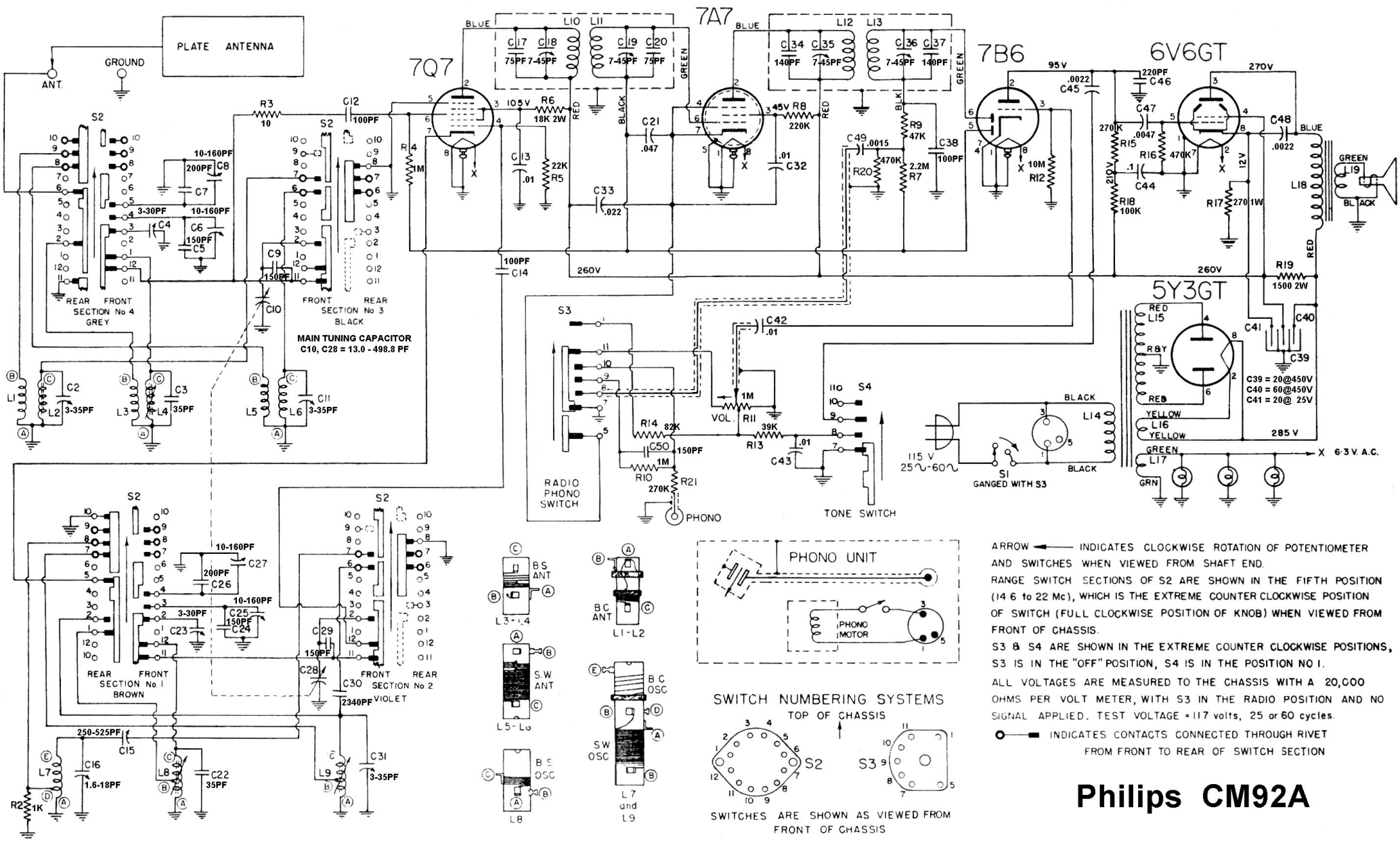


ARROW ← INDICATES CLOCKWISE ROTATION OF POTENTIOMETER AND SWITCHES WHEN VIEWED FROM SHAFT END.

