

# SYLVANIA

GENERAL TELEPHONE & ELECTRONICS  
**FACTORY PREPARED**

## **TECHNICAL SERVICE DATA**

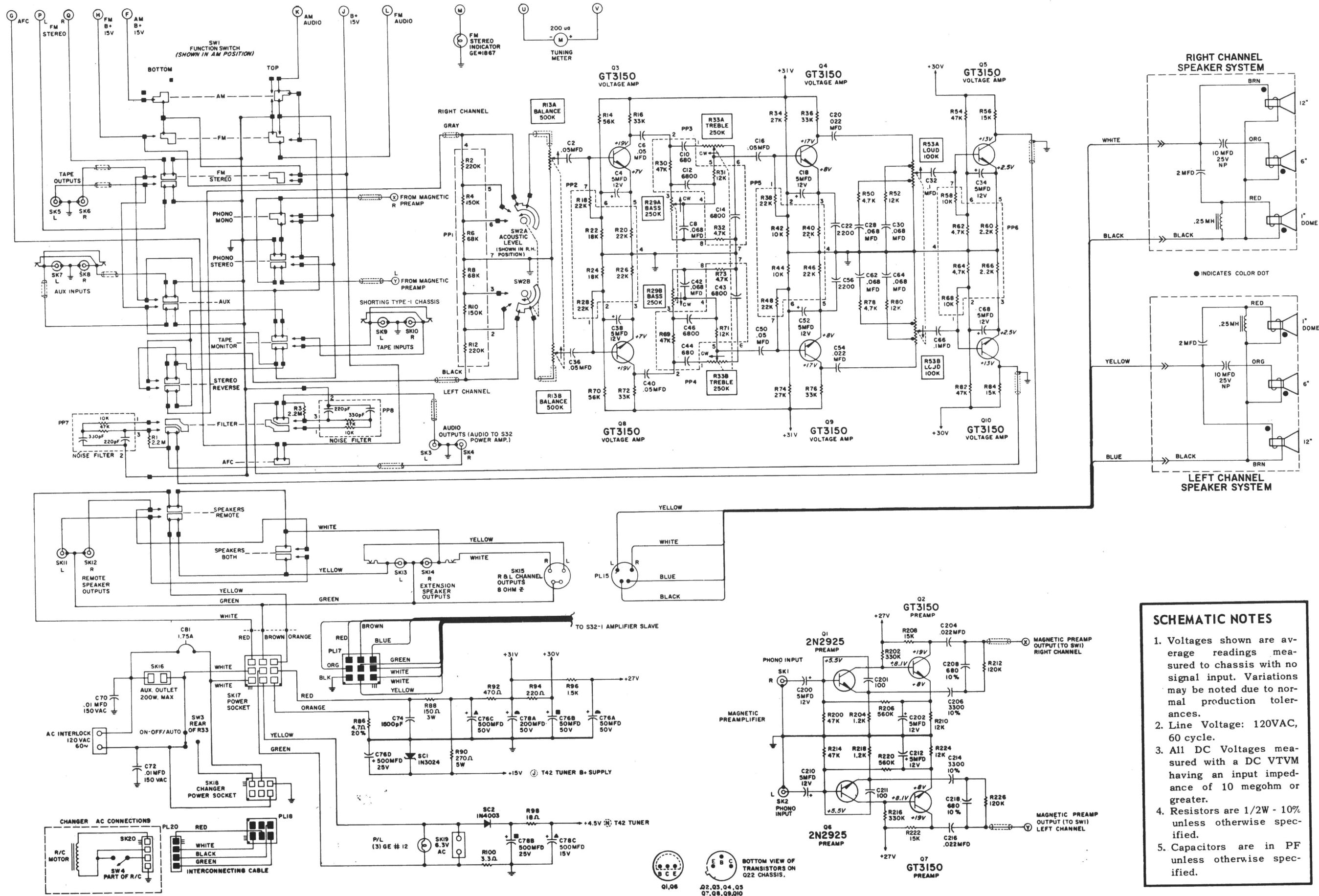
**Covering 1965 Production of**



MODEL: SC916  
AMP. CHASSIS: Q22-1  
POWER AMP: S32-1  
AM/FM TUNER: T42-1  
R/C: 11-14654-1

Sylvania Stereo Hi-Fi Amplifier Chassis Q22-1,-2

SCHEMATIC DIAGRAM



AIR SUSPENSION SPEAKER SYSTEM

The two separate speaker chambers are built to a carefully - calculated size and have a predetermined volume of air - - - sealed to function as an air tight infinite baffle. Speaker replacement is accomplished from the REAR of the cabinet only. Access to the speakers is provided when the back panel of the speaker chamber is removed.

LAMP REPLACEMENT

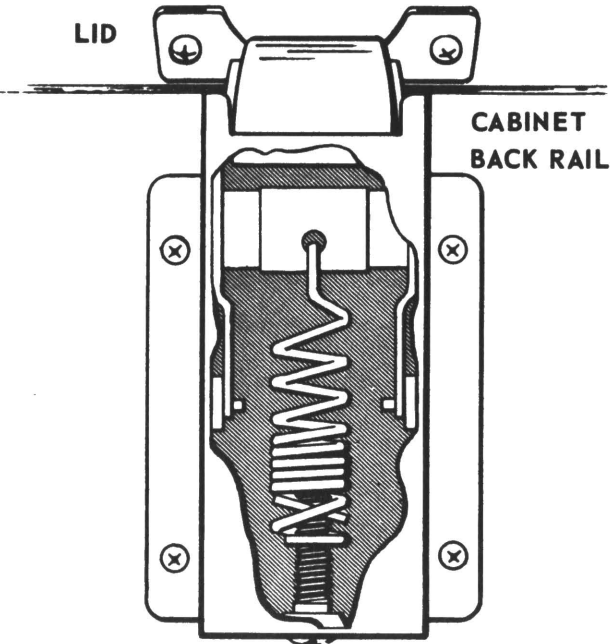
Cabinet Pilot Lamp Replacement - Use Sylvania Part #611-0012 (GE#12) or EQUIVALENT TYPE BULB. Remove lamp holder at the inside bottom center of the cabinet to gain access to the bulb.

Dial Glass and Tuning Meter Lamp Replacement - Use Sylvania Part #611-0012 (GE#12) or EQUIVALENT TYPE BULB. Remove chassis as outlined under CHASSIS REMOVAL to gain access to the bulbs.

Stereo Indicator Lamp Replacement - Use Sylvania Part #30-14005-1 (GE#1867) or EQUIVALENT TYPE BULB. Remove chassis as outlined under CHASSIS REMOVAL to gain access to the bulb.

Record Changer Compartment Lamp Replacement - Use Sylvania Part #611-0012 (GE#12) or EQUIVALENT TYPE BULB. Remove front panel inside the Record Changer compartment. The lamp is located behind the lens, accessible only after the panel is removed.

HINGE ADJUSTMENT



LID SUPPORT ADJUSTMENT SCREW  
(Adjust when lid is open. Screw adjusts tension on spring. When properly adjusted, lid should stay in place when opened 4" -5".)

SPECIFICATIONS

Rated EIA Music Power:	200 watts	FM Quieting Sensitivity:	2 $\mu$ V
Peak Power:	320 watts	FM Sensitivity (IHF):	3 $\mu$ V
Amplifier Frequency Response:	10-75,000 c.p.s. $\pm 3$ db	Full Limiting:	4 $\mu$ V
Power Response:	15-15,000 c.p.s. (half power points)	FM Stereo Separation:	35 db
Distortion:	0.3% total harmonic distortion at 50 watts per channel	Speaker Impedance:	8 ohms
		Stylus Pressure:	2.5 $\pm$ 1/4 Gram

CHASSIS REMOVAL

- Q22 CHASSIS
1. Disconnect AC power plug from power outlet.
  2. IDENTIFY and disconnect the following on Q22 chassis.  
A. Antenna lead connections on antenna terminal board.  
B. Record changer power plug on chassis.  
C. Phono input leads on chassis.  
D. Audio output leads on chassis.  
E. Chassis power plug on chassis.  
F. Cabinet pilot lamp connector on bottom rear of chassis.  
G. Speaker connector plug on bottom of jack plate.
  3. Remove screws anchoring AC interlock to the base of the cabinet.
  4. Remove the two (2) screws securing antenna terminal board to cabinet.
  5. Remove the jack plate from the rear of the cabinet. (After chassis is removed, fasten the jack plate to the front panel of the chassis.

6. Remove control knobs and push buttons on the control panel by pulling straight up.
7. Remove four (4) screws securing escutcheon to chassis.
8. Remove screws securing chassis to chassis pan. Pull top of chassis out (to free chassis tabs from pan) and down; remove chassis.
9. To replace chassis reverse the above procedure making certain all leads are replaced in their original position.

- S32 CHASSIS
- IDENTIFY and disconnect the following:
- A. Channel input leads on chassis.
  - B. Remove chassis power cable from Q22 chassis.
  - C. Remove screws securing chassis to cabinet and remove chassis from cabinet.
  - D. To replace chassis reverse the above procedure making certain all leads are replaced in their original position.

