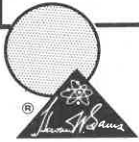


PHOTOFACT® Folder



**MORROW MODELS CB-1, -2, -3,
5W1-6, -12, -117, 5W3-6, -12, -117**



MODEL 5W3-117

**MORROW MODELS CB-1, -2, -3,
5W1-6, -12, -117, 5W3-6, -12, -117**

TRADE NAME	Morrow Models CB-1, CB-2, CB-3, 5W1-6, 5W1-12, 5W1-117, 5W3-6, 5W3-12, 5W3-117
MANUFACTURER	Morrow Radio Mfg. Co., 2794 Market Street, N. E., Salem, Oregon
TYPE SET	11 Tube Crystal Controlled 3 Channel Citizens Band Transmitter-Receiver (CB Series are Single Channel)
POWER SUPPLY	Models CB-1, 5W1-6, 5W3-6: 6 Volt Storage Battery Models CB-2, 5W1-12, 5W3-12: 12 Volt Storage Battery Models CB-3, 5W1-117, 5W3-117: 110-120 Volts AC, 60 Cycles
RATING	(Model 5W3-117) 68 Watts, .62 Amp. @117 Volts AC (Transmit), 61 Watts, .56 Amp. @117 Volts AC (Receive) (6 Volt Versions) 8 Amp. @6.3 Volts DC (12 Volt Versions) 4 Amp. @12.6 Volts DC
TUNING RANGE	Any Citizens Band Channel 1 thru 23

NOTICE

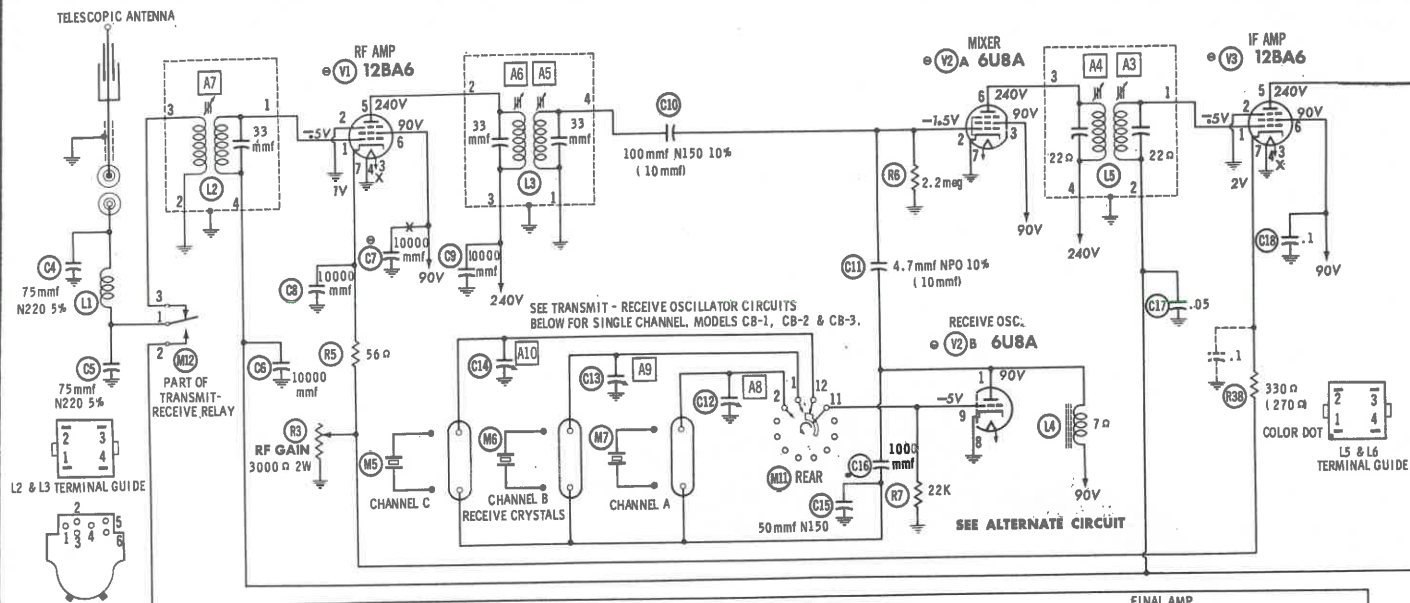
ONLY THOSE PERSONS PROPERLY LICENSED BY FCC ARE PERMITTED TO MAKE CRYSTAL SUBSTITUTION OR EFFECT REPAIRS ON THE TRANSMITTER PORTION OF THIS UNIT.

