

**CONTRAST
 VOLUME
 OFF-ON SW.**

**HORIZ.
 VERT.
 HOLD**

**CHANNEL
 SELECTOR
 FINE TUNING**

**EMERSON
 MODELS 600, 639 (Ch. 120103B)**

EMERSON MODEL 600

| | | |
|---------------------|---|--|
| TRADE NAME | Emerson Models 600, 639 (Ch. 120103B) | |
| MANUFACTURER | Emerson Radio and Phono Corp., 111 Eighth Ave., New York 11, New York | |
| TYPE SET | Television Receiver | |
| TUBES | Twenty One | |

| | | | |
|----------------------|--------------------------|---------------|--------------------------|
| POWER SUPPLY | 110 - 120 Volts AC or DC | RATING | .98 Amp. at 117 Volts AC |
| TUNING RANGE- | Channels 2 thru 13 | | |

INDEX

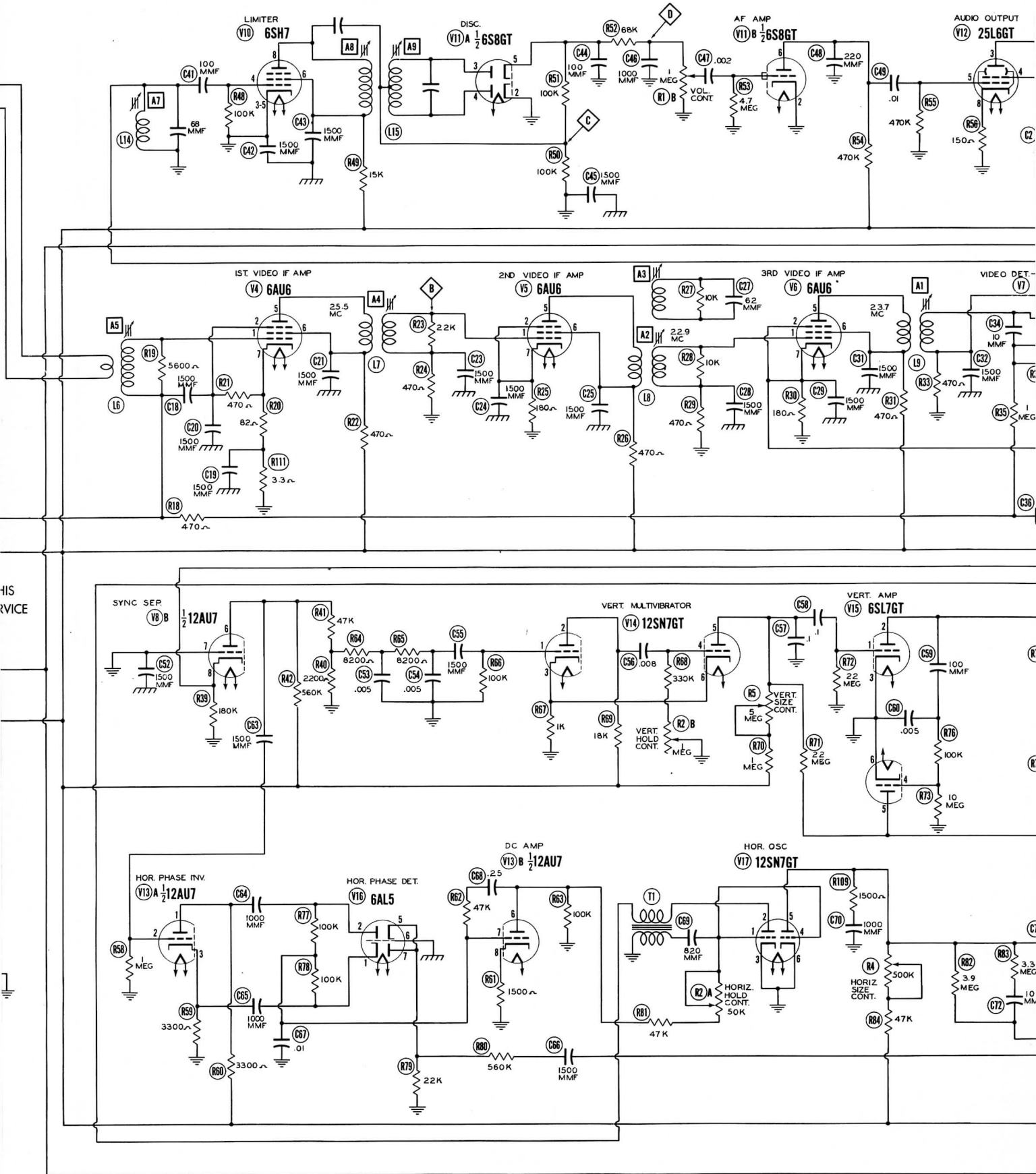
| | | | |
|----------------------------------|------------|--|--------|
| Alignment Instructions | 6, 7 | Photographs (continued) | |
| Block Diagram | 13 | RF Tuner (Standard Coil) | 10 |
| Disassembly Instructions .. | 13 | Resistor Identification .. | 12, 17 |
| High Voltage Adjustment .. | 13 | Trans., Inductor and Alignment Identification .. | 4, 9 |
| Parts List and Description .. | 14, 15, 16 | Schematic | 2 |
| Photographs | | Schematic (General Instrument Tuner) .. | 20 |
| Capacitor Identification | 11, 18 | Tube Placement Chart .. | 5 |
| Chassis- Top View .. | 3 | Voltage and Resistance Measurements .. | 8 |
| RF Tuner (General Instrument) .. | 19 | | |

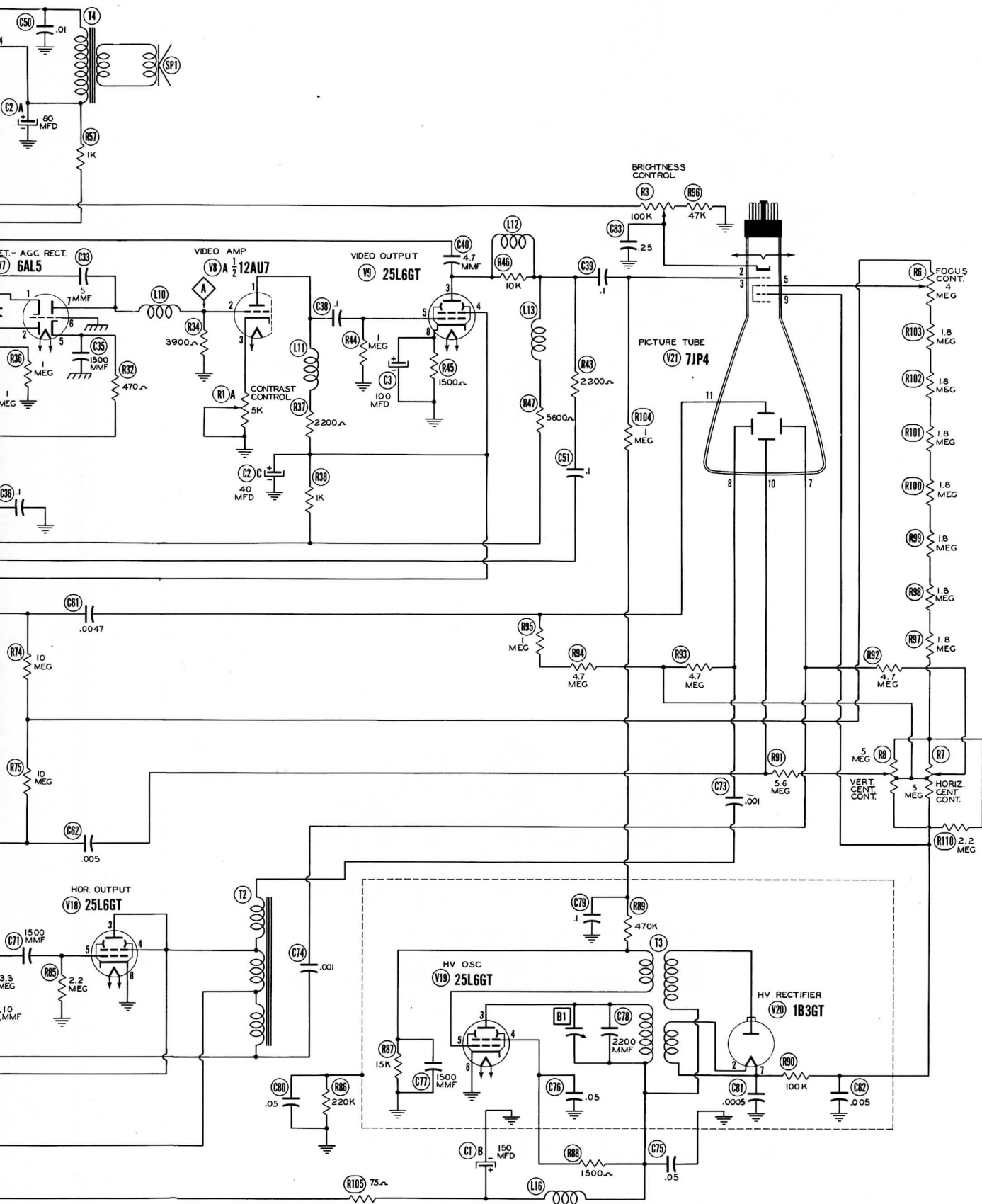
HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
 "Reproduction or use, without express permission, of editorial or pictorial con-

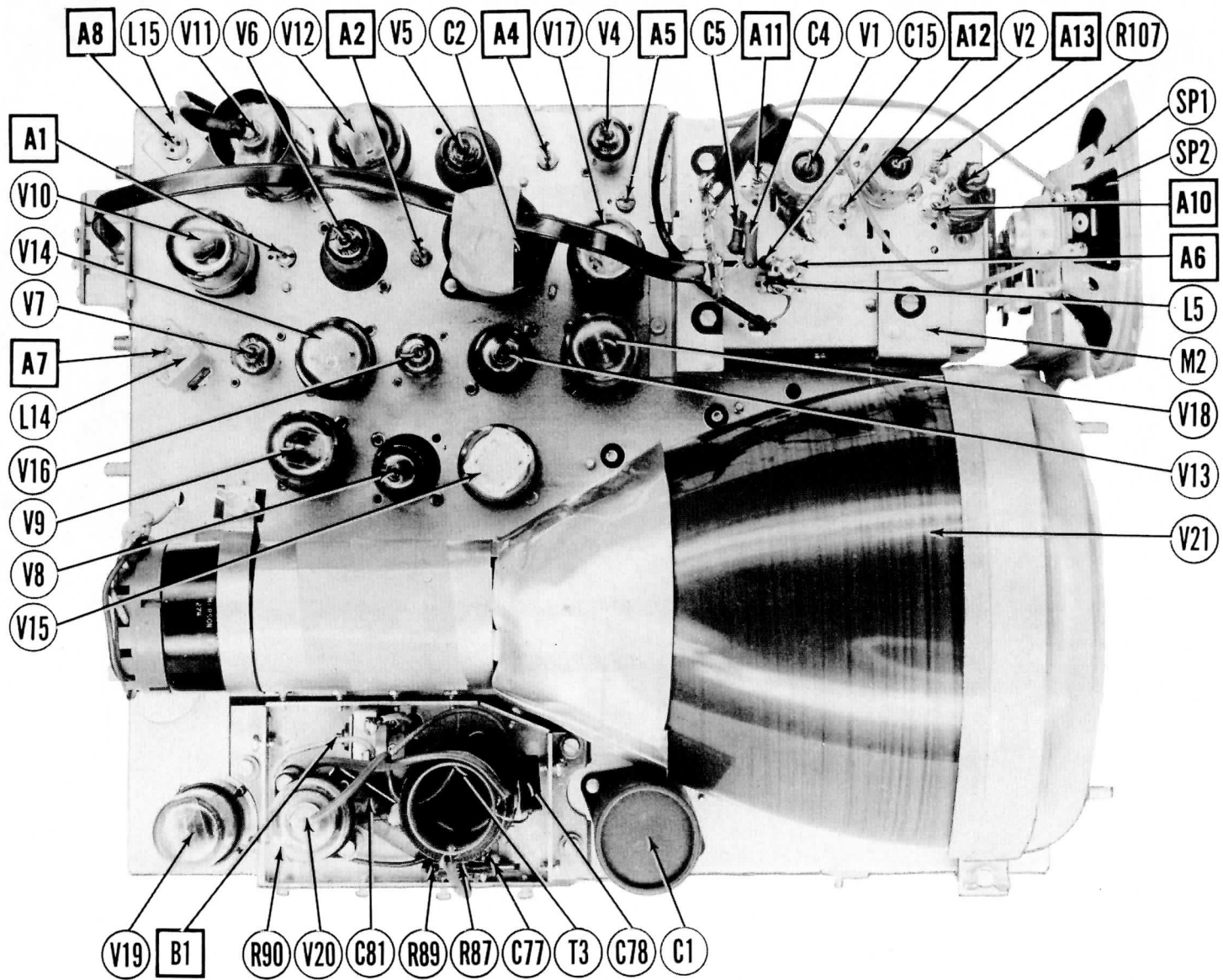
tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1950 by Howard W. Sams & Co., Inc., Indianapolis 1, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

THIS SERVICE



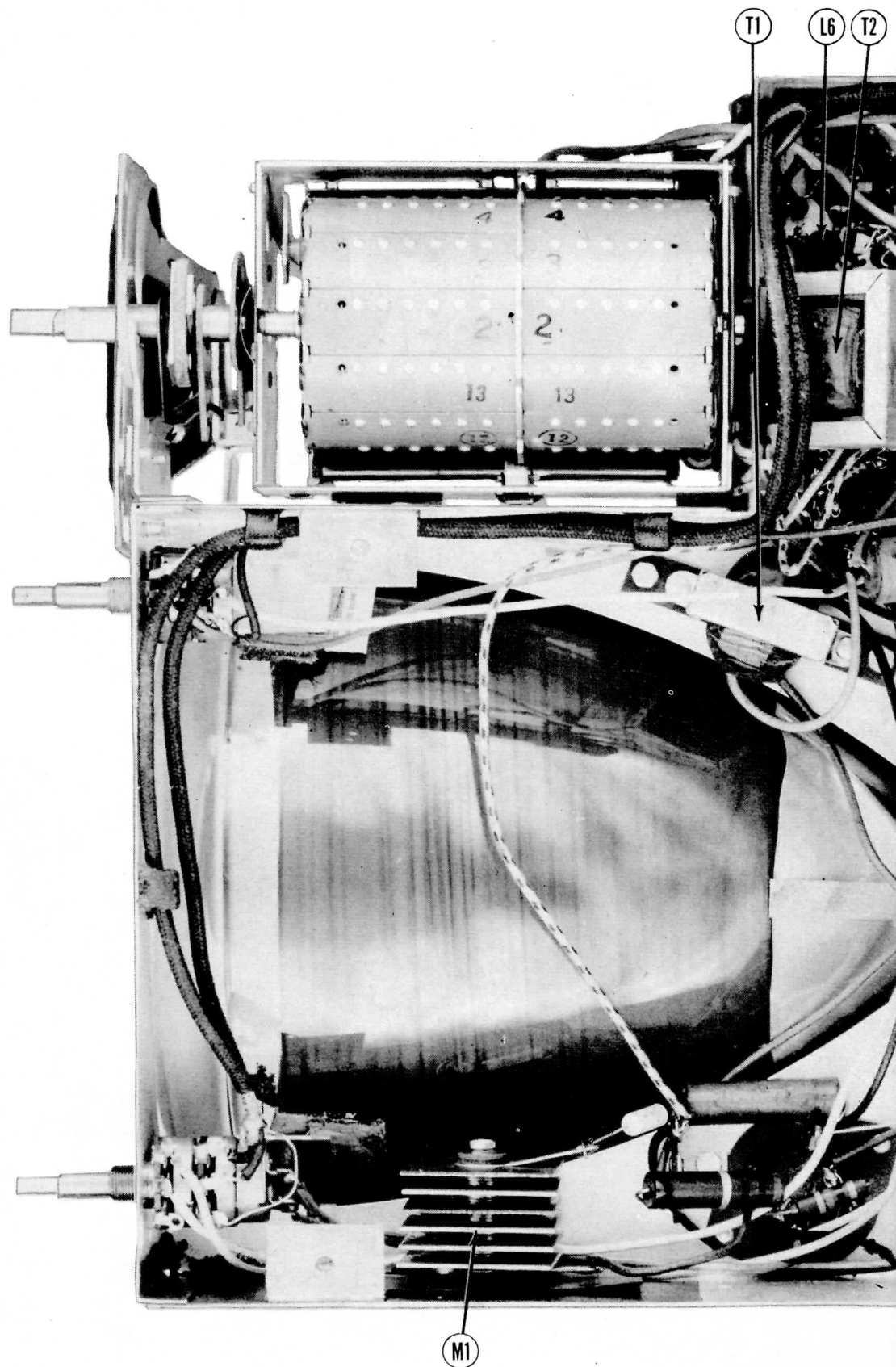


EMERSON
MODELS 600, 639 (Ch. 120103B)