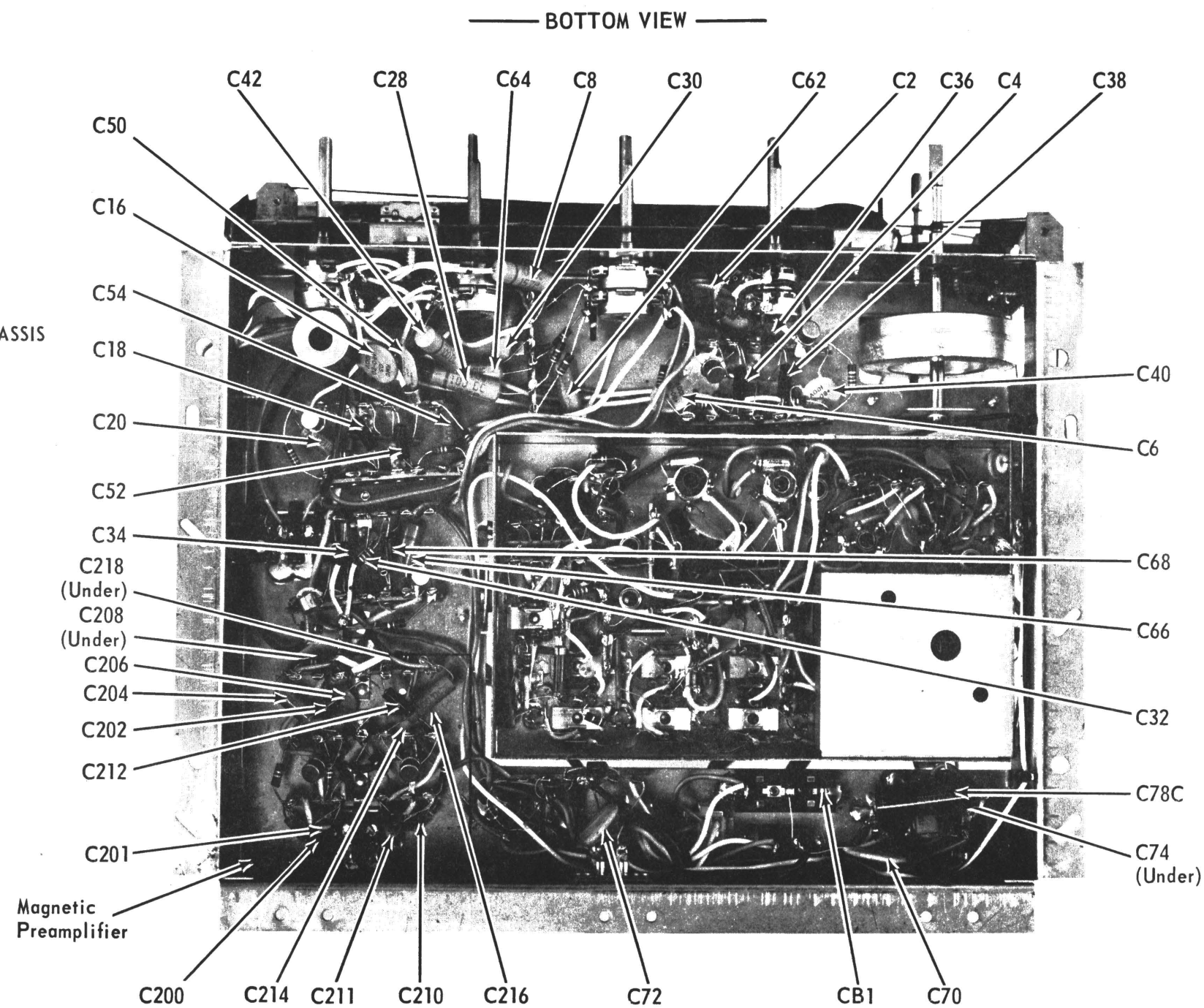
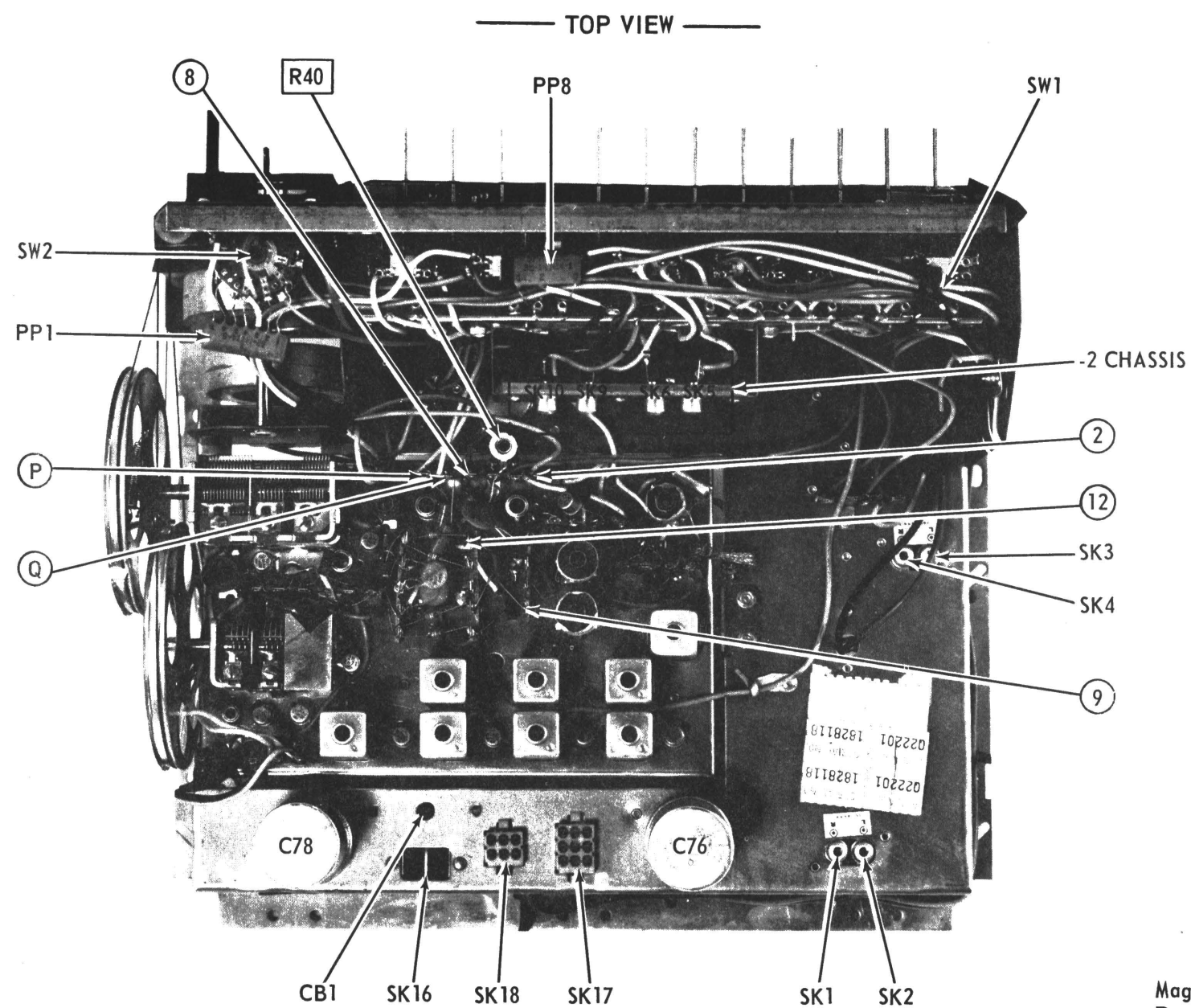
CABINET PARTS LIST

MODELS

DESCRIPTION	SC911W	SC916C	SC917PW	SC918P	SC919K	SCT923C
Back Cover	85-18557-1	85-18557-2	85-18557-3	85-18557-4	85-18557-6	85-18558-1
Bezel - Control Escutcheon	74-18091-1	74-18091-1	74-18091-1	74-18091-1	74-18091-1	74-18091-1
Bezel - Overlay	74-18090-1	74-18090-1	74-18090-1	74-18090-1	74-18090-1	74-18090-1
Button - Level Switch	74-18213-1	74-18213-1	74-18213-1	74-18213-1	74-18213-1	74-18213-1
Cabinet						
Lid Support	74-96125-10	74-96125-10	74-96125-10	74-96125-10	74-96125-10	74-96125-10
Hinge - Lid	70-83929-11	70-83929-11	70-83929-11	70-83929-11	70-83929-11	70-83929-11
Hinge - Decorative		70-83929-26		70-83929-22	70-83929-21	
Tutch Latch	70-56693-2	70-56693-2	70-56693-2	70-56693-2	70-56693-2	70-56693-2
Strike	70-56693-3	70-56693-3	70-56693-3	70-56693-3	70-56693-3	70-56693-3
Spring Latch	77-18601-1	77-18601-1	77-18601-1	77-18601-1	77-18601-1	77-18601-1
Magnetic Catch & Strike		70-56693-5				
Doors - Speaker - RH	10-88872-44	10-88872-26	74-14846-1	10-88872-37	10-88872-42	10-88872-35
Doors - Speaker - LH	10-88872-45	10-88872-26	74-14846-1	10-88872-38	10-88872-43	10-88872-36
Hardware - Corner			74-86842-43			
Hardware - Center Panel		74-86842-72	74-86842-78	74-86842-83		74-13827-1
Hardware - Pulls (Doors)	74-13827-16			74-86842-84	74-86842-96	74-86842-99
Hardware - Back Plate (Pulls Center Doors)					74-86842-97	74-13827-2
Hardware - Back Plate (Pulls Sliding Doors)					74-86842-98	
Curtain		10-96198-70		10-96198-71		
Casters		70-18651-1	70-18651-1	70-18651-1	70-18651-1	70-18651-1
Bracket - Caster Mtg.		10-86915-30	10-86915-30	10-86915-30	10-86915-28	10-86915-30
Grille Cloth			10-96198-75	10-96198-76		
Cartridge	11-18561-1	11-18561-1	11-18561-1	11-18561-1	11-18561-1	11-18561-1
Stylus	11-10329-18	11-10329-18	11-10329-18	11-10329-18	11-10329-18	11-10329-18
Clip - Small Spindle	70-14178-2	70-14178-2	70-14178-2	70-14178-2	70-14178-2	70-14178-2
Cup - 45 RPM Spindle	74-98769-1	74-98769-1	74-98769-1	74-98769-1	74-98769-1	74-98769-1
Jewel - Cabinet	74-14843-5	74-14843-5	74-14843-5	74-14843-5	74-14843-5	74-14843-5
Lens - Compartment Light	74-14150-1	74-14150-1	74-14150-1	74-14150-1	74-14150-1	74-14150-1
Knob - Control - Treble, Bass, Loudness, Balance	74-18185-1	74-18185-1	74-18185-1	74-18185-1	74-18185-1	74-18185-1
- Tuning	74-18165-2	74-18165-2	74-18165-2	74-18165-2	74-18165-2	74-18165-2
Insert - Knob - Treble, Bass, Loudness, Balance	74-18382-1	74-18382-1	74-18382-1	74-18382-1	74-18382-1	74-18382-1
- Tuning	74-18166-2	74-18166-2	74-18166-2	74-18166-2	74-18166-2	74-18166-2
Push - Button	74-14666-2	74-14666-2	74-14666-2	74-14666-2	74-14666-2	74-14666-2
Spindle - 45 RPM	11-14705-1	11-14705-1	11-14705-1	11-14705-1	11-14705-1	11-14705-1
Plug - Amplifier (4 Connector)	73-10302-3	73-10302-3	73-10302-3	73-10302-3	73-10302-3	73-10302-3
Plug - Amplifier (6 Connector)	73-10302-5	73-10302-5	73-10302-5	73-10302-5	73-10302-5	73-10302-5
Plug - Speaker Output	73-18521-1	73-18521-1	73-18521-1	73-18521-1	73-18521-1	73-18521-1
Speakers - 1" Dome	12-14959-1	12-14959-1	12-14959-1	12-14959-1	12-14959-1	12-14959-1
Speakers - 6" PM	12-18503-1	12-18503-1	12-18503-1	12-18503-1	12-18503-1	12-18503-1
Speakers - 12" PM	12-18453-1	12-18453-1	12-18453-1	12-18453-1	12-18453-1	12-18453-1
Microphone						12-18739-1
Speaker Crossover Network						
Capacitor - 2 MFD - 25V - NP	41-14304-2	41-14304-2	41-14304-2	41-14304-2	41-14304-2	41-14304-2
Capacitor - 10 MFD - 25V - NP	41-14304-4	41-14304-4	41-14304-4	41-14304-4	41-14304-4	41-14304-4
Choke - 25 MH	56-14305-1	56-14305-1	56-14305-1	56-14305-1	56-14305-1	56-14305-1

