

TELEVISION Service Manual

PUBLISHED BY RADIO COLLEGE OF CANADA, TORONTO

1963 Supplement No. 50

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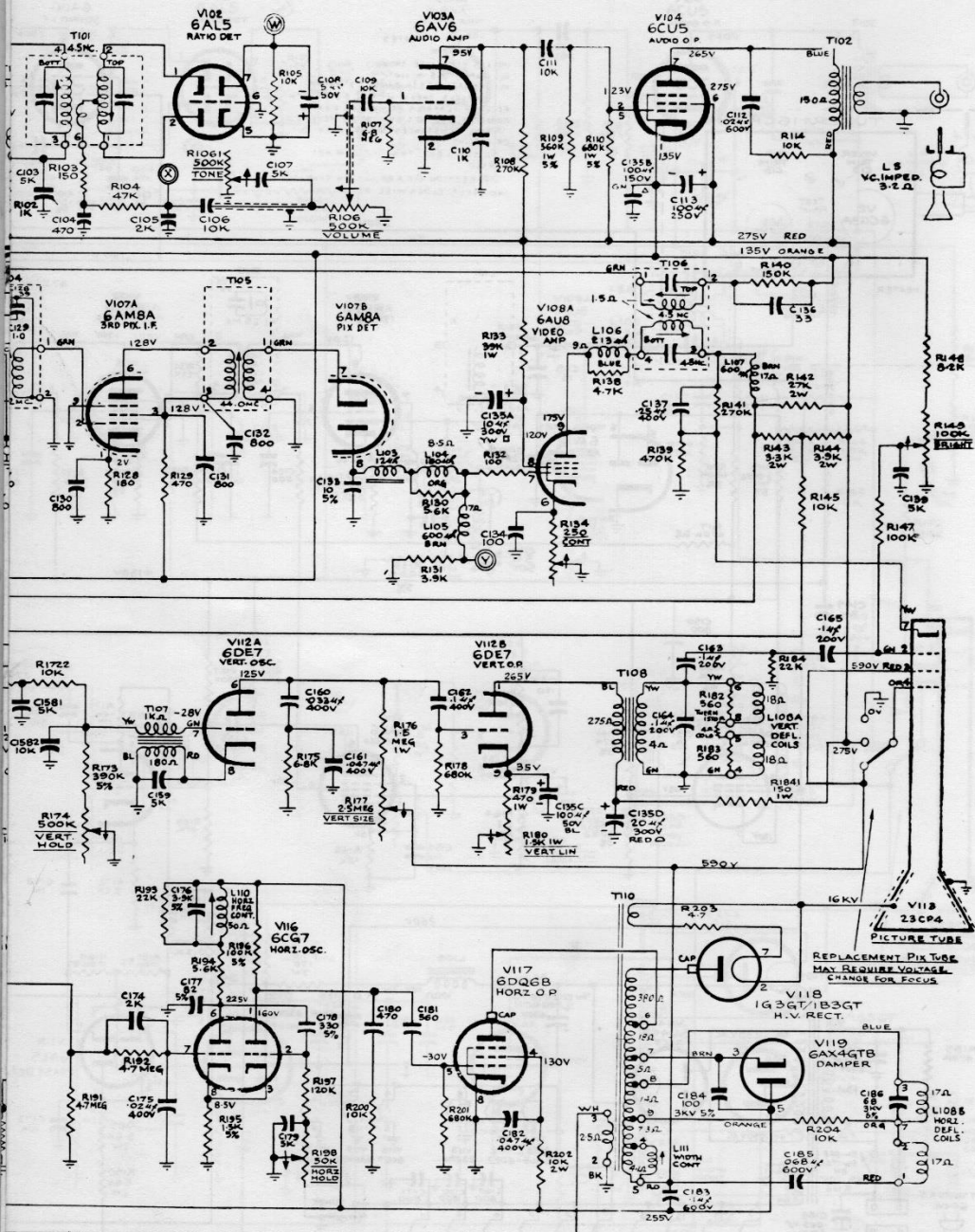
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RCC
TELEVISION
Supplement
No. 50



TV ALIGNMENT PROCEDURE
Chassis Types

19M1, 19M2, 19M3, 23M1, 23M2, 23M3, 23M4, 23M6, 23M7, 23M8, 23M9

WARNING: Before any attempt is made to re-align these models please read the following:
On Models 19M1, 19M2, 19M3, 23M3, 23M9 - one side of the AC line is connected directly to chassis. It is therefore necessary to provide adequate isolation before test equipment is connected to the chassis.

