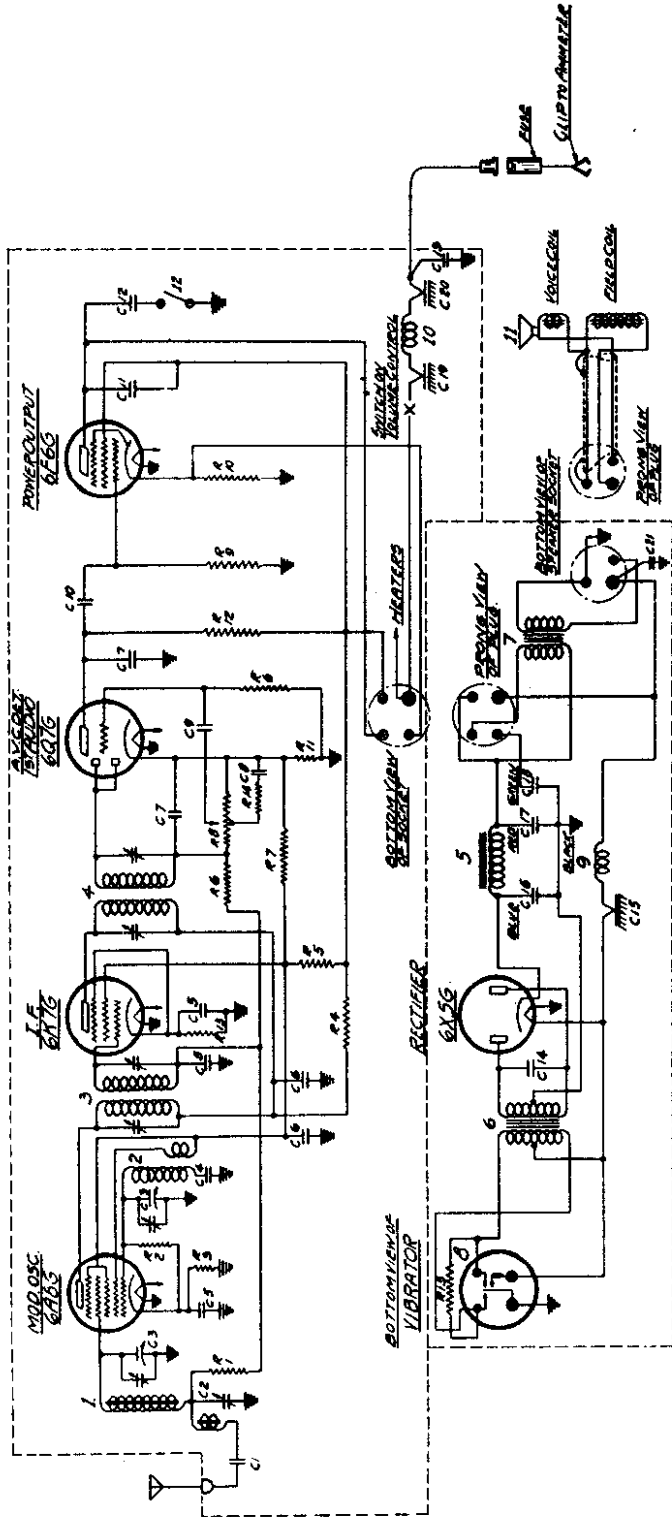


ZENITH RADIO CORP.

MODEL 5M291, Chas. 5527  
Schematic

I. F. FREQUENCY-455-K.C.

MODEL-5-M-291 CHASSIS-5527  
ZENITH RADIO CORPORATION  
CHICAGO, ILL.



