



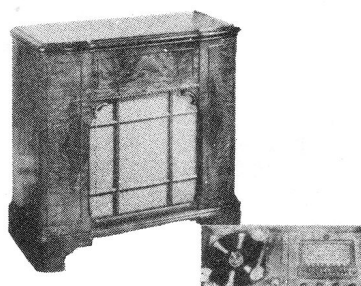
RCA Victor

MODELS VR8-L, VR8-S & VR10-S

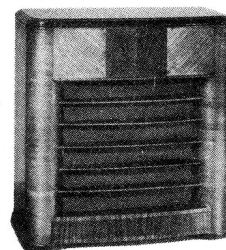
Eleven-Tube, Five-Band, Electric-Tuning, A-C, Victrolas

TECHNICAL INFORMATION AND SERVICE DATA

SERVICE DIVISION • RCA VICTOR COMPANY LIMITED • MONTREAL



Models VR8-L, VR8-S



Model VR10-S

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A)	540-1,550 kc
"49 Meter Band"	5,920-6,230 kc
"31 Meter Band"	9,480-9,690 kc
"25 Meter Band"	11,680-11,940 kc
"19 Meter Band"	15,080-15,390 kc

Intermediate Frequency 455 kc

TUBE COMPLEMENT

(1) Type-6K7	R-F Amplifier
(2) Type-6A8	First Detector
(3) Type-6J7	Heterodyne Oscillator
(4) Type-6K7	I-F Amplifier
(5) Type-6H6	Second Det., A.V.C., and Muting
(6) Type-6F5	Audio Voltage Amplifier

Pilot Lamps One Mazda 47, 6-8 volts, .15 amp; Two Mazda 44, 6.3 volts, .25 amp.
Fuse (Motor) 3 Ampere

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 155 watts
Rating B	105-125 volts, 25-30 cycles, 155 watts

POWER OUTPUT

Undistorted	10 watts
Maximum	12 watts

PHONOGRAPH (RP140)

Record Capacity	Eight 10-inch or Seven 12-inch
Turntable Speed	78 R.P.M. (Adjustable)

R-F ALIGNMENT FREQUENCIES

"Standard Broadcast" (A)	1,500 kc (osc., det., ant.), 600 kc (osc.)
"49 Meter Band"	6,100 kc (osc.)
"31 Meter Band"	9,600 kc (osc., det., ant.)
"25 Meter Band"	11,800 kc (osc.)
"19 Meter Band"	15,200 kc (osc.)

(7) Type-6F5	A-F Amp. and Audio Phase Inverter
(8) Type-6F6	Power Output
(9) Type-6F6	Power Output
(10) Type-6U5	Tuning Tube
(11) Type-5T4	Full-Wave Rectifier

LOUDSPEAKER

Type	12-inch Electrodynamic
Voice Coil Impedance	2.2 ohms at 400 cycles

Type Pickup	Crystal
Pickup Impedance	100,000 ohms at 1,000 cycles

Mechanical Specifications

	VR10S	VR8L VR8S
Height	35	34 inches
Width	33 1/4	36 1/4 inches
Depth	17	17 1/2 inches
Weight (net)	106	103 pounds
Weight (shipping)	140	141 pounds
Chassis Base Dimensions	15 1/2 inches x 8 1/2 inches	x 3 1/2 inches
Over-all Chassis Height		8 1/4 inches
Operating Controls	(1) Power Switch-Tone; (2) Volume; (3) Tuning; (4) Range Selector, left to right, "A," "49 Meter," "31 Meter," "25 Meter," "19 Meter;" Ten Push Buttons; left to right, Victrola-Switch; Eight Station Buttons, Dial-Tuning Button.	
Tuning Drive Ratio (manual)	18 to 1	

General Description

These three receivers are identical differing in cabinet design only.

They employ an eleven-tube, five-band "Magic-Brain" superheterodyne circuit, the arrangement of which is shown in the Schematic Circuit Diagram. Features of design include electric tuning for eight broadcast stations; push-pull power output stage; magnetite-core i-f transformers; magnetite-core oscillator tracking adjustment; temperature-stabilized capacitors; four spread-bands; automatic volume control; "Magic Eye" tuning tube; 12-inch, dust-proof electrodynamic loudspeaker; aural-compensated audio volume control; continuously variable high-frequency tone control; new straight-line dial; illuminated band indicator.