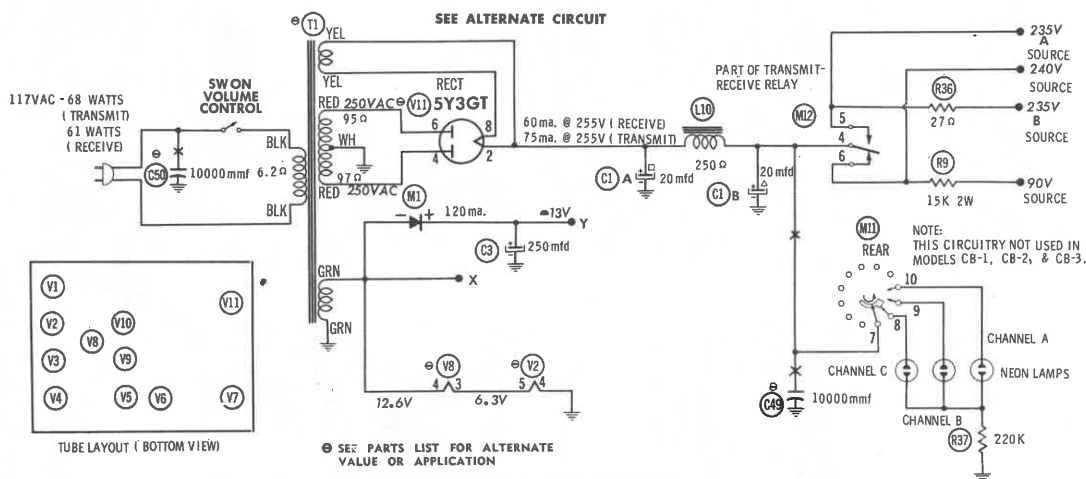
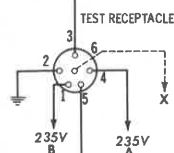
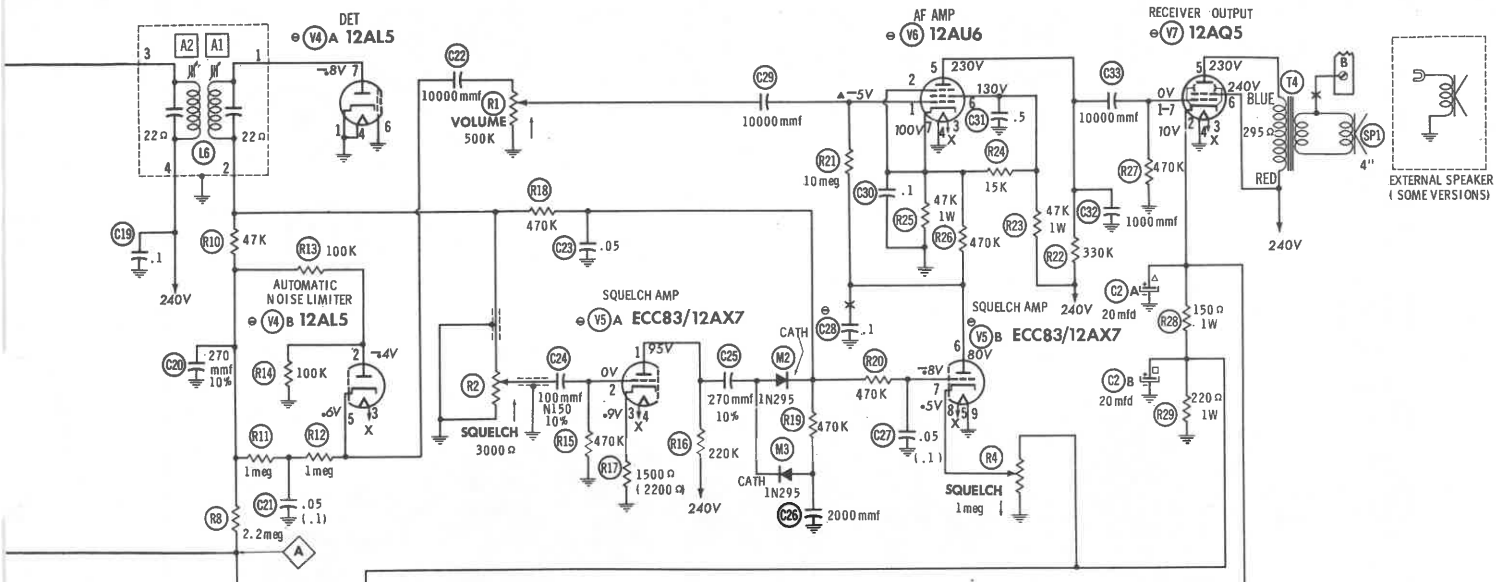
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



