RECEIVER

Sensitivity	Less than 1 microvolt for 10 db signal-plus-noise to noise ratio.
Selectivity	500 Hz at 6 db down.
Image Rejection	70 dB or better.
IF Rejection	35 dB or better.
Intermediate Frequency	3396 kHz.
Antenna Impedance	50 Ω unbalanced.
External Speaker Impedance	8 Ω.

GENERAL

Frequency Coverage	3.5 to 3.75 MHz. 7.0 to 7.25 MHz. 21.0 to 21.25 MHz.
Power	120 VAC 50/60 Hz.
Transmitter Tube Complement	6CL6 Crystal oscillator. 6CL6 Driver 6GE5 Final.
Receiver Tube Complement	6EW6 RF amplifier. 6EA8 Heterodyne mixer-oscillator. 6EA8 VFO mixer-oscillator. 6EW6 IF amplifier. 12AX7 Product detector-oscillator. 6HF8 1st audio and audio output.
Transistor Complement	2N1274 muting circuit.
Dimensions	13-3/4" wide x 11-1/2" deep x 6-1/2" high.
Net Weight	20 lbs.

The Heath Company reserves the right to discontinue instruments and to change specifications at any time without incurring any obligation to incorporate new features in instruments previously sold.

CIRCUIT DESCRIPTION

Refer to the Block Diagram (fold-out from Page 50) and to the Schematic Diagram (fold-out from Page 63) while reading this Circuit Description.

Note that the receiver circuits are across the bottom and the transmitter circuits are across the top of the Schematic and Block Diagrams.

TRANSMITTER

Tube V7 is a modified Pierce crystal oscillator which combines the functions of an oscillator and a buffer amplifier. It creates the basic signal which is amplified by tube V8, the driver stage. The driver stage also serves as a frequency tripler on the 15-meter band. The final amplifier, tube V9, increases the power sufficiently for transmission. Closing the key removes the cutoff bias from the grids of all three transmitter stages.

Crystal Oscillator

The screen grid of pentode V7 serves as the plate of a crystal-controlled triode oscillator. The oscillator operates at the fundamental frequency of an 80- or 40-meter crystal.

The complete pentode acts as an amplifier for the oscillator signal on the control grid. The plate load is a tuned tank circuit on 40-meter signals, but the coil acts as an RF choke on 80-meters. (Capacitor C7 couples the signal to the driver stage.)

Driver

Driver tube V8 operates as a straight amplifier on either 40 or 80 meters. On 15 meters, V8 acts as a frequency tripler. The proper broadband plate tank circuit is selected with the Band switch. The output signal is coupled through capacitor C15 to the final amplifier.

Final Amplifier

Final amplifier tube V9 operates as a neutralized amplifier with its input and output circuits tuned to the same frequency. It is necessary to cancel the plate-to-grid capacity by using capacitors C21 and C22 to pass a small amount of the output into the grid circuit as an out-of-phase neutralizing signal. A parasitic choke made up of coil L15 and resistor R11 is used in the plate circuit to suppress high frequency parasitic oscillations.

The Power Level control on the front panel adjusts the screen voltage of tube V9 to control the power output. When the Plate-Rel Pwr meter switch is in the Rel Pwr position, the meter measures a sample of RF voltage taken from voltage divider resistors R16 and R17 and rectified by diode D2. The meter reading is proportional to the RF output voltage at the antenna.

In the Plate position of the Plate-Rel Pwr meter switch, the meter indicates final cathode current (plate current and screen current) by measuring the voltage drop across resistor R15.

In the transmit condition, cathode current flows through resistor R15, coil L17, and diode D1 to the cathode of tube V9 (pins 4 and 10). This provides forward bias to D1 and allows any RF coupled from the pi network circuit via C23 to be bypassed to ground through diode D1 and capacitors C16 and C17. This prevents the transmitter output from reaching the receiver RF amplifier grid during transmit.

During receive operation, diode D1 has no bias. It is effectively an open circuit at the low signal voltages received. Signals are coupled through C23 to the grid of receiver RF amplifier tube V1. Diode D1 acts as an antenna relay.

Pi Network Output Circuit

The output network is used in both the transmit and receive modes. Different pi network configurations are switched into the output circuit by

the Band switch. On the 80-meter band, the entire coil L12 is used; capacitors C26 and C27 are paralleled with capacitor C28; and capacitors C29 and C31 are paralleled with capacitor C32, which is a fixed loading capacitor. On the 40-meter band, a few turns of coil L12 are shorted; the shunting capacitances are reduced by switching capacitors C27 and C29 out of the circuit. On the 15-meter band, most of coil L12 is shorted; the shunting capacitances are reduced further by switching capacitors C26 and C31 out of the circuit.

Grid-Block Keying Circuits

With a key-up condition, a large negative voltage is placed on the grids of tubes V7, V8, and V9. This bias voltage cuts these tubes off, therefore the transmitter has no output.

The key-down condition shorts resistor R69, which removes the cutoff bias voltage from tubes V7 and V8. At the same time, the bias at V9 is reduced to an operating level.

RECEIVER

The receiver employs one RF amplifier, a fixed-tuned heterodyne oscillator and heterodyne mixer, a manually-tuned VFO, a VFO mixer, an IF amplifier, a crystal controlled product detector, and two audio amplifiers. In addition, there is a transistor-type bias switch with a manual RF Gain control.

RF Amplifier

The received signal from the antenna passes through the pi network and is amplified by RF amplifier tube V1. The plate load is a broad-band tank circuit. All received signals in the selected band of frequencies are coupled through capacitor C42 to Heterodyne Oscillator-Mixer tube V2. The amount of RF amplification is controlled by the RF Gain control. It controls the amount of cathode bias on RF amplifier tube V1. The RF Gain control also affects IF amplifier V4.

Heterodyne Oscillator-Mixer

The RF signal at the grid of heterodyne mixer tube V2A is mixed with a signal generated by heterodyne oscillator V2B. The Band switch selects the proper crystal and plate coil for the oscillator. The signal produced in the heterodyne oscillator is capacitively coupled to the heterodyne mixer within the tube. Here, all signals passed by the pi network and RF amplifier are mixed with the heterodyne oscillator signal. The output signal is coupled to the grid of the VFO mixer through T1, the bandpass coupler. This bandpass coupler passes desired signals in the range of frequencies from 5546 kHz to 5296 kHz.

Variable Frequency Oscillator-Mixer

The signal input to V3A at the VFO mixer grid is mixed with the signal from VFO tube V3B. Capacitor C53 tunes the VFO from 1900 kHz to 2150 kHz. The VFO signal is coupled through C56 to the cathode of the VFO mixer where the bandpass signals from the preceding stage are mixed with the signal from the VFO. The resultant signal is an IF of 3396 kHz. A highly selective crystal filter couples the output of the VFO mixer to the grid of the IF amplifier.

