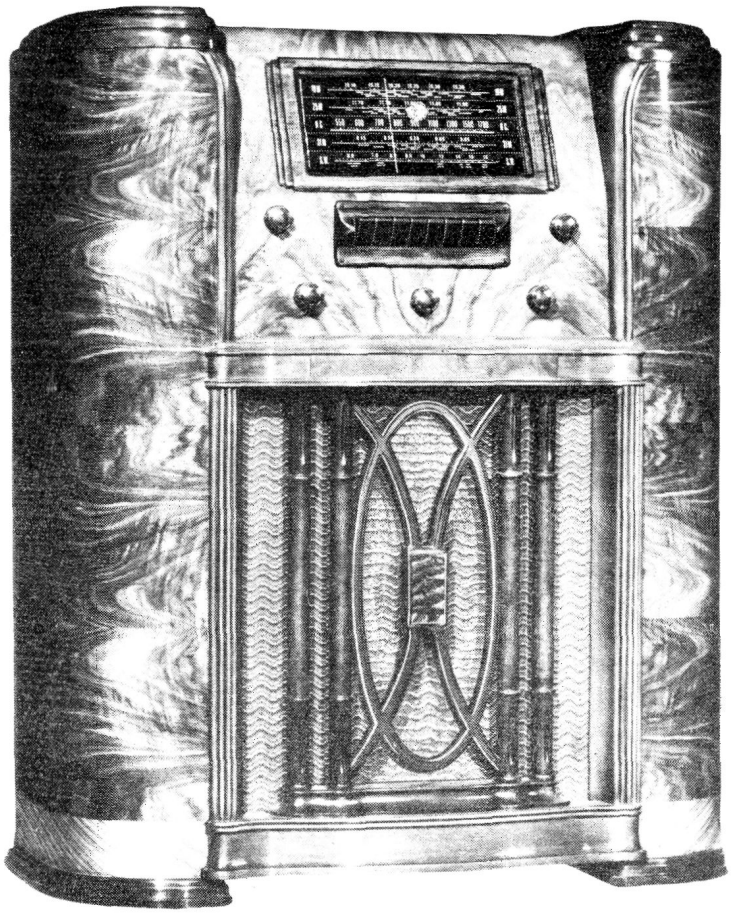
June, 1941

RADIO SERVICE MANUAL

SECTION RS-219

WESTINGHOUSE A.C. MODEL 987-X

9 TUBES, 5 BANDS, B.C., S.W., AND 31, 25, 19 METER BAND SPREAD.



CANADIAN WESTINGHOUSE COMPANY, LIMITED

Service Department - Hamilton, Ont.

SPECIFICATIONS

RADIOTRON COMPLEMENT

1. W-6SK7.....R.F. Amplifier
2. W-6SA7....Converter, Oscillator
3. W-6SK7.....I.F. Amplifier
4. W-6SQ7 2nd. Detector, A.V.C.
5. W-6J5-G.....Audio Driver
6. W-6V6-G.....Output
7. W-6V6-G.....Output
8. W-5Y4-G.....Rectifier
9. W-6U5...Tuning Eye.

DIAL LAMPS (5) AND PHONO. LAMP (1) - WESTINGHOUSE MAZDA #44 - 6.3 V.

INTERMEDIATE FREQUENCY.....460 KC.

TUNING DRIVE RATIO.....13:1

MAXIMUM POWER OUTPUT.....10 WATTS

UNDISTORTED OUTPUT.....8 WATTS

REPRODUCER.....12 INCH ELECTRO DYNAMIC WITH DIFFUSER CONE

VOICE COIL IMPEDANCE AT 400 CYCLES.....5.7 OHMS.

POWER CONSUMPTION.....100 WATTS

AUTOMATIC TUNING.....8 BUTTON ACTUATOR TUNING

SHIPPING WEIGHTS:

25 CYCLE - 80 LBS.
60 CYCLE - 78 LBS.

CABINET DIMENSIONS

WIDTH.....30-1/2"
HEIGHT.....38-1/2"
DEPTH.....13-3/4"

FREQUENCY RANGES

B.C.....535:1735 KC.
S.W.....5.6:18.5 MC.
31 METRE.....9.44:9.67 MC.
25 METRE.....11.66:11.95MC.
19 METRE.....15.03:15.42MC.