RANGE SWITCH SECTIONS OF S2 ARE SHOWN IN THE FIFTH POSITION (14·6 to 22 Mc), WHICH IS THE EXTREME COUNTER CLOCKWISE POSITION OF SWITCH (FULL CLOCKWISE POSITION OF KNOB) WHEN VIEWED FROM FRONT OF CHASSIS.

S3 & S4 ARE SHOWN IN THE EXTREME COUNTER CLOCKWISE POSITIONS, S3 IS IN THE "OFF" POSITION, S4 IS IN THE POSITION NO 1.

ALL VOLTAGES ARE MEASURED TO THE CHASSIS WITH A 20,000 OHMS PER VOLT METER, WITH S3 IN THE RADIO POSITION AND NO SIGNAL APPLIED. TEST VOLTAGE = 117 volts, 25 or 60 cycles.

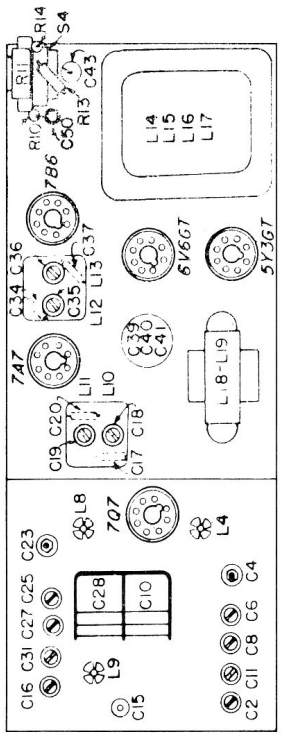
○— —■ INDICATES CONTACTS CONNECTED THROUGH RIVET FROM FRONT TO REAR OF SWITCH SECTION

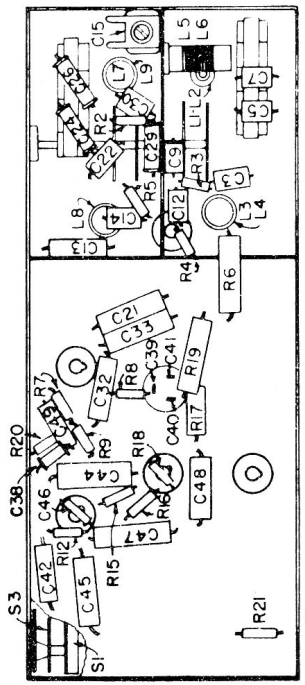
SWITCH NUMBERING SYSTEMS
TOP OF CHASSIS

SWITCHES ARE SHOWN AS VIEWED FROM FRONT OF CHASSIS

Philips CM92A

LOCATION OF PARTS





MODEL CM92A: Is a five tube superheterodyne receiver combined with an automatic record changer phonograph designed for use on A.C. lines only. Five tuning ranges cover from 13.6 to 560 meters, 22 Mc to 535 kc with Bandspread on three short wave ranges.

PHILIPS TUBES: Converter 7Q7, I.F. Amplifier 7A7, Detector A.V.C. & 1st A.F. Amplifier 7B6, Audio Output 6V66T, Rectifier 5Y3GT.

RANGE SWITCH POSITIONS AND TUNING RANGES:

1st—560-170 m—535-1635 kc
2nd—120-37.5 m—2.5-8.0 Mc
3rd—32.2-28.5 m—9.3-10.5 Mc Bandspread
4th—28.8-24.6 m—10.4-12.2 Mc Bandspread
5th—20.5-13.6 m—14.6-22.0 Mc Bandspread

INTERMEDIATE FREQUENCY: 455 kc

AUDIO-POWER OUTPUT: 2 watts

LOUDSPEAKER: Is an 8 inch permanent magnet dynamic with a voice coil D.C. resistance of 3.0 ohms.

ANTENNA & GROUND: A sheet of metal foil on the inside of the back cover provides a built-in antenna. For optimum results an outside antenna is necessary. A secure ground connection should be made to a cold water pipe or to a grounding plate buried in damp ground.

