RCC TELEVISION Service Manual

PUBLISHED BY RADIO COLLEGE OF CANADA, TORONTO

1963 Supplement No. 50

INDEX

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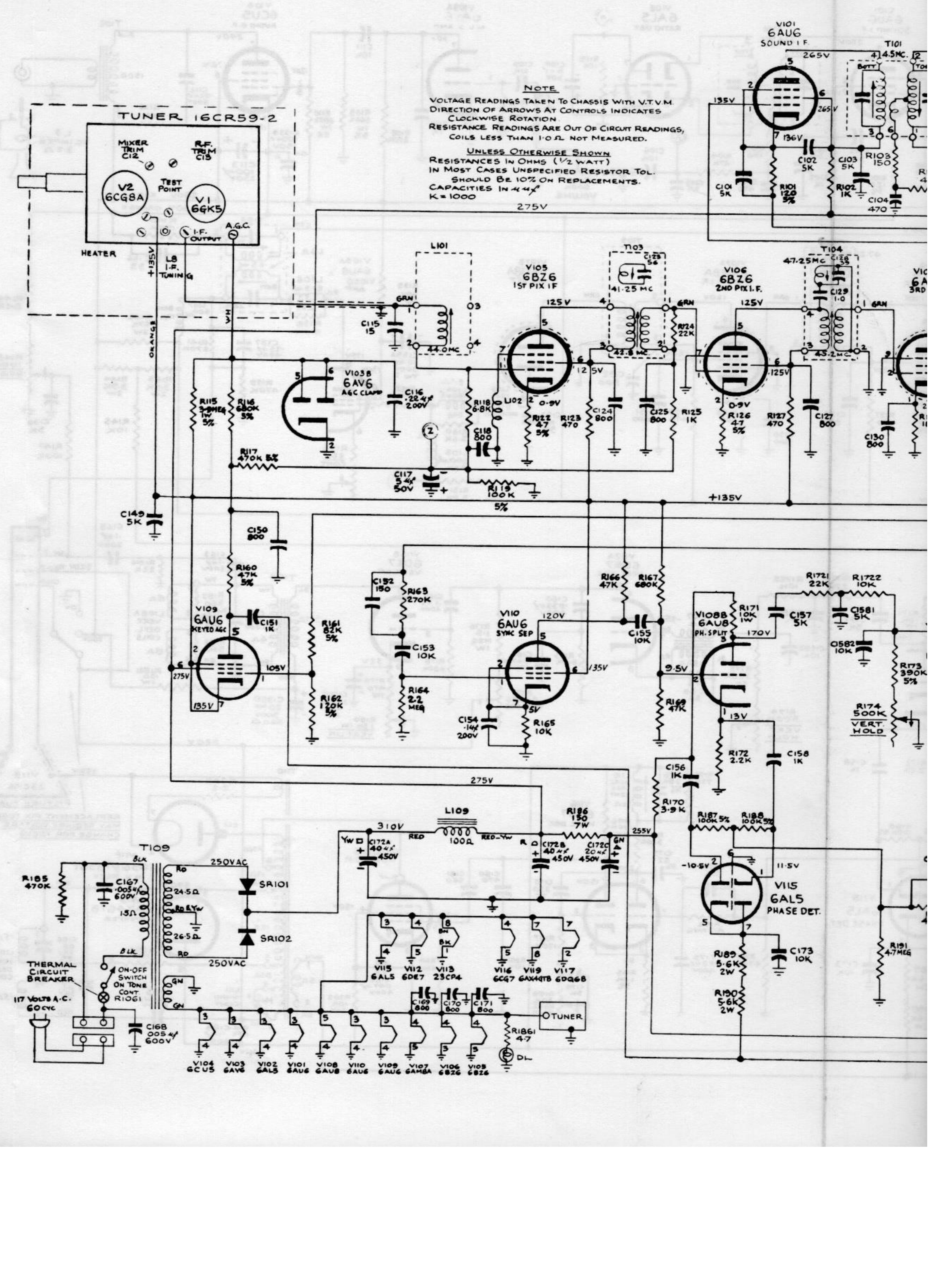
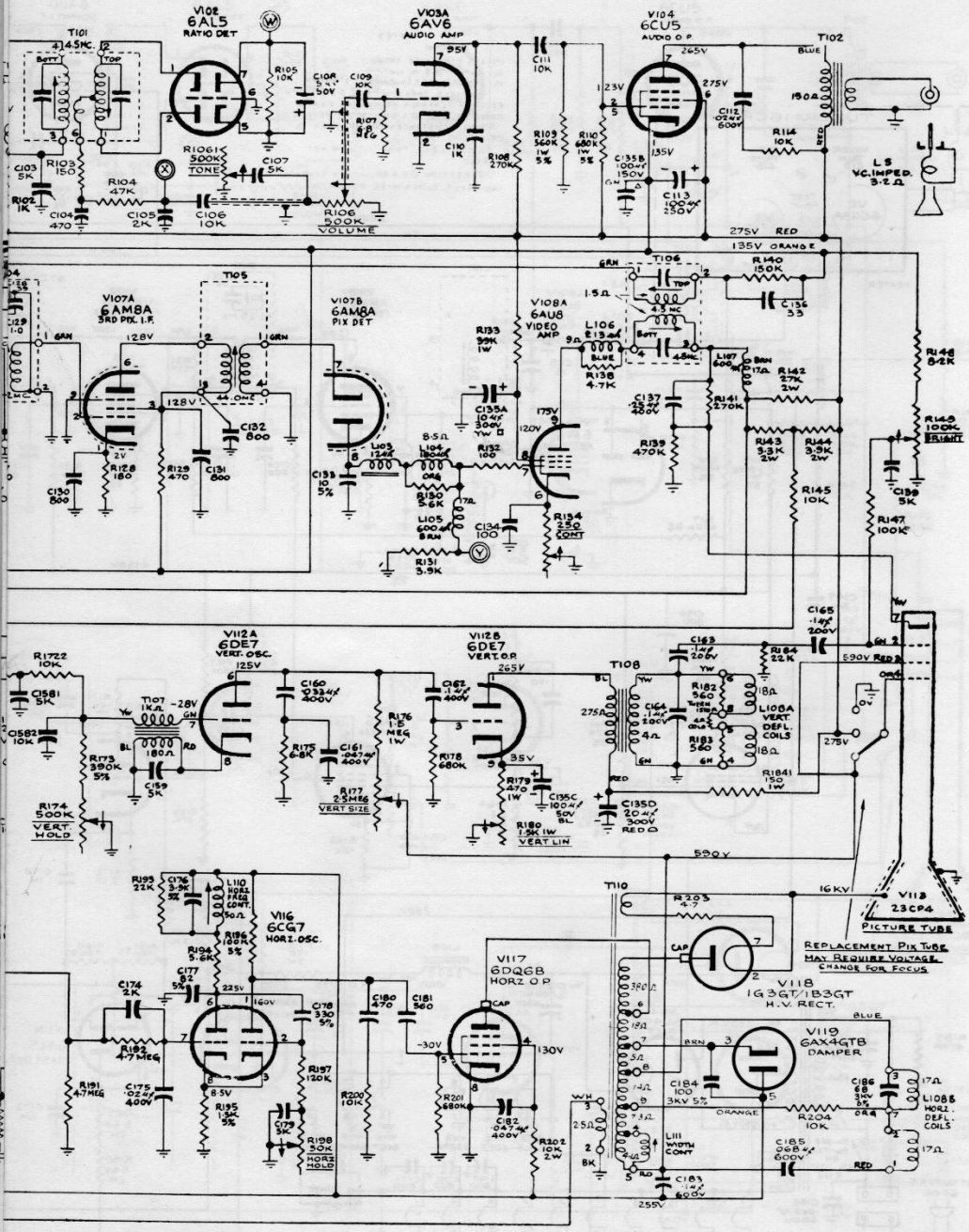

