



**Rockwell
International**

Collins instruction book

Collins Government Telecommunications Group

**Collins 75S-3B and 75S-3C
Receivers**

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**Collins Government
Telecommunications Group
Rockwell International**
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table of contents

	<i>Page</i>
Section 1 Installation	1-1
1.1 Unpacking	1-1
1.2 Cabling.....	1-1
1.2.1 External Connections.....	1-1
1.2.2 Cabling With 32S-3 Transmitter.....	1-2
1.2.3 Cabling With KWM-2/2A Transceiver.....	1-2
1.2.4 Cabling With Other Transmitters.....	1-4
1.3 Initial Checks	1-4
Section 2 Operation	2-1
2.1 Calibration.....	2-1
2.2 Single-Sideband Tuning.....	2-1
2.3 CW Tuning	2-2
2.4 AM Tuning	2-2
2.5 RTTY Tuning.....	2-2
2.6 Rejection Tuning	2-2
2.7 Use of S-Meter.....	2-2
2.8 Transceiver Operation With 32S-() Transmitter.....	2-2
2.9 Operation Outside Amateur Bands	2-3
Section 3 Principles of Operation.....	3-1
3.1 Block Diagram.....	3-1
3.2 RF and Mixer Circuits	3-1
3.3 Oscillator Circuits	3-1
3.3.1 Crystal Oscillators	3-1
3.3.2 Variable Oscillators	3-1
3.4 IF. and Detector Circuits.....	3-2
3.5 Q-Multiplier and Notch Filter.....	3-2
3.6 AGC and Control Circuits	3-2
3.7 Audio Circuits	3-2
3.8 Power Supply Circuits.....	3-4
Section 4 Service Instructions	4-1
4.1 General	4-1
4.2 Trouble Analysis.....	4-1
4.3 Voltage and Resistance Measurements	4-1
4.4 Signal Tracing	4-3
4.5 Alignment Procedure	4-3
4.5.1 455-Kilocycle IF. Alignment	4-4
4.5.2 Bandpass IF. Alignment.....	4-5

table of contents (cont)

	<i>Page</i>
4.5.3 RF Circuit Alignment	4-5
4.5.4 VFO Sideband Frequency Shift Adjustment.....	4-5
4.5.5 Crystal Calibrator Adjustment	4-5
4.5.6 VFO Dial Calibration.....	4-5
4.5.7 Tunable BFO Alignment	4-6
4.5.8 Notch Filter Alignment	4-6
4.5.9 IF. Gain Adjustment	4-6
4.5.10 S-Meter Zero Adjustment	4-6
4.5.11 Antenna Trimmers Adjustment	4-6
4.6 Installation of Optional Filters.....	4-6
4.7 Replacement of Dial Lamps	4-8
4.7.1 Dial Lamp Installation.....	4-8
Section 5 Specifications	5-1
5.1 Frequency Coverage	5-1
5.2 Equipment Characteristics.....	5-1
5.3 Tube, Fuse, Lamp, and Semiconductor Complement	5-1
5.4 Available Accessories	5-1
Section 6 Parts List	6-1
6.1 Introduction	6-1
6.2 Group Assembly Parts List	6-6
6.3 Numerical Index	6-31
6.4 Reference Designation Index	6-36
Section 7 Illustrations	7-1
Index	A-1

list of illustrations

<i>Figure</i>		<i>Page</i>
1-1	External Connections (C785-01-3).....	1-2
1-2	Station Interconnections (C785-02-5)	1-3
2-1	Operating Controls.....	2-1
2-2	Crystal Socket Locations (C290-09-P)	2-4
2-3	Preselector Calibration Curves (TP0-0691-018).....	2-5
3-1	Block Diagram (C785-17-4)	3-3
4-1	Location of Adjustments.....	4-4
4-2	Optional Filter Installation Diagram (C785-05-3).....	4-7
4-3	Dial Lamp Replacement.....	4-8
6-1	75S-3B/3C Receiver.....	6-6
6-2	Receiver Subassembly	6-9
6-3	Crystal Selection Group	6-26
7-1	75S-3B/3C Receiver, Schematic Diagram.....	7-3
7-2	Chassis Component Location Display (Bottom View)	7-11

list of tables

<i>Table</i>		<i>Page</i>
1-1	Equipment Furnished With 75S-3B/C.....	1-1
2-1	Approximate Limits of Frequency Change Before 32S-() Retuning is Required.....	2-3
2-2	Crystal Frequencies and Operating Bands	2-4
4-1	Voltage and Resistance Measurements Taken With 11-Megohm Input VTVM.....	4-2
4-2	Signal Levels	4-3
5-1	Tubes, Fuses, Lamps, and Semiconductors.....	5-2
5-2	Available Accessories	5-2

SERVICE BULLETIN LIST

SERVICE BULLETIN NO	SUBJECT	MANUAL REVISION NUMBER	MANUAL REVISION DATE
1	Improved Performance	6th Ed	15 Jan 74
2	Second Mixer Plate Circuit Improvement	6th Ed	15 Jan 74
3	Connect 75S-3B to 75S-3C	NA	NA

NOTE

For service information on the 75S-3B and 75S-3C Receivers, write or call Amateur Radio Marketing, Collins Radio Group, Rockwell International, Cedar Rapids, Iowa 52406; 319/395-4507.

75S-3B and 75S-3C Receivers. The power cable plugs into socket J13. The ANT jack is a nominal 50-ohm antenna input. The 4 Ω AUDIO jack is for connection of a speaker.



1.1 Unpacking.

Lift the receiver out of the carton and packing material. Examine for visible damage. If the receiver has been damaged in shipment, save the box and packing material, and notify the transportation company. Complete and mail the equipment guarantee card. Check tubes and crystals for proper seating in sockets. Check tuning controls and switches for freedom of action.

The 75S-3B/C Receiver power transformer can be operated on either 115 or 230 volts ac. Before connecting the receiver to the ac line, see that the transformer connections are correct for the line voltage available. Refer to the receiver schematic, figure 7-1. DO NOT connect the ac power cord to the ac line until power plug P6 has been plugged into J13. To avoid damage to the receiver, make sure the key on P6 is properly aligned with the keyway on J13.

1.2 Cabling.

1.2.1 EXTERNAL CONNECTIONS. Figure 1-1 shows the location of jacks for external connections to the

To connect the receiver for mute operation, a means of supplying a ground while receiving must be applied

TABLE 1-1. EQUIPMENT FURNISHED WITH 75S-3B/C

QUANTITY	DESCRIPTION	FUNCTION	PART NUMBER
2	Phono connectors	External connections	361-0062-00
1	Fuse, 1-ampere slow blow	Spare	264-4280-00
1	Power cord	Ac power	544-3121-00
1	Power plug adapter	Ac power	368-0138-00
1	Instruction book	75S-3B/C instructions	523-0756533
1	Cable marker card	Cable identification	280-2946-00
1	No. 4 Bristol wrench	Accessory tool	024-2900-00
1	No. 6 Bristol wrench	Accessory tool	024-9730-00
1	No. 6 Bristol wrench	Accessory tool	024-0167-00
1	No. 8 Bristol wrench	Accessory tool	024-0019-00
1	No. 10 Bristol wrench	Accessory tool	024-9710-00

SECTION 1
Installation

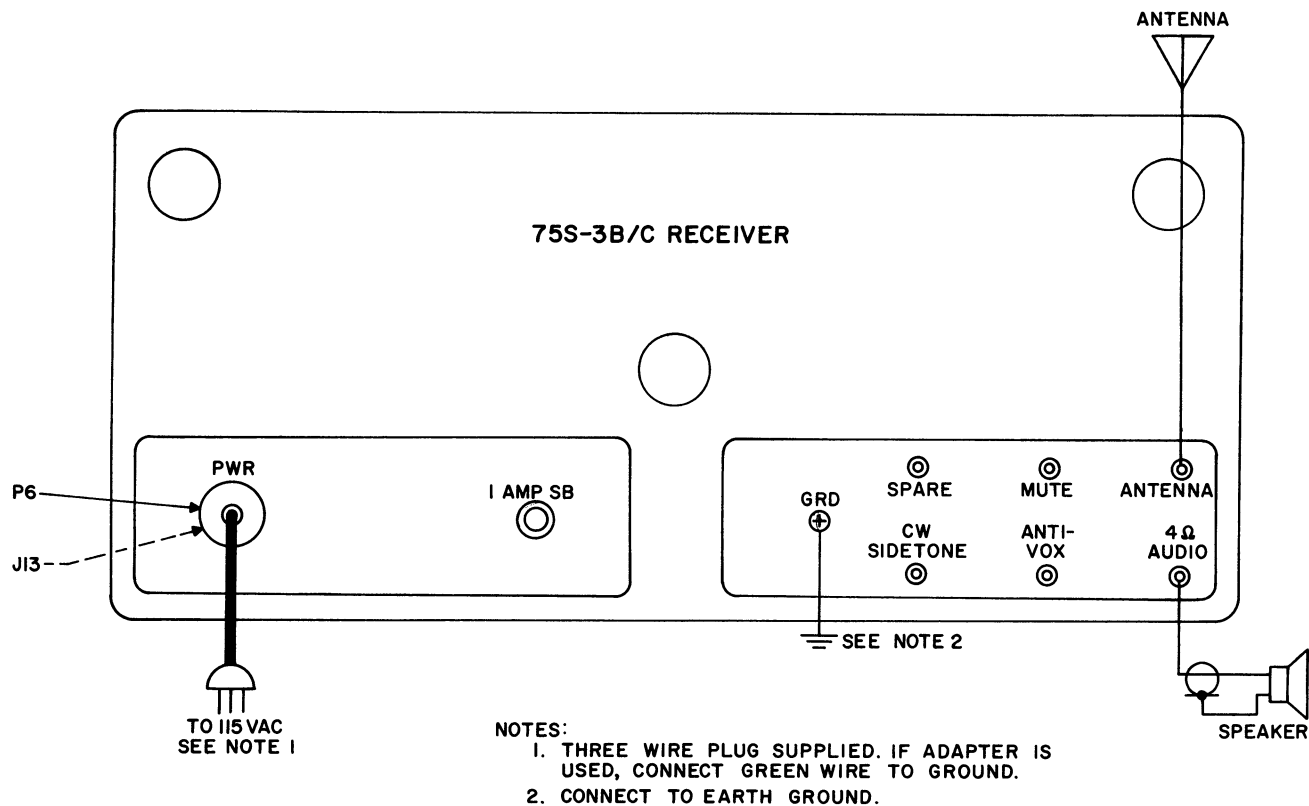


Figure 1-1. External Connections

to the MUTE jack. Opening this circuit mutes the receiver. A set of normally closed contacts on a relay which is keyed with the transmitter may be used for this purpose. To use this circuit, the receiver must be operated in the STBY position.

The CW SIDETONE jack is a high-impedance, low-level audio input (0.2 volt rms, typical) to the receiver. Audio from a sidetone oscillator may be applied to this jack to provide a CW monitoring circuit through the receiver audio system.

The ANTI-VOX jack is a 500-ohm audio output from the receiver. At normal speaker volume levels, 5 to 10 volts rms is provided at this output. This voltage is normally applied to antivox circuits in an associated transmitter.

The PHONES jack on the front panel is connected through a resistive network to a 500-ohm tap on the output transformer. Therefore, best results will be obtained if headphones used are 500 ohms or higher impedance. The speaker is silenced when headphones are plugged in.

1.2.2 CABLING WITH 32S-3 TRANSMITTER. Figure 1-2 shows a complete station interconnection for a 75S-3B/C Receiver, 32S-3 Transmitter, and 312B-4 Station Control. The RG-58C/U cables indicated are

slightly larger in diameter and two inches shorter than the audio and control cables. If the 312B-4 is not used, connect a 4-ohm speaker, such as the 312B-3, to 4 Ω AUDIO jack on receiver. Connect ANTI-VOX jack on receiver directly to ANTI-VOX jack on transmitter. Omit PHONE PATCH and PTT connections.

