



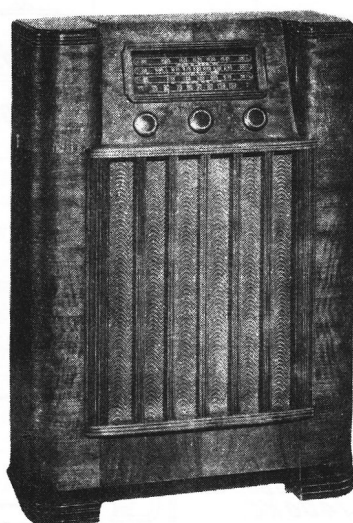
RCA Victor

MODEL A-36

Five-Tube, Four-Band, A-C, Superheterodyne Receiver

TECHNICAL INFORMATION AND SERVICE DATA

SERVICE DIVISION • RCA VICTOR COMPANY LIMITED • MONTREAL



Electrical and Mechanical Specifications

FREQUENCY RANGES

Standard Broadcast (A)	540-1,570 k.c.
31 M	9,450-9,700 k.c.
25 M	11,680-11,920 k.c.
19 M	15,030-15,380 k.c.

Intermediate Frequency 455 k.c.

Tuning Drive Ratio 12 to 1

RADIOTRON COMPLEMENT

(1) Type-6SA7	First Detector-Oscillator
(2) Type-6SK7	Intermediate Amplifier
Pilot Lamps (2)	

R. F. ALIGNMENT FREQUENCIES

31 M (31 Meters)	9,550 k.c. (osc., ant.)
25 M (25 Meters)	11,800 k.c. (osc.)
19 M (19 Meters)	15,200 k.c. osc.,
Standard Broadcast (A)	1400 k.c. (osc., ant.)

(3) Type-6SQ7	2nd Det., A. V. C. & A. F.
(4) Type-6F6G	Power Output
(5) Type-5Y4G	Full Wave Rectifier
	Mazda No. 51, 6.3 volts, 0.2 amp.

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 75 watts
Rating B	105-125 volts, 25-60 cycles, 75 watts

POWER OUTPUT

Undistorted	2 watts
Maximum	4.5 watts

LOUDSPEAKER

Type	12 inch Electrodynamic
Impedance (V.C.)	2.4 ohms at 400 cycles

CABINET DIMENSIONS

Height	35 $\frac{1}{8}$ inches
Width	25 $\frac{3}{8}$ inches
Depth	11 $\frac{3}{4}$ inches

General Description

This receiver employs a five-tube, four band super-heterodyne circuit, the arrangement of which is shown in the Schematic Circuit Diagram. Features of design include:—Loop antenna as the first tuned circuit; three spread bands; stabilized oscillator circuit resulting in less frequency drift; magnetite core I.F. transformers;

magnetite core oscillator coils on all bands; automatic volume control; Phono input jack on chassis back apron; two position tone control circuit; dust proof electrodynamic loudspeaker; temperature stabilized capacitors in the oscillator circuits; and a large, edge lighted dial individually calibrated for each band.

Circuit Arrangement

The circuit consists of a first detector (oscillator) stage incorporating the Loop Antenna as the first tuned circuit; I.F. amplifier stage; second detector, A.V.C. and first Audio stage; single pentode output operating in Class A ; and a well regulated power supply.

The Loop Antenna used in the first tuned stage is in the circuit on the "A" band; temperature compensated capacitors are used in the oscillator circuits to reduce

oscillator drift.

The intermediate frequency amplifier consists of a Type 6SK7 tube in a single stage transformer-coupled circuit. The windings of all I.F. Transformers are resonated by magnetite cores and are adjusted by adjustable capacitors to tune to 455 K.C.