NOTE
VOLTAGE READINGS TAKEN TO CHASSIS WITH V.T.V.M.
DIRECTION OF ARROWS AT CONTROLS INDICATES CLOCKWISE ROTATION
RESISTANCE READINGS ARE OUT OF CIRCUIT READINGS, COILS LESS THAN 1.0 Ω NOT MEASURED.
UNLESS OTHERWISE SHOWN
RESISTANCES IN OHMS (1/2 WATT)
IN MOST CASES UNSPECIFIED RESISTOR TOL. SHOULD BE 10% ON REPLACEMENTS.
CAPACITIES IN μμf
K = 1000
TUNER 16CR59-2
MIXER TRIM C12
R.F. TRIM C13
TEST POINT
V2 6CG8A
V1 6GK5
I.F. OUTPUT
A.G.C.
HEATER
L8 I.F. TUNING
V101 6AU6 SOUND I.F.
T101 4.5MC.
V103B 6AV6 AGC CLAMP
V105 6BZ6 1ST PIX I.F.
V106 6BZ6 2ND PIX I.F.
T103 41.25 MC
T104 47.25MC
L101 44.0MC
V109 6AU6 KEYED AGC
V110 6AU6 SYNC SEP
V108B 6AU8 PH. SPLIT
V115 6AL5 PHASE DET.
R174 500K VERT. HOLD
T109
L109 100Ω
SR101
SR102
250VAC
THERMAL CIRCUIT BREAKER
ON-OFF SWITCH ON TONE CONT R1061
117 VOLTS A.C. 60CYC
V115 6AL5
V112 6DE7
V113 23CP4
V116 6CG7
V119 6AX4GTB
V117 6DQ6B
V104 6CU5
V103 6AV6
V102 6AL5
V101 6AU6
V108 6AU8
V110 6AU6
V109 6AU6
V107 6AM8A
V106 6BZ6
V105 6BZ6
TUNER
+135V
275V
310V

SPARTON

23M2, 4, 6, 7, 8



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.