To connect the 75S-3B/C and the 32S-3 for transceiver operation, use the patch cables furnished with the transmitter, and connect as follows:

a. Connect the 32S-3 and 75S-3B/C as shown in figure 1-2.

b. On the top plate of the 32S-3 slug rack, remove P1 from XMTR XTAL OSC jack J7, and plug it into 32S-3 RCVR XTAL OSC jack J6. Remove the 100-ohm dummy load plug from the 75S-3B/C XTAL OSC OUTPUT jack, and plug it into the XMTR XTAL OSC jack J7 in the 32S-3.

1.2.3 CABLING WITH KWM-2/2A TRANSCEIVER. The 75S-3B/C may be used with a KWM-2/2A to provide separate transmit and receive frequencies. Connect the patch cables as follows:

a. Using an RG-58C/U patch cable, connect REC ANT jack on KWM-2/2A to ANT jack on 75S-3B/C.

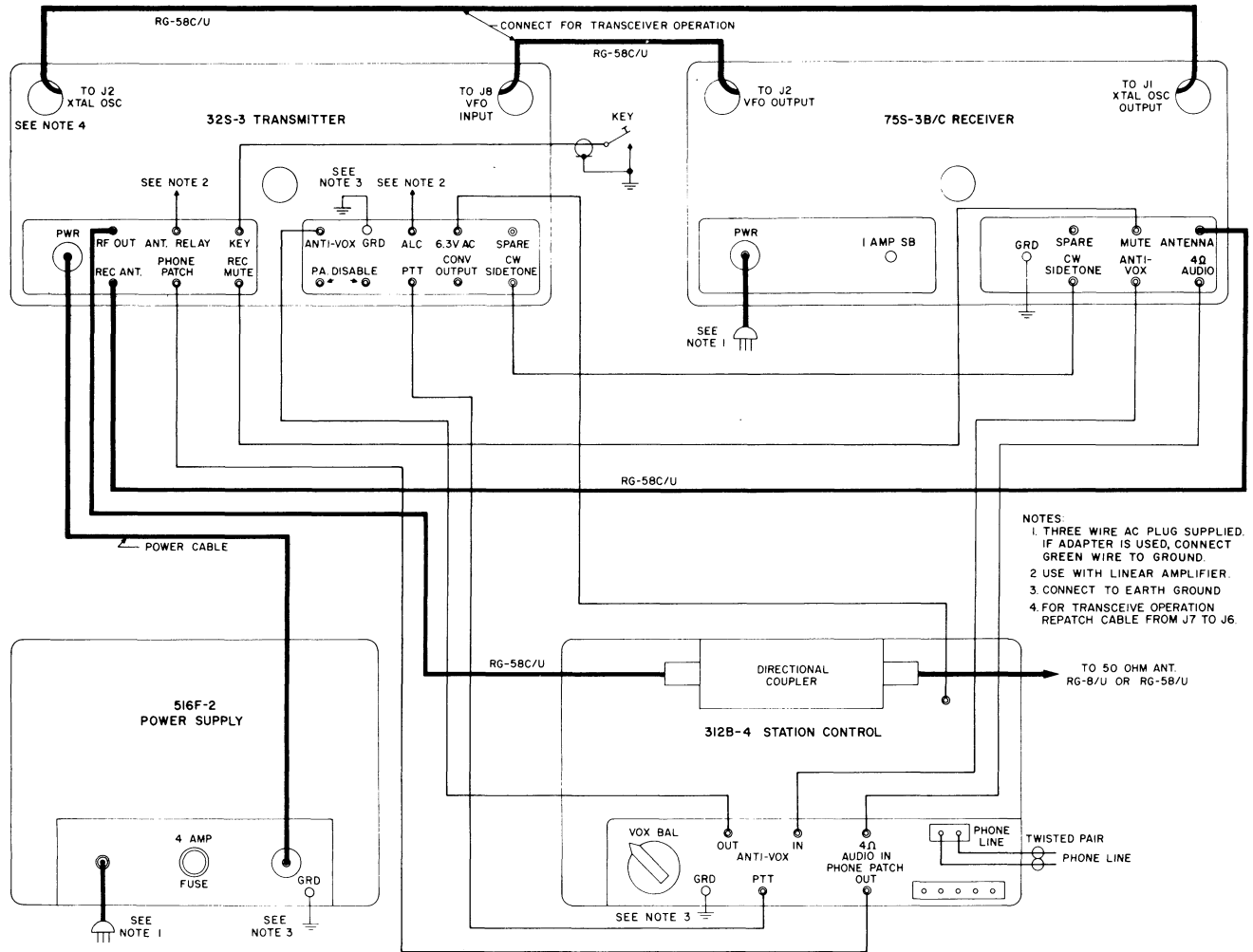


Figure 1-2. Station Interconnections

SECTION 1 Installation

b. Connect the 500 Ω jack on the KWM-2/2A to the ANTI-VOX jack on the 75S-3B/C. If a 312B-4 or 312B-5 is used, connect the KWM-2/2A 500 Ω jack to ANTI-VOX IN and the 75S-3B/C ANTI-VOX jack to ANTI-VOX OUT on the 312B-4/5.

c. Connect the REC MUTE jack J20 on the KWM-2/2A to the MUTE jack on the 75S-3B/C.

The station speaker may be plugged into either the 4 Ω jack on the KWM-2/2A or the 4 Ω AUDIO jack on the 75S-3B/C. For normal mute operation, set the 75S-3B/C function switch to STBY. Receiver output from the KWM-2/2A is turned off by setting AF GAIN to zero. For transmit and receive operation on the same frequency, reduce the 75S-3B/C AF GAIN to zero, and operate the KWM-2/2A in a normal manner.

1.2.4 CABLING WITH OTHER TRANSMITTERS.

a. To provide receiver muting when using 75S-3B/C with a KWS-1, connect a cable from pins 5, 6 on J102

(receiver disable) in the transmitter to MUTE jack on the receiver. Connect a cable from receiver ANTI-VOX jack to pin 7 on J102 (500-ohm audio) in the KWS-1. Connect cable shield to ground.

b. To use the 75S-3B/C with the 32V-3, connect a cable from the receiver MUTE jack to receiver disabling pins 24 and 25 on the transmitter.

c. To use the 75S-3B/C with other makes of transmitters, connect muting, CW sidetone, and antivox provisions in the receiver as applicable. The requirements for use are outlined in paragraph 1.2.1.

1.3 Initial Checks.

Lift the top cover, and make sure the dummy load (see figure 4-1) is plugged into the XTALOSC OUTPUT jack unless the receiver is connected for transceiver operation. Recheck the interconnections to make sure the patch cables are plugged into the appropriate jacks. Be sure that RG-58C/U cables, rather than the audio and control cables, have been used for all rf applications.

section 2

operation

2.1 Calibration.

- a. After making external connections, set controls as shown in figure 2-1, except set function switch (1) to CAL.
- b. Set BAND switch (11) to desired frequency range. If receiver is 75S-3C, set crystal board selector (located directly above BAND switch) so desired set of bands appears in window.
- c. Set dial to 0, 100, or 200 with tuning knob (3) and BFO knob (13) fully counterclockwise until a click is heard.
- d. Adjust PRESELECTOR (2) for maximum signal or noise output.
- e. Tune back and forth near 0, 100, or 200 until calibrate signal is at zero beat.
- f. Adjust zero set knob (4) until dial is calibrated.

NOTE

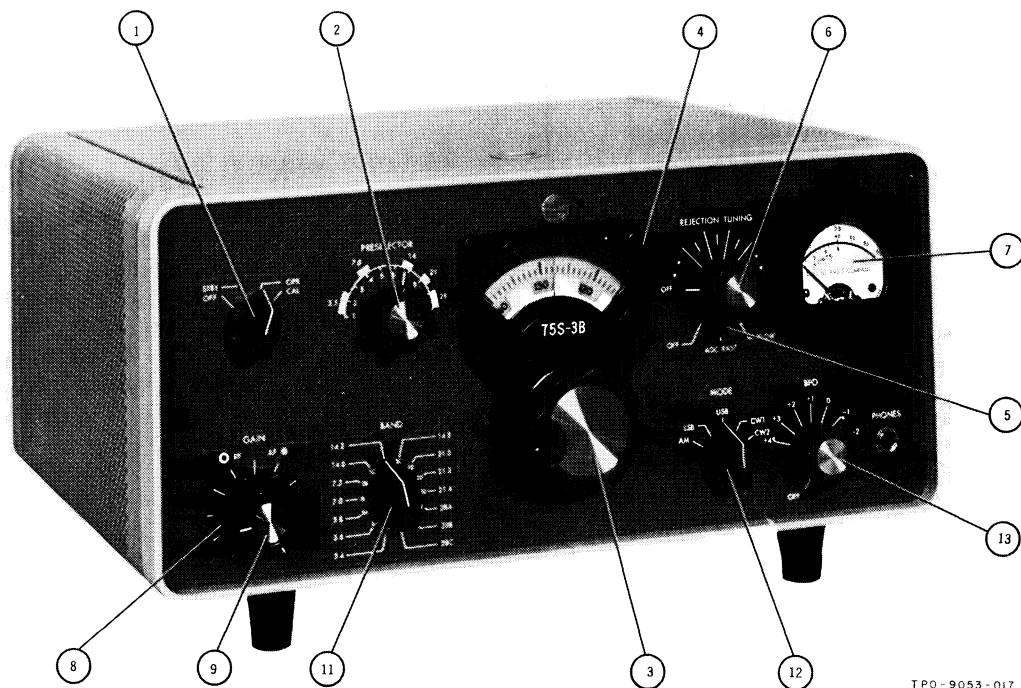
Response from the 100-kc calibrator will be heard at approximately 55 and 155 on the dial

due to the signal entering the bandpass intermediate frequency. These are to be ignored.

2.2 Single-Sideband Tuning.

For SSB operation, set controls as follows (refer to figure 2-1 for location of controls):

- a. OFF-STBY-OPR-CAL (function) switch (1) to OPR.
- b. AGC control (5) to SLOW.
- c. BFO knob (13) fully counterclockwise until a click is heard.
- d. MODE switch (12) to desired sideband.
- e. BAND switch (11) to desired frequency band.
- f. RF GAIN control (8) fully clockwise and AF GAIN (9) to the 12 o'clock position.
- g. PRESELECTOR (2) for maximum signal or noise output.
- h. Tune in signal and adjust AF GAIN (9) for desired audio output level.



TPO-9053-017

Figure 2-1. Operating Controls

SECTION 2 Operation

When listening to strong signals, a reduction in background noise under no signal conditions may be obtained by rotating RF GAIN control (8) counterclockwise, away from the maximum position. As this is done, S-meter (7) static reading will shift up scale. At proper gain control setting, meter will kick about one or two S-units on peaks. For example, if the weakest of the desired signals is peaking at S-9, set gain control so that static meter reading is S-7 to S-8. This retains accurate meter readings. To read frequency, add the dial setting to the BAND switch setting. For example, if the BAND switch is set to 3.8 and the dial is set to 5, the frequency is 3.805 mc. If the BAND switch is set to 3.8 and the dial to 170, the frequency is 3.970 mc. Approximately ten turns of the main tuning knob are required to cover each 200-kc range.

