



# PHOTOFACT®



TRADE NAME : Webster Model 440  
 SUPPLIER : Webster Manufacturing  
 317 Roebling Road  
 S. San Francisco, California  
 TYPE SET : 10 Tube Transceiver  
 POWER SUPPLY : 110 - 120 Volts AC, 60 Cycles (or)  
 12 Volt Storage Battery  
 RATING : Watts, .6 Amp. @ 117VAC  
 3 Amp. @ 12.6 VDC  
 TUNING RANGE : Any 10 CB Channels 1 thru 22

## ALIGNMENT INSTRUCTIONS

### Suggested Alignment Tools:

A1 thru A6.....GENERAL CEMENT #5097, 8607, 8727  
 WALSCO #2515  
 A9 thru A13.....GENERAL CEMENT #5000, 5003, 5006  
 WALSCO #2515, 2516, 2518  
 A7, A8, A14, A15.....GENERAL CEMENT #8282, 8606, 9295  
 WALSCO #2526, 2545, 2544

### RECEIVER ALIGNMENT

The Channel 11 crystal in position A should not be removed or adjusted as it forms the reference for the tuned receiver calibration, and it is factory preset.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
Across antenna terminals. Tune to 27.085MC (Unmod.).	A(Channel 11)	A1 thru A10	Adjust for maximum front panel meter deflection.
"	A(Channel 11)	A11	Set the tuning dial to the Channel 11 calibration mark. Switch channel selector to "tune" position. Adjust A11 for maximum meter deflection.