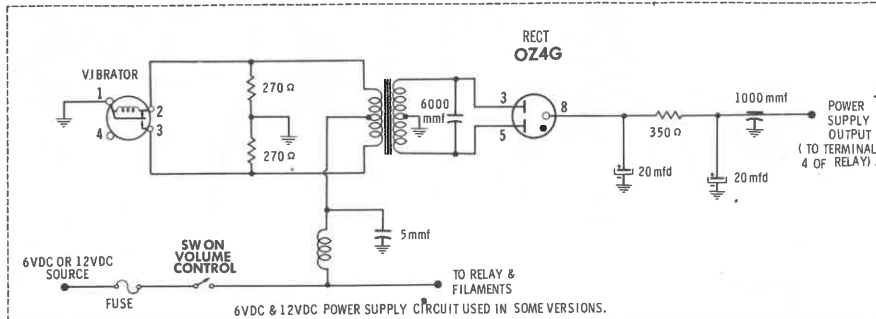
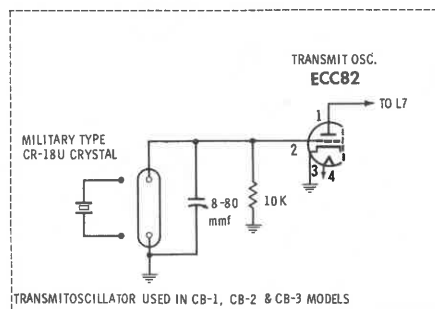
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KZ486

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America





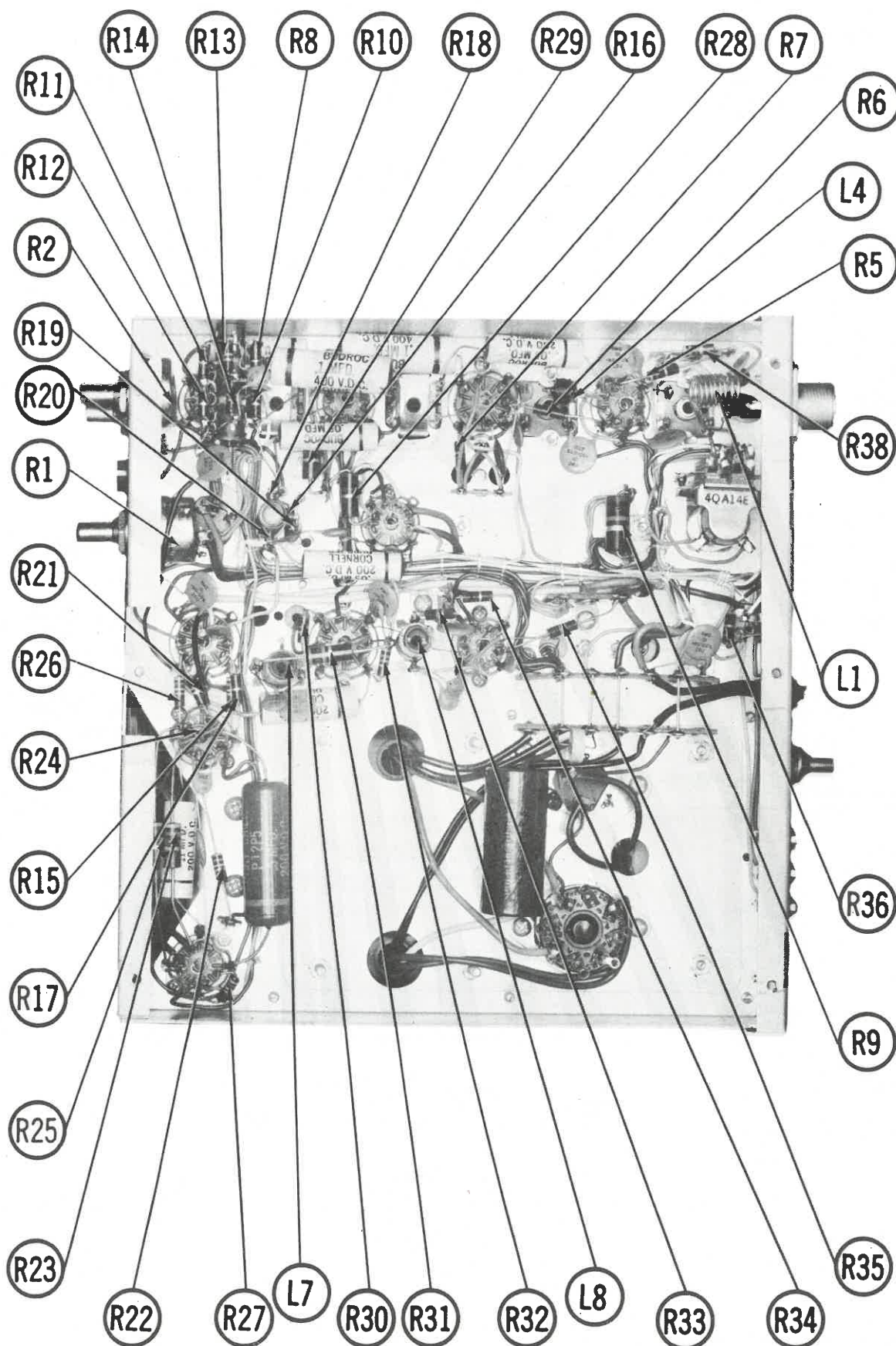
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM. NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