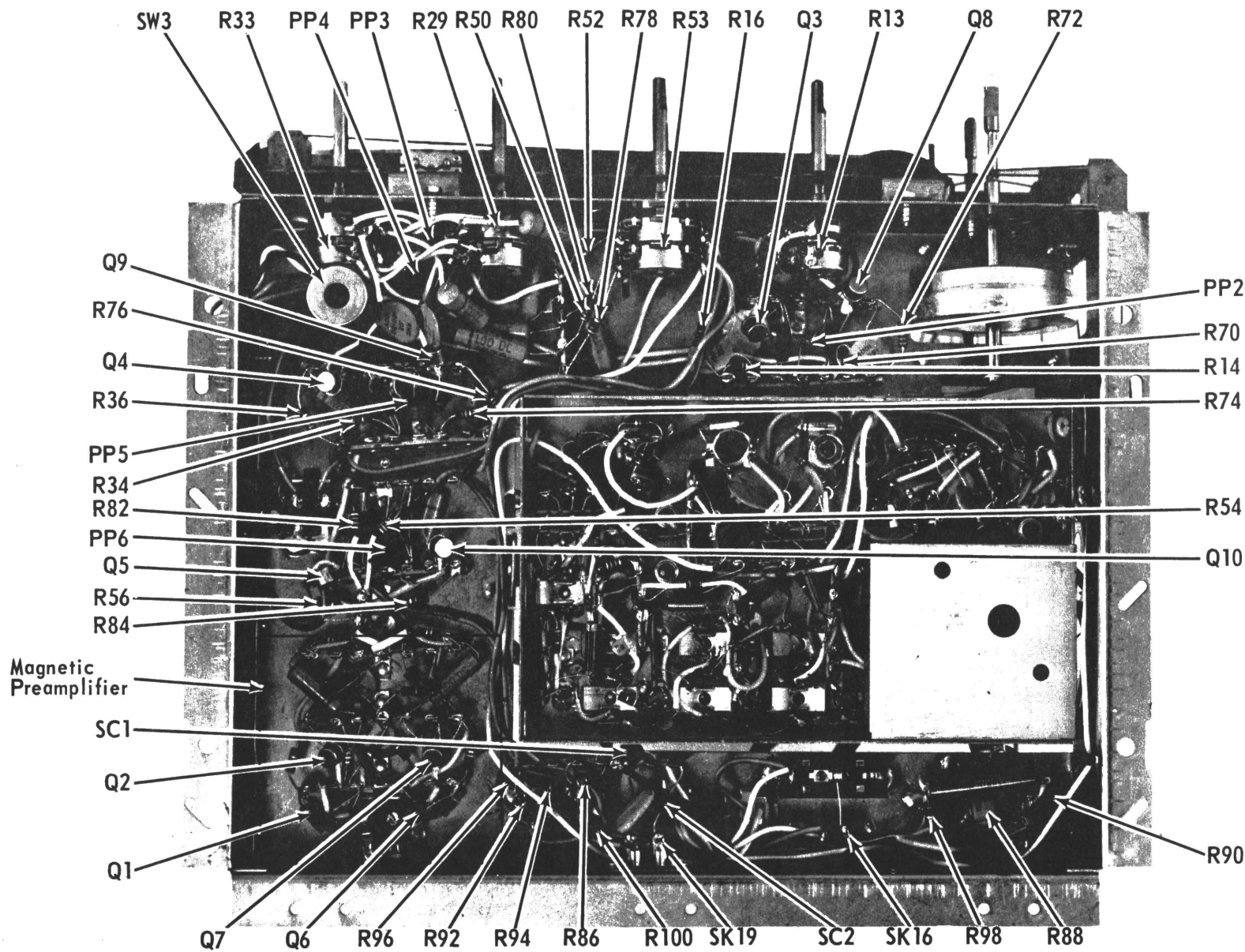


## Sylvania Stereo Hi-Fi Amplifier Chassis Q22-I,-2

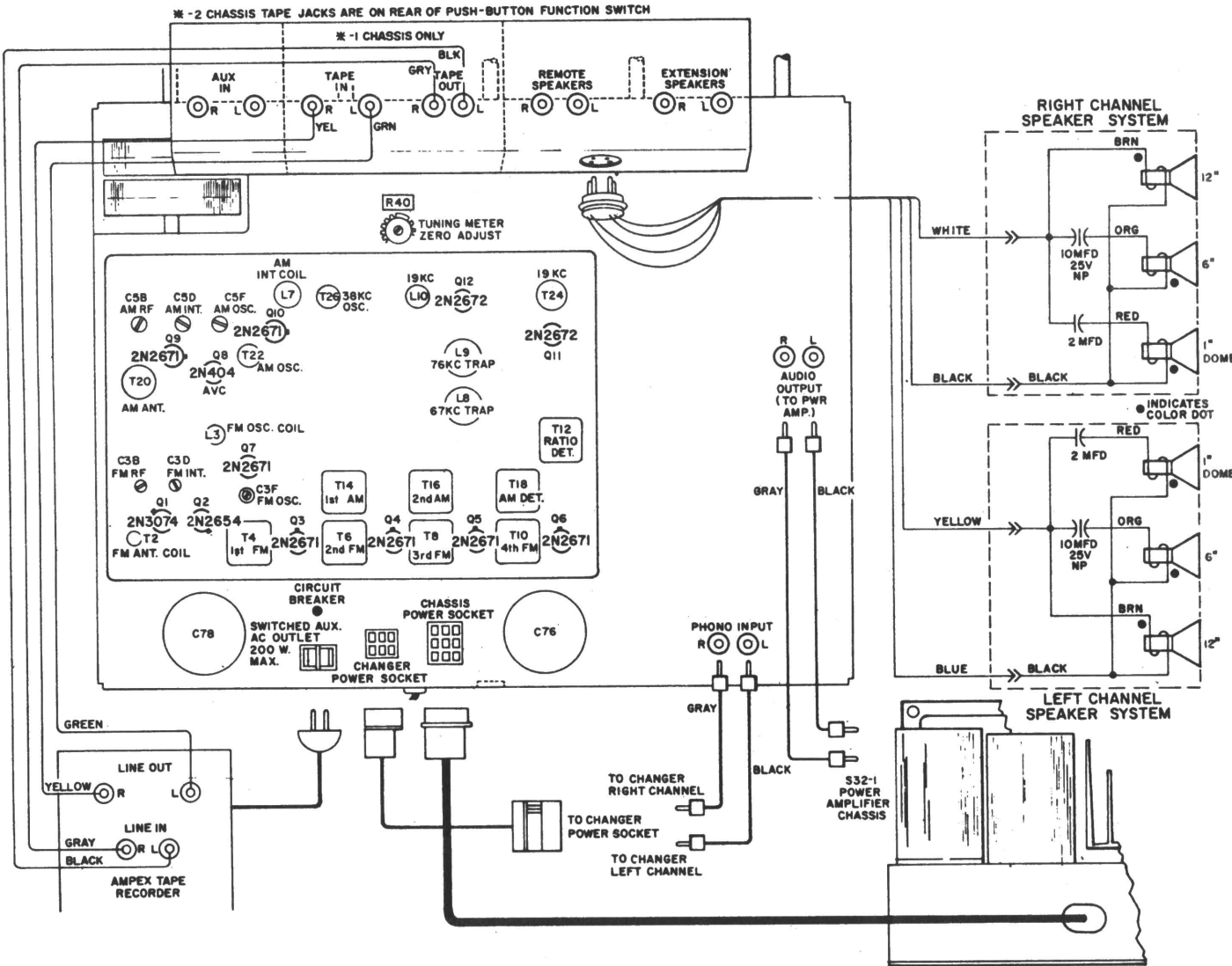




BOTTOM VIEW



CHASSIS LAYOUT



Sylvania Stereo Hi-Fi Amplifier Chassis Q22-I,-2

REPLACEMENT PARTS LIST

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
CAPACITORS (all 10% - 100V ceramic unless otherwise specified)		
C2		.05 MFD ( + 80 - 20)
C4	41-18226-4	5 MFD - Electrolytic - 12V
C6		.05 MFD ( + 80 - 20)
C8		.068 MFD
C10,C12,C14	Part of PP3	See "Misc. Elect. Parts"
C16		.05 MFD ( + 80 - 20)
C18	41-18226-4	5 MFD - Electrolytic - 12V
C20		.022 MFD
C22		2200 PF
C28,C30		.068 MFD
C32		.1 MFD
C34	41-18226-4	5 MFD - Electrolytic - 12V
C36		.05 MFD ( + 80 - 20)
C38	41-18226-4	5 MFD - Electrolytic - 12V
C40		.05 MFD ( + 80 - 20)
C42		.068 MFD
C43,C44,C46	Part of PP4	See "Misc. Elect. Parts"
C50		.05 MFD ( + 80 - 20)
C52	41-18226-4	5 MFD - Electrolytic - 12V
C54		.022 MFD
C56		2200 PF
C62,C64		.068 MFD
C66		.1 MFD
C68	41-18226-4	5 MFD - Electrolytic - 12V
C70,C72	169-0138	.01 MFD AC Bypass - 150 VAC
C74		1500 PF
C76	41-14771-1	4 Section Electrolytic
A		50 MFD - 50V
B		50 MFD - 50V
C		500 MFD - 50V
D		500 MFD - 25V
C78	41-14954-2	3 Section Electrolytic
A		200 MFD - 50V
B		500 MFD - 25V
C		500 MFD - 15V
MAGNETIC PREAMPLIFIER		
C200	41-18226-4	5 MFD - Electrolytic - 12V
C202	41-18226-4	5 MFD - Electrolytic - 12V
C204		.022 MFD
C206		3300 PF - 10%
C208		680 PF
C210	41-18226-4	5 MFD - Electrolytic - 12V
C212	41-18226-4	5 MFD - Electrolytic - 12V
C214		3300 PF
C216		.022 MFD
C218		680 PF
RESISTORS (all 10% - 1/2W unless otherwise specified)		
R1,R3		2.2 Megohm
R2,R4,R6	Part of PP1	See "Misc. Elect. Parts"
R8,R10,R12	Part of PP1	See "Misc. Elect. Parts"
R13	37-14435-14	Dual Balance Control
A		500K - RC
B		500K - LC
R14		56K
R16		33K
R18,R20,R22	Part of PP2	See "Misc. Elect. Parts"
R24,R26,R28	Part of PP2	See "Misc. Elect. Parts"
R29	37-14435-13	Dual Bass Control
A		250K - RC
B		250K - LC
R33	37-14435-12	Dual Treble Control and ON/OFF Switch
A		250K - RC
B		250K - LC
R34		27K
R36		33K

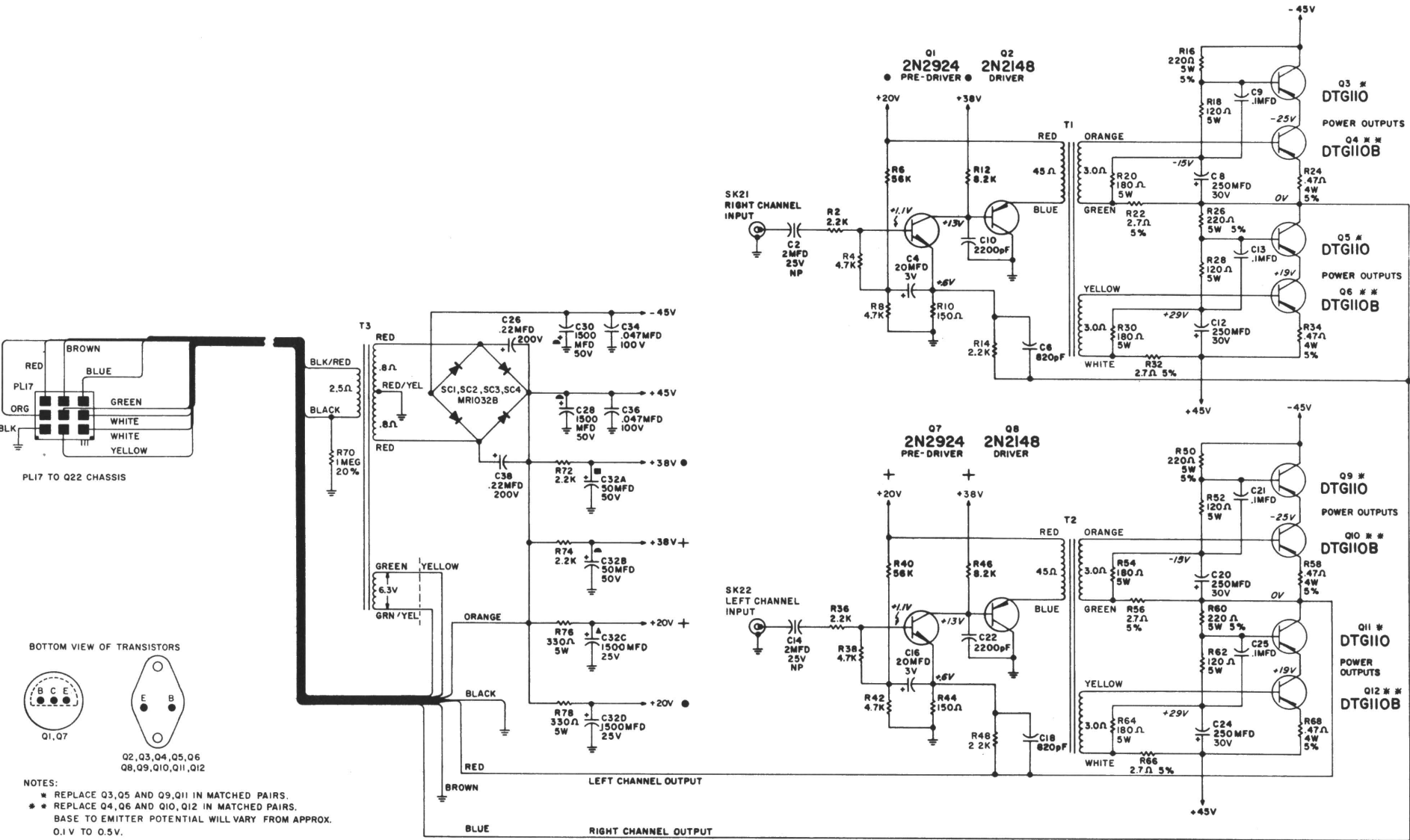
SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
RESISTORS (CONTINUED)		
R38,R40,R42	Part of PP5	See "Misc. Elect. Parts"
R44,R46,R48	Part of PP5	See "Misc. Elect. Parts"
R50		4.7K
R52		12K
R53	37-14591-15	Dual Loudness Control
A		100K - RC
B		100K - LC
R54		47K
R56		15K
R58,R60,R62	Part of PP6	See "Misc. Elect. Parts"
R64,R66,R68	Part of PP6	See "Misc. Elect. Parts"
R70		56K
R72		33K
R74		27K
R76		33K
R78		4.7K
R80		12K
R82		47K
R84		15K
R86		4.7 OHM - 20%
R88	187-0105	150 OHM - 3W
R90	36-62453-59	270 OHM - 5W
R92		470 OHM
R94		220 OHM
R96		1.5K
R98		18 OHM
R100		3.3 OHM
MAGNETIC PREAMPLIFIER		
R200		47K
R202		330K
R204		1.2K
R206		560K
R208		15K
R210		12K
R212		120K
R214		47K
R216		330K
R218		1.2K
R220		560K
R222		15K
R224		12K
R226		120K
MISCELLANEOUS ELECTRICAL PARTS AND TRANSISTORS		
CB1	29-88908-6	Circuit Breaker
PP1	32-14774-5	Plate - Level - RC & LC
R2,R12		220K
R4,R10		150K
R6,R8		68K
PP2	32-14774-1	Plate - Audio - RC & LC
R18,R28		22K
R20,R26		22K
R22,R24		18K
PP3,PP4	32-14775-1	Plate - Tone - RC & LC
C10,C44		680 PF
C12,C46		6800 PF
C14,C43		6800 PF
R30,R69		47K
R31,R71		12K
R32,R73		4.7K
PP5	32-14774-4	Plate - Audio - RC & LC
R38,R48		22K
R40,R46		22K
R42,R44		10K

