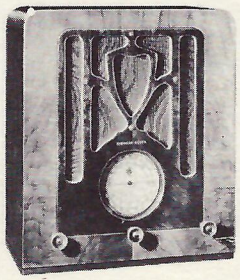
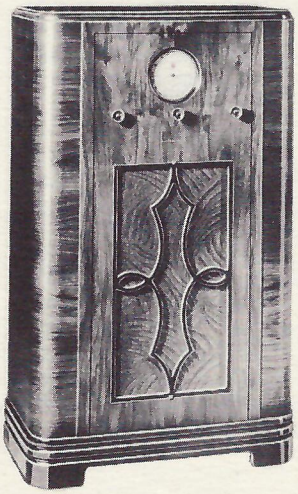
AMERICAN - BOSCH Centr-O-matic RADIO

MODELS 510-510E

FIVE-TUBE, TWO BAND, SUPERHETERODYNE RECEIVERS

SERVICE NOTES





UNITED AMERICAN BOSCH CORPORATION
SPRINGFIELD, MASS., U. S. A.

Form No. HJ4 BKH 935 Printed in U.S.A.

AMERICAN-BOSCH PRODUCTS

Made by UNITED AMERICAN BOSCH CORPORATION, SPRINGFIELD, MASS., U.S.A.

AMERICAN-BOSCH RADIO MODEL 510

Five Tube, Two Band, Superheterodyne Receiver

SERVICE NOTES

ELECTRICAL SPECIFICATIONS

Type and Number of Tubes	1 #6F7, 1 #6D6, 1 #75, 1 #42, 1 #80 - Total 5
Power Supply	105 to 125 volts, 50 to 60 cycles A.C.
Power Consumption	46 Watts
Tuning Ranges	530 to 1500 K.C. and 1500 to 3300 K.C.
Maximum Undistorted Output	1.5 Watts
Maximum Output	2.8 Watts
Line-Up Frequencies	I.F. 465 K.C., 1400 K.C.

GENERAL DESCRIPTION

This is a five-tube, A.C. two band superheterodyne receiver whose circuit comprises a combined first detector-oscillator, an intermediate frequency amplifier, a combined second detector - A.V.C. and first audio amplifier, a power pentode output stage and a rectifier with its associated filter circuit and power transformer.

The model is designed to work over two bands, the broadcast band extending from 530 to 1500 K.C. and a police band which extends from 1500 to 3300 K.C.

LINE-UP CAPACITOR ADJUSTMENTS

To align the circuits of this receiver it is essential to use a high grade modulated test oscillator, the output of which can be continuously varied with absence from overload when the individual circuits of the receiver are brought into alignment.

A conventional output meter can be connected across the terminals of the speaker voice coil to indicate when the circuits are aligned. The sensitivity of the output meter must be sufficient to give satisfactory reading with a low input signal.

Before attempting to align the receiver, the service man should familiarize himself with the general layout of the chassis, the location of the tubes and various alignment condensers. Top and bottom views of the chassis are shown in figures #1 and #2 and should be carefully studied before the actual work is started.

ADJUSTMENT OF I.F. (465 K.C.)