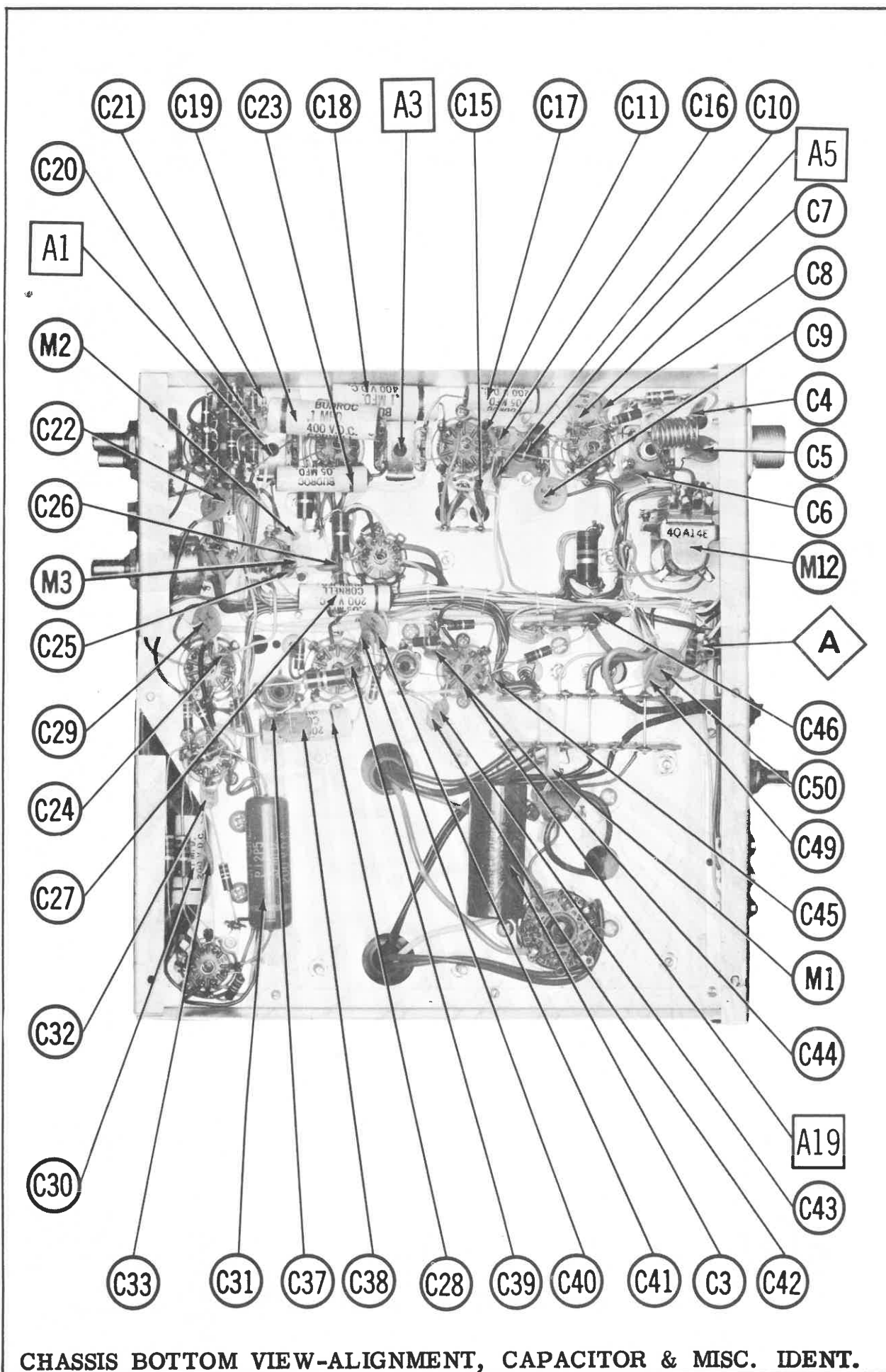
1. DC voltage measurements taken with vacuum tube voltmeter;
2. AC voltages measured with 1000 ohm per volt voltmeter.
3. Socket connections are shown as bottom views.
4. Measured values are from socket pin to common ground.
5. Line voltage maintained at 117 volts for voltage readings.
6. Nominal tolerance of component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
7. All controls at minimum, proper output load connected.