Under most conditions the PICTURE I. F. will not require complete re-alignment. The circuit design is such that tube and component part changes do not seriously affect proper functioning of the circuit.

If re-alignment is felt necessary, the following procedure must be followed:

- (1) Check overall band pass using STEP TWO, VISUAL ALIGNMENT.
NOTE: Since most equipment set-ups will differ considerably in results, it will be necessary to first check a receiver that is known to be good; variations in curve should be noted and re-alignment made to this response curve. Only slight adjustments are usually necessary.
- (2) In the case of a tuner change it is usually only necessary to adjust the input I. F. circuit, that is, L8 (the coil in the tuner) and L101.
- (3) In cases where the I. F. 's have been seriously maladjusted, it will be necessary to follow the complete I. F. alignment procedure. It must be kept in mind that the spot frequency alignment, STEP ONE, is only a guide and will not necessarily produce the required results. A visual alignment check is required in order to produce optimum operation.

NOTE: Alignment may be done from the bottom of chassis with Hexagon tool.

STEP ONE: POINT BY POINT ALIGNMENT OF PICTURE I. F.

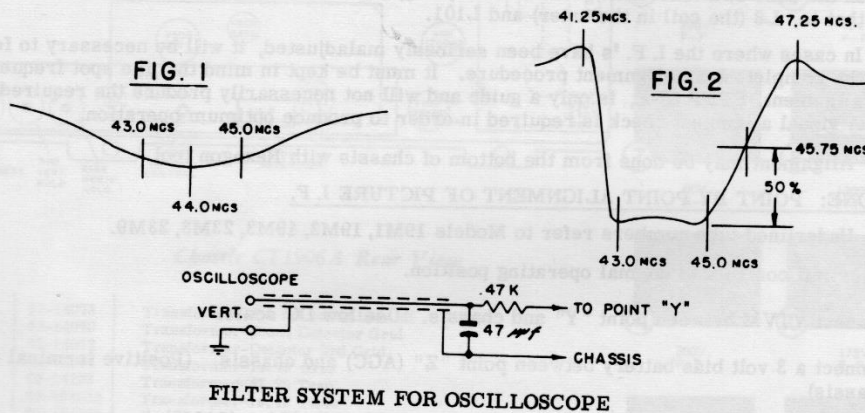
NOTE: Underlined tube numbers refer to Models 19M1, 19M2, 19M3, 23M3, 23M9.

- A. Adjust all controls to normal operating position.
- B. Connect VTVM between point "Y" and chassis. Use low DC scale.
- C. Connect a 3 volt bias battery between point "Z" (AGC) and chassis. (Positive terminal to chassis).
- D. Connect Signal Generator to the grid of 6AM8, pin 2 of V107A. (5AM8)
- E. With generator set at 44.0 mcs adjust T105 for maximum indication on VTVM.
- F. Connect Signal Generator to the grid of 6BZ6, pin 1 of V106. (3BZ6)
- G. Set generator at 45.2 mcs and adjust T104 bottom for maximum indication. Reset Signal Generator to 47.25 mcs and adjust top of T104 for minimum indication.
- H. Connect Signal Generator to grid of 6BZ6, pin 1 of V105. (3BZ6)
- I. Set Signal Generator to 42.8 mcs and adjust T103 bottom for maximum indication. Reset Signal Generator to 41.25 mcs and adjust T103 top for minimum indication.
- J. Lower tube shield on V2, 6CG8A (5CG8). Make coupling device by cutting extra tube shield so 1/2" length remains. Place over V2. Connect Signal Generator between shield and chassis.
- K. With Signal Generator Set at 44.0 mcs adjust L8 (tuner I. F. adjust) and L101 for maximum indication.

STEP TWO: VISUAL ALIGNMENT OF PICTURE I. F.

