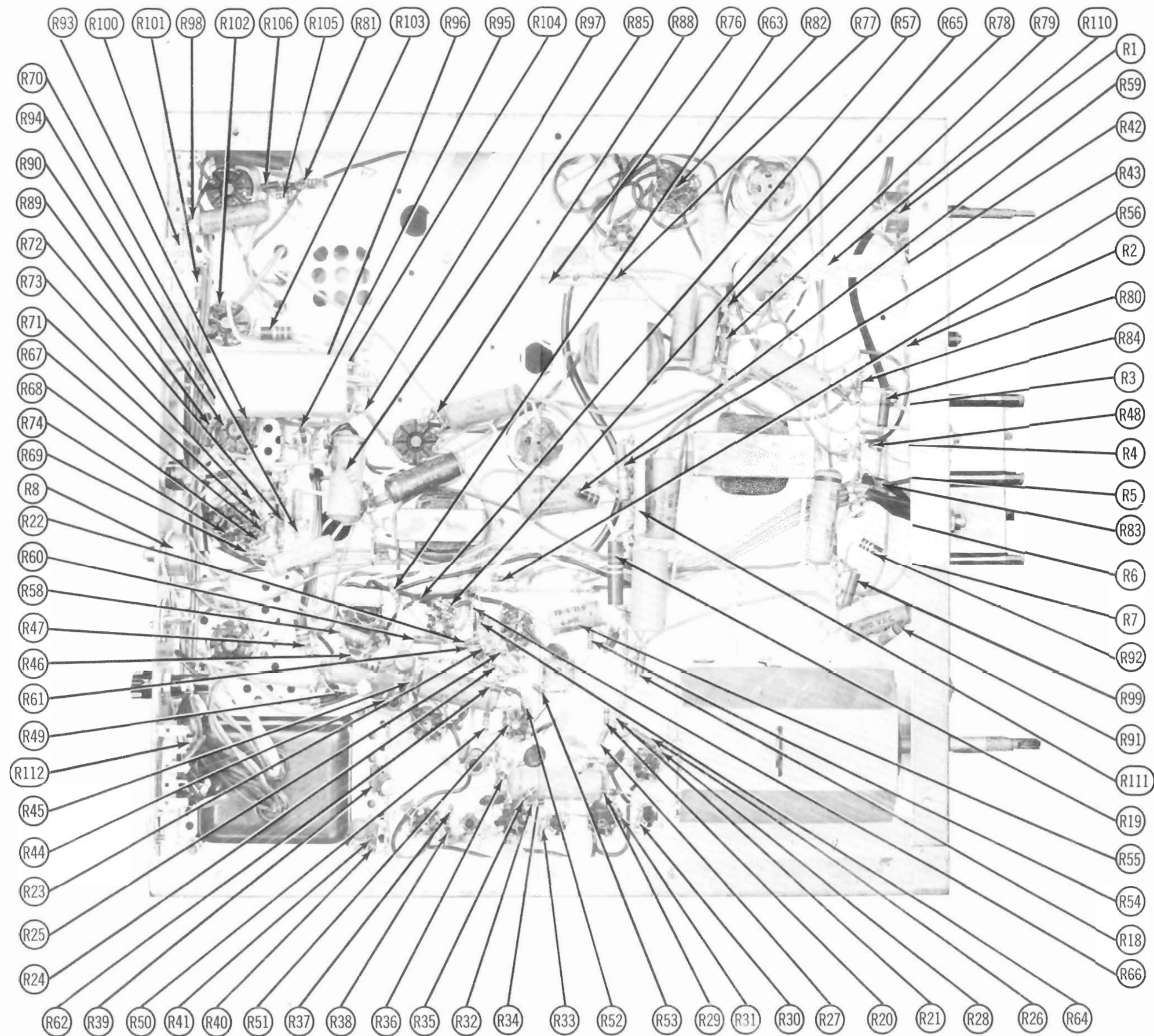


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TRADE NAME	Ma
MANUFACTURER	Ma
TYPE SET	Te
TUBES	Tv
POWER SUPPLY	110
TUNING RANGE	Ch
Alignment Instructions	
Disassembly Instructio	
Horizontal Sweep Circu	
Parts List and Descrip	
Photographs	
Cabinet-Rear View	
Capacitor Identific	
Chassis-Top View	
RF Tuner
Resistor Identifica	

The listing of any available re
case a recommendation, warra
as to the quality and suitability
parts have been compiled from
inc., by the manufacturers of it
"Reproduction or use, without



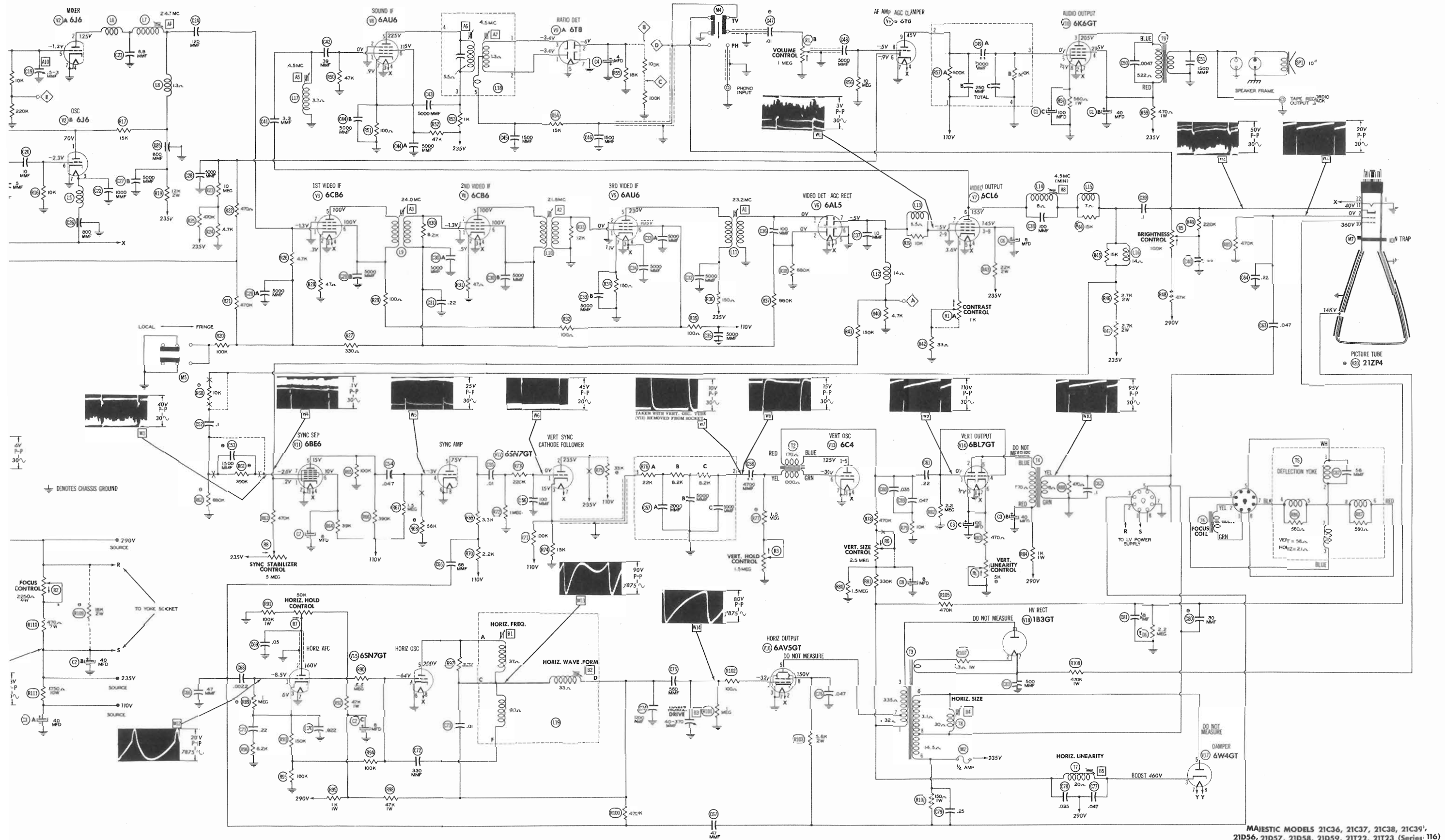
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