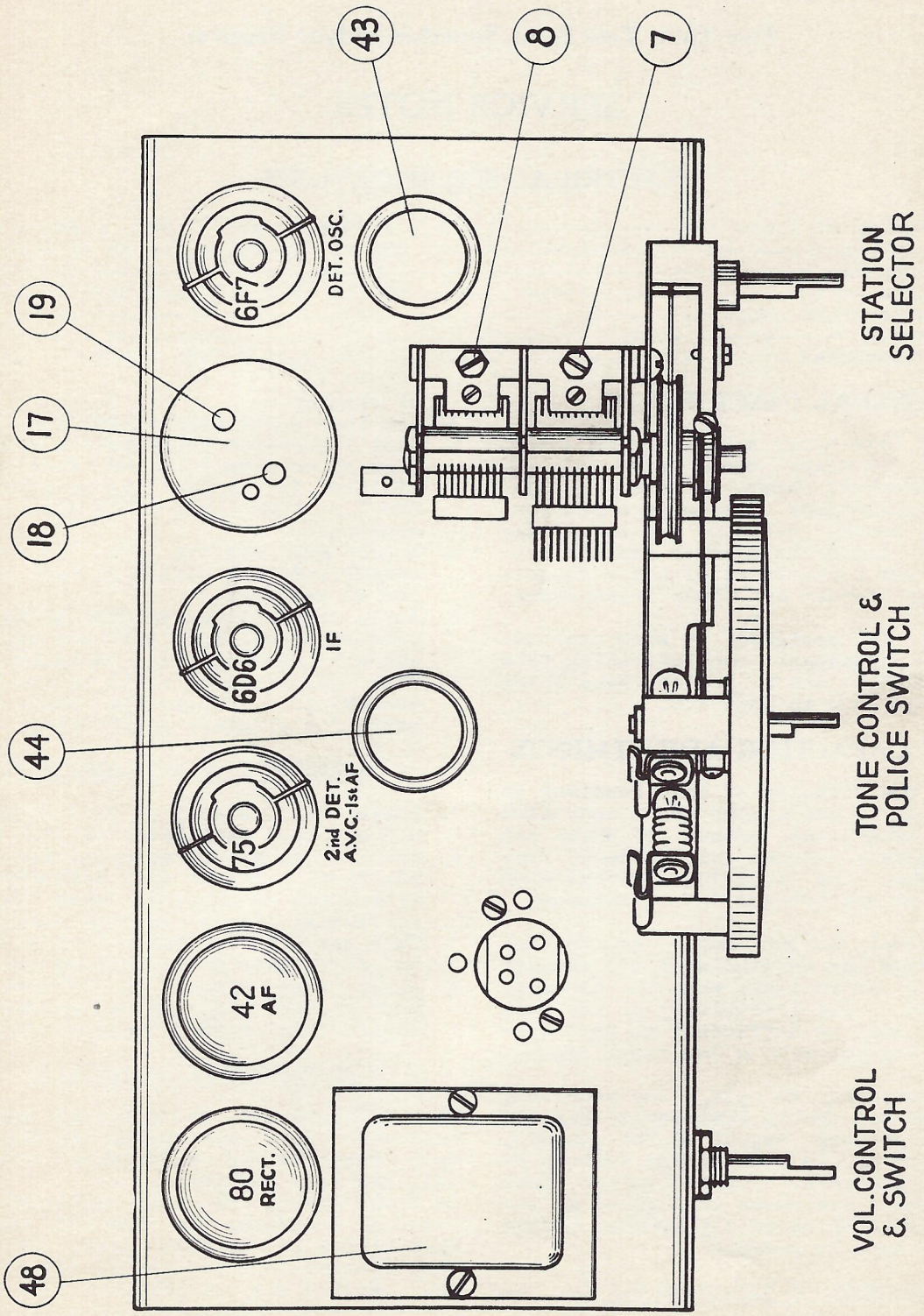
1. Set volume control on full and turn tone control knob to the right hand position.
2. Connect output meter across voice coil of speaker.
3. Set test oscillator to 465 K.C. and adjust its output to produce a measurable reading on output meter when test oscillator is applied to the grid of the 6D6 I.F. tube thru a .25 mfd. blocking condenser.
4. Adjust #26 (see Fig. #2) to maximum output reducing output of test oscillator as required.
5. Apply test signal to grid of 6F7 first detector-oscillator tube and adjust #18 and #19 (see Fig.#1) to maximum output.
6. With test signal still on the grid of the 6F7 tube, repeat the above adjustments for greatest sensitivity.

ADJUSTMENT OF BROADCAST BAND

1. Leave test signal on grid of 6F7 tube and set test oscillator to 1400 K.C.
2. Turn the gang condenser to its maximum position. Adjust dial indicator until either end is directly over the long horizontal lines on the dial scale. Then set dial indicator to 1400 K.C.
3. Adjust trimmer #8 to maximum output.
4. Apply test signal to antenna of set thru a .0002 mfd. series condenser and adjust trimmer #7 to maximum output.

