Western Auto Supply Co.

Model: D2027A	Chassis:	Year: Pre 1951
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources

- Riders Volume 21 - WESTERN AUTO 21-20
- Riders Volume 21 - WESTERN AUTO 21-21
- Riders Volume 21 - WESTERN AUTO 21-22
- Riders Volume 21 - WESTERN AUTO 21-23
- Riders Volume 21 - WESTERN AUTO 21-24

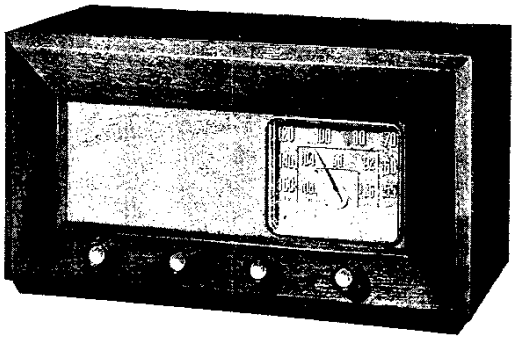
MODEL D2027A

CHECK YOUR LINE VOLTAGE

Unless otherwise marked this radio must be operated on a supply of 105-125 volts AC, 50 to 60 cycles only. Do not connect the radio to a wall outlet unless certain that the power supply is correct for the receiver. If in doubt, telephone your local power company before inserting the plug. Radios of this model which are to be used on other power supplies are marked accordingly.

FM BAND

88 - 108 MEGACYCLES — This band is calibrated in megacycles and covers the newly allocated frequency modulation band of 88-108 megacycles. Reception in this band is usually limited to "line of sight" distances between the transmitting and receiving antennas. This is normally up to about 30 miles with approximately 45 miles being the extreme range.



BROADCAST BAND

540 - 1600 KILOCYCLES — This band is calibrated in channel numbers. To obtain the kilocycle number add a zero to the number on the dial scale.

TONE CONTROL

Use this knob to adjust the tone of the receiver. When turned clockwise the high notes will predominate and when turned counterclockwise a deep bass effect will result.

BAND AND PHONO RADIO SWITCH

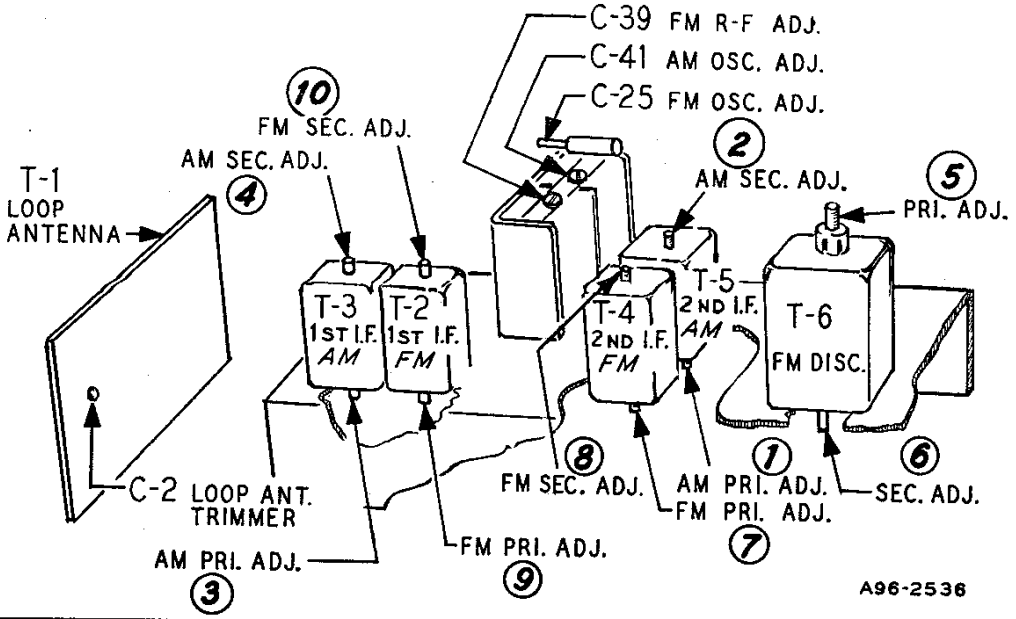
This control has three positions, FM, Broadcast and Phono. In the Phono position, the electrical circuits are connected for the reproduction of records played on a record player. (See paragraph "Record Player Connection.")