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COI

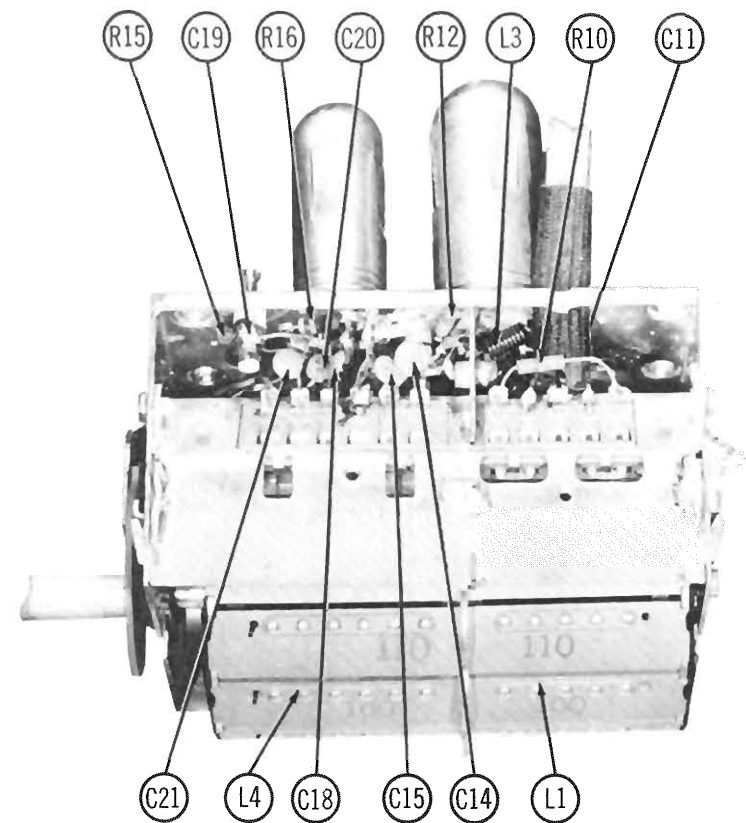
TRADE NAME	Major
MANUFACTURER	Manufacturer
TYPE SET	Tele
TUBES	Two
POWER SUPPLY	110-1
TUNING RANGE	Chai
Alignment Instructions	
Disassembly Instructions	
Horizontal Sweep Circuit	
Parts List and Description	
Photographs	
Cabinet-Rear View	
Capacitor Identification	
Chassis-Top View	
RF Tuner	
Resistor Identification	

HO

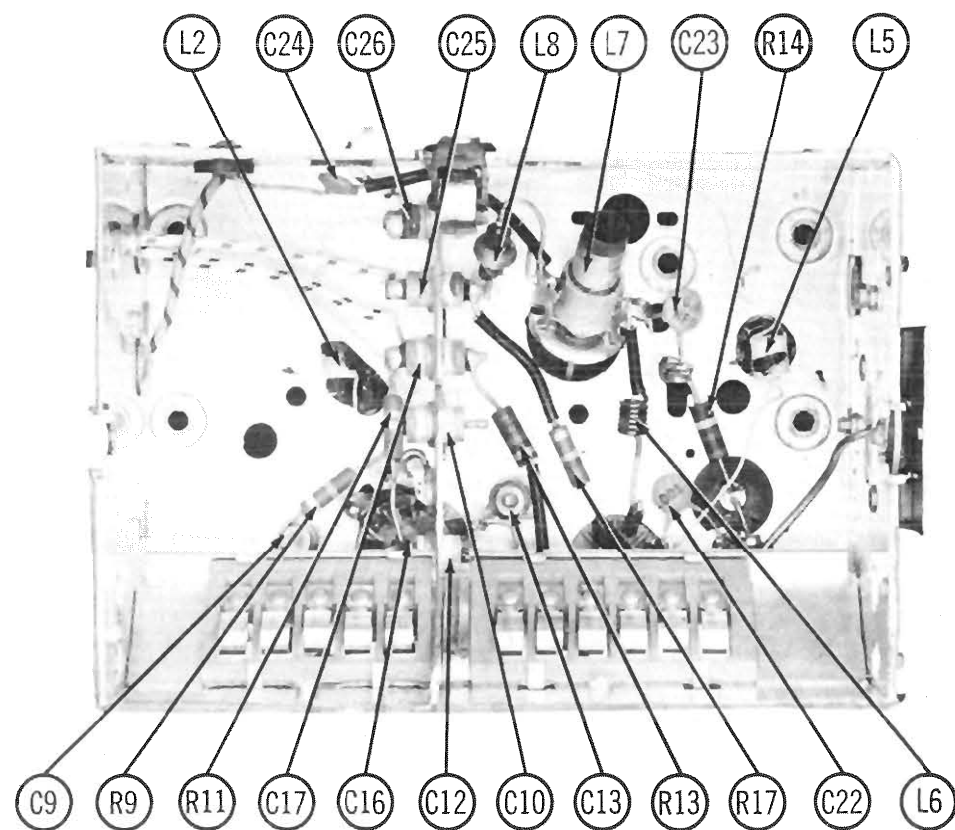
"The listing of any available replacement parts is a recommendation, warranting as to the quality and suitability of parts have been compiled from information received from the manufacturers of the parts, by the manufacturers of the equipment. Reproduction or use, without express permission, is prohibited."



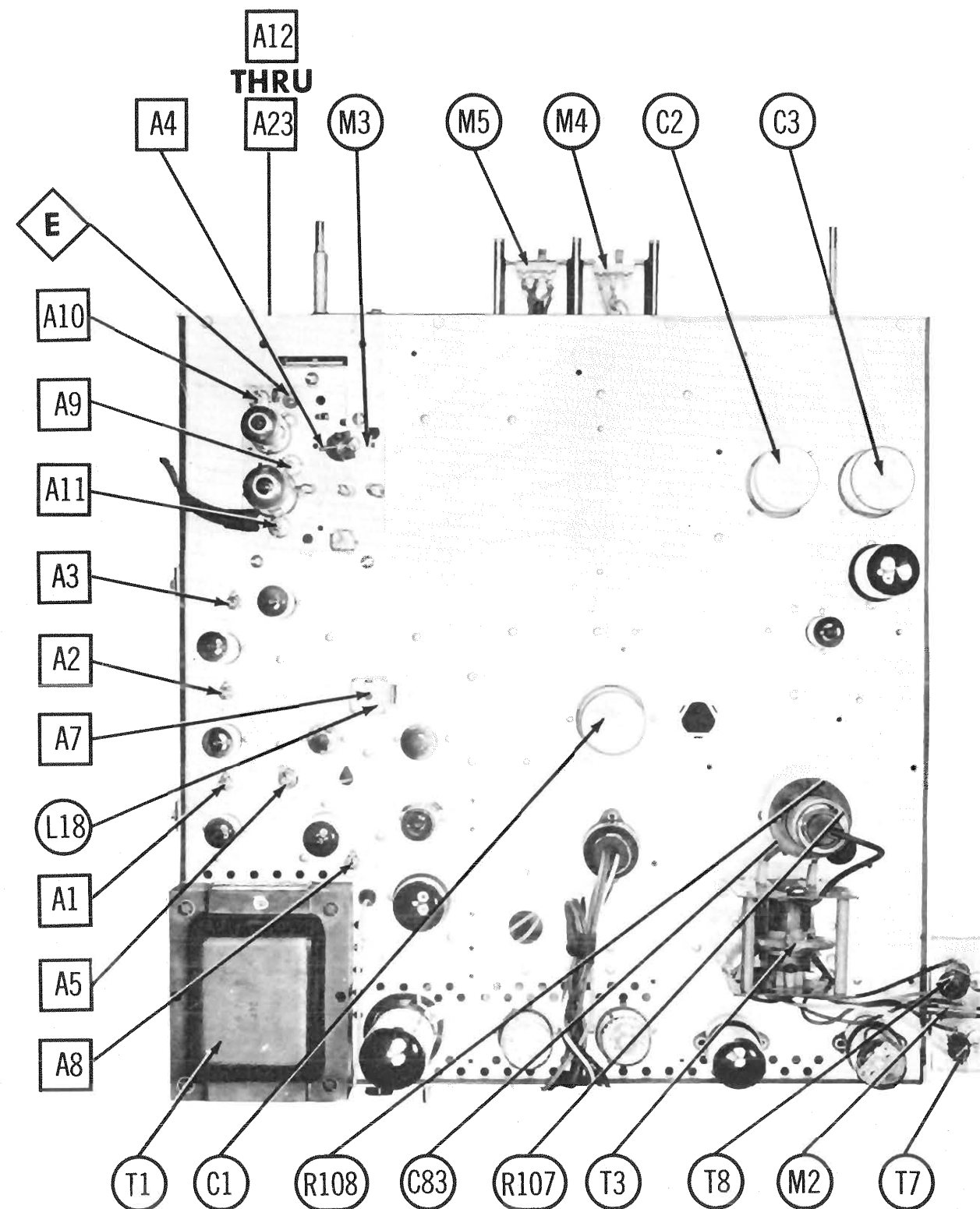
MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39,
21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)



