

Sears Roebuck & Co.

Model: 6120

Chassis:

Year: Pre June 1940

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

Riders Volume 11 - SEARS 11-10

Riders Volume 11 - SEARS 11-15

Riders Volume 11 - SEARS 11-16

MODELS See Below
Tuner Alignment

SEARS, ROEBUCK & CO.

For Models: 6025, 6128, 6201, 6251, 6251 Chassis 101.547, A-1, B; 6208, 6209 Chassis 101.544; 6214, 6270 Chassis 101.552, 101.552A; 6056, 6067 Chassis 101.546
6133, 6141, 6159, 6177, 6202, 6203, 6253, 6255, 6139 Chassis 101.535.

PRELIMINARY:

- Output meter connection across load speaker voice coil
- Output meter reading to indicate 500 milliwatts (See page 11-10)
- Generator ground lead connection Receiver chassis
- Dummy antenna value to be in series with generator output See chart below
- Connection of generator output lead See chart below
- Generator modulation 70%, 400 cycles
- Position of Volume Control Fully clockwise
- Position of Tone Control HI
- Models 6025, 6128, 6201, 6251, 6251 Chassis 101.547, A-1, B; 6208, 6209 Chassis 101.544; 6214, 6270 Chassis 101.552, 101.552A.
- Position of Dial Pointer: rtr variable fully closed horizontal (to fall on first brass block below 550 kc.)

WAVE BAND SWITCH POSITION	POSITION OF VARIABLE	GENERATOR FREQUENCY	DUMMY ANTENNA	GENERATOR CONNECTION	TRIMMER ADJUSTMENT (SEE CHART)	PRIMER FUNCTION
'AM'	Closed	455 kc	.1 mfd.	455 kc	1070 Grid	C1 Wave Trap
'AM'	800 kc	455 kc*	.0002 mfd.	455 kc*	1070 Grid	C1 Wave Trap
'AM'	Open	1750 kc	.0003 mfd.	1750 kc	1070 Grid	C1 Wave Trap
'AM'	1400 kc	1400 kc	.0003 mfd.	1400 kc	1070 Grid	C1 Wave Trap
'AM'	600 kc (rock)	600 kc	.0003 mfd.	600 kc	1070 Grid	C1 Wave Trap
'FM'	45-15 mc (rock)	45-15 mc	400 ohms	45-15 mc	1070 Grid	C1 Wave Trap

WAVE BAND SWITCH POSITION	POSITION OF VARIABLE	GENERATOR FREQUENCY	DUMMY ANTENNA	GENERATOR CONNECTION	TRIMMER ADJUSTMENT (SEE CHART)	PRIMER FUNCTION
'AM'	Closed	455 kc	.1 mfd.	455 kc	1070 Grid	C1 Wave Trap
'AM'	800 kc	455 kc*	.0002 mfd.	455 kc*	1070 Grid	C1 Wave Trap
'AM'	Open	1750 kc	.0003 mfd.	1750 kc	1070 Grid	C1 Wave Trap
'AM'	1400 kc	1400 kc	.0003 mfd.	1400 kc	1070 Grid	C1 Wave Trap
'AM'	600 kc (rock)	600 kc	.0003 mfd.	600 kc	1070 Grid	C1 Wave Trap
'SW'	45-15 mc (rock)	45-15 mc	400 ohms	45-15 mc	1070 Grid	C1 Wave Trap

* The generator should be adjusted for high output. The trimmer should be adjusted for maximum output. If the frequency of an interfering station around 455 kc is known, the generator should be adjusted to the frequency of that station instead of to 455 kc.

Where indicated by the word "Rock", the variable should be rocked back and forth a degree or two while making the adjustment.

The alignment procedure should be repeated stage by stage. In the original order, for greatest accuracy, always keep the output from the test oscillator at its lowest possible value to make the AVC action of the receiver ineffective.

THE BIAS CELLS:
Models 6056, 6067
CHASSIS 101.546

Do not attempt to test the bias cells with a voltmeter. Ordinarily these cells have an internal bypass capacitor which should be shorted. The bias applied to the tube will be correct. The bias of the cells is the polarity of the bias applied to the tube. If the cells are removed from their holders, be sure that they are replaced so that the polarity will be correct. The Location of Parts diagram shows the correct positions of the cells.

THE FILAMENT CIRCUIT:
Models 6119, 6120, 6126, 6127, 6200, 6250
CHASSIS 101.546, 101.546-1

All of the tube heaters are connected in series. Accordingly, if any one tube burns out, the others will not light. The full line voltage will appear across the heater terminals of the under-heat. conditions the chassis may be above ground potential by an amount equal to the line voltage. Accordingly, appropriate precautions should be taken when working on the chassis, by insulating the chassis completely from ground, etc.