GENERAL ALIGNMENT PROCEDURE

There are various alignment trimmers provided in the R.F. and oscillator coil tuned circuits. The i-f transformer adjustments are made by means of screws attached to molded magnetite cores. All of these circuits have been accurately adjusted during manufacture and should remain properly aligned unless affected by abnormal conditions or altered during servicing. Loss of sensitivity, improper tone quality, and poor selectivity are the usual indications of improper alignment.

The correct performance of this receiver can only be obtained when the aligning has been done with adequate and reliable apparatus. It is not necessary to use a frequency modulated oscillator and cathode ray oscillograph to align these receivers. Those service men that have this equipment will probably prefer to use it and for their convenience we have indicated on the trimmer diagram the proper connection point for the cathode ray vertical amplifier input terminal.

A test oscillator is required as a source of the specified alignment frequencies. Visual indication of receiver output during the adjustment is necessary and should be accomplished by the use of an indicator or meter.

The procedure outlined below should be followed in adjusting the various trimmer capacitors and molded cores:

Calibrate the tuning dial by adjusting pointer to the low frequency end of scale with gang condenser plates fully meshed. The pointer should be set at the end of the horizontal line. Adjustment is made by loosening the dial drum on the shaft.

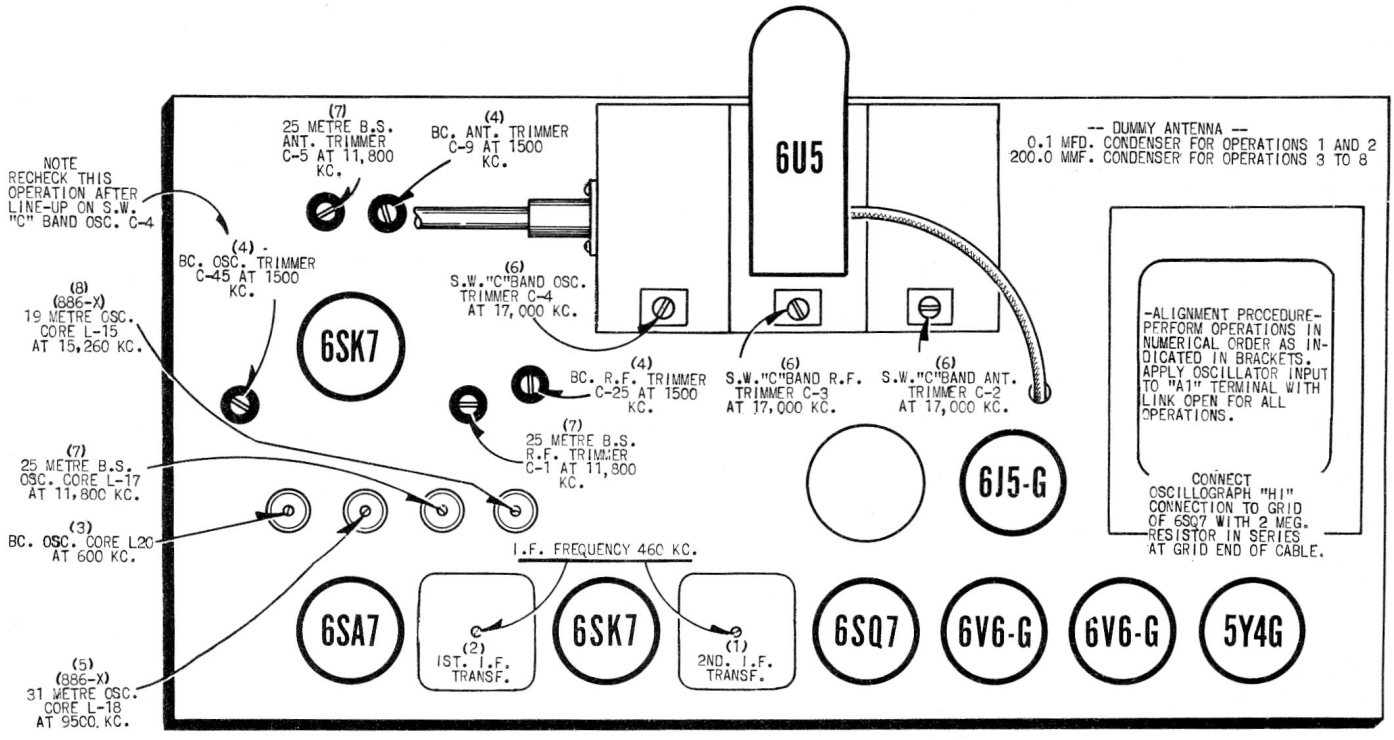
Perform alignment in proper order as shown by the accompanying chart, starting with No. 1, and following all operations across, then No. 2, etc. The chassis bottom shield must be securely in place when making R.F. adjustments. Adjustment locations and frequencies are shown on a sticker fastened to the bottom side of the chassis shield. These trimmer locations are also shown in the accompanying illustrations.