IF Amplifier-Product Detector And BFO

Amplifier V4 is a conventional IF stage which amplifies the 3396 kHz signal passed by the crystal filter. The amount of IF amplification is controlled by the RF Gain control, which controls the amount of cathode bias on V4. The RF Gain control also affects RF amplifier tube V1.

Coil T3, which is tuned to resonance by a small capacitor, serves as the plate load for IF amplifier V4. The signal from the plate of V4 is coupled through capacitor C73 to the grid of product detector stage V5A.

Tube V5B is a crystal-controlled BFO that produces a 3396.4 kHz signal. The BFO signal couples from the cathode of V5B to the cathode of V5A through capacitor C78. The product detector produces an audio signal equal to the

difference in frequency between the BFO and IF of the two input signals. The output of the product detector couples through the AF Gain control to audio amplifier V6A. The AF Gain control varies the volume of the output signal.

AF Gain Control

AF Gain control R61 is connected in series with DC blocking capacitor C75 and resistor R53 as an audio (signal) voltage divider which shunts plate load resistor R54. Turning AF Gain control R61 in a clockwise direction increases the proportion of the audio signal being coupled to audio amplifier V6A. The greater the signal input to the audio amplifier, the greater the volume of the output signal.

Audio Amplifier-Audio Power Amplifier

The cathode circuit of audio amplifier V6A is connected to a side-tone oscillator, neon lamp and capacitor C86. When the key is depressed, the sidetone oscillator provides an audio signal at the cathode of audio amplifier V6A. This is for monitoring purposes and allows you to monitor the message you are transmitting. The amplified signal from the plate of audio amplifier V6A is coupled through capacitor C85 to the grid of audio power amplifier V6B.

Audio power amplifier V6B couples through a transformer to either a speaker or headphones. The speaker is left connected at all times. When the headphones are plugged in, their high impedance causes the speaker to be effectively muted. For operation with headphones only, a shorted phono plug must be inserted in SPKR Jack.

Bias Switch

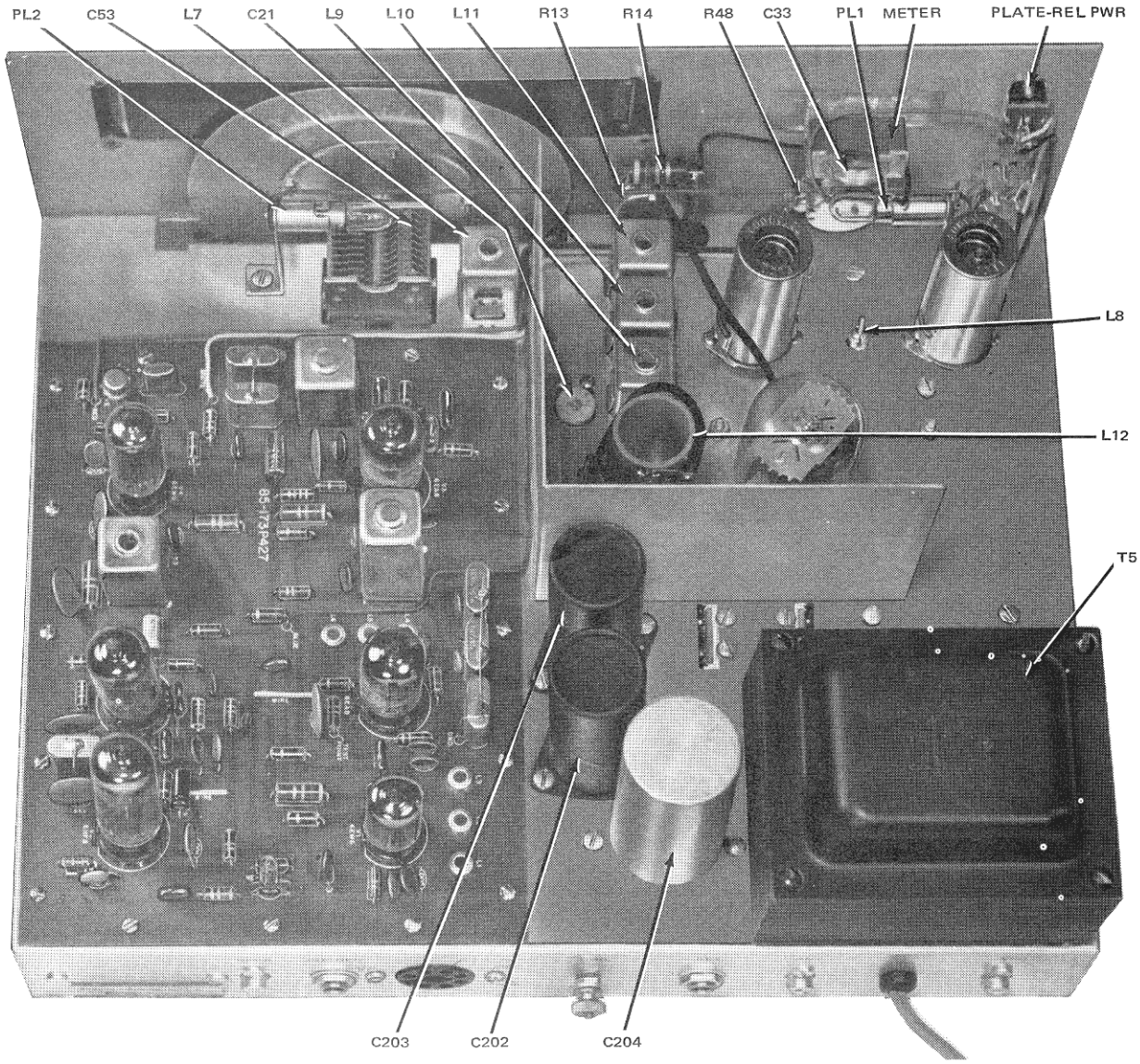
Transistor Q1 is a bias switch for receiver muting. When receiving, Q1 conducts and provides operating bias to the cathode of V1 and V4. Depressing the key causes the base-emitter junction of Q1 to become reverse biased and cut off. Because of this, the cathode voltage of V1 and V4 rises and cuts off the receiver RF and IF stages.