### TRANSMITTER ALIGNMENT

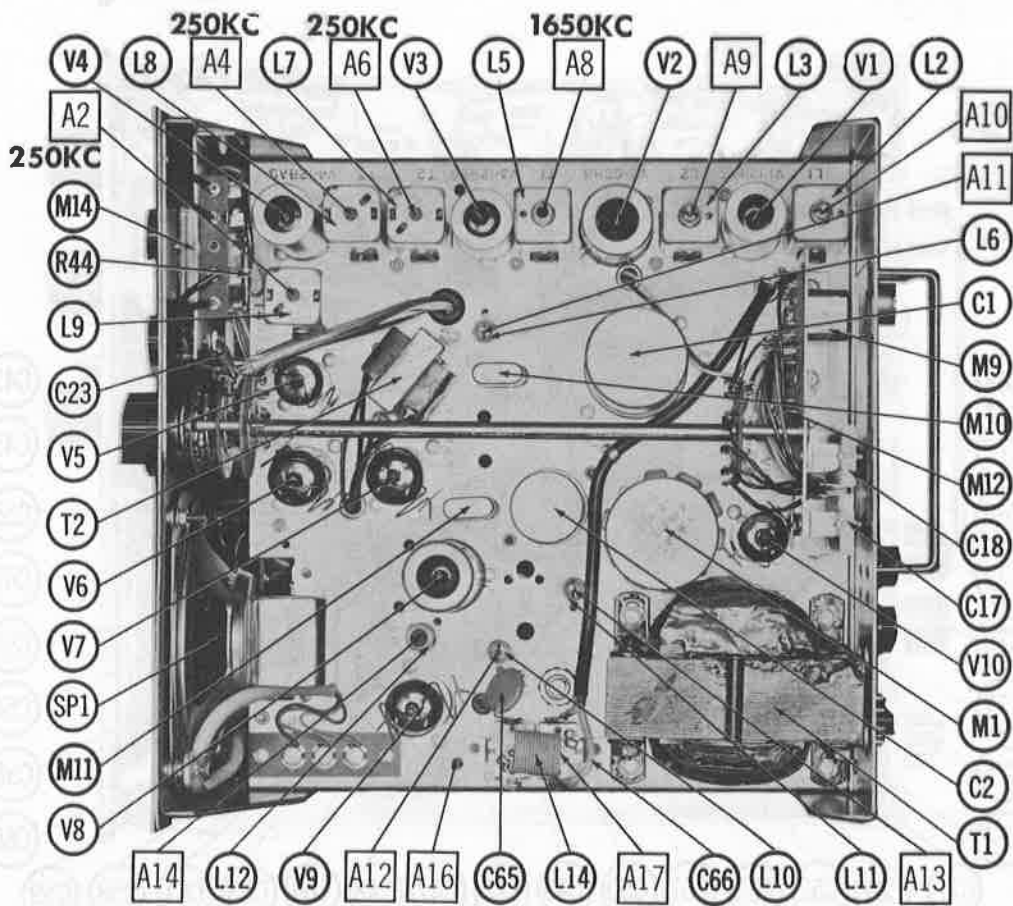
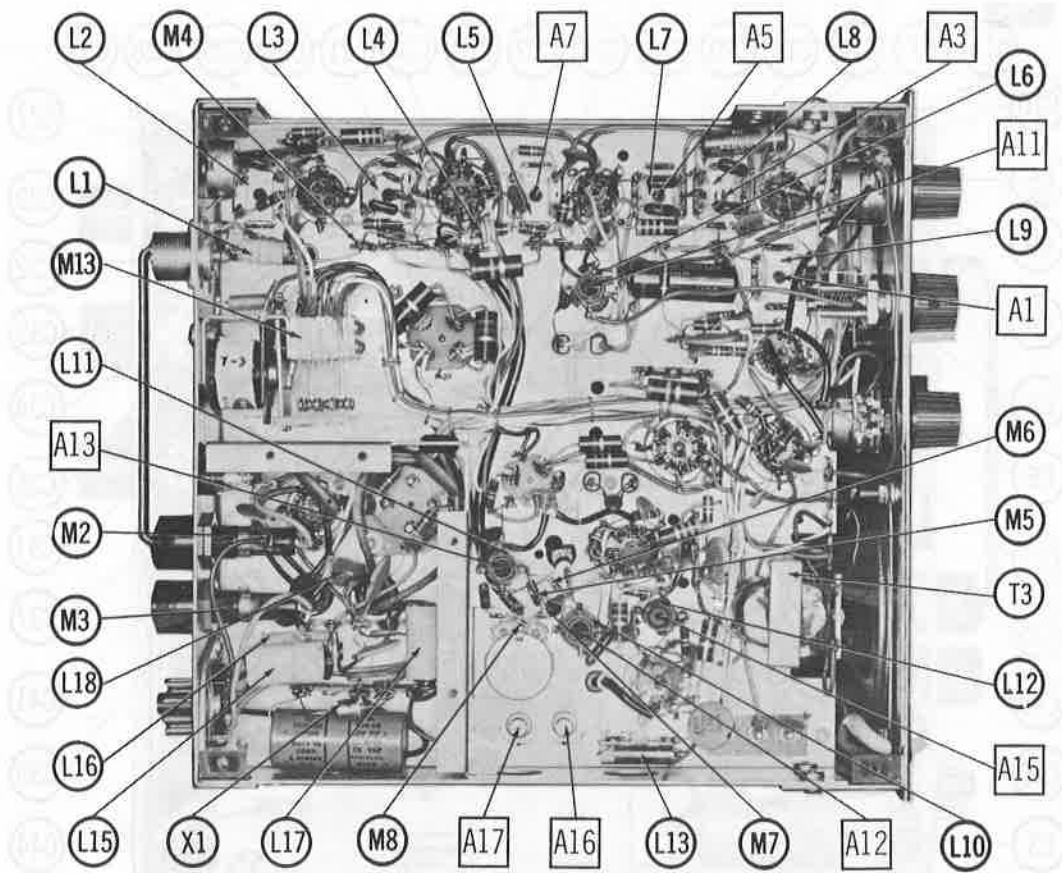
Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 19, Subpart D, Section 19.71)