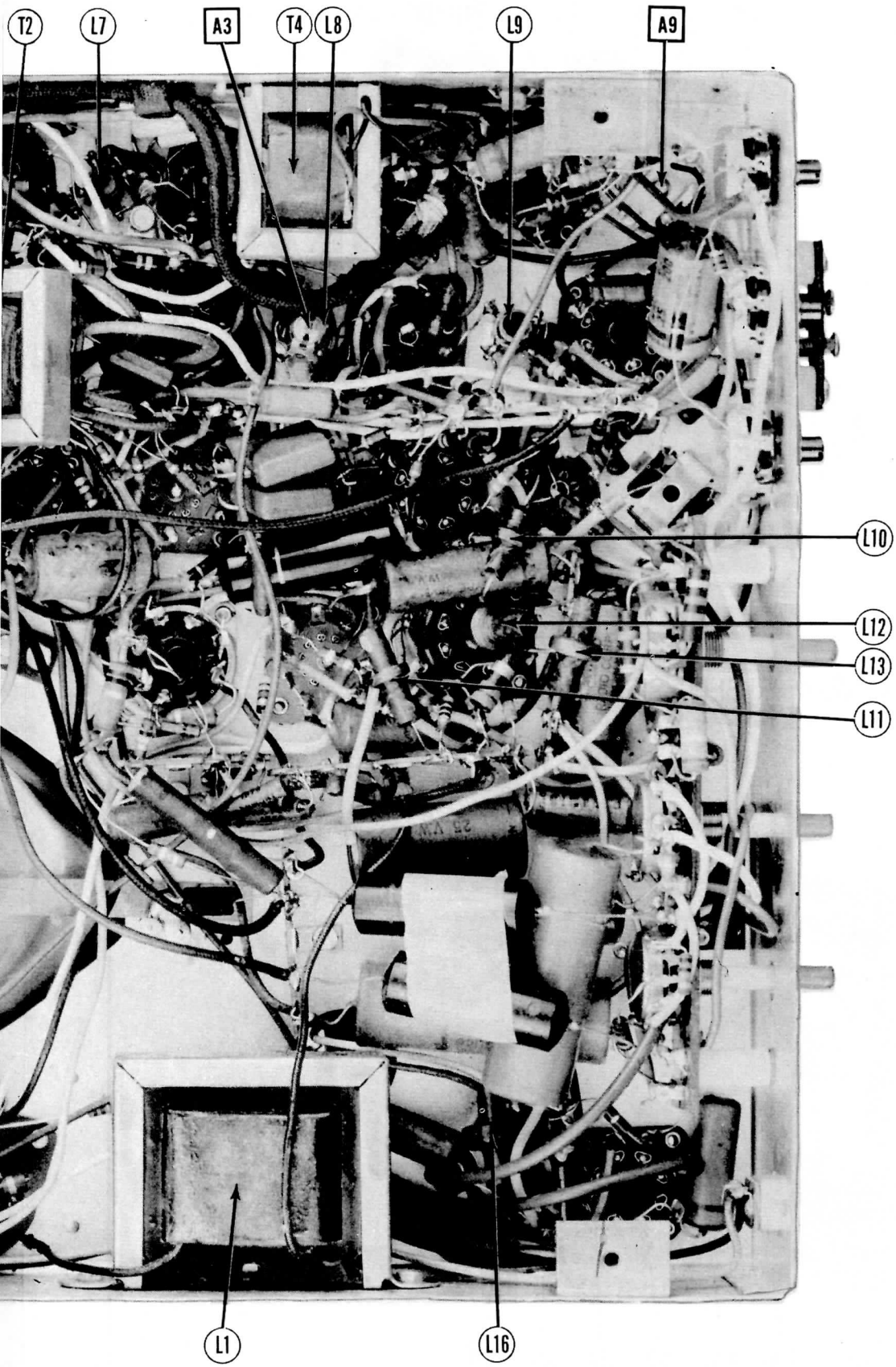


CHASSIS TOP VIEW

EMERSON
 MODELS 600, 639 (Ch. 120103B)

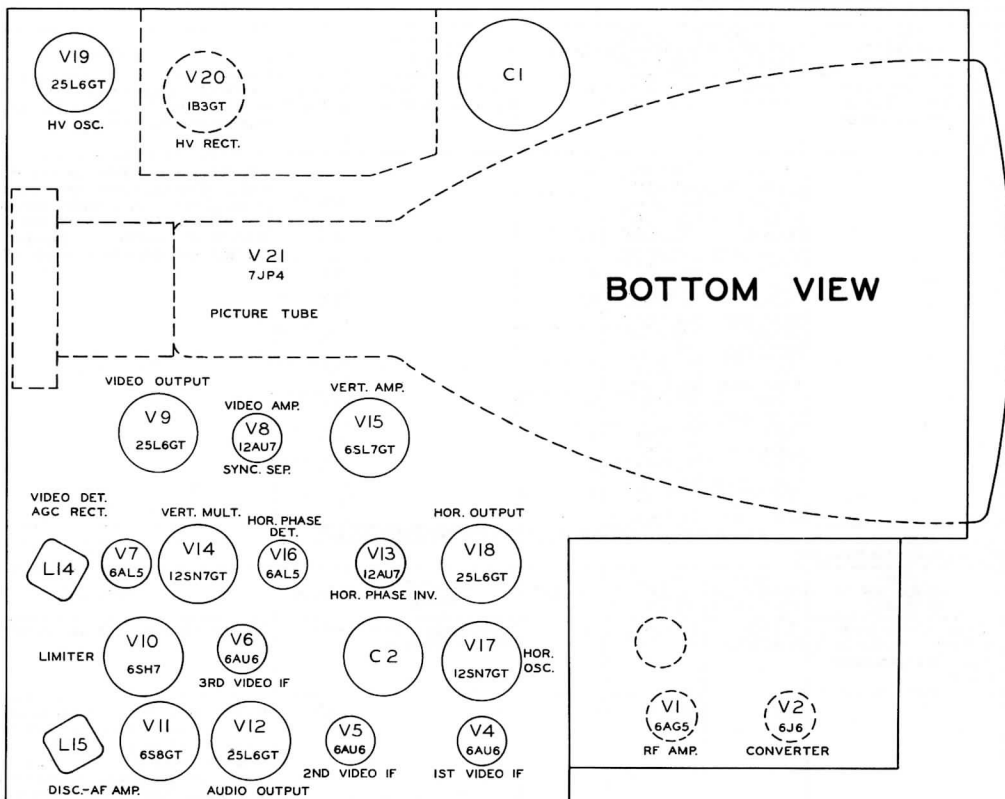
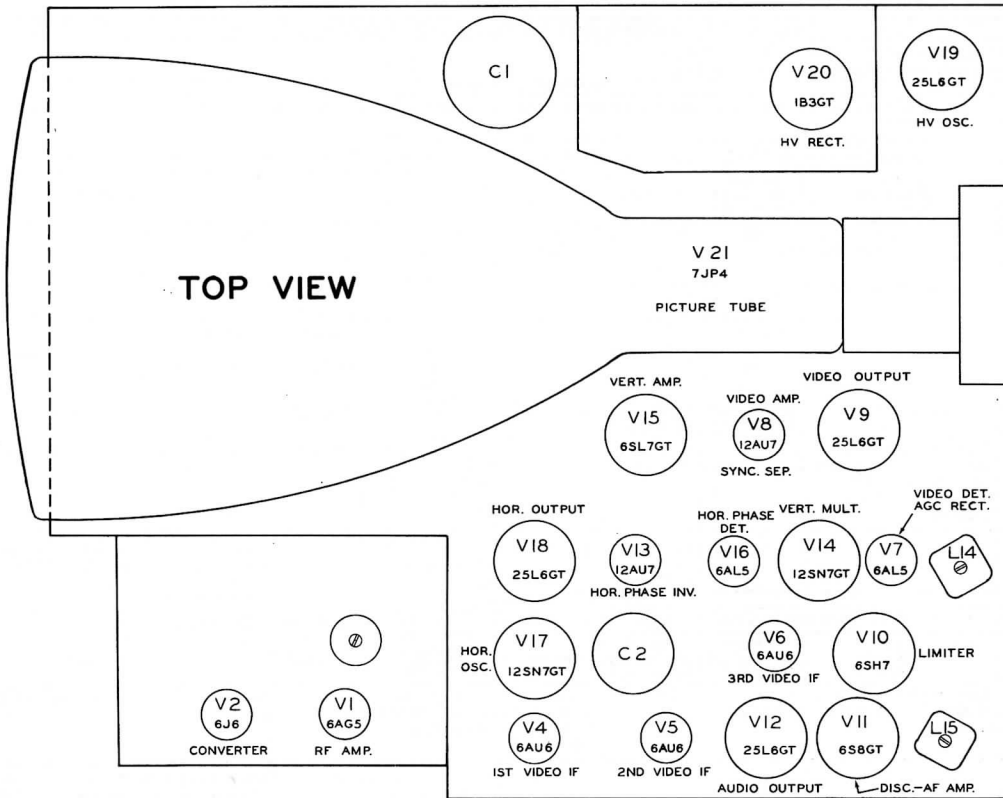


CHASSIS BOTTOM VIEW-TRANS., INDUC



EMERSON
MODELS 600, 639 (Ch. 120103B)

DUCTOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

| ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT | | | | | | | |
|--|---|----------------------------|------------------------------|---|---|--------------------------------|--|
| Use an isolation transformer to protect the test equipment. Set the contrast control to the mid-position of its range. | | | | | | | |
| VIDEO IF ALIGNMENT | | | | | | | |
| If the set has a Standard Coil tuner, remove the channel 13 segment of the converter section of the tuner turret and turn the channel selector to 13 to disable the local oscillator. If the set has a General Instrument tuner remove the local oscillator tube (V3) from its socket. Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. | | | | | | | |
| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS | |
| 1. .001MFD | High side to pin 1 (Grid) of 6AU6 (V4). Low side to B-. | 23.7MC (Unmod.) | 13 | DC Probe to Point ∇ Common to chassis. | A1 | Adjust for maximum deflection. | |
| 2. .001MFD | " | 22.9MC | " | " | A2 | " | |
| 3. .001MFD | " | 21.25MC | " | " | A3 | Adjust for MINIMUM deflection. | |
| 4. .001MFD | " | 25.5MC | " | " | A4 | Adjust for maximum deflection. | |
| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
| 5. Direct | High side to ungrounded tube shield floating over converter tube (V2). Low side to TUNER CHASSIS. | 24.5MC (10MC Sweep) | 21.25MC 25.75MC | 13 | Vert. Amp. thru detector probe (Fig 1) to Point ∇ Low side to chassis. | A5, A6 | Adjust for response curve similar to Fig 2 with markers as shown. |
| 6. Direct | " | " | 25.75MC 22.6MC 21.25MC | 13 | Vert. Amp. to Point ∇ Low side to chassis. | | Check for response curve similar to Fig 3. If necessary retouch A1 thru A6 for proper response. |
| SOUND IF ALIGNMENT | | | | | | | |
| Use frequency modulated signal with 60 ~ modulation and 450KC sweep. Use 120 ~ sawtooth voltage in scope for horizontal deflection. | | | | | | | |
| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
| 7. .01MFD | High side to pin 5 (Grid) of 25L6 (V9). Low side to B-. | 4.5MC (1MC Sweep) | 4.5MC | Any channel not used locally | Vert. Amp. thru 100K Ω to Point ∇ Low side to B-. | A7, A8 | Adjust for maximum amplitude and symmetry as per Fig 4. |
| 8. .01MFD | " | " | " | " | Vert. Amp. to Point ∇ Low side to B-. | A9, A8 | Adjust A9 so 4.5MC occurs at center of crossover lines as per Fig 5. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines. |
| RF MIXER AND OSCILLATOR ALIGNMENT (STANDARD COIL TUNER) | | | | | | | |
| The overall oscillator circuit adjustment A10 is pre-set at the factory and should not require adjustment in the field. The oscillator adjustment for each channel is accessible through the hole just to the right of the channel switch shaft as the switch is turned to each channel. Set the fine tuning control to maximum clockwise. Replace the channel 13 segment of the tuner turret. | | | | | | | |
| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
| 9. 300 Ω carbon res. | Across antenna terminals with 300 Ω in high side of generator output. | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | Vert. Amp. to Point ∇ Low side to B-. | A11, A12, A13, A14 | Adjust A11, A12 and A13 for response curve similar to Fig 6. Adjust A14 to place sound marker as shown in Fig 6. |
| 10. " | " | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | " | A15 | Adjust to place sound marker as shown in Fig 6. If optimum performance is desired on any channel, make slight adjustment of A11, A12 and A13 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected. |
| | | 201MC (10MC SWP) | 199.25MC 203.75MC | 12 | | A16 | |
| | | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | | A17 | |
| | | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | | A18 | |
| | | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | | A19 | |
| | | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | | A20 | |
| | | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | | A21 | |
| | | 79MC (10MC SWP) | 77.25MC 81.75MC | 5 | | A22 | |
| | | 69MC (10MC SWP) | 67.25MC 71.75MC | 4 | | A23 | |
| | | 63MC (10MC SWP) | 61.25MC 65.75MC | 3 | | A24 | |
| | | 57MC (10MC SWP) | 55.25MC 59.75MC | 2 | | A25 | |
| OSCILLATOR ALIGNMENT (GENERAL INSTRUMENT TUNER) | | | | | | | |
| Replace the local oscillator tube (V3). | | | | | | | |
| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
| 9. 300 Ω carbon res. | Across antenna leads with 300 Ω resistor in high side of generator output. | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | Vert. Amp. to Point ∇ Low side to B-. | A311 | Adjust to place sound marker as shown in Fig 6. |
| 10. " | " | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | " | A312 | Adjust to place sound marker as shown in Fig 6. Check all channels to see that the sound marker can be properly placed well within the range of the fine tuning control. If not compromise may be made using A311 for channels 7 thru 13 and A312 for channels 2 thru 6. |