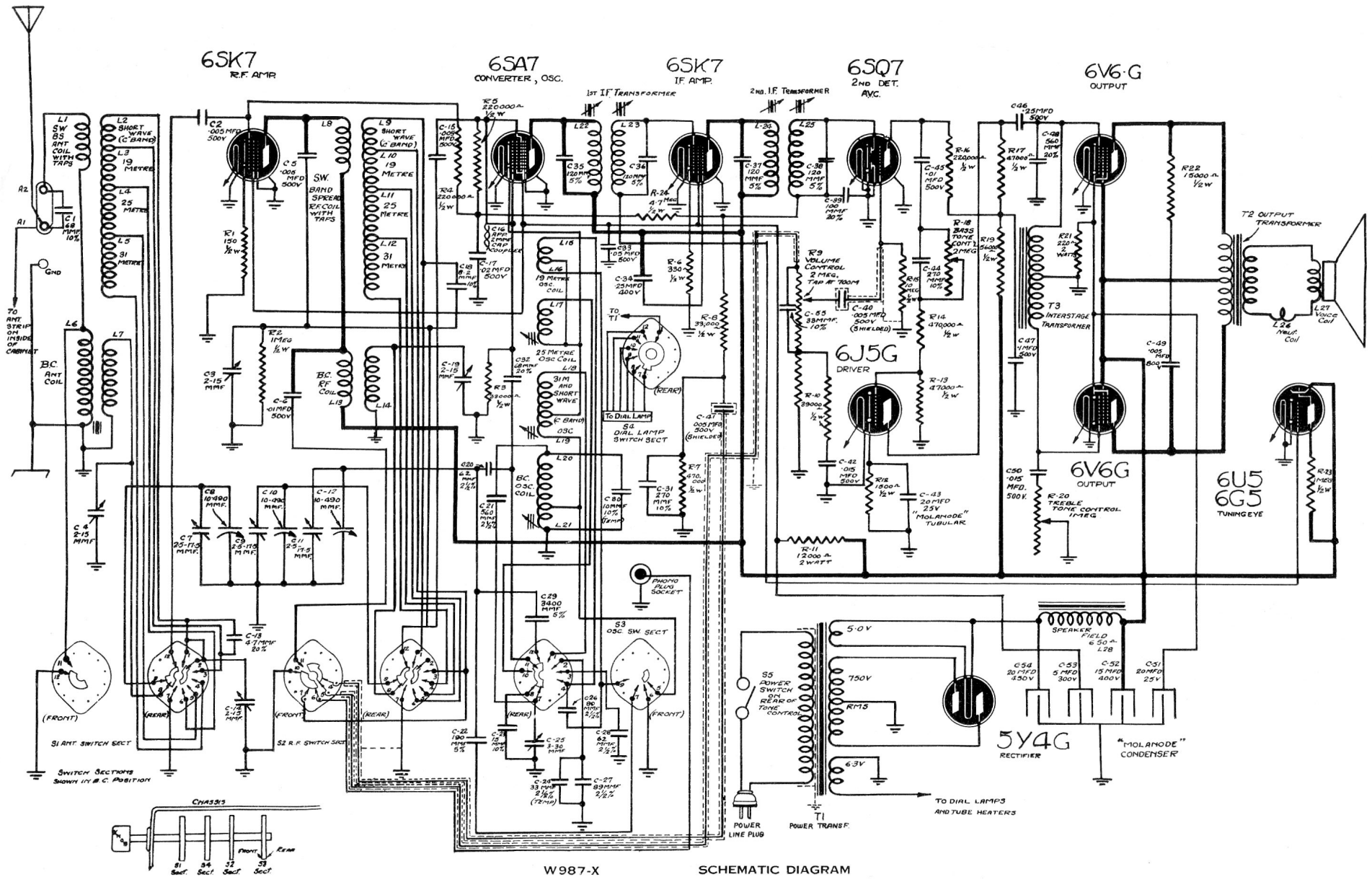
Connect the "low" output terminal of the test oscillator to the receiver chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver to obtain an observable output indication. This will avoid a-v-c action.