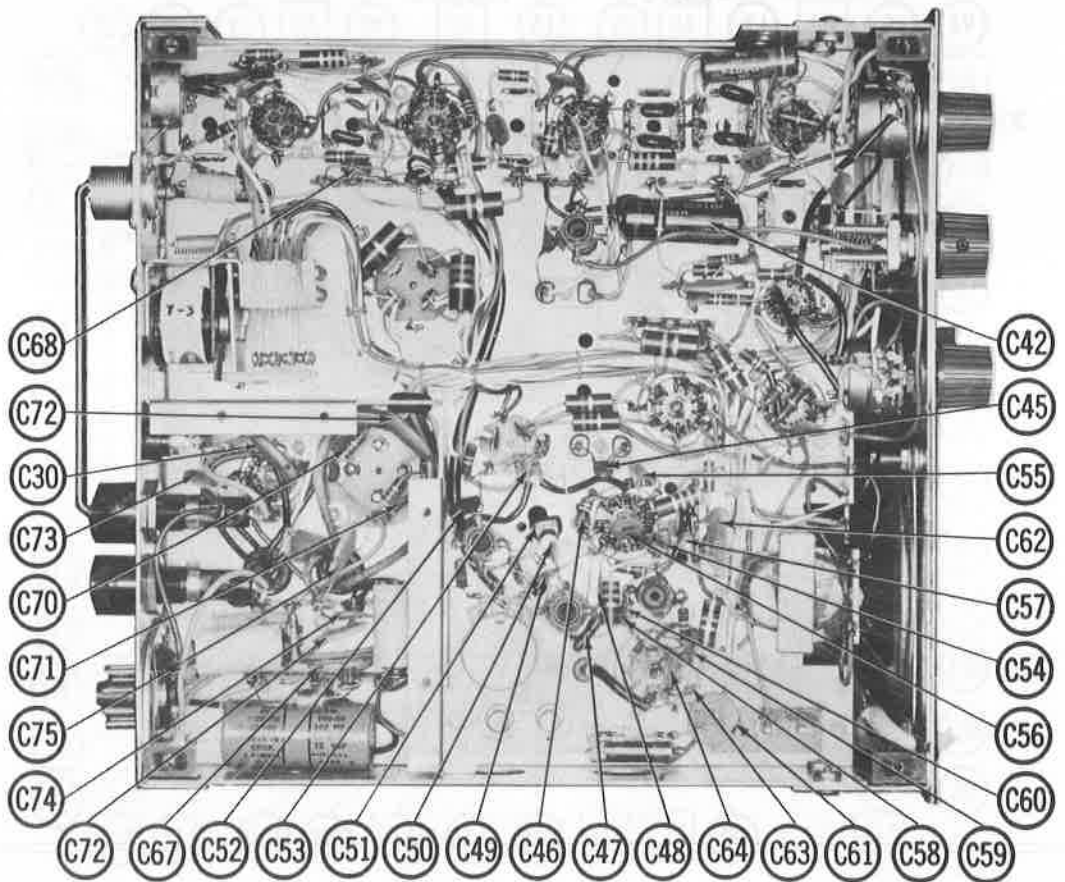
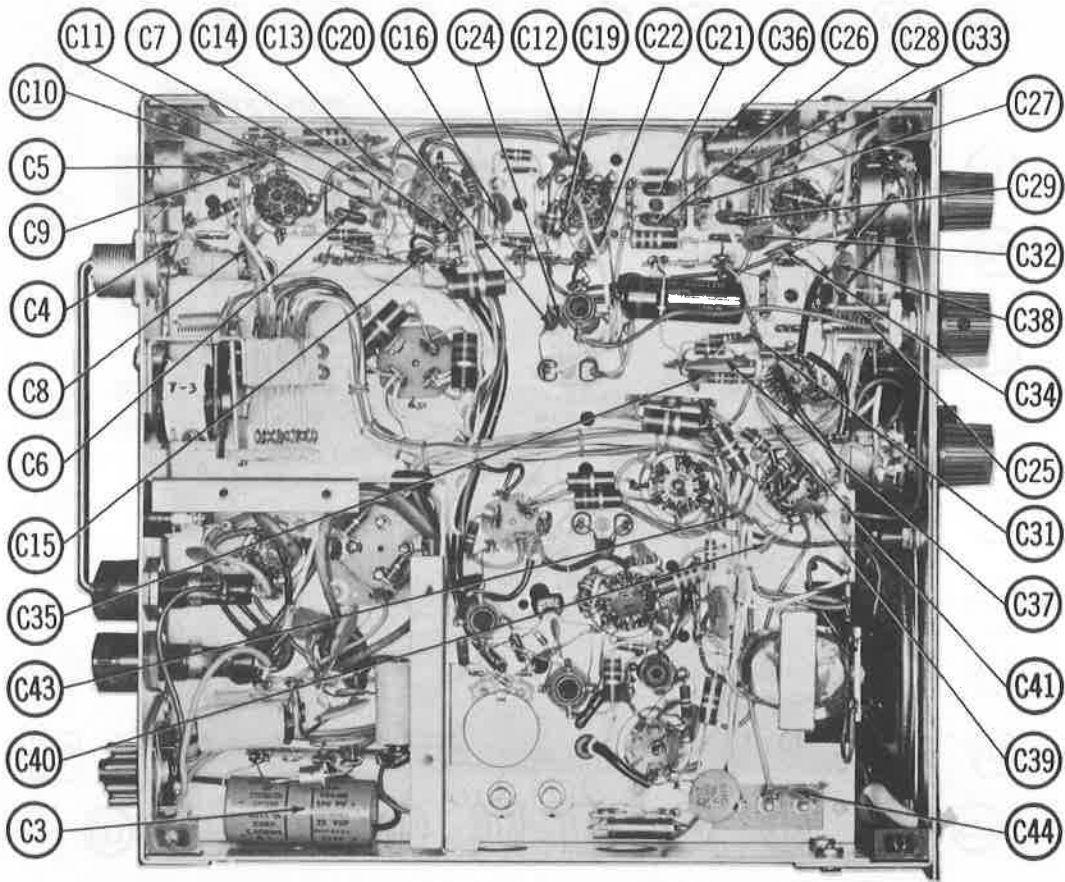
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
Connect a DC VTVM in series with 220K between pin 9 (grid) of V8A and ground.		A12	Key transmitter. Adjust for maximum. Turn counterclockwise one turn. Key transmitter several times to be sure that oscillator starts each time.
Connect DC VTVM across R35. (L12 CT)		A13, A14, A15	Adjust for maximum.
Connect DC VTVM across R35. Remove crystal (M11).		R4	Adjust for MINIMUM. (VTVM reading should be less than .2 Volt).
Connect a DC milliammeter in series with R36 and a low range DC VTVM across R36 (V9 plate).		A16, A17	Turn A17 clockwise (in) several turns. Alternately adjust A16 for MINIMUM deflection and A17 for maximum deflection until the meter indicates 22ma. (2.2 Volts across R36).