FIG. 1

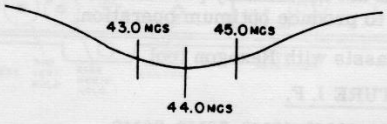
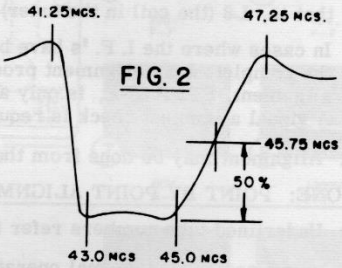
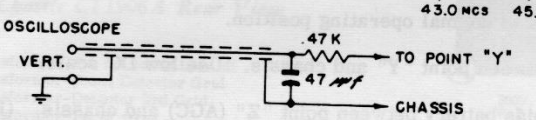


FIG. 2





FILTER SYSTEM FOR OSCILLOSCOPE

STEP THREE: SOUND I. F. ALIGNMENT

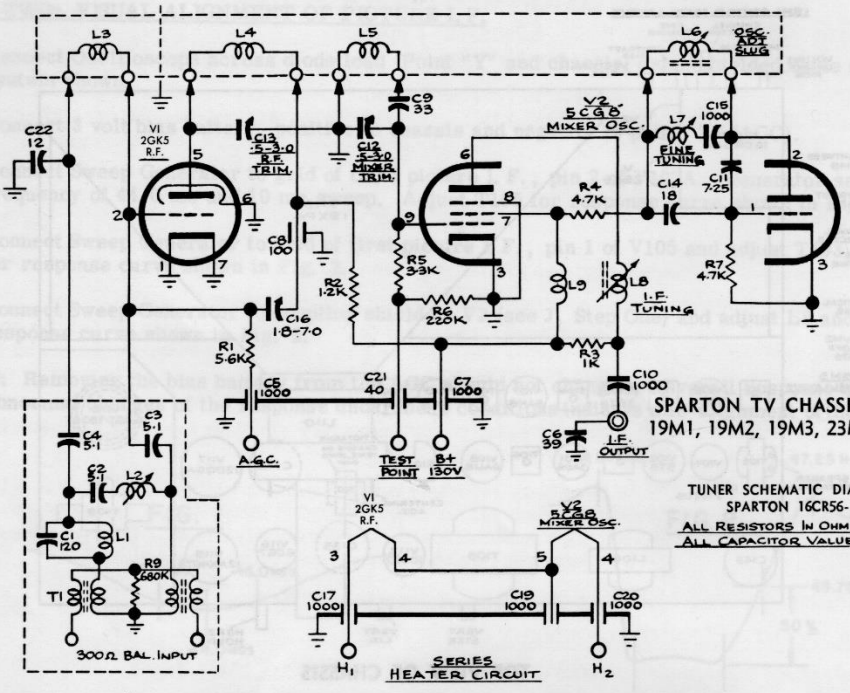
A. Connect RF Signal Generator to grid of 6AU8, pin 7 of V108. Inject 4.5 mc Signal (Frequency accuracy important).

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.

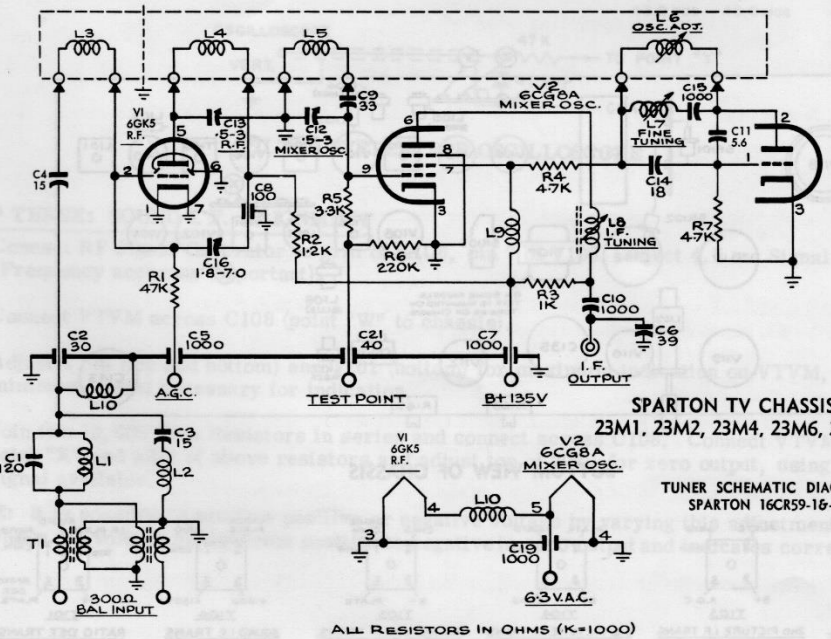
D. Join two 10,000 Ohm Resistors in series and connect across C108. Connect VTVM between point "X" and joint of above resistors and adjust top of T101 for zero output, using maximum signal available.

