

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

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 95, SUBPARTS C & D.)

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.

Connect either 50-ohm dummy load or the normally used antenna system.



MODEL 675

VFO ALIGNMENT

Suggested Alignment Tools:

L1, thru L7.....#9440
TC1, TC2, TC3.....#5000

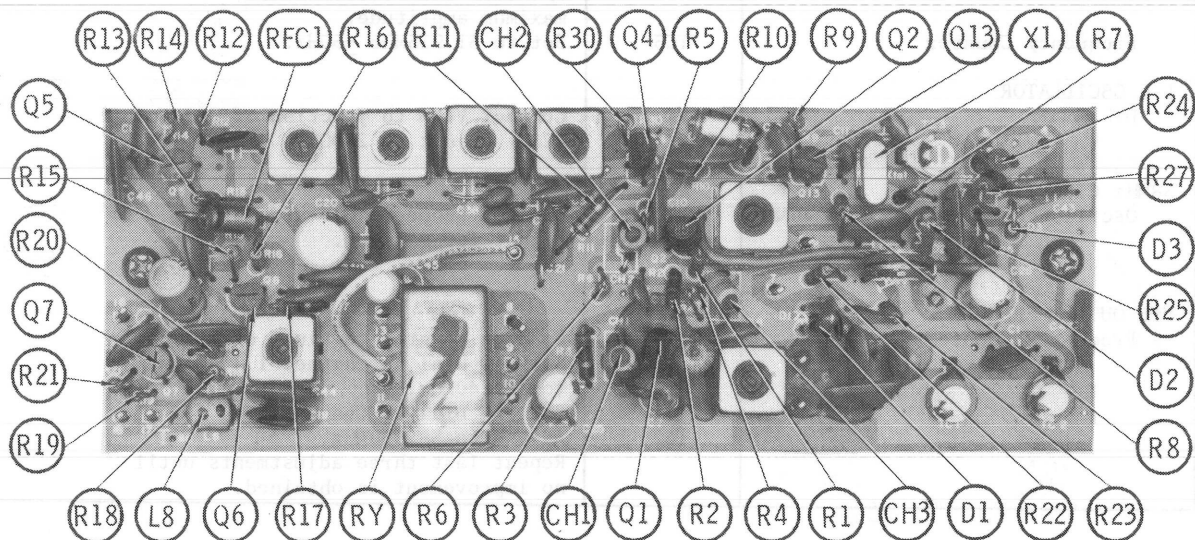
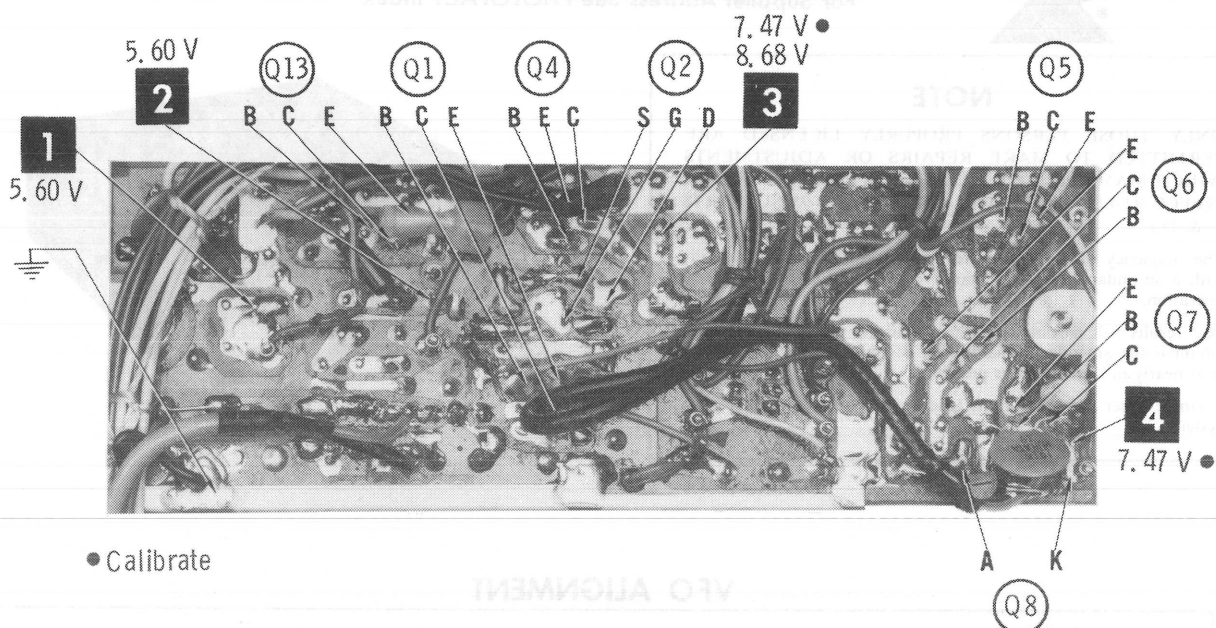
GC ELECTRONICS