The new RCA Victor "Magic Loop" antenna for "A" and Spread band operation; Loop control knob for ease in operation.

The RP140 automatic mechanism has a self-starting motor, crystal pickup, and may be set to play ten-inch and twelve-inch records singly, or automatically. In the automatic position, seven twelve-inch; eight ten-inch; or a mixed group of seven, ten- and twelve-inch records, may be played in succession.

Refer to the VR-8 Service Notes for Electric Tuning Mechanism, Socket Voltages and Wiring Diagram. Reference to the RP-140 Service Notes will give details of the automatic phono mechanism.

Alignment Procedure

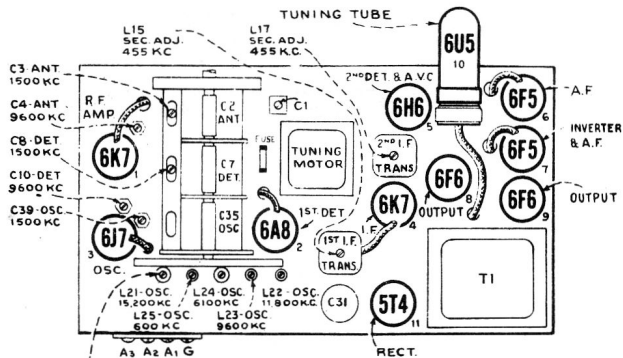
Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

Calibration Scale on Indicator-Drive-Cord Drum.—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment, therefore a calibration scale is attached to the rear of the indicator-drive-cord drum which is mounted on the front shaft of the gang condenser. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The "0" mark on the drum scale must be vertical, and directly over the center of the gang-condenser shaft when the plates are fully meshed. The drum is held to the shaft by means of two set screws, which must be tightened securely when the drum is in the correct position.

Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that



CAUTION: THIS ADJ. SCREW MUST PROJECT AT LEAST $\frac{3}{4}$ " FROM TOP OF CHASSIS TO PREVENT SHORTING +B.

Tube and Trimmer Locations

it points to the "0" mark on the calibration scale when the plates are fully meshed.

Dial-Indicator Adjustment. — After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 530 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