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
MISCELLANEOUS ELECTRICAL PARTS AND TRANSISTORS (CONT.)		
PP6	32-14774-2	Plate - Audio - RC & LC
R58,R68		10K
R60,R66		2.2K
R62,R64		4.7K
PP7,PP8	32-14724-1	Plate - Noise Filter - RC & LC
SC1	13-14879-1	Diode - Zener/1N3024
SC2	13-18458-1	Diode - Rectifier/1N4003
SW1	33-18277-1	Switch - Function (12 Push-Button)
SW2	33-18192-1	Switch - Acoustic Level
SW3	Part of R33	Switch - ON/OFF
SW4	Part of R/C	Switch - Dual R/C
SK1,SK2	73-98079-2	Socket - Phone Input
SK3,SK4	73-98079-2	Socket - Audio Output
SK5,SK6	73-98079-2	Socket - Tape Output (-1 chassis)
SK5,6,9,10	73-18187-1	Socket - Tape - In & Out (-2 chassis)
SK7,SK8	73-18519-1	Socket - Aux. Input
SK9,SK10	73-18519-1	Socket - Tape Input (-1 chassis)
SK11,SK12	73-14829-1	Socket - Remote Speakers
SK13,SK14	73-18519-1	Socket - Extension Speakers
SK15	73-40669-1	Socket - Internal Speakers
PL15	73-18521-1	Plug - Internal Speakers
SK16	417-0009	Socket - Aux. Outlet
SK17	73-10302-6	Socket - Chassis Power
PL17	Part of S32	Plug - Chassis Power
SK18	73-10302-4	Socket - R/C Power
PL18	73-10302-5	Plug - 6 Connector
SK19	73-14688-1	Socket - Cabinet Pilot Lamps
SK20	Part of R/C	Socket - R/C Power
PL20	73-10302-3	Plug - 4 Connector
Q1,Q6	13-18363-1	Transistor - 2N2925
Q2,Q3,Q4,Q5	13-18654-1	Transistor - GT3150
Q7,Q8,Q9,Q10	13-18654-1	Transistor - GT3150

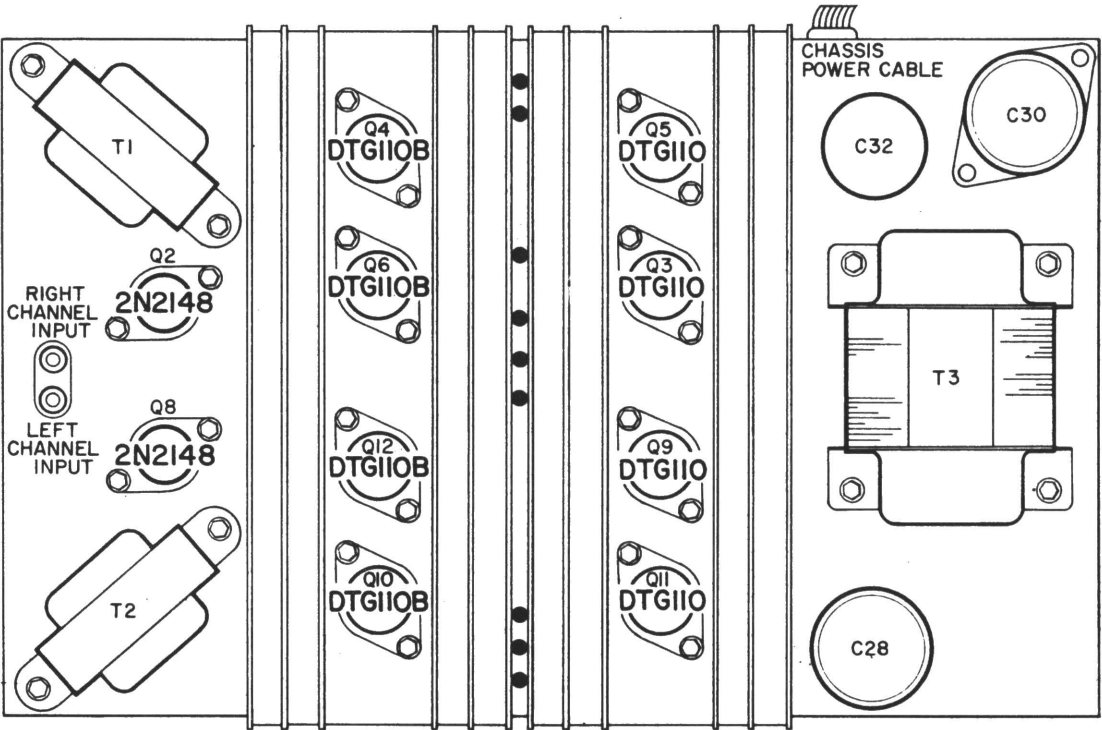
SERVICE PART NO.	DESCRIPTION
CHASSIS PARTS	
73-89236-3	AC Interlock Assembly
195-0061	AC Line Cord
81-87861-1	Retainer - AC Line Cord
73-10380-1	Antenna Board
74-18214-1	Dial - Background Overlay
74-18427-2	Dial - Glass
74-18374-2	Dial Pointer (FM)
74-18374-3	Dial Pointer (AM)
611-0012	Lamp - Pilot (GE #12)
30-14005-1	Lamp - Stereo Indicator (GE #1867)
74-18140-1	Jewel - Stereo Indicator
411-0043	Socket - Pilot Lamp/Clip
73-14973-1	Socket - Pilot Lamp (Dial Glass)
411-0045	Socket - Pilot Lamp (Cabinet)
73-14874-1	Socket - Stereo Ind. Lamp
72-14734-1	Socket - Transistor Miniature (T42 Chassis)
415-0010	Plug - Pilot Lamp (SK19)
81-18201-1	Slide - Acoustic Level Switch
81-18209-1	Pivot - Acoustic Level Switch
81-18212-1	Shaft - Acoustic Level Switch
84-14156-6	Shaft and Flywheel Assembly (AM)
84-14156-7	Shaft and Flywheel Assembly (FM)
496-0275	Spring - Dial Drive
25-18148-1	Tuning Meter
77-14867-1	Clip - Tuning Meter Mtg.

Sylvania Stereo Hi-Fi Power Amplifier Chassis S32-1

SCHEMATIC DIAGRAM



TOP PARTS LAYOUT

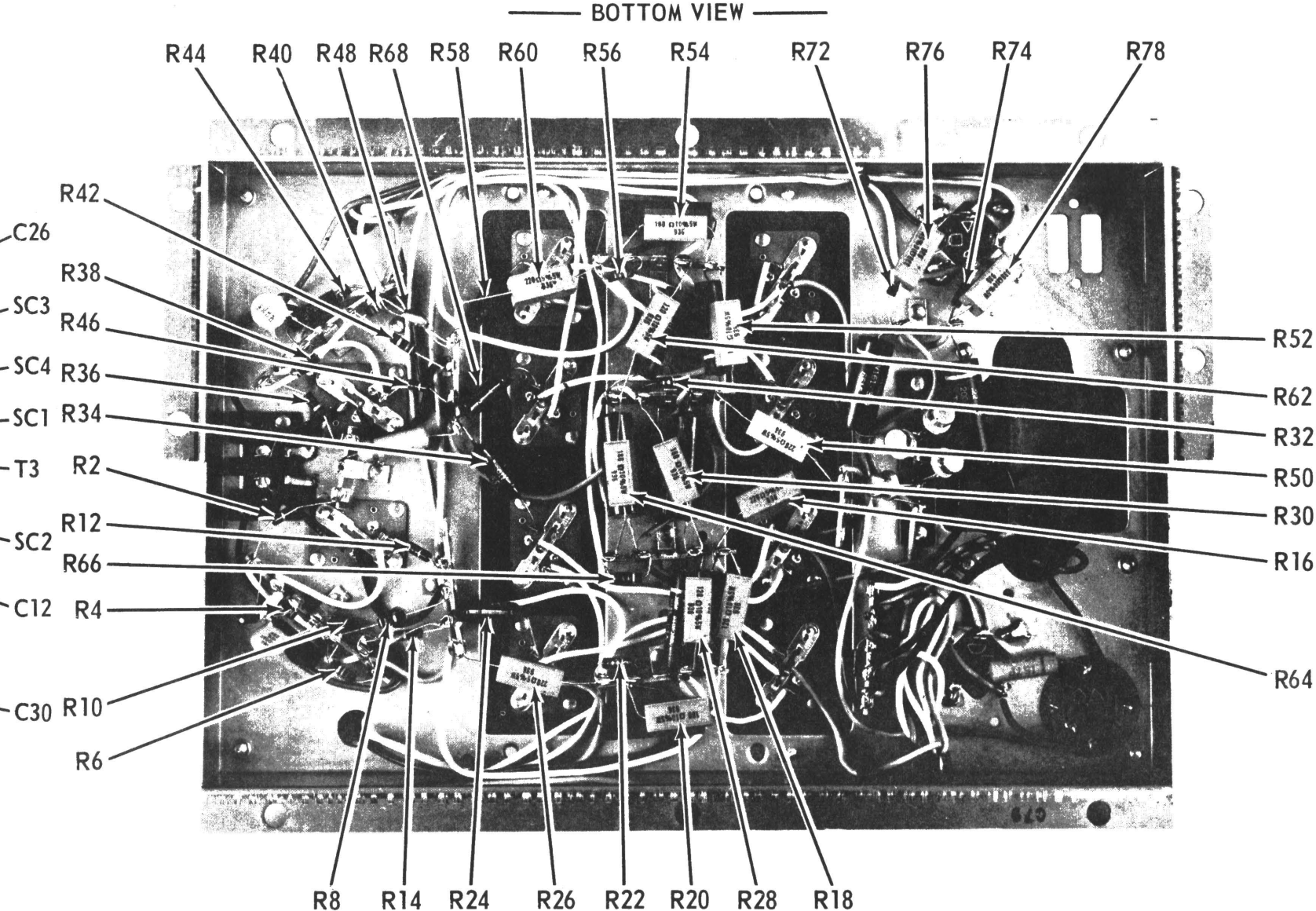
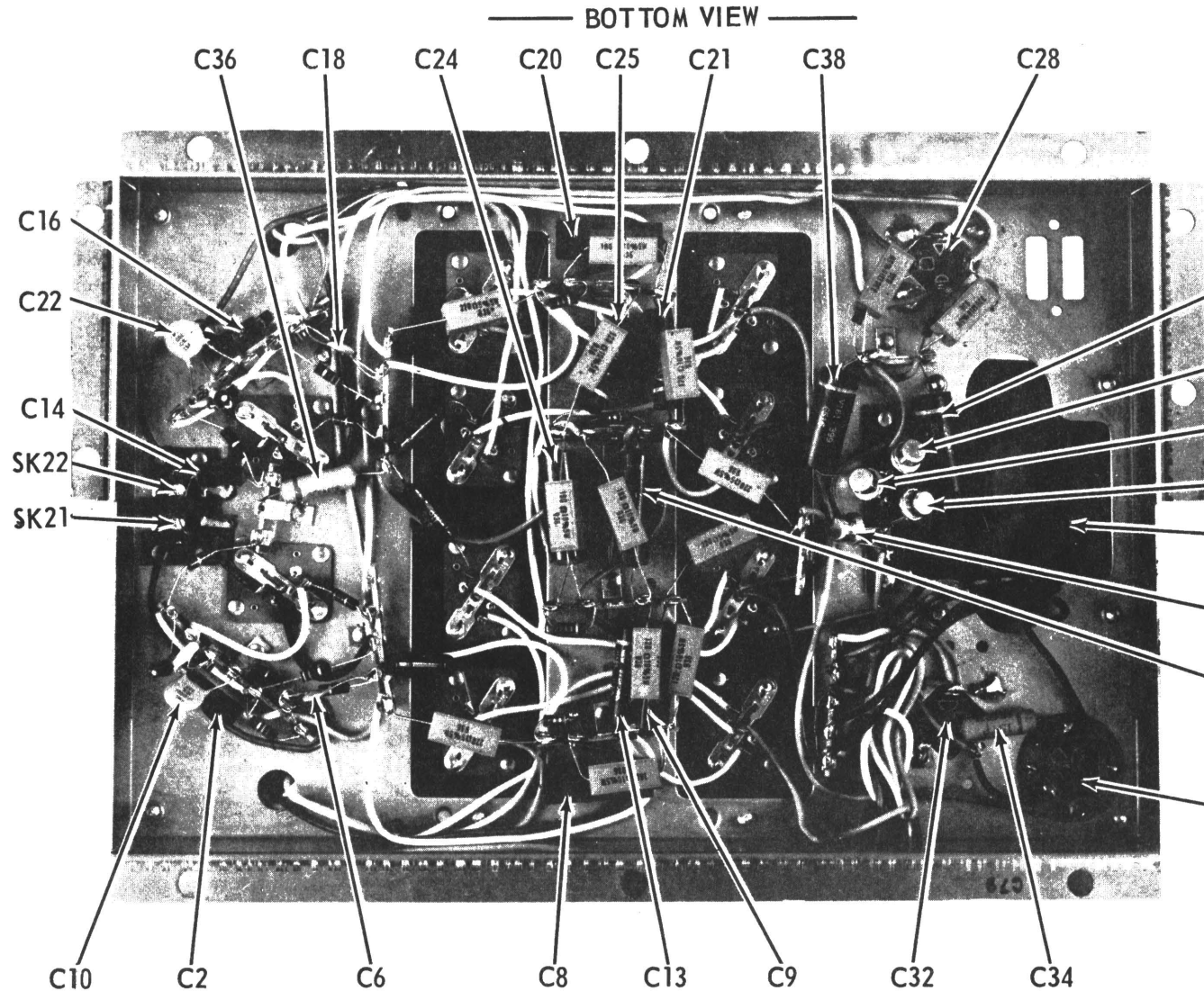


SCHEMATIC NOTES

1. Voltages shown are average readings measured to chassis with no signal input. Variations may be noted due to normal production tolerances.
2. Line Voltage: 120VAC, 60 cycle.
3. All DC Voltages measured with a DC VTVM having an input impedance of 10 megohm or greater.
4. Resistors are 1/2W - 10% unless otherwise specified.
5. Capacitors are in pF unless otherwise specified.