2.3 CW Tuning.

a. Set the controls as shown in paragraph 2.2, except set the MODE switch to USB and the AGC control to SLOW (for normal CW work) or OFF (for break-in operation).

b. Center the desired signal in the receiver passband, and then switch to the CW1 or CW2 mode (depending on the optional filter desired) to reduce interference.

c. Rotate the BFO knob clockwise to energize the tunable bfo, and set the bfo to give the most pleasing beat note. The beat note will be the same in both the USB and CW modes.

d. If the AGC is turned off, decrease the RF GAIN control setting to prevent receiver overloading, and adjust the AF GAIN control to provide the desired audio level. In general, it is best to set the RF GAIN control at a point just below that which causes signals to overload the receiver. This provides optimum sensitivity.

e. Signal hunting is best done in the USB mode, and the sharp CW modes are used for reducing interference once the desired signal is found. The USB mode is also useful for net operation.

2.4 AM Tuning.

a. Set controls as outlined in paragraph 2.2.

b. Set MODE switch to AM.

c. Set AGC switch to FAST.

d. Tune in signal, and adjust AF GAIN for desired audio output level.

If desired, SSB methods may be used for AM reception. Set MODE switch to either USB or LSB position; use tuning procedure for a single-sideband signal. Once the desired signal is tuned in, switching to the opposite sideband may yield a more readable signal. This method of reception is useful under conditions of severe interference or extreme fading.

2.5 RTTY Tuning.

This type of operation requires an external RTTY converter and printer. Tune receiver as follows:

a. Set controls for SSB reception as outlined in paragraph 2.2 with MODE switch in USB position.

b. Turn on tunable bfo by rotating BFO knob (13) clockwise.

c. Set the pointer on the BFO tuning knob at the dot near -1 on the calibrated scale.

d. Tune the receiver for maximum S-meter reading on the desired RTTY signal.

e. Fine adjustment of the BFO tuning knob then will produce 2125-cps and 2975-cps mark and space signals at the receiver audio output. To reverse the mark and space signals, reset the BFO tuning knob to the dot near +4 on the calibrated scale.

2.6 Rejection Tuning.

An interfering heterodyne or CW signal may be reduced in level or eliminated by operation of the REJECTION TUNING knob (6). The off position for this control is at the end of extreme counterclockwise rotation. The on-off switch is provided with a positive stop rather than a detent. Do not force the knob. Clockwise rotation of the knob from the off position moves the rejection notch across the receiver passband. It is recommended that the operator familiarize himself with the operation of this control by tuning the notch across the signal from the crystal calibrator.

When the receiver is initially placed in operation, it may be necessary to touch up the adjustment of R77. Refer to paragraph 4.5.8.

2.7 Use of S-Meter.

The S-meter is intended primarily to indicate relative rather than absolute signal strength. A nominal meter reading of S-9 is obtained with an input signal of 100 microvolts on the antenna. The threshold of agc operation is set at the factory to a nominal value of 2 microvolts. Due to normal tolerances in receiver operation, agc threshold varies slightly from band to band causing correspondingly slight changes in the number of db represented by each S-unit. The db scale is calibrated with 1 microvolt as a reference; therefore, an S-9 signal of 100 microvolts represents a 40-db increase over the reference signal level. Since agc is not applied to very weak signals, S-zero is arbitrarily established at 10 db above 1 microvolt. A figure of 4 db can be taken as an average for one S-unit.

2.8 Transceiver Operation with 32S-() Transmitter.

a. Make sure patch cables are connected as outlined in paragraph 1.2.2.

b. Set FREQ CONTROL on 32S-() to REC VFO position.

c. Set OFF-STBY-OPR-CAL switch on 75S-3B/C to STBY position.

d. Set both BAND selectors to the same desired band and both MODE switches to the same position (either USB, LSB, or CW).

e. Tune both receiver and transmitter as in normal operation. Both transmit and receive functions operate from the receiver vfo and the receiver hf crystal oscillator; the transmitter vfo and the transmitter hf crystal oscillator are not used in transceiver operation. Switching the transmitter FREQ CONTROL back to TRANS VFO position will allow separate operation of the two units within the same 200-kc band.

NOTE

Do not attempt operation in transceiver service with any other receiver not having the same frequency mixing scheme.

NOTE

When operating cw in the transceiver mode, the transmitted signal will be approximately 1.3 kc away from the received signal. It is recommended that independent control of the transmitter and the receiver be used when working cw.



When operating a 75S-3B/C with a 32S-() in transceiver service on an amateur band, DO NOT operate the transmitter while the receiver is tuned outside the band limits; the transmitted signal will be outside the amateur band. This is also true for the phone segments of the amateur bands.

There are 14 positions to the BAND switch divided into three A, two B, and three C, D, and E positions. These correspond to 14 crystals in the 75S-3B and to 28 crystals in the 75S-3C. Through the use of an extra switch, 2 crystals are available at each position of the 75S-3C BAND switch.

In transceiver operation, the vfo and the crystal oscillator in the 75S-3B/C determine both the receiver and the transmitter frequency; the 32S-() vfo and crystal oscillator are disabled. However, in order for the tuned circuits of the transmitter to resonate at the desired frequency, the transmitter BAND switch must be set to the same letter as the receiver BAND switch. For example, if the 75S-3B/C is set to band 2D, the 32S-3 can be set to 1D, 2D, or 3D.

If operation on different 200-kc bands is desired (that is, receive on one 200-kc band and transmit on another), remove the transceiver patch cables and operate the units as in normal independent operation.

If transmitted frequency is changed by any great amount, be sure to redip the PA plate current and check the loading. This will be most important on the 80- and 40-meter bands. Refer to table 2-1.

NOTE

When working foreign stations in the 14-mc band with a 75S-3B and a 32S-3 connected for transceive operation, a crystal (8627.500 kc, Collins part number 290-9179-00) permitting operation between 14.1 and 14.3 mc can be used in place of the 14.0- to 14.2-mc or 14.2- to 14.4-mc crystal supplied with the 75S-3B. However, the 32S-3 FREQ CONTROL switch must be set to TRANS VFO. This enables the 32S-3 to be operated between 14.2 and 14.3 mc (between 100 and 200 on the 32S-3 vfo dial).

f. To restore both units to normal operation, remove the two patch cables connecting oscillator signals, replace P1 in J7 on the transmitter slug rack (under top cover), and replace the 100-ohm load plug in the receiver XTAL OSC OUTPUT jack (see figure 4-1).

2.9 Operation Outside Amateur Bands.

Additional 10-meter band coverage or coverage outside the amateur bands may be obtained by plugging an appropriate crystal into the crystal mounting board. Two extra sockets are provided in the mounting board for this purpose. The total 3.4- to 30.0-megacycle coverage available is divided into five segments designated A, B, C, D, and E. The frequency range of

TABLE 2-1. APPROXIMATE LIMITS OF FREQUENCY CHANGE BEFORE 32S-() RETUNING IS REQUIRED

	BANDS (mc)				
	3.4-4	7-7.4	14-14.4	21-21.6	28-30
Approximate limits of frequency change before retuning is required.	15 kc	30 kc	50 kc	75 kc	100 kc

SECTION 2
Operation

each of these segments is listed in the total coverage column of table 2-2. The letter portions of the crystal socket locations shown in figure 2-2 indicate which sockets may be used for crystals to cover a 200-kc band within a specific total coverage segment. For example, crystals for extended 10-meter coverage must be plugged into sockets marked E.

NOTE

The second harmonics of the VFO and the variable intermediate frequency both fall in the 5.0- to 6.5-mc range. During reception in this range, these harmonics will cause spurious responses. If the 75S-3B or the 75S-3C is to be used in transceiver operation with a 32S-1 or 32S-3, this frequency range should be avoided. Some of this harmonic energy will pass through the transmitter tuned circuits and become spurious emissions.

The proper crystal for coverage of a specific 200-kc band may be selected as follows:

a. If the lower edge of the desired band is 11.8 mc or less, the required crystal frequency is equal to the lower edge of the desired band plus 3.155 mc. For example, if the desired band is 4.0 to 4.2 mc, the required crystal frequency is 7.155 mc.

b. If the lower edge of the desired band is 12.0 mc or higher, the required crystal frequency is equal to half the sum of the desired lower band edge and 3.155 mc. For example, if the desired band is 14.4 to 14.6

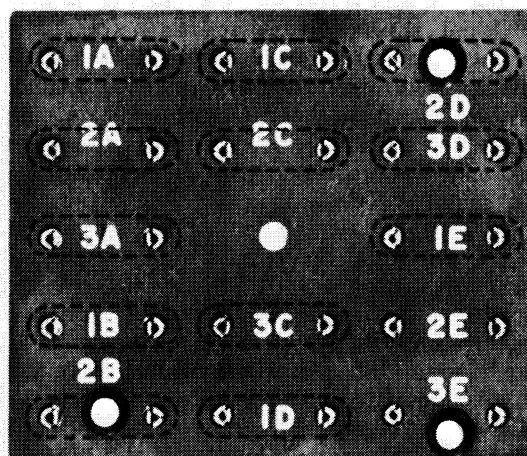


Figure 2-2. Crystal Socket Locations

mc, the required crystal frequency is 8.7775 mc. Extra crystals available are listed in section 6, parts list.

Approximate settings for the PRESELECTOR are shown in figure 2-3. For example, if coverage from 10.0 to 10.2 mc is desired, plug the appropriate crystal into a socket marked C, turn the BAND switch to that position, and set the PRESELECTOR to approximately 3.2 on the logging scale. Peak the PRESELECTOR tuning as in normal operation. The ANT, RF, and OSC trimmer capacitors (those marked C in

TABLE 2-2. CRYSTAL FREQUENCIES AND OPERATING BANDS

BAND SWITCH POSITION	FREQUENCY BAND	CRYSTAL SUPPLIED	CRYSTAL SOCKET CONNECTED	TOTAL COVERAGE
1A - 3.4 2A - 3.6 3A - 3.8	3.4 - 3.6 mc 3.6 - 3.8 mc 3.8 - 4.0 mc	6.555 mc 6.755 mc 6.955 mc	1A 2A 3A	A 3.4 - 5.0 mc
1B - 7.0 2B - 7.2	7.0 - 7.2 mc 7.2 - 7.4 mc	10.155 mc 10.355 mc	1B 2B	B 6.5 - 9.5 mc
1C - 14.0 2C - 14.2 3C - 14.8	14.0 - 14.2 mc 14.2 - 14.4 mc 14.8 - 15.0 mc	8.5775 mc 8.6775 mc 8.9775 mc	1C 2C 3C	C 9.5 - 15.0 mc
1D - 21.0 2D - 21.2 3D - 21.4	21.0 - 21.2 mc 21.2 - 21.4 mc 21.4 - 21.6 mc	12.0775 mc 12.1775 mc 12.2775 mc	1D 2D 3D	D 15.0 - 22.0 mc
1E - 28A 2E - 28B 3E - 28C	28.5 - 28.7 mc As selected As selected	15.8275 mc Not supplied Not supplied	1E 2E 3E	E 22.0 - 30.0 mc