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana





# PARTS LIST AND DESCRIPTION TUBES

♦ AMPEREX ♦		♦ GENERAL ELECTRIC ♦		♦ RCA ♦		♦ RAYTHEON ♦		♦ SYLVANIA ♦	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1	RF Amp.	12BA6		V6	AF Amp. -Speech Amp.	12AX7			
V2	Mixer - Osc.	6GH8		V7	Output - Modulator	12AB5			
V3	2nd Converter	12BE6		V8	Transmit Osc. -Buffer	6GH8			
V4	IF Amp.	12BA6		V9	Final RF Amp.	12AB5			
V5	Detector -ANL	12AL5		V10	Rectifier	12X4			

## POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1		PT505	1N2070	1N2858 or 1N3754	40H

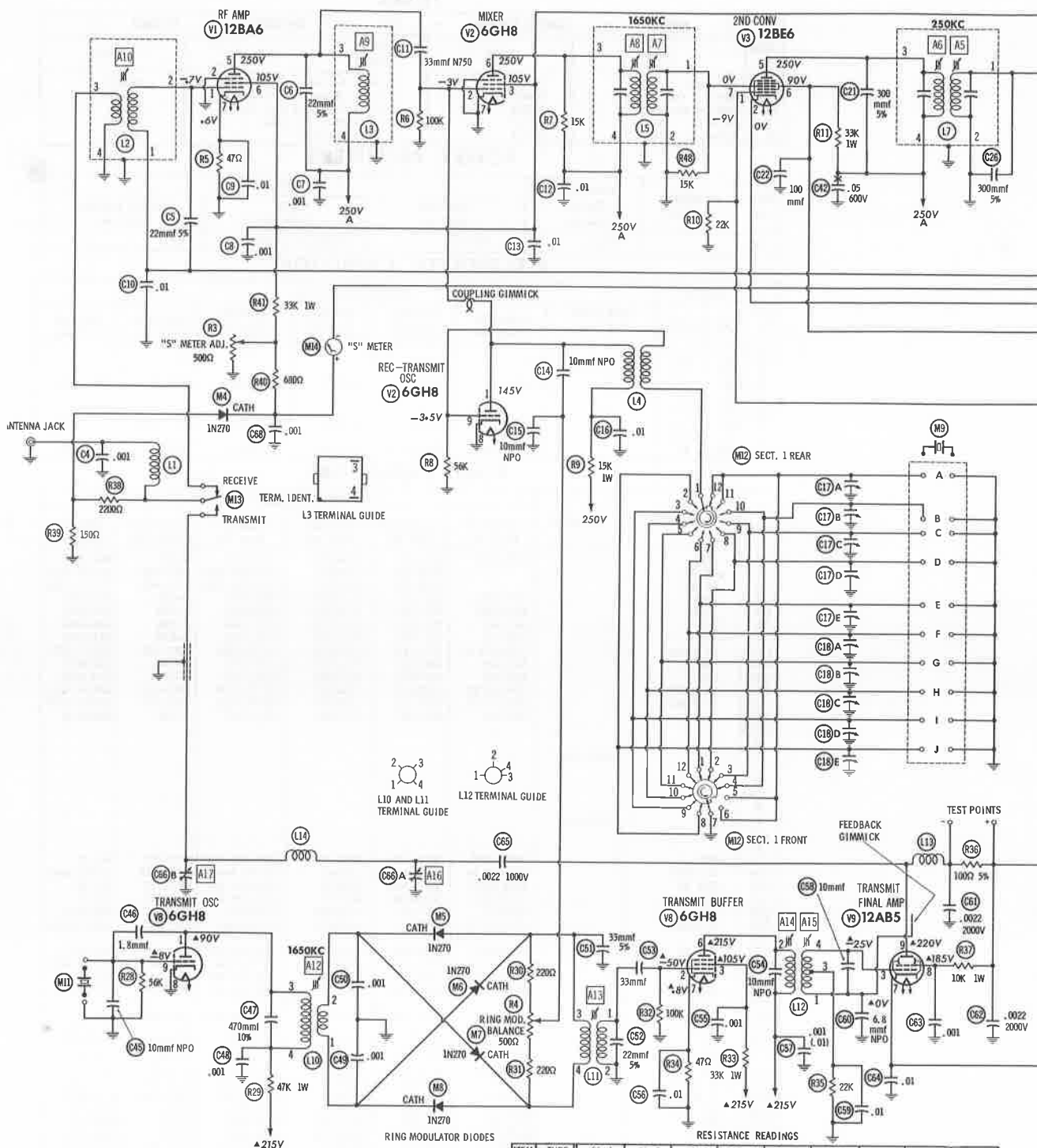
## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		WEBSTER PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲ 40	300							
B	▲ 60	300							
C	■ 20	300		AFH4-46	D0380	XC4-72	TMQ-4140	FP419, 7	TVL-4570
D	50	25							
C2A	▲ 20	150							
B	■ 20	150		AFH3-05	XC0041	QT3-5	TMD-3112	FP311, 2A	TVL-3433
C	20	150							
C3	100	50		PRS-1360	BR-100-50	QT1-23	TD-100-50	TC3501	TVA-1310

## FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C5	22 5%			DTZ-22	C10Q22C	CM-19B-220J	CNO-422	10TCC-Q22
C8	22 5%			DTZ-22	C10Q22C	CM-19B-220J	CNO-422	10TCC-Q22
C7	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C9	.01		BPD-01	DD-103	BYA10S1	CCD-102	B-210	5HK-D10
C10	.01		BPD-01	DD-103	BYA10S1	CCD-102	B-210	5HK-D10
C11	33 N750		N750-DI 33	DTN-33	C10Q33U	CCTN-330	CN7-433	10TCC-Q33
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C15	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C16	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C17A		#0561-68						
B								
C								
D								
E								
C18A		#0561-68						
B								
C								
D								
E								
C19	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C20	10 NPO		NPO-DI 10	DTZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C21	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C22	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	33 N750		N750-DI 33	DTN-33	C10Q33U	CCTN-330	CN7-433	10TCU-Q33
C25								
C26	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C27	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C28	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C29	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C30	.1							
C31	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	100 5%		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C36	.1 200V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C37	.1 100V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C41	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C42	.05 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C43	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C45	10 NPO	(22) †	NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C46	1.8		NPO-SI 2		C10V2C			10TCC-V18
C47	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C49	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C51	33 5%		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C52	22 5%		1469-00022	TCZ-22	22R5Q22	CM-19B-220J	MS-422	
C53	33		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C54	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C55	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C56	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C57	.001	(.01) †	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C58	10		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C59	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C60	6.8 NPO		NPO-SI 6.8	TCZ-6R8	C10V88C	CCTO-6R8	CNO-568	10TCC-V68
C61	.0022 2000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20
C62	.0022 2000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20
C63	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C64	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C65	.0022 1000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20

