MODEL H-61

Six-Tube, Two-Band, A-C Superheterodyne Receiver

Electrical Specifications

FREQUENCY RANGES

Standard Broadcast ..... 540-1,720 kc
Short Wave ..... 5.8-18 mc

INTERMEDIATE FREQUENCY ..... 455 kc

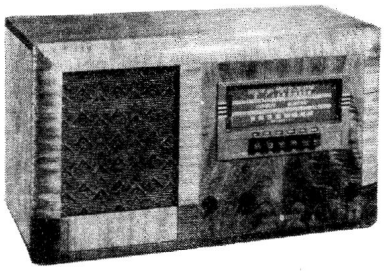
TUBE COMPLEMENT

(1) Type-6SA7.. 1st Detector—Oscillator
(2) Type-6SK7 ..... I-F Amplifier
(3) Type-6SQ7.....2nd Detector, A.V.C., and A-F Amplifier
(4) Type-6F6-G .....Power Output
(5) Type-5Y4G ..... Rectifier
(6) Type-6U5 ..... Tuning Indicator

PILOT LAMPS (2) Mazda No. 44, 6.3 volts, 0.25 amp.

POWER OUTPUT RATING

Undistorted ..... 2.5 watts
Maximum ..... 4.5 watts



LOUDSPEAKER (RL-79-1)

Type ..... 8-inch Electrodynamic
V.C. Impedance...3.4 ohms at 400 cycles

POWER SUPPLY RATINGS

Rating A.....105-125 volts, 50-60 cycles, 80 watts

Rating B.....105-125 volts, 25-60 cycles, 80 watts

Adjustments for Keyboard Tuning

The keys should be adjusted for six stations after the receiver has had a brief warm-up period.

Any standard broadcast stations may be chosen. The preferable arrangement is to adjust for stations in the order of frequency, from low to high. Proceed as follows:—

1. Remove the keys from the adjusting screws by pulling forward.

2. Set Accessory-Tone knob to "Radio", and turn the range selector to the "A" position.

3. Loosen the adjusting screws by turning in a counter clockwise direction one-half turn.

4. Press in the tuning knob and accurately tune in the first station.

5. With the station accurately tuned in, press in the first adjusting screw (with a small screwdriver) and tighten the screw, being careful not to upset the station setting.

6. Proceed in a similar manner to adjust the remaining keys.

7. Replace push keys on adjusting screw rods.

Alignment Procedure

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the chassis drawing.

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.

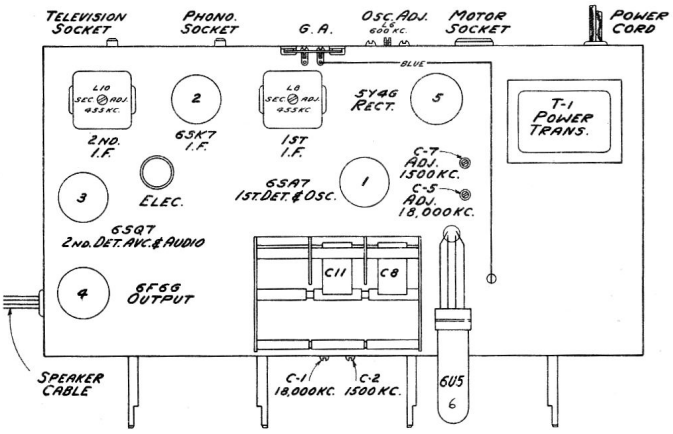
As the first step in r-f alignment, check the position of the drum. The 240° mark on the drum scale must be vertical and directly above the center of the shaft of the tuning drum when the plates are fully meshed. The drum is held to the shaft by means of two set-screws, which must be tightened securely when the drum is in the correct position.

On the inner side of the tuning drum are two projections which serve as stops to prevent extreme rotation of the gang condenser. The tuning drum should be set so that the stop limiting clockwise movement of the drum takes effect just as the gang condenser plates are becoming fully meshed, thus preventing stress on the gang due to extreme rotation.

Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the chassis, and bend the wire so that it points to the 240° mark on the calibration scale when the plates are fully meshed.

Steps	Connect the high side of the test-osc. to—	Tune test osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	6SK7 grid in series with .01 mfd.	455 kc	"A" Band Quiet Point between 550-750 kc	L9 and L10 (2nd I-F Trans.)
2	6SA7 grid in series with .01 mfd.			L7 and L8 (1st I-F Trans.)
3	Ant. terminal in series with 300 ohms	18 mc	18 mc (24°) "C" Band	C5 (osc.)* C1 (ant.)
4	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc (41.75°) "A" Band	C7 (osc.) C2 (ant.)
5		600 kc	600 kc (200.25°) "A" Band	L6 (osc.) Rock Gang
6	Repeat step 4.			