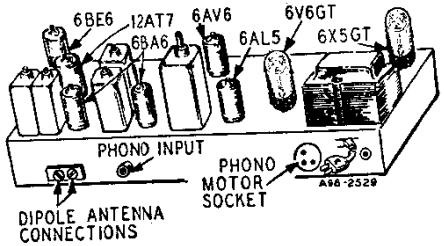
ON-OFF SWITCH AND VOLUME CONTROL

The On-Off switch and Volume control are operated by the same knob. To turn the radio on, turn the knob clockwise until a click is heard. Allow approximately 30 seconds for the tubes to heat. Then continue to turn the knob clockwise to increase the volume.

TUNING KNOB

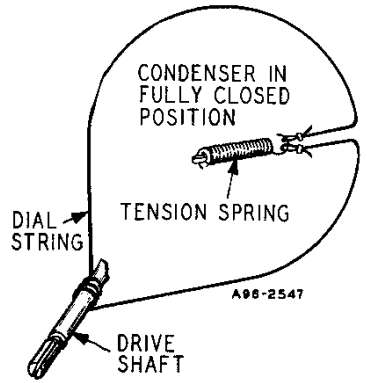
Use this control to tune in the desired station. Turn the knob until the station is heard. Then slowly rotate it back and forth until the signal is clearest and strongest. If signal is too strong, reduce it by means of the volume control, not by using the tuning knob.





DRIVE CORD REPLACEMENT

Replacement of the drive cord may be accomplished as shown in the illustration. For this purpose use the new drive cord assembly listed in the Replacement Parts List. Turn the gang condenser until the plates are fully meshed Then install the string as shown, winding three turns counter-clockwise around the tuning shaft with the turns progressing away from the chassis. After the cord is installed, rotate the tuning shaft several times in order to take up any slack in the cord.



ELECTRICAL SPECIFICATIONS

Power Output—
117 volts AC—40 watts

Power Output—
1.9 watts maximum
.8 watts 10% distortion

Speaker—5¼ inch PM dynamic

Frequency Ranges—
Broadcast 540-1600 KC
Frequency modulation 88-108 MC

Intermediate Frequency—
AM 455 KC — FM 10.7 MC

Selectivity — AM — 45 KC broad at 1000 times signal, measured at 1000 KC

I.F. FM—200 KC broad at 2 times down

I.F. FM—950 KC broad at 200 times down

AM Sensitivity—(For .5 watt output with external antenna)
50 microvolts average

FM Sensitivity—(For .5 watt output)
25 microvolts average

ALIGNMENT PROCEDURES

AM STAGES

The following is required for aligning:
An All Wave Signal Generator Which Will Provide an Accurately Calibrated Signal at the Test Frequencies as Listed.
Output Indicating Meter, Non-Metallic Screwdriver, Dummy Antennas — .1 mf, and 50mmf.

Volume Control Maximum all Adjustments.
Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.
Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.

SIGNAL GENERATOR						
FREQUENCY SETTING	CONNECT GENERATOR OUTPUT TO	THROUGH DUMMY ANTENNA	CONNECT GROUND TO	GANG CONDENSER SETTING	ADJUST	ADJUST FOR
455 KC	Control Grid 1st 6BA6 Pin No. 1	.1 mf	Chassis Base	Rotor Fully Open	2nd I.F. Pri. (1) and Sec. (2)	Maximum Output
455 KC	Control Grid 6BE6 Pin No. 7 1st Det.	.1 mf	Chassis Base	Rotor Fully Open	1st I.F. Pri. (3) and Sec. (4)	Maximum Output
455 KC	Control Grid 6BE6 Pin No. 7	.1 mf	Chassis Base	Rotor Fully Open	2nd I-F Pri. (1) and Sec. (2)	Maximum Output
1620 KC	Control Grid 6BE6 Pin No. 7	.1 mf	Chassis Base	Rotor Fully Open	Oscillator C-41	Maximum Output
1400 KC	External Antenna Clip	50 mmf	Chassis Base	Turn Rotor to Max. Output. Set Pointer to 1400 KC See Note A	Antenna C-2	Maximum Output

NOTE A—If the pointer is not at 1400 KC on the dial, reset pointer to the 1400 KC mark on the dial scale.

MODEL D2027A

FM STAGES

The following is required for aligning:

An accurately calibrated signal generator providing unmodulated signals at the test frequencies listed below.

Non-metallic screwdriver.