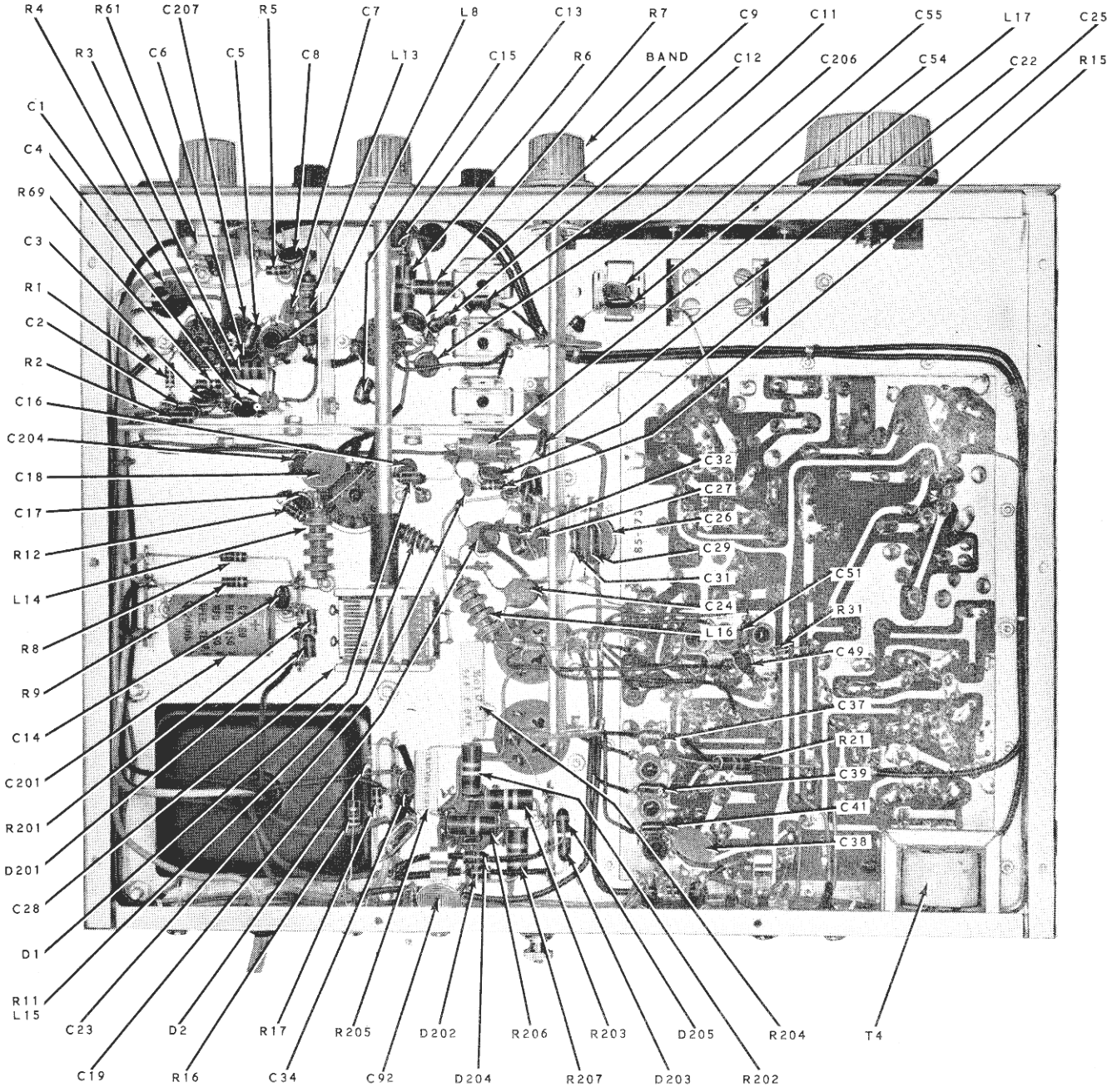
POWER SUPPLY

The power supply consists of a half-wave rectifier, a voltage doubler and a filament supply. The half-wave rectifier produces -120 V DC for the grid-block keying bias. This is filtered by capacitor C201 and resistor R201. The voltage doubler circuit produces 600 V DC for the final amplifier plate and 300 V DC which is further filtered and dropped to supply low voltage B+ to the receiver and transmitter sections. Filament voltage is supplied directly by a low voltage winding on power transformer T5.

The primary of the power transformer is protected by a circuit breaker and controlled by an On-Off switch operated with the AF Gain control.