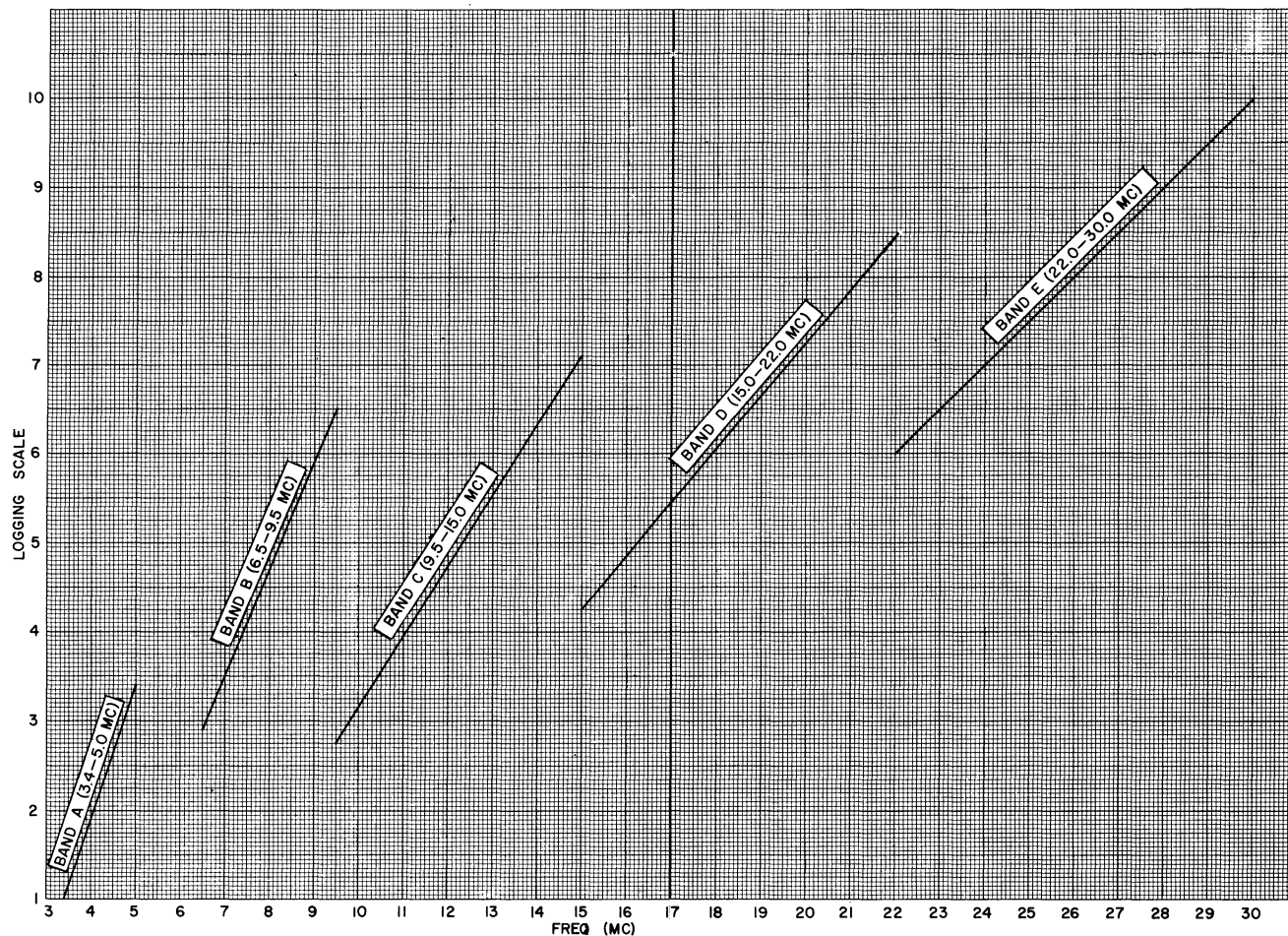


Figure 2-3. Preselector Calibration Curves

the example above) may also be peaked if optimum performance is desired at frequencies outside the amateur bands. On some bands it is possible to peak the PRESELECTOR tuning at an image frequency or at a different order of output frequency from the crystal oscillator; however, there is only one correct setting for coverage within a given 200-kc band.

The above information also applies to the 75S-3C, except that two crystal mounting boards are provided in this receiver. The amateur-band board is located

under the chassis. To obtain access, refer to paragraph 4.1. When the crystal board selector (located directly above the BAND switch) is switched to the alternate coverage position, the above-chassis board is switched into the circuit. This provides 14 additional 200-kc bands within the 3.4- to 30-mc range of the receiver. The crystal socket locations are the same for both boards. Space is provided in the window adjacent to the BAND switch to record band information. A pencil may be used to allow erasure if changes are to be made.

principles of operation

3.1 Block Diagram.

Figure 3-1 is a block diagram for 75S-3B and 75S-3C Receivers. Double conversion is used with injection voltage for the first conversion provided by a crystal-controlled oscillator. A bandpass if. 200 kilocycles wide is used to couple the first and second mixers. Injection voltage for the second mixer is furnished by a vfo with a tuning range of 200 kc. The 455-kc output frequency of the second mixer is coupled through the if. system to separate AM and SSB detectors. Injection voltage for the product detector is provided by either a crystal-controlled bfo or a tunable bfo. The 75S-3C is electrically identical to the 75S-3B, except that it is equipped with an extra hf crystal mounting board on the chassis, a crystal board selector switch on the front panel, and associated components. Figure 7-1 is a schematic diagram for both receivers with circuit differences noted.

3.2 RF and Mixer Circuits.

The rf amplifier grid, high-frequency mixer grid, and crystal oscillator plate circuits are resonated by slug-tuned coils. The slugs are mechanically ganged and linked to the PRESELECTOR tuning knob. The required tuning ranges of these circuits are obtained by switching appropriate values of fixed capacitance in parallel with the coils. The total 3.4- to 30-mc tuning range of the receiver is divided into five segments for band switching purposes, as noted in table 2-1. The tuned-circuit LC ratio is thereby varied within appropriate limits for each of the five segments.

Signals within the particular 200-kc band selected are amplified by V2, the rf amplifier, and coupled to the control grid of V3A, the first mixer. Injection voltage is coupled to the cathode of V3A. Products of mixing are selected in the plate circuit of V3A tuned from 3.155 to 2.955 mc which is the bandpass intermediate frequency. Signals are coupled to the control grid of second mixer V4A with vfo injection voltage applied to the cathode of this tube.

3.3 Oscillator Circuits.

3.3.1 CRYSTAL OSCILLATORS. High-frequency crystal oscillator V3B provides injection voltage for the first mixer. The crystal oscillator output frequency is always 3.155 mc higher than the lower edge of the selected band. On bands below 12.0 mc,

the oscillator plate circuit is tuned to the crystal frequency. At 12.0 mc and higher, the plate circuit is tuned to the second harmonic. The secondary winding of T2 couples injection voltage to the first mixer cathode circuit and furnishes a dc return to ground for mixer tube V3A. Dummy load R41 simulates the load presented by a transmitter when connected for transceiver operation.

Crystal-controlled bfo V8B and associated circuitry furnishes injection voltage for the product detector. Crystals Y15 and Y16 provide the proper bfo frequency relationships to the mechanical filter passband to yield optimum audio response from the product detector. Crystal Y15 (453.650 kc) is used for lower sideband reception, and Y16 (456.35 kc) is used for upper sideband. This is due to sideband inversion in the first mixer. Capacitor C95 and coil L12 form a broadly resonant circuit at 455 kc. Oscillator voltage is developed across R49 and coupled by C100 to the cathode of V8A, the product detector tube.

The crystal calibrator circuit provides marker signals at multiples of 100 kc. Variable capacitor C61 provides for adjustment to zero beat with WWV. The output of this oscillator is coupled to the receiver antenna circuits. Diode CR8 assists in the generation of the higher frequency harmonics.

3.3.2 VARIABLE OSCILLATORS. The vfo uses fixed capacitance and variable inductance to produce the required tuning range of 2.50135 to 2.70135 mc for LSB reception and 2.49865 to 2.69865 mc for USB, AM, and CW reception. Capacitor C303, in the frequency-determining network, is paralleled by variable capacitor C308 in series with diode CR301. This diode switches C308 in or out of the circuit depending on the polarity of the bias voltage impressed across its junction. With the MODE switch in the LSB position, diode CR301 is reverse biased and switches capacitor C308 out of the frequency-determining network. This condition will result in the tunable 2.50135 to 2.70135 mc signal desired. With the MODE switch in the USB, AM, or CW position, diode CR301 is forward biased and switches C308 into the frequency-determining network lowering the output frequency to the tunable 2.49865- to 2.69865-mc signal desired. Note that when C308 is properly adjusted, it shifts the vfo frequency by an amount equal to the frequency separation of crystals Y15 and Y16. This allows either sideband to be selected without retuning or recalibrating the dial. The vfo output voltage is coupled to the cathode of second mixer tube V4A and to the control grid of cathode follower

SECTION 3

Principles of Operation

V4B. The cathode follower prevents loading of the vfo circuits by cable capacity when operated in transceiver service.

Tube V11 and associated circuitry comprise a 452.35-- to 458.35-kc tunable bfo. The bfo tuning control is potentiometer R81. This control varies a positive dc voltage applied to the junction of voltage-variable capacitor CR4. The junction capacity of this device is proportional to applied voltage. Adjustment of R81 therefore varies the output frequency of the bfo. Voltage for the tuning circuit is stabilized by a regulator consisting of zener diode CR5 and resistor R82. Switch S13 completes the cathode circuit of either V8B or V11 thus turning on the desired bfo and turning off the other. The output circuits of both oscillators are coupled to the product detector.

3.4 IF and Detector Circuits.

Output from the second mixer is connected to T4 and then to one of three mechanical filters FL1, FL2, or FL3 (FL2 and FL3 are not supplied) or to the tuned circuit of transformer T5. Mechanical filter FL1 (centered on 455 kc with a nominal bandpass of 2.1 kc) is selected for SSB reception, while FL2 and FL3 are optional filters to be used for CW operation. For AM operation, 455-kc transformer T5 is used to provide an increased bandwidth of approximately 5 kc. Output from these circuits is amplified by the if. preamplifier, V5A. Transformer T9 matches the preamplifier to the Q-multiplier, V5B. Control R57, the IF GAIN ADJUST, sets the receiver gain for the proper agc threshold sensitivity. The S-meter circuit is connected from the screen circuits of V6 and V7, the two if. amplifiers, to the cathode of V7. Under no-signal conditions, the voltage developed across R13 is equal to that developed across R21, and the meter reads zero. Application of agc causes the cathode current of V7 and the combined screen current of V6 and V7 to decrease. The voltage across R13 increases, the voltage across R21 decreases, and the meter reads up-scale by an amount which is proportional to signal strength. Output voltage from the second if. amplifier is coupled to the product detector, V8A. It is also coupled to separate AM and agc diode detectors. Bfo injection voltage is applied to the cathode of the product detector.

3.5 Q-Multiplier and Notch Filter.

The notch filter is composed of coil L8 and associated capacitors and resistors. The rejection notch occurs at the resonant frequency of this circuit and is centered at 455 kc. Capacitor C132 is mechanically coupled to the REJECTION TUNING control which allows the notch frequency to be moved across the receiver if. passband. Potentiometer R77 is adjusted to provide optimum Q and depth of notch. Switch S10 shorts the filter circuit in the OFF position. The Q-multiplier is a feedback circuit which includes L8. This circuit multiplies the Q of L8 approximately ten times, thereby

obtaining a much deeper and narrower rejection notch than would be provided by the filter alone.

3.6 AGC and Control Circuits.

Signal voltage is coupled from the secondary of transformer T6 to one of the diode plates in V9 and rectified. This rectified signal voltage then passes through filter network R50 and C49 to the agc network consisting of resistors R24 and R88, and capacitors C50, C137, and C153. The agc network develops the desired agc signal and then applies it to the rf and if. amplifier stages. The parallel combination of R88 and C153 present the fast charge-discharge rate desired for elimination of small time duration interference; the parallel combination of R24 and C50 present a longer RC time constant allowing for a smoothly developed agc signal. Generation of agc voltage is delayed until the signal voltage at the diode plate exceeds the cathode bias on V9. Potentiometer R57 in the secondary of T9 is normally adjusted so that agc action is initiated with a receiver input signal of approximately 2 microvolts. This point is referred to as agc threshold.

Manual control of rf gain is also accomplished through the agc line. A voltage divider circuit consisting of resistors R33, R55, and RF GAIN control R56 is connected across the negative 65-volt bias line. At the maximum gain setting, this circuit places a one-volt static bias on the agc line to furnish proper operating bias for rf amplifier V2. At lower control settings, increased bias is provided which reduces the gain. The dc grid return for the first mixer stage and MUTE jack J11 are connected to the junction of resistors R33 and R58. When the receiver function switch is placed in the STBY position, a ground at J11 causes the receiver to operate in a normal manner. Removal of this ground causes cutoff bias to be applied to the mixer grid and increases bias on the agc line, thus muting the receiver.