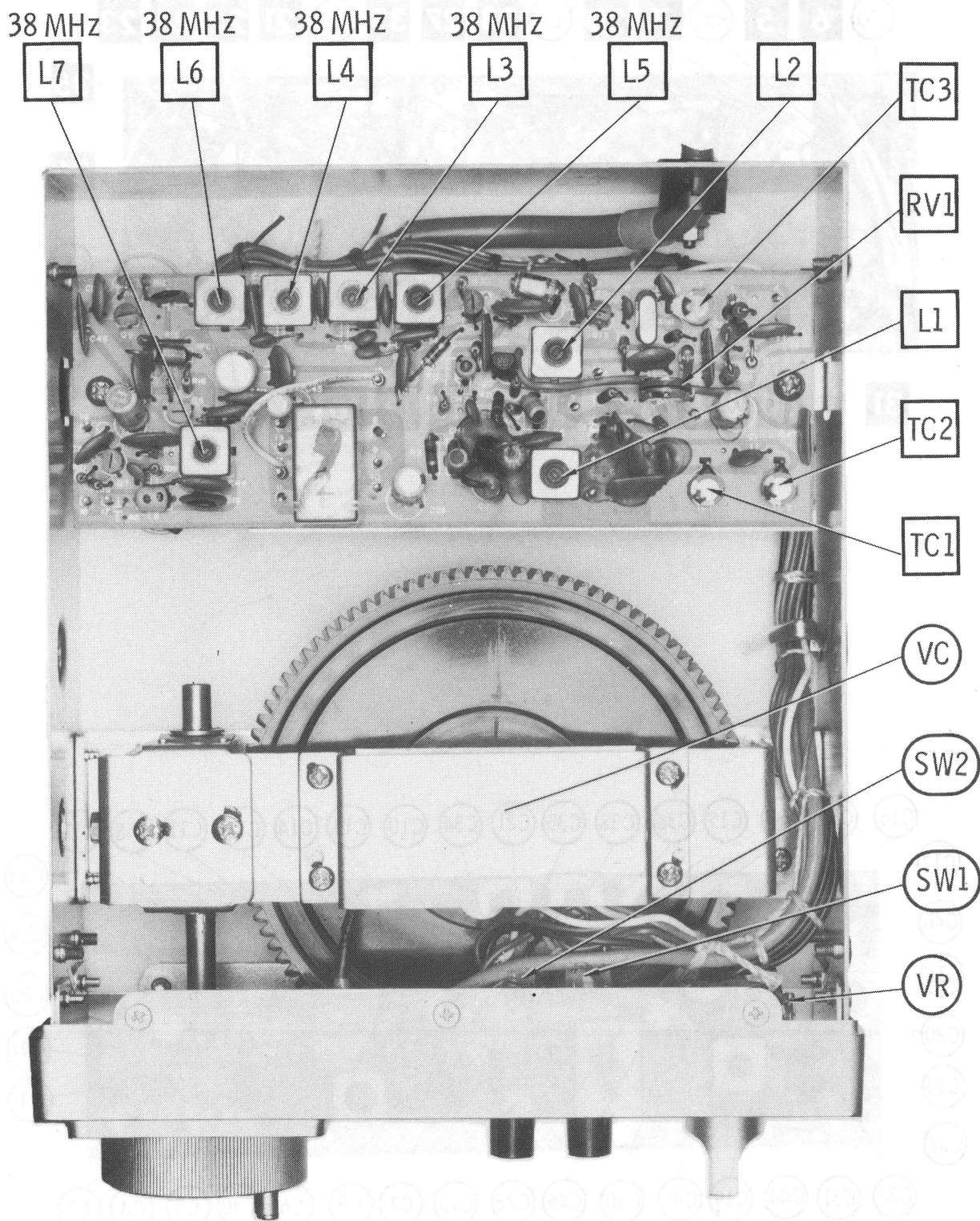
HY-GAIN MODEL 675

INDICATOR	ADJUST	REMARKS
CRYSTAL OSCILLATOR Oscilloscope (Response to 40MHz)	L2	Connect to Emitter of Q13. Adjust 3/4 turn counterclockwise from maximum amplitude.
Frequency Counter	TC3	Set to 31.935MHz +50Hz.
L-C OSCILLATOR DC VTVM	VR	Connect VTVM to junction of R22 and R23. Adjust to 2VDC.
38MHz CIRCUITS Oscilloscope (Response to 40MHz)	L3,L4, L5,L6, L7	Connect scope to C19 side of L8. Adjust for maximum.