CONTROLS: Left front to right rear (looking at front)

1. Volume Control (Outer)
2. Tone Switch (Inner)
3. On-Off and Radio Phonograph Switch
4. Tuning Control
5. Wave Range Switch

PHONOGRAPH: The Phonograph unit is a G.I. Model 700F-33-45 utilizing an Astatic crystal pickup cartridge No. LT3D. The turntable is rotated by either a 115 volt, 25 or 60 cycle motor, depending upon the frequency of the power source. For service data on the record changer refer to the General Instruments Model 700F-33-45 Record Changer Service Manual.

LINE VOLTAGE: 115 volts, 25 cycles, or 115 volts, 60 cycles.

CURRENT DRAIN: 0.85 ampere.

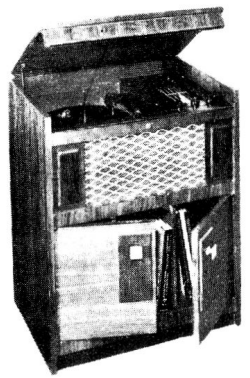
CABINET DIMENSIONS: Width—25½ inches
Height—32 inches
Depth—18½ inches

SERVICE DATA

WAVE RANGE SWITCH: The schematic diagram shows each section of this switch in a straight line form. The short stator contacts are represented as solid squares; the long contacts as solid rectangles; and the rotor contacts as bars. All sections are shown in the extreme counterclockwise (14 6 to 22.0 Mc Range or 5th) position of the switch or the extreme clockwise rotation of the switch knob. As the switch rotates clockwise (knob counterclockwise) the rotor contacts move upwards through the 4th to the 1st Wave Range Switch positions as listed above. The exact location of each stator contact on its wafer is shown on a front view drawing of a switch wafer on the schematic diagram.

TO REMOVE CHASSIS

1. Disconnect plug from line socket.
2. Remove antenna and ground connections.
3. Remove back cover and control knobs.
4. Disconnect speaker leads.
5. Remove clamp and disconnect the phonograph motor and phonograph pickup cables from the chassis.
6. Remove the receiver top panel from the cabinet.
7. Lift the chassis through the top of the cabinet.



ALIGNMENT OF RECEIVER

See that the Radio-Phonograph switch is in the radio position. With the variable capacitor fully closed, adjust the dial pointer on the alignment marks on the sides of the dial scale below the 550 calibration mark, (approximately 530 kc).

Place the tone switch in the second position (one position to the right of full counterclockwise) and turn the volume control to the maximum volume (clockwise) position.

EQUIPMENT REQUIRED

OUTPUT INDICATOR: A high resistance A.C. voltmeter and an output transformer.

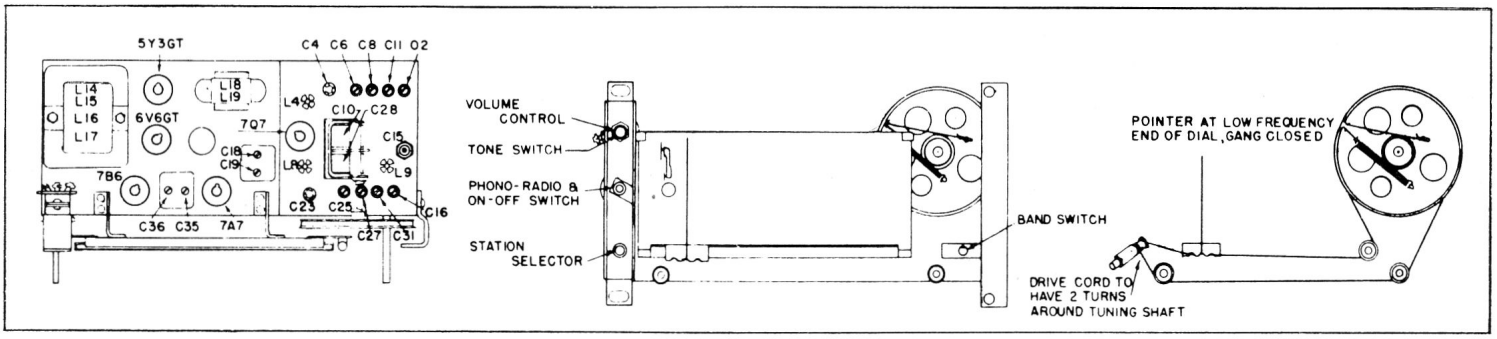
SIGNAL GENERATOR: A generator capable of supplying modulated signals between 455 kc and 22 Mc.