3.7 Audio Circuits.

Audio voltage from the appropriate detector is selected by S8A on the MODE switch and is coupled to the AF GAIN control. The CW SIDETONE jack, J10, is also connected to this point. A sidetone audio voltage of approximately 0.2 volt will produce a comfortable listening level at average gain settings. Audio is amplified in a 2-stage amplifier consisting of tubes V8 and V10. Capacitor C106 limits the audio response to 3 kc for AM and SSB reception, and capacitor C164 reduces it to 1.5 kc for CW reception. Three audio outputs are provided. Jack J8 is a 4-ohm outlet for a speaker. The headphone jack is connected to a resistive divider across the 500-ohm tap on the output transformer. The divider provides a load for V10 when the impedance of headphones used is relatively high. The ANTI-VOX jack, J12, is also connected to the 500-ohm tap. At normal audio gain settings, 5 to 15 volts of audio are available at J12 for use with the antivoix circuits in an associated transmitter.

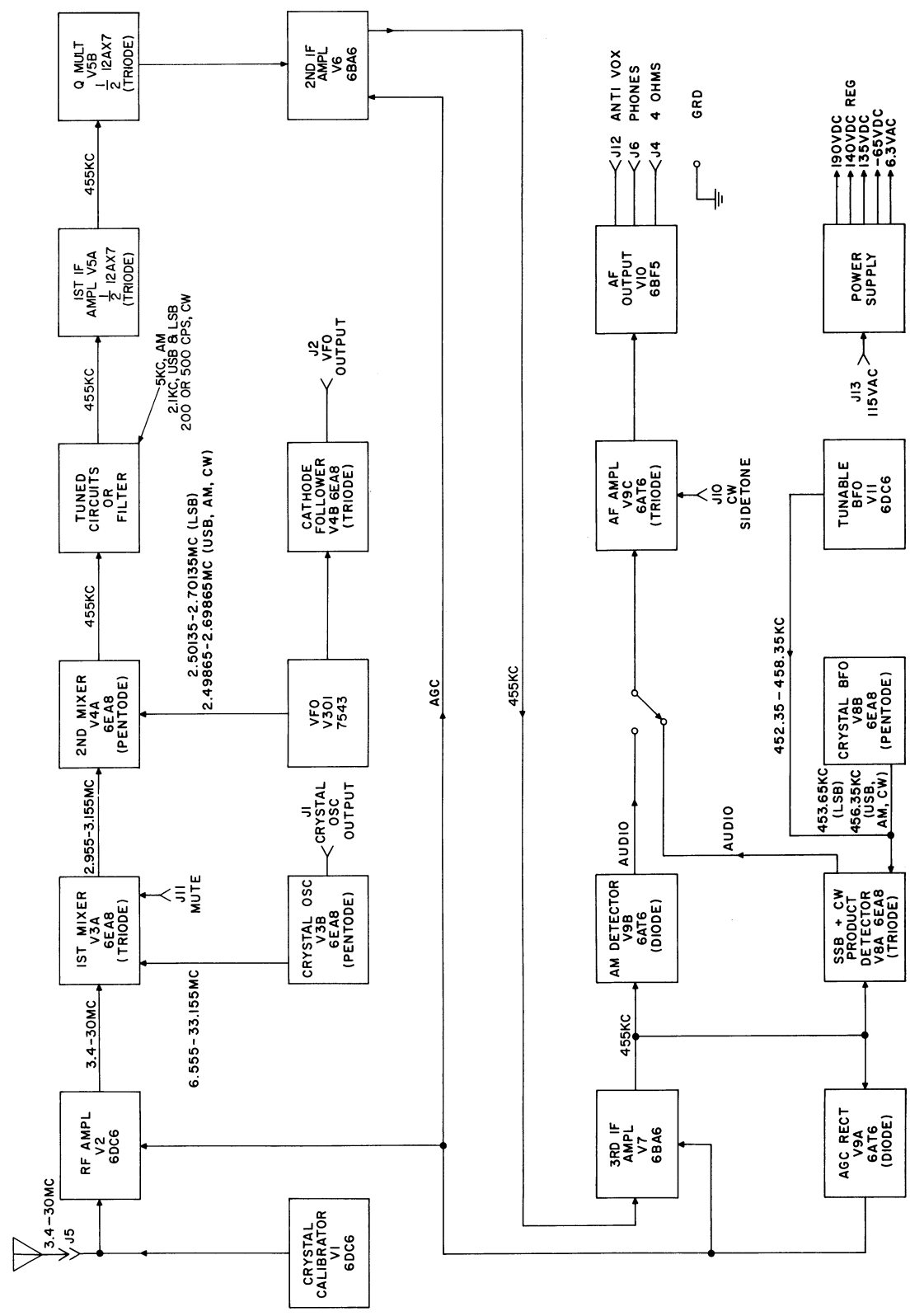


Figure 3-1. Block Diagram

SECTION 3

Principles of Operation

3.8 Power Supply Circuits.

The internal power supply furnishes filament, plate, and bias voltages for the receiver. Three high voltage values are developed consisting of a 190-volt dc unregulated voltage at the positive side of C59B, a 140-volt dc regulated voltage at the cathode of zener diode CR6, and a 135-volt dc unregulated voltage at the positive side of C59A. The high voltage winding of transformer T8; diode CR1, CR2, and CR6; resistor R86; and the filter network consisting of capacitors

C59A, C59B, and C59C, resistor R51, and choke L6 make up the full-wave rectifier system which generates the three high voltage values mentioned above. Bias voltage is obtained by rectifying ac voltage from a voltage divider connected between one leg of the high voltage secondary and ground. The tube heaters and pilot lamps are connected to allow operation from a 6-, 12-, or 24-volt source. Heater, plate, and bias voltages may be furnished by an external source such as a mobile power supply. Figure 7-1 illustrates the proper connections to the power plug for this type of operation.

4.1 General.

This section covers maintenance and service of 75S-3B and 75S-3C Receivers. It includes information on trouble analysis, signal tracing procedures, voltage and resistance measurements, and alignment procedures. The usefulness of signal level and alignment data given depends upon the accuracy of the test equipment used. Minor adjustments in alignment may be made using the crystal calibrator as a signal source. Except for an occasional touch-up to compensate for possible component aging, alignment normally will be necessary only if frequency-determining components have been replaced. If servicing requires that the cabinet be removed, proceed as follows:

- a. Disconnect all power and external connections.
- b. Lift the lid, and remove the two screws located at the front edge of the cabinet (not the painted outer ones).
- c. Remove the four feet and the screw located midway between the rear feet.
- d. From the rear, push the receiver chassis forward until the front panel protrudes from the cabinet about an inch.
- e. Grasp the front panel at the edges and slide the receiver out of the cabinet.

NOTE

DO NOT lubricate the 70K-2 vfo shaft bearings or the dial-drive system bearings. The vfo shaft bearings are lubricated at the factory with a special grease. Dial bearings are the Oilite type which are self-lubricating.

Tube heaters and pilot lamps are connected in series-parallel arrangements for 6-, 12-, or 24-volt operation. When making tube or lamp replacements, be sure that the replacement tube or lamp is the same as the original unit.

4.2 Trouble Analysis.

Most cases of trouble can be traced to defective tubes. Many tube checkers cannot duplicate the conditions under which the tubes work in the receiver. Substitution of new tubes will sometimes clear an obscure case of tube trouble. Intermittent trouble conditions in tubes can usually be discovered by

lightly tapping the envelope. Occasionally, tube pins or socket terminals will become dirty or corroded causing an intermittent condition. When this situation is suspected, remove the tube and apply a few drops of contact cleaner to the tube pins. Replace the tube, and work it up and down in the socket a few times. A blue glow in a tube is normally caused by stray electrons striking the glass envelope and is not an indication of any tube or circuit fault. Shorted tubes or capacitors will often cause associated resistors to overheat and crack, blister, or discolor. Making the measurements listed in table 4-1 will help to isolate this type of trouble to a particular stage or component.

A logical process of elimination in conjunction with a study of the main schematic diagram, block diagram, and section 3 will aid in isolating trouble. For example, if the receiver functions properly in the AM position but fails to operate in the SSB or CW positions, trouble in the product detector should be suspected because this circuit is not used for AM reception. As a further check, both beat-frequency oscillators should be alternately switched into the circuit to see if one has failed. A third possibility would be that both beat oscillators have failed.

If the receiver is to be returned to the factory or an authorized service agency, a detailed report of operational difficulties and any efforts made to correct them will assist the servicing agency in making repairs with a minimum of time and expense. This is particularly important when intermittent trouble is involved.

4.3 Voltage and Resistance Measurements.

Table 4-1 lists typical voltage and resistance readings at each tube socket terminal except those of the vfo tube, V301. Do not open the vfo can. If repair or replacement is necessary, rebuilt 70K-2 oscillators are available at a nominal fee on an exchange basis from Collins Radio Group, Rockwell International, Factory Repair Service, Cedar Rapids, Iowa. Make all measurements under the following conditions:

- a. Unless otherwise noted in the table, set RF GAIN at maximum, AF GAIN at minimum, MODE switch in USB position, function switch in OPR position, tunable bfo off, REJECTION TUNING OFF, and AGC in the FAST position.
- b. Voltage measurements are made with power connected.

SECTION 4
Service Instructions

TABLE 4-1. VOLTAGE AND RESISTANCE MEASUREMENTS TAKEN WITH 11-MEGOHM INPUT VTVM

TUBE	TUBE SOCKET TERMINAL								
	1	2	3	4	5	6	7	8	9
V1 DC V AC V OHMS (See note 1)	-42 1 meg	0,78 1K	0 0	6.3 0	93 *220K	49 *220K	0 0		
V2 DC V AC V OHMS	-1.2 5.5 meg	0 0	0 0	6.3 0	138 *20K	59 *60K	0 0		
V3 DC V AC V OHMS	136 *20K	-14.6 100K	140 *20K	0 0	6.3 0	140 *20K	0 0	3.8 1K	0 220K
V4 DC V AC V OHMS	108 *20K	0 220K	108 *20K	6.3 0	0 0	108 *20K	4.5 1K	5.6 680	3.8 100K
V5 DC V AC V OHMS	138 *20K	0 100K	1.0 820	0 0	0 0	138 *20K	0 330K	1.0 1800	6.3 0
V6 DC V AC V OHMS	-0.88 2.6 meg	0 0	0 0	6.3 0	140 *20K	74 *26K	0 0		
V7 DC V AC V OHMS	-0.89 2.6 meg	0 0	0 0	6.3 0	135 *20K	72 *26K	0.25 39		
V8 DC V AC V OHMS	75 *90K	-3.9 (USB) -6.4 (AM) -4.8 (LSB) 20K (AM)	52 *290K	6.3 0	0 0	138 (AM, USB and LSB) *35K	0 0	0 4	-2.5 5.6K
V9 DC V AC V OHMS	1.0 600K	2.7 12K	6.3 0	0 0	-0.8 2.5 meg	-0.5 CW/SSB 2.5 AM ∞ CW/SSB 220K AM	112 *120K		
V10 DC V AC V OHMS	-12.0 250K	0 27	0 0	6.3 0	185 *20K	140 *20K	-12.0 250K		
V11 DC V AC V OHMS (See note 2.)	-2.2 47K	0 0	0 0	6.3 0	112 *35K	27 *300K	0 0		

*Resistance may vary depending upon diode and electrical condition. Reverse vom leads for highest reading.

Note 1. Place function switch in CAL position.