ADJUSTMENT OF POLICE BAND

When adjustments as outlined under the broadcast band are completed, the police band requires no adjustment unless the coil has been changed.
In this event, set test oscillator and station indicator to 1700 K.C. and apply test signal to antenna lead. The police band winding is indicated by "A" in Fig. #2. Adjust the position of this winding by sliding it back and forth on the core until maximum output is indicated on the output meter. This winding should then be secured in place by applying a thin coat of coil cement.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18
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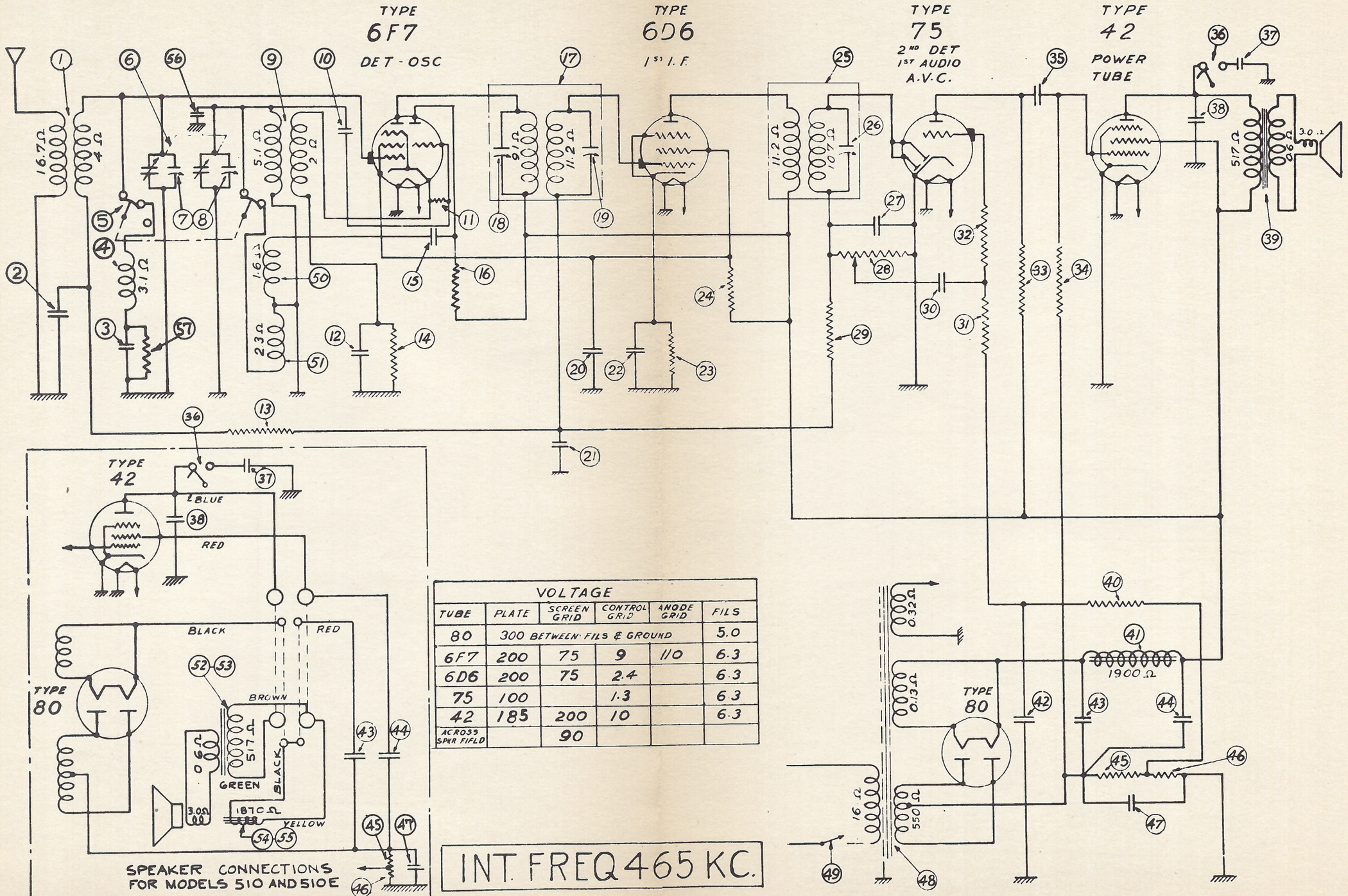
48
6F7
DET. OSC.
6D6
IF
75
2nd DET. A.V.C.-1st AF
42 AF
80 RECT.
STATION SELECTOR
TONE CONTROL & POLICE SWITCH
VOL. CONTROL & SWITCH

