

General Electric Co.

Model: G106

Chassis:

Year: Pre October 1938

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

Riders Volume 9 - GE 9-32

Riders Volume 9 - GE 9-33, 34

Riders Volume 9 - GE 9-35, 36

Riders Volume 9 - GE 9-37

Riders Volume 9 - GE 9-38

Riders Volume 9 - GE 9-39

MODELS G-105, G-106
Specifications
Tuner Data

GENERAL ELECTRIC CO.

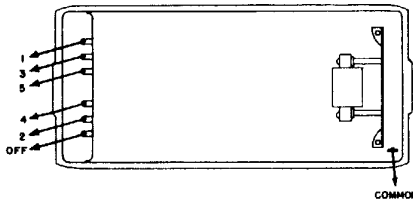


Fig. 12. Pre-timer Wiring Diagram

Physical Specifications

Model	G-105	G-106
Height	42 inches	43 inches
Width	28 3/4 inches	29 3/4 inches
Depth	18 1/2 inches	17 3/4 inches
Weight Packed	100 lbs.	130 lbs.

Manual Tuning Drive Ratio . . . 50:1

Tuning Frequency Range

Band "B"	540-1575 kc
Band "C"	1575-5700 kc
Band "D"	5700-18,000 kc

Intermediate Frequency . . . 455 kc

Electrical Power Output

Undistorted	11.0 watts
Maximum	13.0 watts

Tone Control . . . 5 Position

Low-speaker—Electrodynamic

Outside Cone Diameter	12 inch
Voice Coil Impedance	3.5 ohms at 400 cycles
Trial Coil Resistance	460 ohms (cold)

Tubes

R.F. Amplifier	GE-6K7
Converter and Oscillator	GE-6A8G
I.F. Amplifier	GE-6K7
Detector and A.V.C.	GE-6H6
Audio Driver	GE-6F5
Audio Inverter	GE-6V6G
Audio Power Amplifier	(2) GE-6V6G
Tuning Indicator	GE-6U5
Rectifier	GE-5U4G
Dial Lamp	(2) MAZDA No. 44

of the system. To remedy, lower the complete assembly by loosening the two screws on the inside of the case and then lower assembly—tighten set screws.

2. The tension of the friction clutch on the remote control motor is adjusted at the factory and should not require resetting. If it is set too tight, the volume control may be damaged when "VOL. DEC." key is used to a depression position. If this condition exists, the volume control may be damaged when the slip clutch is too loose the control will fail to turn.

AUTOMATIC STATION PRE-TIMER
G-106

The Pre-timer is quite similar to the remote control in operation in that it works in parallel with the regular station keys; turning "On" and "Off" power and tuning stations. The operation, however, instead of being controlled manually, is controlled by a synchronous motor. This allows a pre-set circuit to be made with a selected station key by a pre-set time.

The 86 timing contacts project through slots in the clock panel and are supported by two metal plates at the rear. A molded carriage is propelled from left to right during the 12 hours of the AM period and from right to left during the PM period, by means of a lead screw having right and left handed threads, which is rotated continuously by the idler drive wheel. The timing contacts are supported by two metal plates at the rear. The carriage corresponding to the stations to which the contacts are set. When the contact is made the pre-timer energizes the corresponding station button on the faintail (in back of the gang condenser) and thus drives the tuning motor to the desired station. In order to differentiate between AM and PM operations, a limit switch is provided that is operated by the carriage at the edge of the AM period, and the PM sliders during the PM period.

As the contact carriage moves very slowly, the accuracy with which it makes and breaks the control circuits is not sufficient. In order to obtain accurate timing, the contacts on the carriage are arranged so as to engage the sliders several minutes before and to disengage them several minutes after the common return lead. This switch closes the control circuit exactly on the quarter hour, and opens it after ample time has elapsed for the completion of the tuning operation, in this case, about ten seconds.

The clock motor is of the self-starting synchronous type with enclosed gearing running in a bath of oil. It operates on the 110-volt power supply. The receiver is shown on the lower left-hand portion of Fig. 5. The wiring diagram to the clock panel is shown in Fig. 12.

Photograph Connections

Fig. 13 shows a simple sketch for connecting a crystal or high impedance magnetic pick-up into the G-105 or G-106 circuit for the reproduction of phonograph recording. This method uses a two-prong jack and is C-32 and the volume control plug is attached to the pick-up leads; and for phonograph operation, it is merely necessary to insert it into the jack. The jack may be mounted on the rear-chassis deck and all connecting leads should be properly shielded to prevent radio noise. The pick-up is connected as suggested, the regular radio and tone controls work for both radio and phonograph reproduction.

NOTE.—In most cases a suitable loading circuit composed of a resistor or resistor and capacitor network should be used across the pick-up leads when using a crystal type unit.



Fig. 13.

motor driven tuning system. When the button passes into the insulated segment it will easily over ride the insulated segment on the contact drum, since this segment is very narrow. If this condition continues an oscillatory motion or "hunting" is set up and the motor will not come to rest as long as the station key is pressed. The brake, located at the rear of the motor, will be adjusted to give the proper voltage so that the motor only has to make one or two reversals.

This adjustment should be made under an average operating line voltage and allowance made for changes in voltage over the 24 hour period.

Lubrication

For smooth and noiseless operation of the tuning system, it is absolutely necessary to keep it well lubricated. Contactor Drum—use thin film of petroleum jelly. Dial Pointer Guide Rods—use thin film of petroleum jelly. Motor Bearings—these are oil-less type and do not require lubrication.

Dial Mechanism

A sketch showing the threading of the dial mechanism controls is shown in Fig. 9. The manual drive involves two extra parts in addition to the manual drive wheel (M), the idler drive wheel (I) and its shaft (S), see Fig. 9. If the idler drive wheel (D) on which the manual drive cone engages is set up too high, the manual drive cone is liable to wedge underneath the idler drive wheel, thus not allowing the motor drive cone to engage when using Touch-Tuning. If this occurs by only a normal pressure on manual control, then the idler drive wheel must be moved either up or down. The bracket which mounts the large idler drive wheel has slots and mounting screws so that idler drive wheel can be moved either up or down.