Note 2. Turn tunable bfo to on position.

c. Resistance measurements are made with all external cables, including power cable, disconnected. Resistances of less than 1 ohm are listed as 0.

d. Make all measurements from indicated socket terminal to chassis ground.

It is recommended that a vtvm be used for these measurements. A vom may be used if it has an input resistance of not less than 20,000 ohms per volt. Voltage measurements made with a vom will yield lower readings in high impedance circuits such as the agc line. Do not use a vom for rf measurements.

4.4 Signal Tracing.

Appropriate test points and normal signal levels are listed in table 4-2. The values listed are nominal. Signal levels in a given receiver may differ from those listed by a factor of plus or minus 20 percent without noticeable variation in performance. A signal generator with an accurately calibrated output must be used to provide the rf signal source voltages indicated. A Hewlett-Packard model 606A or equivalent generator is recommended for this purpose. Be sure to consult the signal generator instruction book for information regarding output termination requirements. Measurements of oscillator injection voltages require the use of an rf vtvm such as the

Hewlett-Packard model 410B. Make rf and audio measurements under the following conditions:

a. For audio measurements, use an audio oscillator as the signal source and an ac vtvm or calibrated oscilloscope to monitor receiver audio output. If desired, an audio wattmeter may be used. Set AF GAIN at maximum, and terminate the 4 Ω AUDIO output with a 4-ohm resistive load.

b. Oscillator injection voltages are measured with an rf vtvm. Measure from cathode to chassis ground at the associated mixer or product detector tube.

c. To check rf signal levels, connect a dc vtvm to the receiver agc line. Set RF GAIN at maximum. Static dc voltage on the agc line should be approximately -1.0 volt. Connect the rf signal generator to the point indicated in the table, and rock the generator dial to produce maximum agc voltage. Starting from minimum output, increase signal generator output to the point where a further increase in signal produces a slight increase in agc voltage. This is agc threshold. Note generator output voltage, and compare with the value listed in the table.

4.5 Alignment Procedure.

Complete alignment of the receiver may be accomplished using the crystal calibrator as a signal

TABLE 4-2. SIGNAL LEVELS

SIGNAL INJECTION POINT	GENERATOR OUTPUT FREQUENCY	GENERATOR OUTPUT VOLTAGE	NORMAL INDICATION
V10 - pin 1	1000 cps	3.4 volts	1-watt audio output
V9 - pin 1	1000 cps	0.15 volt	1-watt audio output
V8 - pin 9	455 kc	34 millivolts	1-watt audio output
V8 - pin 8	BFO INJECTION		1.6-2.2 volts rf (each bfo)
V7 - pin 1	455 kc	30 millivolts	Agc threshold
V6 - pin 1	455 kc	300 microvolts	Agc threshold
V5 - pin 2	455 kc	300 microvolts	Agc threshold
V4 - pin 6	455 kc	4500 microvolts	Agc threshold
V4 - pin 7	VFO INJECTION		2.0-3.0 rf volts
V4 - pin 2	3.055 mc	80 microvolts	Agc threshold
V3 - pin 8	H-F OSC INJECTION		0.8-2.5 rf volts
V3 - pin 9	14.3 mc	29 microvolts	Agc threshold
V2 - pin 1	14.3 mc	14 microvolts	Agc threshold
J5 (ANT)	14.3 mc	1.4 microvolts	Agc threshold

SECTION 4
Service Instructions

source and the S-meter as a peak indicator. To provide a variable output attenuator for the calibrator, connect a 0.001-uf capacitor to one end of a 5000-ohm carbon potentiometer. Temporarily connect the free end of the capacitor to tube socket terminal 5 of V1, the crystal calibrator. Connect the rotating contact of the potentiometer to ground. Figure 4-1 shows the location of adjustments except for the filter input and output trimmer capacitors. These trimmers are located under the chassis adjacent to the mechanical and crystal filters. The rotary ceramic trimmers used in the receiver are at maximum capacity when the large notch is positioned midway between the two mounting screws. Rotation in either direction from this position reduces capacity with minimum being at 180 degrees from maximum.

4.5.1 455-KILOCYCLE IF. ALIGNMENT.

a. Set MODE switch to USB, and center the calibrate signal at 3.7 mc in the if. passband.

b. Adjust calibrator output attenuator to provide S-meter reading of approximately S-3.

c. Adjust the slugs of T4, T9, T10, and T6 for peak meter reading. Reduce calibrator output as necessary to maintain a low meter reading. Repeat T4, T9, T10, and T6 adjustments.

d. Adjust C122 and C123 FL1 input and output trimmers, for peak meter reading.

e. Switch to CW; adjust C126 and C127, CW filter input and output trimmers, for peak meter reading. Rock receiver tuning dial to make sure signal is centered in filter passband.

f. Switch to AM; adjust top and bottom slugs of T4 and T5 for peak meter reading. Both slugs can be reached through top of transformer can and adjusted with Walsco type 2543 or similar alignment tool. Adjust T9 with small fiber or plastic screwdriver-type tool.

g. If a signal generator is used for this alignment, remove vfo tube V301, connect generator to pin 2 of V4, and adjust frequency to center of filter passband. Align as outlined above, disconnect generator, and replace V301.

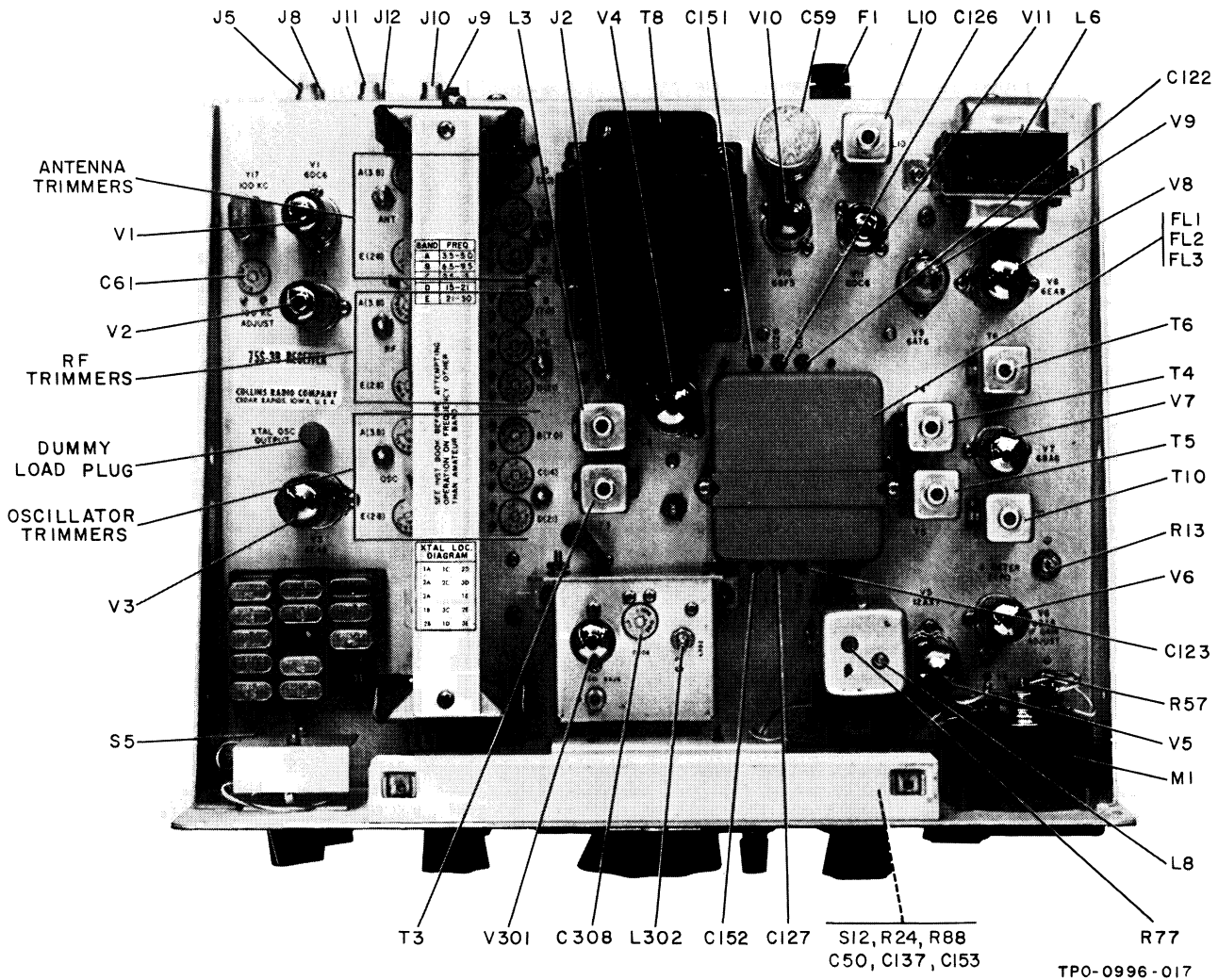


Figure 4-1. Location of Adjustments

4.5.2 BANDPASS IF. ALIGNMENT.

- a. Set MODE switch to USB, and center the calibrate signal at 3.7 mc in the if. passband.
- b. Make two swamping networks by connecting a 0.01-uf capacitor in series with a 1000-ohm resistor and connecting alligator clips to the two remaining leads.
- c. Connect one swamping network from T3 primary (terminal 1) to ground and the other from L3 (terminal 1) to ground.
- d. Adjust attenuator to provide meter reading of approximately S-3.
- e. Peak the secondary of T3 (top of can) using a Walsco type 2543 or equivalent tuning tool.
- f. Remove both swamping networks and swamp T3 secondary (terminal 3 to ground), peak T3 primary (bottom of can), and peak L3.
- g. Remove swamping network from T3 secondary. This completes bandpass if. alignment.
- h. If a signal generator is used for this alignment, disable the hf crystal oscillator by removing the crystal for the 3.6-mc band. Connect the signal generator to the XTAL OSC OUTPUT jack, and set to 3.055 mc. Tune receiver to the generator signal at approximately 100 on the dial. Align as above, disconnect generator, and replace crystal.

4.5.3 RF CIRCUIT ALIGNMENT.

- a. Tune to the calibrate signal at 3.7 mc with the MODE switch in either USB or LSB position. Connect a 47-ohm resistor or a dummy load such as the DL-1 to the 75S-3B/C ANT jack. During the following procedures, adjust the calibrator output attenuator as necessary to maintain a meter reading of approximately S-3.
- b. Set both A (3.8) RF and ANT trimmer capacitors so the large notches point to approximately 2 o'clock when viewed as shown in figure 4-1. Set the A (3.8) OSC trimmer so the large notch points to the rear of the chassis.
- c. Set the PRESELECTOR to 2.1 on the logging scale.
- d. Adjust the OSC, RF, and ANT slugs located on the movable platform for maximum S-meter indication. Adjust the OSC slug first. After making these adjustments, make sure the PRESELECTOR tuning peaks at 2.1 on the logging scale.
- e. Set BAND switch to 28A, PRESELECTOR to 8.9 on the logging scale, and tune to the calibrate signal at 28.6 mc. Maintain S-3 signal level.
- f. Adjust E (28) OSC, RF, and ANT trimmer capacitors for peak S-meter reading. Adjust OSC trimmer first.
- g. Set BAND switch to 21.0 and PRESELECTOR to 7.9 on the logging scale. Tune to calibrate signal at 21.1 mc. Maintain S-3 signal level.
- h. Adjust D (21) OSC, RF, and ANT trimmers for peak S-meter reading. Adjust OSC trimmers first.
- i. Set BAND switch to 14.8 and PRESELECTOR to 7.0 on the logging scale. Tune to calibrate signal at 14.9 mc. Maintain S-3 signal level.