VFO OUTPUT FREQUENCY Frequency Counter	L1	Connect counter to Pin 9 of PL1. Set VFO Dial on Channel 1. Adjust to 38.240MHz.
	TC1	Set VFO Dial to Channel 23.
	TC2	Adjust to 38.530MHz.
		Repeat last three adjustments until no improvement is obtained.

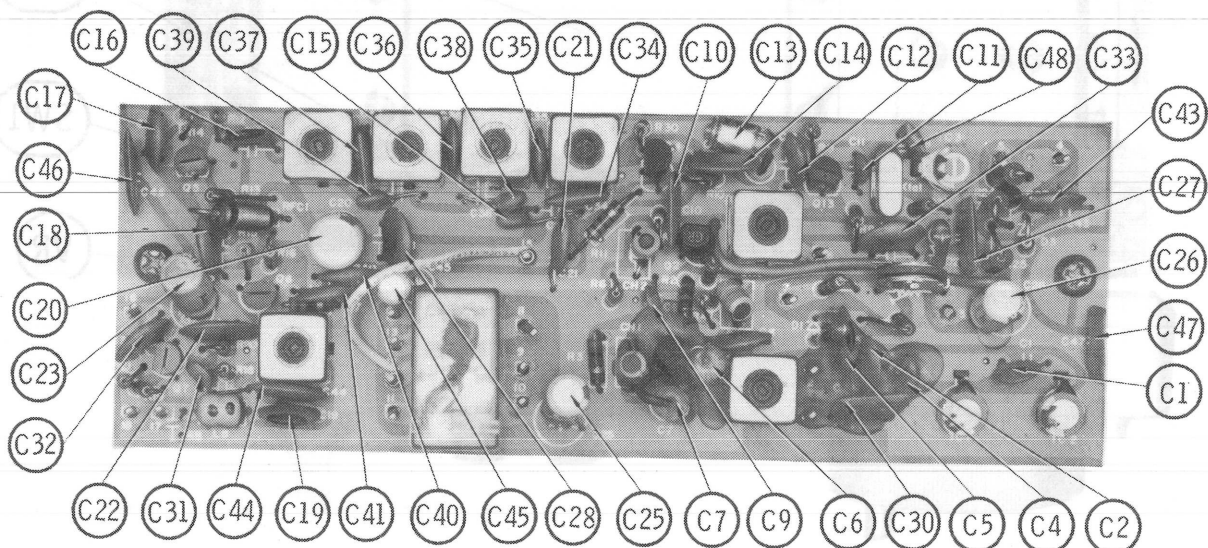
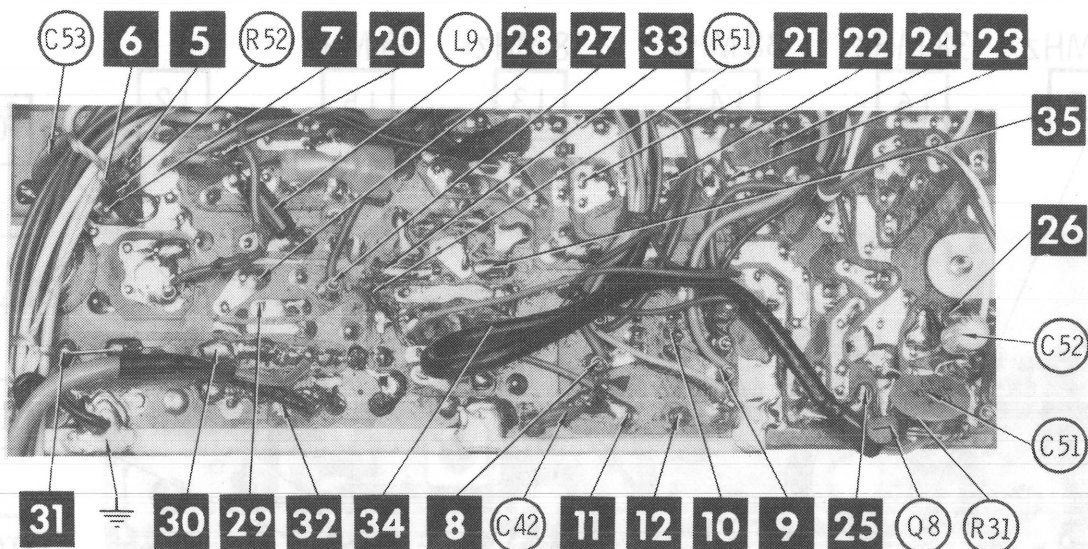
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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HY-GAIN MODEL 675



PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	ITT410/EDS-31	GE-90 (8)	D201 (8)		HEPR2503(8)	SK3126 (8)		
D2	RD6A(M)EDZ-19	GEZD-5.6	Z-1204	PTC502	HEPZ0407	SK3057	RT236	ECG 136
	5.6V Zener							
D3	BZ-090/EDZ-23	GEZD-9.1	Z-1210	PTC505	HEPZ0412	SK3060	RT240	ECG 139
	9.1 V Zener							
Q1	2SC839(H)/EQS-100	GE-20	TR-24	PTC121	HEP728	SK3018	RT102	ECG 108
Q2	2SK19(GR)/EQF-4	GE-FET-2	FE-100	PTC152	HEPF0021	SK3116	RT175	ECG 132
Q4	2SC839(H)/EQS-100	GE-20	TR-24	PTC121	HEP728	SK3018	RT102	ECG 108
Q5	2SC815(L)/EQS-22	GE-18	TR-25	PTC123	HEP736	SK3024	RT102	ECG 123A
Q6	2SC839(H)/EQS-100	GE-20	TR-24	PTC121	HEP728	SK3018	RT102	ECG 108
Q7	2SC839(H)/EQS-100	GE-20	TR-24	PTC121	HEP728	SK3018	RT102	ECG 108
Q8	2SC815(L)/EQS-22(1)	GE-18	TR-25	PTC123	HEP736	SK3024	RT102	ECG 123A
Q13	2SC839(H)/EQS-100	GE-20	TR-24	PTC121	HEP728	SK3018	RT102	ECG 108

(1) Transistor used as a diode.