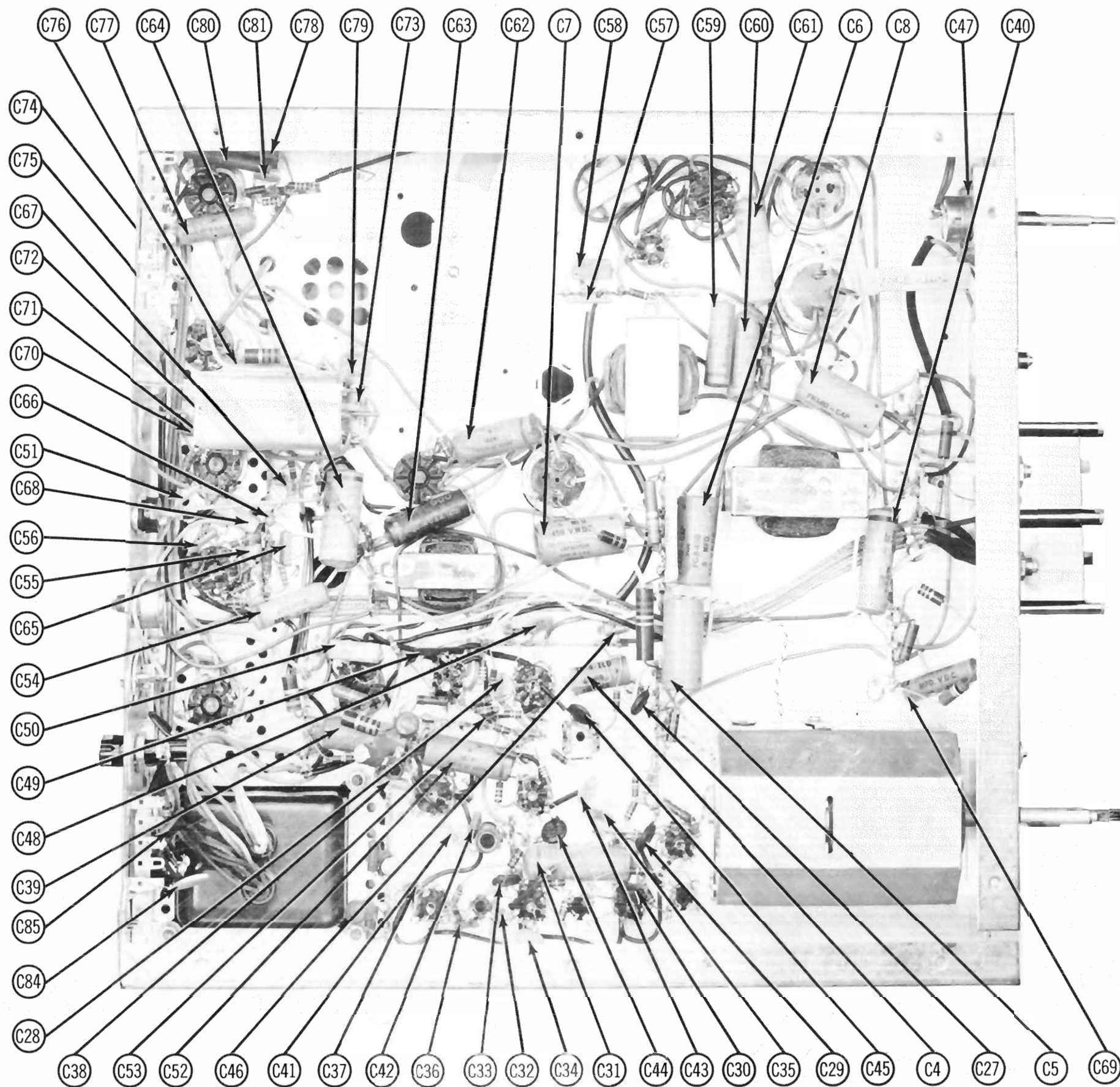
RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS TOP VIEW



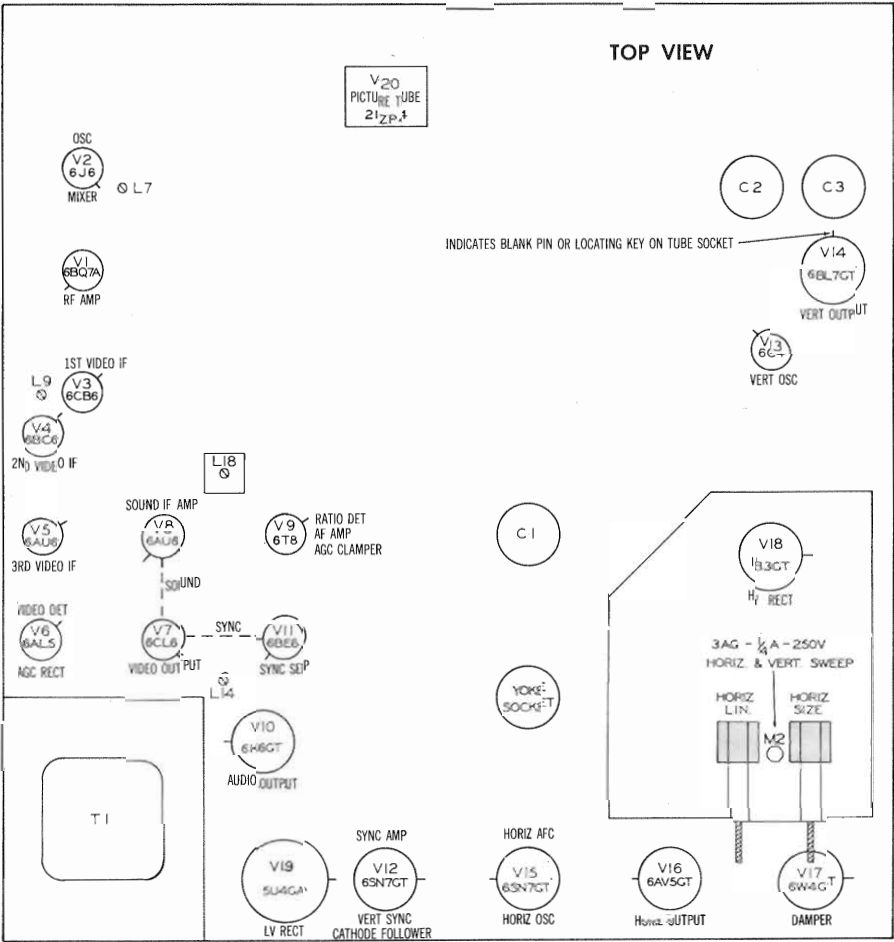
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	1.5Meg	0Ω	.1Ω	0Ω	†4KΩ	†110KΩ	INF	0Ω
V 2	6J6	†27KΩ	†12.5KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	1.2Meg	47Ω	0Ω	.1Ω	†4.4KΩ	†4.4KΩ	0Ω		
V 4	6CB6	1.2Meg	47Ω	0Ω	.1Ω	†4.4KΩ	†4.4KΩ	0Ω		
V 5	6AU6	.7Ω	0Ω	0Ω	.1Ω	†500Ω	†4.2KΩ	150Ω		
V 6	6AL5	.7Ω	680KΩ	.1Ω	0Ω	0Ω	0Ω	4.7KΩ		
V 7	6CL6	250Ω	4.7KΩ	†22KΩ	.1Ω	0Ω	†5.8KΩ	0Ω	†22KΩ	4.7KΩ
V 8	6AU6	47KΩ	0Ω	0Ω	.1Ω	†1.4KΩ	†47KΩ	100Ω		
V 9	6T8	INF	18KΩ	INF	.1Ω	0Ω	1.5Meg	0Ω	10Meg	†500KΩ
V 10	6K6GT	NC	0Ω	†1.4KΩ	†900Ω	500KΩ	TP	.1Ω	560Ω	
V 11	6BE6	120KΩ	0Ω	0Ω	.1Ω	†100KΩ	†40KΩ	1Meg		
V 12	6SN7GT	1.2Meg	†400Ω	15KΩ	56KΩ	†9.6KΩ	0Ω	.1Ω	0Ω	
V 13	6C4	1.8Meg	0Ω	0Ω	.1Ω	1.8Meg	2Meg	0Ω		
V 14	6BL7GT	2.2Meg	†2KΩ	1KΩ	2.2Meg	†2KΩ	1KΩ	.1Ω	0Ω	
V 15	6SN7GT	1.2Meg	†50KΩ	330KΩ	280KΩ	†50KΩ	0Ω	0Ω	.1Ω	
V 16	6AV5GT	1Meg	.1Ω	0Ω	NC	.52Ω	NC	0Ω	†6KΩ	
V 17	6W4GT	TP	NC	700KΩ	NC	†400Ω	NC	30KΩ	30KΩ	
V 18	1B3GT		PINS 1 - 8	HAVE	INFINITE	RESISTANCE				Top Cap .390Ω
V 19	5U4GA	NC	30KΩ	NC	27Ω	TP	25Ω	TP	30KΩ	
V 20	21ZP4	0Ω	470KΩ	400KΩ	†240KΩ	.1Ω				