Dummy Antennas and I-F Loading Resistor—2500 mmf, 300 ohms

Zero center scale DC vacuum tube voltmeter having a range of approximately 3 volts.

(If a zero center scale meter is not available, a standard scale vacuum tube voltmeter may be used by reversing the meter connections for negative readings).

Allow chassis and signal generator to "Heat Up" for several minutes.

	SIGNAL GENERATOR		THROUGH DUMMY ANTENNA	BAND SWITCH SETTING	GANG CONDENSER SETTING	ADJUST	ADJUST FOR
	FREQUENCY SETTING	CONNECT GENERATOR OUTPUT TO					
Discriminator	10.7 MC	6BA6 2nd I-F Pin 1 and Chassis	2500 mmf	FM	Rotor Fully Open	Disc. Pri. (5) Note A	Maximum Deflection
	10.7 MC	6BA6 2nd I-F Pin 1 and Chassis	2500 mmf	FM	Rotor Fully Open	Disc. Sec. (6) Note B	
I-F	10.7 MC Note C	6BA6 1st I-F Pin 1 and Chassis	2500 mmf	FM	Rotor Fully Open	2nd I-F Pri. (7) Sec. (8) Note D	Maximum Deflection
Discriminator	10.7 MC	6BA6 1st I-F Pin 1 and Chassis	2500 mmf	FM	Rotor Fully Open	Disc. Pri. (5) Note D	Maximum Deflection
I-F	10.7 MC	Junction C-32A & B (Dual 100 mmf cond.) And chassis	2500 mmf	FM	Rotor Fully Open	1st I-F Pri. (9) & Sec. (10) 2nd I-F Pri. (7) & Sec. (8) Disc. Pri. (5) In Order Shown Note D	Maximum Deflection
	10.7 MC	Same as above	2500 mmf	FM	Rotor Fully Open	Disc. Sec. (6) Note B	Maximum Deflection
RECHECK I-F ADJUSTMENTS IN ORDER GIVEN							
Oscillator	108.5	Disconnect hank antenna and connect generator to dipole terminals with resistor in series.	300 ohms	FM	Rotor Fully Open	Osc. C-25	Maximum Deflection
Antenna	104.5	Same as above	300 ohms	FM	Tune rotor for max. AVC voltage	Ant. C-39	Maximum Deflection
RECHECK ANTENNA & OSC. ADJUSTMENTS IN ORDER GIVEN							

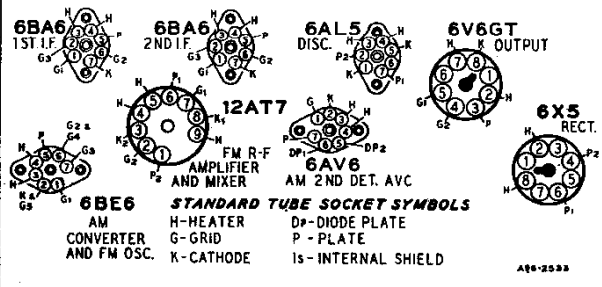
FM ALIGNMENT NOTES

NOTE A—The zero center scale DC vacuum tube voltmeter is to be connected between chassis ground and the AVC line. A signal of .1 volt must be fed into the receiver for this adjustment.
Note output voltage on the zero center DC vacuum tube voltmeter

NOTE B—Disconnect zero center DC vacuum tube voltmeter from AVC and connect it at the audio takeoff point at the 27 K ohm resistor (R-10) and its junction with the terminal strip. Adjust for zero voltage indication.

NOTE C—AM I-F coils must be aligned before attempting to align the FM I-F coils.

NOTE D—Connect zero center DC vacuum tube voltmeter as in Note A. Adjust input to give same output on the zero center DC vacuum tube voltmeter as in Note A.

