

## Stromberg Carlson Co.

**Model:** 320T

**Chassis:**

**Year:** Pre August 1939

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

**Riders Volume 10 - STROMBERG 10-9**

**Riders Volume 10 - STROMBERG 10-10**

**Riders Volume 10 - STROMBERG 10-11**

STROMBERG-CARLSON TEL. MFG. CO.

MODELS 320H, 320HB  
320T, 320TB  
Schematic, Socket  
Trimmers

Type of Circuit..... Superheterodyne  
Tuning Ranges..... A—530 to 1700 Kc.; C—5900 to 18,000 Kc.  
Number and Types of Tubes..... 1 No. 6A8, 1 No. 6K7, 1 No. 6Q7G, 1 No. 6V6G, 1 No. 80  
Voltage Rating..... 105 to 125 Volts, A. C.  
Input Power Frequency..... 25 to 60 Cycles and 50 to 60 Cycles  
Input Power Rating..... 40 Watts  
Frequency of Intermediate Amplifier..... 455 Kilocycles

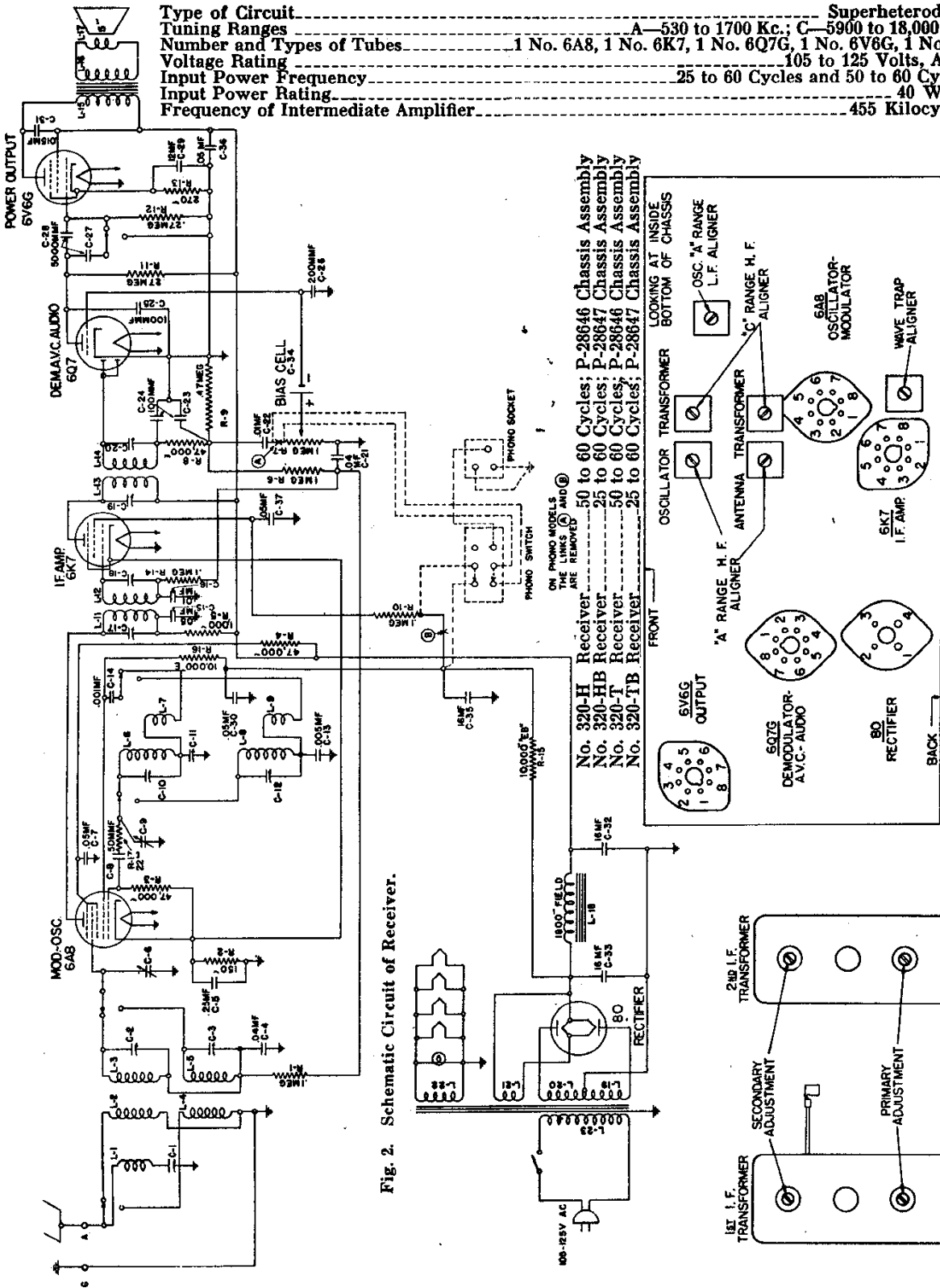


Fig. 2. Schematic Circuit of Receiver.

No. 320-H Receiver..... 50 to 60 Cycles; P-28646 Chassis Assembly  