(8) Varactor

ELECTROLYTIC CAPACITORS

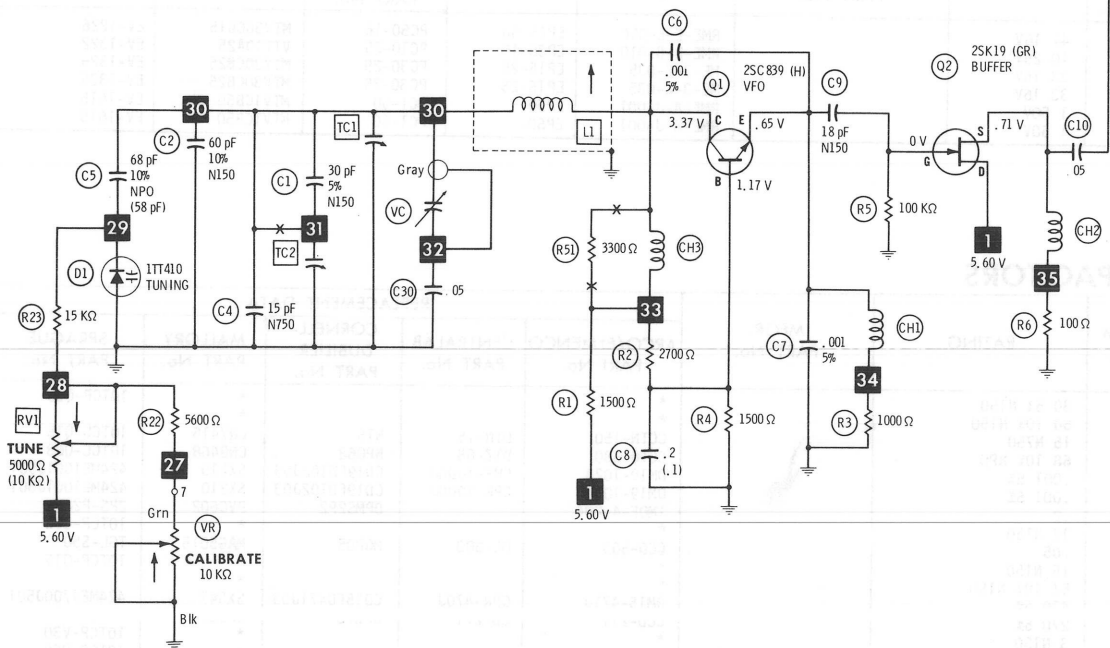
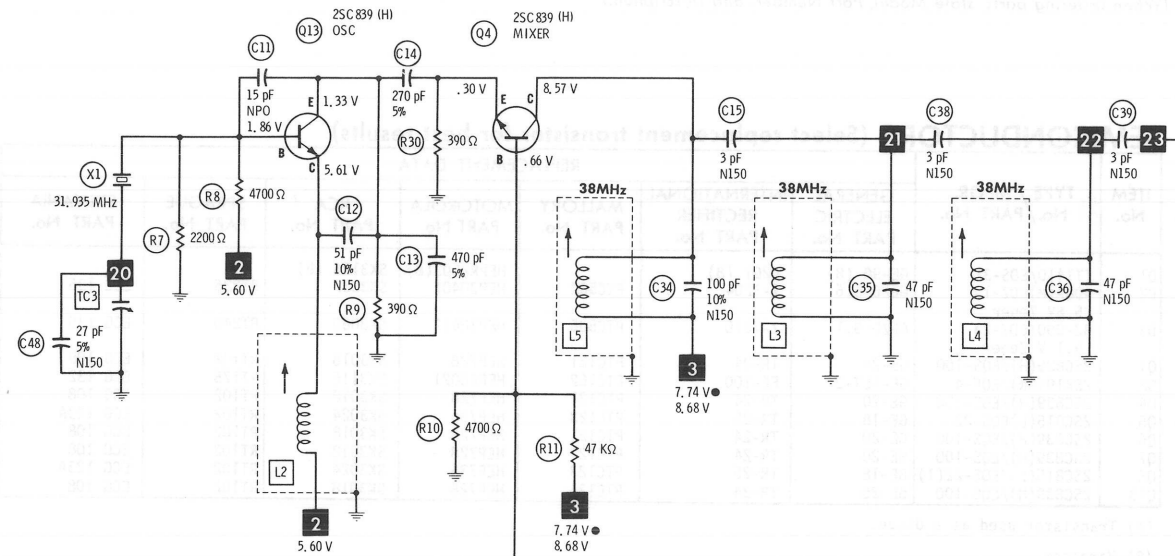
ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C20	47 16V		RME-E-E-050	EP15-50	PC50-16	MTV50CB15	EV-1226
C23	10 25V		RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C25	33 16V		ME-3-E-035	EP15-25	PC30-25	MTV30CB25	EV-1325
C26	33 16V		ME-3-E-035	EP15-25	PC30-25	MTV30CB25	EV-1325
C46	1 50V		RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615
C52	1 50V		RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615