The 25-cycle receivers as they leave the factory have a larger rubber manual drive cone than the 60-cycle receivers. The cone for the 60-cycle receiver may be substituted for replacement provided the idler drive wheel is lowered slightly.

REMOTE CONTROL

The GM-8 Remote Control is merely another station key-board assembly that is wired in parallel with the regular station keys. In addition, a remotely controlled motor is used to either raise or lower the volume at the receiver. By referring to Fig. 11, the details of the operation of this device may be readily understood. Control leads that parallel any six of the regular receiver station keys. Lead No. 1 supplies 23 volts to the remote key-board assembly while leads No. 8 and No. 9 are the phase-reversing leads to the volume control motor.

When the remote control is attached to a receiver, then the semi-depressed positions which the receiver must be in to obtain the necessary phase shift. The brake pad tension should be re-adjusted when operating a 25-cycle receiver on a 60-cycle circuit.

During period of motor operation, either for automatic station selection or for scanning, silent tuning is incorporated. This is accomplished by a circuit which gives both instantaneous cut-off of the audio amplifier and time delay in restoring the response. By reference to the schematic Fig. 5, it will be observed that one lead of the 60th diode is used to rectify the D.C. voltage is used to bias the audio amplifier tube to cut-off. Note that the charging time of the bias circuit is only determined by the diode resistance which is very small. The time required for the audio amplifier (6F5) to return to normal bias however, is determined by the product of R-26 and C-56 and is therefore controllable.

Remote Control Notes

1. If key assembly on remote control unit is too high in the case, it is possible that one or all of the keys may be slightly depressed at all times so as to cause faulty operation

TOUCH-TUNING

The General Electric "Touch-Tuning" system consists of three essential units: the keyboard assembly of fourteen keys, used for touch-tuning control; the motor and drive mechanism; and the contact drum, which is a set of thirteen different stations to be tuned automatically.

Thirteen keys are used for the selection of pre-set stations while the No. 14 key is used to turn power "Off". Pressing in any key will lock the key in a semi-depressed position and release any other that may be in the circuit, thus the selection of the station to be tuned. The "Off" key, when turned, turning the set power on on key will release the "Off" key.

The tuning motor is operated as a 23-volt, split-phase induction motor using capacitor C-51 as the phase shifting device. On the Model G-105, the 23 volts is supplied directly from the receiver power transformer while on the Model G-106 the voltage is obtained from a separate transformer which operates the motor on the "Off" key. The motor is always connected to the power supply when the "Off" key is depressed. The motor is in operation and is set up when the receiver is assembled at the factory. A special button is assembled on the faintail assembly, at the rear of the gang condenser, for the "Off" position. This button is white to distinguish it from the regular station buttons and the contact point is narrower so that no bounce back is allowed on the "Off" position.

The contact drum, which is the tuning control circuit and the following cycle of operation, may be traced very easily. When a key is depressed, it completes the 23-volt circuit through the button making contact with the contact segment (CT) and energizes one winding of the motor. The other winding on the motor is energized through the condenser C-51. The direction of rotation of the motor is dependent upon the position of the contact segment (CT) which is in the motor. The rotor is pulled further into motor field and engages its rubber cone hub (I) with the idler drive wheel (D), (see Fig. 9) which in turn rotates the gang condenser and contact segment. This operation continues until the insulated segment (I) breaks the station button circuit to the contact segment and the motor stops. The inertia in the tuning system causes the motor to overshoot the contact segment and makes contact with the other half of the contact segment. This makes the other winding of the motor and causes the motor to reverse. The brake on the idler drive wheel does not allow the tuning system to store up enough inertia to go past this insulated strip, on the reversal of the motor and thus allows the station button to come to rest on the stationary pre-set position.

The motor scan switch S-7 is incorporated to allow fingertip control of the motor drive. Normally, the switch contacts are open and control of the motor is had by closing either of the two sides of the switch dependent upon the direction of travel desired. receivers, two motor capacitors (RC-597) are used to obtain the necessary phase shift. The brake pad tension should be re-adjusted when operating a 25-cycle receiver on a 60-cycle circuit.

Silent Tuning

During period of motor operation, either for automatic station selection or for scanning, silent tuning is incorporated. This is accomplished by a circuit which gives both instantaneous cut-off of the audio amplifier and time delay in restoring the response. By reference to the schematic Fig. 5, it will be observed that one lead of the 60th diode is used to rectify the D.C. voltage is used to bias the audio amplifier tube to cut-off. Note that the charging time of the bias circuit is only determined by the diode resistance which is very small. The time required for the audio amplifier (6F5) to return to normal bias however, is determined by the product of R-26 and C-56 and is therefore controllable.

Drive Wheel Brake Adjustment

A friction brake has been incorporated on the drive wheel circumference (D) to accomplish accurate stopping of the

GENERAL ELECTRIC CO.