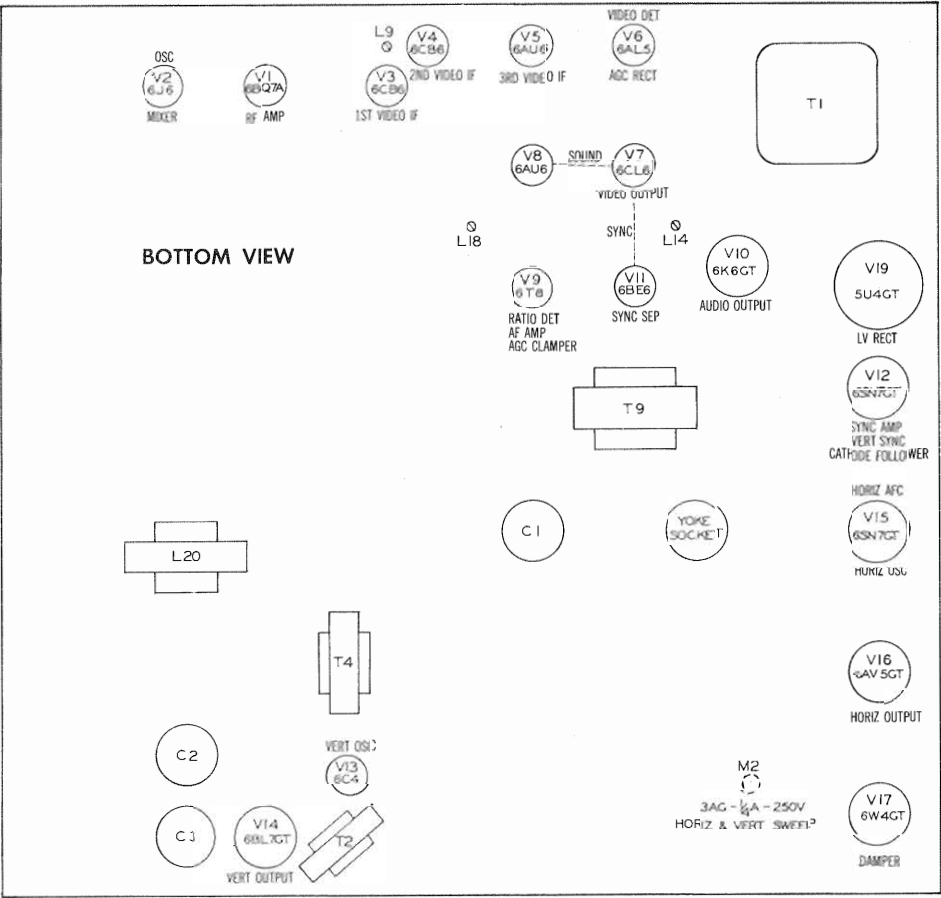
† MEASURED FROM PIN 8 OF V10.
▲ MEASURED FROM PIN 3 OF V17.
NC - NO CONNECTION
TP - TIE POINT

TUBE PLACEMENT CHART



MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39, 21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)

BOTTOM VIEW



TUBE PLACEMENT CHART

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V19, Fuse (M1)

LOSSES OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V20
Has pic, no sound - V5, V6, V10
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V12, V13
No horiz. sync - V12, V15
No vert. or horiz. sync - V11, V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20 Fuse (M2)
No vertical deflection - V13, V14
Poor vert. linearity or foldover - V13, V14
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V18, V19
Vert. off freq. - V12, V13
Horiz. off freq. - V12, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.							
VIDEO IF ALIGNMENT							
Set the contrast control maximum counter clockwise. Connect the negative lead of a 3 volt bias supply to the ungrounded side of C29A. Positive lead to chassis. Remove the converter tube (V2) from its socket and replace with a 6J6 with pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23.2MC (Unmod)	Any	DC probe to point \diamond . Common to chassis.	A1	Adjust for maximum deflection. Attenuate signal generator to maintain not more than 1.5 volts at VTVM.	
"	"	21.8MC	"	"	A2	"	
"	"	24.0MC	"	"	A3	"	
"	"	24.7MC	"	"	A4	"	
OVERALL VIDEO IF RESPONSE CHECK							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23MC (10MC Swp)	20.25MC 21.75MC 24.75MC	Any	Vert. amp. thru 10K Ω to point \diamond . Low side to chassis.		Check for response similar to Fig. 1. If necessary, retouch A1 thru A4 for desired response.
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM							
Set the "TV-Phono" switch for TV position. Connect two matched 100K Ω (\pm 1%) resistors in series from point \diamond to chassis. The junction of these two resistors is alignment point \diamond as shown on the schematic.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
.0015MFD	High side to pin 9 (grid) of 6CL6 (V7). Low side to chassis.	4.5MC (unmod)	Any non-interfering channel.	DC probe to point \diamond . Common to chassis.	A5, A6	Adjust for maximum deflection.	
"	"	"	"	DC probe to point \diamond . Common to point \diamond .	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	
SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE							
Set "TV-Phono" switch for TV position. Use frequency modulated signal with 60v modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
.0015MFD	High side to pin 9 (grid) of 6CL6 (V7). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any non-interfering channel.	Vert. amp. to point \diamond . Low side to chassis.	A5, A6	Disconnect stabilizer capacitor (C4). Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
"	"	"	"	"	Vert. amp. to point \diamond . Low side to chassis.	A7	Reconnect stabilizer capacitor (C4). Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.
4.5MC TRAP ALIGNMENT							
Remove 3rd IF tube (V5) from its socket. Short out L17 with a short jumper.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
.0015MFD	High side to pin 9 (grid) of 6CL6 (V7). Low side to chassis.	4.5MC (30% Mod)	Any	DC probe thru detector (Fig. 4) to pin 11 (cathode) of picture tube	A8	Adjust for MINIMUM deflection. Attenuate generator to maintain not more than .1 volt on VTVM.	

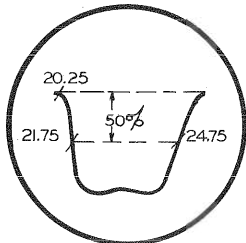


FIG. 1

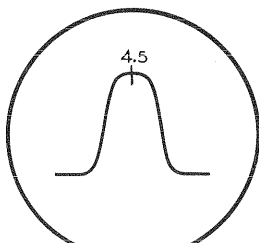


FIG. 2

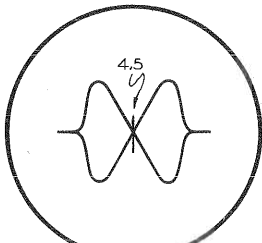


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT							
Remove bias battery used in "Video IF Alignment" and connect a short across C29A. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point E . Low side to chassis.	A9, A10, A11	Adjust for response similar to Fig. 5. with markers at not less than 70%.
"	"	213MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 171MC (10MC Swp) 165MC (10MC Swp) 159MC (10MC Swp) 153MC (10MC Swp) 147MC (10MC Swp) 141MC (10MC Swp) 135MC (10MC Swp) 129MC (10MC Swp) 123MC (10MC Swp) 117MC (10MC Swp) 111MC (10MC Swp) 105MC (10MC Swp) 99MC (10MC Swp) 93MC (10MC Swp) 87MC (10MC Swp) 81MC (10MC Swp) 75MC (10MC Swp)	211.25MC 215.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 169.25MC 173.75MC 163.25MC 167.75MC 157.25MC 161.75MC 151.25MC 155.75MC 145.25MC 149.75MC 139.25MC 143.75MC 133.25MC 137.75MC 127.25MC 131.75MC 121.25MC 125.75MC 115.25MC 119.75MC 109.25MC 113.75MC 103.25MC 107.75MC 97.25MC 101.75MC 91.25MC 95.75MC 85.25MC 89.75MC 79.25MC 83.75MC 73.25MC 77.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	13 11 10 9 8 7 6 5 4 3 2	"		Check all channels for proper marker placement. If markers fall below 70% on any channel, make slight compromise adjustments of A9, A10 and A11 with channel selector set to that channel. Recheck all other channels to see that they have not been seriously affected.
OSCILLATOR ALIGNMENT							
The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel selector switch is turned to each channel. Remove the dummy converter tube and replace the original 6J6 in its socket. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp) 207MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 171MC (10MC Swp) 165MC (10MC Swp) 159MC (10MC Swp) 153MC (10MC Swp) 147MC (10MC Swp) 141MC (10MC Swp) 135MC (10MC Swp) 129MC (10MC Swp) 123MC (10MC Swp) 117MC (10MC Swp) 111MC (10MC Swp) 105MC (10MC Swp) 99MC (10MC Swp) 93MC (10MC Swp) 87MC (10MC Swp) 81MC (10MC Swp) 75MC (10MC Swp)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 169.25MC 173.75MC 163.25MC 167.75MC 157.25MC 161.75MC 151.25MC 155.75MC 145.25MC 149.75MC 139.25MC 143.75MC 133.25MC 137.75MC 127.25MC 131.75MC 121.25MC 125.75MC 115.25MC 119.75MC 109.25MC 113.75MC 103.25MC 107.75MC 97.25MC 101.75MC 91.25MC 95.75MC 85.25MC 89.75MC 79.25MC 83.75MC 73.25MC 77.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	13 12 11 10 9 8 7 6 5 4 3 2	Vert. amp. thru 10KΩ to point A . Low side to chassis.	A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23	Adjust to place sound marker as shown in Fig. 6. Video marker should be at 50% response.