Equipment Connections and Alignment Procedure

OUTPUT INDICATOR: Connect the A.C. voltmeter across the voice coil of the speaker. During alignment, keep the output below 1.25 A.C. volts across the voice coil. If the meter is not sensitive enough to indicate 1.25 volts, connect the secondary of an output transformer across the speaker voice coil and connect the A.C. voltmeter across the primary. When using the latter method, the maximum output reading should be kept below 30 A.C. volts. When the output indication increases regulate the signal generator attenuator to restore the original indication.

SIGNAL GENERATOR: Connect the ground lead of the signal generator to the ground jack in the rear of the receiver and the output lead to the points indicated in the chart below, in series with the specified resistor or capacitor.

Philips CM92A



ALIGNMENT PROCEDURE

	SIGNAL GENERATOR		RECEIVER			
Operation Steps	Output Connections to Receiver	Frequency	Range Switch	Tuning Capacitor	See Notes	Adjust in stated order for Maximum Output
1	To 7A7 Control Grid (6) through .05 ufd. Capacitor	455 kc	Pos. 1	Min.		2nd. I.F. Trimmers C36, C35.
2	To Stator C10 through .05 ufd. Capacitor	455 kc	Pos. 1	Min.	A	1st. I.F. Trimmers C19, C18.
3	To Antenna Contact through 200 uuf. Capacitor	600 kc	Pos. 1	600 kc		Broadcast Padder C15
4	To Antenna Contact through 200 uuf. Capacitor	1500 kc	Pos. 1	1500 kc	B	BC-Osc. Trimmer C16 BC-Ant. Trimmer C2
5	To Antenna Contact through 400 ohms Resistance	7.0 Mc	Pos. 2	7.0 Mc	C	SW-Osc. Trimmer C31 SW-Ant. Trimmer C11
6	To Antenna Contact through 400 ohms Resistance	2.9 Mc	Pos. 2	2.9 Mc	D	SW-Osc. Coil L9
7	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 5	21.5 Mc	C	BS-Osc Trimmer C23
8	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 5	15.2 Mc	D	BS-Osc. Coil L8
9	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 5	21.5 Mc	E	BS-Ant. Trimmer C4
10	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 5	15.2 Mc	F	BS-Ant. Coil L4
11	To Antenna Contact through 400 ohms Resistance	11.6 Mc	Pos. 4	11.6 Mc	C	BS-Osc. Trimmer C25 BS-Ant. Trimmer C6
12	To Antenna Contact through 400 ohms Resistance	9.6 Mc	Pos. 3	9.6 Mc	C	BS-Osc. Trimmer C27 BS-Ant. Trimmer C8

ALIGNMENT NOTES

Note "A"—After step 2 has been completed, do not make any further adjustments of the 2nd I.F. trimmers C36 and C35.

Note "B"—Return to 600 kc and tune receiver for maximum output, vary padder adjustment slightly and turn the tuning capacitor back and forth through maximum peak. Repeat until the greatest output is obtained.

Note "C"—Unscrew oscillator trimmer capacitor to minimum capacity (counter clockwise). Turn adjustment clockwise until the first output peak is obtained. Make adjustment using this peak.

Note "D"—Check high frequency end of dial for accuracy, adjust oscillator trimmer if necessary.

Note "E"—Rock tuning capacitor while adjusting antenna trimmer for maximum output.

Note "F"—Repeat operation 9.