Sylvania Stereo Hi-Fi Power Amplifier Chassis S32-1



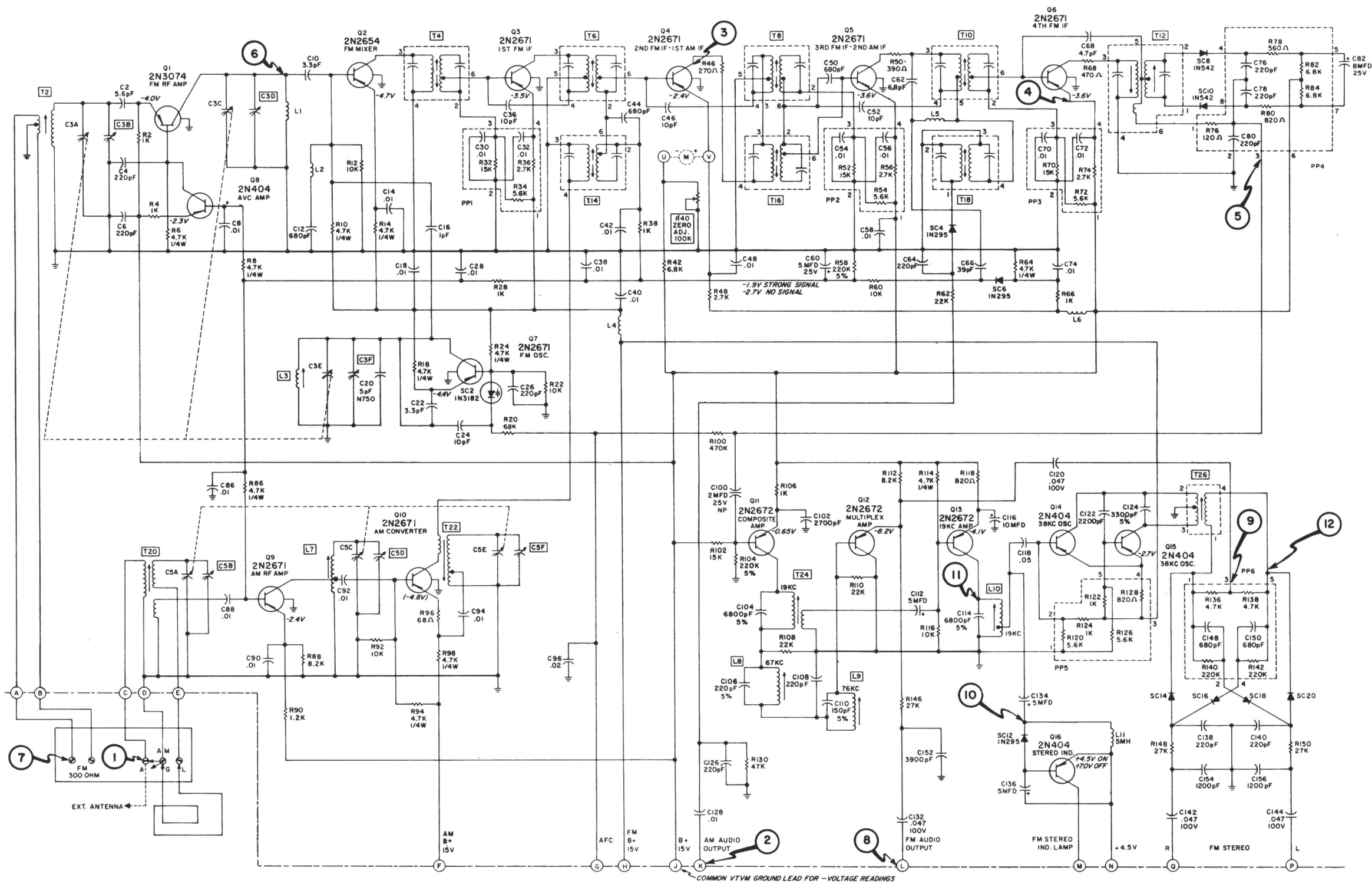
— REPLACEMENT PARTS LIST —

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
<b>CAPACITORS</b>		
C2	161-1085	2 MFD - 25V - NP
C4	41-10004-9	20 MFD - Electrolytic - 3V
C6		820 PF
C8	41-14594-6	250 MFD - Electrolytic - 30V
C9		.1 MFD
C10		2200 PF
C12	41-14594-6	250 MFD - Electrolytic - 30V
C13		.1 MFD
C14	161-1085	2 MFD - 25V - NP
C16	41-10004-9	20 MFD - Electrolytic - 3V
C18		820 PF
C20	41-14594-6	250 MFD - Electrolytic - 30V
C21		.1 MFD
C22		2200 PF
C24	41-14594-6	250 MFD - Electrolytic - 30V
C25		.1 MFD
C26		.22 MFD - 200V
C28	41-14772-1	1500 MFD - Electrolytic - 50V
C30	41-14772-1	1500 MFD - Electrolytic - 50V
C32	41-18285-1	4 Section Electrolytic
A		50 MFD - 50V
B		50 MFD - 50V
C		1500 MFD - 25V
D		1500 MFD - 25V

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
<b>CAPACITORS (CONTINUED)</b>		
C34		.047 MFD - 100V
C36		.047 MFD - 100V
C38		.22 MFD - 200V
<b>RESISTORS (all 1/2W - 10% unless otherwise specified)</b>		
R2		2.2K
R4		4.7K
R6		56K
R8		4.7K
R10		150 OHM
R12		8.2K
R14		2.2K
R16	187-0092	220 OHM - 5W - 5%
R18	187-0068	120 OHM - 5W
R20	36-62454-55	180 OHM - 5W
R22		2.7 OHM - 5%
R24	36-18482-9	.47 OHM - 4W - 5%
R26	187-0092	220 OHM - 5W - 5%
R28	187-0068	120 OHM - 5W
R30	36-62454-55	180 OHM - 5W

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
<b>RESISTORS (CONTINUED)</b>		
R32		2.7 OHM - 5%
R34	36-18482-9	.47 OHM - 4W - 5%
R36		2.2K
R38		4.7K
R40		56K
R42		4.7K
R44		150 OHM
R46		8.2K
R48		2.2K
R50	187-0092	220 OHM - 5W - 5%
R52	187-0068	120 OHM - 5W
R54	36-62454-55	180 OHM - 5W
R56		2.7 OHM - 5%
R58	36-18482-9	.47 OHM - 4W - 5%
R60	187-0092	220 OHM - 5W - 5%
R62	187-0068	120 OHM - 5W
R64	36-62454-55	180 OHM - 5W
R66		2.7 OHM - 5%
R68	36-18482-9	.47 OHM - 4W - 5%
R70		1 Megohm - 20%
R72		2.2K
R74		2.2K
R76	36-62454-61	330 OHM - 5W
R78	36-62454-61	330 OHM - 5W

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
<b>TRANSFORMERS</b>		
T1	56-18464-1	Transformer - Driver
T2	56-18464-1	Transformer - Driver
T3	55-14766-1	Transformer - Power
<b>MISCELLANEOUS ELECTRICAL PARTS</b>		
PL17	73-10302-7	Plug - Chassis Power
SK21,SK22	73-98079-2	Socket - Audio Input
SC1,2,3,4	13-18481-1	Rectifier - Silicon - MR 1032B
Q1,Q7	13-18363-1	Transistor - 2N2924
Q2,Q8	2N2148	Transistor - 2N2148
*Q3,Q5	2N301	Transistor - DTG110
*Q4,Q6	13-18642-1	Transistor - DTG110B
*Q9,Q11	2N301	Transistor - DTG110
*Q10,Q12	13-18642-1	Transistor - DTG110B
	86-14608-1	Insulator - Power Transistor (Mica)
	72-14607-1	Socket - Power Transistor
	86-61830-1	Insulator (Mtg. for C30)
*Replace in Matched Pairs		

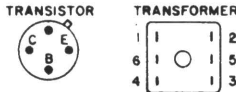


SCHEMATIC NOTES

1. Voltages shown are average readings measured with no signal input. Variations may be noted due to normal production tolerances. All negative transistor voltages are measured with common lead to B+ supply [J], using a VTVM. All + voltages are measured to chassis ground.
2. Voltages at points [F], [H], [J], and [N] are measured in respect to chassis ground.

3. Line Voltage: 120 VAC, 60 cycle.
4. All transistor base voltages will be approximately 0.2 volt more negative than emitter voltage.
5. Capacitors are in microfarads unless otherwise specified.
6. All voltages in brackets are measured in AM position.

TUNING METER ZERO ADJUSTMENT  
TUNE TO OFF STATION AND ADJUST [R40]  
FOR ZERO METER INDICATION.



AM/FM ALIGNMENT PROCEDURE

Alignment is an exacting procedure and should be undertaken only when necessary. If alignment of both AM and FM is required, the AM section should be aligned first. The following equipment is required for alignment.

- AM
- 1. Signal generator; frequency range of 455KC to 1650KC and 30% modulation.
  - 2. Oscilloscope or a sensitive AC VTVM

- FM (Method 1) - Sweep Generator Method
- 1. Sweep generator with a 10.7MC marker.

- 2. Signal generator, frequency range of 88MC to 108MC and 22 KC deviation.
- 3. Oscilloscope

- (Method 2) - DC Method (Alternate)
- 1. Signal generator; frequency range of 10.7MC to 108MC.
  - 2. DC VTVM (such as Hewlett - Packard VTVM) 20K ohm/volt meter or scope.

Allow test equipment several minutes warm-up time. During alignment keep generator output at lowest useable level. The RF shield cover must be on chassis during alignment.

AM ALIGNMENT

(Engage AM Push - Button)

STEP	TUNING CAPACITOR SETTING	TEST EQUIPMENT HOOK - UP	GENERATOR FREQUENCY	ADJUSTMENT POINT	ADJUST FOR
1	600 KC	SIGNAL GENERATOR - Signal to test point ①. Ground lead to ⑥ on antenna terminal board.	455 KC	T18 Bottom T18 Top T16 Bottom T16 Top T14 Bottom T14 Top	Maximum amplitude on scope or meter
2	600 KC	SIGNAL GENERATOR - Same as step 1.	600 KC	T22 Osc. Coil L6 Interstage Coil *T20 Ant. Coil	Maximum amplitude on scope or meter
* NOTE: When adjusting T20 Antenna Coil, the loop antenna on the cabinet must be used. Do this alignment with chassis in cabinet.					
3	1400 KC	SIGNAL GENERATOR - Same as step 1.	1400 KC	C5F AM Osc. Trimmer C5D AM Interstage Trimmer C5B AM Ant. Trimmer	Maximum amplitude on scope or meter
		VTVM or OSCILLOSCOPE - Same as step 1.			