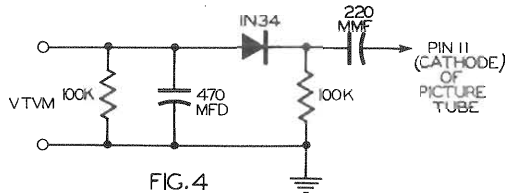


FIG. 4

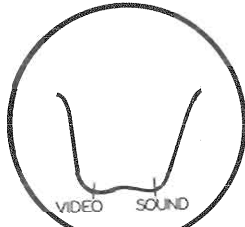


FIG. 5

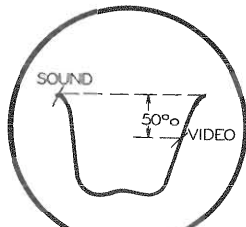


FIG. 6

MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39, 21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

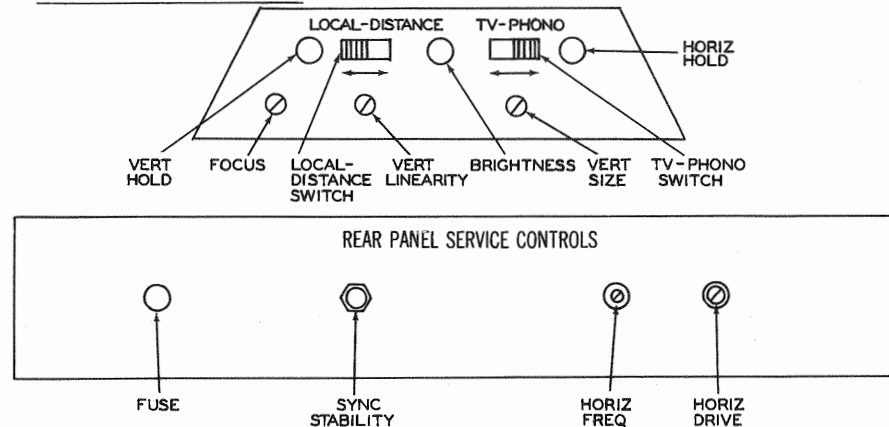
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass, remove 4 wood screws holding plastic moulding at the bottom of safety glass. Remove plastic moulding and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions.)

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS - SYNC STABILITY CONTROL ADJUSTMENT

Tune in a weak station with high noise level. Adjust the sync stability control (R8) clockwise until horizontal and vertical sync are stable.

Tune in a strong station with low noise level. Check for stability of sync. If unstable, adjust R8 counter clockwise for stable sync.

Note: If R8 control needed adjustment on strong signal, make compromise adjustment of R8 for the two signal strengths.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency slug of L19 until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L18) located on top of chassis.

FUSES

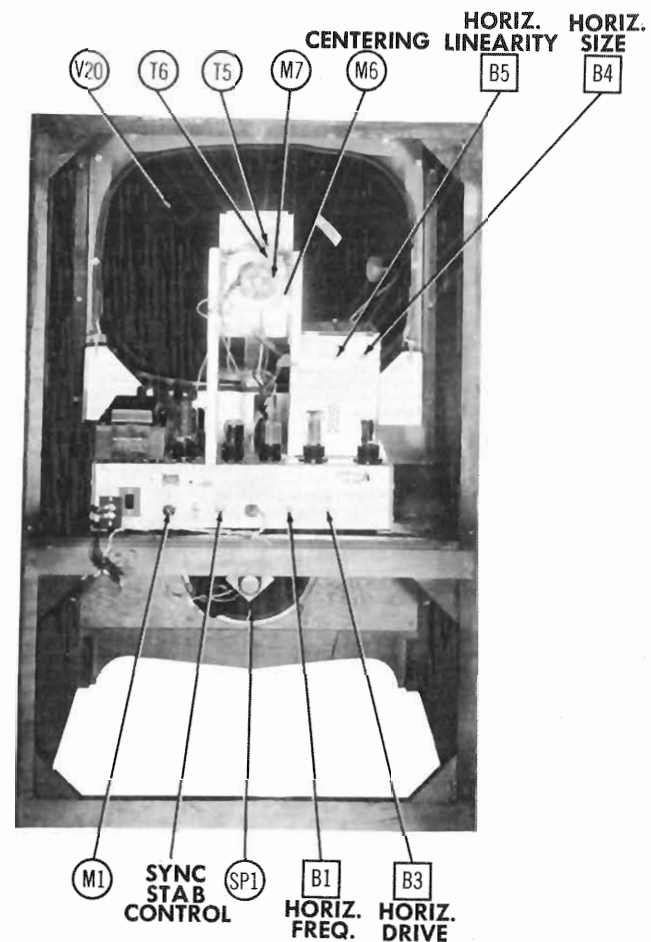
Two fuses are used. One for horizontal sweep circuit protection and one for LV power supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by positioning the focus coil. Adjust the three wing nuts located on the focus coil bracket until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push-on type control knobs from front panel of cabinet.
2. Remove 9 wood screws. Remove rear cover.
3. Disconnect speaker plug from chassis.
4. Remove 8 chassis bolts. Remove chassis.
5. Remove 2 speaker nuts. Remove speaker.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station, preferably a test pattern.

Turn the horizontal hold control fully counter clockwise.

If the picture is out of sync, adjust the horizontal frequency slug (B1) until the picture synchronizes. Momentarily interrupt the signal by switching off channel, then back. The picture should just fall out of sync. If it does not, turn B1 slightly clockwise and again interrupt the signal. Continue this procedure until the picture just falls out of sync only when signal is interrupted. Rotate the horizontal hold control clockwise until picture falls into sync. The picture should remain in sync throughout most of the range of the horizontal hold control. If the picture does not hold sync, it may be necessary to adjust the horizontal waveform slug (B2). Connect the vertical amplifier of an oscilloscope through 10KΩ to terminal "C" of L19. Connect the low side to chassis. If necessary, adjust B2 to obtain waveform similar to Fig. 7.

During adjustment of B2, keep picture in sync by adjusting B1.

Adjust the horizontal drive trimmer (B3) counter clockwise as far as possible without the presence of vertical white lines or compression near the center of the picture. Adjust the horizontal size slug (B4) for a picture slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug (B5) for a picture that is symmetrical from left to right.

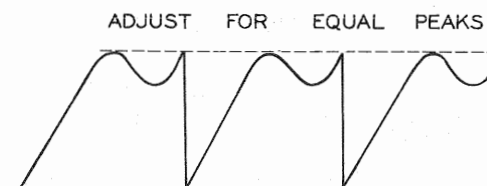


FIG. 7

MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39,
21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL				
<p><u>LOSS OF SWEEP</u></p> <p>Follow procedure outlined under "Loss of High Voltage".</p> <p><u>INSUFFICIENT SWEEP</u></p> <p>Check by substitution V16, V17 and V19. Check adjustments B3, B4 and B5. Check T3, T5A, C75, R103, R104 and other associated components.</p> <p><u>DRIVE LINES</u></p> <p>Check by substitution V16 and V17. Check adjustments B3 and B5. Check C75, C67, R103 and other associated components.</p> <p><u>COMPRESSED LEFT SIDE</u></p> <p>Check by substitution V16 and V17. Check horizontal output and damper stages for component failure or change of value.</p> <p><u>FOLDS</u></p> <p>Follow procedure outlined under "Drive Lines".</p> <p><u>PIE CRUST EFFECT</u></p> <p>Check by substitution V15, V16 and V17. Check C71, C70, R96 for open. Check L19, R97, R91, C68 and other associated components.</p> <p><u>XMAS TREE EFFECT</u></p> <p>Check by substitution V15, V16 and V17. Check T3 and T5 for internal arcing. Check C37, C66, C72, R97, R92 and other associated components.</p>	<p><u>LOSS OF SWEEP</u></p> <p>Check by substitution V13 and V14. Check waveform W9.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T4, T5B, R84, C3B and other associated components.</td><td>Check T2, C58, C61, C8, R81, R6, R77 and other associated components.</td></tr> </table> <p><u>INSUFFICIENT SWEEP</u></p> <p>Check by substitution V13 and V14. Check vertical size and vertical linearity controls for proper operation. Check R78, T4 and other associated components.</p> <p><u>COMPRESSED AT BOTTOM</u></p> <p>Check by substitution V13 and V14. Check C61, C60, T2, R78, R81, R6 and other associated components.</p> <p><u>COMPRESSED AT TOP</u></p> <p>Check by substitution V13 and V14. Check C3C, R4, R83, T4, T5B and other associated components.</p> <p><u>FOLDS</u></p> <p>Check by substitution V13 and V14. Check C59, C60, C61, R79, R83, T4 and other associated components.</p>	If Satisfactory	If Unsatisfactory	Check T4, T5B, R84, C3B and other associated components.	Check T2, C58, C61, C8, R81, R6, R77 and other associated components.
If Satisfactory	If Unsatisfactory				
Check T4, T5B, R84, C3B and other associated components.	Check T2, C58, C61, C8, R81, R6, R77 and other associated components.				