* Use minimum capacity peak if two can be obtained.
Note: Oscillator tracks above signal on all bands.



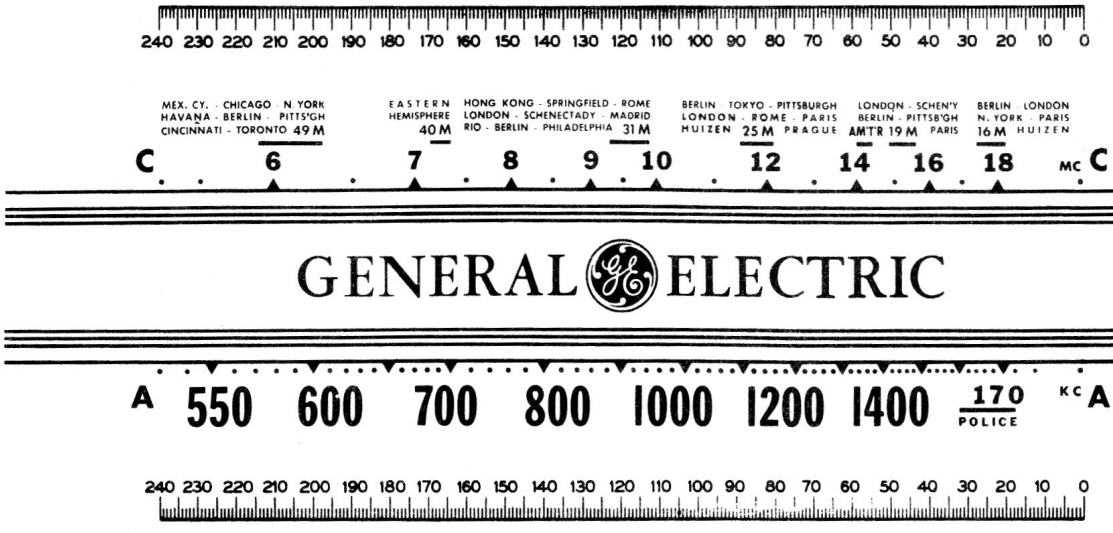
RADIOTRON SOCKET VOLTAGES

Type	Function	Plate	Screen Grid	Cathode	Heater
6SA7	Det.	260V	80V	----	6.6V
	Osc.	----	----	2.3V	----
6SK7	I.F.	260V	80V	----	6.6V
6SQ7	Audio	80*V	----	----	6.6V
6F6-G	Output	245V	260V	16V	6.6V
5Y4-G	Rectifier	350V	----	----	5.0V

* Cannot be measured with an ordinary voltmeter.

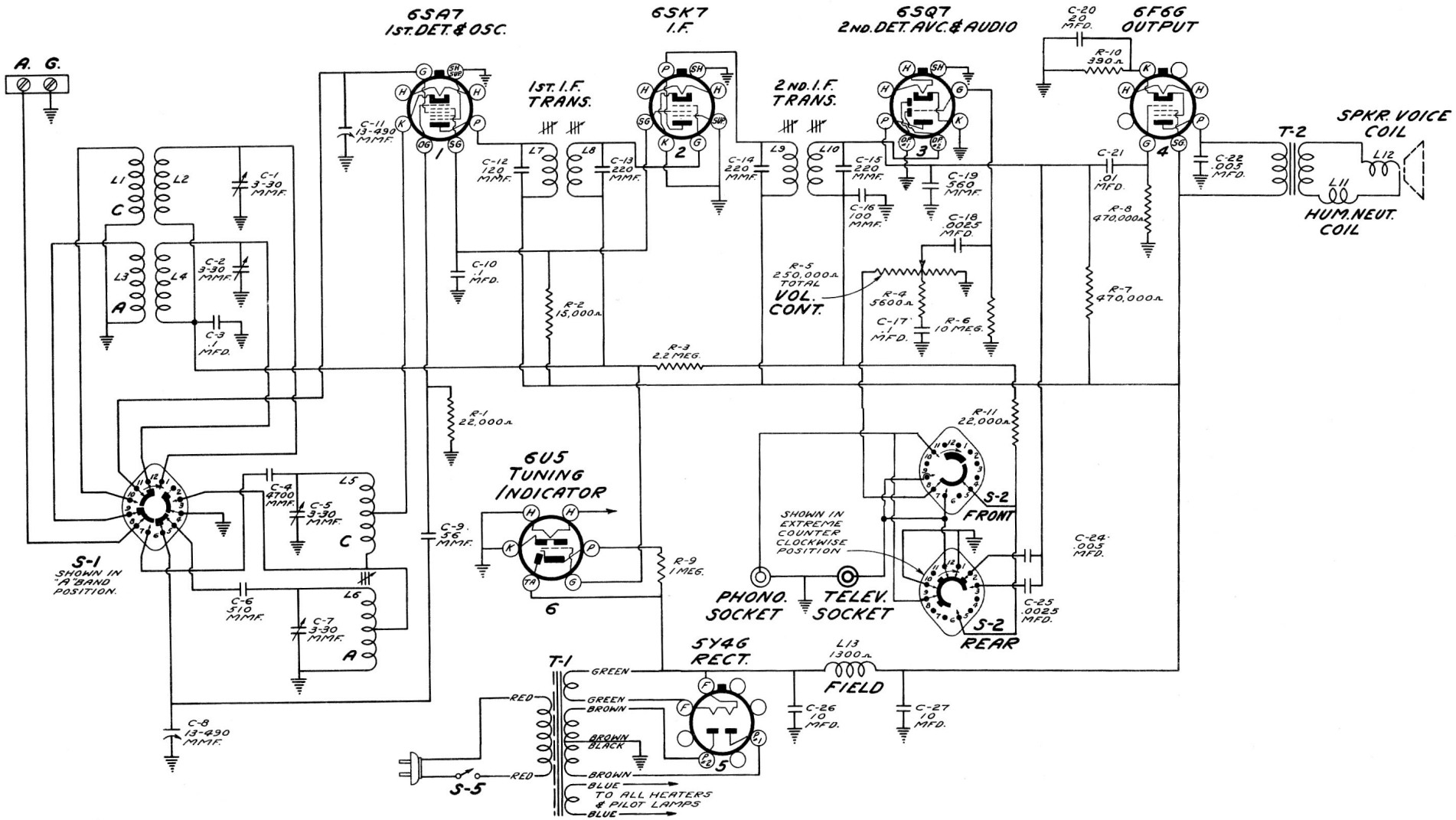
The above voltages are measured with a 1000 ohm-per-volt meter. All values should hold within ± 20 percent.