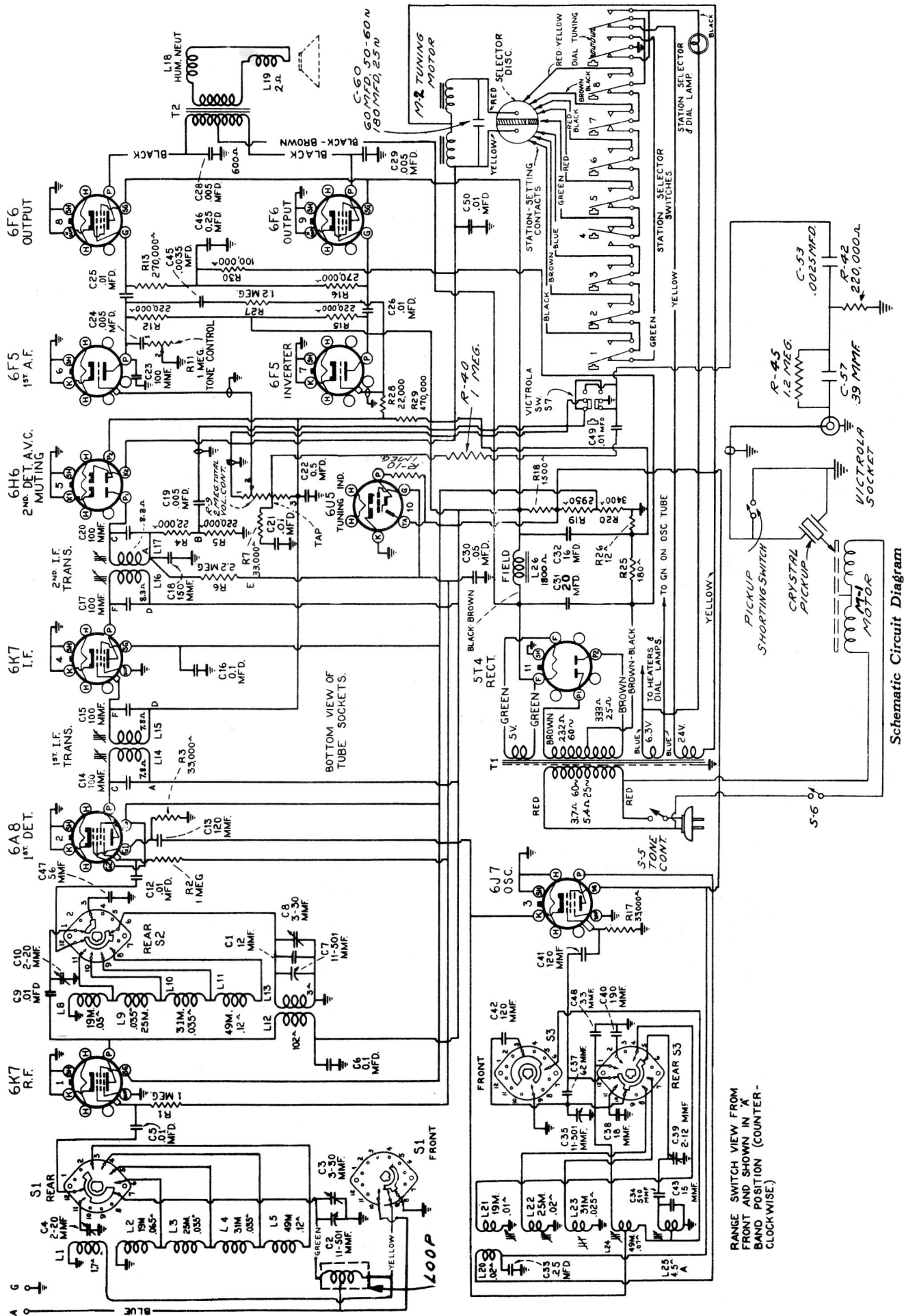
Steps	Connect the high side of test-oscillator to—	Tune Test-Oscillator to—	Range Selector	Set Tuning Gang to—	Adjust the following for max. peak output
No. 1	6K7 I-F grid cap, in series with .01 mfd.	455 kc	"A"	Quiet point between 550-750 kc	L16, L17 (2nd I-F transformer)
No. 2	6A8 1st-det. grid cap, in series with .01 mfd.	455 kc	"A"		L14, L15 (1st I-F transformer)
No. 3	A2, in series with 100 mmf. Connect A3 to chassis.	1,500 kc	"A"	1,500 kc (167°)	C39 (osc.) C3 (ant.) C8 (det.)
No. 4	A2, in series with 100 mmf. Connect A3 to chassis.	600 kc	"A"	600 kc (35°)	L25 (osc.)
No. 5	A2, in series with 100 mmf. Connect A3 to chassis.	1,500 kc	"A"	1,500 kc (167°)	C39 (osc.)
No. 6	A in Series with 200 ohms	6,100 kc	"49M"	6,100 kc (106°)	L24 (osc.)*
No. 7	A in Series with 200 ohms	9,600 kc	"31M"	9,600 kc (102°)	L23 (osc.)** C4 (ant.) C10 (det.)
No. 8	A in Series with 200 ohms	11,800 kc	"25M"	11,800 kc (90.0°)	L22 (osc.)**
No. 9	A in Series with 200 ohms	15,200 kc	"19M"	15,200 kc (78.0°)	L21 (osc.)**

* Use maximum inductance peak (plunger in) if two peaks can be obtained.

**** Use minimum inductance peak (plunger out) if two peaks can be obtained**

Note that the heterodyne oscillator tracks **above** the signal frequency on all bands except "49M," where it is lower than the signal frequency.