WEBSTER MODEL 440



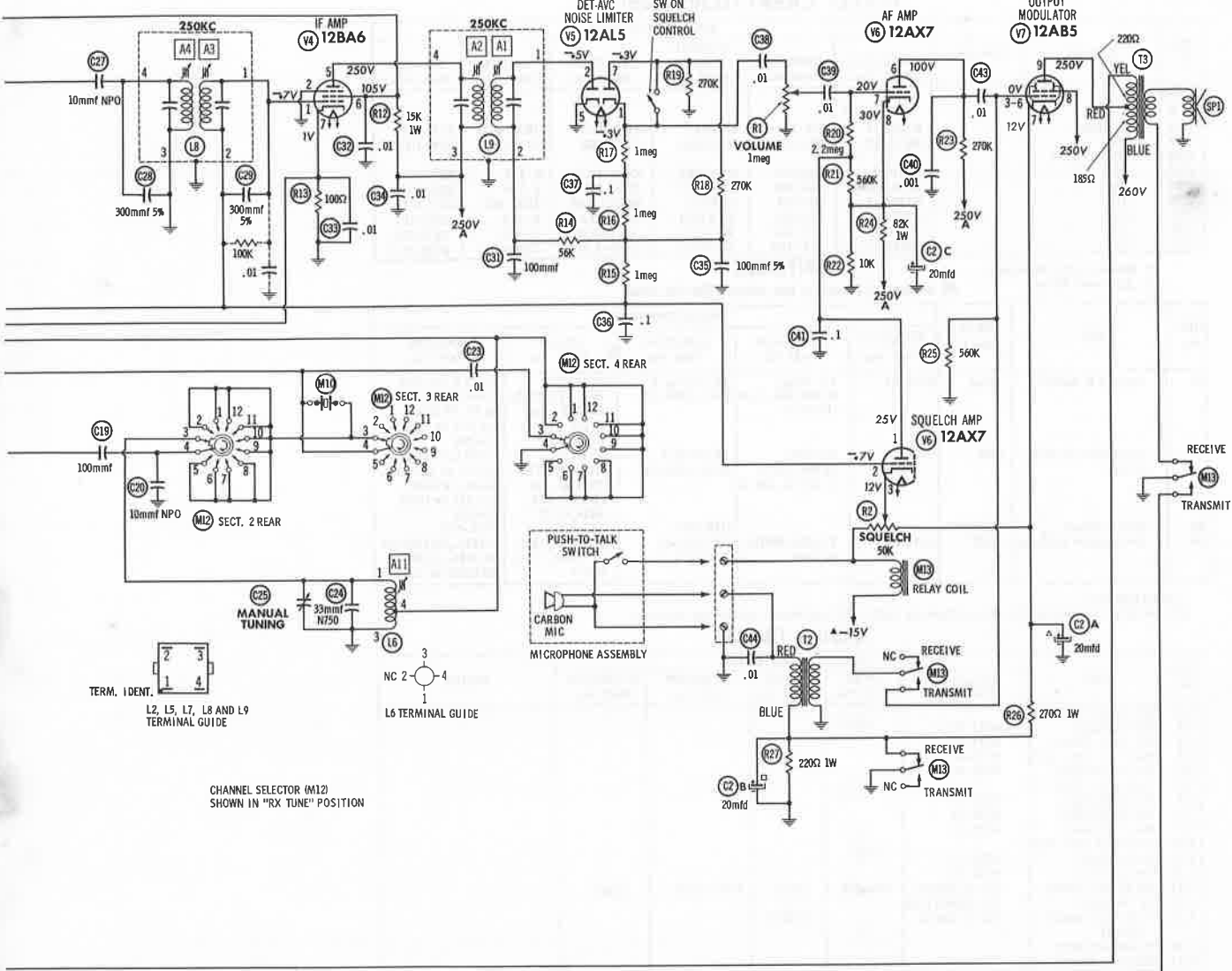
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BA6	1.6meg	0Ω	FIL	1370Ω	115K	47Ω			
V2	6GH8	115K	100K	115K	FIL	FIL	1370Ω	0Ω	0Ω	56K
V3	12BE6	22K	0Ω	FIL	FIL	1370Ω	133K	.1Ω		
V4	12BA6	1.6meg	0Ω	FIL	FIL	1370Ω	115K	100Ω		
V5	12AL5	2.6meg	600K	FIL	FIL	0Ω	0Ω	270K		
V6	12AX7	570K	1.6meg	490Ω	FIL	FIL	1270K	2.8meg	10K	NC
V7	12AB5	TP	TP	560K	FIL	FIL	560K	1370Ω	1600Ω	
V8	6GH8	▲147K	100K	▲133K	FIL	FIL	▲1370Ω	47Ω	0Ω	56K
V9	12AB5	NC	NC	22K	FIL	FIL	NC	▲0Ω	▲110K	1540Ω
V10	12X4	145Ω	NC	FIL	FIL	NC	150Ω	100K		