No. 320-HB Receiver..... 25 to 60 Cycles; P-28647 Chassis Assembly  
No. 320-T Receiver..... 50 to 60 Cycles; P-28646 Chassis Assembly  
No. 320-TB Receiver..... 25 to 60 Cycles; P-28647 Chassis Assembly

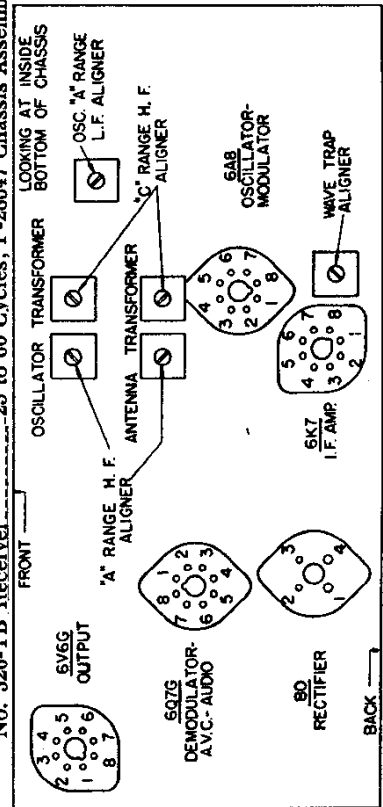


Fig. 1. Terminal Layout

MODELS 320H, 320HB  
 320T, 320TB STROMBERG-CARLSON TEL. MFG. CO.  
 Chassis Wiring, Voltage

Tube	Circuit	Cap	Terminals of Sockets								Heater Voltages Between Heater Terminals	
			1	2	3	4	5	6	7	8	Socket Terminal Numbers	Volts
6A8	Mod.—Osc.	0	0	0	+174	+64	-7.2	+176	6.1	+1.8	2-7	6.1
6K7	I. F. Amp.	0	0	0	+176	+62	+1.8	+210	6.1	+1.8	2-7	6.1
6Q7G	Dem.—A. V. C.—Audio	0	0	0	+65*	0	0	+65*	6.1	0	2-7	6.1
6V6G	Audio Output	—	0	0	+167	+176	0	0	6.1	+8.2	2-7	6.1
80	Rectifier	—	+260	258	258	+260	—	—	—	—	1-4	4.8

Receiver tuned to 1000 Kc., no signal. A. C. voltages are indicated by italics.