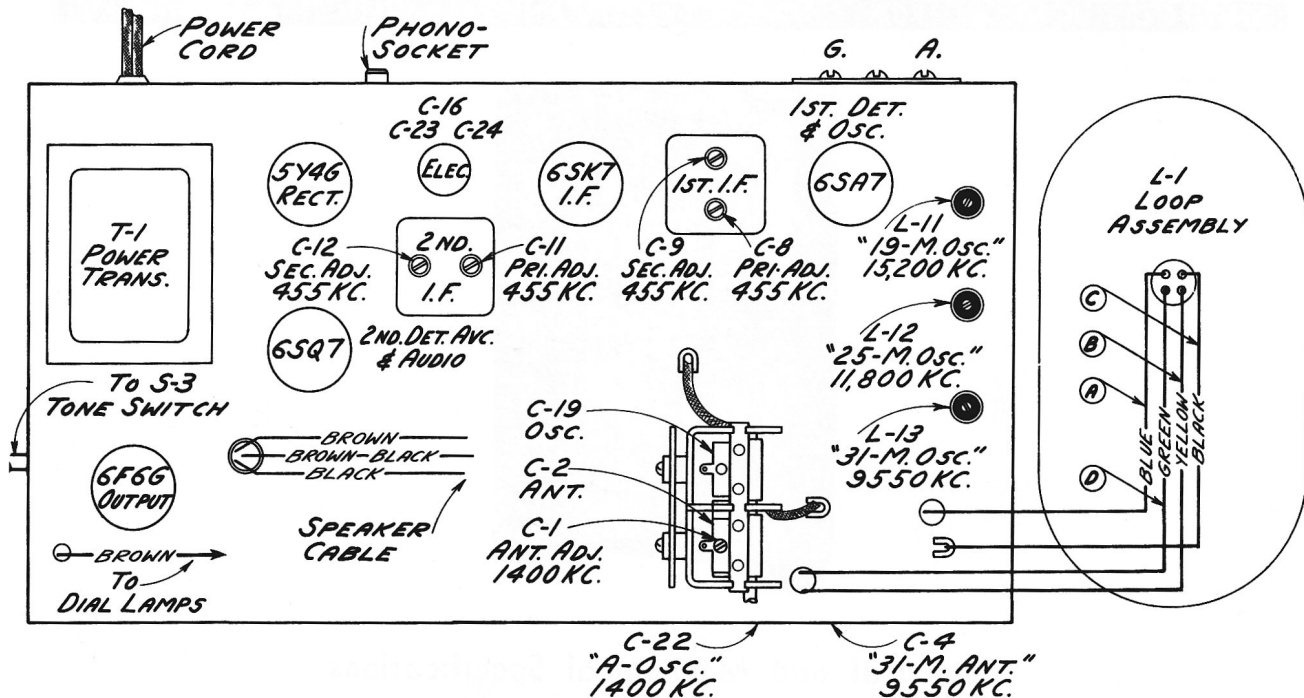


Figure 1—Chassis Layout and Alignment Adjustments

RADIOTRON SOCKET VOLTAGES

Type	Plate	Screen Grid	Control Grid	Cathode	Heater
6SA7 Conv.	270V	100V			6.4V
6SK7 I.F.	275V	100V			6.4V
6SQ7 Audio	80V				6.4V
6F6G Output	250V	260V		16V	6.4V
5Y4G Rectifier	Transformer A.C. output measured from each plate to chassis			345V	5.0V

Note:—All the above values hold within plus or minus 20% when measured with a 20,000 ohm-per-volt meter, on a line voltage of 115 volts. All voltages are measured to chassis.

Alignment Procedure

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown on the schematic diagram.

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 tuning drum. 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 180° mark on the drum scale must be vertical and directly above the center of the shaft of the tuning drum 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 condenser gang, and bend the wire so that it points to the 180° mark on the calibration scale when the plates are fully meshed.

Order of Alignment	Test Oscillator			Range Selector	Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	Control Grid 6SK7	.1 Mfd.	455 k.c.	"A"	No Signal 550-750 k.c.	2nd I.F. Transformer	C11 & C12
2	Control Grid 6SA7	.1 Mfd.	455 k.c.	"A"	550-750 k.c.	1st I.F. Transformer	C8 & C9
3	Ant. Terminal	300 Ohms	1,400 k.c.	"A"	1400 k.c. 27°	"A" Osc.	C22
4	Radiated signal *	—	1,400 k.c.	"A"	1400 k.c. 27°	"A" Ant.	C1
5	Ant. Terminal	300 Ohms	15,200 k.c.	19 M	15,200 k.c. 93°	19 M Osc.	L11
6	Ant. Terminal	300 Ohms	11,800 k.c.	25 M	11,800 k.c. 82°	25 M Osc.	L12
7	Ant. Terminal	300 Ohms	9,550 k.c.	31 M	9,550 k.c. 104°	31 M Osc.	L13
8	Ant. Terminal	300 Ohms	9,550 k.c.	31 M	9,550 k.c. 104°	31 M Ant.	C4

All adjustments indicated above except operation 4, are made with antenna link in the open position.