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT (GENERAL INSTRUMENT TUNER)

The coupling adjustment rings (A305 and A308) are pre-set and sealed at the factory, they should not require adjustment in the field.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS | |
|---------------|--------------------------|---|--|--|-------------------------------|---|---------------------------------|---|
| 11. | 300Ω carbon res. | Across antenna terminals with 300Ω resistor in high side of generator output. | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | Vert. Amp. thru 10KΩ to Point X Low side to B- (Tuner chassis.) | A301, A302, A303, A304 | Adjust for response curve similar to Fig 7 with markers as above 70%. |
| 12. | " | " | 207MC (10MC SWP) 201MC (10MC SWP) 195MC (10MC SWP) 189MC (10MC SWP) 183MC (10MC SWP) 177MC (10MC SWP) | 205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC | 12 11 10 9 8 7 | " | | Check all high band channels for response similar to Fig 7. If markers are below 70% on any channel make slight adjustment of A301, A302, A303 and A304 with channel switch set for that channel. Recheck all high band channels to see that they have not been seriously effected. |
| 13. | " | " | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | " | A307, A308, A309, A310 | Adjust for response curve similar to Fig 7 with markers above 70%. |
| 14. | " | " | 79MC (10MC SWP) | 77.25MC 81.75MC | 5 | " | | Check all low band channels for response similar to Fig 7. If markers are below 70% on any channel, make slight adjustment of A307, A308, A309 and A310 with channel switch set for that channel. Recheck all low band channels to see that they have not been seriously effected. |

WAVE TRAP ADJUSTMENT (GENERAL INSTRUMENT TUNER)

Wave traps A313 and A314 are used for specific types of interference and their alignment will depend upon the type encountered. With the receiver tuned to the channel having the interference, set the fine tuning control until the interference is at maximum. Adjust A313 and A314 for minimum interference in both the sound and picture, keeping the cores at approximately the same relative position. Turn one core $\frac{1}{2}$ turn, adjust the other for minimum interference.

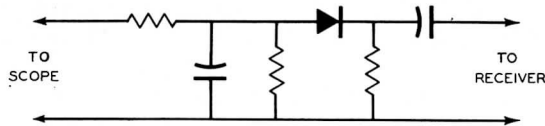


FIG. 1

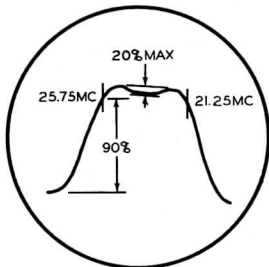


FIG. 2

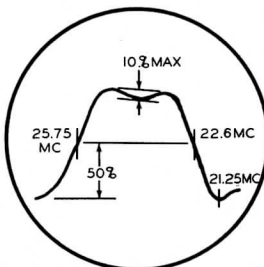


FIG. 3

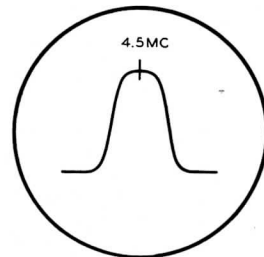


FIG. 4

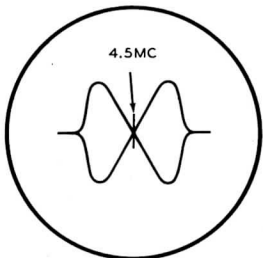


FIG. 5

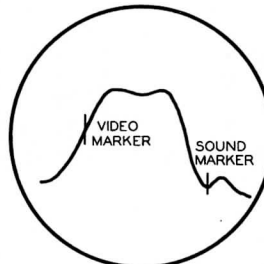


FIG. 6

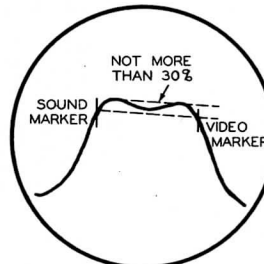


FIG. 7

EMERSON
MODELS 600, 639 (Ch. 120103B)

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 | |
|------|---------|------------------|--------------------------|-----------------|------------|----------------|------------|------------|-------------|------------------|----------------|
| V 1 | 6AG5 | -.5VDC | 0V. | 105VAC | 110VAC | 105VDC | 105VDC | 0V. | | | |
| V 2 | 6J6 | 85VDC | 125VDC | 95VAC | 105VAC | -1.8VDC | §-2.6VDC | 0V. | | | |
| V 3 | | | | | | | | | | | |
| V 4 | 6AU6 | -.4VDC | .6VDC | 38VAC | 32VAC | 125VDC | 125VDC | .6VDC | | | |
| V 5 | 6AU6 | 0V. | 1.5VDC | 24VAC | 32VAC | 125VDC | 125VDC | 1.5VDC | | | |
| V 6 | 6AU6 | 0V. | 1.4VDC | 18VAC | 24VAC | 125VDC | 125VDC | 1.4VDC | | | |
| V 7 | 6AL5 | 0V. | -.2VDC | 6VAC | 12VAC | 1.2VDC | .4VDC | -.2VDC | | | |
| V 8 | 12AU7 | 115VDC | -.2VDC | 5.6VDC | 12VAC | 12VAC | 8VDC | 0V. | 1.2VDC | 18VAC | |
| V 9 | 25L6GT | -.2VDC | 38VAC | 87VDC | 120VDC | 0V. | 120VDC | 63VAC | 14VDC | | |
| V 10 | 6SH7 | .4VDC | 24VAC | 0V. | -.4VDC | 0V. | 55VDC | 30VAC | 55VDC | | |
| V 11 | 6S8GT | 0V. | 0V. | -.3VDC | -.3VDC | 0V. | 55VDC | 12VAC | 6VAC | TOP CAP .8VDC | |
| V 12 | 25L6GT | 0V. | 49VAC | 90VDC | 95VDC | 0V. | 95VDC | 75VAC | 6VDC | | |
| V 13 | 12AU7 | 120VDC | 0V. | 5.4VDC | 18VAC | 18VAC 20VDC | 24VDC | -.1VDC | .6VDC | 24VAC | |
| V 14 | 12SN7GT | 0V. | 82VDC | 2.6VDC | -2.4VDC | 34VDC | 2.6VDC | 42VAC | 30VAC | | |
| V 15 | 6SL7GT | -3.5VDC | 400VDC | 0V. | -.9VDC | 300VDC | 0V. | 48VAC | 42VAC | | |
| V 16 | 6AL5 | .9VDC | -1.1VDC | 12VAC | 18VAC | 0V. | .4VDC | 0V. | | | |
| V 17 | 12SN7GT | -24VDC | 125VDC | 0V. | -24VDC | 18VDC 80VDC | 0V. | 63VAC | 75VAC | | |
| V 18 | 25L6GT | -.1VDC | 75VAC | 125VDC | 125VDC | -1.8VDC | 0V. | 100VAC | 0V. | | |
| V 19 | 25L6GT | 0V. | 75VAC | 125VDC | 110VDC | -33VDC | 0V. | 100VAC | 0V. | | |
| V 20 | 1B3GT | * DO NOT MEASURE | | | | | | | | | |
| V 21 | 7JP4 | PIN 1 0V. | PIN 2 45VDC 125VDC | PIN 3 -15VDC | PIN 5 * | PIN 7 * | PIN 8 * | PIN 9 * | PIN 10 * | PIN 11 * | PIN 14 6VAC |

§ TAKEN WITH VACUUM TUBE VOLTMETER.

* DO NOT MEASURE.

RESISTANCE READINGS

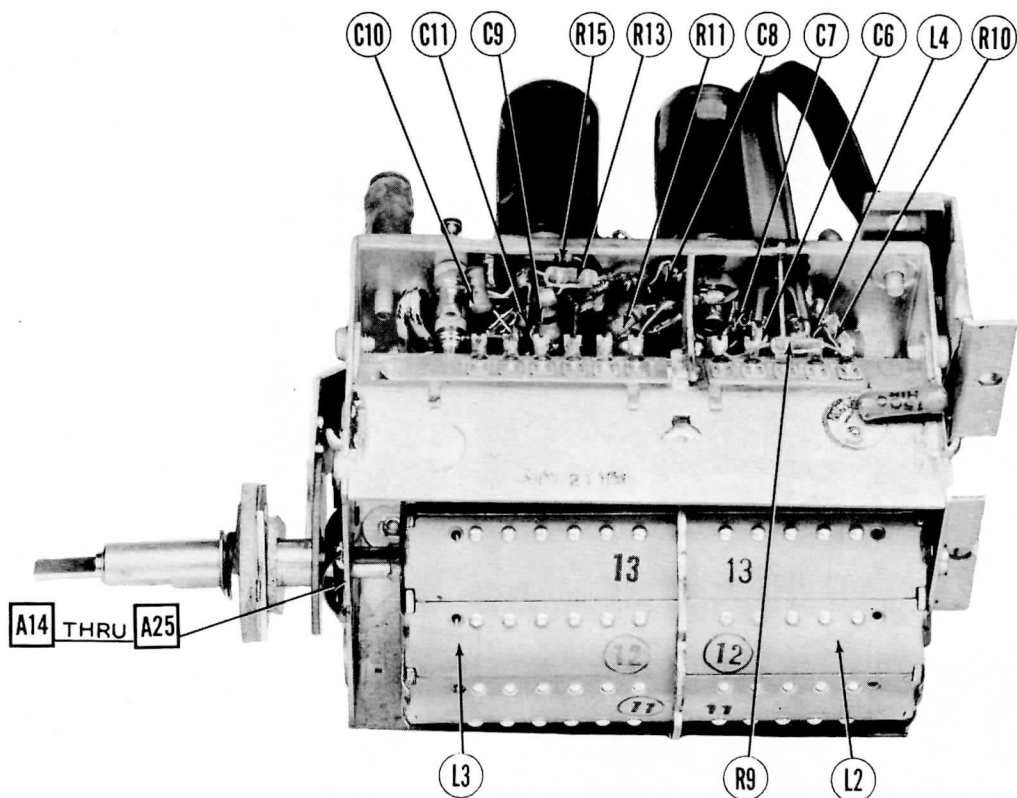
| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 | |
|------|---------|-------------|-----------------------|------------------|------------------|-------------------|-----------------|-----------------|--------------------|--------------------|--------------|
| V 1 | 6AG5 | 2 Meg. | 0Ω | 32Ω | 36Ω | †2.2KΩ | †2.2KΩ | 0Ω | | | |
| V 2 | 6J6 | †4.7KΩ | †1000Ω | 32Ω | 34Ω | 220KΩ | 10KΩ | 0Ω | | | |
| V 3 | | | | | | | | | | | |
| V 4 | 6AU6 | 2 Meg. | 550Ω | 16Ω | 13Ω | †500Ω | †500Ω | 82Ω | | | |
| V 5 | 6AU6 | 470Ω | 180Ω | 11Ω | 13Ω | †500Ω | †500Ω | 180Ω | | | |
| V 6 | 6AU6 | 470Ω | 180Ω | 9Ω | 11Ω | †500Ω | †500Ω | 180Ω | | | |
| V 7 | 6AL5 | 470Ω | 1Meg. | 2Ω | 5Ω | 650Ω | Inf. | 4KΩ | | | |
| V 8 | 12AU7 | †3.2KΩ | 4KΩ | 5KΩ | 5Ω | 5Ω | †500KΩ | 0Ω | 180KΩ | 8Ω | |
| V 9 | 25L6GT | 4KΩ | 18Ω | †5.6KΩ | †1000Ω | 1 Meg. | †1000Ω | 25Ω | 1.5KΩ | | |
| V 10 | 6SH7 | Inf. | 10Ω | 0Ω | 100KΩ | 0Ω | †15KΩ | 13Ω | †15KΩ | | |
| V 11 | 6S8GT | Inf. | 0Ω | 100KΩ | 100KΩ | 160KΩ | †470KΩ | 5Ω | 2Ω | TOP CAP 4.7Meg. | |
| V 12 | 25L6GT | Inf. | 21Ω | †1.2KΩ | †1000Ω | 470KΩ | †1000Ω | 28Ω | 150Ω | | |
| V 13 | 12AU7 | †3.3KΩ | 1 Meg | 3.3KΩ | 8Ω | 8Ω | 100KΩ | Inf. | 1.5KΩ | 10Ω | |
| V 14 | 12SN7GT | 100KΩ | †18KΩ | 1000Ω | 330KΩ | †5Meg. †1Meg. | 1000Ω | 19Ω | 13Ω | | |
| V 15 | 6SL7GT | 22Meg. | †23Meg. | 0Ω | 10Meg. | †23Meg. | 0Ω | 21Ω | 19Ω | | |
| V 16 | 6AL5 | Inf. | Inf. | 5Ω | 9Ω | 22KΩ | Inf. | 22KΩ | | | |
| V 17 | 12SN7GT | 200KΩ | †1000Ω | 0Ω | 200KΩ | †500KΩ †47KΩ | 0Ω | 25Ω | 28Ω | | |
| V 18 | 25L6GT | Inf. | 28Ω | †100Ω | †100Ω | 2.2Meg. | Inf. | 32Ω | 0Ω | | |
| V 19 | 25L6GT | Inf. | 28Ω | †90Ω | †1.5KΩ | 15KΩ | 0Ω | 32Ω | 0Ω | | |
| V 20 | 1B3GT | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | TOP CAP †700Ω | |
| V 21 | 7JP4 | PIN 1 0Ω | PIN 2 90KΩ 50KΩ | PIN 3 1.5Meg. | PIN 5 †12Meg. | PIN 7 †4.7Meg. | PIN 8 †6Meg. | PIN 9 †100KΩ | PIN 10 †6.5Meg. | PIN 11 †6Meg. | PIN 14 2Ω |

† MEASURED FROM OUTPUT OF M1.