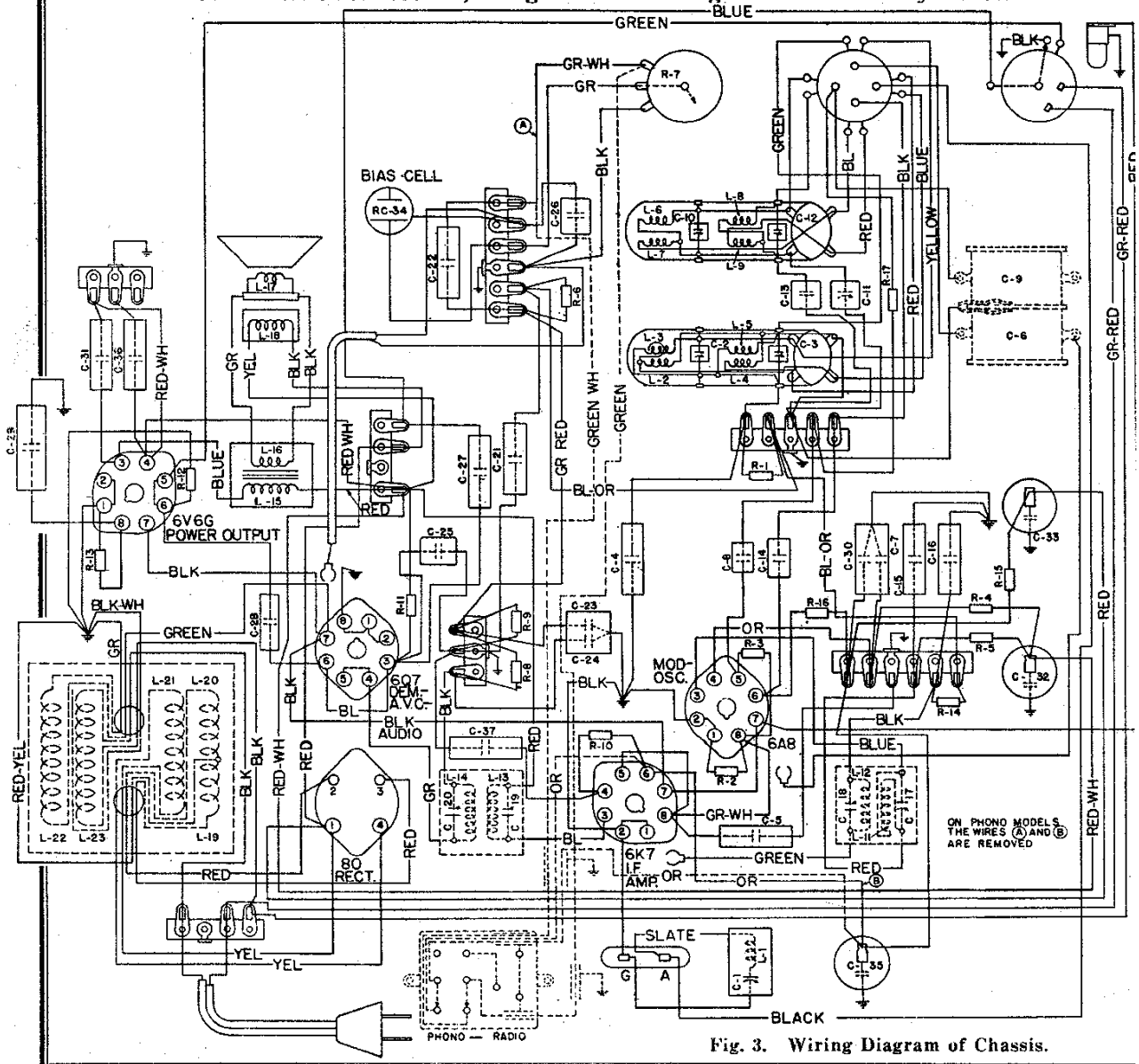


Fig. 3. Wiring Diagram of Chassis.

STROMBERG-CARLSON TEL. MFG. CO.

MODELS 320H, 320HB  
320T, 320TB  
Alignment, Parts

3. Adjust the antenna's "C" range high frequency aligner for maximum output, at the same time rotate the gang tuning capacitor back and forth through resonance until maximum output is obtained.