The term "Dummy antenna" means the device which must be connected between the "high" test-oscillator output terminal and the point of connection to the receiver in order to obtain ideal alignment. "No signal, 1,700 kc." means that the receiver should be tuned to approximately 1,700 kc. where no signal or interference is received from a station or the receiver (heterodyne) oscillator.

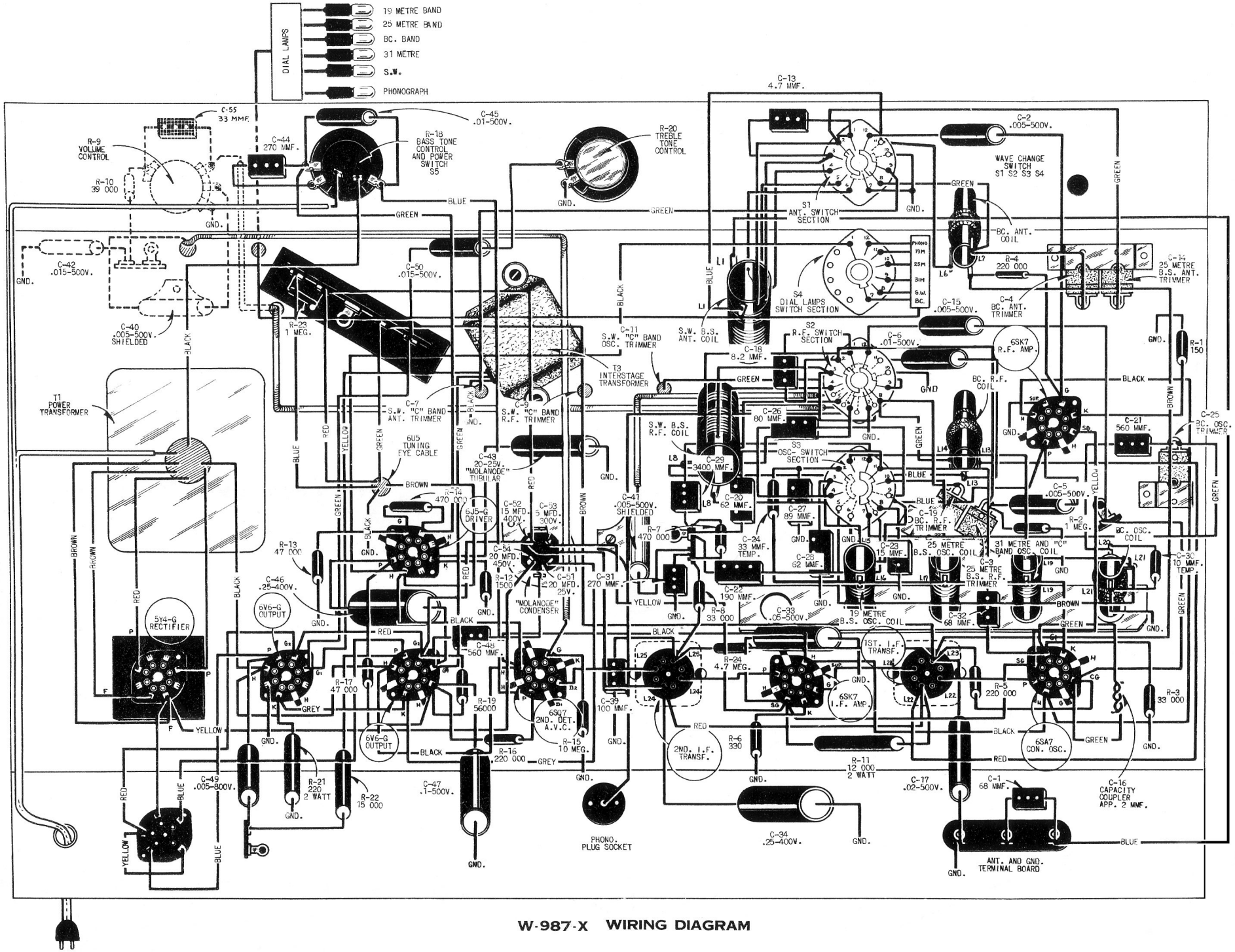
The term "Rock Through" indicates that the receiver station selector should be rocked back and forth while making the indicated adjustment. The adjustment and rocking should be continued until the combined action results in the maximum deflection on the output meter.