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

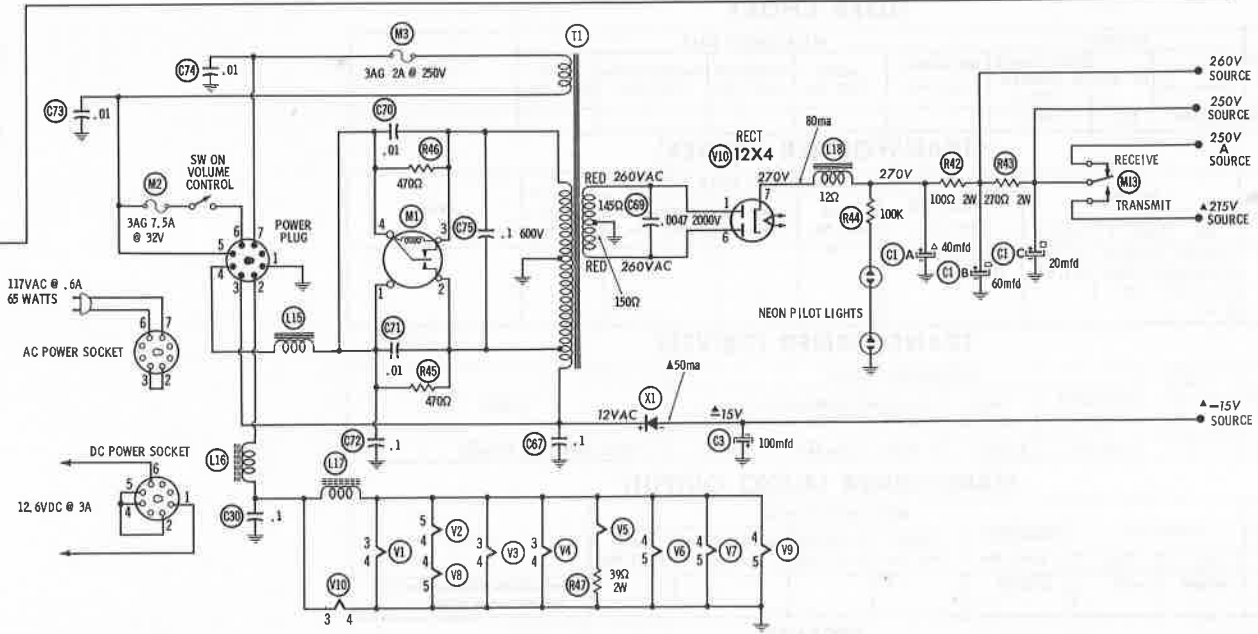
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.  
 † MEASURED FROM PIN 7 OF V10. NC NO CONNECTION.  
 ▲ MEASURED IN "TRANSMIT" POSITION.  
 TP TIE POINT.



TERM. IDENT.  
L2, L5, L7, L8 AND L9  
TERMINAL GUIDE

CHANNEL SELECTOR (M12)  
SHOWN IN "RX TUNE" POSITION



WEBSTER MODEL 440

## PARTS LIST AND DESCRIPTION (CONTINUED)

### FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C66A B		#0554						
C67	.1 200V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C68	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C69	.0047 2000V							
C70	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C71	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C72	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C73	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C74	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C75	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10

# Webster Part Number.  
† Alternate Value.

### CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			WEBSTER PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	1meg	0366-01	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, FS-3, SWE-12	QCBI①, B13-137, TM5, 76-1②, or (BU2, CF28, SS14, GC)*	UA16A, SF1000, US-41 or (RU16A, SL38, SF1000, US-41) or (U53, US-26)
R2	Noise Gate & ANL Switch	50K	0353	F2-50K, SU204, KR-1 or (B-32, KR-1)	A47-50K-Z, FS-3, SWE-12	QCBI①, B13-123, TM5, 76-1②, or (BU2, CF83, SS14, GC)*	UA54A, SF1000, US-41 or (RU54A, SL38, SF1000, US-41) or (U33, US-26)
R3	Meter Adjust	500Ω 2W			U39-500	110-600	PFL-600
R4	Synthesizer Balance	500Ω	0341-20	F1-500, SN010, or B-4	A47-500-S, FKS-1/2	B11-103, SK8, or (BU2, CF4, SS6)*	UA52L, SN1000, or (RU52L, SL38, SN1000) or (U2)

\* "SNAPTROL"

① Use QCBI instead of Tab Mount Plate in TM5. ② Use Switch with Metal Housing.

### COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		WEBSTER PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (.56MH)						
L2	RF Bandpass	0041-60					
L3	RF Amp. Plate	0041-61					
L4	Receiver Osc. Coil	0047-50					
L5	1st IF (1650KC)	0075-60					
L6	Tune Osc. Coil						
L7	2nd IF (250KC)	0075-17					
L8	3rd IF (250KC)	0075-17					
L9	4th IF (250KC)	0075-17					
L10	Transmit Osc. Plate						
L11	Driver Grid	0028-01					
L12	Driver Plate	0062-50					
L13	RF Choke (15MH)	TL-70 (0020)	SW-631	4609	RTC-8519	T959	
L14	Pi Network	TL-98(0027-01)					
L15	Hash Suppressor (15MH)	TL-70 (0020)		7825-8			
L16	Filament Choke						
L17	Filament Choke						

### FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L18	.080ADC	12Ω	.5MH						

### TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .6A (or 12.6VCT @ 3A)	560VCT @ .080A DC	12.6V @ 1.6A	ST-102A (1351-01)					