HY-GAIN MODEL 675

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENC0 PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	30 5% N150		*			*	10TCP-Q30
C2	60 10% N150		*			*	
C4	15 N750		CCTN-150	DTN-15	N15	CN7415	10TCU-Q15
C5	68 10% NPO		CCT0-680	DTZ-68	NP068	CN0468	10TCC-Q68
C6	.001 5%		DM19-102J	CPR-1000J	CD19FD102J03	SX210	424ME1001J501
C7	.001 5%		DM19-102J	CPR-1000J	CD19FD102J03	SX210	424ME1001J501
C8	.2		1MDP-4-204		DPMS2P2	PVC602	2PS-P20
C9	18 N150		*			*	10TCP-Q18
C10	.05		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C11	15 N150		*			*	10TCP-Q15
C12	51 10% N150		*			*	
C13	470 5%		DM15-471J	CPR-470J	CD15FD471J03	SX347	424ME4700J501
C14	270 5%		CCD-271	DD-271	GP270	GP327	10TS-T27
C15	3 N150		*			*	10TCP-V30
C16	68 10% N150		*			*	10TCP-Q68
C17	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C18	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C19	68 10% NPO		CCT0-680	DTZ-68	NP068	CN0468	10TCC-Q68
C21	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C22	270 5%		CCD-271	DD-271	GP270	GP327	10TS-T27
C27	.05		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C28	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C30	.05		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C31	15 N150		*			*	10TCP-Q15
C32	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C33	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C34	100 10% N150		*			*	10TCP-T10
C35	47 10% N150		*			*	10TCP-Q45
C36	47 10% N150		*			*	10TCP-Q45
C37	100 10% N150		*			*	10TCP-T10
C38	3 N150		*			*	10TCP-V30
C39	3 N150		*			*	10TCP-V30
C40	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C41	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C42	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C43	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10

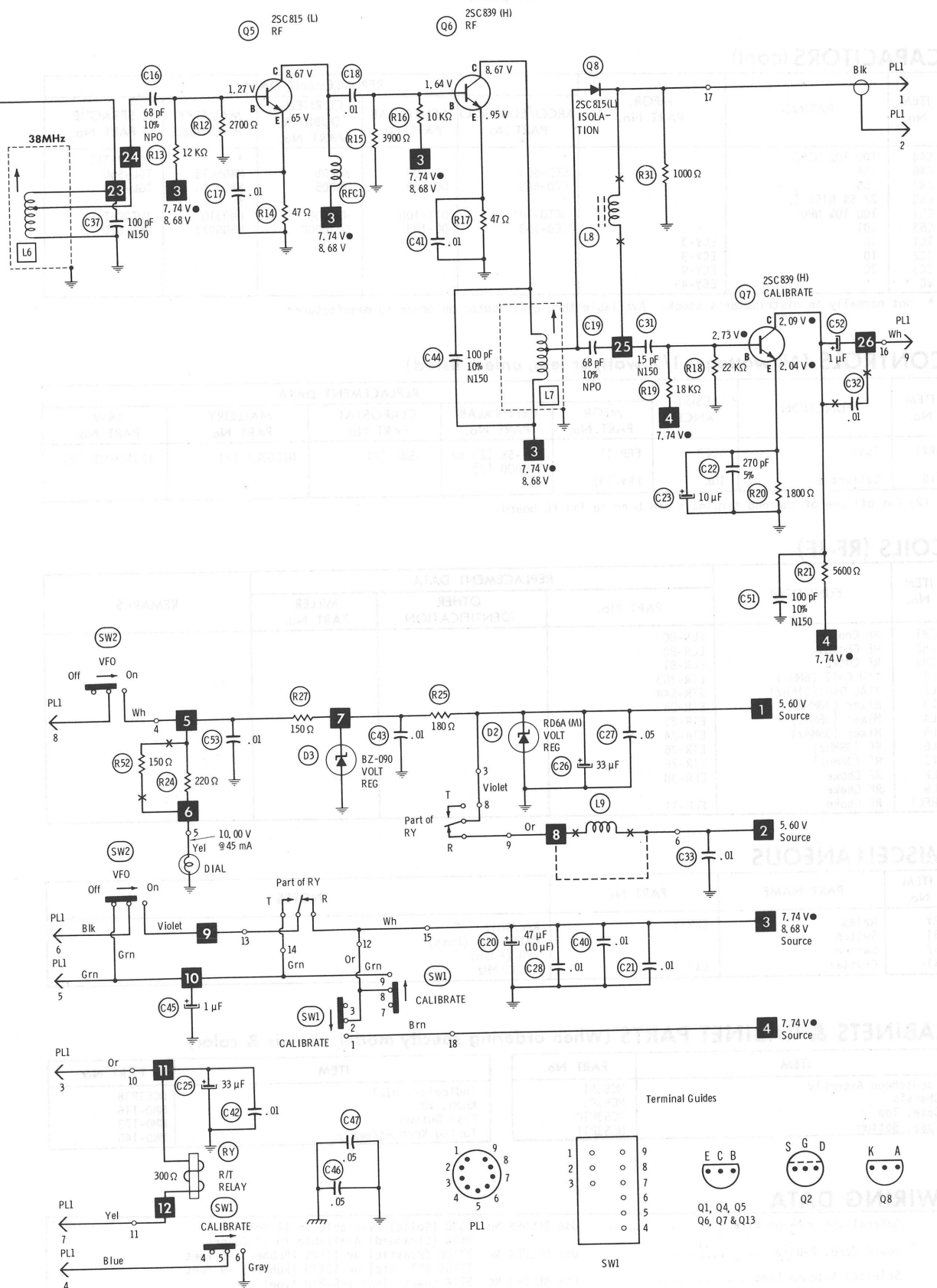
(CONTINUED ON PAGE 34)