* Radiation loop comprising two turns of wire 18 inches in diameter should be connected to test oscillator and placed approximately 4 feet from receiver before adjusting C1.

Spread-Band Alignment.—The most satisfactory method of aligning or checking the spread-band ranges is on actual reception of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test-oscillator, as a slight error will produce considerable inaccuracy on the spread-band dials. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-bearing the test-oscillator against short-wave stations of known frequency.

2. Use harmonics of the standard-broadcast range of a test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

NOTE:—Whenever possible spread band final adjustments should be made with the chassis fastened in the cabinet and the pointer accurately aligned to the dial.

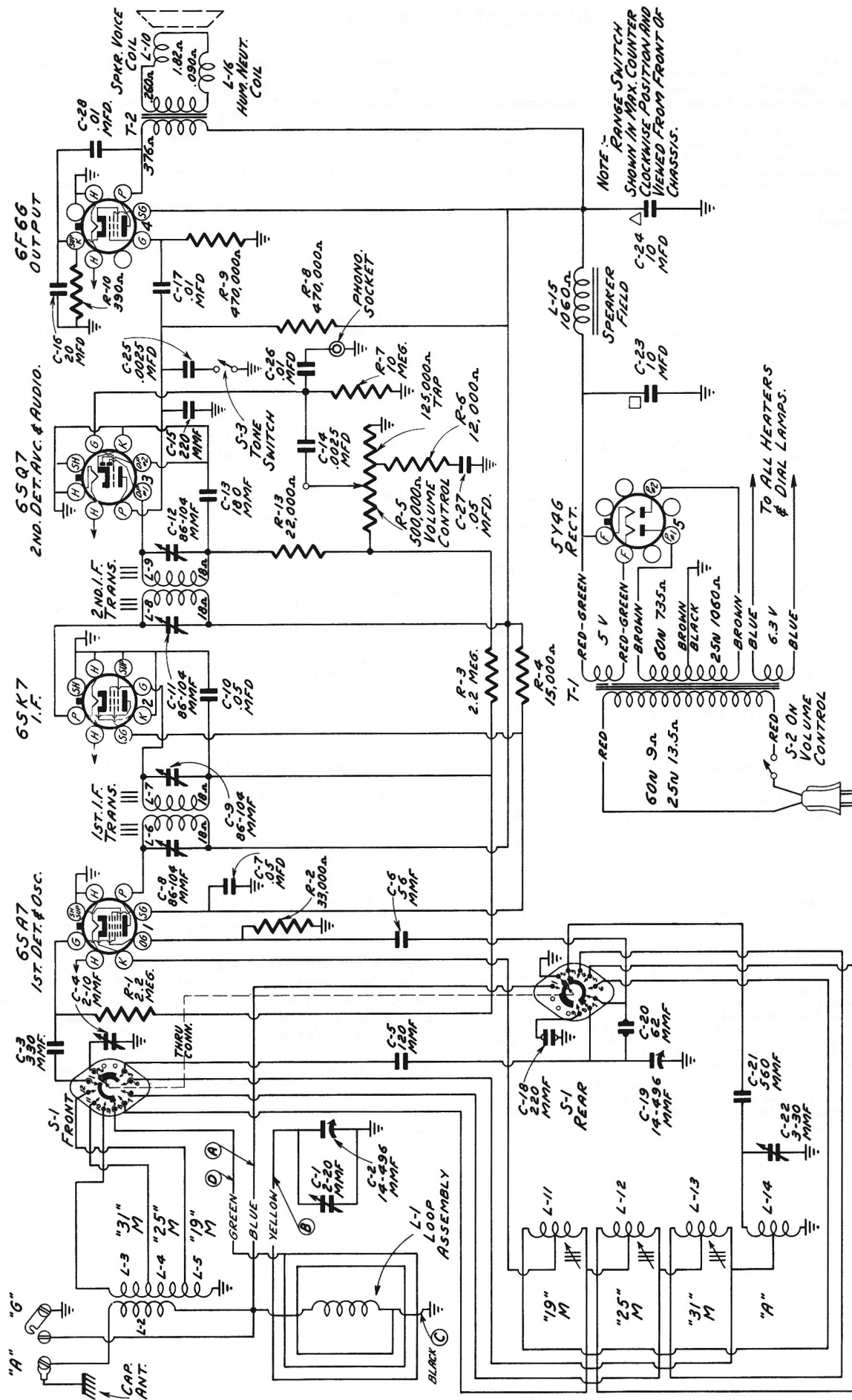


Figure 2—Schematic Circuit Diagram

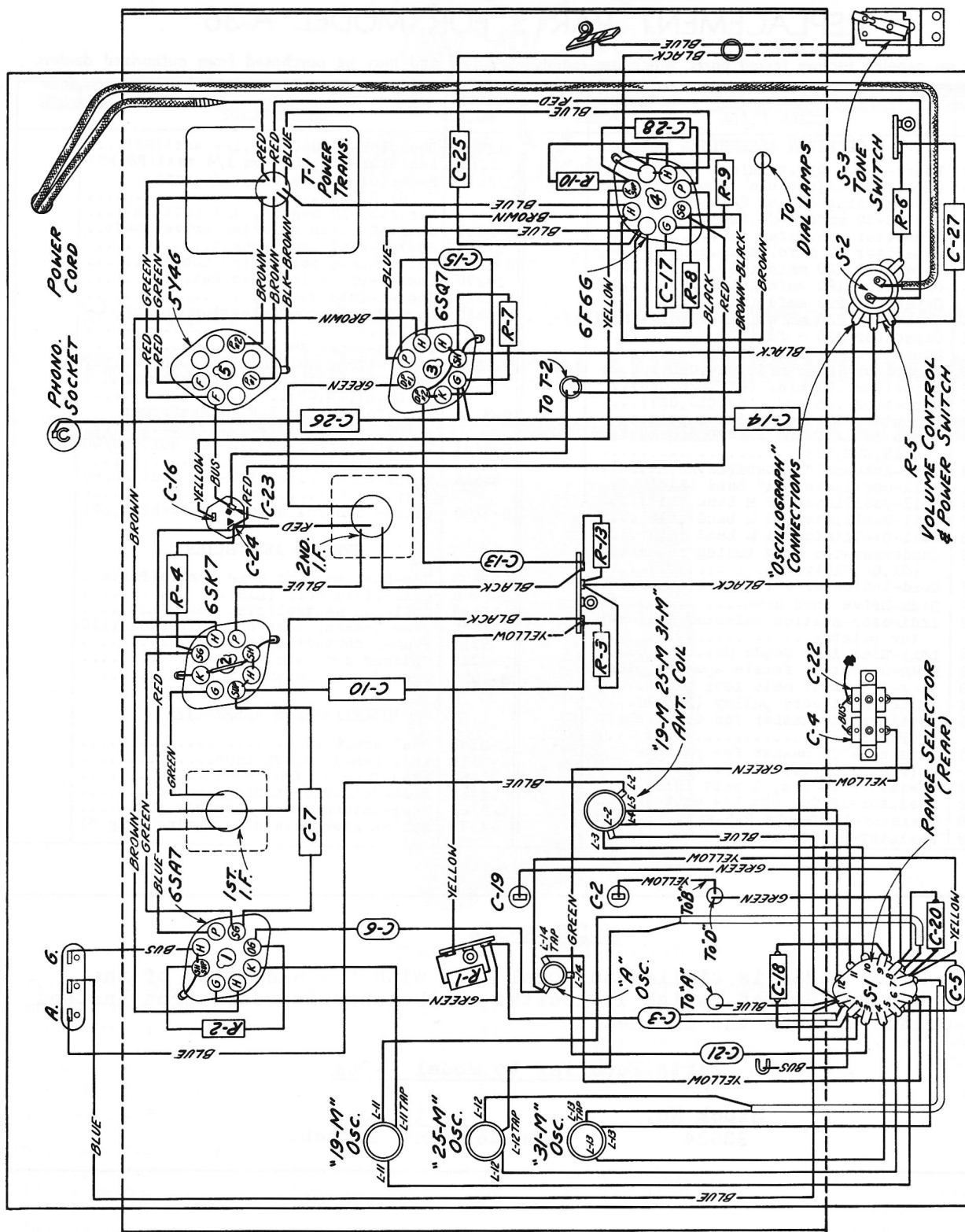


Figure 3—Chassis Wiring Diagram

REPLACEMENT PARTS FOR MODEL A-36

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			
34025	Board-Ant. & Grd. terminal board.....	12454	Resistor-33,000 ohm, 1/4 watt (R2)....
S-3099	Capacitor-Adjustable trimmer bank comprising one of 2-10 mmfd, one of 3-30 mmfd. (C4, C22).....	12285	Resistor-470,000 ohm 1/4 watt (R8, R9)
12723	Capacitor 56 mmfd. (C6).....	12679	Resistor-2.2 megohm, 1/4 watt (R1, R3).....