On some tuning ranges it is found that more than one peak may be secured if the trimmer is adjusted over a wide enough range. Whe this occurs it should be noted that oscillator circuits should be aligned, using that peak which occurs at the lower capacity or inductance setting of the trimmer. (The 49 M. band spread circuit is an exception to this — it is just the opposite.) On R.F. or first detector trimmers the peak occurring with the larger capacity setting of the trimmer should be used.





W987-X SCHEMATIC DIAGRAM



W-987-X WIRING DIAGRAM

GENUINE CANADIAN WESTINGHOUSE PARTS

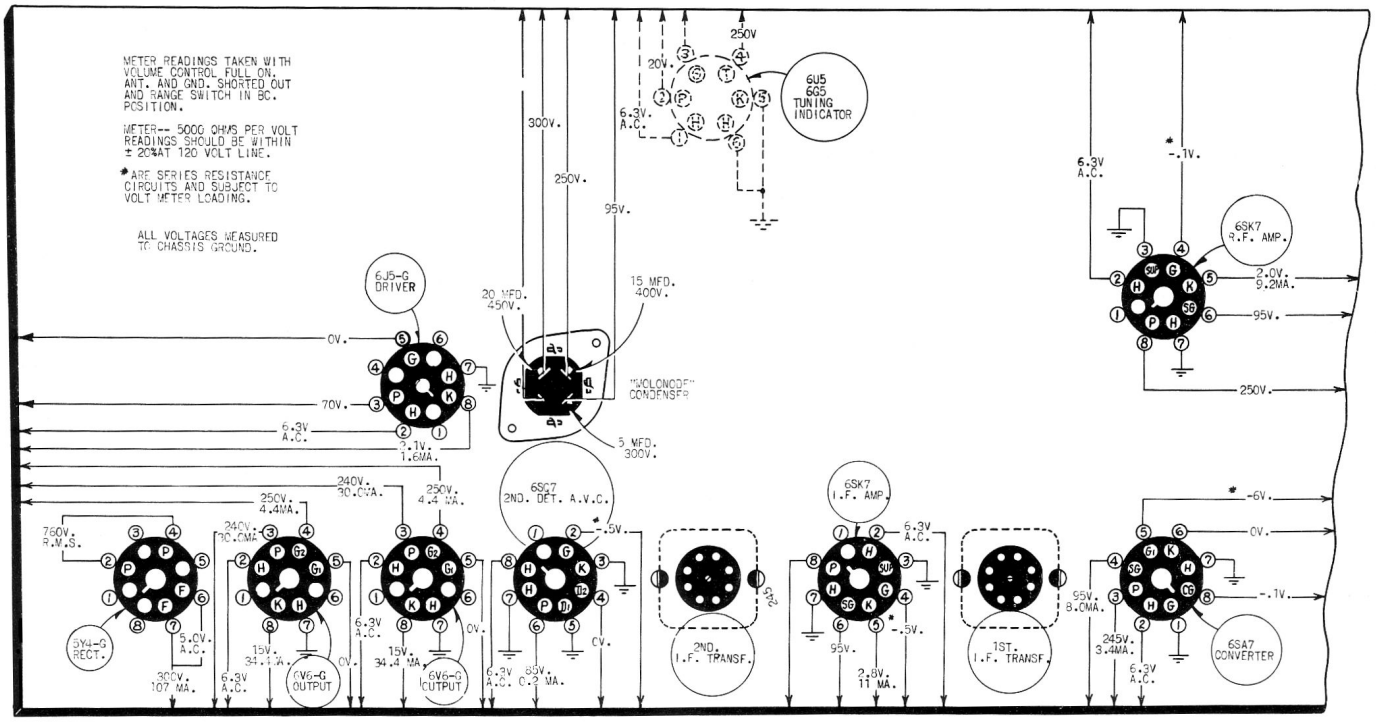
CHASSIS	KEY No.	PART No.	LIST PRICE
Board - Antenna and Ground Terminal	.....	595388-1....	.30
Coil - B.C. Antenna Assembly	L6,L7.....	587946-501..	.85
Coil - B.C. R.F. Assembly	L13,L14...	587256-511..	.85
Coil - B.C. Oscillator	L20,L21...	595409-502..	.80
Coil - S.W. 31 Metre and "C" Band Oscillator Assembly	L18,L19...	587458-502..	.65
Coil - S.W. 25 Metre Oscillator Assembly	L17.....	586950-503..	.65
Coil - S.W. 19 Metre Oscillator Assembly	L15,L16...	588138-503..	.65
Coil - S.W. Band Spread R.F. Coil Assembly	L8,L9,L10. L11,L12...	587766-508..	.85
Coil - S.W. Band Spread Antenna Coil Assembly	L1,L2,L3,. L4,L5.....	587766-510..	.85
Condenser - 3 Gang Tuning 8 Button Actuator	C7,C8,C9,C10 C11,C12...	573698-1....	On App.
Condenser - "Molanode" 20-450, 5-300, 15-400 and 20-25	C51,C52... C53,C54...	572083-3....	4.90
Condenser - Trimming complete with Mounting Bracket 3-30 MMF	C25.....	594995-2....	.30
Condenser - Dual Trimming complete with Mounting Bracket.... 2-15 MMF	C3,C4,C19, C14.....	596767-1....	.60
Condenser - Tubular Electrolytic 20-25	C43.....	595086-5....	.50
Condenser - Anti-Drift 80 MMF	C26.....	586270-11...	.60
Condenser - Anti-Drift 190 MMF	C22.....	586270-17...	.60
Condenser - Anti-Drift 89 MMF	C27.....	586270-15...	.60
Condenser - Anti-Drift 62 MMF	C28,C20...	586270-4....	.60
Condenser - Temperature Compensator 33 MMF	C24.....	594768-10...	.60
Condenser - Temperature Compensator 10 MMF	C30.....	594768-12...	.60
Control - Volume 2 Meg. total-Tap at 700 M	R9.....	596804-1....	1.40
Control - Treble Tone 1 Meg	R20.....	594773-2....	1.20
Control - Bass Tone 2 Meg. with S.P.S.T. Power Switch	R18,S5....	594772-4....	1.40
Cord - Power - complete with plug	.....	594727-501..	.50