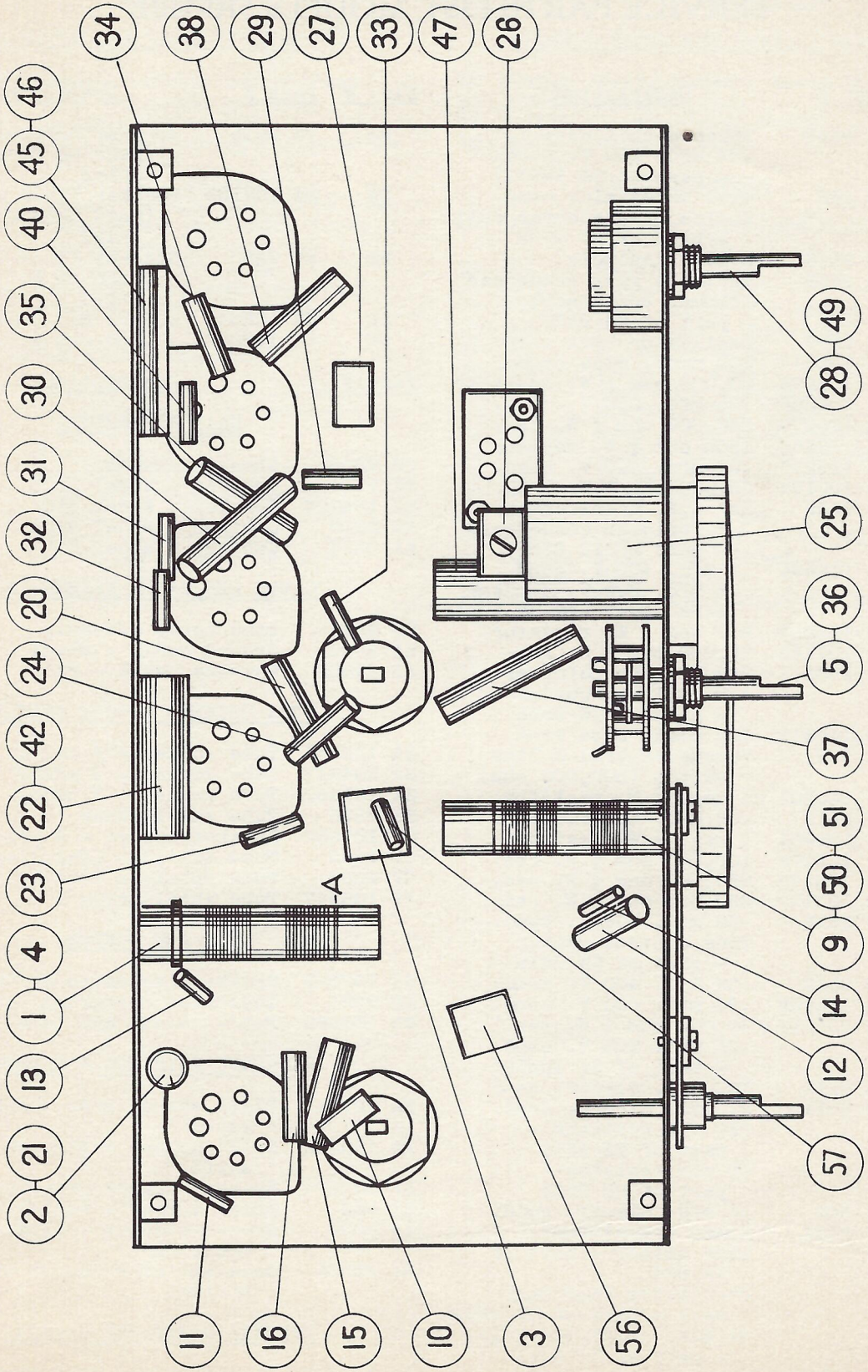
Figure No. 1

AMERICAN-BOSCH RADIO MODELS 510-510E



VOLTAGE					
TUBE	PLATE	SCREEN GRID	CONTROL GRID	ANODE GRID	FILS
80	300 BETWEEN FILS & GROUND				5.0
6F7	200	75	9	110	6.3
6D6	200	75	2.4		6.3
75	100		1.3		6.3
42	185	200	10		6.3
ACROSS SPKR FIELD		90			

INT. FREQ 465 KC.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A

Figure No. 2

AMERICAN-BOSCH PRODUCTS

Made by UNITED AMERICAN BOSCH CORPORATION, SPRINGFIELD, MASS., U.S.A.