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 TV CHASSIS TYPES
19M1, 19M2, 19M3, 23M3, 23M9

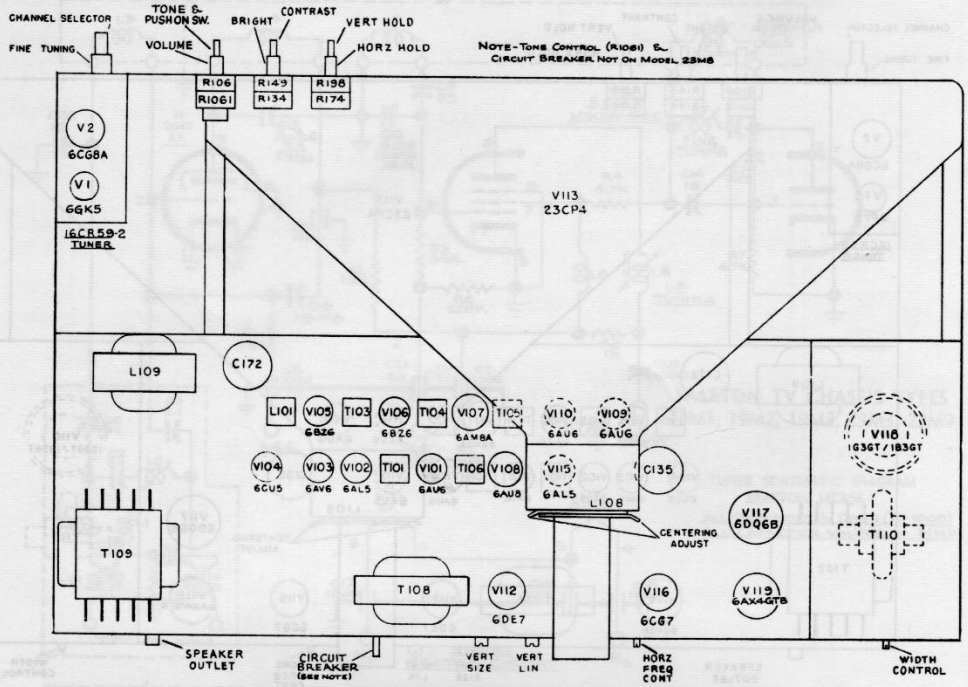
TUNER SCHEMATIC DIAGRAM
SPARTON 16CR56-1
ALL RESISTORS IN OHMS (K=1000)
ALL CAPACITOR VALUES IN MMF.



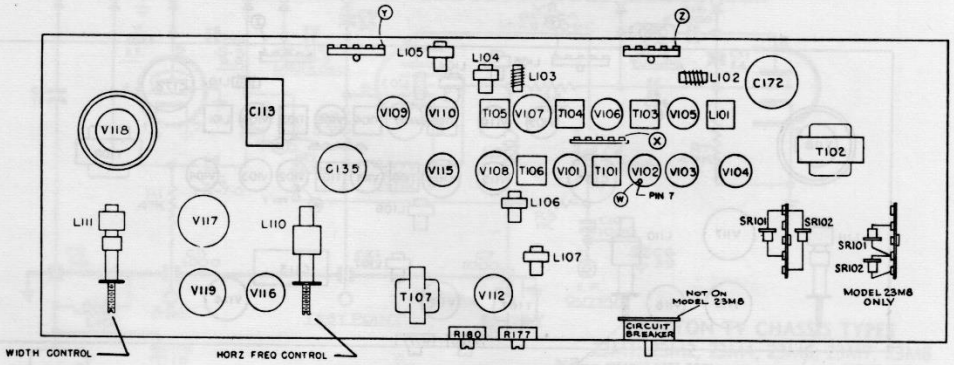
SPARTON TV CHASSIS TYPES
23M1, 23M2, 23M4, 23M6, 23M7, 23M8

TUNER SCHEMATIC DIAGRAM
SPARTON 16CR59-1&-2

ALL RESISTORS IN OHMS (K=1000)



TOP VIEW OF CHASSIS



BOTTOM VIEW OF CHASSIS