CHAS. PART NO.	PART NO.	DESCRIPTION	DIAS. NO.	PART NO.	DESCRIPTION
C 1	81-219	0.3 MFD	R 12	81-379	ANTENNA COIL
C 2	22-844	40MTC ANTENNA TRANSFORMER	R 13	81-380	OSCILLATOR COIL
C 3	22-845	170 AMP. VARIABLE	R 14	81-381	500 P. TAP
C 4	22-846	OSCILLATOR INDUCTOR	R 15	81-382	250 OHM
C 5	22-847	1 MFD			
C 6	22-848	1 MFD	1	81-378	POWER CHOKER
C 7	22-849	0.0025 MFD	2	81-379	AUDIO TAP
C 8	22-850	0.05 MFD	3	81-380	POWER CHOKER
C 9	22-851	0.05 MFD	4	81-381	AUDIO TAP
C 10	22-852	0.05 MFD	5	81-382	POWER CHOKER
C 11	22-853	0.05 MFD	6	81-383	AUDIO TAP
C 12	22-854	0.05 MFD	7	81-384	POWER CHOKER
C 13	22-855	0.05 MFD	8	81-385	AUDIO TAP
C 14	22-856	0.05 MFD	9	81-386	POWER CHOKER
C 15	22-857	0.05 MFD	10	81-387	AUDIO TAP
C 16	22-858	0.05 MFD	11	81-388	POWER CHOKER
C 17	22-859	0.05 MFD	12	81-389	AUDIO TAP
C 18	22-860	0.05 MFD			
C 19	22-861	0.05 MFD			
C 20	22-862	0.05 MFD			
C 21	22-863	0.05 MFD			
R 1	81-227	500 OHM			
R 2	81-228	100 OHM			
R 3	81-229	100 OHM			
R 4	81-230	100 OHM			
R 5	81-231	100 OHM			
R 6	81-232	100 OHM			
R 7	81-233	100 OHM			
R 8	81-234	100 OHM			
R 9	81-235	100 OHM			
R 10	81-236	100 OHM			
R 11	81-237	100 OHM			

MODEL 5M291, Chas. 5527  
 Socket, Trimmers, Voltage  
 Alignment  
 MODEL 5M294, Chas. 5530  
 Alignment, Tuner Data

ZENITH RADIO CORP.

MODELS 5X230, 5X248  
 5X274, Chas. 5523  
 Voltage

**IMPORTANT — ANTENNA ALIGNMENT**  
 5-M-294 — CHASSIS 5530

Due to the large variation in electrical capacity of different automatic antennas it is necessary to adjust the receiver to the particular antenna used after installation has been made for maximum performance. Model 5-M-294 is equipped with two adjusting screws to accomplish this alignment. The green tag on the side of the receiver case shows the location of the two adjusting screws.

To align, first turn the receiver on with the center knob shown in Fig. 3. Press the tuning knob IN. This places the tuning mechanism in the manual operating position. Tune to a weak station near 1400 K.C. and adjust the trimmer directly below the antenna connector to maximum volume. Next tune the receiver to a weak station near 800 K.C. and adjust the trimmer nearest the power pack case for maximum volume. Repeat the adjustments for greatest accuracy.

**AUTOMATIC**

To set the automatic buttons, first pull the tuning knob OUT. This shifts the tuning mechanism to the Automatic position. Press Automatic button A and turn the volume up and with a small screw driver carefully adjust screw A at bottom of the Automatic unit shown in Fig. 3 to a local station between 1500 to 1050 K.C. Set to exact position of maximum volume and clearest tone. Next adjust trimmer A1 for maximum volume

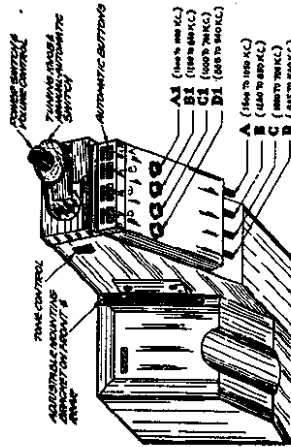


Fig. 5

and clearest tone on the same station. It should be noted that there are two trimmer adjustments to each station button. To set the second button press B and tune trimmer B to a local station between 1250 to 850 K.C. Trim with adjustment B1 to best volume and tone on the same station. To set the third button press C and tune trimmer screw C to a station between 1000 to 700 K.C. and corresponding adjustment C1 obtain for maximum volume of the selected station. Follow the same procedure for the fourth button by pressing button D and using trimmers D and D1 on a local station between 885 to 540 K.C. After all four buttons have been set, cut the call letters of stations selected from the gummed call letter sheet supplied with the receiver. Remove the celluloid strip and paste the station call letters in their proper positions by wetting the back of the call letter sticker. The four outlines on the celluloid strip provide the exact points at which the gummed labels are placed. After the call letter stickers are attached replace the celluloid and the escutcheon plate.