**Alignment of Standard Broadcast Range (Also Referred to as "A" Range)**

In aligning the radio frequency circuits for this range, replace the 400-ohm carbon type resistor in series with the test oscillator's output lead with a 200-micro-microfarad capacitor and align these circuits as follows:

1. Rotate the Range Switch control knob to the Standard Broadcast ("A") range position and set the test oscillator's frequency and the receiver's tuning dial to 1.5 megacycles.
2. Adjust the oscillator's "A" range high frequency aligner for maximum output.
3. Adjust the antenna's "A" range high frequency aligner for maximum output.
4. Set the test oscillator's frequency and the receiver's tuning dial to 0.6 megacycles.
5. Adjust the oscillator's "A" range low frequency aligner (series aligner) for maximum output and at the same time rotate the gang tuning capacitor slightly back and forth through resonance until maximum output is obtained.
6. Reset both the test oscillator's frequency and receiver's tuning dial to 1.5 megacycles and repeat operations Nos. 2 and 3.

**Wave Trap Adjustment**

In adjusting the wave trap circuit, set the Range Switch control knob to the Standard Broadcast range position and set the dial pointer to 1600 kilocycles.

Connect a 200-micro-microfarad capacitor in series with the output terminal of the modulated test oscillator and the antenna binding post on the receiver, and the ground terminal of the capacitor to the ground binding post on the receiver. Then, with the gang tuning capacitor in the Standard Broadcast position, the test oscillator at 455 kilocycles, supply a fairly strong signal to the receiver and adjust the wave trap aligner until a minimum indication is obtained on the output meter.

**PROCEDURE FOR OBTAINING REPRODUCTION FROM PHONOGRAPH RECORDS**

In order to obtain reproduction of phonograph records in conjunction with the No. 290 Receiver, the following instructions should be followed:

To enable these receivers for phonograph operation, it will be necessary to purchase and install a Stromberg-Carlson P-2800 Switch Assembly. The rear of the chassis base of these receivers is already drilled for mounting this switch assembly. Complete instructions on how to install and operate this switch are furnished with each P-2800 Switch Assembly.

To obtain the best quality of phonograph reproduction from these receivers, a Stromberg-Carlson Record Play and Test Record, Type 2800, should be used. This record is specially equalized circuit.

If a Stromberg-Carlson Record Player is not used and the electric pick-up to be used is of the high impedance type, it will be necessary to connect a low capacity shielded cable between the three-prong socket and plug of the P-2800 Switch Assembly and the pick-up. This shielded cable should be of the low capacity high capacity in order to prevent the effect of the capacitance of the cable on the shielded cable having between the three-prong socket and plug of the P-2800 Switch Assembly, and the pick-up. The transformer should be located as near to the receiver as possible, in which case it will not be necessary to use a shielded cable.

2855	CE	Electrolytic Capacitor, 15 Mfd., 250 Volts
2860	LA, LA, LA, LA	Coil Assembly, Antenna Transformer
2861	LA, LA, LA, LA	Coil Assembly, Oscillator Transformer
2862	LA, LA, LA, LA	Coil Assembly, Tuning Transformer
2864	L1, L1, L1	First I. F. Transformer
2865	L1, L1, L1	Second I. F. Transformer
2867	CA, C	Coil Assembly, Antenna Transformer
2868	CA, C	Coil Assembly, Oscillator Transformer
2869	CA, C	Coil Assembly, Tuning Transformer
2870	CA, C	Coil Assembly, Antenna Transformer
2871	CA, C	Coil Assembly, Oscillator Transformer
2872	CA, C	Coil Assembly, Tuning Transformer
2873	CA, C	Coil Assembly, Antenna Transformer
2874	CA, C	Coil Assembly, Oscillator Transformer
2875	CA, C	Coil Assembly, Tuning Transformer
2876	CA, C	Coil Assembly, Antenna Transformer
2877	CA, C	Coil Assembly, Oscillator Transformer
2878	CA, C	Coil Assembly, Tuning Transformer
2879	CA, C	Coil Assembly, Antenna Transformer
2880	CA, C	Coil Assembly, Oscillator Transformer
2881	CA, C	Coil Assembly, Tuning Transformer
2882	CA, C	Coil Assembly, Antenna Transformer
2883	CA, C	Coil Assembly, Oscillator Transformer
2884	CA, C	Coil Assembly, Tuning Transformer
2885	CA, C	Coil Assembly, Antenna Transformer
2886	CA, C	Coil Assembly, Oscillator Transformer
2887	CA, C	Coil Assembly, Tuning Transformer
2888	CA, C	Coil Assembly, Antenna Transformer
2889	CA, C	Coil Assembly, Oscillator Transformer
2890	CA, C	Coil Assembly, Tuning Transformer
2891	CA, C	Coil Assembly, Antenna Transformer
2892	CA, C	Coil Assembly, Oscillator Transformer
2893	CA, C	Coil Assembly, Tuning Transformer
2894	CA, C	Coil Assembly, Antenna Transformer
2895	CA, C	Coil Assembly, Oscillator Transformer
2896	CA, C	Coil Assembly, Tuning Transformer
2897	CA, C	Coil Assembly, Antenna Transformer
2898	CA, C	Coil Assembly, Oscillator Transformer
2899	CA, C	Coil Assembly, Tuning Transformer
2900	CA, C	Coil Assembly, Antenna Transformer