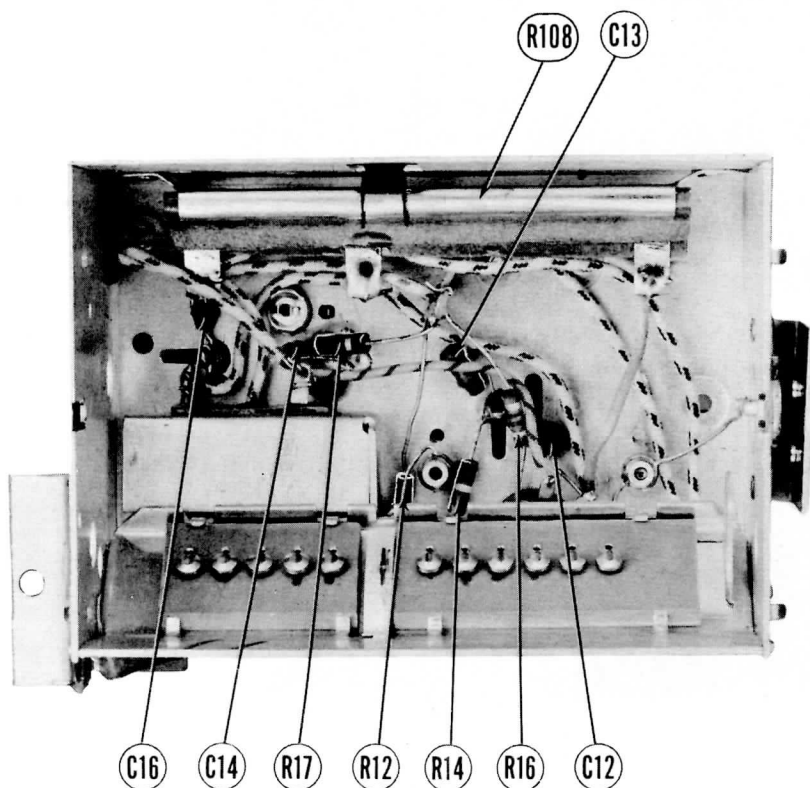
♦ MEASURED FROM PIN 7 OF V20.

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
- Pin numbers are counted in a clockwise direction on bottom of socket.
- Measured values are from socket pin to common negative unless otherwise stated.

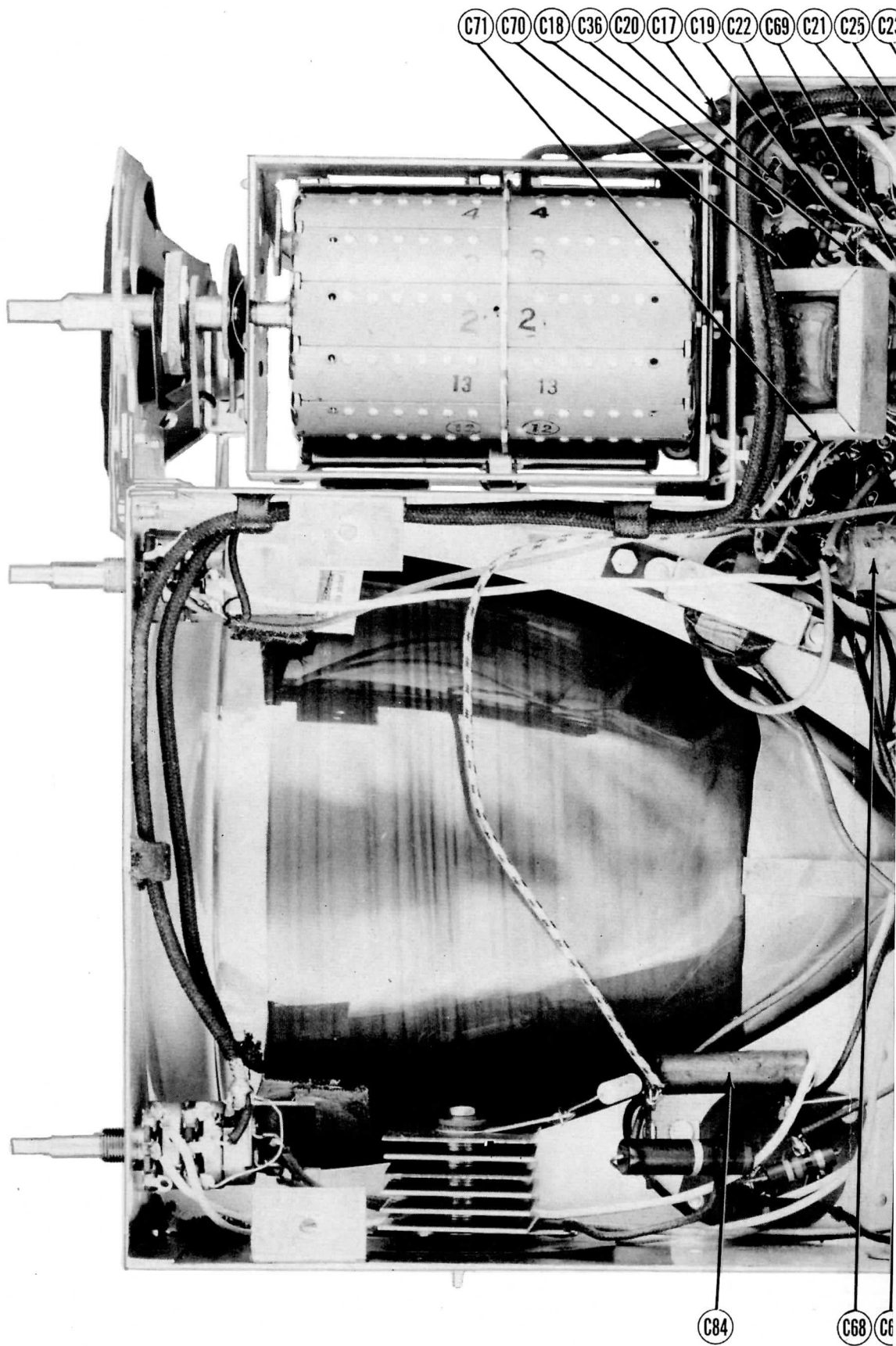
- Line voltage maintained at 117 volts for voltage readings.
- Front panels controls set at minimum.
- Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



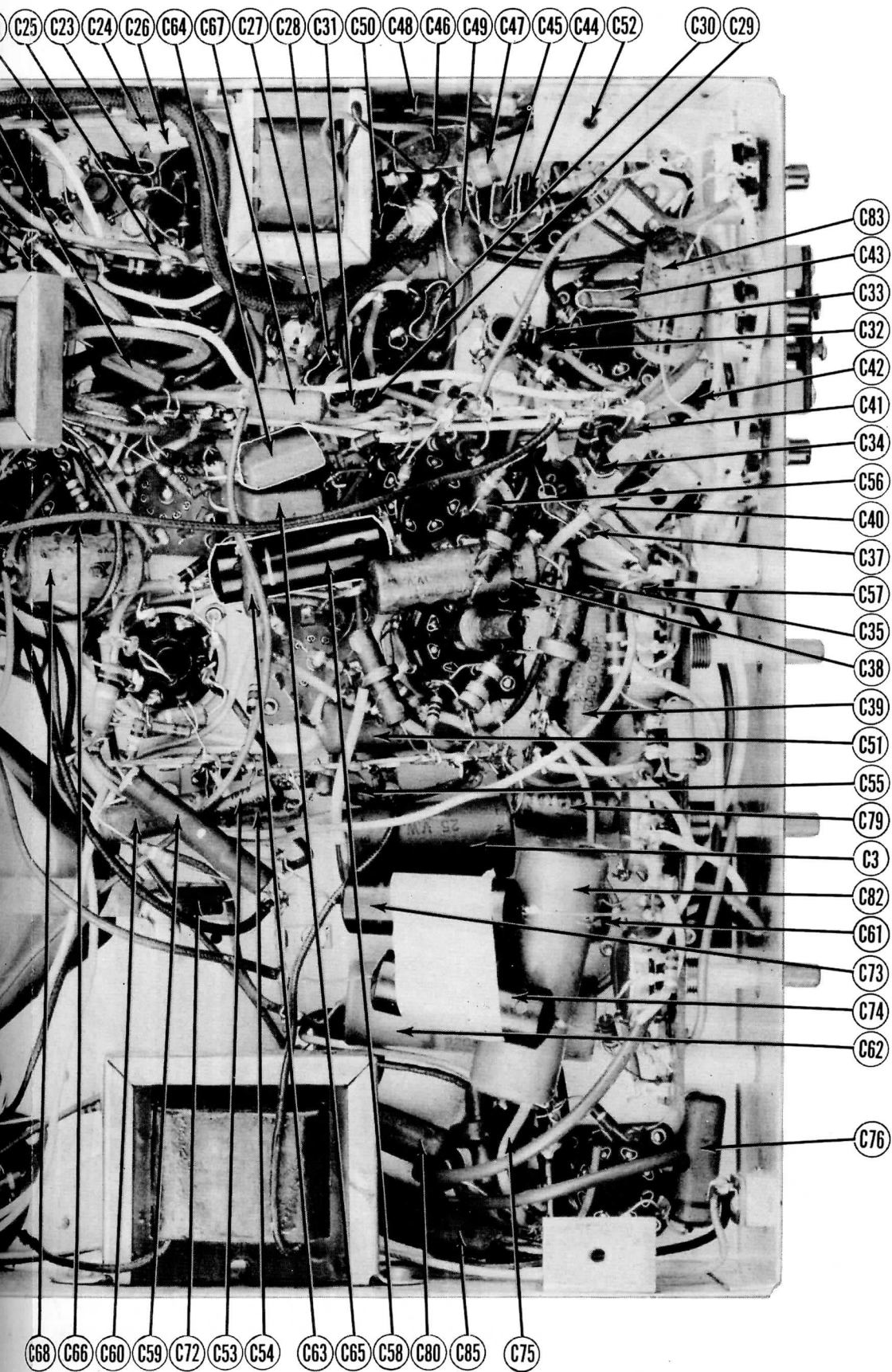
RF TUNER-RIGHT SIDE - STANDARD COIL



RF TUNER-BOTTOM VIEW-STANDARD COIL

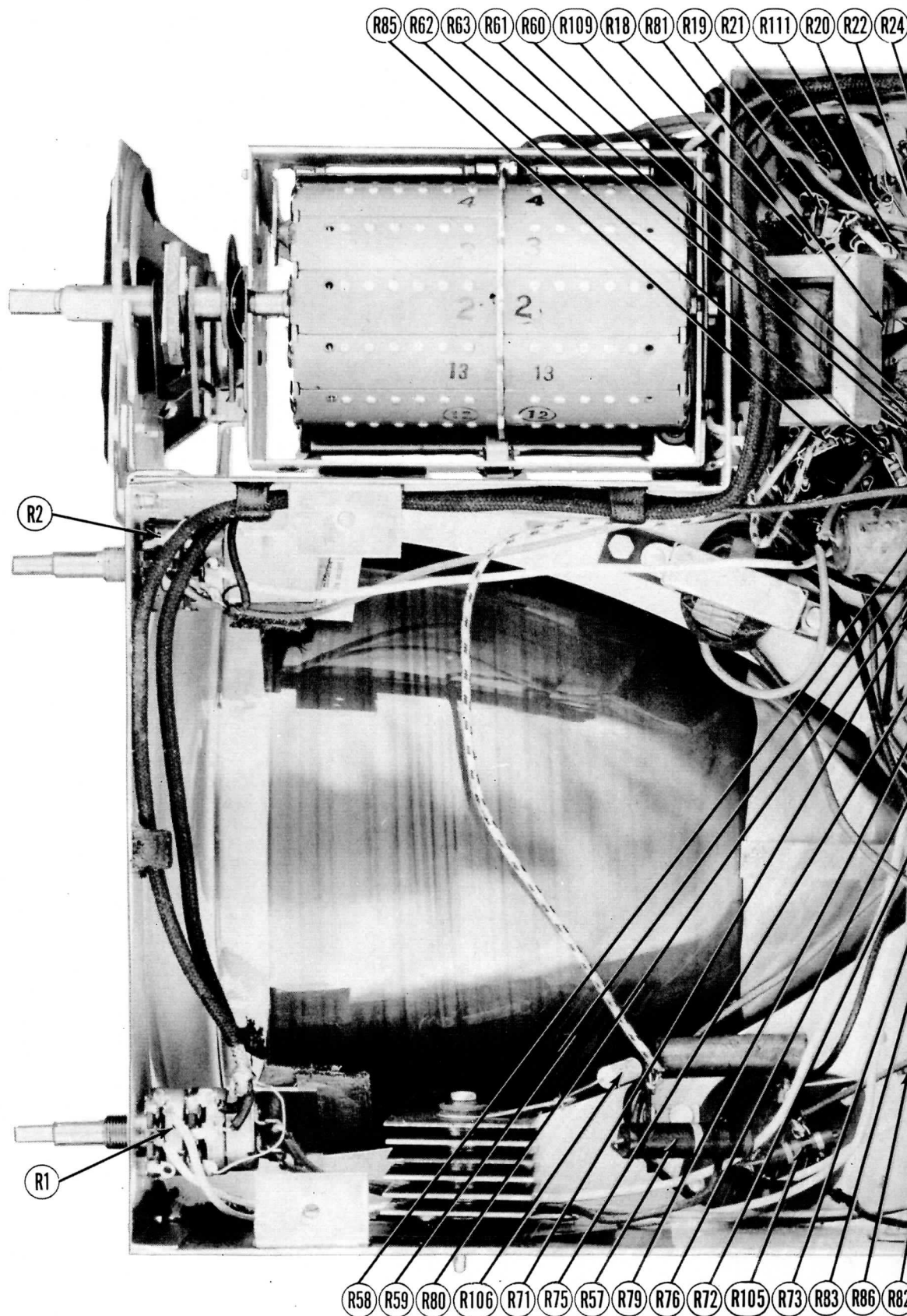


CHASSIS BOTTOM VIEW-CAF

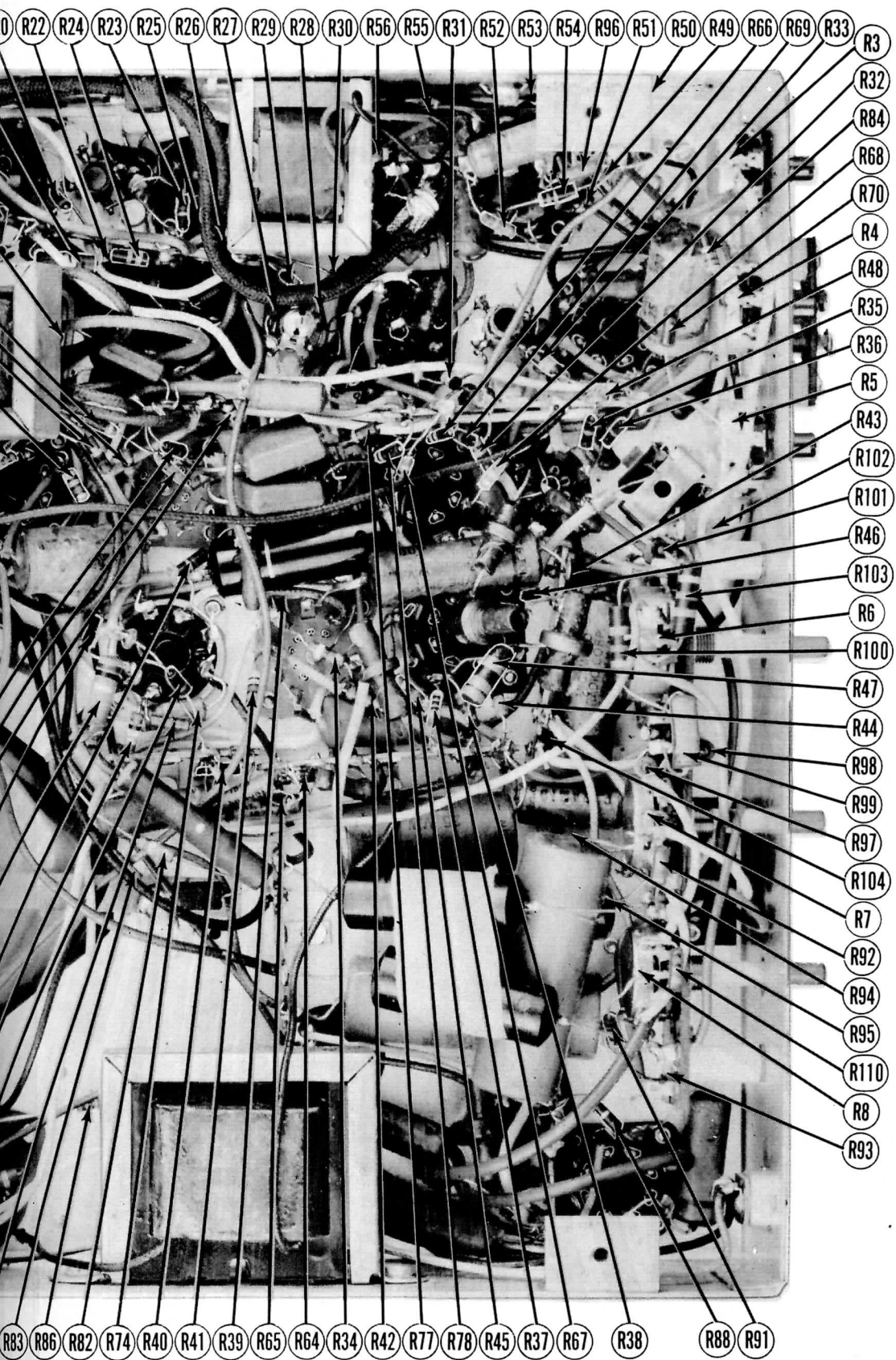


EMERSON
 MODELS 600, 639 (Ch. 120103B)