SYNC

<p><u>LOSS OF VERTICAL AND HORIZONTAL SYNC</u></p> <p>Check by substitution V11 and V12. Check C52, C54, C53, C55, R64, R66, R70, R69 and other associated components.</p> <p><u>LOSS OF VERTICAL SYNC - HORIZONTAL SYNC SATISFACTORY</u></p> <p>Substitute V13. Check vertical integrator network. Check C58, R77, R3, T2 and other associated components.</p>	<p><u>LOSS OF HORIZONTAL SYNC - VERTICAL SYNC SATISFACTORY</u></p> <p>Substitute V15. Check C65, C68, R92, R91, R7, L19 and other associated components.</p> <p><u>HORIZONTAL BENDING</u></p> <p>Check by substitution V11, V12 and V15. Check components associated with V15.</p>
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VIDEO

<p><u>LOSS OF VIDEO</u></p> <p>Substitute V7. Check C39, R43, R47, R46, L12 and other associated components.</p> <p><u>SOUND BARS (4.5MC BEAT)</u></p> <p>Adjust tuner fine tuning for best sound and picture. Check adjustment A8. Check video IF alignment.</p> <p><u>POOR CONTRAST</u></p> <p>Substitute V7. Check contrast control. Check L15, L16, R44, R42, C39 and other associated components.</p>	<p><u>NEGATIVE PICTURE</u></p> <p>Substitute V7. Check picture tube. Check R46, R47, R44, R45, L16, L15 and other associated components.</p> <p><u>SMEAR</u></p> <p>Substitute V7. Check video detector network. Check L12, L13, L15, L16, C39 and other associated components.</p> <p><u>WIDE BLACK BAR ACROSS PICTURE</u></p> <p>Check by substitution V1, V3, V4, V5, V6 and V7 for heater to cathode leakage.</p>
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AUDIO

<p><u>WEAK OR NO SOUND</u></p> <p>Check by substitution V8, V9 and V10. Check stages V9 and V10 using audio signal generator. Apply audio signal across R1B.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check ratio detector and audio IF stages for component failure or change of value.</td><td>Check C47, C48, C49, C50, C1B, C1C, R59, R57, T9, speaker and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check ratio detector and audio IF stages for component failure or change of value.	Check C47, C48, C49, C50, C1B, C1C, R59, R57, T9, speaker and other associated components.	<p><u>BUZZ</u></p> <p>Adjust tuner fine tuning for best sound and picture. Check adjustment A7 for minimum buzz. If still unsatisfactory, check audio IF alignment.</p> <p><u>DISTORTED</u></p> <p>Follow procedure outlined under "Weak or No Sound".</p>
If Satisfactory	If Unsatisfactory				
Check ratio detector and audio IF stages for component failure or change of value.	Check C47, C48, C49, C50, C1B, C1C, R59, R57, T9, speaker and other associated components.				

POWER

<p><u>DEAD SET</u></p> <p>If filaments fail to light, check M1 fuse. Check AC interlock assembly. Check switch on volume control and T1. If filaments light, substitute V19. Check B+ filter and decoupling network.</p>	<p><u>SMALL AND/OR DIM PICTURE</u></p> <p>Substitute V19. Check B+ filter and decoupling network.</p>
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TROUBLE SHOOTING AIDS (cont)

HIGH VOLTAGE

<p><u>LOSS OF HIGH VOLTAGE</u></p> <p>Check by substitution V15, V16, V17 and V18. Check M2 fuse. Check waveform W14.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T3, T5A, T7, T8, C79, C77, C78, C76, R103 and other associated components.</td><td>Check L19, C69, C72, C73, C75, R99, R91, R92, R98 and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check T3, T5A, T7, T8, C79, C77, C78, C76, R103 and other associated components.	Check L19, C69, C72, C73, C75, R99, R91, R92, R98 and other associated components.	<p><u>INSUFFICIENT HIGH VOLTAGE</u></p> <p>Check by substitution V16, V17 and V19. Check C75, R103, R104, T3, T5A and other associated components. Check adjustments B3, B4 and B5.</p> <p><u>BLOOMING</u></p> <p>Check by substitution V16, V17, V18 and V19. Check R108, R103, C75 and other associated components.</p>
If Satisfactory	If Unsatisfactory				
Check T3, T5A, T7, T8, C79, C77, C78, C76, R103 and other associated components.	Check L19, C69, C72, C73, C75, R99, R91, R92, R98 and other associated components.				

GENERAL

<p><u>RASTER, SOUND, NO PICTURE</u></p> <p>Follow procedure outlined under "Loss of Video".</p> <p><u>RASTER, PICTURE, NO SOUND</u></p> <p>Follow procedure outlined under "Weak or No Sound".</p> <p><u>RASTER, NO SOUND, NO PICTURE</u></p> <p>Check by substitution V1, V2, V3, V4, V5, V6 and V7. Check video IF components for failure or change of value.</p>	<p><u>NO RASTER, NO SOUND</u></p> <p>Follow procedure outlined under "Dead Set".</p> <p><u>KEYSTONE EFFECT</u></p> <p>Check T5 and its associated components.</p> <p><u>INTERMITTENT STREAKS</u></p> <p>Check high voltage section for corona discharge and arcing.</p>
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Symptoms shown are assumed and are not indicative of the quality and workmanship of this equipment.

MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39, 21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)

PARTS LIST AND DESCRIPTIONS (Continued)
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MAJESTIC PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.	
T9	8.2KΩ	3.9Ω	C-9.225-4	A-8114 ①	A-3020	S-9Z	Z1002	26848	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MAJESTIC PART No.	VIKING PART No.	QUAM PART No.	
SP1	10"	PM	3.9Ω	30-334A	10J10	10A31	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	MAJESTIC PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coils	0ΩCT	0Ω					
L2	Fil. Choke	0Ω						
L3	Neut. Coil	0Ω						
L4	RF, Mixer Grid, & Osc. Coils	0Ω						
L5	Fil. Choke	0Ω						
L6	RF Choke	0Ω						
L7	1st. Video IF	1Ω						
L8	RF Coil	1.3Ω						
L9	2nd. Video IF	.7Ω	.7Ω	C-1.553	17-1063	TV-116	6249	
L10	3rd. Video IF	.7Ω	.7Ω	C-1.553	17-1066	TV-116	6249	
L11	4th. Video IF	.7Ω	.7Ω	C-1.553	17-1063	TV-116	6249	
L12	Shunt Peak-ing Coil	14Ω		C-1.522-2	19-3500	TV-188	6174	470 Microhenries
L13	Series Peak-ing Coil	6.5Ω		C-1.522-4	19-3125		6153	126 Microhenries
L14	4.5MC Trap	8Ω		C-1.555	20-1004	TV-151	1469	
L15	Series Peak-ing Coil	7Ω		C-1.522-4	19-3125		6153	126 Microhenries
L16	Shunt Peak-ing Coil	14Ω		C-1.522-2	17-3500	TV-188	6174	470 Microhenries
L17	Sound IF	3.7Ω		C-1.529	20-1005	TV-151	1470	
L18	Ratio Det.	5.5Ω	1.8ΩCT	C-1.552	17-3497	TV-115	6205	Tertiary winding - .6Ω
L19	Horiz. Osc.	90Ω	37Ω	C-1.549	20-1402	TV-162	6265	Waveform winding -33Ω

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	MAJESTIC PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.
L20	.240ADC	69Ω	3.36HY	C-9.237-3	C-2334 ①	C-2981 ①	C-17X		26C48 ①