MODEL G-105
Schematic, Dial Data

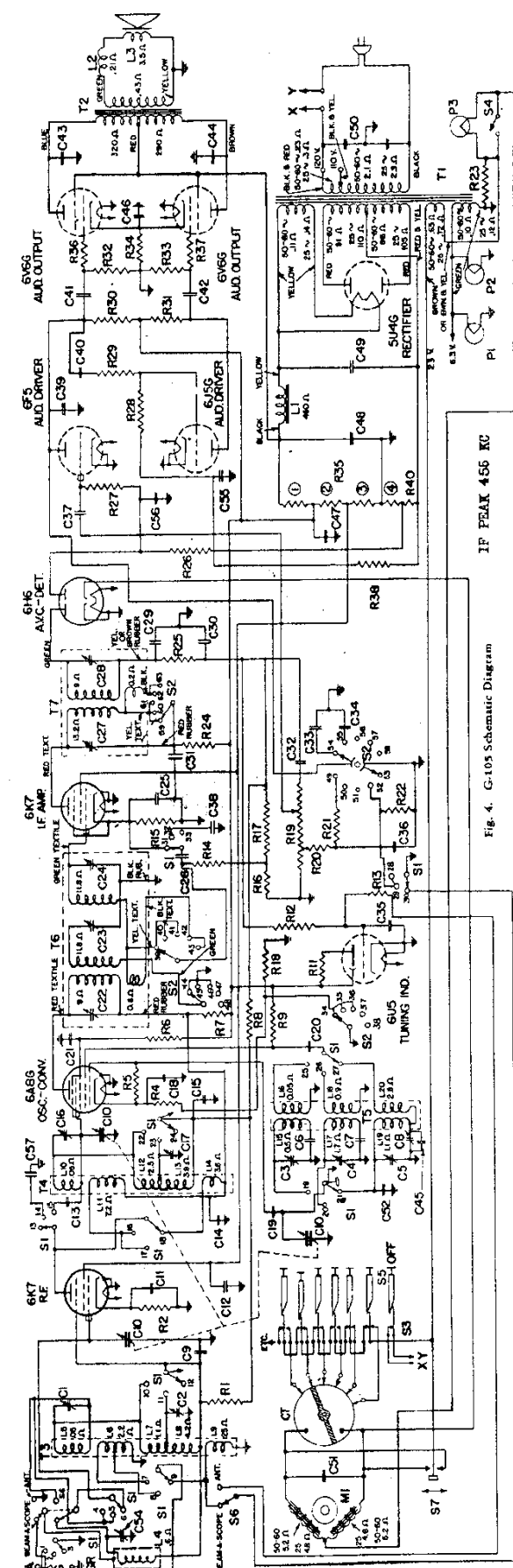


Fig. 4. G-105 Schematic Diagram

SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
R-1	2,000 Ohm Carbon Resistor	C-38	.01 MFD. Paper Capacitor
R-2	300 Ohm Carbon Resistor	C-39	50-500 MFD. Electrolytic Capacitor
R-3	330 Ohm Carbon Resistor	C-40	20 MFD. Paper Capacitor
R-4	39,000 Ohm Carbon Resistor	C-41	.05 MFD. Paper Capacitor
R-5	19,000 Ohm Carbon Resistor	C-42	.05 MFD. Paper Capacitor
R-6	1,000 Ohm Carbon Resistor	C-43	.003 MFD. Paper Capacitor
R-7	1,000 Ohm Carbon Resistor	C-44	.003 MFD. Paper Capacitor
R-8	1.8 Megohm Carbon Resistor	C-45	.175 MFD. Compensating Capacitor
R-9	22,000 Ohm Carbon Resistor	C-46	25 MFD. 25 V. W.V. Dry Electro.
R-10	1 Megohm Carbon Resistor	C-47	10 MFD. 400 V. W.V. Dry Electro.
R-11	22 Megohm Carbon Resistor	C-48	30 MFD. 450 V. W.V. Wet Electro.
R-12	22 Megohm Carbon Resistor	C-49	30 MFD. 450 V. W.V. Wet Electro.
R-13	22 Megohm Carbon Resistor	C-50	.01-.01 MFD. 350 V. A.C. Line Capacitor
R-14	22 Megohm Carbon Resistor	C-51	60 MFD. 40 V. A.C. Dry Electro.
R-15	56,000 Ohm Carbon Resistor	C-52	20 MFD. Compensating Capacitor
R-16	20,000 Ohm Carbon Resistor	C-53	2-40 MFD. Trimmer Capacitor
R-17	20,000 Ohm Carbon Resistor	C-54	.25 MFD. Paper Capacitor
R-18	330 Ohm Carbon Resistor	C-55	.25 MFD. Paper Capacitor
R-19	2 Megohm Tap. Vol. Control	C-56	.25 MFD. Paper Capacitor
R-20	68,000 Ohm Carbon Resistor	C-57	.81 MFD. Mica Capacitor
R-21	68,000 Ohm Carbon Resistor	T-1	Power Transformer, 30-40 cycles-25
R-22	17 Megohm Carbon Resistor	T-2	Series Transformer
R-23	1,000 Ohm Carbon Resistor	T-3	Ant. Transformer
R-24	1,000 Ohm Carbon Resistor	T-4	Ant. Transformer
R-25	47,000 Ohm Carbon Resistor	T-5	Osc. Transformer
R-26	47,000 Ohm Carbon Resistor	T-6	1st I.F. Transformer
R-27	15 Megohm Carbon Resistor	T-7	2nd I.F. Transformer
R-28	42,000 Ohm Carbon Resistor	L-1	Field Coil 400 Ohms cold
R-29	1.2 Megohm Carbon Resistor	L-2	Hum Bunk Coil
R-30	58,000 Ohm Carbon Resistor	L-3	Boost Coils 3.5 Ohms
R-31	68,000 Ohm Carbon Resistor	CT	Contactor Assembly
R-32	210,000 Ohm Carbon Resistor	P-1	Pilot Lamp 6.3 V. - .25 Amp
R-33	230 Ohm Resistor (W. W.)	P-2	Pilot Lamp 6.3 V. - .25 Amp
R-34	230 Ohm Resistor (W. W.)	P-3	Tuning Lamp 25 V. - 2 Amp.
R-35	4 Sections Voltage Divider	S-1	Bread Change Switch
R-36	1,000 Ohm Carbon Resistor	S-2	Tone Control Switch
R-37	1,000 Ohm Carbon Resistor	S-3	Power Supply Switch
R-38	470,000 Ohm Carbon Resistor	S-4	Tuning Lamp Switch
C-1	50 MFD. Paper Capacitor	S-5	Station Selector Switch
C-2	50 MFD. Paper Capacitor	S-6	Motor-Stop Ant. Switch
C-3	5-20 MFD. "D" Ant. Trimmer	S-7	Tuning Motor 23 V. 50-60 Cycles-25
C-4	2-20 MFD. "D" Osc. Trimmer	M	M
C-5	7-13 MFD. "B" Osc. Trimmer		
C-6	3200 MFD. Mica Capacitor		
C-7	2100 MFD. Mica Capacitor		
C-8	160-375 MFD. "B" Padder		
C-9	.05 MFD. Paper Capacitor		
C-10	10-450 MFD. Tuning Capacitor		
C-11	10-450 MFD. Tuning Capacitor		
C-12	.05 MFD. Paper Capacitor		
C-13	.05 MFD. Paper Capacitor		
C-14	.1 MFD. Paper Capacitor		
C-15	.05 MFD. Paper Capacitor		
C-16	2-20 MFD. "D" R.F. Trimmer		
C-17	3-30 MFD. "B" R.F. Trimmer		
C-18	.05 MFD. Paper Capacitor		
C-19	.50 MFD. Silver Plated Capacitor		
C-20	47 MFD. Mica Capacitor		
C-21	10 MFD. Paper Capacitor		
C-22	400-230 MFD. 1st I.F. Trimmer		
C-23	50-135 MFD. 1st I.F. Sec. Trimmer		
C-24	50-135 MFD. 1st I.F. Term. Trimmer		
C-25	.05 MFD. Paper Capacitor		
C-26	.05 MFD. Paper Capacitor		
C-27	50-135 MFD. 2nd I.F. Trimmer		
C-28	100-230 MFD. 2nd I.F. Sec. Trimmer		
C-29	150 MFD. Mica Capacitor		
C-30	.05 MFD. Paper Capacitor		
C-31	.05 MFD. Paper Capacitor		
C-32	.05 MFD. Paper Capacitor		
C-33	.0055 MFD. Paper Capacitor		
C-34	.002 MFD. Paper Capacitor		
C-35	.05 MFD. Paper Capacitor		
C-36	.0055 MFD. Paper Capacitor		
C-37	.07 MFD. Paper Capacitor		

SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
S-4	Tuning Lamp Switch
S-5	Station Selector Switch
S-6	Motor-Stop Ant. Switch
S-7	Tuning Motor 23 V. 50-60 Cycles-25

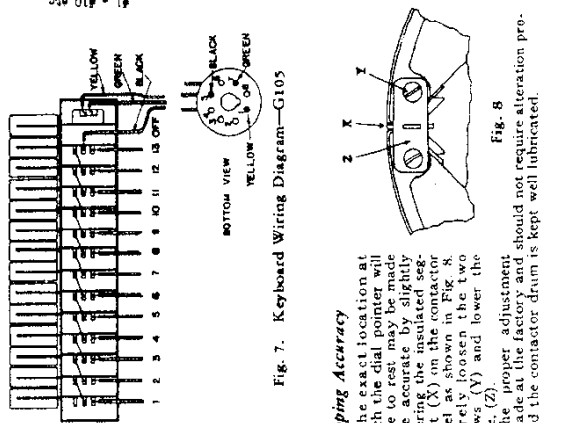
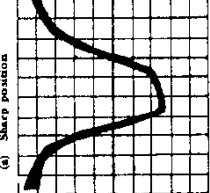
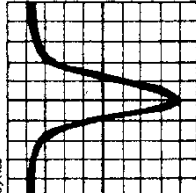


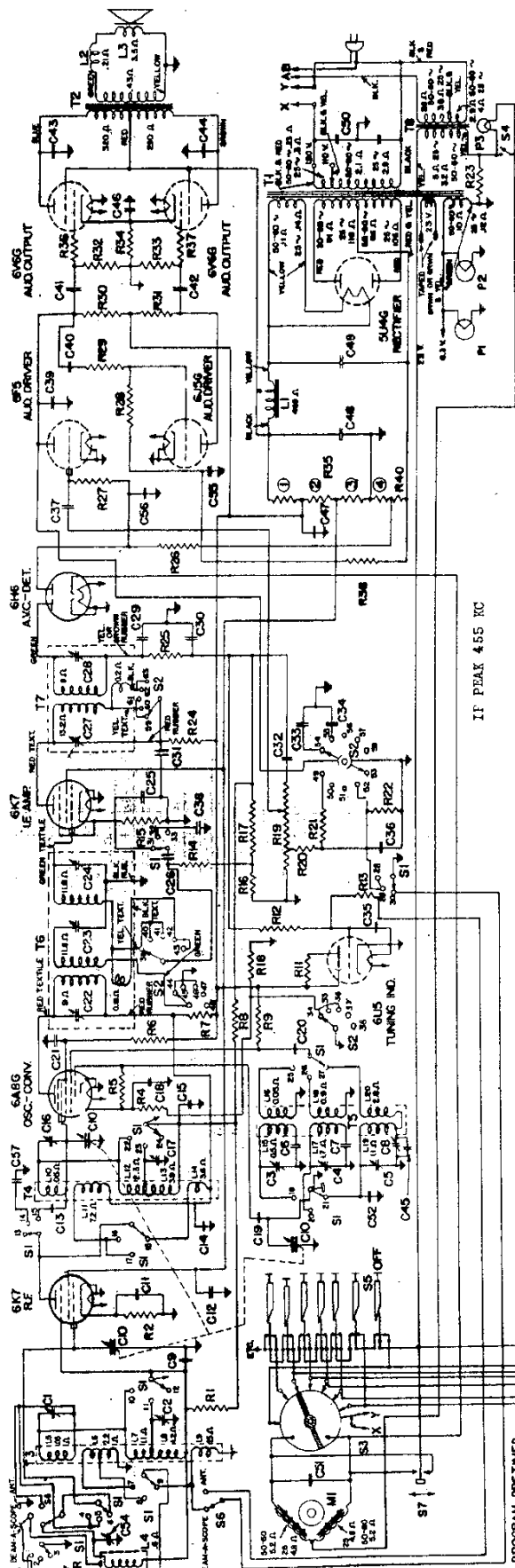
Fig. 7. Keyboard Wiring Diagram-G105

Stopping Accuracy

The exact location of the contactor drum while the receiver is in use may be made more accurate by slightly lowering the insulated segment (X) on the contactor wheel as shown in Fig. 8. Merely loosening the two screws (Y) and lowering the contactor drum is made in the factory and should not require alteration provided the contactor drum is kept well lubricated.