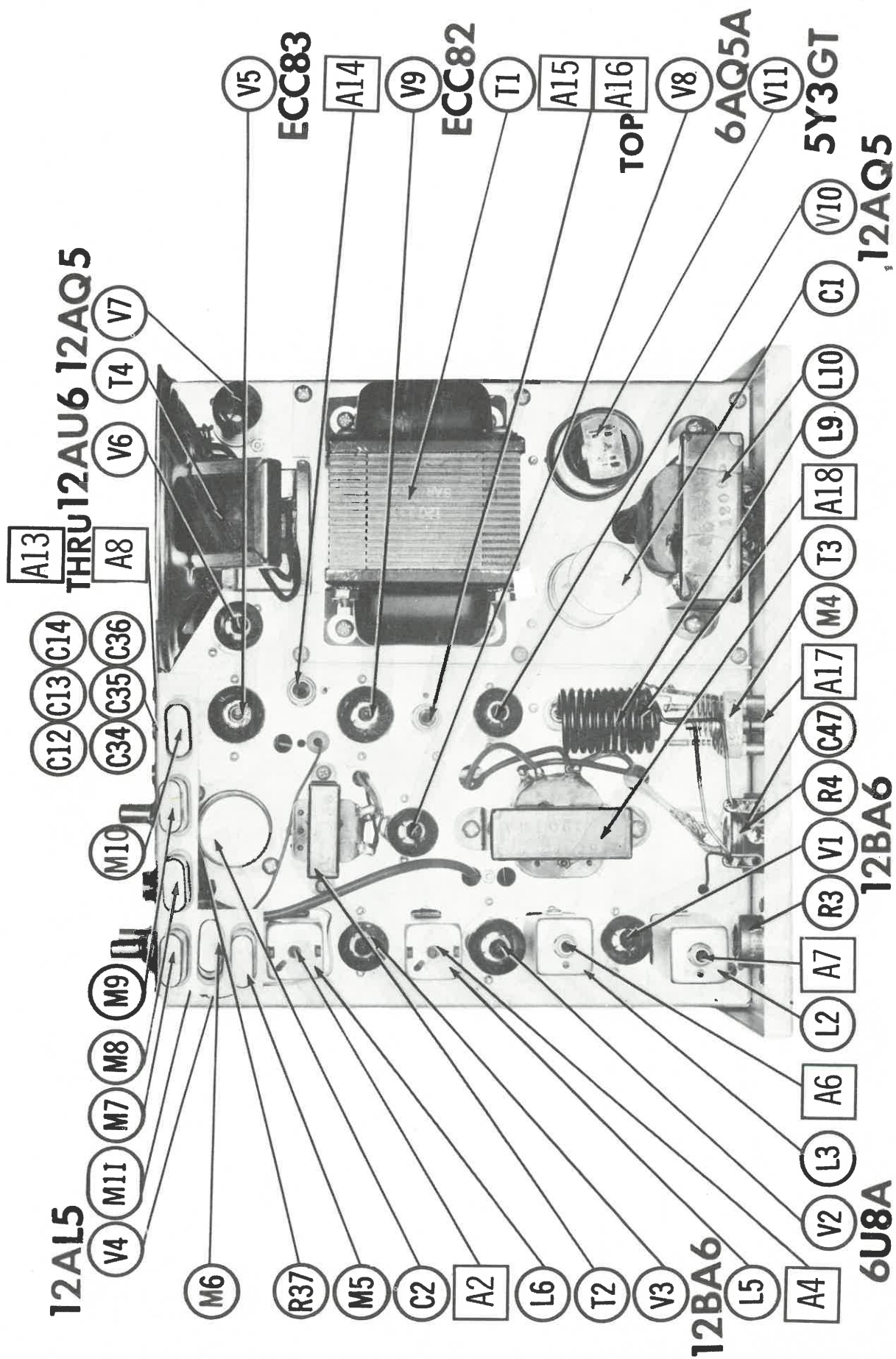
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