- j. Adjust C (14) OSC trimmer for peak S-meter reading.
- k. Set BAND switch to 14.2 and PRESELECTOR to 6.6 on the logging scale.
- l. Adjust C (14) RF and ANT trimmers for peak meter reading. Maintain S-3 signal level.
- m. Set BAND switch to 7.0 and PRESELECTOR to 3.9 on the logging scale. Tune to calibrate signal at 7.1 mc. Maintain S-3 signal level.
- n. Adjust B (7) OSC, RF, and ANT trimmers for peak S-meter reading. Adjust OSC trimmer first.
- o. Disconnect the crystal calibrator output attenuator. This completes rf alignment.
- p. If signal generator and rf vtm are used for this alignment, connect the generator output to the receiver ANT jack. Set generator output to frequencies listed, and align RF and ANT trimmers as outlined in preceding steps. Connect rf vtm to XTAL OSC OUTPUT jack on bottom side of chassis leaving load plug P1 in place. Align OSC trimmers as indicated, except adjust for peak reading on the vtm. In step k, adjust PRESELECTOR near 6.6 on logging scale at the point where vtm reading peaks.

4.5.4. VFO SIDEBAND FREQUENCY SHIFT ADJUSTMENT.

Set MODE switch to LSB, and tune to zero beat with calibrate signal at 3.7 mc. Without further movement of the dial, switch to USB, and adjust C308 (on vfo) for zero beat.

4.5.5 CRYSTAL CALIBRATOR ADJUSTMENT.

- A. Set receiver for AM reception, and tune to WWV at 15.0 mc at a time when the station is not transmitting a tone.
- b. Turn function switch to CAL position. Set 100 KC ADJUST trimmer C61 for zero beat of the calibrate signal against WWV.

4.5.6 VFO DIAL CALIBRATION.

Calibrate the dial at 100. If zero beat with the calibrate signal does not occur at 0 and 200 \pm 1 kc on the dial, there is end-point spread. If there is no end-point spread, but the hairline is not vertical when the dial is calibrated, a mechanical adjustment only is required. Refer to step h in the following procedure. To correct for end-point spread, make the following adjustments:

- a. Set BAND switch to any band and function switch to CAL, and tune calibrate signal to zero beat at 200 end of the dial.
- b. Set hairline to 200 with zero set knob.
- c. Tune calibrate signal to zero beat at 0 end of the dial. Note the difference in kilocycles between the hairline and dial 0 (example: -1.5 kc).
- d. Without moving the hairline, move the dial to the opposite side of 0 by an amount equal to the frequency difference noted above (example: +1.5 kc).

SECTION 4
Service Instructions

- e. Adjust L302 for zero beat. It is located on top of the vfo can.
- f. Set the hairline at 0 with zero set knob.
- g. Tune the calibrate signal to zero beat at the 200-end of the dial. If zero beat does not occur at exactly 200, repeat steps b through e.
- h. After the vfo has been calibrated at both end points, set the BAND switch to 3,4 and calibrate the vfo dial at 100. Locate the calibrate signal at 100 for each position of the BAND switch. The maximum difference in the vfo dial settings for all bands should not exceed 3 kc.
- i. After adjustment of end points, if the hairline is not vertical in the dial window, set the BAND switch to a band where the 100-calibration point is in the middle of the spread shown in step h above. Set the hairline vertical in the dial window, loosen the setscrews on the dial hub, and move the dial on the oscillator shaft so that it reads 100 at zero beat.
- j. After adjustment of end points, if the hairline is not vertical in the dial window, loosen the setscrews on the dial hub, and move the dial relative to the oscillator shaft so that, at zero beat, the dials read 0 to 200 with the hairline vertical
- k. After these adjustments of the vfo calibration, make the vfo sideband frequency shift adjustment as outlined in paragraph 4.5.4.

4.5.7 TUNABLE BFO ALIGNMENT.

- a. Make sure the BFO tuning knob is correctly positioned on the shaft. At the control end stops, the knob pointer should be at approximately 7 o'clock (ccw end) and 5 o'clock (cw end).
- b. Rotate BFO knob to extreme counterclockwise.
- c. Turn on calibrator and tune receiver to zero beat in USB position.
- d. Turn on tunable bfo, and set BFO knob to 0.
- e. Adjust L10 for zero beat.

4.5.8 NOTCH FILTER ALIGNMENT.

- a. Check REJECTION TUNING knob position. Pointer should be at OFF when the knob is at the counterclockwise stop. Leave at OFF position.
- b. Tune to the calibrate signal on a band which provides a calibrate signal level of approximately S-9 plus 20 db in either USB or LSB position. Center signal in filter passband (approximately 1350-cps tone).
- c. Set REJECTION TUNING knob to midscale (pointer vertical.)
- d. Alternately adjust L8 and R77 for maximum depth of notch as indicated by minimum S-meter reading. If the Q-multiplier exhibits a tendency to ring or oscillate, back off slightly on R77.

4.5.9 IF. GAIN ADJUSTMENT.

To set if. gain control R57, a 50- Ω calibrated signal generator is required. Connect the signal generator to the receiver ANT jack, and adjust to 2.0 micro-volt output at 14.3 mc. Tune the receiver to the

generator signal, and adjust R57 to the point which produces a just-perceptible increase above the no-signal reading on the S-meter. Do not make this adjustment until receiver alignment has been completed.

4.5.10 S-METER ZERO ADJUSTMENT.

- a. Set receiver to the middle of any operating band, and peak PRESELECTOR for maximum output.
- b. Set RF GAIN to maximum, and short ANT jack to ground.
- c. Set S-METER ADJUST (R13) so S-meter reads zero.

4.5.11 ANTENNA TRIMMERS ADJUSTMENT.

After the receiver alignment is completed, a final adjustment of the ANT trimmer capacitors may be made to compensate for any detuning effects caused by the antennas. Adjust on weak incoming signals near the frequencies indicated in paragraph 4.5.3.

4.6 Installation of Optional Filters.

Space is provided in the 75S-3B/C to install accessory filters. These filters are available in 6.0-, 4.0-, 3.1-, 1.5, 0.8-, 0.5-, and 0.2-kc bandwidth (see table 5-2). The 6.0-, 4.0-, and 3.1-kc bandwidth filters are intended for use in AM reception; the 1.5-kc bandwidth filter is intended for reception of RTTY signals; and the 800-, 500-, and 200-cps filters are used in CW reception. The 200-cps bandwidth filter is best for reception of weak CW signals since its narrower passband rejects background noise and interfering signals better than do the other two CW filters.

With the cabinet lid open, the shield can covering the spaces for filters FL1, FL2, and FL3 can easily be seen. Filter FL1 (supplied in the receiver) is used in the LSB and USB modes of operation; filters FL2 and FL3 (not supplied) are used for the CW1 and CW2 modes of operation, respectively. To install or replace filter FL1, FL2, or FL3, unscrew the two screws securing the filter shield can, remove and/or install the desired filter in its proper position; then reinstall the field shield can.

NOTE

The 200-cycle crystal lattice filter (CPN 526-7677-00) listed in table 5-2 is not electrically symmetrical. Unless this filter is installed with terminals 2 and 4 facing the right-hand side of the receiver (as viewed from the front), the receiver will be inoperative when this filter is switched in with the MODE switch.

After replacement or reinstallation of any filters, turn on the receiver (positioning the OFF-STBY-OPR-CAL switch to the CAL position) and tune to

the calibrate signal at 28.6 mc. Adjust the two filter trimmer capacitors for the respective filter replaced or installed (see figure 4-2) for maximum S-meter indication.

The spare filter position adjacent to FL1 permits use of an AM mechanical filter to replace network provided by transformer T5. Receivers supplied in -011 status have been modified in accordance with paragraphs a and b. Install the mechanical filter in the SPARE socket and proceed with operation. Use of the AM mechanical filter with other status receivers requires the following modifications:

NOTE

The 135- and 130-uuf mica capacitors mentioned below are nominal values only. For optimum performance, these values should be

selected for maximum S-meter indication (minimum filter loss). See figure 4-2 for location of transformers T4 and T5.

a. Unsolder C92 at switch S7, pin 5. Connect a length of insulated wire to this switch pin. Connect the other end of the insulated wire with one lead of 135-uuf capacitor (see note) to pin 1 on the SPARE filter socket (one of the pins closest to transformer T4). Connect the other capacitor lead to a ground pin adjacent to the filter. Solder all connections.

b. Unsolder the wire at transformer T5, pin 1, and connect it to pin 4 on the SPARE filter socket (one of the pins closest to transformer T5). To the same filter pin connect one lead of a 130-uuf capacitor (see note). Connect the other capacitor lead to a ground pin adjacent to the filter socket. Solder all connections.

c. Install the desired AM mechanical filter into the spare socket.

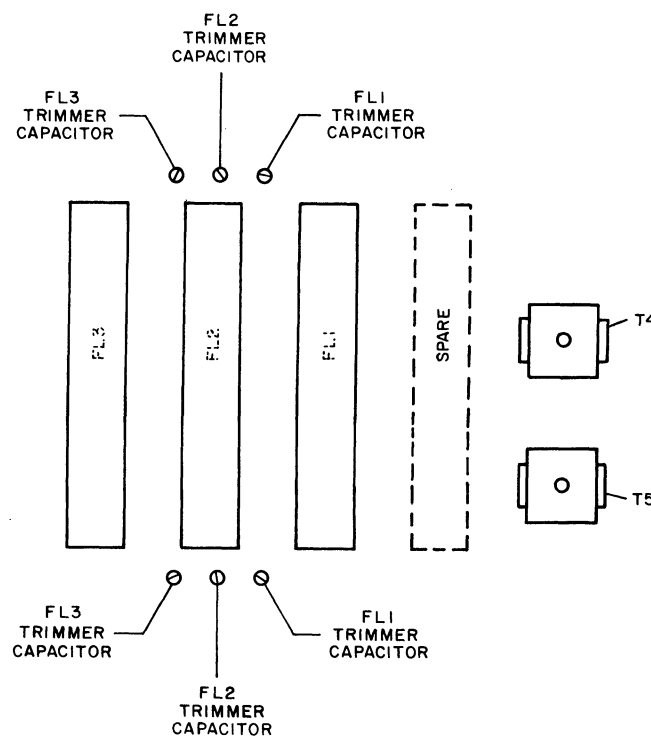


Figure 4-2. Optional Filter Installation Diagram

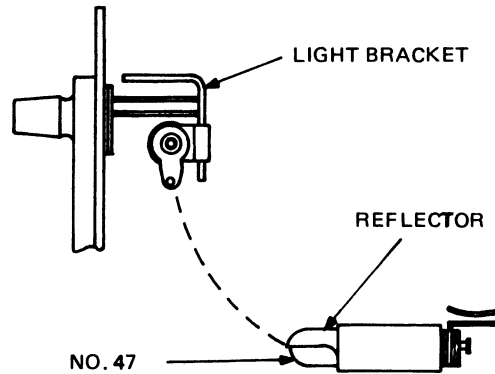
SECTION 4
Service Instructions

4.7 Replacement of Dial Lamps.

To replace the dial lamp, refer to figure 6-2 (index 104) for location of dial lamp DS1.

4.7.1 DIAL LAMP INSTALLATION.

Refer to figure 4-3 for lamp installation. Remove light bracket from lamp shield to allow access to the lamp bulb. After replacing lamp (use no 47), position the reflector to direct the light in the direction that illuminates the tuning dial.