V-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESI



EMERSON
 MODELS 600, 639 (Ch. 120103B)

-RESISTOR IDENTIFICATION

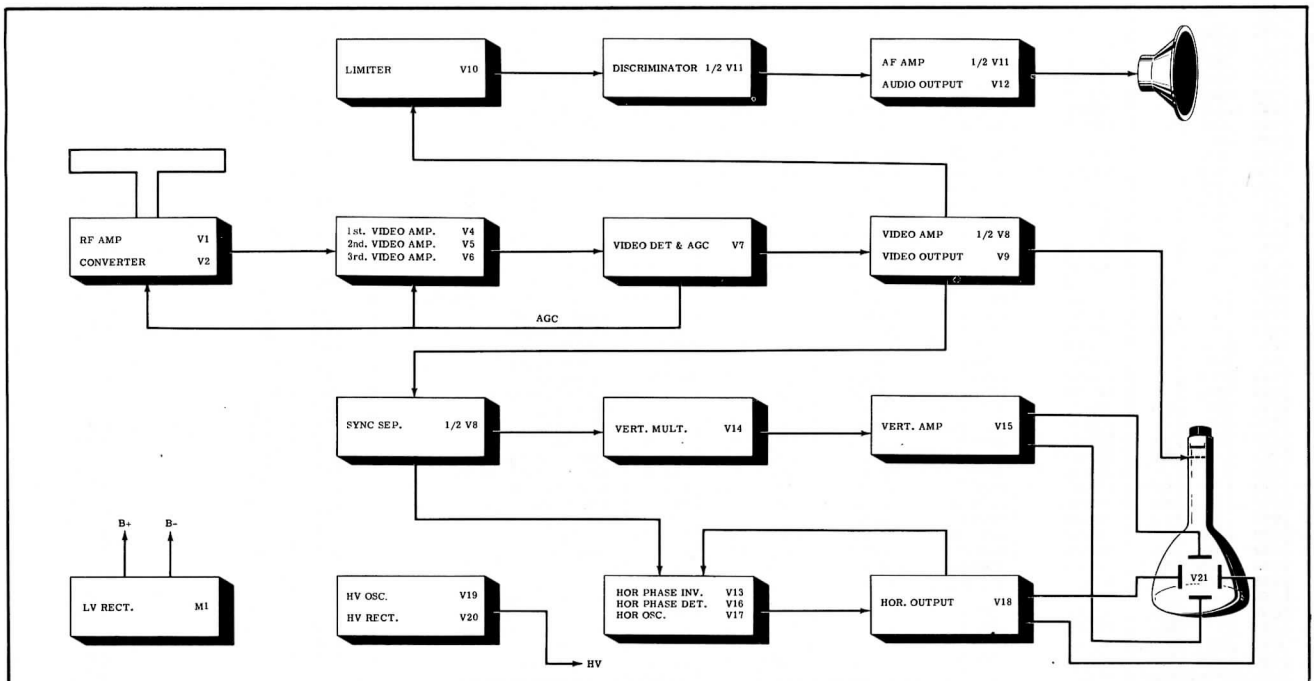
HIGH VOLTAGE ADJUSTMENT

Turn the brightness control to maximum counter-clockwise.

Connect a VTVM with high voltage multiplier probe between pin 9 of the picture tube socket and B-. Adjust the high voltage trimmer (B1) to read 6000 volts. The line voltage should be set at 117 volts for this adjustment.

DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs.
2. Remove six phillips head screws holding rear cover. Remove cover.
3. Loosen two antenna terminal screws. Remove antenna lead in lugs.
4. Remove four phillips head screws holding chassis. Remove chassis.



BLOCK DIAGRAM

PARTS LIST AND

CAPACITOR

TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA | | RMA BASE TYPE | NOTES |
|----------|---------------------------|------------------|----------------------|---------------|------------------------------------|
| | | EMERSON PART No. | STANDARD REPLACEMENT | | |
| V1A | RF Amp. | 800535 | 6AG5 | 7BD | Tuner 470470 (Standard Coil Tuner) |
| B | RF Amp. | 800536 | 6J6 | 7BF | Tuner 470492 (GI Tuner) |
| V2A | Converter | 800536 | 6J6 | 7BF | Tuner 470470 (Standard Coil Tuner) |
| B | Mixer | 800536 | 6J6 | 7BF | Tuner 470492 (GI Tuner) |
| V3 | Oscillator | 800536 | 6J6 | 7BF | Tuner 470492 (GI Tuner) |
| V4 | 1st Video IF | 800533 | 6AU6 | 7BK | |
| V5 | 2nd Video IF | 800533 | 6AU6 | 7BK | |
| V6 | 3rd Video IF | 800533 | 6AU6 | 7BK | |
| V7 | Video Det. -AGC Rectifier | 800541 | 6AL5 | 6BT | |
| V8 | Video Amp. -Sync. Sep. | 800026 | 12AU7 | 9A | |
| V9 | Video Output Limiter | 800490 | 25L6GT | 7AC | |
| V10 | Disc. -AF Amp. | 800420 | 6SH7 | 8BK | |
| V11 | Audio Output | 800015 | 6S8GT | 8CB | |
| V12 | Hor. Phase Inv. | 800490 | 25L6GT | 7AC | |
| V13 | Vert. Multivibrator | 800026 | 12AU7 | 9A | |
| V14 | Vert. Amp. | 800039 | 12SN7GT | 8BD | |
| V15 | Hor. Phase Det. | 800350 | 6SL7GT | 8BD | |
| V16 | Hor. Osc. | 800541 | 6AL5 | 6BT | |
| V17 | Hor. Output | 800039 | 12SN7GT | 8BD | |
| V18 | HV Osc. | 800490 | 25L6GT | 7AC | |
| V19 | HV Rectifier | 800450 | 1B3GT | 7AC | |
| V20 | Picture Tube | 810008 | 7JP4 | 14G | |

| ITEM No. | RATING | | REPLACEMENT DATA | | |
|----------|--------|------|------------------|------------------|------------------------|
| | CAP. | VOLT | EMERSON PART No. | AEROVOX PART No. | CORNE DUBLIER PART No. |
| C63 | 1500 | 500 | 928006 | 1467-0015 | 1W5D15 |
| C64 | 1000 | 500 | 910211 | 1467-001 | 1W5D1 |
| C65 | 1000 | 500 | 910211 | 1467-001 | 1W5D1 |
| C66 | 1500 | | 928006 | 1467-0015 | 1W5D15 |
| C67 | .01 | 200 | 920570 | P488-01 | GT25 |
| C68 | .25 | 200 | 920575 | P488-25 | GT2P25 |
| C69 | 820 | 500 | 910037 | | |
| C70 | 1000 | 500 | 910140 | 1468-001 | 1W5D1 |
| C71 | 1500 | | 928006 | 1467-0015 | 1W5D15 |
| C72 | 10 | 500 | 928002 | 1468-00001 | 5W5Q1 |
| C73 | .001 | 6000 | 920503 | | PTE601 |
| C74 | .001 | 6000 | 920503 | | PTE601 |
| C75 | .05 | 200 | 923068 | P288-.05 | GT255 |
| C76 | .05 | 200 | 923068 | P288-.05 | GT255 |
| C77 | 1500 | | 928006 | 1467-0015 | 1W5D15 |
| C78 | 2200 | 500 | 915000 | | |
| C79 | .1 | 200 | 923067 | P288-1 | GT2P1 |
| C80 | .05 | 400 | 923062 | P488-05 | GT455 |
| C81 | .0005 | 6000 | 920505 | | PTE601 |
| C82 | .005 | 6000 | 920504 | 6089M-005 | PTE601 |
| C83 | .25 | 200 | 920575 | P488-25 | GT2P25 |
| C84 | .05 | 400 | 923062 | P488-05 | GT455 |
| C85 | .05 | 400 | 923062 | P488-05 | GT455 |

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING | | REPLACEMENT DATA | | | | IDENTIFICATION CODES AND INSTALLATION NOTES |
|----------|--------|------|------------------|------------------|--------------------------|---------------|---|
| | CAP. | VOLT | EMERSON PART No. | AEROVOX PART No. | CORNELL-DUBLIER PART No. | ERIE PART No. | |
| C1A | 120 | 150 | 925154 | AFH2430D | UP9BJ038 | | |
| B | 150 | 150 | | | | | Filter |
| C2A | 80 | 150 | 925153 | AFH24168D | | | Filter |
| B | 120 | 150 | | | | | Filter |
| C | 40 | 150 | | | | | Filter |
| C3 | 100 | 25 | 925156 | | | | Decoupling |
| C4 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | V. Output Cathode Bypass |
| C5 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | Ant. Coupling |
| C6 | 5 | | | | | NPOK-5 | Fixed Trimmer |
| C7 | 1000 | | | | | | RF Fil. Bypass |
| C8 | 120 | | | | | GP2K-120 | RF Decoupling |
| C9 | 100 | | | | | GP1K-100 | RF Coupling |
| C10 | 10 | | | | | N750K-10 | Fixed Trimmer |
| C11 | 20 | | | | | NPOK-20 | Osc. Grid Cap. |
| C12 | 1000 | | | | | GP2L-001 | Conv. Filament Bypass |
| C13 | 1000 | | | | | GP2L-001 | RF Bypass |
| C14 | 1000 | | | | | GP2L-001 | Conv. Plate Decoupling |
| C15 | 5 | | | | | NPOK-5 | Fixed Trimmer |
| C16 | 1000 | | | | | GP2L-001 | Filament Bypass |
| C17 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | RF Bypass |
| C18 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | AGC Filter |
| C19 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | RF Bypass |
| C20 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 1st V. IF Supp. Bypass |
| C21 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 1st V. IF Decoupling |
| C22 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 1st V. IF Fil. Bypass |
| C23 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 2nd V. IF Grid Filter |
| C24 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 2nd V. IF Cath. Bypass |
| C25 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 2nd V. IF Decoupling |
| C26 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 2nd V. IF Fil. Bypass |
| C27 | 62 | | | | | | Fixed Trimmer |
| C28 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 3rd V. IF Grid Filter |
| C29 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 3rd V. IF Cath. Bypass |
| C30 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 3rd V. IF Fil. Bypass |
| C31 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | 3rd V. IF Decoupling |
| C32 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | V. Diode Filter |
| C33 | 5 | | 928039 | 1468-000005 | 5W5V5 | NPOK-5 | V. Diode Filter |
| C34 | 10 | | 928002 | 1468-00001 | 5W5Q1 | MS-41 | IF Coupling |
| C35 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | AGC Filter |
| C36 | .1 | 200 | 920573 | P288-1 | GT2P1 | TM-1 | AGC Filter |
| C37 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | V. Det. -AGC Fil. Bypass |
| C38 | .1 | 400 | 923064 | P488-1 | GT4P1 | TM-1 | Video Coupling |
| C39 | .1 | 400 | 923064 | P488-1 | GT4P1 | TM-1 | Video Coupling |
| C40 | 4.7 | | 923004 | 1468-000005 | 5W5V5 | MS-55 | S. IF Coupling |
| C41 | 100 | | 928106 | 1468-0001 | 5W5T1 | GP1K-100 | S. IF Coupling |
| C42 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | RF Bypass |
| C43 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | Limiter Decoupling |
| C44 | 100 | 500 | 928013 | 1468-0001 | 5W5T1 | GP1K-100 | RF Bypass |
| C45 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | RF Bypass |
| C46 | 1000 | 500 | 928003 | 1468-001 | 1W5D1 | GP2L-001 | De-emphasis |
| C47 | .002 | 600 | 923088 | P688-002 | GT6D2 | GP2M-002 | Audio Coupling |
| C48 | 220 | | 928011 | 1468-00025 | 5W5T25 | IFM-325 | AF Amp. Plate Bypass |
| C49 | .01 | 400 | 923061 | P488-01 | GT4S1 | GP2-335-01 | Audio Coupling |
| C50 | .01 | 400 | 923061 | P488-01 | GT4S1 | GP2-335-01 | Output Plate Bypass |
| C51 | .1 | 400 | 923064 | P488-1 | GT4P1 | TM-1 | Sync. Coupling |
| C52 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | RF Bypass |
| C53 | .005 | 200 | 920576 | P688-005 | GT6D5 | GP2M-005 | Integrator Net. |
| C54 | .005 | 200 | 920576 | P688-005 | GT6D5 | GP2M-005 | Integrator Net. |
| C55 | 1500 | | 928006 | 1467-0015 | 1W5D15 | GP2L-0015 | Vert. Sync. Coupling |
| C56 | .008 | 400 | 923087 | | | | Vert. MV Feedback |
| C57 | .1 | 200 | 923067 | P288-1 | GT2P1 | TM-1 | Vert. Discharge |
| C58 | .1 | 600 | 923064 | P688-1 | GT6P1 | TM-1 | Vert. Sweep Coupling |
| C59 | 100 | 3000 | 928041 | | | | Vert. Sweep Coupling |
| C60 | .005 | 200 | 923089 | P688-005 | GT6D5 | GP2M-005 | Voltage Divider |
| C61 | .0047 | 6000 | 920504 | | PTE60D5 | TVM-256 | Vert. Sweep Coupling |
| C62 | .005 | 6000 | 920504 | 6089M-005 | PTE60D5 | TVM-256 | Vert. Sweep Coupling |

CON

| ITEM No. | RATING | | REPLACEMENT DATA | | |
|----------|------------|--------|------------------|--------------|------------|
| | RESISTANCE | WATTS | EMERSON PART No. | IRC PART No. | CLARO PART |
| R1A | 500Ω | 1 Meg. | 390086 | | 390086 |
| B | 50KΩ | 1 Meg. | | | |
| R2A | 1 Meg. | | 390087 | B11-123 * | 390087 |
| B | 1 Meg. | | | B11-137 * | |
| R3A | Shaft End | | | E187 * | |
| C | 100KΩ | | 390088 | Q11-128 | AM-49 |
| B | Shaft | | 390089 | Not Req. | KSS-3 |
| R4A | 500KΩ | | 390091 | Q11-133 | AM-58 |
| B | Shaft | | | Not Req. | KSS-3 |
| R5A | 5 Meg. | | 390091 | Q11-141 | AM-85 |
| B | Shaft | | | Not Req. | KSS-3 |
| R6 | 4 Meg. | | 390092 | RQ | 390092 |
| R7 | 5 Meg. | | 390093 | | 390093 |
| R8 | 5 Meg. | | 390093 | | 390093 |

* Additional parts to be used with "Concetricrit".
†† File slot in shaft to duplicate original.