Calibration Scale

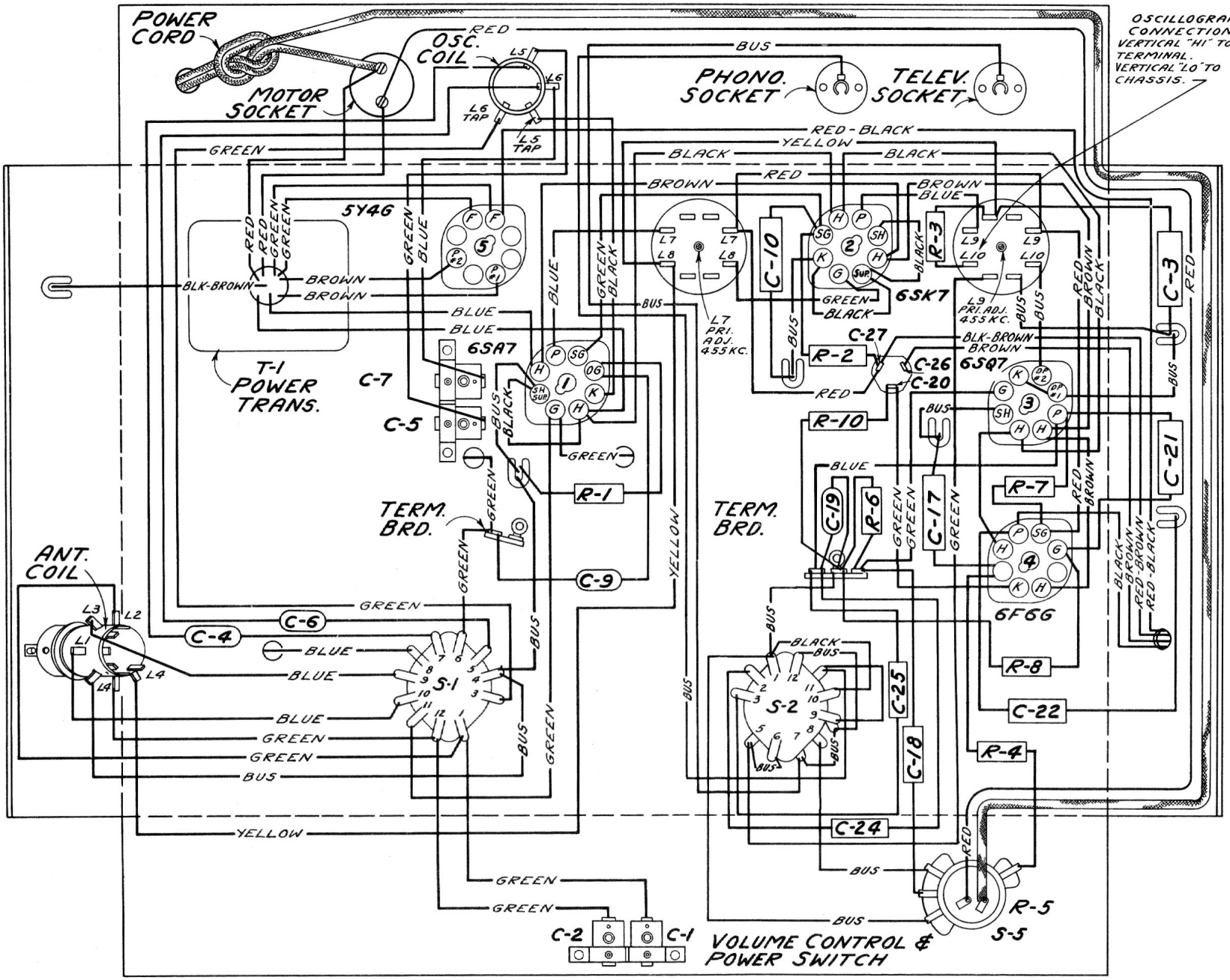


Receiver Dial Scales, and Corresponding 0-240° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example, 200.25° on the calibration scale corresponds to 600 kc on "A" band. Read instructions under "Alignment Procedure."



Schematic Circuit Diagram



Chassis Wiring Diagram

REPLACEMENT PARTS —— MODEL H61

STOCK NO.	DESCRIPTION
	RECEIVER ASSEMBLIES
14517	Board-Antenna-ground terminal board....
14394	Cable-Tuning tube cable & socket (R9)..
30766	Cap-Tuning tube cap.....
31292	Capacitor-Dual trimmer capacitor 3-30 mmfd. (C1,C2,C5,C7).....
12723	Capacitor-56 Mmfd. (C9).....
30433	Capacitor-510 Mmfd.(C6).....
12537	Capacitor-560 mmfd.(C19).....
12897	Capacitor-4700 mmfd. (C4).....
3932	Capacitor-.0025 mfd. (C25,C18).....
4838	Capacitor-.005 mfd. (C24,C22).....
4937	Capacitor-.01 mfd. (C21).....
4839	Capacitor-0.1 mfd. (C10,C3,C16,C17).
32240	Capacitor-Electrolytic capacitor consisting of two 10 mfd. and one 20 mfd. sections (C20,C26,C27).....
S-2527	Coil-Antenna coil (L1,L2,L3,L4).....
S-2528	Coil-Oscillator coil (L5,L6).....
S-2529	Cord-Indicator pointer drive cord.....
34267	Drum-Variable condenser drive drum....
S-2532	Indicator-Pointer & carriage assembly.
11891	Lamp-Pilot lamp.....
5040	Plug-4 contact female plug for speaker cable.....
31388	Resistor-390 ohm, 1 watt (R10).....
S-1894	Resistor-5,600 ohm, 1/4 watt (R4).....
33489	Resistor-15,000 ohm, 2.5 watts (R2)...
13998	Resistor-22,000 ohm, 1/4 watt (R1,R11)
