

Alignment Procedure

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph should be made to the chassis and the green lead on the volume control.

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 180° 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.

Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the condenser gang, and bend the wire so that it points to the 180° mark on the calibration scale when the plates are fully meshed.

Spread-Band Alignment.—The most satisfactory method of aligning or checking the spread-band ranges is on actual reception

of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test-oscillator, as a slight error will produce considerable inaccuracy on the spread-band scales. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-bearing the test-oscillator against short-wave stations of known frequency.
2. Use harmonics of the standard-broadcast range of a test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

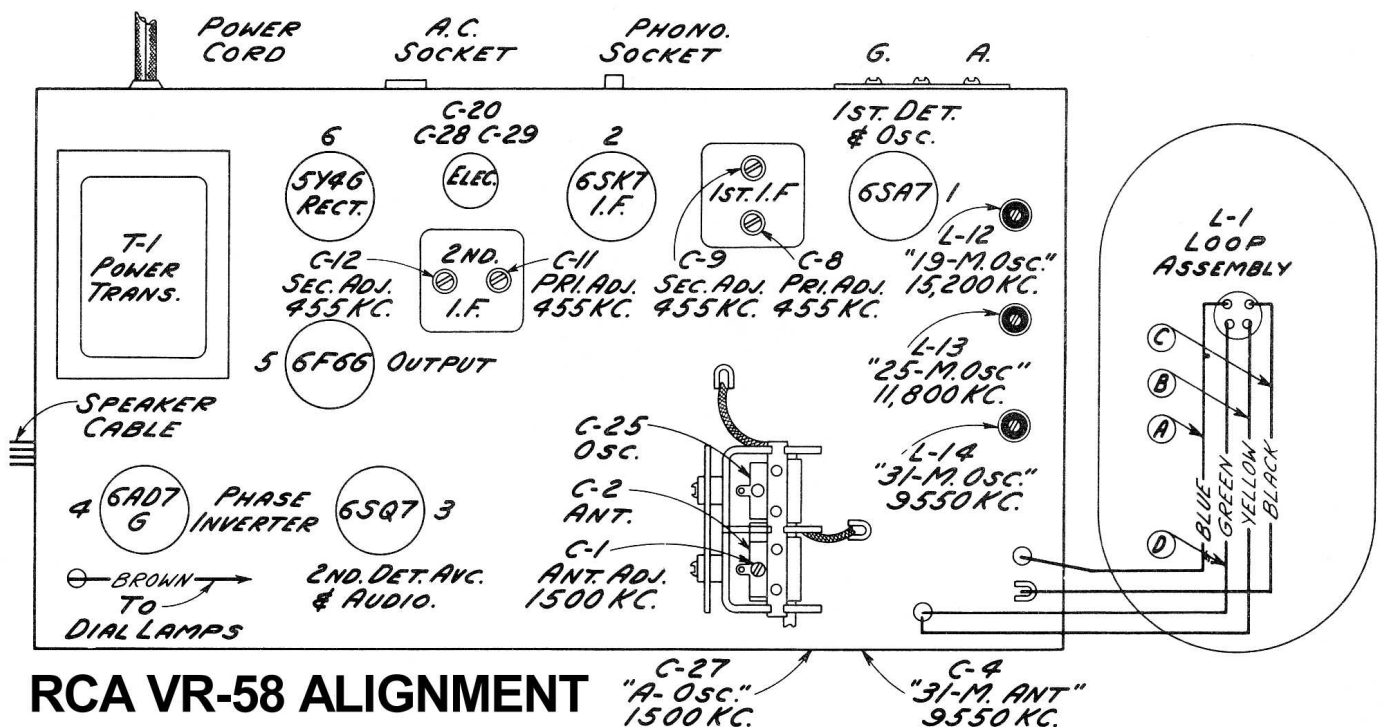
When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

NOTE:—Whenever possible spread band final adjustments should be made with the chassis fastened in the cabinet and the pointer accurately aligned to the dial.

Order of Alignment	Test Oscillator			Range Selector	Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	Control Grid 6SK7 Pin No. 4	.1 Mfd.	455 k.c.	"A"	No Signal 550-750 k.c.	2nd I.F. Transformer	C11 & C12
2	Control Grid 6SA7 Pin No. 8	.1 Mfd.	455 k.c.	"A"	550-750 k.c.	1st I.F. Transformer	C8 & C9
3	Ant. Terminal	300 Ohms	1,500 k.c.	"A"	1,500 k.c. 22°	"A" Osc.	C27
4	Radiated signal *	—	1,500 k.c.	"A"	1,500 k.c. 22°	"A" Ant.	C1
5	Ant. Terminal	300 Ohms	15,200 k.c.	19 M	15,200 k.c. 93°	19 M Osc.	L12
6	Ant. Terminal	300 Ohms	11,800 k.c.	25 M	11,800 k.c. 82°	25 M Osc.	L13
7	Ant. Terminal	300 Ohms	9,550 k.c.	31 M	9,550 k.c. 104°	31 M Osc.	L14
8	Ant. Terminal	300 Ohms	9,550 k.c.	31 M	9,550 k.c. 104°	31 M Ant.	C4

All adjustments indicated above except operation 4, are made with antenna link in the **open** position.

*Radiation loop comprising two turns of wire 18 inches in diameter should be connected to test oscillator and placed approximately 4 feet from receiver before adjusting C1.



RCA VR-58 ALIGNMENT