SETTING UP:
Models 6025, 6128, 6201, 6251, 6251 Chassis 101.547, A-1, B; 6208, 6209 Chassis 101.544; 6214, 6270 Chassis 101.552, 101.552A

PUSH BUTTON TUNING

- Each of the push buttons should be set up in the following manner:
1. Make a list of the local stations desired to be set up on the push buttons.
 2. Punch out of the call letter sheets the corresponding call letters.
 3. Pull the push button knob off of its lever (the push buttons slip off the shaft).
 4. Unscrew (turn counter-clockwise) the slotted shaft then exposed two or three turns (use a token or small screw driver).
 5. Push the slotted shaft all the way in.
 6. Tune in the desired station or station to be set up, making sure to hold the slotted shaft as far in as possible.
 7. While holding both the tuning knob and the slotted push button shaft all the way in, securely tighten (turning counter-clockwise) the slotted screw.
 8. Check for accuracy by detuning the station and returning with that push button. If the setting is not accurate, follow the procedure as outlined in points No. 3 to No. 8.
 9. Place the proper call letter in the recess in front of the push button, and cover the call letter with one of the clear celluloid discs supplied.
 10. Push the push button back into place on the push button lever.
 11. Follow the procedure as outlined in points No. 3 to No. 10, inclusive, for each of the remaining buttons.

"Push button stations" will be tuned accurately by pushing the push button all the way to its stop.

NOTE: Push buttons on Model 101.547 chassis are locked and unlocked by turning the button.

FOR CHASSIS 101.546, -1; 101.548; 101.574, A-1; 101.535.

ELIMINATING WHISTLE AT 910 KC:

A whistle, due to a beat between the second harmonic (910 kc) of the 455 kc IF and a 910 kc signal may be experienced. In localities where the 910 kc station is one that is frequently listened to, it will be desirable to shift the whistle to some other point where it will not be objectionable. This can be done by shifting the IF frequency of the receiver. Determine at what point between 880 kc and 940 kc the whistle will be least objectionable. Dividing this frequency by two will give the new IF frequency to which the receiver should be aligned. For example, if it is determined that a whistle at 880 kc would not be objectionable, align at 440 kc as possible.

Align the IF at the new frequency and then realign the rest of the receiver as described under "ALIGNMENT PROCEDURE".

MODELS 6119,6120,6126,6127
6200,6250,6120A,6230,6250A
Alignment,Changes

SEARS, ROEBUCK & CO.

CHANGES

ADDITION OF TWO 50 OHM 2 WATT RESISTORS TO ELIMINATE FAILURE OF 25Z6G RECTIFIER TUBES AND IN SOME CASES SUBSEQUENT SHORTING OF THE FIRST SECTION OF THE ELECTROLYTIC FILTER CONDENSER.

NOTE: The resistors have been added at the factory when the identification number reads 101.546-1.

Remove the wire connecting pins #4 and #5 of the rectifier tube to pin #7 of the ballast tube. One 50 ohm 2 watt resistor is connected from pin #4 of the rectifier to pin #7 of the ballast tube. The other 50 ohm 2 watt resistor is connected from pin #5 of the rectifier to pin #7 of the ballast tube.

The 50 ohm 2 watt resistors, part number 1012814418, can be obtained from source 101.

Connections are shown on schematic diagram, Model 101.546-1.

CHECKING CONDITION OF FILTER ELECTROLYTICS AFTER 25Z6G RECTIFIER TUBE HAS FAILED.

Check the resistance, with the power disconnected from the set, of each filter electrolytic with a DC ohmmeter, reversing the terminals of the ohmmeter on each condenser. A shorted condenser will show very low resistance in both tests.

If, after the resistors are added and a new rectifier tube installed, the set has excessive hum, the voltage across each of the filter electrolytics should be checked. If the voltage across any one of them is more than 20% below the value shown on the schematic, the replacement of this electrolytic should correct the hum. The condenser used to replace the defective section of the electrolytic should be 1012019915. These condensers can be obtained direct from source 101.

Chassis identified by 101.546-1A are the same as 101.546-1 except for a change in the design and part number of the push buttons and call letter sheets.

ALIGNMENT PROCEDURE

PRELIMINARY:

- Output meter connection Across loud speaker voice coil
- Output meter reading to indicate 500 milliwatts 1.2 volts
- Dummy antenna value to be in series with generator output See chart below
- Connection of generator output lead See chart below
- Generator modulation 30%, 400 cycles
- Position of Volume Control Fully clockwise
- Position of Tone Control HI
- Position of Dial Pointer with variable fully closed Horizontal

WAVE BAND SWITCH POSITION	POSITION OF VARIABLE	GENERATOR FREQUENCY	DUMMY ANTENNA	GENERATOR CONNECTION	TRIMMERS ADJUSTED (IN ORDER SHOWN)	TRIMMER FUNCTION
"AM"	Closed	455 kc	.1 mfd.	6J8G Grid	T3, T1	IF Output IF Input
"AM"	600 kc	455 kc*	.0002 mfd.	Ant. Lead	C2*	Wave Trap
"AM"	1400 kc	1400 kc	.0002 mfd.	Ant. Lead	C5, C31	Oscillator Translator
"AM"	600 kc (rock)	600 kc	.0002 mfd.	Ant. Lead	C6	Padder

IMPORTANT ALIGNMENT NOTES

* The generator should be adjusted for high output. The trimmer should be adjusted for minimum output meter reading instead of the usual maximum reading. If the frequency of an interfering station around 455 kc is known, the generator should be adjusted to the frequency of that station instead of to 455 kc.

Where indicated by the word, "Rock", the variable should be rocked back and forth a degree or two while making the adjustment.

The alignment procedure should be repeated stage by stage, in the original order, for greatest accuracy. Always keep the output from the test oscillator at its lowest possible value to make the AVC action of the receiver ineffective.

There are no trimmer adjustments for the short wave band.