Clamp - To hold Dial Scales to frame.....(Pkg. of 5)	.....	596834-3....	.30
Drive - Tuning Shaft Assembly with bracket	.....	596879-503..	.20
Drum - for Tuning Condenser Shaft	.....	#2432.....	.80
Indicator - Celluloid - Phonograph	.....	596155-1....	.10
Pushbutton - To Actuate Tuning Condenser	.....	596823-502..	.35
Pushbutton - Finger. Assembly Mechanisms only (Complete)	.....	H-40433.....	.30
Pointer - Complete with Slider	.....	596108-502..	.35
Plug - For Power Line Cord	.....	#E-155.....	.20
Plug - To fit Phono. Socket on rear of Chassis	.....	K-82373-4...	.10
Shaft - Pushbutton mounting	.....	596771-4....	.10
Strip - Dial Scale separating or finishing strip(Pkg.of 5)	.....	595511-1....	.30
Spring - Drive Cord tensions	.....	594451-10...	.15
Shield - For Dial lamps	.....	#48730.....	.05
Shield - Spira for wire leads	.....	593969-6....	.15
Shield - Rubber - For tuning eye	.....	K-85116-1...	.15
Screw - Thumb screw to hold Tuning eye clamp	.....	586962-2....	.05
Switch - Wave change	S1,S2,S3,S4	588347-2....	2.00
Switch - S.P.S.T. Power - on rear of tone control(IRC type)	S5.....	H-40156.....	.45
Scale - Calibrated Glass Dial 19 M	.....	575413-5....	.50
Scale - Calibrated Glass Dial 25 M	.....	575413-4....	.50
Scale - Calibrated Glass Dial B.C	.....	575413-3....	.50
Scale - Calibrated Glass Dial 31 M	.....	575413-2....	.50
Scale - Calibrated Glass Dial S.W	.....	575413-1....	.50
Socket - Radiotron Octal Base (8 Contacts)	.....	594542-4....	.25
Socket - Reproducer Cable Plug - (5Contacts)	.....	594550-1....	.15
Socket - Television or Phono. Plug	.....	595441.....	.10
Socket - Tuning Eye with Cable	.....	H-38184.....	.75
Socket - Pilot Lamp (Bayonet Base)	.....	#211-C.....	.15
Transformer - Interstage Phase Inversion	T3.....	596864.....	3.00
Transformer - 1st. and 2nd. I.F	L22,L23... L24,L25...	572201-10...	1.65
Transformer - Power 25 cycle	T1.....	571207-21...	8.20
Transformer - Power 60 cycle	T1.....	571207-22...	6.70
REPRODUCER			
Cone - Reproducer	L27.....	572797-138..	2.40
Mounting - Rubber Grommet for Reproducer.....(Pkg.of 5)	.....	#G-1367.....	.15
Mounting - Brass Eyelet 3/8" for Reproducer.....(Pkg.of 5)	.....	.....	.10
Plug - Reproducer Cable	.....	H-23781.....	.20
Reproducer - Less Output Transformer	L27,L26,.. L28.....	572797-140..	7.50
Reproducer - Complete	L26,L27,.. L28,T2....	572797-21...	On App.
Transformer - Output	T2.....	572797-139..	2.00