FM ALIGNMENT

(Engage FM Push - Button)

STEP	TUNING CAPACITOR SETTING	TEST EQUIPMENT HOOK - UP	GENERATOR FREQUENCY	ADJUSTMENT POINT	ADJUST FOR
SWEEP GENERATOR METHOD					
1	108 MC	SWEEP GENERATOR - Signal to test point ③. Ground lead to chassis ground near Test Point ③.	10.7 MC marker	T10 Top T10 Bottom	Maximum gain and for symmetry of response curve.
		OSCILLOSCOPE - Vertical input to test point ④.			

STEP	TUNING CAPACITOR SETTING	TEST EQUIPMENT HOOK - UP	GENERATOR FREQUENCY	ADJUSTMENT POINT	ADJUST FOR
SWEEP GENERATOR (CONT.)					
2	108 MC	SWEEP GENERATOR - Same as step 1.	10.7 MC marker	T12 Top	Adjust for balanced "S" curve and centering 10.7 MC marker.
		OSCILLOSCOPE - Vertical input to test point ⑤.		T12 Bottom	Adjust for peak separation.
				Repeat T12 Top	
3	108 MC	SWEEP GENERATOR - Signal to test point ⑥. (thru hole on RF shield)	10.7 MC	T8 Bottom T8 Top T6 Bottom T6 Top T4 Bottom T4 Top	Maximum gain and for symmetry of response curve.
		OSCILLOSCOPE - Vertical input to test point ④.			
4	90 MC	SIGNAL GENERATOR - Signal to test point ⑦.	90 MC	L3 FM Osc. Coil L1 FM Interstage Coil (spread and close)	Maximum gain indication
		VTVM or OSCILLOSCOPE - Vert. input to test point ⑧.		T2 FM Ant. Coil	
5	106 MC	SIGNAL GENERATOR - Same as step 4.	106 MC	C3 FM Osc. Trim. C3D FM Interstage Trimmer C3B FM RF Trim.	Maximum gain indication
		VTVM or OSCILLOSCOPE - Same as step 4.			
		Repeat Step 4 & 5 until shift is noticed for proper tracking.			
PEAK METHOD					
1	108 MC	SIGNAL GENERATOR - Signal to test point ③. Ground lead to chassis ground near test point ③.	10.7 MC	T10 Bottom T10 Top T12 Bottom	Maximum gain indication
		DC VTVM - DC probe to test point ⑨. Ground lead to test point ⑩.			
2	108 MC	SIGNAL GENERATOR - Same as step 1.	10.7 MC	T12 Top	Zero DC Volts
		DC VTVM - DC probe to test point ⑤. Ground lead to test point ⑩.			



Sylvania AM/FM Tuner Chassis T42-1

MULTIPLEX ALIGNMENT PROCEDURE

PRELIMINARY INSTRUCTIONS

Multiplex alignment is very exacting and should not be undertaken unless absolutely necessary or adequate alignment equipment is available. The FM RF and FM IF sections MUST be properly aligned before proceeding with FM multiplex alignment.

Outlined below is an alternate method of FM MULTIPLEX ALIGNMENT using a standard Multiplex Broadcast as the signal source. Whenever FM multiplex alignment equipment is used, follow the procedures specified by the equipment manufacturer. Peaking of the 19KC and 38KC coils is easily accomplished. Correct phase relationship is absolutely essential for maximum channel separation.

MULTIPLEX ALIGNMENT

(Engage FM STEREO Push-Button)

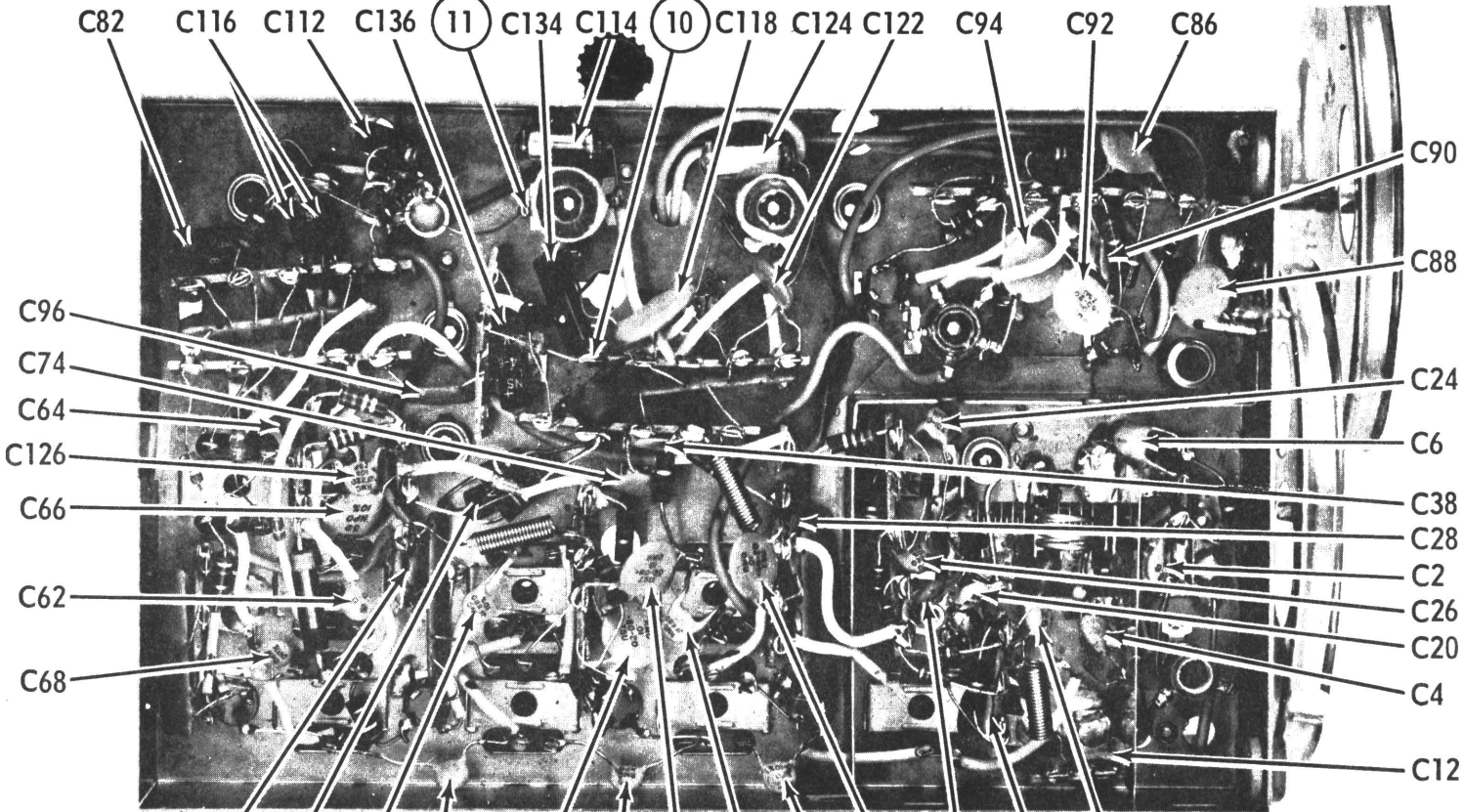
STEP	TEST EQUIPMENT HOOK - UP	SIGNAL USED	ADJUSTMENT POINT	ADJUST FOR
1	SIGNAL GENERATOR - Signal to test point 5 through a .01 mfd. capacitor.  AC VTVM - AC probe to test point 9.	76 KC  67.5 KC	L9 76 KC Trap  L8 67 KC Trap	Minimum Output indication  Minimum Output indication
2	AC VTVM or OSCILLOSCOPE - AC probe to test point 10.	FM Stereo Transmission	L10 19 KC Pilot T24 19 KC Pilot	Maximum gain indication.
3	OSCILLOSCOPE - Vertical input to test point 11. Horizontal to test point 12.	FM Stereo Transmission	T26 38 KC Osc.	Figure 2 scope pattern or zero beat heard in speakers.

IMPORTANT

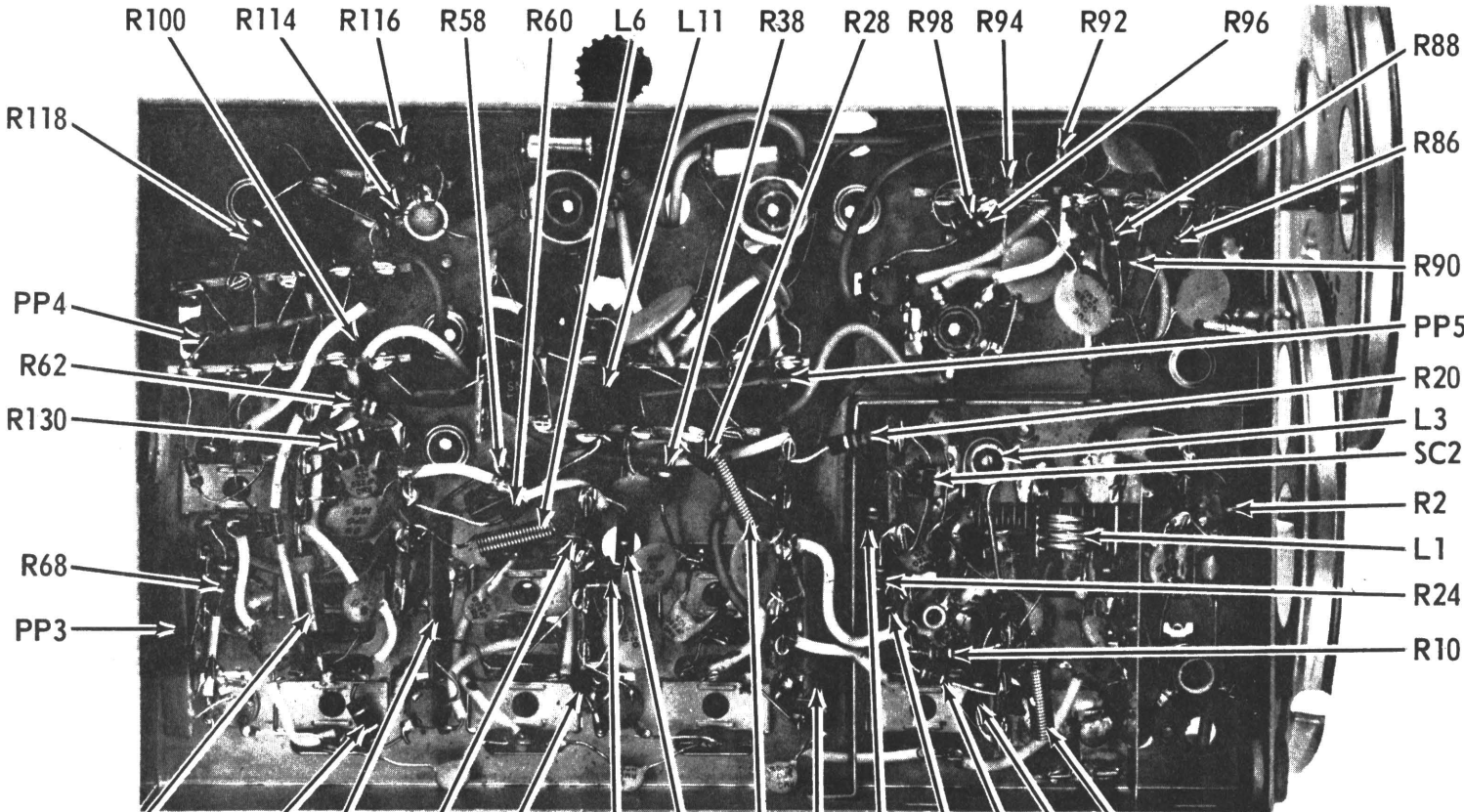
Most FM Multiplex stations make announcements and broadcast news on one channel only. To make a final "touch up" adjustment for maximum separation, turn balance control on amplifier for maximum sound on the "reject" channel during such announcements and carefully adjust T24 for minimum sound on this channel. It is easier to adjust for minimum sound on the unused channel than for maximum on the channel being used for announcements or news broadcasts.

Depending on information transmitted by the multiplex station, it may be extremely difficult to adjust for maximum separation. A reliable multiplex generator should always be used whenever available.

