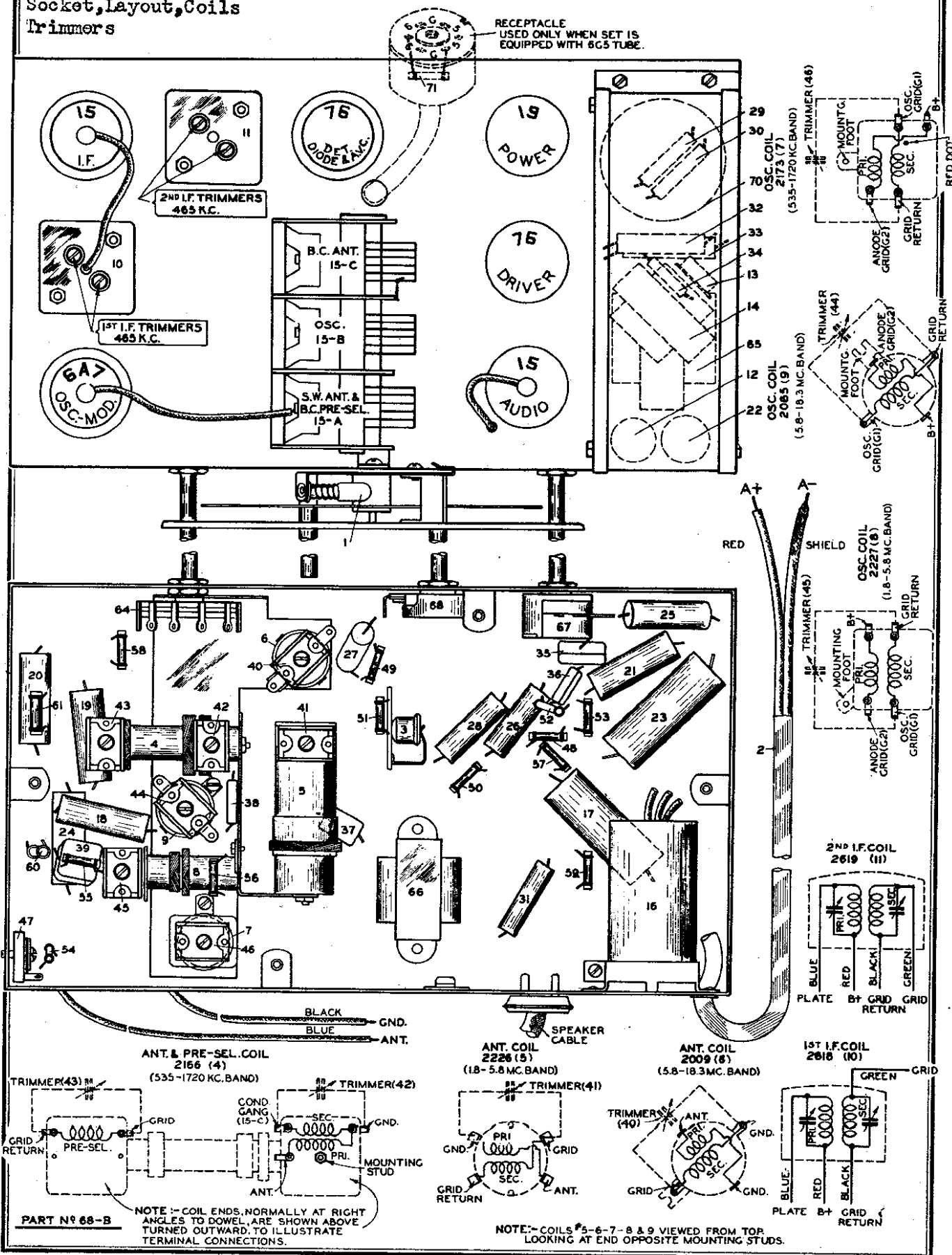




MODELS A9768, A9769, A9770  
 Chassis 68B, 68BE  
 Socket, Layout, Coils  
 Trimmers

ALLIED RADIO CORP.



MODELS A9752, A9753, A9754  
A9755, Chassis 46A  
MODELS A9768, A9769, A9770  
Chassis 68B, 68BE

ALLIED RADIO CORP.