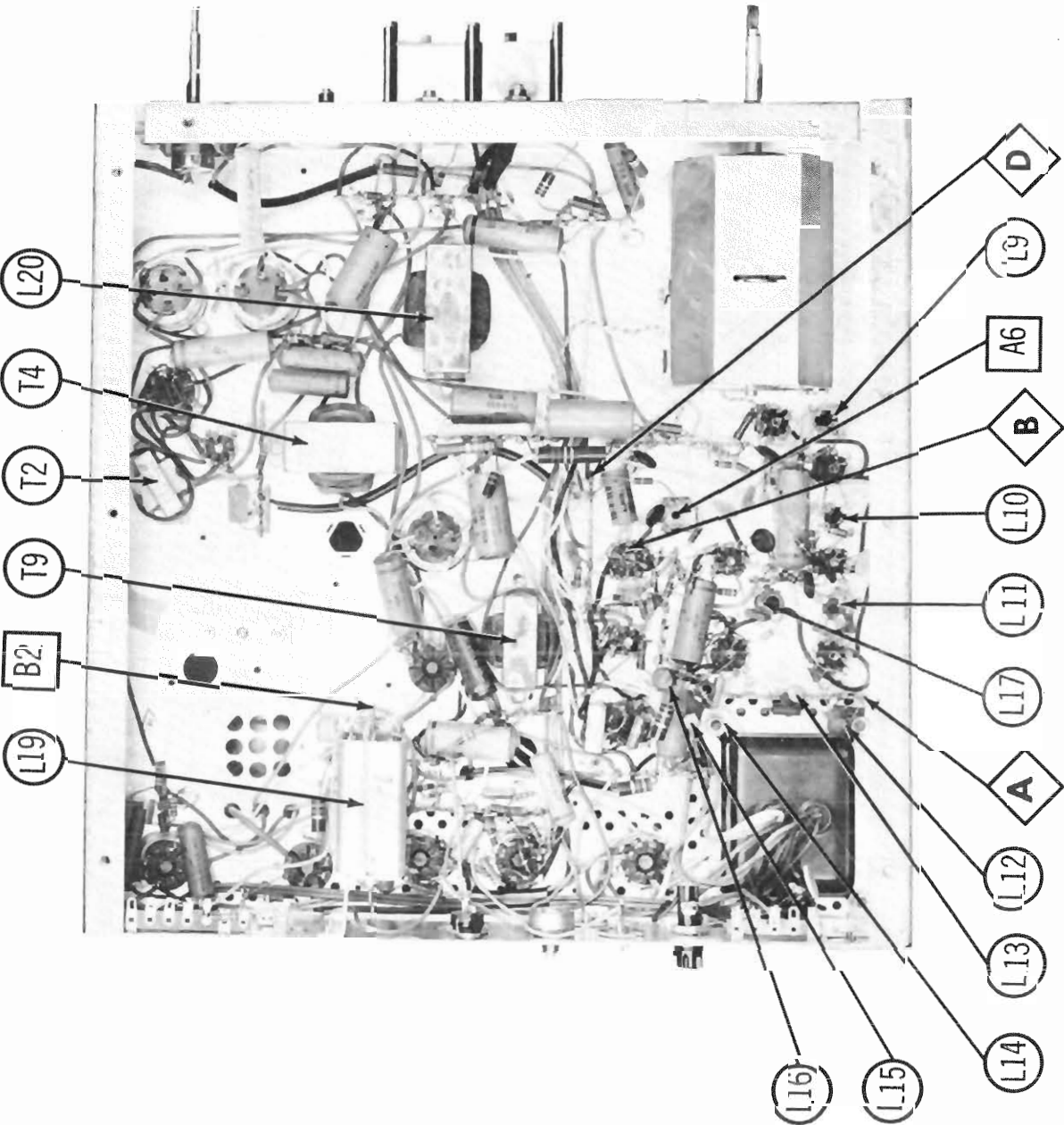
① Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MAJESTIC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3A 250V			312003. (3AG-3A)	342001	AGC3	HKP
M2	3AG	1/4A 250V			318.250 (3AG-Pigtail)		GJV 1/4	

MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
M3	Tuner	E-36.151	VHF
M4	Switch		TV-Phono (DPDT-Slide type)
M5	Switch		Local-fringe (DPDT-Slide type)
M6	Centering Device		
M7	Ion Trap		
B3	Trimmer Cap.	B-4.119-2	Horiz. Drive (40-370MMF)



MAJESTIC MODELS 21C36, 21C37, 21C38, 21C39, 21D56, 21D57, 21D58, 21D59, 21T22, 21T23 (Series 116)
NOTIFICATION: INWGNITG DNR ROLCNDNI "SNR-LWEI WOLLOB SISSHCH

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETMA BASE TYPE	NOTES
		MAJESTIC PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BQ7A	6BQ7A	9AJ	6BZ7 used as an alternate
V2	Mixer-Osc.	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB8	6CB8	7CM	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Det.	6AL5	6AL5	8BT	
V7	AGC Rectifier	6CL6	6CL6	9BV	
V8	Video Output	6AU6	6AU6	7BK	
V9	Sound IF Amp.				
	Ratio Detector-AF Amp.-AGC Clamper	6T8	6T8	9E	
V10	Audio Output	6K6GT	6K6GT	7S	
V11	Sync Separator	6BE6	6BE6	7CH	
V12	Vert. Sync - Cathode Follower	6SN7GT	6SN7GT	8BD	
V13	Vert. Osc.	6C4	6C4	8BG	
V14	Vert. Output	6BL7GT	6BL7GT	8BD	
V15	Horiz. Osc.	6SN7GT	6SN7GT	8BD	
V16	Horiz. AFC	6AV5GT	6AV5GT	8CK	
V17	Horiz. Output	6W4GT	6W4GT	4CG	
V18	HV Rectifier	1B3GT	1B3GT	3C	
V19	LV Rectifier	5U4GA	5U4GA	5T	

CAPACITOR-RAY TUBE

ITEM No.	MAJESTIC PART No.	REPLACEMENT DATA				RETMA BASE TYPE	NOTES
		CBS-HYTRON PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V20	21ZP4	21ZP4A ① 21ZP4B ① ②	21ZP4A ① 21ZP4B ① ②	21ZP4 21ZP4A ① 21ZP4B ① ②	21ZP4 21ZP4A ① 21ZP4B ① ②	12N 12N 12N	① Circuit change necessary. ② Aluminized

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						NOTES
	CAP.	VOLT	MAJESTIC PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C1A	40	450	C-5.435-1			FP375	TM-1057	T-720	
B	40	450							
C	100	50							
C2A	40	450	C-5.435-4			FP376.8	TM-104010-450	T-165	
B	40	450							
C	8	450							
C3A	40	450	C-5.435-1			FP375	TM-3057	T-720	
B	40	450							
C	100	50							
C4	4	100	C-5.430-1			TC46	TD-4-150	FM-150A	
C5	8	450				TC71	TD-8-450	FM-450B	
C6	8	450				TC71	TD-8-450	FM-450B	
C7	8	450				TC71	TD-8-450	FM-450B	
C8	8	450				TC71	TD-8-450	FM-450B	
C9	3-9		829-10						
C10	800								
C11	3		TCZ-3	NP0A-030		ZT-5533			
C12	800								
C13	1.5-3		829-3	3115-01-GR5		CT565A			
C14	1.5		TCZ-1.5	NP0A-1R5		ZT-5515			
C15	47		D6-470	831-470		UC-5447			
C16	1000		DD-102	801-001		DC-521			
C17	800								
C18	47		D6-470	831-470		UC-5447			
C19	5-3		829-3	3115-01-GR5		CT565A			
C20	10		TCN-10	N750K-100		NT-541			
C21	5								
C22	1000		DD-102	801-001		DC-521			
C23	6.8		TCZ-6.8	NP0A-6R8		ZT-5568			
C24	120		D6-121	811-121		UC-5312			
C25	800								
C26	800								
C27A	5000		B-4.125-1	DD2-502	811-005	DC-525			
B	5000				811-005	DC-525			
C28	5000		B-4.115-1	DD-502	811-005	DC-525			
C29A	5000		B-4.125-1	DD2-502	811-005	DC-525			
B	5000				811-005	DC-525			
C30A	5000		B-4.125-1	DD2-502	811-005	DC-525			
B	5000				811-005	DC-525			
C31	22	200	D-3.100-3			PT4022	IMP2-P22	3302122	
C32	5000		B-4.115-1	DD-502	811-005	DC-525		C-1250	
C33A	5000		B-4.125-1	DD2-502	811-005	DC-525		C-1250	
B	5000				811-005	DC-525		C-1250	
C34	5000		B-4.115-1	DD-502	811-005	DC-525		C-1250	
C35	5000		B-4.115-1	DD-502	811-005	DC-525		C-1250	
C36	10		C-4.109-1	D6-101	GPIK-101	UC-531		K-1310	
C37	10		C-4.109-1	D6-100	GPIK-100	UC-541		K-1410	
C38	10	500	D-4.104-31	TCZ-100	NP0-333-01	MCB235		KR-1316	
C39	600		D-3.105-23	DF-104		PT601	IMP6-P1	3304022	
C40	12	400	D-3.105-23			PT4022	IMP4-P2	3304022	
C41	3.3		C-4.111-5	TCZ-3.3	NP0A-3R3	ZT-5533			
C42	3	500	D-4.104-21	TCZ-39	NP0K-390	MCB233		KR-1433	
C43	5000		B-4.15-1	DD-502	81-005	DC-525		C-1250	
C44A	5000		B-4.15-1	DD2-502	81-005	DC-525		C-1250	
B	5000				811-005	DC-525		C-1250	
C45	1500		D-4.108-12	DD-152	801-0015	DC-5215		C-1215	
C46	1500		D-4.108-12	DD-152	801-0015	DC-5215		C-1215	
C47	.01	600		D6-103	GP2-333-103	PT611	IMP6-S1	330611	Note 1