CHASSIS BOT TOM VIEW



CAPACITORS



RESISTORS, MISCELLANEOUS

REPLACEMENT PARTS LIST

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
CAPACITORS (all ceramic unless otherwise specified)		
C2		5.6 PF
C3	42-14580-1	Capacitor - Variable Tuning - FM
A		FM Ant. Gang
B		FM Ant. Trimmer
C		FM Interstage Gang
D		FM Interstage Trimmer
E		FM Osc. Gang
C3F	42-14578-1	FM Osc. Trimmer
C4		220 PF
C5	42-14579-1	Capacitor - Variable Tuning - AM
A		AM Ant. Gang
B		AM Ant. Trimmer
C		AM Interstage Gang
D		AM Interstage Trimmer
E		AM Osc. Gang
F		AM Osc. Trimmer
C6		220 PF
C8		.01 MFD
C10		3.3 PF
C12		680 PF
C14,C18		.01 MFD
C16		1 PF
C20		5 PF - N750
C22		3.3 PF
C24		10 PF
C26		220 PF
C28		.01 MFD
C30,C32	Part of PP1	See "Misc. Elect. Parts"
C36		10 PF
C38		.01 MFD
C40,C42		.01 MFD
C44		680 PF
C46		10 PF
C48		.01 MFD
C50		680 PF
C52		10 PF
C54,C56	Part of PP2	See "Misc. Elect. Parts"
C58		.01 MFD
C60	41-10004-6	5 MFD - Electrolytic - 25V
C62		6.8 PF
C64		220 PF
C66		39 PF
C68		4.7 PF
C70,C72	Part of PP3	See "Misc. Elect. Parts"
C74		.01 MFD
C76,C78,C80	Part of PP4	See "Misc. Elect. Parts"
C82	161-1089	8 MFD - Electrolytic - 25V
C86,C88		.01 MFD
C90,C92,C94		.01 MFD
C96		.02 MFD
C100	161-1085	2 MFD - 25V - NP
C102		2700 PF
C104	40-10285-6	6800 PF - 5%
C106	40-10285-3	220 PF - 5%
C108		220 PF
C110	41-10285-7	150 PF - 5%
C112	41-10004-6	5 MFD - Electrolytic - 25V
C114	40-10285-6	6800 PF - 5%
C116	41-10004-6	5 MFD - Electrolytic - 25V (2)
C118		.05 MFD
C120		.047 MFD - 100V
C122	43-85941-14	2200 PF
C124	40-10285-1	3300 PF - 5%
C126		220 PF
C128		.01 MFD
C132		.047 MFD - 100V
C134,C136	41-10004-6	5 MFD-Electrolytic - 25V
C138,C140		220 PF
C142,C144		.047 MFD - 100V
C148,C150	Part of PP6	See "Misc. Elect. Parts"
C152		3900 PF
C154,C156		1200 PF

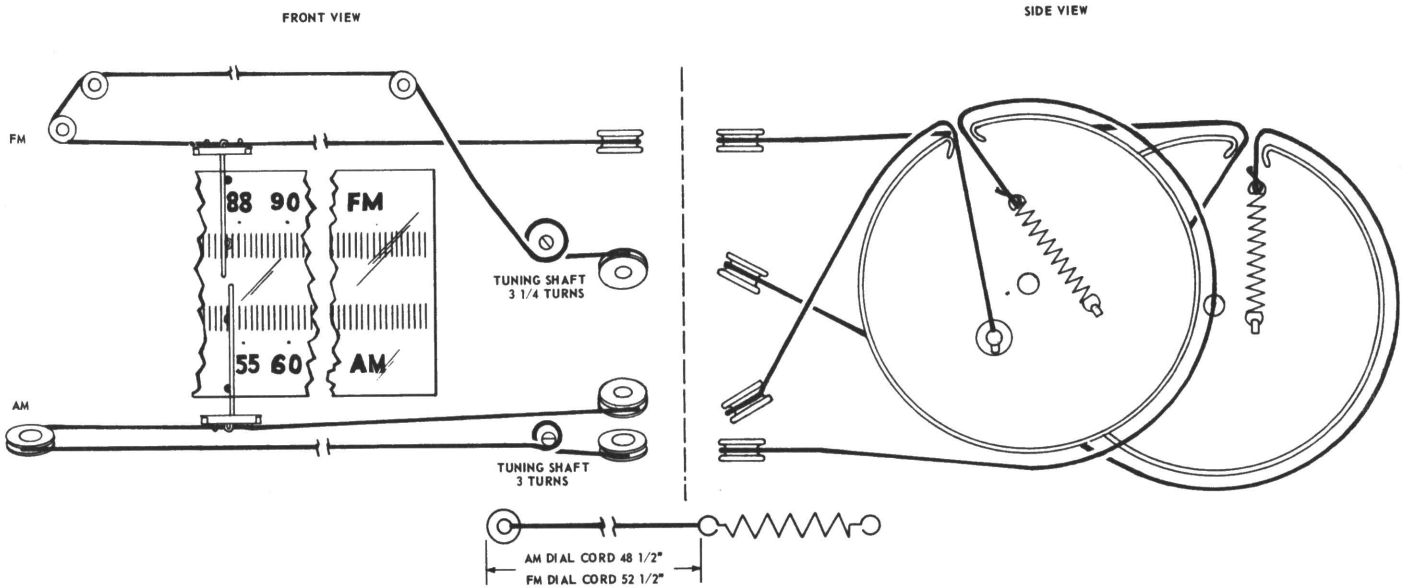
SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
RESISTORS		
R2,R4		1K
R6,R8,R10		4.7K - 1/4W
R12		10K
R14		4.7K
R18		4.7K - 1/4W
R20		68K
R22		10K
R24		4.7K - 1/4W
R28		1K
R32,R34,R36	Part of PP1	See "Misc. Elect. Parts"
R38		1K
R40	37-14576-1	100K - Meter Zero Adjust
R42		6.8K
R46		270 OHM
R48		2.7K
R50		390 OHM
R52,R54,R56	Part of PP2	See "Misc. Elect. Parts"
R58		220K - 5%
R60		10K
R62		22K
R64		4.7K - 1/4W
R66		1K
R68		470 OHM
R70,R72,R74	Part of PP3	See "Misc. Elect. Parts"
R76,R78,R80	Part of PP4	See "Misc. Elect. Parts"
R82,R84	Part of PP4	See "Misc. Elect. Parts"
R86		4.7K - 1/4W
R88		8.2K
R90		1.2K
R92		10K
R94		4.7K - 1/4W
R96		68 OHM
R98		4.7K - 1/4W
R100		470K - 20%
R102		15K
R104		220K - 5%
R106		1K
R108		22K
R110		22K
R112		8.2K
R114		4.7K - 1/4W
R116		10K
R118		820 OHM
R120,R122,R124	Part of PP5	See "Misc. Elect. Parts"
R126,R128	Part of PP5	See "Misc. Elect. Parts"
R130		47K
R136,R138	Part of PP6	See "Misc. Elect. Parts"
R140,R142	Part of PP6	See "Misc. Elect. Parts"
R146,R148,R150		27K
COILS AND TRANSFORMERS		
L1	50-10268-1	Coil - FM RF
L2	50-10261-1	Coil - Filament Choke
L3	50-10267-1	Coil - FM Osc.
L4	50-10261-1	Coil - Filament Choke
L5	118-0010	Coil - RF Choke
L6	50-10261-1	Coil - Filament Choke
L7	50-10270-1	Coil - AM RF
L8	50-10253-1	Coil - 67KC
L9	50-10253-1	Coil - 76KC
L10	50-10253-3	Coil - 19KC
L11	50-18789-2	Coil - 5MH
T2	50-10269-1	Transformer - FM Antenna Coil
T4	57-10263-2	Transformer - FM #1 IF
T6	57-10263-1	Transformer - FM #2 IF
T8	57-10263-1	Transformer - FM #3 IF
T10	57-10263-1	Transformer - FM #4 IF
T12	57-10264-1	Transformer - Ratio Detector

SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
COILS AND TRANSFORMERS (CONTINUED)		
T14	57-10265-1	Transformer - AM #1 IF
T16	57-10265-1	Transformer - AM #2 IF
T18	57-10265-1	Transformer - AM #3 IF
T20	50-10240-3	Transformer - AM Antenna Coil
T22	50-10266-1	Transformer - AM Osc. Coil
T24	50-10254-1	Transformer - 19KC Pilot
T26	50-10262-1	Transformer - 38KC Osc.
MISCELLANEOUS ELECTRICAL PARTS		
PP1,PP2,PP3	32-14726-2	Plate - Bias IF - DC
C30,C54,C70		.01 MFD
C32,C56,C72		.01 MFD
R32,R52,R70		15K
R34,R54,R72		5.6K
R36,R56,R74		2.7K
PP4	32-14722-1	Plate - Ratio Detector
C76		220 PF
C78		220 PF
C80		220 PF
R76		120 OHM
R78		560 OHM
R80		820 OHM
R82		6.8K
R84		6.8K

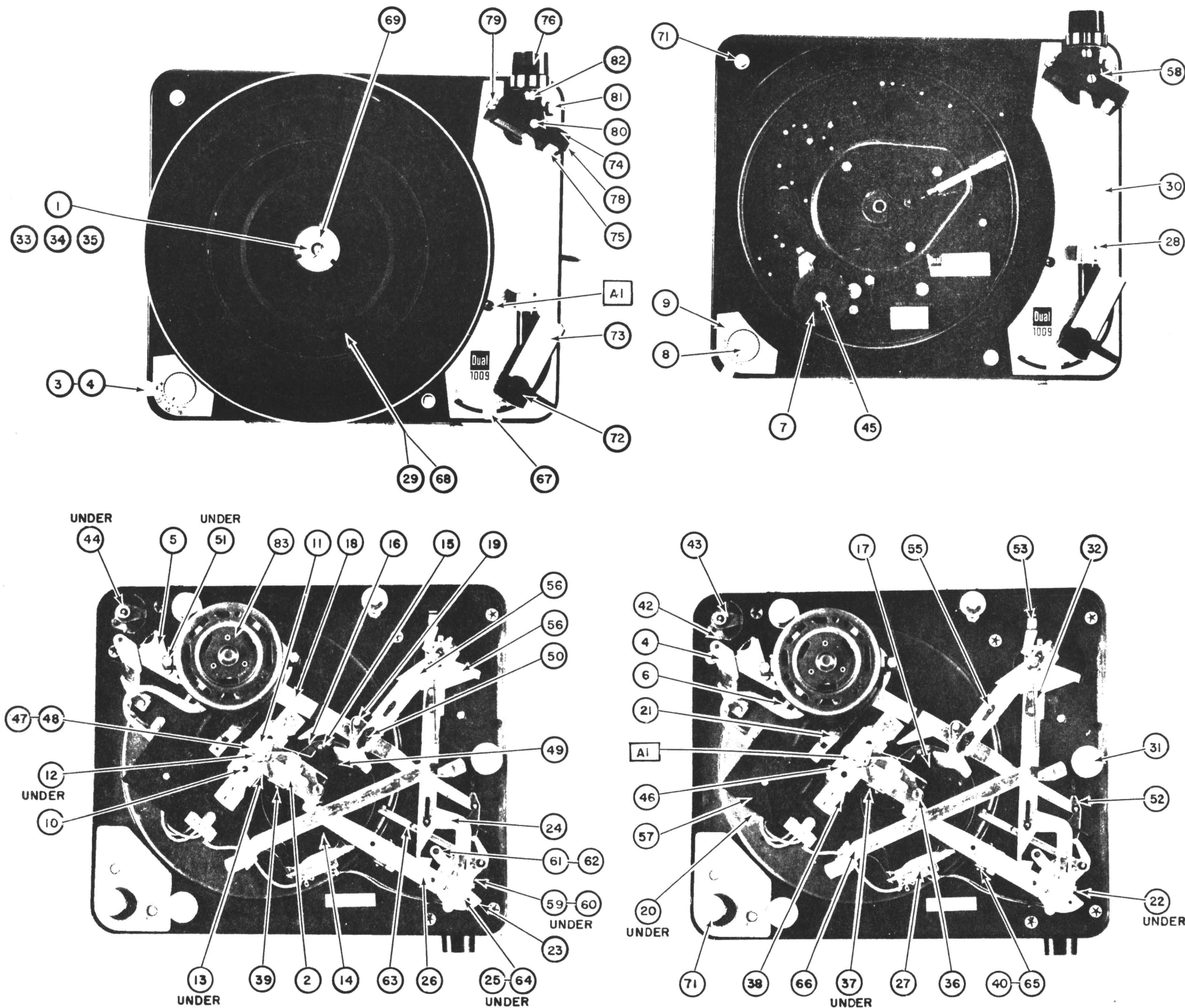
SCHEMATIC LOCATION	SERVICE PART NO.	DESCRIPTION
MISCELLANEOUS ELECTRICAL PARTS(CONT.)		
PP5	32-14725-2	Plate - 38KC Osc.
R120		5.6K
R122,R124		1K
R126		5.6K
R128		820 OHM
PP6	32-14723-1	Plate - Multiplex Output
C148,C150		680 PF
R136		4.7K
R138		4.7K
R140		220K
R142		220K
SC2	1N3182	Diode - Varicap
SC4,SC6,SC12	1N295	Diode
*SC8,SC10	1N542	Diode (Matched Pairs)
SC14	624-0011	Diode - Silicon
SC16	624-0011	Diode - Silicon
SC18	624-0011	Diode - Silicon
SC20	624-0011	Diode - Silicon
Q1	2N3074	Transistor
Q2	2N2654	Transistor
Q3,Q4,Q5	2N2671	Transistor
Q6,Q7,Q9,Q10	2N2671	Transistor
Q8,Q14,Q15,Q16	2N404	Transistor
Q11,Q12,Q13	2N2672	Transistor

\*Or two (2) 1N541's matched.

