

Sparks-Withington Co.

Model: 666

Chassis:

Year: Pre October 1936

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

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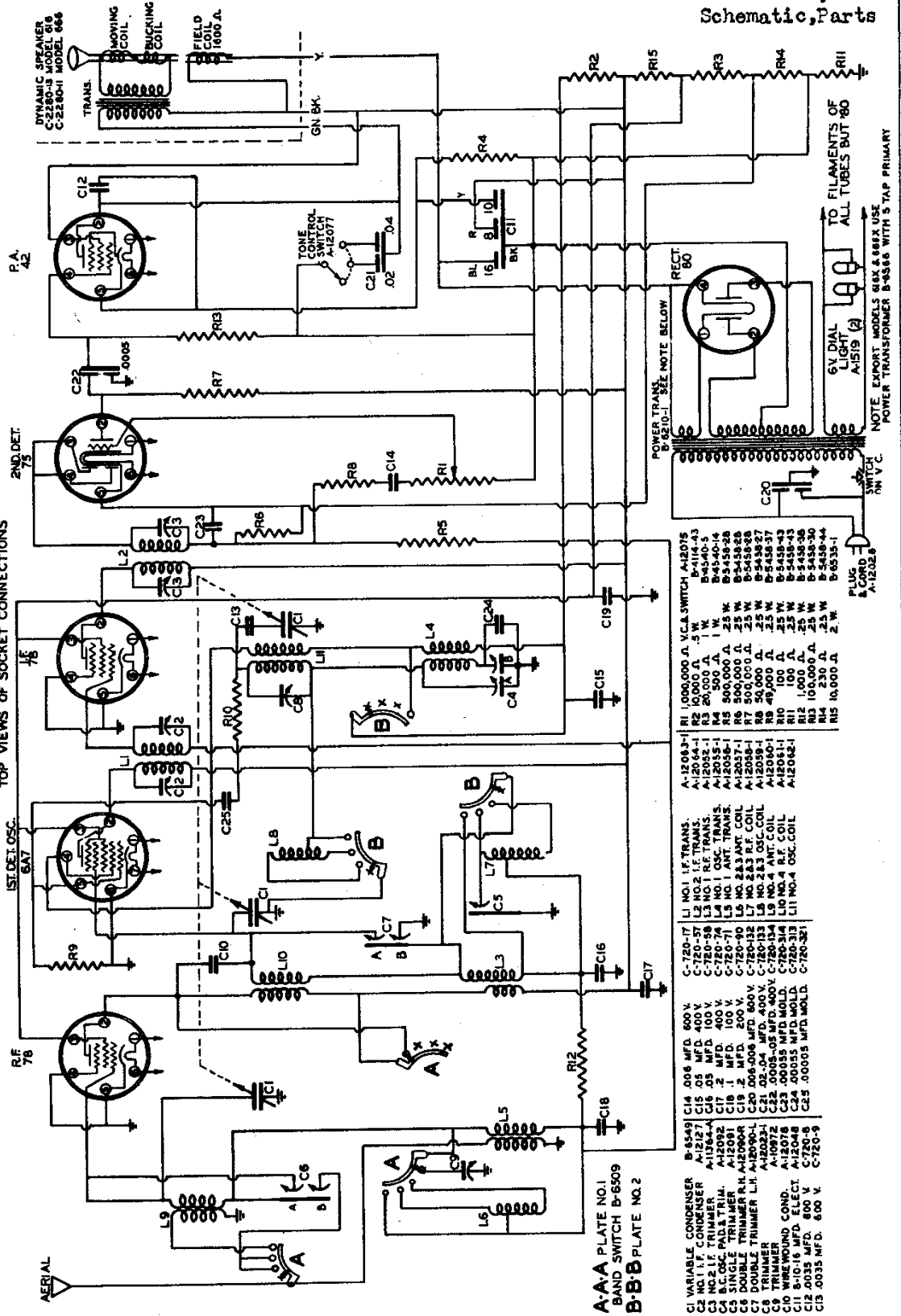
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SPARKS-WITHINGTON CO.

MODELS 616, 616-X
666, 666-X
Schematic, Parts

SPARTON SUPERHETERODYNE MODELS 616, 616-X, 666 & 666-X
INTERMEDIATE FREQUENCY 345KC.
TOP VIEWS OF SOCKET CONNECTIONS



MODELS 616, 616X, 666, 666X
 MODELS 616M, 616MX, 666M
 666MX

SPARKS WITHINGTON CO.

Alignment, Trimmers

September 28, 1935

nect to the antenna terminal.

(5) Adjust condenser C6A. Note: Due to the inter-action between the various circuits, it is necessary to move the station selector knob slightly while adjusting these trimmers in order to realize the maximum possible gain.

(6) Retune the test oscillator and receiver to 9 megacycles and check sensitivity and calibration.

D. Alignment of Band No. 3

(1) Turn the band selector switch to the second short wave band (red section of the dial).