Fig. 8

Fig. 6. Schematic of Touch-Tuning System



IF PEAK 455 KC

SYMBOL	DESCRIPTION
C-17	50 MFD.
C-18	50 MFD.
C-19	50 MFD.
C-20	50-115 M.M.F. 2nd
C-21	50-115 M.M.F. 2nd
C-22	50-115 M.M.F. 2nd
C-23	50-115 M.M.F. 2nd
C-24	50-115 M.M.F. 2nd
C-25	50-115 M.M.F. 2nd
C-26	50-115 M.M.F. 2nd
C-27	50-115 M.M.F. 2nd
C-28	50-115 M.M.F. 2nd
C-29	50-115 M.M.F. 2nd
C-30	50-115 M.M.F. 2nd
C-31	50-115 M.M.F. 2nd
C-32	50-115 M.M.F. 2nd
C-33	50-115 M.M.F. 2nd
C-34	50-115 M.M.F. 2nd
C-35	50-115 M.M.F. 2nd
C-36	50-115 M.M.F. 2nd
C-37	50-115 M.M.F. 2nd
C-38	50-115 M.M.F. 2nd
C-39	50-115 M.M.F. 2nd
C-40	50-115 M.M.F. 2nd
C-41	50-115 M.M.F. 2nd
C-42	50-115 M.M.F. 2nd
C-43	50-115 M.M.F. 2nd
C-44	50-115 M.M.F. 2nd
C-45	50-115 M.M.F. 2nd
C-46	50-115 M.M.F. 2nd
C-47	50-115 M.M.F. 2nd
C-48	50-115 M.M.F. 2nd
C-49	50-115 M.M.F. 2nd
C-50	50-115 M.M.F. 2nd
C-51	50-115 M.M.F. 2nd
C-52	50-115 M.M.F. 2nd
C-53	50-115 M.M.F. 2nd
C-54	50-115 M.M.F. 2nd
C-55	50-115 M.M.F. 2nd

SYMBOL	DESCRIPTION
R-19	1000 Ohms
R-20	1000 Ohms
R-21	1000 Ohms
R-22	1000 Ohms
R-23	1000 Ohms
R-24	1000 Ohms
R-25	1000 Ohms
R-26	1000 Ohms
R-27	1000 Ohms
R-28	1000 Ohms
R-29	1000 Ohms
R-30	1000 Ohms
R-31	1000 Ohms
R-32	1000 Ohms
R-33	1000 Ohms
R-34	1000 Ohms
R-35	1000 Ohms
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R-44	1000 Ohms
R-45	1000 Ohms
R-46	1000 Ohms
R-47	1000 Ohms
R-48	1000 Ohms
R-49	1000 Ohms
R-50	1000 Ohms
R-51	1000 Ohms
R-52	1000 Ohms
R-53	1000 Ohms
R-54	1000 Ohms
R-55	1000 Ohms

SYMBOL	DESCRIPTION
C-1	50-115 M.M.F. 2nd
C-2	50-115 M.M.F. 2nd
C-3	50-115 M.M.F. 2nd
C-4	50-115 M.M.F. 2nd
C-5	50-115 M.M.F. 2nd
C-6	50-115 M.M.F. 2nd
C-7	50-115 M.M.F. 2nd
C-8	50-115 M.M.F. 2nd
C-9	50-115 M.M.F. 2nd
C-10	50-115 M.M.F. 2nd
C-11	50-115 M.M.F. 2nd
C-12	50-115 M.M.F. 2nd
C-13	50-115 M.M.F. 2nd
C-14	50-115 M.M.F. 2nd
C-15	50-115 M.M.F. 2nd
C-16	50-115 M.M.F. 2nd
C-17	50-115 M.M.F. 2nd
C-18	50-115 M.M.F. 2nd
C-19	50-115 M.M.F. 2nd
C-20	50-115 M.M.F. 2nd
C-21	50-115 M.M.F. 2nd
C-22	50-115 M.M.F. 2nd
C-23	50-115 M.M.F. 2nd
C-24	50-115 M.M.F. 2nd

SYMBOL	DESCRIPTION
R-1	1000 Ohms
R-2	1000 Ohms
R-3	1000 Ohms
R-4	1000 Ohms
R-5	1000 Ohms
R-6	1000 Ohms
R-7	1000 Ohms
R-8	1000 Ohms
R-9	1000 Ohms
R-10	1000 Ohms
R-11	1000 Ohms
R-12	1000 Ohms
R-13	1000 Ohms
R-14	1000 Ohms
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R-55	1000 Ohms