S-1690	Resistor-470,000 ohm, 1/4 watt (R7,R8)
12679	Resistor-2.2 meg. 1/4 watt (R3).....
13601	Resistor-10 meg. 1/4 watt (R6).....
S-2446	Retainer-AC power socket retainer (Pkg.3).....
32086	Roller-Drive Shaft rubber roller.....
S-2447	Socket-AC power socket.....
31364	Socket-Pilot light socket.....
33514	Socket-Phono & Television receptacle..
31251	Socket-Radiotron socket.....
31418	Spring-Drive cord tension spring (Pkg.2).....
S-2533	Switch-Range switch (S1).....
33424	Switch-Tone-Phono-Telev.Switch (S2)...
S-2534	Transformer-1st I.F. transformer (L7,L8,C12,C13).....
33761	Transformer-2nd I.F. transformer (L9,L10,C14,C15).....
S-2476	Transformer-Power transformer 105-125 volts 60 cycle (T1).....
S-2535	Transformer-Power transformer 105-125 volts 25/60 cycle (T1).....
S-2536	Volume control & power switch (R5,S5).....
	REPRODUCER ASSEMBLIES R179-1
32907	Cap-Dust cap for cone centre (Pkg.5).....
32906	Coil-Hum neutralizing coil (L11).....
31647	Coil-Field Coil (L13).....
35441	Cone-Reproducer cone and voice coil (L12).....
31302	Plug-4 prong male plug.....
33078	Reproducer complete.....
32905	Transformer-Output transformer (T2).....
	MISCELLANEOUS ASSEMBLIES
S-2544	Dial-Station selector dial scale.....
S-2545	Escutcheon-Dial escutcheon less push keys.....
33731	Key-Station selector push key.....
S-2546	Knob-Range, tuning, tone or volume control knob.....
S-2461	Marker-Station call letter markers (1 set).....
S-2470	Spring-Key retaining spring (Pkg.5).....
S-2547	Tool-Push arm adjusting tool.....