Alignments

Model 68B-68BE—Three Band Superhetrodyne Receiver

Six Volt Storage Battery Operated

Lack of sensitivity and poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, low battery voltage, open or grounded bias resistor, bypass condenser, inadequate or excessive long antenna, etc. Never attempt to realign set until all other possible sources of trouble have been first thoroughly investigated and definitely proven not to be the cause.

NOTE: IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR BE USED WHEN ALIGNING THE RECEIVER AND THAT THE PROCEDURE BE CAREFULLY FOLLOWED, OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. THE TRIMMER AND PADDING CONDENSERS WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE CIRCUIT DIAGRAM.

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

- (a) Attach the ground lead of the test oscillator to the chassis. Connect the other lead to the grid cap of the 6A7 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
- (b) Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.
- (c) Peak each of the second I.F. transformer trimmers.
- (d) Peak each of the first I.F. transformer trimmers.

ALIGNING 1720-535 KILOCYCLE BAND:

- (a) Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity stop (completely in mesh), at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line move needle to correct position.
- (b) Remove test oscillator lead from grid of 6A7 tube and connect to receiver antenna lead through a .00025 Mfd. series condenser.
- (c) Adjust band selector switch for operation on the 1720-535 kilocycle band.
- (d) Set test oscillator frequency and receiver dial to EXACTLY 1720 kilocycles, and BRING IN 1720 KILOCYCLE TEST OSCILLATOR SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.
- (e) Tune receiver dial and set test oscillator frequency to EXACTLY 1400 kilocycles. Adjust 1400 K.C. preselector and antenna trimmers for maximum sensitivity.
- (f) Set test oscillator frequency and receiver dial to approximately 600 kilocycles. Then while rocking gang condenser slightly to right and left, adjust 600 K.C. oscillator padder for maximum signal response.

ALIGNING 1.8-5.8 MEGACYCLE BAND:

- (a) Replace .00025 Mfd. test oscillator antenna lead series condenser with a 400 ohm resistor.
- (b) Adjust band selector switch to 1.8-5.8 megacycles, tune receiver dial and set test oscillator frequency to EXACTLY 5.8 megacycles. Bring in 5.8 megacycycle test signal to maximum output by adjusting 5.8 M.C. oscillator trimmer.
- (c) Tune receiver dial and set test oscillator frequency to EXACTLY 5 megacycles, and adjust 5 M.C. antenna trimmer for maximum sensitivity.

ALIGNING 5.8-18.3 MEGACYCLE BAND:

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.8-18.3 megacycle band, tune receiver dial and set test oscillator frequency to EXACTLY 18 megacycles.
- (b) Adjust 18 M.C. oscillator trimmer to bring in 18 megacycycle test signal to maximum output.

NOTE: When adjusting this trimmer two peaks, the fundamental and the image peak will be noticed. CARE MUST BE TAKEN THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 18 MEGACYCLES. Always back off the trimmer to minimum capacity, then screw down the trimmer (add capacity) until the first peak which is the fundamental and the incorrect image peak will be tuned in. If the trimmer is screwed down beyond the point where the first peak is received the incorrect image peak will be tuned in. After completing adjustment of the oscillator trimmer at 18 megacycles, always check to see if the proper peak has been used. To do this leave test oscillator frequency at 18 megacycles, increase the output of the test oscillator and tune receiver dial to approximately 17 megacycles. Then vary the receiver dial slightly to the right and left on 17 megacycles, and if the fundamental peak was used in aligning at 18 megacycles the test oscillator signal will be heard at approximately 17 megacycles on the receiver dial.

- (c) Tune receiver dial and set test oscillator frequency to EXACTLY 15 megacycles.
- (d) Rock gang condenser slightly to right and left and adjust 15 M.C. antenna trimmer for maximum 15 megacycycle test signal response.

To assure more accurate trimmer setting, repeat all above adjustments several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

46A-CONT.

8. Leave band selector switch for operation on 540 to 1720 kilocycle band, tune receiver dial and set test oscillator frequency to approximately 600 kilocycles. While rocking gang condenser slightly to right and left adjust 600 kilocycle oscillator padder for maximum sensitivity.

CHASSIS MODEL No. 46A  
A. C. Superhetrodyne Receiver

ALIGNMENT PROCEDURE:

Realignment of this receiver should never be necessary unless one of the oscillator, antenna, or I. F. coils has been replaced. Lack of sensitivity, selectivity, and poor tone quality may be due to any one or a combination of causes, such as weak or defective tubes or speaker, inadequate or excessive long antenna, open or grounded bias resistor, bypass condenser, etc. Under no circumstances should realignment be attempted until all other possible sources have been first thoroughly investigated and have been definitely proven not to be the cause.