**MISCELLANEOUS PARTS**

- Black Card for Drive
- Ball Washer (Used on Volume and Off-On-Tone Control Shafts)
- Ball Washer (Used on Station Selector Control Shaft)
- Knob (Used on Volume and Off-On-Tone Control Shafts)
- Knob (Used on Station Selector Control Shaft)
- Knob (Used on Volume and Off-On-Tone Control Shafts)

**ALIGNMENT DATA**

All alignment adjustments are accurately made at the factory on these receivers, and ordinarily no readjustments are necessary. However, should it be necessary to readjust any of the circuits, the following instructions should be followed:

In order to make these alignment adjustments in an easy and satisfactory manner, it is recommended that the Stromberg-Carlson P-27657 and P-27658 aligning tools be used.

To accurately align the circuits in these receivers, it is necessary to use a high grade, modulated test oscillator (Signal Generator), the output voltage of which can be varied. In conjunction with this test oscillator, a voltmeter should be used for determining the maximum signal voltage developed across the voice coil of the loud speaker.

In making any alignment adjustments, always adjust the test oscillator's output voltage to the minimum value where a good alignment may still be obtained. Never attempt to make any alignment adjustments using a strong signal. Before proceeding with the alignment of any circuits in these receivers be sure that the "Off-On-Tone" control knob is in the "Off" position. Then, with the gang tuning capacitor in this position, the dial pointer should center the "Broadcast" position, slightly clockwise to position, where set turns "007". Figure 1, shows the location of all the aligning capacitors in these receivers.

In making any alignment adjustments on these receivers, it will not be necessary to remove the chassis from the cabinet. The aligning capacitors for the intermediate frequency circuits of these receivers are easily accessible from the rear of the receiver and the volume control knob is accessible through the bottom of the cabinet through the bottom of the cabinet shelf depending upon the style of cabinet.

**Dial Adjustment**

Before aligning the circuits of any of these receivers, the tuning dial must be precisely aligned to track with the "Broadcast Selector" knob in a clockwise direction so that the gang tuning capacitor is set in its maximum capacity position. Then, with the gang tuning capacitor in this position, the dial pointer should center the "Broadcast" position, slightly clockwise to position, where set turns "007". Figure 1, shows the location of all the aligning capacitors in these receivers.

In making any alignment adjustments on these receivers, it will not be necessary to remove the chassis from the cabinet. The aligning capacitors for the intermediate frequency circuits of these receivers are easily accessible from the rear of the receiver and the volume control knob is accessible through the bottom of the cabinet through the bottom of the cabinet shelf depending upon the style of cabinet.

**Wave Trap Adjustment**

In adjusting the wave trap circuit, set the Range Switch control knob to the Standard Broadcast range position and set the dial pointer to 1600 kilocycles.