**MORROW MODELS CB-1, -2, -3,
5W1-6, -12, -117, 5W3-6, -12, -117**



CHASSIS BOTTOM VIEW-RESISTOR & INDUCTOR IDENT.





CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •			
ITEM No.	USE	ITEM No.	TYPE
V1	RF Amplifier	V6	AF Amplifier
V2	Mixer-Osc.	V7	Receiver Output
V3	IF Amplifier	V8	Modulator
V4	Det.-ANL	V9	Trans. Osc.-Doubler
V5	Squelch Amplifier	V10	Final Amplifier
		V11	Rectifier

Note 1. 6 Volt Models use 6V Equivalent.
Note 2. 6-12 Volt Models use 0Z4 in this application.

ELECTROLYTIC CAPACITORS

REPLACEMENT DATA					
ITEM No.	RATING	MORROW PART No.	CORNELL-DUBILIER PART No.	PYRAMID PART No.	NOTES
C1A	20 350	AFH2-37	B0300	TMD-2375	
C2A	20 350	AFH2-03	B0050	TMD-2075	
C3	25 15	PRS1210	BR2501	TD-250-15	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

REPLACEMENT DATA					
ITEM No.	RATING	REMARKS	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.
C4	75 N220 5%		BPD-01	DD-103	BYA1081
C5	75 N220 5%	Note 1	BPD-01	DD-103	BYA1081
C6	10000		BPD-01	DD-103	BYA1081
C7	10000		BPD-01	DD-103	BYA1081
C8	10000		BPD-01	DD-103	BYA1081
C9	10000		BPD-01	DD-103	BYA1081
C10	100 N150 10%	(10) †	NPO-DI 4.7	DTZ-4R7	C10V47C
C11	4.7 NPO 10%	(10) †			
C12	4.7 NPO 10%				
C13	50 N150				
C14	1000				
C15	1000				
C16	1000				
C17	.05 200V				
C18	.1 400V				
C19	.1 400V				
C20	270 10%				
C21	.05 200V	(.1) †			
C22	10000				
C23	.05 200V				
C24	100 N150 10%				
C25	270 10%				
C26	2000				
C27	.05 200V				
C28	.1 200V				
C29	10000				
C30	10000				
C31	.1 200V				
C32	10000				
C33	10000				
C34	33 N470 5%				
C35	10000				
C36	10000				
C37	10000				
C38	10000				
C39	100 N150 10%				
C40	10 N750 5%				
C41	10000				
C42	5 NPO 10%				

ALIGNMENT INSTRUCTIONS

RECEIVER

- Connect DC probe of VTVM to point \diamond , Common to chassis. Turn squelch controls, R2 and R4 on front and rear panels, to maximum clockwise position.
Connect a 470K resistor across the secondary of L5 (1st IF Trane).
Connect high side of Signal Generator (455KC, 400u Mod.) thru .05mfd to pin 2 of V2A, low side to chassis. Adjust A1, A2, A3 and A4 for maximum deflection.
- Connect high side of Signal Generator tuned to the proper channel frequency, (400u Mod.) to the antenna socket. Adjust A5, A6 and A7 for maximum deflection. Retouch A1, A2, A3, and A4. Remove 470K resistor.
- Using a Frequency Meter, Adjust A8, A9 and A10 to exact frequency marked on oscillator crystals (within 100 cps).