RESI

| ITEM No. | RATING | | REPLACEMENT DATA | |
|----------|------------|-------|------------------|--------------|
| | RESISTANCE | WATTS | EMERSON PART No. | IRC PART No. |
| R9 | 3900Ω | 20% | | BTS-3900 |
| R10 | 47KΩ | 20% | | BTS-47K |
| R11 | 10KΩ | 20% | | BTS-10K |
| R12 | 2200Ω | 20% | | BTS-2200 |
| R13 | 4700Ω | | | BTS-4700 |
| R14 | 220KΩ | 20% | | BTS-220K |
| R15 | 10KΩ | 20% | | BTS-10K |
| R16 | 4700Ω | | | BTS-4700 |
| R17 | 1000Ω | | | BTS-1000 |
| R18 | 470Ω | 20% | 350412 | BTS-470 |
| R19 | 5600Ω | | 340672 | BTS-5600 |
| R20 | 82Ω | | 340232 | |
| R21 | 470Ω | 20% | 350412 | BTS-470 |
| R22 | 470Ω | 20% | 350412 | BTS-470 |
| R23 | 22KΩ | | 340812 | |
| R24 | 470Ω | 20% | 350412 | BTS-470 |
| R25 | 180Ω | | 340312 | |
| R26 | 470Ω | 20% | 350412 | BTS-470 |
| R27 | 10KΩ | | 340732 | |
| R28 | 10KΩ | | 340732 | |
| R29 | 470Ω | 20% | 350412 | BTS-470 |
| R30 | 180Ω | | 340312 | |
| R31 | 470Ω | 20% | 350412 | BTS-470 |
| R32 | 470Ω | 20% | 350412 | BTS-470 |
| R33 | 470Ω | 20% | 350412 | BTS-470 |
| R34 | 3900Ω | | 340632 | BTS-3900 |
| R35 | 1 Meg. | 20% | 351212 | BTS-1 Meg. |
| R36 | 1 Meg. | 20% | 351212 | BTS-1 Meg. |
| R37 | 2200Ω | | 340572 | BTS-2200 |
| R38 | 1000Ω | | 340492 | BTS-1000 |
| R39 | 180KΩ | | 341032 | BTS-180K |
| R40 | 2200Ω | | 340572 | BTS-2200 |
| R41 | 47KΩ | | 340892 | BTS-47K |
| R42 | 560KΩ | | 341152 | BTS-560K |
| R43 | 2200Ω | 20% | 350572 | BTS-2200 |
| R44 | 1 Meg. | 20% | 351212 | BTS-1 Meg. |
| R45 | 1500Ω | | 340532 | BTS-1500 |
| R46 | 10KΩ | | 340732 | BTS-10K |
| R47 | 5600Ω | | 370672 | BTA-5600 |
| R48 | 100KΩ | | 340972 | |
| R49 | 15K | | | |

PARTS LIST AND DESCRIPTIONS

CAPACITORS (CONT.)

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | IDENTIFICATION CODES AND INSTALLATION NOTES |
|----------|--------|------|------------------|------------|------------------|------------|----------|-------------------------|---|
| | CAP. | VOLT | EMERSON | AEROVOX | CORNELL-DUBILIER | ERIE | SPRAGUE | | |
| | | | PART No. | PART No. | PART No. | PART No. | PART No. | | |
| C63 | 1500 | | 928006 | 1467-0015 | IW5D15 | GP2L-0015 | IFM-215 | Hor. Sync. Coupling | |
| C64 | 1000 | 500 | 910211 | 1467-001 | IW5D1 | GP2L-001 | IFM-21 | Hor. Sync. Coupling | |
| C65 | 1000 | 500 | 910211 | 1467-001 | IW5D1 | GP2L-001 | IFM-21 | Hor. Sync. Coupling | |
| C66 | 1500 | | 928006 | 1467-0015 | IW5D15 | GP2L-0015 | IFM-215 | Hor. Feedback | |
| C67 | .01 | 200 | 920570 | P488-01 | GT2S1 | GP2-335-01 | TM-11 | AFC Filter | |
| C68 | .25 | 200 | 920575 | P488-25 | GT2P25 | | TC-2 | AFC Feedback | |
| C69 | 820 | 500 | 910037 | | | | | Hor. Osc. Grid Cap. | |
| C70 | 1000 | 500 | 910140 | 1468-001 | IW5D1 | GP2L-001 | IFM-21 | Hor. Discharge | |
| C71 | 1500 | | 928006 | 1467-0015 | IW5D15 | GP2L-0015 | IFM-215 | Hor. Sweep Coupling | |
| C72 | 10 | 500 | 928002 | 1468-00001 | 5W5Q1 | GPIK-10 | MS-41 | Hor. Feedback | |
| C73 | .001 | 6000 | 920503 | | PTE60D1 | | TVM-216 | Hor. Sweep Coupling | |
| C74 | .001 | 6000 | 920503 | | PTE60D1 | | TVM-216 | Hor. Sweep Coupling | |
| C75 | .05 | 200 | 923068 | P288-05 | GT2S5 | | TM-15 | HV Osc. Decoupling | |
| C76 | .05 | 200 | 923068 | P288-05 | GT2S5 | | TM-15 | HV Osc. Screen Bypass | |
| C77 | 1500 | | 928006 | 1467-0015 | IW5D15 | GP2L-0015 | IFM-215 | HV Osc. Grid Cap. | |
| C78 | 2200 | 500 | 915000 | | | | | Fixed Trimmer | |
| C79 | .1 | 200 | 923067 | P288-1 | GT2P1 | | TM-1 | Bias Filter | |
| C80 | .05 | 400 | 923062 | P488-05 | GT4S5 | | TM-15 | HV Chassis Isolation | |
| C81 | .0005 | 6000 | 920505 | | PTE60T5 | | TVM-356 | HV Filter | |
| C82 | .005 | 6000 | 920504 | 6089M-005 | PTE60D5 | | TVM-256 | HV Filter | |
| C83 | .25 | 200 | 920575 | P488-25 | GT2P25 | | TC-2 | Picture Tube Cath. Dec. | |
| C84 | .05 | 400 | 923062 | P488-05 | GT4S5 | | TM-15 | Line Filter | |
| C85 | .05 | 400 | 923062 | P488-05 | GT4S5 | | TM-15 | Line Filter | |

| ITEM No. | RATING | | EMERSON PART No. |
|----------|--------------|-------|------------------|
| | RESISTANCE | WATTS | |
| | | | |
| R53 | 4.7Meg. 20% | | 351372 |
| R54 | 470KΩ 20% | | 351132 |
| R55 | 470KΩ 20% | | 351132 |
| R56 | 150Ω | 1 | 370292 |
| R57 | 1000Ω | 2 | 397006 |
| R58 | 1 Meg. 20% | | 351212 |
| R59 | 3300Ω | | 340612 |
| R60 | 3300Ω | | 340612 |
| R61 | 1500Ω | | 340532 |
| R62 | 47KΩ | | 340892 |
| R63 | 100KΩ 5% | | 330972 |
| R64 | 8200Ω | | 340712 |
| R65 | 8200Ω | | 340712 |
| R66 | 100KΩ | | 340972 |
| R67 | 1000Ω | | 340492 |
| R68 | 330KΩ | | 341092 |
| R69 | 18KΩ | | 340792 |
| R70 | 1 Meg. | | 341212 |
| R71 | 22 Meg. 20% | | 351532 |
| R72 | 22 Meg. 20% | | 351532 |
| R73 | 10 Meg. 20% | | 351452 |
| R74 | 10 Meg. | 1 | 371452 |
| R75 | 10 Meg. | 1 | 371452 |
| R76 | 100KΩ | | 340972 |
| R77 | 100KΩ 5% | | 330972 |
| R78 | 100KΩ 5% | | 330972 |
| R79 | 22KΩ | | 340812 |
| R80 | 560KΩ | | 341152 |
| R81 | 47KΩ | | 340892 |
| R82 | 3.9 Meg. | | 341352 |
| R83 | 3.3 Meg. 20% | | 351332 |
| R84 | 47KΩ | | 350892 |
| R85 | 2.2 Meg. | | 351292 |
| R86 | 220KΩ | | 351052 |
| R87 | 15KΩ | | 340772 |
| R88 | 1500Ω | | 340532 |
| R89 | 470KΩ 20% | | 351322 |
| R90 | 100KΩ | | 340972 |
| R91 | 5.6 Meg. | | |
| R92 | 4.7 Meg. | | 341372 |
| R93 | 4.7 Meg. | | 341372 |
| R94 | 4.7 Meg. | | 341372 |
| R95 | 1 Meg. | | 341212 |
| R96 | 47KΩ 20% | | 340892 |
| R97 | 1.8 Meg. | 1 | 371272 |
| R98 | 1.8 Meg. | 1 | 371272 |
| R99 | 1.8 Meg. | 1 | 371272 |
| R100 | 1.8 Meg. | 1 | 371272 |
| R101 | 1.8 Meg. | 1 | 371272 |
| R102 | 1.8 Meg. | 1 | 371272 |
| R103 | 1.8 Meg. | 1 | 371272 |
| R104 | 1 Meg. | | 351212 |
| R105 | 75Ω 5% | 1 | 330222 |
| R106 | 2.5Ω | | 394062 |
| R107 | 10Ω | 5 | |
| R108A | 20Ω | 10 | |
| R108B | 40Ω | 10 | |
| R109 | 1500Ω | | 340532 |
| R110 | 2.2 Meg. | | 351292 |
| R111 | 3.3Ω | | |

CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | INSTALLATION NOTES |
|----------|------------|----------|------------------|--------------|--------------------|--|
| | RESISTANCE | WATTS | EMERSON PART No. | IRC PART No. | CLAROSTAT PART No. | |
| | RIA | 5000Ω | | 390086 | | |
| B | 1 Meg. | | | | | Volume control and switch |
| R2A | 50KΩ | | | B11-123 * | | Horiz. hold control, front |
| B | 1 Meg. | | 390087 | B11-137 * | 390087 | Horiz. hold control, rear |
| C | Shaft End | | | E187 * | | Attach per instructions in "Concentrikit". |
| R3A | 100KΩ | | 390088 | Q1-128 | AM-49-S | Brightness control |
| B | Shaft | Not Req. | RQ | KSS-3 †† | | Attach to R3A per instructions |
| R4A | 500KΩ | | 390089 | Q1-133 | AM-58-S | Horiz. size control |
| B | Shaft | Not Req. | RQ | KSS-3 †† | | Attach to R4A per instructions |
| R5A | 5 Meg. | | 390091 | Q1-141 | AM-85-S | Vert. size control |
| B | Shaft | Not Req. | RQ | KSS-3 †† | | Attach to R5A per instructions |
| R6 | 4 Meg. | | 390092 | RQ | 390092 | Focus control |
| R7 | 5 Meg. | | 390093 | | 390093 | Horiz. centering control, tapped at 2.5 Meg. |
| R8 | 5 Meg. | | 390093 | | 390093 | Vert. centering control, tapped at 2.5 Meg. |

* Additional parts to be used with "Concentrikit".
 †† File slot in shaft to duplicate original.

Electrolytic Capacitors.

IDENTIFICATION CODES AND INSTALLATION NOTES

- Filter
- Filter
- Filter
- Filter
- Decoupling
- V. Output Cathode Bypass
- Ant. Coupling
- Ant. Coupling
- Fixed Trimmer
- RF Fil. Bypass
- RF Decoupling
- RF Coupling
- Fixed Trimmer
- Osc. Grid Cap.
- Conv. Filament Bypass
- RF Bypass
- Conv. Plate Decoupling
- Fixed Trimmer
- Filament Bypass
- RF Bypass
- AGC Filter
- RF Bypass
- 1st V. IF Supp. Bypass
- 1st V. IF Decoupling
- 1st V. IF Fil. Bypass
- 2nd V. IF Grid Filter
- 2nd V. IF Cath. Bypass
- 2nd V. IF Decoupling
- 2nd V. IF Fil. Bypass
- Fixed Trimmer
- 3rd V. IF Grid Filter
- 3rd V. IF Cath. Bypass
- 3rd V. IF Fil. Bypass
- 3rd V. IF Decoupling
- V. Diode Filter
- V. Diode Filter
- IF Coupling
- AGC Filter
- AGC Filter
- V. Det. -AGC Fil. Bypass
- Video Coupling
- Video Coupling
- S. IF Coupling
- S. IF Coupling
- S. IF Coupling
- RF Bypass
- 3rd V. IF Decoupling
- RF Bypass
- RF Bypass
- RF Bypass
- De-emphasis
- Audio Coupling
- AF Amp. Plate Bypass
- Audio Coupling
- Output Plate Bypass
- Sync. Coupling
- RF Bypass
- Integrator Net.
- Integrator Net.
- Vert. Sync. Coupling
- Vert. MV Feedback
- Vert. Discharge
- Vert. Sweep Coupling
- Vert. Sweep Coupling
- Voltage Divider
- Vert. Sweep Coupling
- Vert. Sweep Coupling
- Vert. Sweep Coupling