Connect a 200-micro-microfarad capacitor in series with the output terminal of the modulated test oscillator and the antenna binding post on the receiver, and the ground terminal of the capacitor to the ground binding post on the receiver. Then, with the gang tuning capacitor in the Standard Broadcast position, the test oscillator at 455 kilocycles, supply a fairly strong signal to the receiver and adjust the wave trap aligner until a minimum indication is obtained on the output meter.

**Intermediate Frequency Adjustments**

The intermediate frequency used in these receivers is 455 kilocycles. In making these circuit adjustments always align the circuits in the order given in these instructions.

1. Rotate the Range Switch control knob to the Standard Broadcast Range position (arrow on knob pointing in direction of letters BR).
2. Set the dial pointer to the extreme low frequency position on the receiver's dial. Rotate the "Off-On-Tone" control knob to the "Off" position. Then, with the gang tuning capacitor in this position, the dial pointer should center the "Broadcast" position, slightly clockwise to position, where set turns "007". Figure 1, shows the location of all the aligning capacitors in these receivers.
3. Apply between the chassis base (or ground binding post) of the receiver, and the grid of the No. 6A8 modulator-oscillator tube, a modulated signal of 455 kilocycles from the test oscillator, using a 0.1 microfarad capacitor in series with the connection between the output terminal of the test oscillator and the grid of the modulator-oscillator tube. The other end of the test oscillator should be connected to either the chassis base or the ground binding post terminal.
4. Now, noting from Figure 1, the aligning capacitors for the first and second I. F. Transformers, align the I. F. circuits in the following manner:  
Secondary of second I. F. transformer.  
Primary of second I. F. transformer.  
Primary of first I. F. transformer.

**Adjusting the Circuits to Obtain Maximum Reading on the Output Meter, Reducing the Output of the Test Oscillator as Required.**

**Radio Frequency Adjustments**

The alignment of the radio frequency circuits in these receivers should be very carefully made and in the order specified.

**Alignment of Short Wave Range (Also Referred to as "C" Range)**

In aligning the radio frequency circuits for this range, replace the 0.1-microfarad capacitor which was placed in series with the test oscillator's output lead for the I. F. alignments, with a 400-ohm carbon type resistor. This resistor (or low side of the test oscillator) should be connected to the ground binding post on the receiver.

1. Rotate the Range Switch control knob to the Short Wave ("C") range position, and set the test oscillator's frequency and the receiver's tuning dial to 17 megacycles.
2. Adjust the oscillator's "C" range high frequency aligner for maximum output.