NOTE: Loop Antenna must remain in circuit during alignment.



Schematic Circuit Diagram

REPLACEMENT PARTS FOR MODELS VR8-L, VR8-S, VR10-S

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
RECEIVER ASSEMBLIES			
S-2842	Board-Ant.grd.terminal board.....	31225	Transformer-Power transformer 110 volt,60 cycle (T1).....
12714	Capacitor-Adjustable trimmer,2-12 mmfd.(C39).....	31450	Volume control (R9).....
12884	Capacitor-Adjustable trimmer - 2-20 mmfd.(C4,C10).....	TUNING MOTOR ASSEMBLIES	
13002	Capacitor-12 mmfd.(C1).....	32088	Capacitor-60 mfd.,60 cycle only (C60).....
12896	Capacitor-15 mmfd.(C51).....	32435	Capacitor-180 mfd.,25 cycle(60)....
S-1877	Capacitor-39 mmfd.(C57).....	32096	Disc-Friction disc & pinion engaging roller on motor shaft.....
12720	Capacitor-100 mmfd.(C23).....	31239	Gear-Knob shaft drive gear & hub..
12724	Capacitor-120 mmfd.(C13,C41).....	32434	Motor-Tuning drive motor(M2)25 cyc.
12725	Capacitor-150 mmfd.(C18).....	32095	Motor-Tuning drive motor(M2)60 cyc.
12723	Capacitor-56 mmfd.(C47).....	31228	Plate-Station setting contact plate
31353	Capacitor-15 mmfd.(Temp.Comp.)(C43)...	31231	Plunger-Station setting contact plunger (Pkg.2).....
31354	Capacitor-33 mmfd.(Temp.Comp.)(C48)...	32086	Roller-Friction roller mounted on motor shaft.
31350	Capacitor-18 mmfd.(C38).....	31233	Rotor-Selector rotor disc-mounts on condenser shaft.....
31352	Capacitor-120 mmfd.(C13,C41,C42).....	14350	Screw-8/32 square head set screw for selector disc Stock #31233 (Pkg.10).....
31351	Capacitor-190 mmfd.(C40).....	31681	Shaft-Dial drive knob shaft.....
31348	Capacitor-510 mmfd.(C34).....	31232	Spring-Station setting contact spring (Pkg.10).....
31349	Capacitor-62 mmfd.(C37).....	31230	Spring-Station setting contact body spring(Pkg.10).....
5107	Capacitor-.0025 mfd. (C53).....	REPRODUCER ASSEMBLIES (RL70H-504)	
30303	Capacitor-.0035 mfd. (C45).....	13866	Cap-Dust cap for cone center (Pkg.5)
4838	Capacitor-.005 mfd. (C19,C24,C28,C29)...	11234	Coil-Field coil (L26).....
4858	Capacitor-.01 mfd. (C5,C12,C21,C49,C50)	11469	Coil-Neutralizing coil (L18).....
4886	Capacitor-.05 mfd. (C30).....	31275	Cone-Reproducer cone and voice coil (L19).....
4839	Capacitor-0.1 mfd. (C6,C16).....	31539	Plug-5 contact male plug for reproducer.....
12484	Capacitor-0.25 mfd. (C33,C46).....	31538	Reproducer complete.....
14393	Capacitor-.01 mfd. (C9,C25,C26).....	14534	Transformer-Output transformer(T2)
S-2442	Capacitor-Electrolytic 20 mfd. dry (C31).....	14357	Washer-Spring washer for field coil (Pkg.5).....
S-2441	Capacitor-Electrolytic 16 mfd. dry (C32).....	OPERATING MECHANISM	
S-2843	Coil-"A" band detector coil(L12,L13)...	Refer to RP-140 Service Notes for Record Changing Mechanisms.	
31257	Coil-"A" band oscillator coil(L25)....	MISCELLANEOUS ASSEMBLIES	
31264	Coil-Band spread antenna coil(L1,L2,L3,L4,L5).....	S-2438	Button-Station selector push button.
31266	Coil-Bandspread detector coil(L8,L9,L10,L11).....	13103	Cap-Pilot lamp cap.....
31258	Coil-19 meter band oscillator coil (L20,L21).....	31345	Contact-Push button switch contacts comprising 10 contacts riveted to an insulating strip.....