- RF - IF Coil resistance of less than 1 Ω not given.
 ⏏ Denotes ground. (Voltage reference unless otherwise indicated).
 --- Indicates connection used in some versions.
 * Indicates connection not used in some versions.
 * Omitted in some versions.
 ⦿ See parts list.
 Measurements taken with switching in position shown unless otherwise indicated.
- Measured with switching in calibrate position.
- Values shown in () are used in some applications.
 Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
 Supply voltage maintained at rated value for measurements.
 Voltage and resistance measured with VTVM or equivalent meter,
 no signal applied and controls adjusted for normal operation.
 Arrow on control indicates direction of advance.
 Numbers assigned to terminals may not be found on the unit.
 Transistor resistances vary widely. No resistance measurements taken.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
 with CIRCUITRACE[®]

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PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C44	100 10% N150		*			*	10TCP-T10
C46	.05		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C47	.05		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C48	27 5% N150		*			*	
C51	100 10% NPO		CCT0-101	DTZ-100	NP0100	CN0310	10TCC-T10
C53	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
TC1	10	ECV-3					
TC2	10	ECV-3					
TC3	20	ECV-9					
VC		ECV-45					

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

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
RV1	Tune	5000	ERP-11	TSV-5K (2) or T-5000 (2)	C-502 (2)	MTC53L1 (2)	X201R502B (2)
VR	Calibrate	10K	ERV-137				

(2) Cut off one of the end terminals and bend to fit PC board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
CH1	RF Choke	ELR-80			
CH2	RF Choke	ELR-80			
CH3	RF Choke	ELR-81			
L1	VFO Coil (6MHz)	ETR-263			
L2	XTAL Osc. (31MHz)	ETR-54N			
L3	Mixer (38MHz)	ETR-25			
L4	Mixer (38MHz)	ETR-25			
L5	Mixer (38MHz)	ETR-24			
L6	RF (38MHz)	ETR-26			
L7	RF (38MHz)	ETR-26			
L8	RF Choke	ELR-38			
L9	RF Choke				
RFC1	RF Choke	ELR-11			

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
RY	Relay	EZR-6	Rec/Xmit
S1	Switch		Calibrate (Push)
S2	Switch		VFO (Push)
X1	Crystal	EXT-23	31.935MHz

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Escutcheon Assembly	MC53A1	Indicator, Dial	MC53P18
Chassis	MC53P3	Knob, VR	MNO-116
Case, Top	MC53P10	Push Button	MMO-173
Case, Bottom	MC53P11	Tuning Knob Assembly	MNO-140

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord, 2-Wire	8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) -6 feet
	17109 (Plastic) or 17129 (Rubber) -9 feet
	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. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene
Ignition Noise Suppression	8491 4-Conductor (2 shielded, 2 unshielded) Neoprene
Bonding Strap	Use BELDEN No. 7300-Series Spark-Plug Sets
	Use BELDEN No. 8661 (3/8 inch)