**REPLACEMENT PARTS**

2624	RA	Resistor, Type 27, 10,000 Ohms
2625	RA, RA, RA	Resistor, Type 27, 4,000 Ohms
2626	RA, RA, RA	Resistor, Type 27, 2,000 Ohms
2627	RA, RA, RA	Resistor, Type 27, 1,000 Ohms
2628	RA, RA, RA	Resistor, Type 27, 500 Ohms
2629	RA, RA, RA	Resistor, Type 27, 250 Ohms
2630	RA, RA, RA	Resistor, Type 27, 125 Ohms
2631	RA, RA, RA	Resistor, Type 27, 62.5 Ohms
2632	RA, RA, RA	Resistor, Type 27, 31.25 Ohms
2633	RA, RA, RA	Resistor, Type 27, 15.625 Ohms
2634	RA, RA, RA	Resistor, Type 27, 7.8125 Ohms
2635	RA, RA, RA	Resistor, Type 27, 3.90625 Ohms
2636	RA, RA, RA	Resistor, Type 27, 1.953125 Ohms
2637	RA, RA, RA	Resistor, Type 27, 0.9765625 Ohms
2638	RA, RA, RA	Resistor, Type 27, 0.48828125 Ohms
2639	RA, RA, RA	Resistor, Type 27, 0.244140625 Ohms
2640	RA, RA, RA	Resistor, Type 27, 0.1220703125 Ohms
2641	RA, RA, RA	Resistor, Type 27, 0.06103515625 Ohms
2642	RA, RA, RA	Resistor, Type 27, 0.030517578125 Ohms
2643	RA, RA, RA	Resistor, Type 27, 0.0152587890625 Ohms
2644	RA, RA, RA	Resistor, Type 27, 0.00762939453125 Ohms
2645	RA, RA, RA	Resistor, Type 27, 0.003814697265625 Ohms
2646	RA, RA, RA	Resistor, Type 27, 0.0019073486328125 Ohms
2647	RA, RA, RA	Resistor, Type 27, 0.00095367431640625 Ohms
2648	RA, RA, RA	Resistor, Type 27, 0.000476837158203125 Ohms
2649	RA, RA, RA	Resistor, Type 27, 0.0002384185791015625 Ohms
2650	RA, RA, RA	Resistor, Type 27, 0.00011920928955078125 Ohms
2651	RA, RA, RA	Resistor, Type 27, 0.000059604644775390625 Ohms
2652	RA, RA, RA	Resistor, Type 27, 0.0000298023223876953125 Ohms
2653	RA, RA, RA	Resistor, Type 27, 0.00001490116119384765625 Ohms
2654	RA, RA, RA	Resistor, Type 27, 0.000007450580596923828125 Ohms
2655	RA, RA, RA	Resistor, Type 27, 0.0000037252902984619140625 Ohms
2656	RA, RA, RA	Resistor, Type 27, 0.00000186264514923095703125 Ohms
2657	RA, RA, RA	Resistor, Type 27, 0.000000931322574615478515625 Ohms
2658	RA, RA, RA	Resistor, Type 27, 0.0000004656612873077392578125 Ohms
2659	RA, RA, RA	Resistor, Type 27, 0.00000023283064365386962890625 Ohms
2660	RA, RA, RA	Resistor, Type 27, 0.000000116415321826934814453125 Ohms
2661	RA, RA, RA	Resistor, Type 27, 0.0000000582076609134674072265625 Ohms
2662	RA, RA, RA	Resistor, Type 27, 0.00000002910383045673370361328125 Ohms
2663	RA, RA, RA	Resistor, Type 27, 0.000000014551915228366851806640625 Ohms
2664	RA, RA, RA	Resistor, Type 27, 0.0000000072759576141834259033203125 Ohms
2665	RA, RA, RA	Resistor, Type 27, 0.00000000363797880709171295166015625 Ohms
2666	RA, RA, RA	Resistor, Type 27, 0.000000001818989403545856475780078125 Ohms
2667	RA, RA, RA	Resistor, Type 27, 0.000000000909494701772928237890140625 Ohms
2668	RA, RA, RA	Resistor, Type 27, 0.0000000004547473508864141191453125 Ohms
2669	RA, RA, RA	Resistor, Type 27, 0.00000000022737367544320705957265625 Ohms
2670	RA, RA, RA	Resistor, Type 27, 0.0000000001136868377216035297878125 Ohms
2671	RA, RA, RA	Resistor, Type 27, 0.00000000005684341886080176489390625 Ohms
2672	RA, RA, RA	Resistor, Type 27, 0.000000000028421709430400882446953125 Ohms
2673	RA, RA, RA	Resistor, Type 27, 0.0000000000142108547152004412234765625 Ohms
2674	RA, RA, RA	Resistor, Type 27, 0.0000000000071054273576002206112173828125 Ohms
2675	RA, RA, RA	Resistor, Type 27, 0.000000000003552713678800110305609375 Ohms
2676	RA, RA, RA	Resistor, Type 27, 0.0000000000017763568394000551528046875 Ohms
2677	RA, RA, RA	Resistor, Type 27, 0.00000000000088817841970002757640234375 Ohms
2678	RA, RA, RA	Resistor, Type 27, 0.0000000000004440892098500137852171875 Ohms
2679	RA, RA, RA	Resistor, Type 27, 0.000000000000222044604925006892609375 Ohms