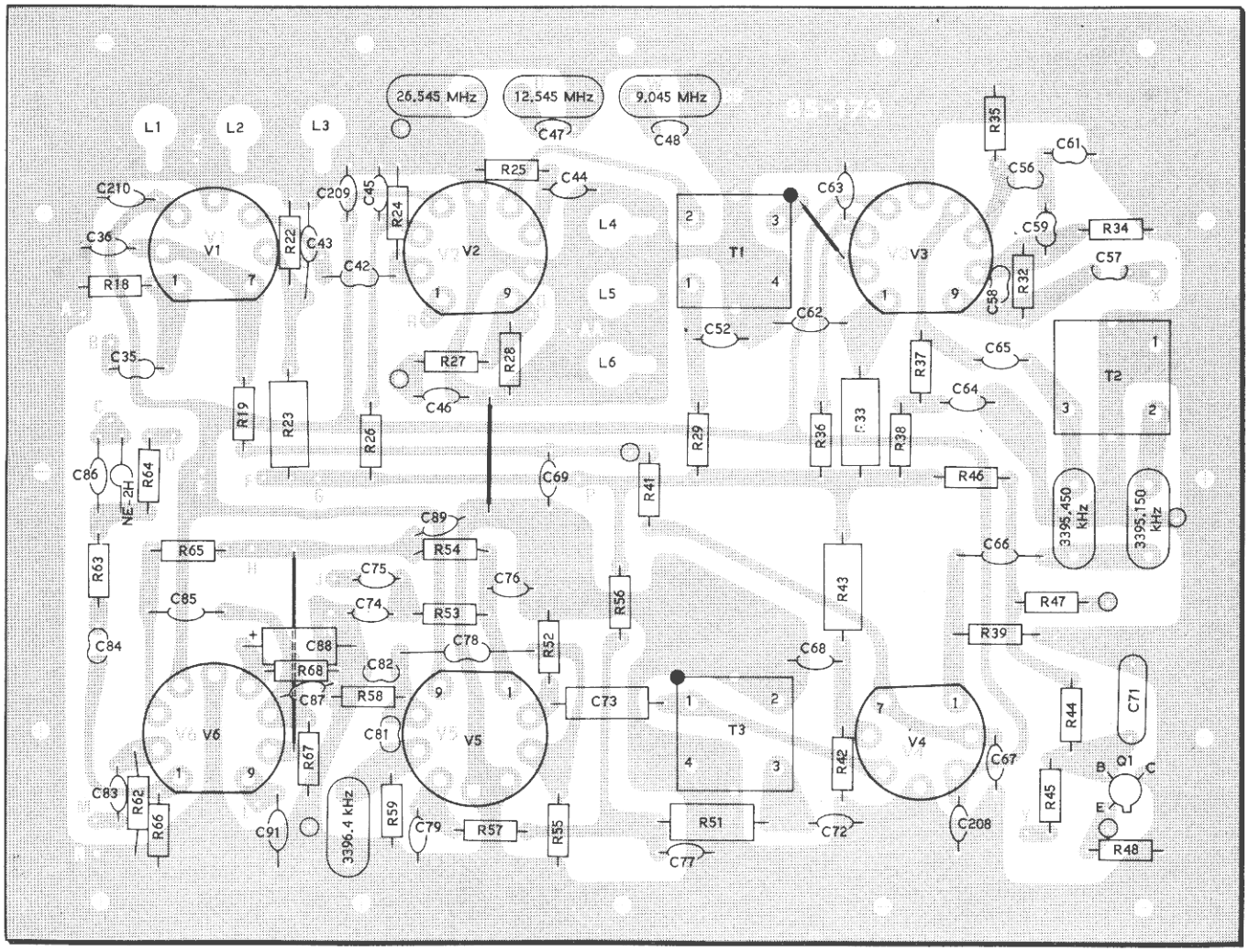
CHASSIS PHOTOGRAPHS




R4
R61
C207
R5
C7
L8
C13
R7
C9
C11
C55
L17
C25
R3
C6
C5
C8
L13
C15
R6
BAND
C12
C206
C54
C22
R15
C1
C4
R69
C3
R1
C2
R2
C16
C204
C18
C17
R12
L14
R8
R9
C14
C201
R201
D201
C28
D1
R11
L15
C23
C19
D2
R16
R17
C34
R205
C92
D202
D204
R206
R207
R203
D203
D205
R204
R202
T4
C32
C27
C26
C29
C31
C24
L16
C51
R31
C49
C37
R21
C39
C41
C38

CIRCUIT BOARD X-RAY VIEW

(VIEWED FROM FOIL SIDE)



REPLACEMENT PARTS PRICE LIST

To order parts, use the Parts Order Form furnished with this kit. If a Parts Order Form is not available, refer to Replacement Parts in the Kit Builders Guide.

PART No.	PRICE Each	DESCRIPTION
RESISTORS		
1/2 Watt		
1-41	.10	10 Ω
1-54	.10	15 Ω
1-66	.10	150 Ω
1-42	.10	270 Ω
1-6	.10	470 Ω
1-9	.10	1000 Ω
1-13	.10	2700 Ω
1-14	.10	3300 Ω
1-18	.10	5600 Ω
1-20	.10	10 KΩ
1-21	.10	15 KΩ
1-22	.10	22 KΩ
1-25	.10	47 KΩ
1-60	.10	68 KΩ
1-26	.10	100 KΩ
1-121	.10	120 KΩ
1-29	.10	220 KΩ
1-99	.15	240 KΩ
1-31	.10	330 KΩ
1-33	.10	470 KΩ
1-35	.10	1 megohm
1-36	.10	1.5 megohm
1 Watt		
1-2-1	.10	1000 Ω
1-5-1	.10	22 KΩ
1-7-1	.10	47 KΩ
1-8-1	.10	68 KΩ
2 Watt		
1-13-2	.20	220 Ω
1-17-2	.20	6800 Ω
1-11-2	.20	22 KΩ
1-18-2	.20	33 KΩ
1-10-2	.20	47 KΩ
1-24-2	.20	100 KΩ
Other Resistors		
3-19-5	.15	330 Ω 5 watt
3-9-7	.15	100 Ω 7 watt

PART No.	PRICE Each	DESCRIPTION
CAPACITORS		
Resin		
20-130	.15	12 pf
20-99	.15	22 pf
20-96	.15	36 pf
20-101	.15	47 pf
20-110	.15	75 pf
20-102	.15	100 pf
20-104	.15	130 pf
20-108	.20	200 pf
20-106	.30	390 pf
20-107	.40	680 pf
20-122	.30	1000 pf
27-47	.20	.1 μfd
Disc		
21-3	.10	10 pf
21-7	.10	33 pf
21-49	.20	68 pf 4 KV
21-139	.20	150 pf 2 KV or 4 KV
21-56	.10	470 pf
21-14	.10	.001 μfd
21-71	.15	.001 μfd 1.4 KV
21-36	.10	.002 μfd
21-57	.10	.005 μfd
21-35	.15	.005 μfd 1.6 KV
21-31	.10	.02 μfd
Electrolytic		
25-54	.40	10 μfd
25-206	.85	20-20 μfd
25-179	2.65	50-40-80-80 μfd
25-17	1.05	50 μfd
Other Capacitors		
21-29	.15	4.7 pf tubular
31-31	1.05	3-12 pf trimmer
26-113	1.55	54 pf variable
COILS		
40-79	.45	40-meter oscillator coil
40-360	.40	15-meter heterodyne oscillator coil
40-363	.40	15-meter RF coil
40-795	.40	80-meter RF coil
40-796	.40	40-meter RF coil
40-797	.40	40/80-meter heterodyne oscillator coil
40-798	1.10	80/40/15-meter final coil
40-799	.55	VFO shielded coil
40-801	.60	80-meter driver coil (shielded)

PART No.	PRICE Each	DESCRIPTION
Coils (cont'd.)		
40-802	.55	40-meter driver coil (shielded)
40-803	.55	15-meter driver coil (shielded)
40-800	.80	Crystal filter coil (shielded)
CHOKES		
45-30	.40	.5 mH RF choke
45-3	.30	1 mH RF choke
45-19	.40	Parasitic RF choke, wound on 47 Ω (yellow-violet-black)
TRANSFORMERS		
51-55	1.75	AF output
52-71	.65	IF
52-102	2.25	Bandpass coupler
54-179	10.25	Power
DIODES-TRANSISTOR		
56-26	.30	1N191 crystal diode
57-27	.60	Silicon diode
417-150	1.05	2N1274 transistor
TUBES		
411-26	1.20	12AX7
411-63	1.90	6CL6
411-124	1.50	6EA8
411-170	1.20	6EW6
411-171	2.00	6HF8
411-185	1.95	6GE5
CRYSTALS		
404-206	5.00	3396.4 kHz product detector
404-301	5.00	9.045 MHz
404-302	5.00	12.545 MHz
404-303	5.00	26.545 MHz
404-305	9.45	Matched set of crystals consisting of the following:
404-241		3395.150 kHz
404-242		3395.450 kHz
LAMPS		
412-1	.15	6 volt incandescent
412-34	.55	Neon