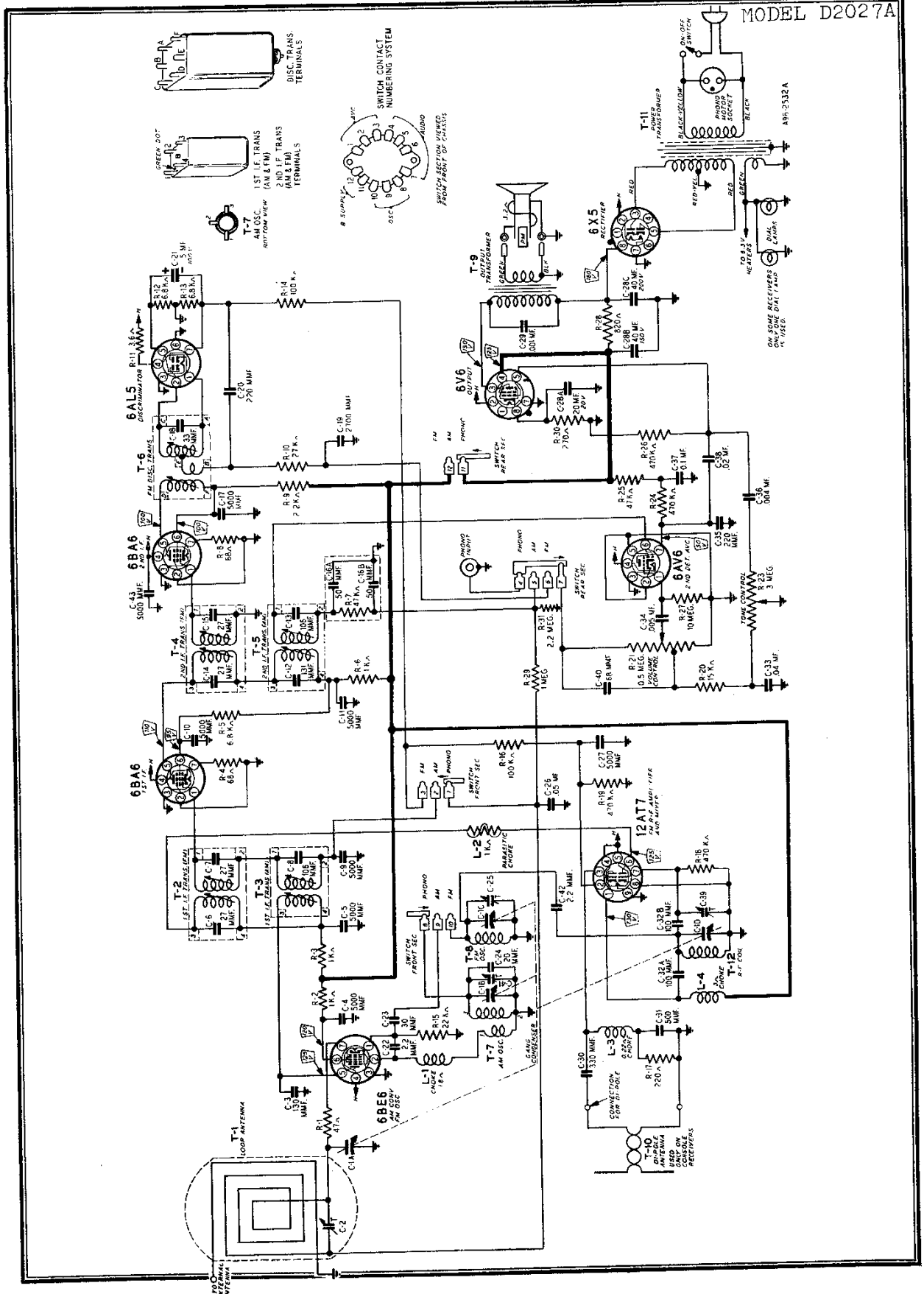


TUBE SOCKET VOLTAGES

Socket voltages are shown on the schematic diagram at the tube socket terminals. All voltages are between the socket terminal and chassis ground. Plate, screen and cathode voltages were taken with a 1000 ohm-per-volt meter with a 300 volt scale used for plate and screen voltages. Audio grid voltages were read with a vacuum tube volt-meter. Conditions of measurement are:

Line voltage .....117 Volts AC
Signal Input .....None
A Variation of ±10% is usually permissible.

MODEL D2027A



MODEL D2027A

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information on this label.