**SOCKET VOLTAGES**

5X-230, 5X-248, 5X-274 — CHASSIS 5523

TUBE	POSITION	1	2	3	4	5	6	7	8	9
6A8	1st Det. Osc.	0	10	146	50	0	132	5.5	2.5	0
6K7	I.F. A.V.C.	0	16.5	154	50	2	-	10.5	2.	0
6Q7	2nd Det. A.V.C.	0	0	25	0	0	-	5.	1.	0
6V6	Power	0	23	134	154	0	-	16	6	-
6X5	Rect.	0	28	A.C.	-	16	-	22	156	-

All voltages measured from point indicated to ground using a 1000 Ohm per Volt meter, antenna and ground disconnected. Line voltage 51.5 volts. Consumption 3.9 amp.

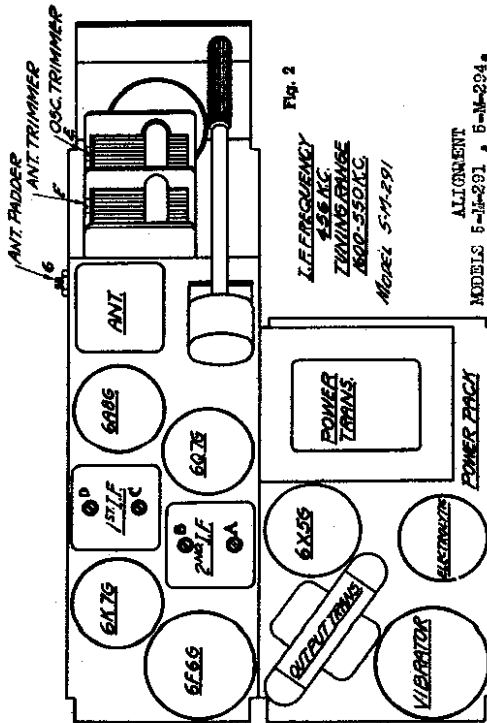


Fig. 2

**ALIGNMENT**  
 MODELS 5-M-291, 5-M-294.

Operation	Connect Test Oscillator To	Dummy Antenna	Set Test Out. To	Max. Cap.	Min. Cap.	Adjust Trimmers	Purpose
1	1st Det. Grid	1/2 Mid.	456	Manual	1400	A, B, C, D	I. F. Alignment
2	Rec. Ant. Lead	50 Mid.	1530	Manual	1400	E	Trim Oscillator
3	Rec. Ant. Lead	50 Mid.	1400	Manual	1400	F	Trim Ant. Stage
4	Rec. Ant. Lead	50 Mid.	600	Manual	600	G	Adjust Ant. Padder For Max. Output
5	Connect Car Antenna to Set						Tune to Weak Station Around 1400 K. C. — Trim Antenna Trimmer "F" for Maximum Peak Output.
6	With Set Connected to Car Antenna						Tune To Weak Station Around 800 K. C. — Trim Antenna Padder "G" for Maximum Peak Output.

**ANTENNA ALIGNMENT**

(Models 5-M-291 and 5-M-294)

There is such a great variation in the capacity of different antennas that it is impossible to meet every condition without some means of variable antenna alignment. To accomplish this, 2 screw adjustments are provided on the receiver case as shown in Figure 3. After the set has been completely installed, the proper method of antenna alignment is as follows: Tune in a weak signal at or near 1400 K.C. and carefully adjust the lower screw as indicated in Figure 3 to loudest signal strength. Turn the tuning dial to a station at or near 800 K.C. and carefully adjust the upper left screw, also shown in Figure 3. Do not use a loud local signal for either of the adjustments. The adjustments at both 800 and 1400 K.C. should be repeated not only as a check but for more perfect alignment.

