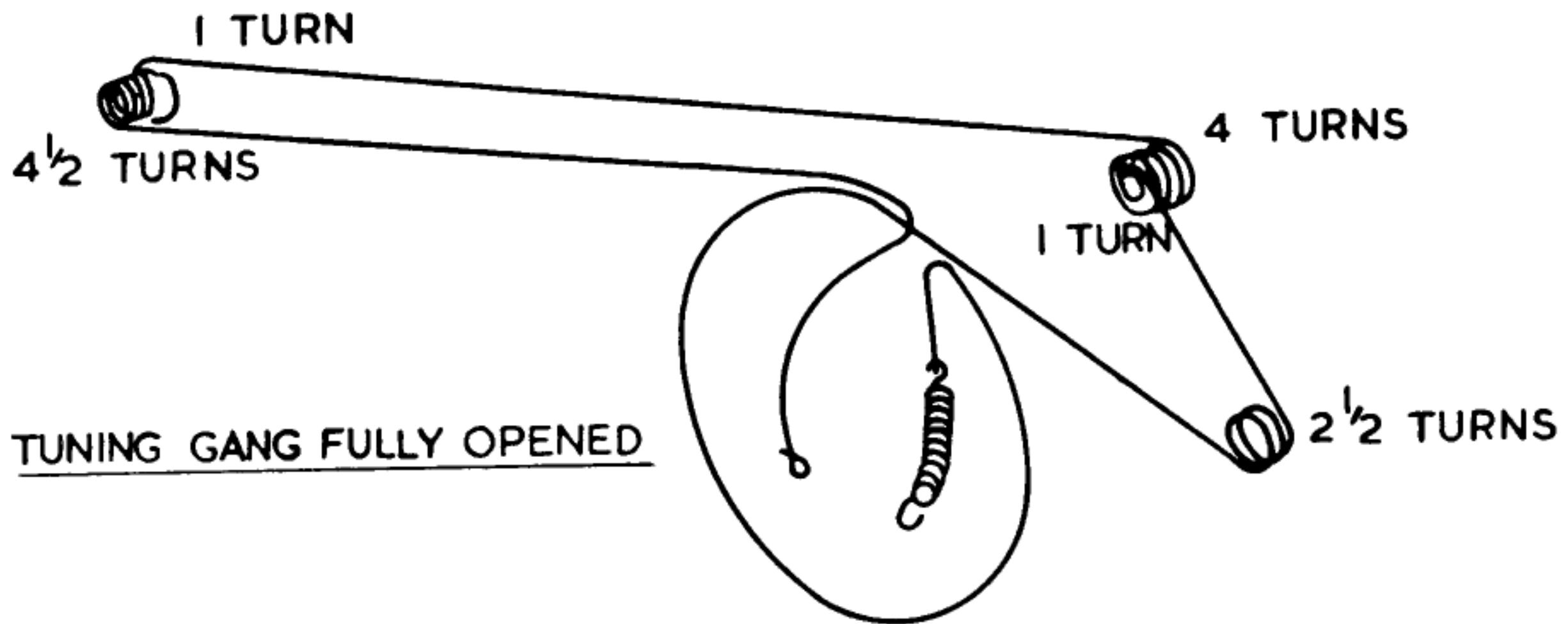
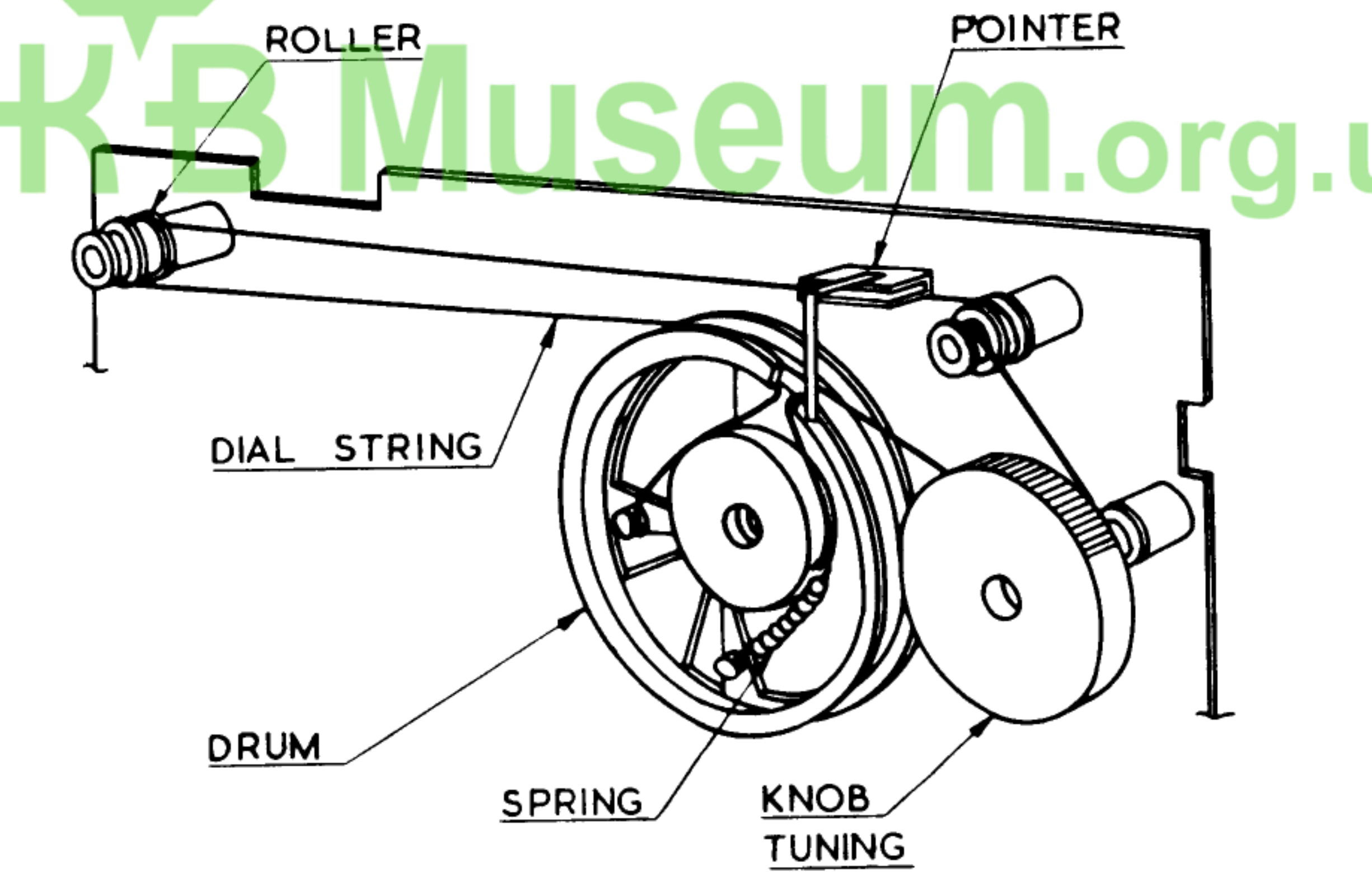
TX4 TX5 TX6
2SB-75(B) 2SB-75(B) 2SB-156(B)

TRANSISTOR BASE CONNECTIONS



TX7
2SB-156(B)

CIRCUIT DIAGRAM OF KR611



Drive Cord Assembly