(CONTINUED)

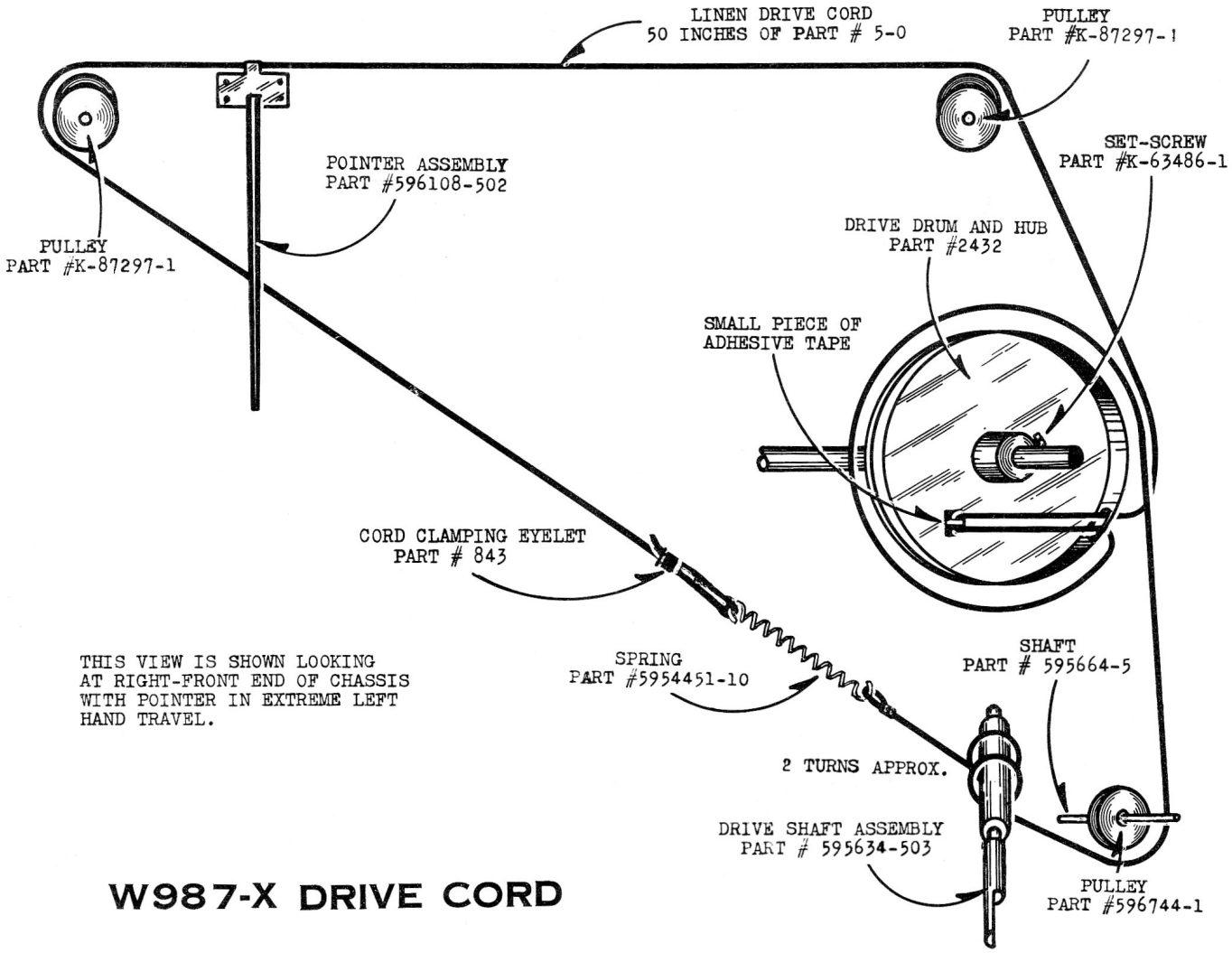
CABINET	KEY No.	PART No.	LIST PRICE
Antenna - 20 feet of .050 Bare Dia. Enamelled Copper Wire.	.....	.....	.....
Cabinet - Console.....	.....	554228-1....	On App.
Card - Station Call Card for Pushbuttons.....	.....	595427-2....	.35
Clamp - To hold Escutcheon Dial Glass.....(Pkg.of 2)	.....	569229-3....	.20
Clamp - To hold Escutcheon for Dial Scale.....(Pkg.of 5)	.....	594875-4....	.10
Dial - Glass Dial for Cabinet Front.....	.....	596935-1....	.85
Escutcheon - Dial Scale Opening.....	.....	575275-1....	1.50
Escutcheon - Pushbutton Opening.....	.....	588367-1....	.75
Knob - Plain with Spring.....	.....	586001-6....	.20
Knob - Dotted with Spring.....	.....	596897-1....	.20
Spring - For Knob.....(Pkg.of 5)	.....	K-7776l-1...	.20
Screw - For Pushbutton Escutcheon #2 x 3/8 Phillips..... Recessed Oval Hd. W. Screw (Pkg. of 5).....	.....	.....	.05