31254	Coil-25 meter band oscillator coil(L22)	31344	Contact-Push button switch contacts comprising 13 contacts riveted to an insulating strip.....
31255	Coil-31 meter band oscillator coil(L23)	31281	Cord-Indicator pointer drive cord.
31256	Coil-49 meter band oscillator coil(L24)	31278	Cord-Band indicator drive cord....
31234	Condenser-3 gang variable condenser (C2,C3,C7,C8,C35).....	32634	Cord-Variable cond.drum drive cord
S-2844	Dial-Station selector dial scale.....	S-2848	Escutcheon-Dial escutcheon.....
31273	Drum-Indicator drive cord drum.....	S-2209	Fuse-3 Amp.motor fuse (F1).....
11891	Lamp-Dial lamp.....	31717	Indicator-Station selector indicator pointer.....
31480	Lamp-Electric tuning set-up lamp.....	31304	Indicator-Band indicator strip....
31271	Pulley-Knob shaft pulley.....	31355	Knob-Station selector,volume control range switch or loop control knob
12493	Plug-5 contact female plug for speaker cable.....	S-2840	Loop-Antenna loop assembly.....
31272	Pulley-Range switch pulley.....	S-2183	Marker-Station call letter markers (1 set).....
31250	Resistor-Voltage divider comprising one 1500 ohm, one 2950 ohm, one 3400 ohm,one 12 ohm, one 180 sections (R18,R19,R20,R25,R26).....	31459	Marker-"Victrola" push button marker(Pkg.10).....
14284	Resistor-22,000 ohm,1/10 watt (R28)...	S-2437	Marker-"Dial Tuning" push button marker(Pkg.10).....
13998	Resistor-22,000 ohm(R4) 1/4 watt.....	31280	Pulley-Indicator pointer drive cord pulley.....
11300	Resistor-33,000 ohm,1/10 watt (R7)....	14887	Retainer-Drive cord pulley retainer (Pkg.10).....
12454	Resistor-33,000 ohm,1/4 watt (R17)...	31559	Screen-Light diffuser dial screen mounts on dial frame assembly....
11281	Resistor-100,000 ohm,1/10 watt(R30)...	S-2841	Shaft-Antenna loop assembly drive shaft.....
11398	Resistor-220,000 ohm,1/10 watt(R5,R42)	13638	Spring-Indicator pointer drive cord tension spring(Pkg.5).....
12264	Resistor-220,000 ohm,1/4 watt (R12,R15)	31418	Spring-Variable condenser drive cord tension spring(Pkg.3).....
11453	Resistor-270,000 ohm,1/10 watt(R13,R16)	31279	Spring-Band indicator tension spring(Pkg.10).....
11452	Resistor-470,000 ohm,1/10 watt(R29)...	31970	Spring-Tension spring for switch latch bar(Pkg.5).....
13730	Resistor-1.0 meg.1/4 watt(R1,R2,R23)...	14270	Spring-Retaining spring for knob (Pkg.5).....
30208	Resistor-1.2 meg.,1/4 watt(R27,R45)...	31360	Switch-Pickup switch mounted on push button switch assembly.....
5131	Resistor-2.2 meg.,1/10 watt(R6).....	31312	Switch-Push button switch & bracket assembly complete.....
14350	Screw-set screw for pulleys stock #31271 & 31272 (Pkg.10).....		
31364	Socket-Dial lamp socket.....		
31251	Socket-Radiotron socket.....		
31365	Socket-Electric Tuning set-up lamp socket.....		
S-2845	Switch-Range switch (S1,S2,S3).....		
31248	Tone control & power switch(R11,S5)...		
S-2846	Transformer-First I.F.transformer(L14, (L15,C14,C15).....		
S-2847	Transformer-Second I.F.transformer (L16,L17,C17,C20,R5,R6).....		
31226	Transformer-Power transformer 110 volt, 25-60 cycle (T1).....		