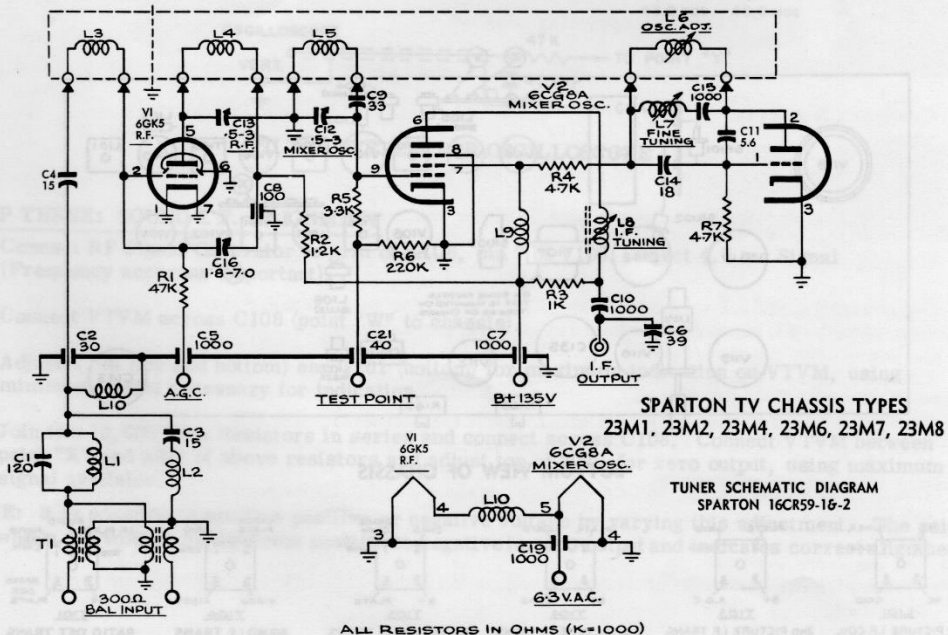
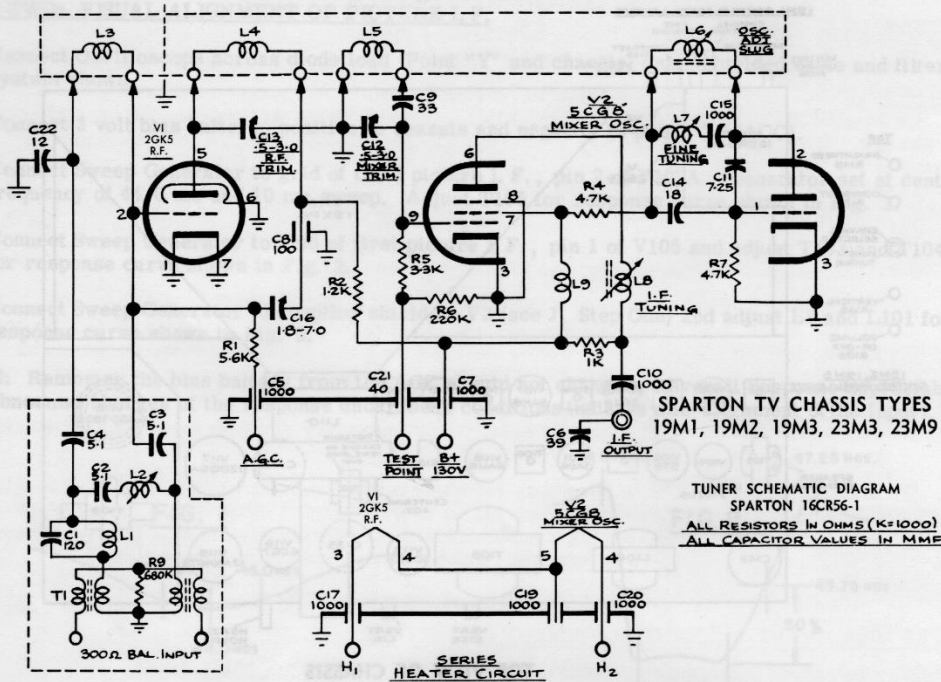
- A. Connect Oscilloscope across diode load (Point "Y" and chassis) using shielded cable and filter system shown.
- B. Connect 3 volt bias battery, positive to chassis and negative to point "Z" (AGC).
- C. Connect Sweep Generator to grid of third picture I. F., pin 2 of V107A. Generator set at centre frequency of 44.0 mc and 10 mc sweep. Adjust T105 for response curve shown in Fig. 1.
- D. Connect Sweep Generator to grid of first picture I. F., pin 1 of V105 and adjust T103 and T104 for response curve shown in Fig. 2.
- E. Connect Sweep Generator to coupling shield on V2 (see J, Step One) and adjust L8 and L101 for response curve shown in Fig. 2.

NOTE: Removing the bias battery from the AGC should not change the overall response appreciably. Abnormal changes of the response under these conditions indicate mis-alignment of the input I. F.