Screw - For Dial Escutcheon #2 x 5/16 Phillips Recessed. Rd. Hd. l. Wd. Screw (Pkg. of 5).....	.....	.....	.05
Screw - To hold Dial Escutcheon Glass #4 x 1/4" Phillips Recessed Rd. Hd. l. Wd. Screw. (Pkg. of 5).....	.....	.....	.05
Transfer - OFF.....	.....	586178-1....	.10
Transfer - VOLUME.....	.....	586178-4....	.10
Transfer - TUNING.....	.....	586178-5....	.10
Transfer - BASS TONE.....	.....	586178-7....	.10
Transfer - TREBLE TONE.....	.....	586178-6....	.10
Transfer - BC, SW, 31M, 25M, 19M, Phono.....	.....	586178-22...	.10
Transfer - WESTINGHOUSE.....	.....	586178-13...	.10

SEE CATALOGUE RS-200 FOR OTHER RESISTORS AND CONDENSERS

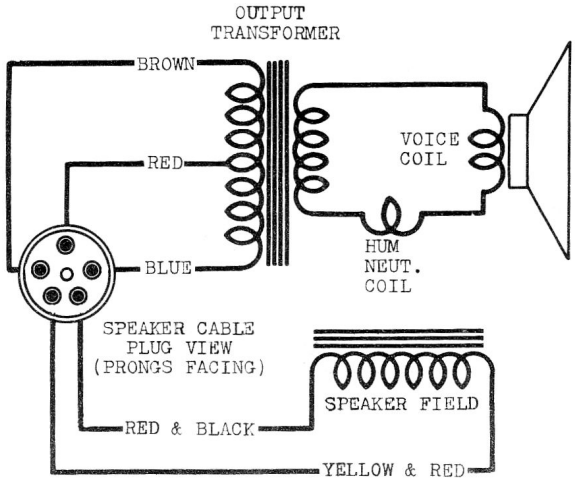
ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE



W987-X SOCKET READINGS



W987-X DRIVE CORD



W987-X
REPRODUCER CONNECTIONS