MISCELLANEOUS

12A494	5¼" P.M. Speaker	
4X1055	Escutcheon	
10A734	Knob	
13X546	Line Cord & Plug Assembly	
2A393	Band Change Switch	
3A303	Molded Octal Tube Socket	
3A305	Phono Socket	
3A426	Tube Socket (Miniature)	
3A443	Tube Socket (6BE6)	
14X466	Speaker Baffle	
14X467	Grille Cloth	
20X1551	Stud (Mtg. Speaker to Baffle)	
3A304	Phono Motor Socket	
3A427	Tube Socket (12AT7)	
	Mahogany Cabinet No. 906	

CAPACITORS

C-1	14A211	Gang Condenser Assembly		
C-2	17A256	2-24 mmf		Trimmer
C-3	47X559	130 mmf		Ceramic
C-4, C-5, C-9, C-10, C-11, C-17, C-27, C-43	47X507	5000 mmf		Ceramic
C-6, C-7	Part of T-2 (1st I-F Trans. FM)			
C-8	Part of T-3 (1st I-F Trans. AM)			
C-12, C-13	Part of T-5 (2nd I-F Trans. AM)			
C-14, C-15	Part of T-4 (2nd I-F Trans. FM)			
C-16A, C-16B	47X112	50-50 mmf		Dual Mica
C-18	Part of T-6 (Discriminator Trans.)			
C-19	47X492	2700 mmf		Molded Mica
C-20, C-35	47X468	220 mmf		Ceramic
C-21	45X361	5 mf	100 V	Dry Electrolytic
C-22, C-42	47X557	2.2 mmf		Ceramic
C-23	47X558	30 mmf		Ceramic
C-24	47X516	20 mmf		Ceramic
C-25	17A255	1-8 mmf		Trimmer
C-26	B66503	.05 mf	200 V	Tubular
C-28A		20 mf	20 V	
C-28B	45X360	40 mf	150 V	Dry Electrolytic
C-28C		40 mf	200 V	
C-29	H66102	.001 mf	800 V	Tubular
C-30	47X470	330 mmf		Molded Mica
C-31	47X508	500 mmf		Ceramic
C-32A, C-32B	76X4	100 mmf		Dual Ceramic
C-33	B66403	.04 mf	200 V	Tubular
C-34	D66502	.005 mf	400 V	Tubular
C-36	B66402	.004 mf	200 V	Tubular
C-37	D66104	.1 mf	400 V	Tubular
C-38	D66203	.02 mf	400 V	Tubular
C-39, C-41	Part of C-1 (Gang Condenser)			
C-40	47X471	68 mmf		Ceramic

RESISTORS

		Ohms	Watts	
R-1	B85470	47	0.5	Carbon
R-2, R-3, R-6	B85102	1000	0.5	Carbon
R-4, R-8	B84680	68	0.5	Carbon
R-5, R-12, R-13	B84682	6800	0.5	Carbon
R-7, R-25	B85473	47 K	0.5	Carbon
R-9	B85222	2200	0.5	Carbon
R-10	B85273	27 K	0.5	Carbon
R-11	43X233	3.6	0.5	Wirewound
R-14, R-16	B85104	100 K	0.5	Carbon
R-15	B85223	22 K	0.5	Carbon
R-17	B84221	220	0.5	Carbon
R-18, R-19, R-24, R-26	B85474	470 K	0.5	Carbon
R-20	B85153	15 K	0.5	Carbon
R-21	36X372	.5 meg.		Volume Control
R-23	40X285	3 meg.		Tone Control
R-27	B85106	10 meg.	0.5	Carbon
R-28	D84821	820	2.0	Carbon
R-29	B85105	1 meg.	0.5	Carbon
R-30	B84271	270	0.5	Carbon
R-31	B85225	2.2 meg.	0.5	Carbon

TRANSFORMERS AND COILS

L-1	35A5	Insulated Choke
L-2	9A2068	Parasitic Choke
L-3	35A9	Insulated Choke
L-4	35A8	Insulated Choke
T-1	9A2097	"B" Range Loop Antenna
T-2	9A2060	1st I-F Trans. (FM)
T-3	9A2062	1st I-F Trans. (AM)
T-4	9A2061	2nd I-F Trans. (FM)
T-5	9A2063	2nd I-F Trans. (AM)
T-6	9A2064	Discriminator Transformer
T-7	9A2065	Oscillator Coil (AM)
T-8	9A2067	Oscillator Coil (FM)
T-9	51X144	Output Transformer
T-11	53X291	Power Transformer
T-12	9A2066	Antenna Coil (FM)

DIAL AND DRIVE ASSEMBLY

58X731	Dial Glass
15X256	Pointer
19X192	"C" Washer (Mtg. Drive Shaft)
6X66	Rubber Grommet
25X1679	Dial Bracket
28X113	Drive Cord Tension Spring
7A103	No. 47 Pilot Light
7A225	Pilot Light Socket Assembly
10X60	Drive Cord Assembly
26X486	Drive Shaft