PART No.	PRICE Each	DESCRIPTION
CONTROLS-SWITCHES		
10-33	.35	200 Ω control (RF Gain)
11-78	1.70	15 KΩ control (Power-Level)
19-72	.95	500 KΩ control with switch (AF Gain and Off-On)
60-4	.20	SPDT slide switch (Rel-Pwr-Plate)
63-436	4.70	4-section band switch
65-10	.45	3 ampere circuit breaker
SOCKETS-JACKS-PLUGS		
434-2	.10	Octal tube socket
434-38	.20	Large crystal socket
434-42	.10	Phono socket
434-43	.20	9-pin, shielded tube socket
434-74	.15	Small crystal socket
434-79	.15	9-pin, circuit board type tube socket
434-90	.20	Miniature pilot lamp socket with bracket
434-112	.10	7-pin circuit board type tube socket
434-121	.20	12-pin, compactron tube socket
436-4	.35	Phone jack
438-3	.45	Phone plug
438-4	.10	Phono plug
431-10	.10	3-lug terminal strip
431-11	.10	5-lug terminal strip
431-12	.10	4-lug terminal strip
431-16	.10	2-lug terminal strip
431-55	.10	6-lug terminal strip
481-1	.10	Capacitor mounting wafer, 4-prong metal
481-4	.10	Capacitor mounting wafer, 3-prong fiber
206-54	.30	Tube shield
COAXIAL CABLE-WIRE-SLEEVING		
343-7	.05/ft	Coaxial cable
344-50	.05/ft	Black hookup wire
344-51	.05/ft	Brown hookup wire
344-52	.05/ft	Red hookup wire
344-54	.05/ft	Yellow hookup wire
344-55	.05/ft	Green hookup wire
344-56	.05/ft	Blue hookup wire
344-59	.05/ft	White hookup wire
340-3	.05/ft	Large bare wire
340-8	.05/ft	Small bare wire
346-4	.05/ft	Sleeving

PART No.	PRICE Each	DESCRIPTION
HARDWARE		
#3 Hardware		
250-49	.05	3-48 x 1/4" screw
254-7	.05	#3 lockwasher
252-1	.05	3-48 x 3/16" nut
#4 Hardware		
250-34	.05	4-40 x 1/2" screw
252-15	.05	4-40 x 3/16" nut
#6 Hardware		
250-138	.05	6-32 x 3/16" screw
250-56	.05	6-32 x 1/4" screw
250-116	.05	6-32 x 1/4" black screw
250-8	.05	#6 sheet metal screw
250-162	.05	6-32 x 1/2" screw
254-1	.05	#6 lockwasher
252-3	.05	6-32 x 1/4" nut
252-22	.05	6-32 speednut
259-1	.05	#6 solder lug
259-6	.05	#6 small solder lug
#8 Hardware		
250-16	.05	8-32 x 3/16"setscrew
250-92	.05	8-32 x 3/8" screw
253-9	.05	#8 small flat washer
253-45	.05	#8 large flat washer
254-2	.05	#8 lockwasher
252-4	.05	8-32 x 3/8" nut
252-28	.10	8-32 nut
259-24	.05	#8 wire lug
Other Hardware		
251-1	.05	6-32 spade bolt
252-7	.05	Control nut
253-10	.05	Control flat washer
254-4	.05	Control lockwasher
254-5	.05	Thin control lockwasher
259-10	.05	Control solder lug
455-9	.15	Bushing
259-20	.05	Terminal pin

PART No.	PRICE Each	DESCRIPTION
METAL PARTS		
90-358	2.80	Top cover
100-43	.25	Dial hub assembly
200-485-1	4.15	Chassis
203-479-1	1.00	Front panel
204-102	.10	Shield bracket
205-260	.90	Plate, chassis bottom
206-334	.30	Small shield plate
206-335	.45	Large shield plate
206-336	.90	RF shield
MISCELLANEOUS		
73-1	.10	3/8" rubber grommet
73-4	.10	5/16" rubber grommet
75-24	.10	Line cord strain relief
89-1	.35	Line cord
85-173-1	3.70	Circuit board
100-624	1.20	Dial drive assembly
407-121	3.10	Meter
464-29-5	1.15	Dial
453-39	.10	Shaft, 5-13/16"
462-122	.20	Gray knob with skirt and pointer
462-258	.30	Dark green knob
462-189	.60	2" gray knob
446-59	1.45	Escutcheon
346-25	1.05/ft	Black tubing
260-7	.05	IF transformer clip
261-9	.05	Rubber foot
489-1	.15	Sandpaper, #24 or #28
331-6	.15	Solder
490-5	.10	Nut starter
490-1	.10	Alignment tool
	2.00	Instruction Manual (See front cover for part number.)

The above prices apply only on purchases from the Heath Company where shipment is to a U.S.A. destination. Add 10% (minimum 25 cents) to the price when ordering from a Heathkit Electronic Center to cover local sales tax, postage and handling. Outside the U.S.A. parts and service are available from your local Heathkit source and will reflect additional transportation, taxes, duties and rates of exchange.

FACTORY REPAIR SERVICE

You can return your completed kit to the Heath Company Service Department to have it repaired for a minimum service fee. (Kits that have been modified will not be accepted for repair.) If you wish you can deliver your kit to a nearby Heathkit Electronic Center. These centers are listed in your Heathkit catalog.

To be eligible for replacement parts under the terms of the warranty, equipment returned for factory repair service, or delivered to a Heathkit Electronic Center, must be accompanied by the invoice or the sales slip, or a copy of either. If you sent the original invoice or sales slip, it will be returned to you.

If it is not convenient to deliver your kit to a Heathkit Electronic Center, please ship it to the factory at Benton Harbor, Michigan and follow the following shipping instructions:

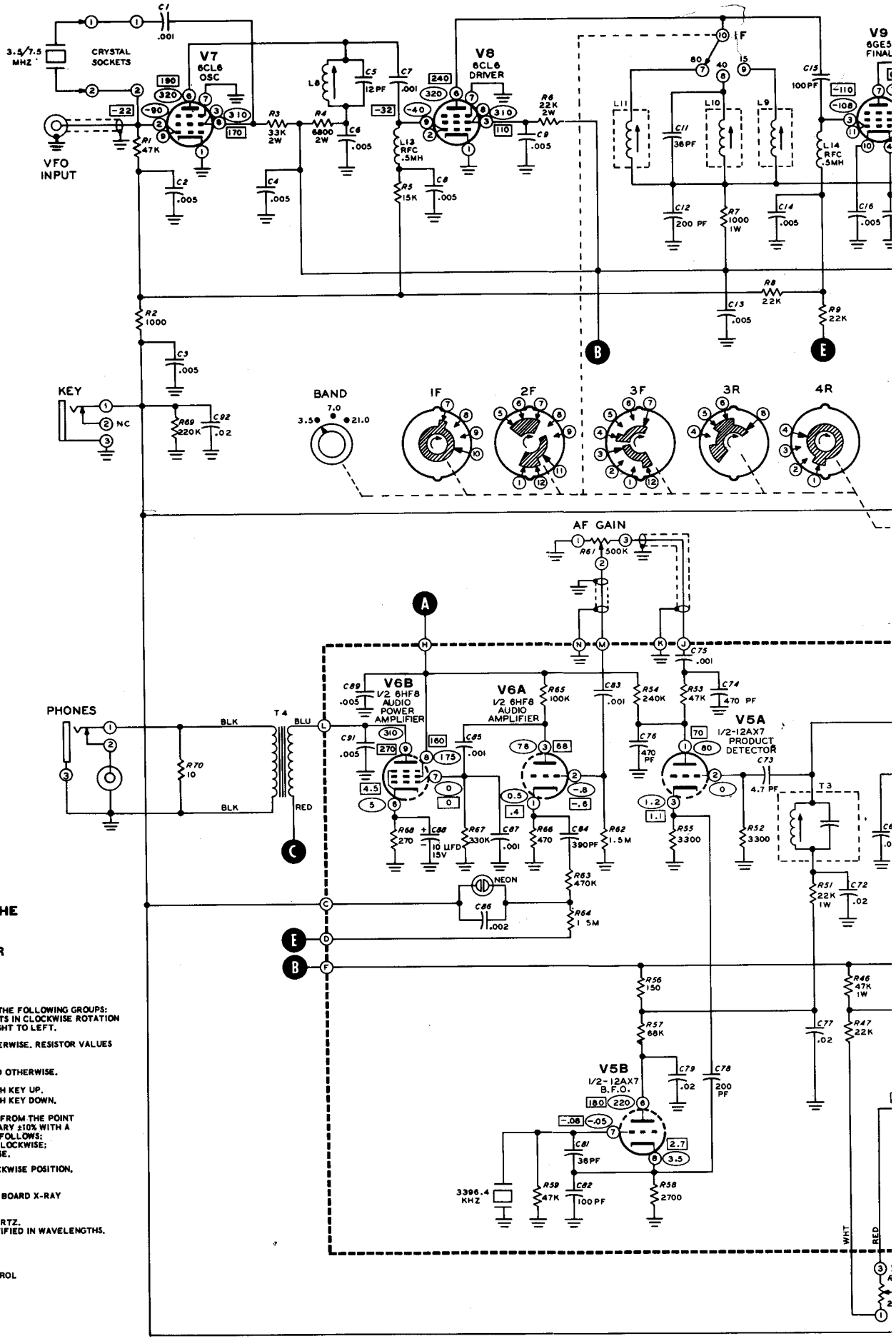
Prepare a letter in duplicate, containing the following information:

- Your name and return address.
- Date of purchase.
- A brief description of the difficulty.
- The invoice or sales slip, or a copy of either.
- Your authorization to ship the repaired unit back to you C.O.D. for the service and shipping charges, plus the cost of parts not covered by the warranty.

Attach the envelope containing one copy of this letter directly to the unit before packaging, so that we do not overlook this important information. Send the second copy of the letter by separate mail to Heath Company, Attention: Service Department, Benton Harbor, Michigan.

Check the equipment to see that all parts and screws are in place. (Do not include wooden cabinets when shipping receivers, tuners, amplifiers, or TV sets, as these are easily damaged in shipment.) Then, wrap the equipment in heavy paper. Place the equipment in a strong carton, and put at least THREE INCHES of resilient packing material (shredded paper, excelsior, etc.) on all sides, between the equipment and the carton. Seal the carton with gummed paper tape, and tie it with a strong cord. Ship it by prepaid express, United Parcel Service, or insured parcel post to:

Heath Company
Service Department
Benton Harbor, Michigan 49022

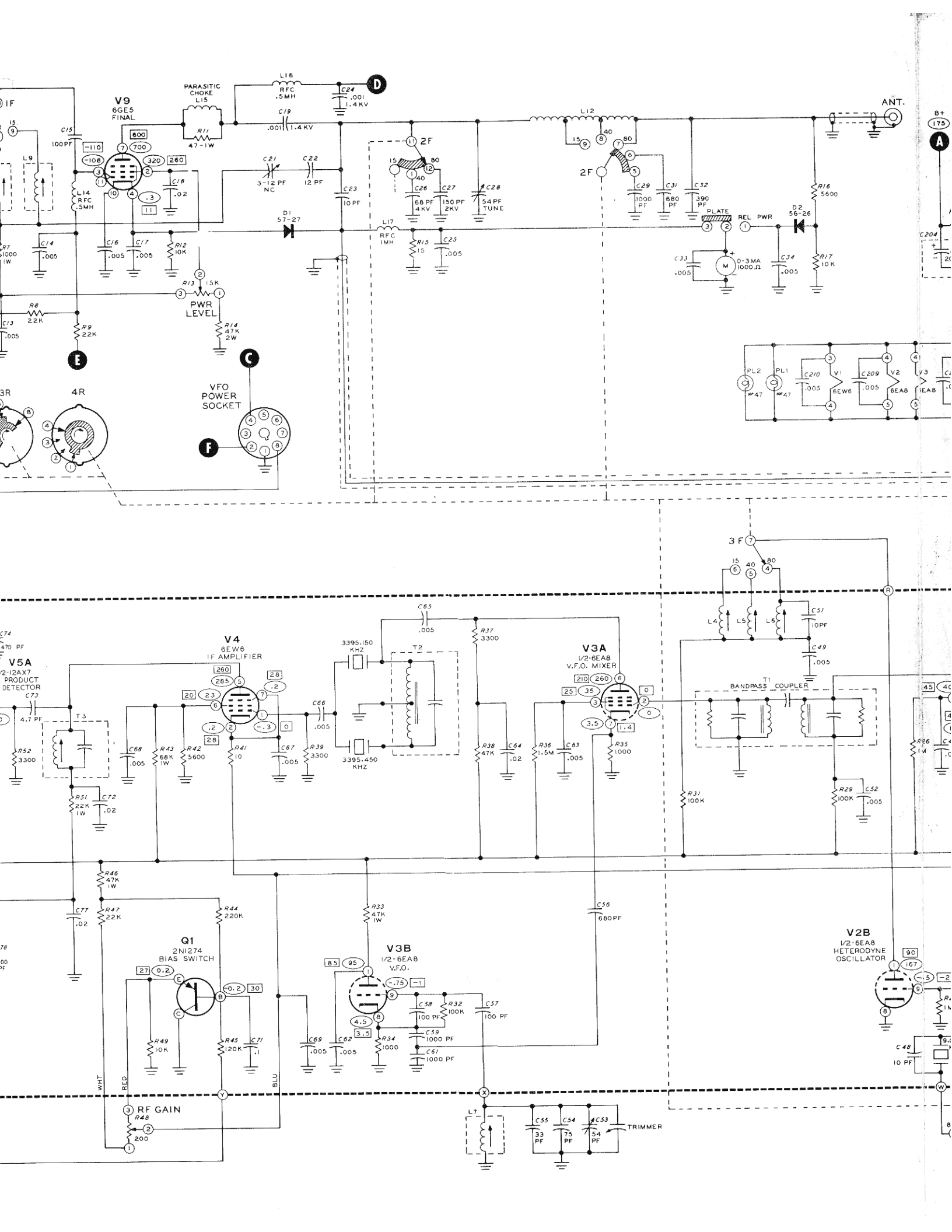


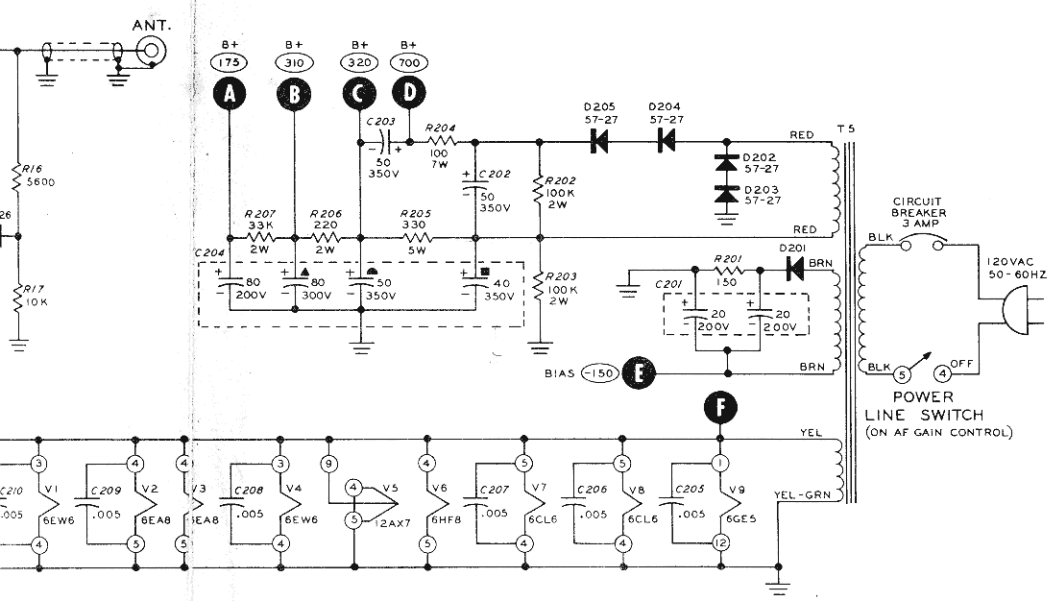
SCHEMATIC OF THE HEATHKIT® CW TRANSCEIVER MODEL HW-16

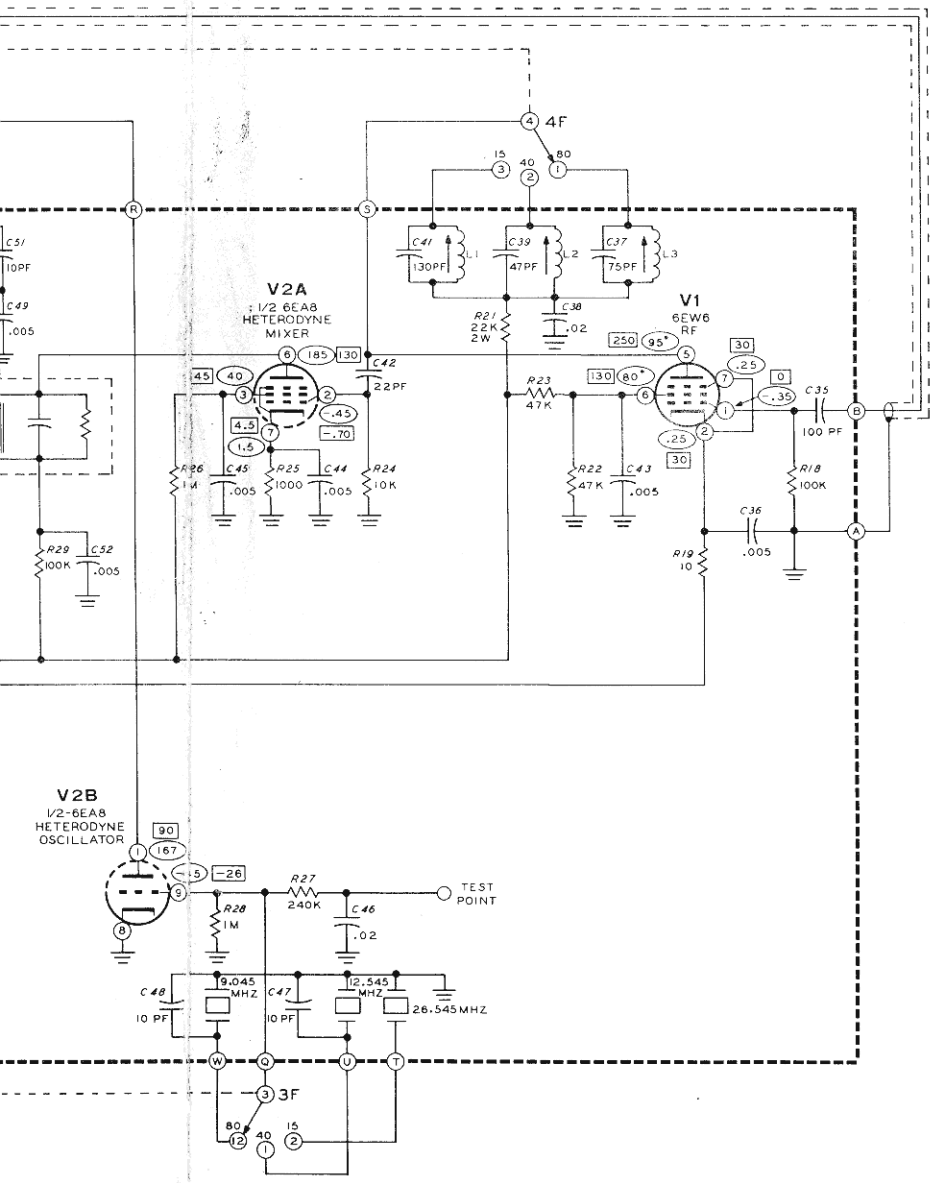
NOTES:

1. RESISTOR, CAPACITOR AND DIODE NUMBERS ARE IN THE FOLLOWING GROUPS: 0-99 PARTS OF TRANSMITTER AND RECEIVER CIRCUITS IN CLOCKWISE ROTATION 20'-299 PARTS OF POWER SUPPLY CIRCUIT FROM RIGHT TO LEFT.
2. ALL RESISTORS ARE 1/2 WATT UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (K = 1,000, MEG = 1,000,000).
3. ALL CAPACITOR VALUES ARE IN μfd UNLESS MARKED OTHERWISE.
4. ⬭ THIS SYMBOL INDICATES A DC VOLTAGE WITH KEY UP.
   ▭ THIS SYMBOL INDICATES A DC VOLTAGE WITH KEY DOWN.
5. ALL VOLTAGES TAKEN WITH AN 11 MEGOHM VTVM FROM THE POINT INDICATED TO CHASSIS GROUND. VOLTAGES MAY VARY ±10% WITH A LINE VOLTAGE OF 120 VAC AND CONTROLS SET AS FOLLOWS: RF GAIN - FULL CLOCKWISE; PWR LEVEL - FULL CLOCKWISE; BAND SWITCH - 3.5 MHz; AF GAIN - FULL CLOCKWISE.
6. ALL SWITCH WAFERS SHOWN IN FULL COUNTERCLOCKWISE POSITION, AS VIEWED FROM THE KNOB END OF THE SHAFT.
7. REFER TO THE CHASSIS PHOTOGRAPHS AND CIRCUIT BOARD X-RAY VIEWS FOR THE PHYSICAL LOCATION OF PARTS.
8. THE BANDSWITCH PANEL MARKINGS ARE IN MEGAHERTZ. THE BANDSWITCH SCHEMATIC CONTACTS ARE IDENTIFIED IN WAVELENGTHS.
   3.5 MHZ CORRESPONDS TO 80 METERS
   7 MHZ CORRESPONDS TO 40 METERS
   21 MHZ CORRESPONDS TO 15 METERS

* VOLTAGE VARIES WITH POSITION OF RF GAIN CONTROL


V9
6GE5
FINAL
PARASITIC CHOKE L15
L16 RFC .5MH
C24 .001 1.4KV
C19 .001 1.4KV
R11 47-1W
L12
ANT.
2F
C21 3-12 PF NC
C22 12 PF
C23 10 PF
C26 68 PF 4KV
C27 150 PF 2KV
C28 54 PF TUNE
D1 57-27
L17 RFC 1MH
R15 15
C25 .005
C29 1000 PF
C31 680 PF
C32 390 PF
PLATE
REL PWR
D2 56-26
R16 5600
C33 .005
0-3 MA 1000Ω
C34 .005
R17 10K
L14 RFC .5MH
C15 100PF
L9
C18 .02
C14 .005
C16 .005
C17 .005
R12 10K
R13 15K
PWR LEVEL
R14 47K 2W
R8 22K
R9 22K
C13 .005
VFO POWER SOCKET
PL2
PL1
C210 .005
V1 6EW6
C209 .005
V2 6EA8
V3 1EA8
3R
4R
3F
L4
L5
L6
C51 10PF
C49 .005
T1 BANDPASS COUPLER
V4
6EW6
IF AMPLIFIER
3395.150 KHZ
3395.450 KHZ
T2
C65 .005
R37 3300
V3A
1/2-6EA8
V.F.O. MIXER
V5A
1/2-12AX7
PRODUCT DETECTOR
C73 4.7 PF
T3
R52 3300
C68 .005
R43 68K 1W
R42 5600
R41 10
C67 .005
R39 3300
C66 .005
R38 47K
C64 .02
R36 1.5M
C63 .005
R35 1000
R31 100K
R29 100K
C52 .005
R51 22K 1W
C72 .02
R46 47K 1W
C77 .02
R47 22K
R44 220K
Q1
2N1274
BIAS SWITCH
R49 10K
R45 120K
C71 .1
R33 47K 1W
V3B
1/2-6EA8
V.F.O.
C58 100 PF
R32 100K
C57 100 PF
C59 1000 PF
R34 1000
C61 1000 PF
C62 .005
C69 .005
C56 680PF
V2B
1/2-6EA8
HETERODYNE OSCILLATOR
C48 10 PF
WHT
RED
BLU
RF GAIN
R48 200
L7
C55 33 PF
C54 75 PF
C53 54 PF
TRIMMER


ANT.
B+ 175
B+ 310
B+ 320
B+ 700
A
B
C
D
C203
50 350V
R204 100 7W
D205 57-27
D204 57-27
D202 57-27
D203 57-27
RED
T5
R202 100K 2W
C202 50 350V
R207 33K 2W
R206 220 2W
R205 330 5W
C204 80 200V 80 300V 50 350V 40 350V
R203 100K 2W
R201 150
D201
BRN
C201 20 200V 20 200V
BIAS -150
E
F
CIRCUIT BREAKER 3 AMP
BLK
120VAC 50-60HZ
OFF
POWER LINE SWITCH (ON AF GAIN CONTROL)
YEL
YEL-GRN
R16 5600
R17 10K
C210 .005
V1 6EW6
C209 .005
V2 6EA8
V3 1EA8
C208 .005
V4 6EW6
V5 12AX7
V6 6HF8
C207 .005
V7 6CL6
C206 .005
V8 6CL6
C205 .005
V9 6GE5


4F
15
40
80
C41 130PF
L1
C39 47PF
L2
C37 75PF
L3
C38 .02
R21 22K 2W
V2A
1/2 6EA8 HETERODYNE MIXER
V1
6EW6 RF
C42 22PF
R23 47K
C35 100 PF
R18 100K
C36 .005
R19 10
R26 1M
C45 .005
R25 1000
C44 .005
R24 10K
R22 47K
C43 .005
C51 10PF
C49 .005
R29 100K
C52 .005
V2B
1/2-6EA8 HETERODYNE OSCILLATOR
R27 240K
R28 1M
C46 .02
TEST POINT
C48 10 PF
9.045 MHZ
C47 10 PF
12.545 MHZ
26.545 MHZ
3F

TYPICAL COMPONENT TYPES

This chart is a guide to commonly used types of electronic components. The symbols and related illustrations should prove helpful in identifying most parts and reading the schematic diagrams.