If an I. F. tube is replaced it is advisable to realign the I. F. Amplifier particularly if the replacement tube is one of a different manufacturer than the one in the receiver. It is important when aligning to carefully follow the procedure in the order given, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect.

IT IS IMPERATIVE THAT AN ACCURATELY CALIBRATED OSCILLATOR BE USED WITH SOME TYPE OF OUTPUT MEASURING DEVICE.

INTERMEDIATE ALIGNMENT:

1. Connect the high side of the test oscillator output to the control grid of the 6D6 modulator tube through a .02 Mfd. condenser. Leave the grid cap connected to the grid terminal of the tube, and connect the ground side of the test oscillator to the receiver ground.
2. Set the test oscillator frequency to 465 kilocycles (this must be accurate).
3. Align the second intermediate transformer by turning one of the trimmer screws accessible through holes in the top of the transformer shields up and down (increasing and decreasing capacity) until maximum reading is obtained on the output meter, after which adjust the other trimmer screw of the same transformer for maximum sensitivity.
4. Adjust the first intermediate transformer in the same manner as the second I. F. transformer.

TO ALIGN THE VARIABLE CONDENSER:

It is important when aligning the gang condenser, padding and trimmer condensers to follow the procedure carefully, otherwise the receiver will be insensitive and the dial calibration will be incorrect. The padding and trimmer condensers located underneath the chassis will be referred to by their function as indicated on the circuit diagram.

1. Connect the high output side of the test oscillator through a 400 ohm resistor to the receiver antenna lead and the low side to the set ground.

2. Place the band selector switch for operation on the 5.8 to 18.1 megacycle band, tune the receiver dial, and set the test oscillator frequency to EXACTLY 18.1 MEGACYCLES.

Tune in the 18.1 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING THE 18.1 MEGACYCLE OSCILLATOR TRIMMER. When adjusting this trimmer two peaks, the fundamental and the image peak will be noticed. CARE MUST BE TAKEN THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 18.1 MEGACYCLES. Always back off the trimmer to minimum capacity, then screw down the trimmer (add capacity) until the first peak which is the fundamental and the proper one to use is tuned in. If the trimmer is screwed down beyond the point where the first peak is received, the incorrect image peak will be tuned in. After completing adjustment of the oscillator trimmer at 18.1 megacycles, always check to see if the proper peak has been used. To do this leave the test oscillator frequency at 18.1 megacycles, increase the output of the test oscillator and tune the receiver dial to approximately 17.1 megacycles, and if the fundamental peak was used in aligning at 18.1 megacycles the test oscillator signal will be heard at approximately 17.1 megacycles on the receiver dial. If it is not possible to receive the signal, then the fundamental peak was not used and the 18.1 megacycycle oscillator trimmer must be properly readjusted.

3. With band selector switch set for operation on 5.8 to 18.1 megacycle band tune the receiver dial and set test oscillator frequency to EXACTLY 16 MEGACYCLES. Adjust 16 megacycycle antenna trimmer for maximum 16 megacycycle signal sensitivity.

4. Place band selector switch for operation on 1.7 to 5.8 megacycle band, tune the receiver dial, and set test oscillator frequency to EXACTLY 5.8 MEGACYCLES. BRING IN 5.8 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 5.8 MEGACYCLE OSCILLATOR TRIMMER.

5. With the band selector switch set for operation on the 1.7 to 5.8 megacycle band tune receiver dial and set test oscillator frequency to EXACTLY 5 MEGACYCLES. Then adjust 5 megacycycle antenna trimmer for maximum 5 megacycycle signal sensitivity.

6. Replace the 400 ohm resistor in series with test oscillator lead with a 200 Mmfd. condenser, place the band selector switch for operation on the 540 to 1720 kilocycle band, tune receiver dial, and set test oscillator frequency to EXACTLY 1720 KILOCYCLES. NEXT BRING IN THE 1720 KILOCYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.

7. With band selector switch placed for operation on the 540 to 1720 kilocycle band set test oscillator frequency and receiver dial to EXACTLY 1400 KILOCYCLES. Adjust 1400 kilocycle band set test oscillator trimmers for maximum 1400 kilocycle signal sensitivity.