TRANSMITTER

- Connect a 50 ohm dummy load to antenna. Using a Frequency Meter, Adjust A11, A12 and A13 to the exact frequency marked on oscillator crystals, (within 100 cps).
- Connect a 0-50 ma. meter to pins 1 and 4 and a 0-2 ma. meter to pins 2 and 5 of test jack on rear panel. Adjust A14 for maximum grid current and then back off 10% on the long slope.
Adjust A15 and A16 for maximum grid current.
Adjust A17 for minimum plate current, then Adjust A18 for 20 ma. at a plate voltage of 250 Volts. Do not exceed 25 ma. of plate current.
- The power amplifier requires neutralization. Grid current will be maximum when the plate current is minimum as A17 is tuned through resonance. Slight adjustment of A19 may be necessary in the field.
- Remove the 50 ohm dummy load and connect transmitter to the antenna.
Adjust A17 for minimum plate current then adjust A18 for 20 ma. plate current.

FIXED CAPACITORS (cont)

ITEM No.		RATING		REMARKS		REPLACEMENT DATA		SPRAGUE PART No.	
C43	10 N750 5%								
C44	10000								
C45	2000								
C46	5000 1400V								
C47	150 10%								
C48	610								
C49	10000								
C50	10000								

Note 1. Not used in some versions.

† Alternate Value.

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

REPLACEMENT DATA						INSTALLATION NOTES	
ITEM No.		RATING		REMARKS			
R1A	500K						
B	Switch						
C2A	3000G						
B	Shaft						
R3A	Imeg						
B	Shaft						

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN TV PART No.			IRC PART No.	WORKMAN TV PART No.
R5	56Ω			R22	330K		
R6	2.2meg			R23	47K 1W		
R7	22K			R24	15K		
R8	2.2meg			R25	47K 1W		
R9	15K 2W			R26	470K		
R10	47K			R27	470K		
R11	1meg			R28	150Ω 1W		
R12	1meg			R29	220Ω 1W		
R13	100K			R30	10K		
R14	470K			R31	82K 1W		
R15	220K			R32	47K		
R16	220K			R33	22K		
R17	1500Ω			R34	1000Ω		
R18	470K			R35	22K		
R19	470K			R36	27Ω		
R20	470K			R37	220K		
R21	10meg			R38	330Ω		

* Used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Workman TV PART No.	Stancor PART No.
L1	RF Choke (.3uh)						
L2	Ant. RF	108-126	6252		RTC-8570	T234	
L3	RF	108-127	6174		RTC-8592	T324	
L4	RF Choke (500uh)				RTC-8632	T607	
L5	Input IF	108-506	I2-C1		RTC-8633	T608	
L6	Output IF	108-506	I2-C2		RTC-8609	T216	
L7	Osc. Plate	108-128	6171-A				
L8	Driver	108-128					
L9	Final Plate	108-129					

FILTER CHOKE

ITEM No.	CURRENT (Measured)	RATINGS	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
			MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
L10	.075A	250Ω 11 HY	120-055				28C84	C-8X

TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		SEC. 1	SEC. 2			SEC. 1	SEC. 2
T1	117V @ 500WCT 6.8A @ .075A						
	SEC. 3	SEC. 4	SEC. 5				
	12.6V @ 1.8A						

TRANSFORMER (MIC)

ITEM No.	TURNS RATIO	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
T2	1:11	120-133					

TRANSFORMER (MOD)

ITEM No.	TURNS RATIO	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
T3	1:1	120-134					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
T4	4800Ω	3-4Ω	A-3026				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
S1	4"	3-4Ω	4A1				

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
M1	.120A		1N1763 *				

SIGNAL DIODES

ITEM No.	OMG. TYPE	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
M2	1N295		1N295				

MISCELLANEOUS

ITEM No.	PART NAME	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MORROW PART No.	Merit PART No.			Stancor PART No.	Thordarson PART No.
M4	Variable Cap.						
M5	Crystal						
M6	Crystal						
M7	Crystal						
M8	Crystal						
M9	Crystal						
M10	Crystal						
M11	Switch						
M12	Relay						

Manufacturer recommends military type crystal CR-18U

Note 1. M6 and M7 not used in CB series. To compute crystal frequency, subtract .455 from channel frequency in megacycles and divide by 3.

Note 2. M9 and M10 not used in CB series. To compute crystal frequency divide channel frequency in megacycles by 2.

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length)
	1726-K (7 1/2 Ft. Length)