### TRANSFORMER (DRIVER)

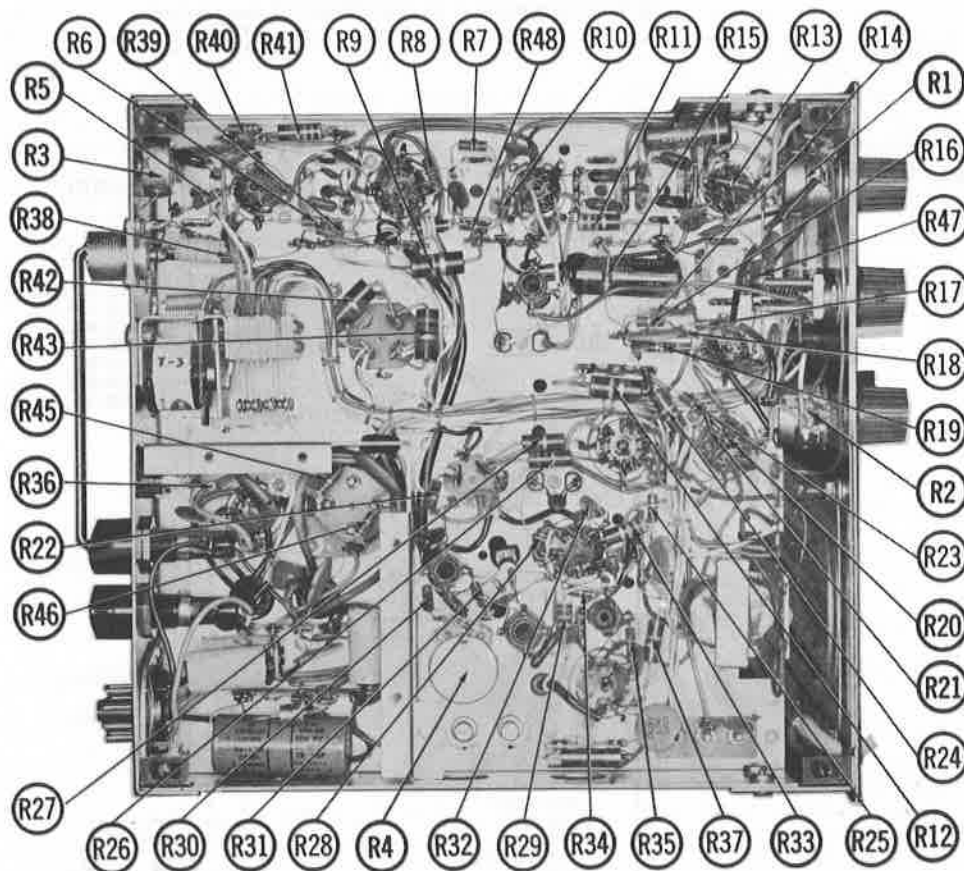
ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2			1287-01	A-2929	A-4705*	25A24*	A-1X	* Drill New Mtg. Hole(a)

### TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	5000Ω*	3-4Ω	1312-20					* Modulation winding has DC resistance of 220Ω

### SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		WEBSTER PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω	0708-01	4A1	



## PARTS LIST AND DESCRIPTION (CONTINUED)

### VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			NOTES
				WEBSTER PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12.6	115v	G1801 (0750)	8301	G1801	

### FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			WEBSTER PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	7½A 32V	AGC 7½ (0670)		31107.5 (3AG 7½A 250V)	342001	AGC 7½	HKP
M3	3AG	2A 250V	AGC-2 (0667)		312002 (3AG 2A 250V)	342001	AGC-2	HKP

### MISCELLANEOUS

ITEM No.	PART NAME	WEBSTER PART No.	NOTES
M4	S Meter Rectifier		1N270
M5	Freq. Synthesizer		1N270
M6	Freq. Synthesizer		1N270
M7	Freq. Synthesizer		1N270
M8	Freq. Synthesizer		1N270
M9	Crystal		28.735MC Receiver Oscillator
M10	Crystal	0710-91	1900KC Receiver Oscillator
M11	Crystal	0710-90	1650KC Transmit Oscillator
M12	Switch		Channel Selector (Rotary Wafer Type)
M13	Relay		Receive-Transmit
M14	S Meter	0700-70	

### WIRING DATA

General-use Hook-up Wire . . . . .	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors)
Shielded Antenna Lead . . . . .	Use BELDEN No. 8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable . . . . .	Use BELDEN No. 8499 Single Conductor Shielded (Neoprene) 8498 Single Conductor Shielded (Vinyl)
Ignition Noise Suppression . . . . .	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap . . . . .	Use BELDEN No. 8881 (3/8 In.)