S-3123	Capacitor 62 mmfd. (temp. comp.) (C20)	13601	Resistor-10 megohm, 1/4 watt (R7)...
12724	Capacitor 120 mmfd. (C5).....	S-3155	Shaft-Station selector drive shaft..
13003	Capacitor 180 mmfd. (C13).....	31364	Socket-Dial lamp socket.....
12694	Capacitor 220 mmfd. (C15).....	S-3180	Socket-Loop socket (on Loop).....
S-2895	Capacitor 220 mmfd. (close tol.) (C18)	14278	Socket-Phono input socket.....
12952	Capacitor 330 mmfd. (C3).....	31319	Socket-Tube socket.....
31381	Capacitor 620 mmfd. (C21).....	30585	Spring-Drive cord tension spring (Pkg. 2).....
5107	Capacitor .0025 mfd. (C14, C25).....	S-3151	Switch-Range switch.....
4937	Capacitor .01 mfd. (C17, C26, C28)....	S-3153	Switch-Tone switch (S3).....
32787	Capacitor .05 mfd. (C7, C10, C27)....	S-3115	Transformer-1st I.F. transformer (L6, L7, C8, C9).....
32240	Capacitor Electrolytic comprising two 10 mfd, and one 20 mfd. section (C16, C23, C24).....	S-3116	Transformer-2nd I.F. transformer (L8, L9, C11, C12).....
S-3109	Coil-Antenna "C" band (L2, L3, L4, L5).	S-2457	Transformer-Power 110-125 volt 50/60 cycle (T1).....
S-3111	Coil-Oscillator "A" band (L14).....	33618	Transformer-Power 110-125 volt 25/60 cycle (T1).....
S-3114	Coil-Oscillator 19 M band (L11)....	S-3150	Volume control & power switch (R5, S2)
S-3112	Coil-Oscillator 25 M band (L12)....	SPEAKER ASSEMBLIES	
S-3113	Coil-Oscillator 31 M band (L13)....	31825	Cap-Dust cap for cone centre (Pkg. 5).