**STEP THREE: SOUND I. F. ALIGNMENT**

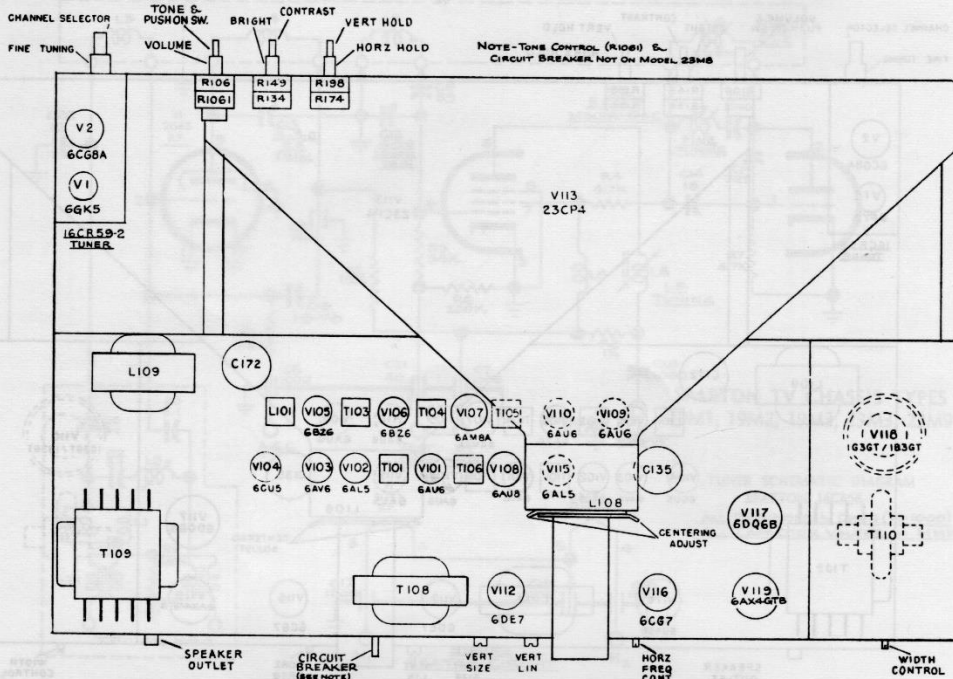
- A. Connect RF Signal Generator to grid of 6AU8, pin 7 of V108. Inject 4.5 mc Signal (Frequency accuracy important).
- B. Connect VTVM across C108 (point "W" to chassis).
- C. Adjust T106 (top and bottom) and T101 (bottom) for maximum indication on VTVM, using minimum signal necessary for indication.
- D. Join two 10,000 Ohm Resistors in series and connect across C108. Connect VTVM between point "X" and joint of above resistors and adjust top of T101 for zero output, using maximum signal available.

NOTE: It is possible to produce positive or negative voltage by varying this adjustment. The point where the voltage swings from positive to negative is zero output and indicates correct alignment.

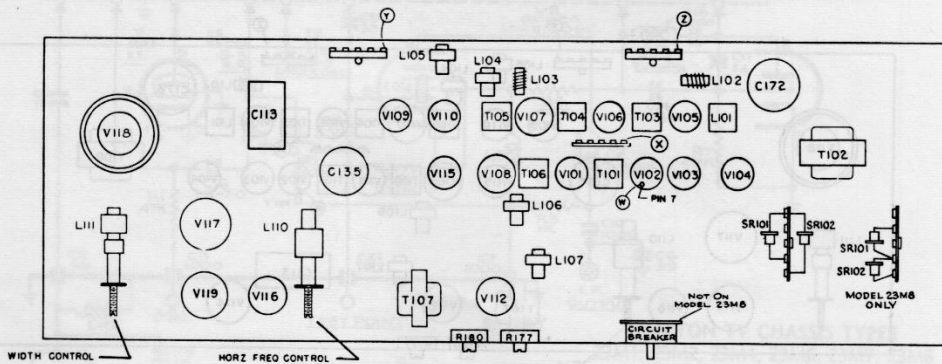


SPARTON

23M2, 4, 6, 7, 8



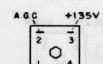
TOP VIEW OF CHASSIS



BOTTOM VIEW OF CHASSIS



L101
1 ST PIX IF COIL



T103
2 ND PIX IF TRANS



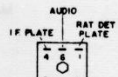
T104
3 RD PIX IF TRANS



T105
4 TH PIX IF TRANS



T106
SOUND IF TRANS



T101
RATIO DET TRANS