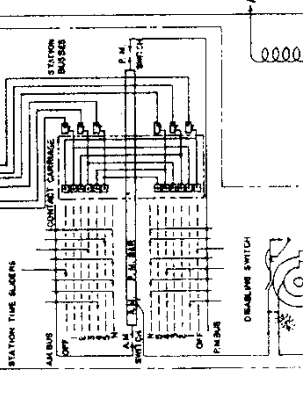
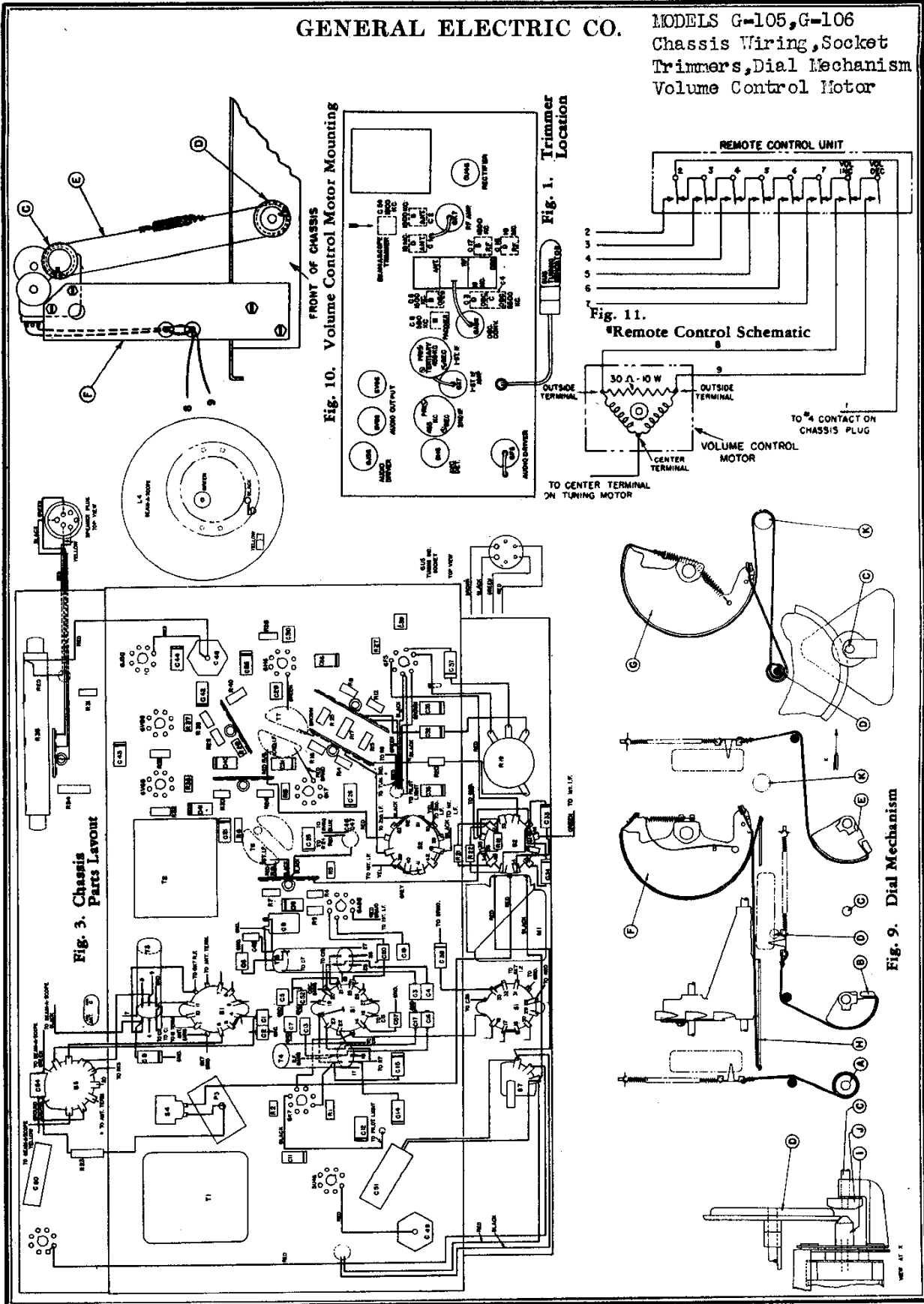


Fig. 5. G-106 Schematic Diagram

GENERAL ELECTRIC CO.

MODELS G-105, G-106
Chassis Wiring, Socket
Trimmers, Dial Mechanism
Volume Control Motor



MODELS G-105, G-106
Circuit Data
Alignment

GENERAL ELECTRIC CO.

I.F. Alignment with Output Meter*

Band Switch Setting	Input Frequency	Tone Control Position	Point of Input	Trimmer	Comments
1. Band B	455 K.C. modulated	Normal	I.F. 6K7 Grid	2nd I.F. Sec. 2nd I.F. Pri.	Condenser gang at minimum capacity—output meter connected across voice coil—volume control at maximum—input as low as practical. Adjust all trimmers in order listed for maximum output. Note.—Do not attempt alignment in the expanded position.
2. Band B	455 K.C. modulated	Normal	Converter 6A8 Grid	1st I.F. Sec. 1st I.F. Pri. Tertiary	
3. Band B	455 K.C. modulated	Normal	Converter 6A8 Grid	All I.F. Trimmers	

R.F. Alignment**

Band Switch Setting	Input Frequency	Tone Control Position	Point of Input	Trimmer	Comments
1. Band B					Mechanically adjust dial pointer to first line at left-hand end of dial scale with condenser gang fully meshed.
2. Band B	1500 K.C. modulated	Bass	Antenna Post	Osc. (C-5) R.F. (C-17) Ant. (C-2)	Connect output meter across voice coil—antenna switch turned to counter-clockwise position. Adjust trimmers in order listed for maximum output.
3. Band B	580 K.C. modulated	Bass	Antenna Post	Osc. Padder (C-8)	Adjust padder for maximum output in vicinity of 580 K.C. while rocking gang condenser.
4. Band B	1500 K.C. modulated				
5. Band C	5500 K.C. modulated	Bass	Antenna Post	Osc. (C-4)	Adjust trimmer for greatest output with dial pointer at 5500 K.C.
6. Band D	18.0 M.C. modulated	Bass	Antenna Post	Osc. (C-3) R.P. (C-16) Ant. (C-1)	Peak C16 and C17 while rocking gang condenser. The image of any signal on the D band should be 910 K.C. below input signal. Example: 15 M.C. image 14.09 M.C.
7. Band B	1500 K.C. modulated	Bass	Antenna Post	Beam-a-scope (C-54)	Turn antenna switch to clockwise position, align Beam-a-scope trimmer for maximum output.

* Use "dummy" antenna consisting of .05 mfd. capacitor between signal generator and point of input.
** Use "dummy" antenna consisting of 250 mmf. capacitor in series with 200-ohm resistance between the signal generator and the point of input.