S-3149	Condenser-two gang tuning condenser (C1, C2, C19).....	S-2458	Coil-Field coil (L15).....
S-3177	Cord-Indicator drive cord (approx. 40")	11469	Coil-Hum neutralizing coil (L16)....
35627	Drum-Drive cord drum.....	31275	Cone-Speaker cone and voice coil (L10)
S-3152	Indicator-Station selector indicator pointer.....	5118	Plug-3 contact male plug.....
11765	Lamp-Dial lamp Mazda #51.....	S-2827	Speaker complete.....
5119	Plug-3 contact female speaker plug.	S-2855	Transformer-Output (T2).....
S-3179	Plug-4 contact male loop plug.....	MISCELLANEOUS ASSEMBLIES	
S-3178	Pu ley-Dial cord pulley (Pkg. 2)....	S-3148	Dial scale.....
33726	Retainer-"C" washer for drive shaft (Pkg. 5).....	S-3156	Knob-Range switch knob.....
34373	Retainer-"C" washer for pulleys (Pkg. 5).....	35650	Knob-Tone control knob.....
31388	Resistor-390 ohm, 1 watt (R10).....	34489	Knob-Volume or tuning knob.....
30128	Resistor-12,000 ohm 1/4 watt (R6)...	S-3160	Loop-Antenna loop assembly (L1)....
33489	Resistor-15,000 ohm 2.5 watt wirewound	14270	Spring-Knob retaining spring (Pkg. 5)
13998	Resistor-22,000 ohm, 1/4 watt (R13)		

MODEL A-36A

Model A-36A is similar to Model A-36 with the exception of the Tone Control Switch, which is located on the chassis rear apron instead of on the side of the cabinet.

Parts Peculiar to Model A-36A

Stock No.	Description
33634	Switch-Tone switch.