2680	RA, RA, RA	Resistor, Type 27, 0.0000000000001110223024625034463046875 Ohms
2681	RA, RA, RA	Resistor, Type 27, 0.000000000000055511151231251723169375 Ohms
2682	RA, RA, RA	Resistor, Type 27, 0.000000000000027755575615625861846875 Ohms
2683	RA, RA, RA	Resistor, Type 27, 0.00000000000001387778780781253284329375 Ohms
2684	RA, RA, RA	Resistor, Type 27, 0.000000000000006938893903906164216446875 Ohms
2685	RA, RA, RA	Resistor, Type 27, 0.0000000000000034694469519530821222329375 Ohms
2686	RA, RA, RA	Resistor, Type 27, 0.0000000000000017347234759765410611216446875 Ohms
2687	RA, RA, RA	Resistor, Type 27, 0.000000000000000867361737988270530558216446875 Ohms
2688	RA, RA, RA	Resistor, Type 27, 0.000000000000000433680868994152662779128216446875 Ohms
2689	RA, RA, RA	Resistor, Type 27, 0.00000000000000021684043449707633138861128216446875 Ohms
2690	RA, RA, RA	Resistor, Type 27, 0.000000000000000108420217248538165694441128216446875 Ohms
2691	RA, RA, RA	Resistor, Type 27, 0.000000000000000054210108624269082847220558216446875 Ohms
2692	RA, RA, RA	Resistor, Type 27, 0.00000000000000002710505431213454141128216446875 Ohms
2693	RA, RA, RA	Resistor, Type 27, 0.00000000000000001355252715606727070558216446875 Ohms
2694	RA, RA, RA	Resistor, Type 27, 0.000000000000000006776263578033635352779128216446875 Ohms
2695	RA, RA, RA	Resistor, Type 27, 0.00000000000000000338813178901681767638861128216446875 Ohms
2696	RA, RA, RA	Resistor, Type 27, 0.000000000000000001694065894540883838194441128216446875 Ohms
2697	RA, RA, RA	Resistor, Type 27, 0.000000000000000000847032947270441919097220558216446875 Ohms
2698	RA, RA, RA	Resistor, Type 27, 0.000000000000000000423516473635220959494441128216446875 Ohms
2699	RA, RA, RA	Resistor, Type 27, 0.000000000000000000211758236817672479747220558216446875 Ohms
2700	RA, RA, RA	Resistor, Type 27, 0.00000000000000000010587911840883639873861128216446875 Ohms
2701	RA, RA, RA	Resistor, Type 27, 0.0000000000000000000529395592044181993894441128216446875 Ohms
2702	RA, RA, RA	Resistor, Type 27, 0.0000000000000000000264697796022090996947220558216446875 Ohms
2703	RA, RA, RA	Resistor, Type 27, 0.000000000000000000013234889801104544984861128216446875 Ohms
2704	RA, RA, RA	Resistor, Type 27, 0.000000000000000000006617444900522724942438861128216446875 Ohms
2705	RA, RA, RA	Resistor, Type 27, 0.000000000000000000003308722450261362247194441128216446875 Ohms
2706	RA, RA, RA	Resistor, Type 27, 0.00000000000000000000165436122513061211097220558216446875 Ohms
2707	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000827180612565505555494441128216446875 Ohms
2708	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000413590307782752777247220558216446875 Ohms
2709	RA, RA, RA	Resistor, Type 27, 0.00000000000000000000020679515389137638861128216446875 Ohms
2710	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000103397576945688194441128216446875 Ohms
2711	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000051698788472844097220558216446875 Ohms
2712	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000025849394236422494441128216446875 Ohms
2713	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000012924697118211247220558216446875 Ohms
2714	RA, RA, RA	Resistor, Type 27, 0.0000000000000000000000064623485591061211097220558216446875 Ohms
2715	RA, RA, RA	Resistor, Type 27, 0.0000000000000000000000032311742795530555494441128216446875 Ohms
2716	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000001615587139777638861128216446875 Ohms
2717	RA, RA, RA	Resistor, Type 27, 0.000000000000000000000000807793598888194441128216446875 Ohms
2718	RA, RA, RA	Resistor, Type 27,