DIAL STRINGING







RECORD CHANGER REPLACEMENT PARTS LIST

REF. NO.	SERVICE PART NO.	DESCRIPTION	REF. NO.	SERVICE PART NO.	DESCRIPTION
1	11-96161-10	Automatic Spindle	7	11-96178-4	Drive Wheel Assembly (Idler Wheel)
2	11-96180-10	Cam Rocker	8	11-96172-12	Speed Control Escutcheon and Knob
3	11-10317-6	Speed Change Lever Assembly	9	11-10316-15	Speed Control Knob
4	11-96181-2	Support Assembly	10	11-96163-4	Turntable Bearing Support Assembly
5	11-96180-11	Rocker Assembly	11	11-96163-5	Change Lever Assembly
6	11-96181-3	Lever and Stud Assembly	12	11-96165-42	Change Actuator Screw

RECORD CHANGER REPLACEMENT PARTS LIST (CONTINUED)

REF. NO.	SERVICE PART NO.	DESCRIPTION	REF. NO.	SERVICE PART NO.	DESCRIPTION
13	11-96162-8	Ball Bearing Assembly	54	11-96157-3	Manual & Automatic Lever
14	11-96180-12	Cam Wheel Assembly	55	11-96165-43	Set Screw
15	11-96154-3	Cam Follower Lever Assembly	56	11-10317-5	Start Lever
16	11-96153-2	Friction Plate Assembly	57	11-96167-15	Cover - Line Switch
17	11-96166-2	Shut - Off Lever Assembly	58	11-96162-11	Bearing - Housing
18	11-96158-5	Switch Arm Assembly	59	11-96165-50	Hex - Nut
19	11-96158-6	Switch Lever Assembly	60	11-96165-51	Positioning Nut
20	11-96167-12	Switch Plate Assembly	61	11-96165-52	Spring Pin
21	11-96167-13	Switch Slide Assembly	62	11-96139-49	Compression Spring
22	11-96162-9	Ball Bearing Race	63	11-96166-3	Shut - Off Slide
23	11-96163-6	Arm Segment Assembly	64	11-96139-50	Compression Spring - Lift Screw
24	11-96164-13	Arm Positioning Slide Assembly	65	11-96162-12	Bearing Support - Main Lever
25	11-96170-7	Lift Screw Assembly	66	11-96167-16	Stand w/Plug Assembly
26	11-10313-6	Main Lever Assembly	67	11-10316-13	Switch Knob
27	11-96167-14	Muting Switch Assembly	68	11-10310-9	Turntable Mat
28	11-96146-8	Tone Arm Rest	69	11-96165-53	Turntable Washer
29	11-10309-12	Turntable Assembly w/Mat	70	11-96139-51	Tension Spring
30	11-13801-14	Dress - Up Cover	71A	11-96165-54	Transit Screw
31	11-96139-52	Spring Suspension Mount (Set of 3)	B	11-96165-55	Transit Screw Compression Spring
32	11-96139-41	Tension Spring - Arm Positioning Slide	C	11-96165-56	Transit Screw Washer
33	11-96161-11	Manual Spindle	D	11-96165-57	Transit Screw Hex Nut
34	11-96161-12	45 Centering Disc			
35	11-14705-1	45 RPM Automatic Spindle			
36	11-96162-10	Bearing Post - Cam Wheel			
37	11-96139-42	Snap Spring			
38	11-96139-43	Tension Spring - Change Lever			
39	11-96179-3	Shaft - Cam Rocket			
40	11-96179-4	Shaft - Main Lever			
41	11-10316-14	Slide Key			
42	11-96182-13	Speed Control Actuator			
43	11-96182-14	Switch Segment			
44	11-96139-45	Compression Spring - Switch Segment			
45	11-96179-5	Shaft - Drive Wheel			
46	11-96165-49	Screw			
47	11-96139-46	Compression Spring			
48	11-96139-47	Comp. Spring - Change Actuator Screw			
49	11-96139-48	Coiled Spring			
50	11-96179-6	Grooved Shaft			
51	11-96139-44	Tension Spring - Drive Wheel			
52	11-96182-15	Latch			
53	11-96157-2	Record Size Selector Lever			

TONEARM

72	11-96141-8	Plug - In Cartridge Head Holder
73	11-10312-13	Tonearm Assembly
74	11-96141-9	Bearing Frame Assembly
75	11-96141-10	Spring Housing Assembly
76	11-96152-5	Counterbalance Weight Assembly
77	11-96165-48	Latching Screw
78	11-96165-44	Bearing Screw, Long
79	11-96165-45	Bearing Screw, Short
80	11-96165-46	Set Screw
81	11-96165-47	Tension Screw - Height Adjustment
82	11-96152-6	Spindle

MOTOR

83 A	11-96148-10	Motor Assembly, Less Motor Pulley
B	11-96148-11	Rotor Assembly
C	11-96148-12	60 Cycle Motor Pulley

MAINTENANCE AND ADJUSTMENTS

TO REMOVE THE TURNTABLE

To remove the turntable, remove center cover and slide off turntable clip; lift the turntable with equal pressure on opposite sides.

RECORD SPINDLE ASSEMBLY

Place the record spindle in position and rotate it until location is felt.

LUBRICATION

The motor, turntable and idler wheel bearings are of the oil-retaining type and rarely need lubricating. When the need for oil is apparent, remove the turntable and lubricate these bearings with a fine grade of machine oil. Carefully remove all traces of surplus oil--especially from the motor pulley, idler wheel tire and inside of turntable rim.

BALANCING OF TONE ARM AND STYLUS PRESSURE

With the stylus force scale set at 0, slip the tonearm balance weight onto the rear of the tonearm, guiding it on by the V-shaped track. Unlock the tonearm, lift it off its resting post,

BALANCING OF TONE ARM AND STYLUS PRESSURE (CONT.)

and slide the balance weight back and forth until the arm is roughly balanced . . . then tighten the set screw. (The slight "give" you feel in handling the balance weight comes from its internal rubber cushioning.)

For fine balance, rotate the balance weight itself. If the front of the tonearm needs to be lightened, rotate the weight clockwise . . . and vice versa. When the tonearm is in perfect horizontal balance, apply the desired stylus force (as recommended by the manufacturer of your cartridge) by turning the stylus force scale to the number indicated.

Any cartridge weighing from 2-16 grams can be balanced with this balance weight. The Dual 1009 will track and trip flawlessly with a stylus force as low as 1/2 gram. Hence, the usual restrictions on the choice of cartridges for automatic equipment do not apply to this unique instrument. If your cartridge calls for a very light tracking force, be sure to balance the tonearm perfectly at zero in order for the scale to register accurately and the tonearm to function properly. (Naturally, the percentage of any error in balancing is more significant with a light tracking force than with a heavier one.) Of course whenever you change cartridges, repeat the balancing procedure before applying the necessary tracking force. The stylus pressure for the Pickering V15 cartridge is 3 grams ± 1/2 gram.



ADJUSTMENTS

Drive wheel height	By rotating drive wheel shaft (45). Adjustment is correct when speed selected coincides with the middle of the regulating range.
Travel of change pin (for record drop)	By means of eccentric screw (A2) on cam rocker. Adjustment is correct when the 3 supports of the changer spindle are completely retracted and on further rotation of the cam wheel an overlap of approx. 1/8" occurs between cam and roller of the cam rocker.
Cam follower lever	By set screw (55). Adjustment is correct when in "manual" position switch key latch (52) overlaps guard by approx. 1/32". After adjustment, tighten nut of set screw (55).
Tonearm height	By means of screw (80). Adjustment is correct when tonearm extends 1/16" over its support (28).
Tonearm set-down point (on the record)	For 7" records use eccentric screw (A1). Adjustment is correct when tonearm is 1/16" from record rim.
Tonearm clutch (brake)	In "O" position of cam wheel (14) bend leaf spring on main lever. Adjustment is correct when in "O" position of cam wheel the distance between guide mark (in leaf spring) and arm segment assembly is approx. 1/32".
Tonearm position (over tonearm rest)	Rotate arm segment (23) after loosening screws. Adjustment is correct when tonearm lowers unhampered to tonearm rest (28); then tighten screws. After adjustment check vertical play of tonearm (See tonearm bearing).
Vertical tonearm suspension	Adjust bearing with positioning screw (60). Adjustment is correct when positioning screw (60) is sufficiently tight so that play in bearing is very small.
Horizontal tonearm suspension	Adjust bearing with bearing screw (79). Adjustment is correct when bearing screw (79) allows minimal play (bearing friction: 0.1 g max.).
Actuating position of shut-off	With eccentric screw on arm segment (23). Adjustment is correct, when unit shuts off within 4 1/2" to 5" range of record diameter.

TRUBLE CHART

TRUBLE	CAUSE	REMEDY
NUMBERS REFER TO PARTS LIST REFERENCE NUMBERS.		
Change cycle does not start when plugged in and when start switch is activated	a) Current to motor interrupted b) Drive wheel (7) fails to engage turntable c) Motor pulley (83c) loose	a) Check connections in switch plate b) Check rocker assembly (5) c) Tighten motor pulley
Records do not drop	a) Travel of cam rocker (2) too short b) Changer spindle is not locked c) Spindle defective	a) Re-adjust eccentric screw (A2) on cam rocker (2) b) Rotate spindle, after inserting into hole, to its stop c) Replace spindle
Turntable slows down when record drops	Travel of cam rocker (2) too far	Re-adjust eccentric screw (A2) on cam rocker (2)
Turntable does not come up to required speed	a) Different line frequency b) Slippage on drive wheel (7) and motor pulley (83c) c) Friction in motor bearings	a) Check line frequency. Try larger or smaller motor pulley b) Clean drive wheel (7) surface c) Clean motor bearings and lubricate according to lubricating directions

TRUBLE CHART (CONT.)

TRUBLE	CAUSE	REMEDY
Tonearm does not lower into starting groove	a) Wrong record size selected b) Record is not standard size c) Some lubricant on friction surface of tonearm clutch set-down d) Tonearm position inaccurately adjusted	a) Set to proper record size setting b) Use standard records c) Clean friction surface d) Adjust with set screw (A1) See adjustment instructions
Unit shuts off while tracking in grooves between program selections	Shut-off mechanism actuates too soon	Eccentric screw on arm segment (28) must be adjusted. See adjustment instructions.
Tonearm strikes record stack during change cycle	Tonearm height out of adjustment	Adjust with set screw (80) according to adjustment instructions
Tonearm misses tonearm rest (28) on returning	Segment (23) not correctly positioned on bearing frame	Loosen screw, correct segment position. After this check vertical bearing play. See adjustment instructions
Tonearm continues running in shut-off groove after record finished playing	Eccentric shut-off groove missing or faulty	Replace record
Last record of stack repeats	Engagement of change lever (11) and cam follower lever (19) insufficient	Readjust change lever (11) according to adjustment instructions
Tonearm returns to rest position after each record	Too much engagement between change lever (11) and cam follower (15)	Straighten change lever (11) as in adjustment instructions
Turntable stops moving after automatic lowering of tonearm on record	Switch arm (18) not locking with latch (52)	Adjust switch arm (18) per adjustment instructions
Turntable stops after activating manual switch	Set screw (55) position inaccurate	Adjust set screw (55) according to adjustment instructions
Speed is outside the range of fine adjustment	Position of drive wheel in relation to motor pulley is inaccurate	Adjust drive wheel position with set screw (45). See adjustment instructions
Needle slips out of groove	a) Tonearm unbalanced b) Tonearm tracking pressure insufficient c) Stylus point worn or broken d) Too much friction in tonearm bearings e) Main lever is not raised by segment (23) in play position f) Ball bearing for shut-off slide (63) missing	a) See operating instructions b) Adjust tracking pressure with spring housing (75) to value specified by cartridge manufacturers c) Replace stylus d) Check tonearm bearings e) Adjust position of leaf spring per adjustment instructions f) Replace ball bearing
Tonearm binds vertically on set down	Friction in tonearm bearings	Adjust bearing screw (79).
Tonearm suspension	Both bearings must have some play. Adjust horizontal bearing with left bearing screw (79) only; adjust vertical bearing with positioning nut (60).	