SERVICE PARTS LIST MODELS 510-510E

Dia. #	Part #	Description
1	RC 9588	Antenna coil assy.
2		.05 mfd. 200 V. cond. - part of SA 105327
3	CM 958	400. mmfd. mica cond.
4		Police pre-selector coil - part of RC 9588
5	SW 9519	Switch assembly
6	CG 9522	Variable gang condenser
7-8		Trimmer condensers - part of CG 9522
9	RC 9589	Oscillator coil assy.
10	SA 106417	100 mmfd. mica cond.
11	SA 105276	50,000 ohm ¼ W. resistor
12	SA 106386	.05 mfd. 200 V. cond.
13	SA 105279	250,000 ohm ¼ W. res.
14	SA 105269	1800 ohm ¼ W. resistor
15	SA 106277	.01 mfd. 400 V. cond.
16	SA 100197	25,000 ohm ½ W. res.
17	IC 9532	1st I.F. transformer
18-19		I.F. trimmer condensers - part of IC 9532
20	SA 102494	.1 mfd. 400 V. cond.
21-22		.05 mfd. 200 V. condensers - part of SA 105327
23	SA 105264	500 ohm ¼ W. resistor
24	SA 101163	75,000 ohm ½ W. res.
25	IC 9533	2nd I.F. transformer
26		I.F. trimmer condenser - part of IC 9533
27	SA 106417	100 mmfd. mica cond.
28	VR 957	Volume control & line switch (500,000 ohm)
29	SA 105281	1 meg. ¼ W. resistor
30	CW 9512	.02 mfd. 400 V. cond.
31	SA 105281	1 meg. ¼ W. resistor
32	SA 105278	100,000 ohm ¼ W. res.
33	SA 105279	250,000 ohm ¼ W. res.
34	SA 100195	250,000 ohm ½ W. res.
35	CW 9512	.02 mfd. 400 V. cond.
36		Tone control switch - part of SW 9519
37	CW 9512	.02 mfd. 400 V. cond.
38	SA 103695	.01 mfd. 600 V. cond.
40	SA 105276	50,000 ohm ¼ W. res.
42		.05 mfd. 200 V. cond. - part of SA 105327
43	CE 9512	12. mfd. electr. cond.
44	CE 9511	8. mfd. electr. cond.
45		320 ohm resistor - part of RE 9513
46		30 ohm resistor - part of RE 9513
47	CE 958	10 mfd. electr. cond.
48	TR 9511	Power transformer
49		Line switch - part of VR 957
50		Oscillator feed back coil - part of RC 9589
51		Police oscillator coil - part of RC 9589
52	SA 108025	Speaker output trans. (used on Mod.510 only)
53	TR 9515	Speaker output trans. (used on Model 510E only)
54	SA 107163	Speaker field coil - (used on Mod. 510 only)
55	CL 9533	Speaker field coil - (used on Mod. 510E only)
56	SA 108043	.00001 mfd. mica cond.
57	SA 105272	10,000 ohm ¼ W. res.

Part #	Description
	MAIN ASSEMBLIES
CH 9535	Chassis assembly
SK 9511	Speaker - Model 510E
SA 108024	Speaker - Model 510
KA 9518	Cabinet - Model 510E
KA 9517	Cabinet - Model 510
	CABLE AND CABLE ASSEMBLIES
CB 9512	Line cable assembly
KL 99561	Ground cable - Black
KL 99562	Antenna cable - Blue
	TUBE SOCKETS & TUBE SHIELDS
SA 105143	Tube socket - 4 prong
SA 104617	Tube socket - 6 prong
SA 105461	Tube socket - 7 prong
BE 9536	Tube shield base
SA 107257	Speaker socket - 4 prong
CV 9560	Tube shield - plain top
CV 9559	Tube shield - slotted top
FP 105947	Tube shield ring
	NUTS AND SCREWS
SC 107395	Speaker fastening screws
SC 952	Indicator fastening screw
NT 103039	Nut - volume and tone control
	WASHERS, BUSHINGS & SPACERS
WA 70161	Plain washer used under indicator
WA 106382	Split copper washer on drive shaft
FP 102301	Spacer - power transformer
SR 953	Brass spacer - variable cond.
IS 1002	Rubber bushing - condenser mounting
WA 80589	Lock washer - volume and tone control
	SPEAKER PARTS (SA 108024)
SA 106617	Diaphragm and coil assembly
FP 106498	Diaphragm housing