RESISTORS

| ITEM No. | RATING | | REPLACEMENT DATA | | IDENTIFICATION CODES |
|----------|------------|-------|------------------|------------|---|
| | RESISTANCE | WATTS | EMERSON | IRC | |
| | | | PART No. | PART No. | |
| R9 | 3900Ω | 20% | | BTS-3900 | RF Grid |
| R10 | 47KΩ | 20% | | BTS-47K | AGC Network |
| R11 | 10KΩ | 20% | | BTS-10K | RF Plate Coil Shunt |
| R12 | 2200Ω | 20% | | BTS-2200 | RF Decoupling |
| R13 | 4700Ω | | | BTS-4700 | Conv. Grid |
| R14 | 220KΩ | 20% | | BTS-220K | Conv. Grid |
| R15 | 10KΩ | 20% | | BTS-10K | Osc. Grid |
| R16 | 4700Ω | | | BTS-4700 | Osc. Plate |
| R17 | 1000Ω | | 350412 | BTS-1000 | Conv. Plate Decoupling |
| R18 | 470Ω | 20% | 340672 | BTS-470 | AGC Network |
| R19 | 5600Ω | | 340232 | BTS-5600 | 1st Video IF Transformer Shunt See Note 1 |
| R20 | 82Ω | | 350412 | BTS-470 | 1st Video IF Cathode |
| R21 | 470Ω | 20% | 350412 | BTS-470 | 1st Video IF Suppressor Grid |
| R22 | 470Ω | 20% | 350412 | BTS-470 | 1st Video IF Decoupling |
| R23 | 22KΩ | | 340812 | BTS-470 | 2nd Video IF Transformer Shunt |
| R24 | 470Ω | 20% | 350412 | BTS-470 | 2nd Video IF Grid |
| R25 | 180Ω | | 340312 | BTS-470 | 2nd Video IF Cathode |
| R26 | 470Ω | 20% | 350412 | BTS-470 | 2nd Video IF Decoupling |
| R27 | 10KΩ | | 340732 | | 3rd Video IF Transformer Shunt |
| R28 | 10KΩ | | 340732 | | 3rd Video IF Transformer Shunt See Note 2 |
| R29 | 470Ω | 20% | 350412 | BTS-470 | 3rd Video IF Grid |
| R30 | 180Ω | | 340312 | | 3rd Video IF Cathode |
| R31 | 470Ω | 20% | 350412 | BTS-470 | 3rd Video IF Decoupling |
| R32 | 470Ω | 20% | 350412 | BTS-470 | Voltage Divider |
| R33 | 470Ω | 20% | 350412 | BTS-470 | Video Det. Diode Load |
| R34 | 3900Ω | | 340632 | BTS-3900 | Video Det. Diode Load |
| R35 | 1 Meg. 20% | | 351212 | BTS-1 Meg. | AGC Network |
| R36 | 1 Meg. 20% | | 351212 | BTS-1 Meg. | AGC Rect. Diode Load |
| R37 | 2200Ω | | 340572 | BTS-2200 | Video Amp. Plate |
| R38 | 1000Ω | | 340492 | BTS-1000 | Video Amp. Plate Decoupling |
| R39 | 180KΩ | | 341032 | BTS-180K | Sync. Sep. Cathode |
| R40 | 2200Ω | | 340572 | BTS-2200 | Voltage Divider |
| R41 | 47KΩ | | 340892 | BTS-47K | Voltage Divider |
| R42 | 560KΩ | | 341152 | BTS-560K | Sync. Sep. Plate |
| R43 | 2200Ω | 20% | 350572 | BTS-2200 | Isolation |
| R44 | 1 Meg. 20% | | 351212 | BTS-1 Meg. | Video Output Grid |
| R45 | 1500Ω | | 340532 | BTS-1500 | Video Output Cathode |
| R46 | 10KΩ | | 340732 | BTS-10K | Peaking Coil Shunt |
| R47 | 5600Ω | | 370672 | BTA-5600 | Video Output Plate |
| R48 | 100KΩ | | 340972 | | Limiter Grid |
| R49 | 15KΩ | | 350772 | BTS-15K | Limiter Decoupling |
| R50 | 100KΩ | | 340972 | BTS-100K | Ratio Det. Diode Load |
| R51 | 100KΩ | | 340972 | BTS-100K | Ratio Det. Diode Load |
| R52 | 68KΩ | 20% | 350932 | BTS-68K | De-emphasis |

Note 1. Some models use 10KΩ re...
 Note 2. Some models use 22KΩ re...
 Note 3. Some models use 4.7 Meg...
 Note 4. Not used in all models.

| ITEM No. | RATING | | | | EMERSON PART No. |
|----------|----------------------|------|--------|---|------------------|
| | DC RESISTANCE | | | | |
| | PRI. | SEC. | SEC. 2 | S | |
| T1 | 1.3Ω | | | | 738022 |
| T2 | 255Ω | 3.2Ω | | | 738021 |
| | Tap at 141Ω and 107Ω | | | | |

| ITEM No. | RATING | | | |
|----------|---------|------|------|------|
| | DC RES. | | | |
| | PRI. | SEC. | PRI. | SEC. |
| T3 | 1.5Ω | 630Ω | 36Ω | 0Ω |

| ITEM No. | RATING | | | | EMERSON PART No. |
|----------|-----------|------|---------|------|------------------|
| | IMPEDANCE | | DC RES. | | |
| | PRI. | SEC. | PRI. | SEC. | |
| T4 | 2.6KΩ | 3.5Ω | 172Ω | .5Ω | 7 |

DESCRIPTIONS

(CONT.)

| ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---------------|------------------|---|
| GP2L-0015 | IFM-215 | Hor. Sync. Coupling |
| GP2L-001 | IFM-21 | Hor. Sync. Coupling |
| GP2L-001 | IFM-21 | Hor. Sync. Coupling |
| GP2L-0015 | IFM-215 | Hor. Feedback |
| GP2-335-01 | TM-11 | AFC Filter |
| | TC-2 | AFC Feedback |
| | | Hor. Osc. Grid Cap. |
| GP2L-001 | IFM-21 | Hor. Discharge |
| GP2L-0015 | IFM-215 | Hor. Sweep Coupling |
| GPIK-10 | MS-41 | Hor. Feedback |
| | TVM-216 | Hor. Sweep Coupling |
| | TVM-216 | Hor. Sweep Coupling |
| | TM-15 | HV Osc. Decoupling |
| | TM-15 | HV Osc. Screen Bypass |
| GP2L-0015 | IFM-215 | HV Osc. Grid Cap. |
| | | Fixed Trimmer |
| | TM-1 | Bias Filter |
| | TM-15 | HV Chassis Isolation |
| | TVM-356 | HV Filter |
| | TVM-256 | HV Filter |
| | TC-2 | Picture Tube Cath. Dec. |
| | TM-15 | Line Filter |
| | TM-15 | Line Filter |

INSTALLATION NOTES

| INSTALLATION NOTES |
|--|
| Contrast control |
| Volume control and switch |
| Horiz. hold control, front |
| Vert. hold control, rear |
| Attach per instructions in "Concentrikt". |
| Brightness control |
| Attach to R3A per instructions |
| Horiz. size control |
| Attach to R4A per instructions |
| Vert. size control |
| Attach to R5A per instructions |
| Focus control |
| Horiz. centering control, tapped at 2.5 Meg. |
| Vert. centering control, tapped at 2.5 Meg. |

IDENTIFICATION CODES

| IDENTIFICATION CODES |
|---|
| IF Grid |
| GC Network |
| IF Plate Coil Shunt |
| IF Decoupling |
| Conv. Grid |
| Conv. Grid |
| Asc. Grid |
| Asc. Plate |
| Conv. Plate Decoupling |
| GC Network |
| 1st Video IF Transformer Shunt See Note 1 |
| 2nd Video IF Cathode |
| 3rd Video IF Suppressor Grid |
| 4th Video IF Decoupling |
| 1st Video IF Transformer Shunt |
| 2nd Video IF Grid |
| 3rd Video IF Cathode |
| 4th Video IF Decoupling |
| 1st Video IF Transformer Shunt |
| 2nd Video IF Transformer Shunt See Note 2 |
| 3rd Video IF Grid |
| 4th Video IF Cathode |
| 5th Video IF Decoupling |
| 6th Video IF Decoupling |
| 7th Video Det. Diode Load |
| 8th Video Det. Diode Load |
| GC Network |
| GC Rect. Diode Load |
| 9th Video Amp. Plate |
| 10th Video Amp. Plate Decoupling |
| 11th Sync. Sep. Cathode |
| 12th Voltage Divider |
| 13th Voltage Divider |
| 14th Sync. Sep. Plate Isolation |
| 15th Video Output Grid |
| 16th Video Output Cathode |
| 17th Peaking Coil Shunt |
| 18th Video Output Plate |
| 19th Limiter Grid |
| 20th Limiter Decoupling |
| 21st Ratio Det. Diode Load |
| 22nd Ratio Det. Diode Load |
| 23rd De-emphasis |

RESISTORS (CONT.)

| ITEM No. | RATING | | REPLACEMENT DATA | | IDENTIFICATION CODES |
|----------|--------------|-------|------------------|------------------------|-------------------------------------|
| | RESISTANCE | WATTS | EMERSON PART No. | IRC PART No. | |
| R53 | 4.7Meg. 20% | 1 | 351372 | BTS-4.7 Meg. | AF Grid |
| R54 | 470KΩ 20% | 1 | 351132 | BTS-470K | Output Grid |
| R55 | 470KΩ 20% | 1 | 351132 | BTS-470K | Output Grid |
| R56 | 150Ω | 1 | 370292 | BW-1-150 | Output Cathode |
| R57 | 1000Ω | 2 | 397060 | BW-2-1000 | Filter |
| R58 | 1 Meg. 20% | 1 | 351212 | BTS-1 Meg. | Hor. Phase Inv. Grid |
| R59 | 3300Ω | 1 | 340612 | BTS-3300 | Hor. Phase Inv. Cathode |
| R60 | 3300Ω | 1 | 340612 | BTS-3300 | Hor. Phase Inv. Plate |
| R61 | 1500Ω | 1 | 340532 | BTS-1500 | Hor. Phase Inv. Cathode |
| R62 | 47KΩ | 1 | 340892 | BTS-47K | Feedback |
| R63 | 100KΩ 5% | 1 | 330972 | BTS-100K-5% | Voltage Divider |
| R64 | 8200Ω | 1 | 340712 | BTS-8200 | Integrator |
| R65 | 8200Ω | 1 | 340712 | BTS-8200 | Integrator |
| R66 | 100KΩ | 1 | 340972 | BTS-100K | Vert. MV Grid |
| R67 | 1000Ω | 1 | 340492 | BTS-1000 | Vert. MV Cathode |
| R68 | 330KΩ | 1 | 341092 | BTS-330K | Vert. MV Grid |
| R69 | 18KΩ | 1 | 340792 | BTS-18K | Vert. MV Plate |
| R70 | 1 Meg. 20% | 1 | 341212 | BTS-1 Meg. | Vert. MV Plate |
| R71 | 22 Meg. 20% | 1 | 351532 | BTS-22 Meg. | Voltage Divider |
| R72 | 22 Meg. 20% | 1 | 351532 | BTS-22 Meg. | Vert. Amp. Grid |
| R73 | 10 Meg. 20% | 1 | 351452 | BTS-10 Meg. | Vert. Amp. Grid |
| R74 | 10 Meg. | 1 | 371452 | BTA-10 Meg. | Vert. Amp. Plate |
| R75 | 10 Meg. | 1 | 371452 | BTA-10 Meg. | Vert. Amp. Plate |
| R76 | 100KΩ | 1 | 340972 | BTS-100K | Voltage Divider |
| R77 | 100KΩ 5% | 1 | 330972 | BTS-100K-5% | Horiz. Phase Det. Load |
| R78 | 100KΩ 5% | 1 | 330972 | BTS-100K-5% | Horiz. Phase Det. Load |
| R79 | 22KΩ | 1 | 340812 | BTS-22K | Feedback Network |
| R80 | 560KΩ | 1 | 341152 | BTS-560K | Feedback Network |
| R81 | 47KΩ | 1 | 340892 | BTS-47K | Horiz. Osc. Grid |
| R82 | 3.9 Meg. | 1 | 341352 | BTS-3.9 Meg. | Feedback |
| R83 | 3.3 Meg. 20% | 1 | 351332 | BTS-3.3 Meg. | Feedback |
| R84 | 47KΩ | 1 | 350892 | BTS-47K | Horiz. Osc. Plate |
| R85 | 2.2 Meg. | 1 | 351292 | BTS-2.2 Meg. | Horiz. Output Grid |
| R86 | 220KΩ | 1 | 351052 | BTS-220K | Isolation |
| R87 | 15KΩ | 1 | 340772 | BTS-15K | HV Osc. Grid |
| R88 | 1500Ω | 1 | 340532 | BTS-1500 | HV Osc. Screen |
| R89 | 470KΩ 20% | 1 | 35132 | BTS-470K | Voltage Divider |
| R90 | 100KΩ | 1 | 340972 | | HV Filter |
| R91 | 5.6 Meg. | 1 | | BTS-5.6 Meg. | Vert. Deflection Load See Note 3 |
| R92 | 4.7 Meg. | 1 | 341372 | BTS-4.7 Meg. | Horiz. Deflection Load |
| R93 | 4.7 Meg. | 1 | 341372 | BTS-4.7 Meg. | Horiz. Deflection Load |
| R94 | 4.7 Meg. | 1 | 341372 | BTS-4.7 Meg. | Vert. Deflection Load |
| R95 | 1 Meg. | 1 | 341212 | BTS-1 Meg. | Vert. Deflection Load See Note 4 |
| R96 | 47KΩ 20% | 1 | 340892 | BTS-47K | Voltage Divider |
| R97 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R98 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R99 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R100 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R101 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R102 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R103 | 1.8 Meg. | 1 | 371272 | | Voltage Divider |
| R104 | 1 Meg. | 1 | 351212 | BTS-1 Meg. | Picture Tube Grid |
| R105 | 75Ω 5% | 1 | 330222 | | Filter |
| R106 | 2.5Ω | 5 | 394067 | | Surge Limiter- Wire Wound |
| R107 | 10Ω | 5 | | AB-10 | Filament Dropping-Wire Wound |
| R108A | 20Ω | 10 | | AB-20 | RF Filament Shunt-Wire Wound |
| R108B | 40Ω | 10 | | AB-40 | RF Filament Shunt-Wire Wound |
| R109 | 1500Ω | 1 | 340532 | BTS-1500 | Horiz. Peaking |
| R110 | 2.2 Meg. | 1 | 351292 | BTS-2.2 Meg. | Voltage Divider |
| R111 | 3.3Ω | 1 | | BW- $\frac{1}{2}$ -3.3 | Bias Network-Wire Wound, See Note 4 |

Note 1. Some models use 10KΩ resistor in this application.
 Note 2. Some models use 22KΩ resistor in this application.
 Note 3. Some models use 4.7 Meg. resistor in this application.
 Note 4. Not used in all models.

TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING | | REPLACEMENT DATA | | | | NOTES |
|----------|---------------|-----------------------|------------------|------------------|----------------|------------------|--|
| | DC RESISTANCE | | EMERSON PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| T1 | 1.3Ω | 3.2Ω | 738022 | A-8110 | A-3002 | | Hor. Block Osc. Trans. Hor. Output Trans. |
| T2 | 255Ω | Tap. at 141Ω and 107Ω | 738021 | | | | |

TRANSFORMER (H.V. OSC.)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | |
|----------|--------|--------|--------|--------|------------------|------------------|----------------|------------------|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | EMERSON PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
| T3 | 1.5Ω | 630Ω | 36Ω | 0Ω | 738019 | | | |

TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|----------|-----------|------|---------|-----|------------------|------------------|----------------|------------------|--------------------|
| | IMPEDANCE | | DC RES. | | EMERSON PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| T4 | 2.6KΩ | 3.5Ω | 172Ω | .5Ω | 734052 | A-3876 | A-2928 | RO-2 | |

EMERSON
MODELS 600, 639 (Ch. 120103B)

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA | | | NOTES |
|----------|---------------------|---------------------|------------------|-----------------------|----------|-------------------------------|
| | | | EMERSON | JENSEN | QUAM | |
| | FIELD RES. | V. C. IMP. | PART No. | PART No. | PART No. | |
| SP1 | PM | 3.5Ω | 480065 | ST-113 ① MOD. P4-X | 4A07 | ① Drill and tap magnet frame. |
| SP2 | CONE DIA. 3 7/8" | V. C. DIA. 9/16" | | | | |

FILTER CHOKE

| ITEM No. | RATINGS | | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|----------|----------------------|------------------|------------------------------------|------------------|------------------|----------------|------------------|--------------------------------|
| | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (0 CURRENT 1000 μ) | EMERSON PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| L1 | .099A | 6Ω | 3.3 Henries | 737012 | C-2304 ② | C-2974 ② | TR-4200 ② | ② Drill one new mounting hole. |

COILS (RF-IF)

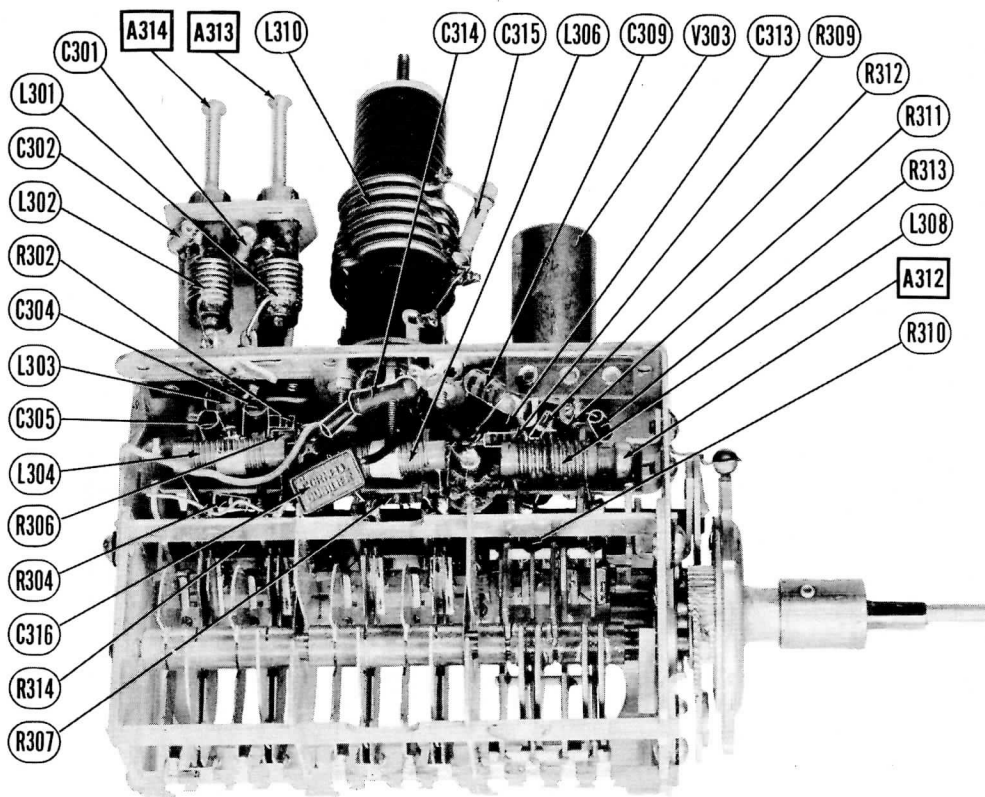
| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | | NOTES |
|----------|------------------------------|---------|------|------------------|----------|------------------------------|
| | | | | EMERSON | MEISSNER | |
| | | PRI. | SEC. | PART No. | PART No. | |
| L2 | Ant. Coils | 0Ω | | | | Part of tuner. |
| L3 | RF Mixer Grid and Osc. Coils | 0Ω | | | | Part of tuner. |
| L4 | Fil. Choke | 0Ω | | | | Part of tuner. |
| L5A | Conv. Trans. | 0Ω | 0Ω | 720107 | | Used in M2A |
| B | Conv. Trans. | | | 720104 | | Used in M2B |
| L6 | 1st Video IF | .2Ω | .2Ω | 720096 | | |
| L7 | 2nd Video IF | .2Ω | .2Ω | 720098 | | |
| L8 | 3rd Video IF | .2Ω | .2Ω | 720106 | | |
| L9 | 4th Video IF | .2Ω | .2Ω | 720097 | | |
| L10 | Peaking | 5Ω | | 708090 | | 80 microhenries, gray dot |
| L11 | Peaking | 6Ω | | 708090 | | 80 microhenries, gray dot |
| L12 | Peaking | 10Ω | | 708095 | | 180 microhenries |
| L13 | Peaking | 22Ω | | 708111 | | 800 microhenries, orange dot |
| L14 | Sound IF | 2Ω | | 720103 | | |
| L15A | Disc. Trans. | 2Ω | 2Ω | 708017 | | |
| B | Disc. Trans. | | | 708018 | | |
| L16 | RF Choke | 9Ω | | 701515 | | 1 millihenry |

SELENIUM RECTIFIER

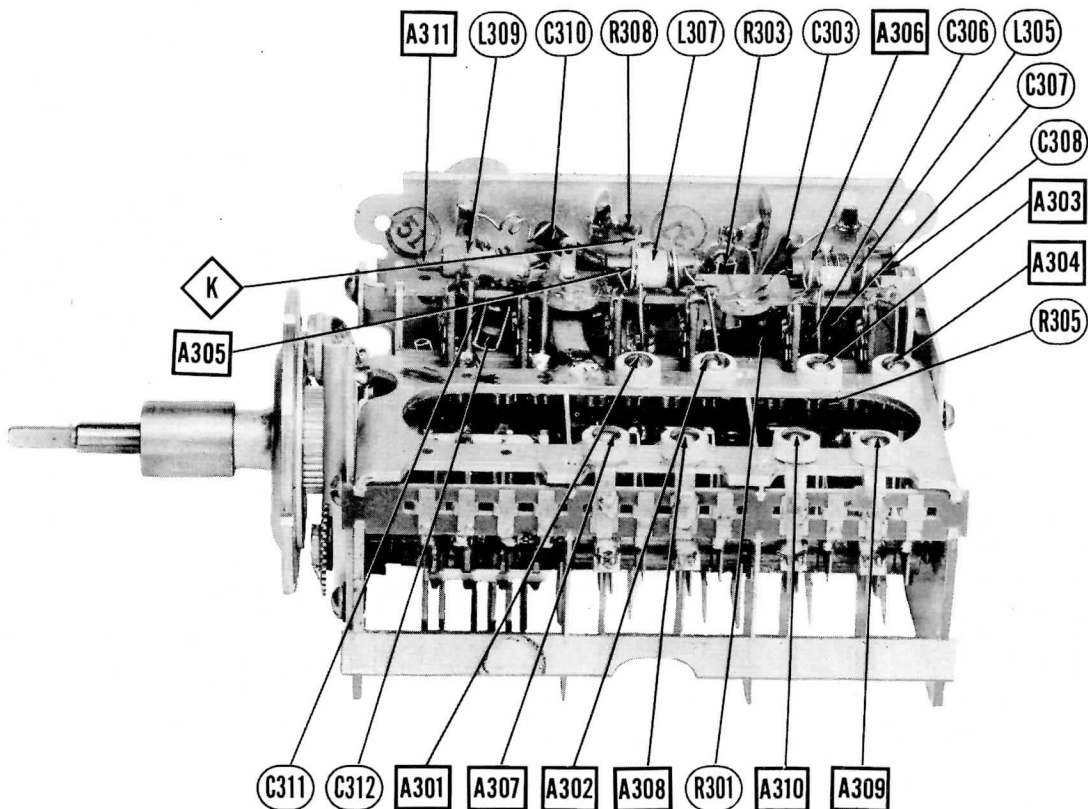
| ITEM No. | RATING | REPLACEMENT DATA | | | NOTES |
|----------|---------|------------------|-------------------|--|-------|
| | CURRENT | EMERSON PART No. | SYLVANIA PART No. | | |
| M1 | .210A | 817013 | NF-5 | | |

MISCELLANEOUS

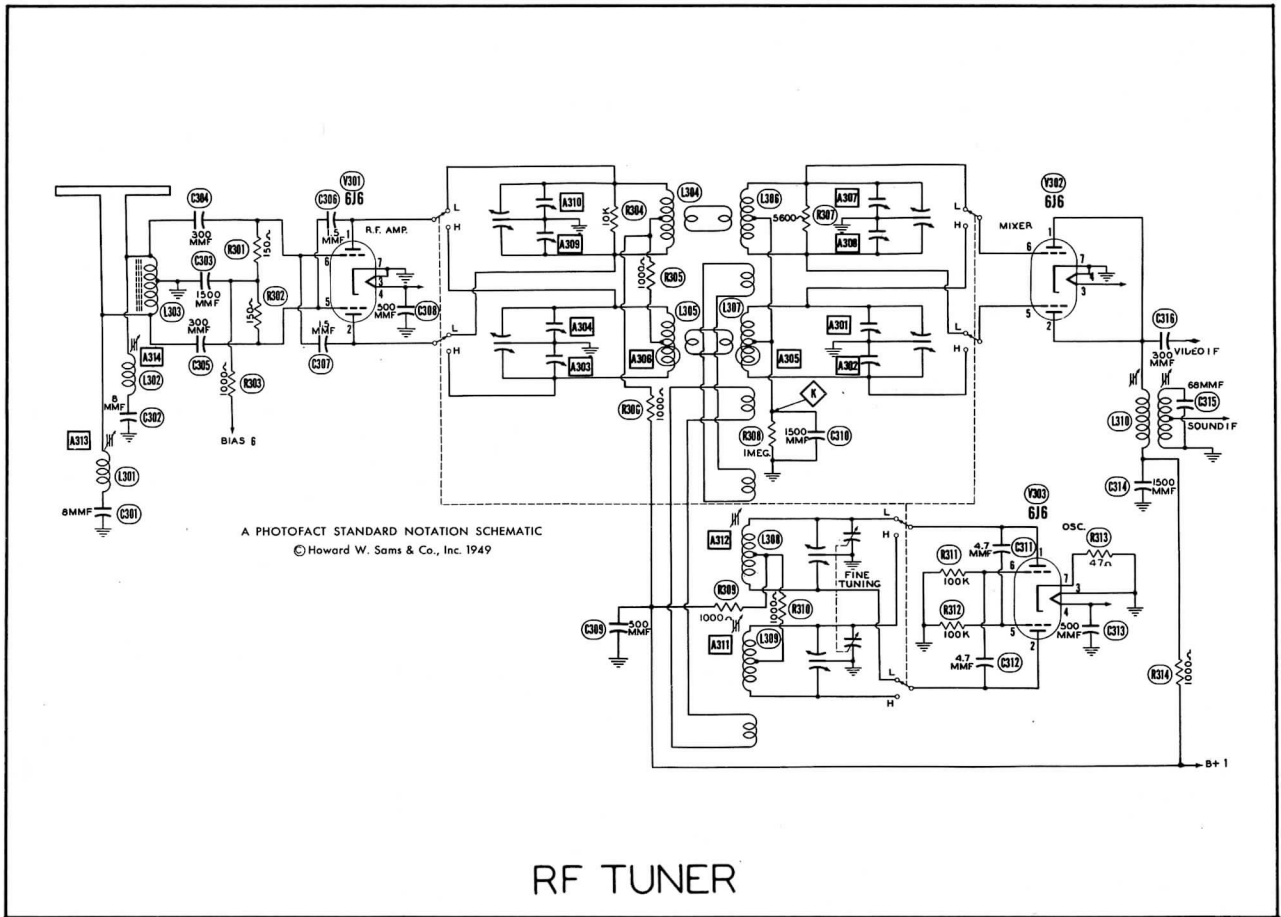
| ITEM No. | PART NAME | EMERSON PART No. | NOTES |
|----------|-----------|------------------|-------------------------------------|
| M2A | RF Tuner | 470470 | Standard Coil |
| B | RF Tuner | 470492 | General Instrument |
| | Socket | 583206 | Interlock with Line Cord |
| | Socket | 585041 | Picture Tube Socket and Cable Assy. |
| | Trimmer | 900056 | Hor. Osc. Adj. (400-2200MMF) |



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE



PARTS LIST AND DESCRIPTIONS

TUBES

| ITEM No. | USE | REPLACEMENT DATA | |
|----------|------------|----------------------|---------------|
| | | STANDARD REPLACEMENT | RMA BASE TYPE |
| V301 | RF Amp. | 6J6 | 7BF |
| V302 | Mixer | 6J6 | 7BF |
| V303 | Oscillator | 6J6 | 7BF |

RESISTORS

| ITEM No. | RATING | | IDENTIFICATION |
|----------|------------|-------|------------------|
| | RESISTANCE | WATTS | |
| R301 | 150Ω | 1/4 | RF Grid |
| R302 | 150Ω | 1/4 | RF Grid |
| R303 | 1000Ω | 1/4 | Bias Filter |
| R304 | 10KΩ | 1/4 | RF Coil Shunt |
| R305 | 1000Ω | 1/4 | RF Plate |
| R306 | 1000Ω | 1/4 | RF Plate |
| R307 | 5600Ω | 1/4 | Mixer Coil Shunt |
| R308 | 1 Meg | 1/4 | Mixer Grid Shunt |
| R309 | 1000Ω | 1/4 | Osc. Plate |
| R310 | 1000Ω | 1/4 | Osc. Plate |
| R311 | 100KΩ | 1/4 | Osc. Grid |
| R312 | 100KΩ | 1/4 | Osc. Grid |
| R313 | 47Ω | 1/4 | Osc. Cathode |
| R314 | 1000Ω | 1/4 | Mixer Decoup. |

CAPACITORS

| ITEM No. | RATING | | IDENTIFICATION |
|----------|--------|------|-------------------|
| | CAP. | VOLT | |
| C301 | 8 | | Fixed Trimmer |
| C302 | 8 | | Fixed Trimmer |
| C303 | 1500 | | Bias Filter |
| C304 | 300 | | RF Coupling |
| C305 | 300 | | RF Coupling |
| C306 | 1.5 | | Neutralizing |
| C307 | 1.5 | | Neutralizing |
| C308 | 500 | | Filament Bypass |
| C309 | 500 | | RF Bypass |
| C310 | 1500 | | Mixer Grid Filter |
| C311 | 4.7 | | Osc. Feedback |
| C312 | 4.7 | | Osc. Feedback |
| C313 | 500 | | Filament Bypass |
| C314 | 1500 | | Mixer Decoupling |
| C315 | 68 | | Fixed Trimmer |
| C316 | 300 | | IF Coupling |

COILS

| ITEM No. | USE | DC RES. | |
|----------|-------------------|---------|------|
| | | PRI. | SEC. |
| L301 | Interference Trap | 0Ω | |
| L302 | Interference Trap | 0Ω | |
| L303 | Ant. Input | 0Ω | |
| L304 | RF Low Band | 0Ω | |
| L305 | RF High | | |
| L306 | Mixer Low Band | 0Ω | |
| L307 | Mixer High Band | 0Ω | |
| L308 | Osc. Low Band | 0Ω | |
| L309 | Osc. High Band | 0Ω | |
| L310 | IF Trans. | .2Ω | 0Ω |