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING		MAJESTIC PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	NOTES
	CAP.	VOLT							
C48 C49A B	5000 10000 250	}	B-4.115-1	DD-502	811-005	DC-525	IMP6-D5	C-1250	Note 2
C50	.0047		†B-10.103	†PC-80	†1404-01				
C51	1500		D-3.105-28	D6-472	GP2-333-472	PT6247	IMP6-D47	3306247	
C52	.1	600	D-4.108-12	DD-152	801-0015	DC-5215	C-1215	330601	
C53	1500	}	D-3.105-21	DF-104	PT601	IMP6-P1	C-1215	3304147	
C54	.047		D-3.105-16	D-6-152	GP2L-152	UC-5215	IMP4-S47	330611	
C55	.01		D-3.105-16	DF-503	GP2-333-103	PT6117	IMP6-S1	K-310	
C56	100	600	C-4.109-10	D6-101	GPIK-101	UC-531	C-220	C-250	
C57A B	2000 5000	}	†B-10.101	†PC-100	†1405-01	DC-522 DC-525 DC-526	IMP6-D2 IMP6-D5 IMP6-D6	C-1250 C-1250 CR-1247	
C58	4700		D-4.105-24			MCB465			
C59	.047		600	D-3.105-59					
C60	.035	600	D-3.100-46						
C61	.22	400	D-3.105-23			PT4022	IMP4-P22	3304022	
C62	.1	600	D-3.105-21	DF-104		PT601	IMP6-P1	330601	
C63	.047	600	D-3.105-34	DF-503		PT6147	IMP6-P47	3306147	
C64	.22	400	D-3.105-23			PT4022	IMP4-P22	3304022	
C65	.68	500	D-4.104-93	TCZ-68	NP0L-680	ZT-5468		KR-1464	
C66	.47	600	D-4.105-14	TCZ-47	NP0K-470	ZT-5447		KR-1447	
C67	.47	600	D-4.105-14	TCZ-47	NP0K-470	ZT-5447		KR-1447	
C68	.0022	600	D-3.105-26	D-6-222	GP2-333-222	PT6222	IMP6-D22	3306222	
C69	.05	400	D-3.105-19	DF-503		PT615	IMP4-S5	330415	
C70	.022	400	D-3.105-17	DF-203	817-02	PT4122	IMP4-S22	3304122	
C71	.22	200	D-3.100-30			PT4022	IMP2-P22	3302022	
C72	.33	500	D-4.104-59					KR-1331	
C73	.01	600	D-3.106-1						
C74	1200	500	D-4.105-9					CR-1222	
C75	.560	500	D-4.104-70					KR-1356	
C76	.047	600	D-3.105-34	DF-503		PT3147	IMP6-847	3306147	
C77	.047	600	D-3.105-59						
C78	.035	600	D-3.100-46						
C79	.25	200	D-3.100-30			PT4025	IMP2-P25	3302025	
C80	30	2000							
C81	.68	2000	B-4.129-4	DD30-680	3KV-680	DC30468		Note 3	
C82	.56	2000	B-4.129-6	DD30-560	3KV-560	DC30456			
C83	.560	20000	B-4.128	TV3-502	413	HV20035A			
C84	5000	1000	B-4.138						
C85	5000	1000	B-4.138						

Note 1: Some versions use .047MFD in this application (part #D-3.105-19).

Note 2: Not used in some versions.

Note 3: Some versions use 39MMF in this application (part #B-4.129-2).

† Items C48A, C49B, C49C, R57A and R57B are combined in one unit.

When replacing items separately C49B and C49C should total 250MMF.

* Items C57A, C57B, C57C, R76A, R76B and R76C are combined in one unit.

CONTROLS

ITEM No.	RATING RESIST. ANCE WATTS	REPLACEMENT DATA					INSTALLATION NOTES
		MAJESTIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	10000	C-8.230-3	*QJ-641	RTV-444	F1-5	UF13R	Contrast - Pinel
R1B	1Meg				R2-52	UR16A	Volume - Repr
R1C	Switch				KB-1	US-26	Attach to R1B
R2	2200	C-8.229-10	Q11-138	RTV-319	SVS-926	M2.5MPK	Focus (Wire wound)
R3A	1.5Meg	Not Req.	Not Req.	A47-15Meg-S	AB-75	J-155	Vert. Hold
R4A	5000	C-8.207-8	Q11-114	A47-5000-S	AK-4	Not Req.	Attach to R3A
R5	5000	C-8.229-9	Q11-128	FKS-1/4	AB-30	Not Req.	Vert. Linearity - NoteAttach to R4A
R6A	100K	C-8.229-9	Q11-128	A47-100K-S	AB-40	Not Req.	Brightness
R7A	2.5Meg	C-8.219-5	Q11-239	FKS-1/4	AB-83	Not Req.	Attach to R5A
R8A	5Meg	C-8.219-7	Q11-123	A47-50K-S	B-31	Not Req.	Vert. Size
R9A	5Meg	C-8.219-1	Q11-141	FKS-1/4	AK-1	Not Req.	Attach to R6A
R10A	5Meg				RS-2	Not Req.	Horiz. Hold
R11A	5Meg				AB-87	Not Req.	Attach to R7A
R12A	5Meg				AK-1	Not Req.	Sync Stabilizer
R13A	5Meg						Attach to R8A

Note: Some versions may use an alternate control part no. C-8.206-6.

* CONCENTRIT EQUIVALENT: KIT K-4, BASE ELEMENTS & SHAFTS: 817-108 & PI-126 (PANEL)

RESISTORS

RESISTORS					
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MAJESTIC PART No.	IRC PART No.	
R9	47K			13TS-47K	
R10	15K			13TS-15K	
R11	220K			13TS-220K	
R12	330K			13TS-330K	
R13	1500			13TS-1500	
R14	220K			13TS-220K	
R15	10K			13TS-10K	
R16	101K			BTS-10K	
R17	15K			BTS-15K	
R18	2200	1	D-7.102-38	BTA-220	
R19	12K	2	D-7.103-132	BTB-12K	
R20	100K		D-7.101-100	BTS-100K	
R21	470K		D-7.101-129	BTS-470K	
R22	470K		D-7.101-3	BTS-470	
R23	101Meg		D-7.101-192	BTS-101Meg	
R24	4700K		D-7.101-44	BTS-4700	
R25	470K		D-7.101-128	BTS-470K	
R26	4700K		D-7.101-44	BTS-4700	
R27	330K		D-7.101-237	BTS-330	
R28	47K		D-7.101-250	BTS-47	
R29	100K		D-7.101-226	BTS-100	
R30	8200K		D-7.101-55	BTS-8200	
R31	470		D-7.101-250	BTS-47	
R32	100K			D-7.101-226	BTS-100
R33	12K			D-7.101-62	BTS-12K
R34	150K			D-7.101-248	BTS-150
R35	100K			D-7.101-226	BTS-100
R36	150K			D-7.101-204	BTS-150
R37	680K			D-7.101-134	BTS-680K
R38	680K			D-7.101-134	BTS-680K
R39	10K			D-7.101-58	BTS-10K
R40	4700K			D-7.101-44	BTS-4700
R41	150K			D-7.101-107	BTS-150K
R42	33K			D-7.101-256	BTS-33
R43	22K	2		D-7.103-142	BTS-22K
R44	15K			D-7.101-65	BTS-15K
R45	15K			D-7.101-65	BTS-15K
R46	2700K			D-7.103-104	BTB-2700
R47	2700K	2		D-7.103-104	BTB-2700
R48	47K			D-7.101-87	BTS-47K
R49	220K			D-7.101-114	BTS-220K
R50	47K			D-7.101-87	BTS-47K
R51	100K			D-7.101-226	BTS-100
R52	47K			D-7.101-86	BTS-47K
R53	1000K			D-7.101-17	BTS-100K
R54	15K			D-7.101-66	BTS-15K