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Part #	Description
SPEAKER PARTS (SA 108024) (Cont'd)	
SA 108025	Speaker output transformer
SA 107359	Core and frame assembly
SA 107163	Speaker field coil
SC 106677	Diaphragm housing fastg. screw
FP 106496	Steel plate
SA 107273	Copper ring assembly
SA 101856	Speaker insulation plate assy.
SC 105642	Transformer fastening screw
FP 106495	Transformer bracket
FP 79381	Speaker cable clamp
SA 107279	Speaker plug bakelite cover
SA 107278	Speaker plug - 4 prong
SPEAKER PARTS (SK 9511)	
SA 107282	Diaphragm and coil assembly
TR 9515	Speaker output transformer
FP 107187	Diaphragm housing
FP 106496	Steel plate
CL 9533	Speaker field coil
SA 106492	Core and frame assembly
SA 101856	Insulation plate assembly
SA 107273	Copper washer assembly
SC 106677	Fastening screw - housing to frame
FP 107169	Transformer bracket

Part #	Description
SPEAKER PARTS (SK 9511) (Cont'd.)	
SC 105642	Fastg. screw - trans. to bracket
SA 107278	Speaker plug
SA 107279	Speaker plug cover
FP 79381	Clamp - cable
MISCELLANEOUS	
BA 956	Speaker cardboard baffle - Model 510
GA 954	Gasket - dial
KN 9519	Knobs - 3 used
FP 108003	Felt washer for knobs
SC 953	Felt foot - Model 510
PU 956	Pulley - large
PU 952	Pulley - small
SH 9514	Shaft for indicator
SH 957	Shaft - dial drive
FP 103164	Spring for condenser drive cord
PR 97160	Cord - condenser drive
PR 98511	Cable - dial drive
DS 9528	Dial scale
SI 9528	Dial indicator
CV 9583	Cover - dial indicator
SA 104822	Dial lamp socket
SA 106809	Dial lamp
BK 95102	Dial scale bracket assembly

AMERICAN-BOSCH PRODUCTS

Made by UNITED AMERICAN BOSCH CORPORATION, SPRINGFIELD, MASS., U.S.A.

Radio Service Parts Prices

for Models 510 & 510 E

Effective October 15, 1935

These prices supersede all previous prices and are subject to change without notice.
U. S. Tax included in list prices of taxable parts.

Consult Price Section R12 for Supplements and Changes.

Part No.	List Price	Part No.	List Price	Part No.	List Price
BA 956	$ .10	KL 99562	$ .05	SA 106492	$ .85
BE 9536	.05	KN 9519	.20	SA 106617	1.15
BK 95102	.05	NT 103039	.05	SA 106809	.15
CB 9512	.50	PR 97160	.05	SA 107163	1.75
CE 958	.65	PR 98511	.20	SA 107257	.10
CE 9511	.95	PU 952	.20	SA 107273	.20
CE 9512	1.25	PU 956	.25	SA 107278	.10
CG 9522	2.45	RC 9588	1.10	SA 107279	.10
CL 9533	1.75	RC 9589	.95	SA 107282	1.15
CM 958	.20	RC 9598A	1.00	SA 107359	.85
CV 9559	.05	SA 100195	.15	SA 108024	6.00
CV 9560	.05	SA 100197	.15	SA 108025	1.25
CV 9583	.05	SA 101163	.15	SA 108043	.20
CW 9512	.20	SA 101856	.05	SC 952	.05
DS 9528	.75	SA 102494	.20	SC 953	.05
FP 79381	.05	SA 102695	.20	SC 105642	.05
FP 102301	.05	SA 104615	.10	SC 106677	.05
FP 103164	.05	SA 104617	.20	SC 107395	.05
FP 105947	.05	SA 104822	.10	SH 957	.20
FP 106495	.05	SA 105264	.15	SH 9514	.20
FP 106496	.30	SA 105269	.15	SI 9528	.10
FP 106498	.50	SA 105272	.15	SK 9511	7.50
FP 107169	.05	SA 105276	.15	SR 953	.05
FP 107187	.55	SA 105278	.15	SW 9519	.85
FP 108003	.05	SA 105279	.15	TR 9511	3.50
GA 954	.40	SA 105281	.15	TR 9515	1.85
IC 9532	1.75	SA 105461	.20	VR 957	1.25
IC 9533	1.10	SA 106277	.20	WA 70161	.05
IS 1002	.05	SA 106386	.20	WA 80589	.05
KL 99561	.05	SA 106417	.20	WA 106382	.05