I.F. Alignment with Oscilloscope*

Band Switch Setting	Input Frequency	Tone Control Position	Point of Input	Trimmer	Comments
1. Band B	455 K.C. and 30 K.C. Sweep	Normal	I.F. 6K7 Grid	2nd I.F. Sec. 2nd I.F. Pri.	Condenser gang at minimum capacity—vertical input to ground—input at R-25, R-12, and R-17. Adjust trimmers in order mentioned for a single curve of maximum amplitude. The resulting curve on the "normal" position as shown in Fig. 2A. The expanded position as shown in Fig. 2B. At "Treble P" is shown in Fig. 2B.
2. Band B	455 K.C. and 30 K.C. Sweep	Treble 1	Converter 6A8 Grid	1st I.F. Sec. 1st I.F. Pri.	
3. Band B	455 K.C. and 30 K.C. Sweep	Normal	Converter 6A8 Grid	Tertiary	
4. Band B	455 K.C. and 30 K.C. Sweep	Normal	Converter 6A8 Grid	All I.F. Trimmers	

Switch (S-6) located at the rear of the chassis is the Beam-a-Scope antenna transfer switch to allow operation on all bands with either the Beam-a-Scope or an outside antenna. This switch also reduces the sensitivity of the 805 tuning indicator tube in the "B" band only.

Load-speaker
To center the voice coil, remove dust cover by softening with acetone. Loosen the two spider clamping screws and place three 1 in. by 1/4 in. by 0.010 in. paper or celluloid shims between spider and voice coil. Use a fine piece for clearance; then tighten clamping screws. Remove shims and cement the dust cap back in place with Gyltrel cement.

Coil System
The "B," "C," and "D" band antenna coils are wound on a single coil form T-3 as shown in Fig. 4 and 5. T-4 and T-5 are the R.F. and oscillator transformers respectively for the "B," "C," and "D" bands. All switch points are numbered in the personal wiring diagram, Fig. 3.

Figs. 4 and 5 to facilitate in locating these switch points, on the personal wiring diagram, Fig. 3.

Wave change switch
Positions of the wave change switch:

Band	Point of Input
Band "D"	L-6
Band "C"	L-9
Band "B"	L-4 (Beam-a-Scope)
Band "A"	L-17

Antenna Primary
Beam-a-Scope
Regular Antenna
Wave change switch point
Antenna Second
Beam-a-Scope
Regular antenna
Wave change switch point
R.F. Primary
Wave change switch point
R.F. Secondary
Wave change switch point
Oscillator Pri.
Wave change switch point
Oscillator Second
Wave change switch point

In the "C" and "D" bands, the band switch removes bass compression by grounding capacitor C-26, increases the I.F. sensitivity and also increases the "North" when replacing capacitor C-46 and C-42. It is absolutely necessary to replace with the specified parts as these are special negative temperature coefficient capacitors that compensate for oscillator drift with temperature.

ALIGNMENT PROCEDURE

Alignment
Use a "dummy" antenna in making all alignments. The grid lead should not be removed from the tube so that the input signal is applied when aligning the I.F. amplifier.

KEYBOARD TOUCH-TUNING
THREE-BAND SUPERHETERODYNE RECEIVERS
SERVICE DATA
MODELS G-105 AND G-106

Electrical Specifications

Model G-105:
Rating "A" 105-115 (115-125)* volts, 50-60 cycles, 155 watts
Rating "C" 105-115 (115-125)* volts, 25-60 cycles, 160 watts

Model G-106:
Rating "A" 105-115 (115-125)* volts, 60 cycles, 155 watts
Rating "B" 105-115 (115-125)* volts, 50 cycles, 155 watts
Rating "C" 105-115 (115-125)* volts, 25 cycles, 160 watts

The receivers as shipped from the factory have the power cord connected to the 115-125-volt tap of the transformer. On the 115-125-volt tap, the power supply transformer should be always below 310 volts, the connecting of the power cord should be removed from this lead and soldered to the 105-115-volt tap (black and yellow lead). After changing the connection, tape the soldered joint as well as the exposed end of the unused lead. This change requires removal of the chassis from the cabinet.

GENERAL INFORMATION

The Models G-105 and G-106 are three band A-C operated receivers employing ten General Electric Pre-tuned tubes in a superheterodyne circuit, as described above. These receivers are equipped with a simplified Touch Tuning system allowing motor-tuning of thirteen stations, and the new air die exclusive tuned antenna system. Beam-a-Scope tone control, R.F. Amplifier, five position hi-fidelity tone control, special I.F. transformers and push-pull output.

The Model G-105 not only has all the above features, but it also incorporates an ingenious automatic program selector which permits the automatic tuning of favorite programs at 10-minute intervals throughout a 24-hour period.

BEAM-A-SCOPE

The "Beam-a-Scope" is essentially a tuned coil antenna wound on an impregnated frame and shielded by a Faraday screen against electrostatic disturbances. This construction discriminates in favor of the desired signal as against a local magnetic field. The "Beam-a-Scope" is composed of two components—electrostatic and magnetic fields—the "Beam-a-Scope" may be revolved so that a null point is found where no voltage is produced from these two components in the direction where the noise originates. Due to the fact that this null point is very sharp, it is possible to cause a sharp null point to be in a direct line with the selected station, and the noise component of the strength reduced appreciably. In the second place, the "Beam-a-Scope" eliminates the external return path to ground eliminates the local man-made noise sources in much the same way as a shielded antenna lead-in does in an ordinary antenna circuit. In other words, the "Beam-a-Scope" discriminates against the electrostatic component, because of the Faraday shield. Since the electrostatic component of a local noise source is a great deal larger than the magnetic component, this rejection property brings about an enormous increase in signal-to-noise ratio.

One important feature available on the broadcast band and in the "B" and "D" bands, the Beam-a-Scope tuned grid circuit. On the "C" and "D" bands, the Beam-a-Scope is connected to operate as a capacity type antenna.

GENERAL ELECTRIC CO.

MODELS G-105, G-106
Voltage, Parts

MODELS G-105 AND G-106

Insist on genuine factory-tensured parts, which may be purchased from authorized dealers.