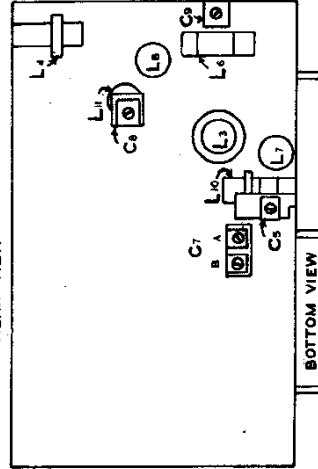
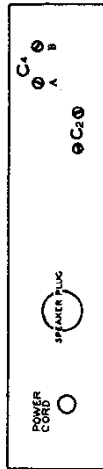
(2) Tune test oscillator and receiver to 7.2 megacycles.

(3) Adjust condensers C5 and C5B.

(4) Tune test oscillator and receiver to 3.6 megacycles and check calibration and sensitivity.

E. Alignment of Band No. 2

Note: There are no adjustable condensers for this band. However, it is advisable to check the calibration of the dial and the general operation of the receiver at both 1.7 megacycles and 3 megacycles. CAUTION: All adjustments should be rechecked to assure accuracy and stability of adjustment and calibration.



station selector, adjust condensers C4A, C7B and C9 in the order given.

(4) Tune test oscillator and receiver to 600 kilocycles and adjust condenser C4B at the same time the station selector knob is moved back and forth to obtain maximum deflection of the output meter.

(5) Retune test oscillator and receiver to 1350 kilocycles and check the adjustments of condensers C4A, C7B and C9.

(6) Calibration of the broadcast band should also be checked at 900 kilocycles and 600 kilocycles.

C. Alignment of Band No. 4

(1) Turn the band selector switch to the third short wave band (blue section of the dial).

(2) Disconnect "antenna" lead of test oscillator from antenna terminal, remove the 150 ohm. condenser and replace with a 400 ohm non-inductive resistor dummy antenna and connect to grid cap of Type 78 R.F. tube.

(3) Tune test oscillator and receiver to 19 megacycles and adjust condenser C8 and condenser C7A.

CAUTION: On this band care must be taken to adjust the various condensers to the fundamental of the signal and not to the image. The image signal is equal to the fundamental minus twice the intermediate frequency of the receiver. A set that is adjusted to the image frequency instead of to the fundamental may be detected by tuning over the band and checking the sensitivity at various points. If a dead spot appears near the center of the band, the adjustable condensers for that band have probably been adjusted to the image instead of the fundamental.

This type of mis-alignment may also be detected by tuning the test oscillator to a frequency of 15 megacycles and the station selector to approximately 15,700 kilocycles. If a strong signal is found approximately at this frequency, it indicates that the band has been adjusted to the image frequency. The normal image frequency for 15,000 kilocycles would be 15,000 kilocycles minus twice 345 kilocycles or approximately 14,300 kilocycles. Therefore a signal of this frequency may be found with the test oscillator generating a 15,000 kilocycle signal.

(4) Disconnect the "antenna" of the test oscillator from the grid cap of the Type 78 R.F. tube and using the 400 ohm resistor in series, com-

STEP BY STEP PROCEDURE

In the following procedure, the broadcast band will be termed Band No. 1; the first short wave band (green section of the dial), Band No. 2; the second short wave band (red section of the dial), Band No. 3; the third short wave band (blue section of the dial), Band No. 4. The dial pointer should be exactly parallel with the horizontal line of the kilocycle scale when the condenser plates are fully meshed. If the pointer does not read correctly, loosen the set screws in the large brass collar directly between the dial lights, hold the rotor plates fully meshed with the stator plates and set the pointer so that it is parallel with the horizontal lines on the kilocycle scale, then tighten the set screws.

A. Alignment of Intermediate-Frequency Stages

(1) Turn on receiver and test oscillator and allow both to operate several minutes before attempting to adjust any condensers.

(2) Turn the band selector switch to the No. 1 (broadcast) position and turn the station selector knob until the rotor plates are completely out of mesh with the stator plates.

(3) Connect "antenna" of test oscillator to grid cap of Type 6A7 1st detector-oscillator tube and "ground" of test oscillator to chassis frame of receiver. Connect output meter "high tap" from plate of Type 676 tube to ground.

NOTE: It is advisable to read carefully the operating instructions included with test oscillator.

(4) Tune test oscillator to obtain a signal of 345 kilocycles.

(5) Turn the volume control of receiver on f. 1 and adjust I.F. condensers C3 and C2. (See FIG. 15). Note: The intermediate frequency circuits are quite selective and care must be taken to insure proper adjustment.

B. Alignment of Broadcast Band

(1) Disconnect "antenna" lead of test oscillator from grid cap of first detector-oscillator tube and connect in series with a 150 ohm. condenser dummy antenna to the antenna terminal of the chassis.

(2) Tune test oscillator to obtain a signal of 1350 kilocycles.

(3) Turn the station selector of the receiver to 1350 kilocycles and without disturbing the setting of the test oscillator or the