Stock No.	Description	List Price	Stock No.	Description	List Price
*RB-008	BOARD—Terminal Board (2 lugs) (25-cycle set)	\$0.10	*RQ-1291	RESISTOR—22,000 ohm, 1/2 W. carbon (R-9) (Pkg. of 5)	.70
*RB-023	BOARD—Terminal Board (4 lugs)	.10	*RB-101	BRACKET—Manual and motor drive bracket	.40
*RB-040	BOARD—Antenna ground terminal board	.10	*RB-102	BRACKET—Tuning condenser mounting	.45
*RB-043	BOARD—Antenna ground terminal board	.10	RB-103	BRACKET—Drive wheel friction bracket (complete)	.20
*RB-046	BOARD—Terminal Board (4 lugs)	.10	RC-8041	CABLE—Dial pointer drive cable (2 cords) piece	.20
*RB-070	BOARD—Terminal Board (3 lugs)	.10	RC-8042	CABLE—Station letter cards (set)	\$0.60
*RB-074	BOARD—Terminal Board (7 lugs)	.10	RC-8044	CABLE—Power cable and plug to push-button assembly	.50
*RB-094	BOARD—Terminal board transformer	.10	RC-8047	CABLE—Station selector button cable	.50
*RB-103	BOARD—Terminal board transformer	.10	RC-8048	CABLE—Station key (Pkg. of 5)	.30
*RC-011	CAPACITOR—.002 mfd., 600 V. paper (C-43)	.80	RC-8049	CABLE—Station Summing Lines (Pkg. of 10)	.10
RC-020	CAPACITOR—.003 mfd., 1500 V. paper (C-43, 44)	.25	RC-8051	SCREWS—Key-board assembly thumb screws (Pkg. of 10)	.40
*RC-023	CAPACITOR—.005 mfd., 600 V. paper (C-33, 36)	.25	RC-8052	SCREWS—Key-board assembly thumb screws (Pkg. of 10)	.40
*RC-038	CAPACITOR—.01 mfd., 600 V. paper (C-35, 38)	.25	RC-8054	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-049	CAPACITOR—.02 mfd., 600 V. paper (C-32, 37, 40)	.30	RC-8055	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-104	CAPACITOR—.05 mfd., 600 V. paper (C-42)	.30	RC-8056	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-138	CAPACITOR—.1 mfd., 600 V. paper (C-14)	.30	RC-8057	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-092	CAPACITOR—.15 mfd., 600 V. paper (C-15, 55, 56)	.30	RC-8058	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-217	CAPACITOR—.50 mfd., mica (silver plate) (C-10)	.35	RC-8059	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-219	CAPACITOR—.18 mfd., mica (C-12)	.25	RC-8060	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-227	CAPACITOR—.48 mfd., mica (C-57)	.25	RC-8061	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-280	CAPACITOR—.20 mfd., compensating capacitor (C-59)	.35	RC-8062	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-242	CAPACITOR—.150 mfd., mica (C-29, 30)	.35	RC-8063	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-245	CAPACITOR—.175 mfd., compensating capacitor (C-49)	.45	RC-8064	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-283	CAPACITOR—.270 mfd., mica (C-39)	.45	RC-8065	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-340	CAPACITOR—2100 mfd., mica (C-7)	.30	RC-8066	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-333	CAPACITOR—3200 mfd., mica (C-6)	.30	RC-8067	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-393	CAPACITOR—1700 mfd., mica (silver plate) (C-4)	.50	RC-8068	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-429	capacitor (C-48, 49)	.135	RC-8069	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-596	CAPACITOR—25 mfd., 25 V., 10 mid., 400 V. A.C. motor (C-30)	1.10	RC-8070	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-697	CAPACITOR—40 mfd., 40 V. A.C. motor capacitor (C-31)	1.00	RC-8071	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-678	CAPACITOR—160-375 mfd., "B" peader (C-9)	.20	RC-8072	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-679	CAPACITOR—2-20 mfd., trimmer (C-54)	.35	RC-8073	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-680	CAPACITOR—2-20 mfd., 3-30 mfd., double trimmer (C-16, 17)	.35	RC-8074	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-681	CAPACITOR—7-25 mfd., "B" double trimmer (C-18)	.90	RC-8075	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-682	CAPACITOR—2-20 mfd., double trimmer (C-19)	.35	RC-8076	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-683	CAPACITOR—5-40 mfd., double trimmer (C-10)	.35	RC-8077	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-729	CONDENSER—3 gang tuning condenser (C-10)	.60	RC-8078	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RC-863	POWER COR.—Power cord	.65	RC-8079	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-1977	GRAP.—Tuning indicator clamp and cable—Speaker cable and plug	.50	RC-8080	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-8035	CABLE—Tuning indicator cable and socket	.45	RC-8081	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-8040	CABLE—Tuning indicator cable and socket	.45	RC-8082	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-882	CABLE—Check connector cord and plug	.50	RC-8083	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-016	GRID (Pkg. of 5)	.10	RC-8084	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-027	KNOB—Tone and band change knobs (Pkg. of 5)	.50	RC-8085	TAB—"On-Off" tab for station button (Strip of 10)	.50
RC-028	KNOB—Control knobs (Pkg. of 5)	.50	RC-8086	TAB—"On-Off" tab for station button (Strip of 10)	.50
RL-068	COIL—Ant. coil band "B, C, and D"	1.25	RC-8087	TAB—"On-Off" tab for station button (Strip of 10)	.50
RL-142	COIL—R.F. coil band "B, C, and D"	1.15	RC-8088	TAB—"On-Off" tab for station button (Strip of 10)	.50
RL-247	COIL—Osc. coil band "B, C, and D"	\$1.25	RC-8089	TAB—"On-Off" tab for station button (Strip of 10)	.50
RL-590	BEAM-ASCOPPE—Beam-oscope antenna	9.15	RC-8090	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RQ-1247	RESISTOR—330 ohm, 1/2 W. carbon (R-2, 4, 16, 18) (Pkg. of 5)	.70	RC-8091	TAB—"On-Off" tab for station button (Strip of 10)	.50
*RQ-1259	RESISTOR—1000 ohm, 1/2 W. carbon (R-7, 21, 36, 37) (Pkg. of 5)	.70	RC-8092	TAB—"On-Off" tab for station button (Strip of 10)	.50