TP4-6626-011

Figure 4-3. Dial Lamp Replacement

5.1 Frequency Coverage.

Both the 75S-3B and the 75S-3C Receivers are capable of receiving on any frequency within the range of 3.4 to 5.0 and 6.5 to 30.0 mc. Receiver coverage is in increments of 200 kc for each band-switch setting. The 75S-3B is equipped with 14 crystal sockets selectable from the front panel. The 75S-3C is equipped with 28

crystal sockets selectable from the front panel. With the 12 crystals furnished, both receivers provide complete coverage of 80 meters, 40 meters, 20 meters, 15 meters, WWV at 15 mc, and the 28.5- to 28.7-mc portion of the 10-meter band. Remaining crystal sockets may be used for additional 10-meter coverage. Other crystals may be substituted for those furnished to provide coverage at other frequencies throughout the range.

5.2 Equipment Characteristics.

Power requirements	115/230 volts, 50 to 400 cps. Power consumption is approximately 85 watts. Power may be provided by an external supply which delivers 185 volts dc at 125 ma and -62 volts dc at 5 ma. Heater power may be ac or dc as follows: 6 to 7 volts at 5.5 amperes, 12 to 14 volts at 2.75 amperes, or 24 to 28 volts at 1.4 amperes.
Frequency range	3.4 to 5.0 and 6.5 to 30.0 megacycles. With crystals furnished, bands are as follows: 3.4 to 3.6 mc, 3.6 to 3.8 mc, 3.8 to 4.0 mc, 7.0 to 7.2 mc, 7.2 to 7.4 mc, 14.0 to 14.2 mc, 14.2 to 14.4 mc, 14.8 to 15.0 mc, 21.0 to 21.2 mc, 21.2 to 21.4 mc, 21.4 to 21.6 mc, and 28.5 to 28.7 mc.
Mode	Selectable USB, LSB, CW, or AM.
Sensitivity	Not less than 0.5 microvolt for 10-db signal-plus-noise to noise ratio in SSB mode.
Selectivity	SSB: 2.1 kc at 6 db down, 4.2 kc at 60 db down. AM: 5 kc at 6 db down, 25 kc at 60 db down.
Spurious response	Image rejection better than 50 db. Internal spurious signals below 1-microvolt equivalent antenna input.
Frequency stability	Within 100 cps after warmup.
Dial accuracy	Better than 1 kc on any band after midband calibration.
S-meter calibration	Approximately S-9 with 100-uv antenna input signal.
Audio output requirements	Speaker: 3 to 4 ohms. Headphones: 500 ohms or higher.
Audio output level	1 watt at agc threshold (applicable to SSB only). 3.0 watts maximum.
Size	7-3/4 in. high, 14-3/4 in. wide, 12-1/2 in. deep.
Weight	20 pounds.
Automatic gain control	Selectable agc time constant fast, slow and off.

SECTION 5
Specifications

5.3 Tube, Fuse, Lamp, and Semiconductor Complement.

TABLE 5-1. TUBES, FUSES, LAMPS, AND SEMICONDUCTORS

SYMBOL	FUNCTION	TYPE	SYMBOL	FUNCTION	TYPE
V1	Crystal calibrator	6DC6	V10	Audio output	6BF5
V2	Rf amplifier	6DC6	V11	Tunable bfo	6DC6
V3A	First mixer	1/2 6EA8	V301	Vfo	7543
V3B	Crystal oscillator	1/2 6EA8	CR1, CR2	Power rectifiers	1N1492, 1N1096 or 1N4005
V4A	Second mixer	1/2 6AE8	CR3	Bias rectifier	1N1492, 1N1096 or 1N4005
V4B	Cathode follower	1/2 6EA8	CR4	Bfo tuning	HC7004
V5A	First if. amplifier	1/2 12AX7	CR5	Voltage regulator	1N732A
V5B	Q-multiplier	1/2 12AX7	CR6	Voltage regulator	1N3010A
V6	Second if. amplifier	6BA6	CR7	Rf amplifier agc delay	1N458
V7	Third if. amplifier	6BA6	CR8	Harmonic generator	1N4454
V8A	Product detector	1/2 6EA8	CR301	Switch	1N34A
V8B	Crystal bfo	1/2 6EA8	DS1	Dial lamps	47
V9	AM detector, agc rectifier, audio amplifier	6AT6	DS2	Meter lamp	47
			F1	Power supply fuse	1 amp SB

5.4 Available Accessories.

TABLE 5-2. AVAILABLE ACCESSORIES (Sheet 1 of 2)

ITEM	FUNCTION	COLLINS PART NUMBER
312B-3 Speaker	Station speaker	522-1160-00
312B-4 Station control	Speaker, phone patch directional wattmeter, and station control switches	522-1167-00
351E-1 Mounting plate	Table mount for 75S-3B/C	522-1479-00
351E-2 Mounting plate	Table mount for 312B-4	522-1480-00
351E-3 Mounting plate	Table mount for 312B-3	522-1481-00
351R-1 Rack mount	Rack mount for 75S-3B/C	522-1481-00

TABLE 5-2. AVAILABLE ACCESSORIES (Sheet 2 of 2)

ITEM	FUNCTION	COLLINS PART NUMBER
351R-2 Rack mount	Rack mount for 312B-4	522-2666-00
Extra crystals	Additional band coverage	(See parts list.)
F455FA-31	3.1-kc bandpass filter	526-9496-00
F455FA-40	4.0-kc bandpass filter	526-9497-00
F455FA-60	6.0-kc bandpass filter	526-9498-00
F455FA-15	1500-cps bandpass filter	526-9495-00
F455FA-08	800-cps bandpass filter	526-9446-00
F455FA-05	500-cps bandpass filter	526-9494-00
X455Q200	200-cps crystal lattice filter	526-7677-00

6.1 INTRODUCTION

6.1.1 General

The purpose of this parts list, prepared by Collins Radio Group of Rockwell International, is for identification, requisition, and issuance of parts.

Parts listed meet critical equipment design specification requirements. Use only part numbers specified in this parts list for replacement of parts.

6.1.2 Group Assembly Parts List

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers assigned in sequence to correspond with item numbers on the illustrations.

PART NO Column — Listed are MIL standard, vendor, or Collins part numbers. Collins part numbering system consists of 10 digits as follows: a 3-digit family number, a 4-digit serial number, and a 3-digit dash number.

INDENT Column — Items are coded 1, 2, 3, etc, to indicate the relationship to the next higher assembly.

DESCRIPTION Column — Lists the noun name, modifier, descriptive information, federal manufacturer's code, reference designation, attaching part (AP), reference to other figures, and effectivities.

Attaching parts are identified by (AP) following the part or parts they attach.

Effectivities are identified by the following methods: MCN (Manufacturer Control Number) 101 and up; CI (Configuration Identifier) 5-digit number; REV (Revision Identifier) dash (-) denotes original, letter A first change, letter B second change, etc. One of the above identifiers is listed on each chassis and/or replaceable assembly. Service Bulletins are identified by SB 1, SB 2, etc.

USABLE ON CODE Column — Part variations within a group of equipment are indicated by a letter code (A, B, C, etc). Absence of a code indicates part applies to all models.

UNITS PER ASSY Column — Quantities specified are per item number. Letters AR denote the selection of parts as required. Letters RF refer to an assembly completely assembled on a preceding figure and illustration.

6.1.3 Numerical Index

PART NUMBER Column — Part numbers are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

TTL REQ Column — Listed is the total quantity of parts or assemblies covered in the Group Assembly Parts List.

6.1.4 Reference Designation Index

REFERENCE DESIGNATION Column — Reference designations are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

PART NUMBER Column — Part numbers listed are for items that have reference designations assigned.

6.1.5 How To Use This Parts List

To locate a part number if the assembly in which the part is used is known, turn to the List of Illustrations and find the page number for the assembly in which the part is used. Locate the part and its index number on the illustration and find the index number on the Group Assembly Parts List page to determine its description and part number.

To locate the illustration for a part if the part number is known, refer to the Numerical Index and find the part number. Turn to the Group Assembly Parts List and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

section 6
parts list

To locate the illustration for a part if the reference designation is known, refer to the Reference Designation Index and find the symbol; turn to the Group Assembly Parts List and find the figure and index number indicated in the index.

6.1.6 Manufacturer's Code, Name, and Address

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
A0473	Avery Label Co., Inc. Div. of Avery Adhesive Prod., Inc. Peoria, IL 61600	08556	Bell Electric Co. 2600 W. 50th St. Chicago, IL 60632
A1334	Joyner Corp. Ocoess, MN	08664	Bristol Div. of American Chain and Cable Co., Inc. Bristol Rd. Waterbury, CT 06720
02660	Bunker-Ramo Corp., The Amphenol Connector Div. 2801 S. 25th Ave. Broadview, IL 60153	09250	Electro Assemblies, Inc. 4338 W. Montrose Ave. Chicago, IL 60641
03333	Basler Electric Co. P.O. Box 269 Rt. 143 Highland, IL 62249	12954	Dickson Electronics Corp. 8700 E. Thomas Rd. Scottsdale, AZ 85252
03508	General Electric Co. Semi-Conductor Products Dept. Electronics Park Syracuse, NY 13201	13499	Collins Radio Group Rockwell International Cedar Rapids, IA 52406
04222	AVX Ceramics Corp. P.O. Box 867 Aerovox Rd. Myrtle Beach, SC 29577	14140	Edison Electronics Div. McGraw Edison Co. Grenier Field-Municiple Airport Manchester, NH 03130
04713	Motorola, Inc. Semiconductor Products Div. 5005 E. McDowell Rd. Phoenix, AZ 85008	27545	Hartford-Universal Co. 1022 Elm St. Rocky Hill, CT 06067
06978	Aladdin Electronics Div. of Aladdin Industries, Inc. 705 Murfreesboro Rd. Nashville, TN 37210	32712	Electro Vector, Inc. 6555 Covey Rd. Forestville, CA 95436
07716	TRW Electronic Components IRC Burlington Div. 2850 Mt. Pleasant Burlington, IA 52601	32897	Erie Technological Products Inc. Erie Frequency Control Div. 453 Lincoln St. Carlisle, PA 17013
		33173	General Electric Co. Tube Products Dept. 316 E. 9th St. Owensboro, KY 42301
		37942	Mallory, P.R., and Co., Inc. 3029 E. Washington St. Indianapolis, IN 46206

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
43991	Norma Fag Bearing Corp. Hamilton Ave. Stamford, CT 06904	72136	Electro Motive Mfg. Co., Inc., The S. Park and John Streets Willimantic, CT 06226
49671	RCA Corp. 30 Rockefeller Plaza New York, NY 10020	72619	Dialight Corp. Sub. of Digitronics Corp. 60 Stewart Ave. Brooklyn, NY 11237
55026	Simpson Electric Co. Div. of American Gage and Machine Co. 5200 W. Kenzie St. Chicago, IL 60644	72765	Drake Mfg. Co. 4626 N. Olcott Ave. Harwood Heights, IL 60656
56289	Sprague Electric Co. North Adams, MA 01247	72982	Erie Technological Products, Inc. 644 W. 12th St. Erie, PA 16512
70417	Chrysler Corp. Amplex Div. 6501 Harper Ave. Detroit, MI 48211	75535	Crosby-Laughlin Div. of American Hoist and Derrick Co. 2511 Taylor St. Ft. Wayne, IN 46804
70903	Belden Corp. 415 S. Kilpatrick Chicago, IL 60644	75543	Lavelle Rubber Co. 424 N. Wood Chicago, IL 60622
71034	Bliley Electric Co. 2545 W. Grandview Blvd. Erie, PA 16512	76487	Millen, James, Mfg. Co., Inc. 150 Exchange St. Malden, MA 02148
71400	Bussmann Mfg. Div. of McGraw-Edison Co. 2536 W. University St. St. Louis, MO 63017	76854	Oak Mfg. Co. Switch Div. S. Main St. Crystal Lake, IL 60014
71450	CTS Corp. 1142 W. Beardsley Ave. Elkhart, IN 46514	79136	Waldes Kohinoor, Inc. 47-16 Austel Place Long Island City, NY 11101
71590	Centralab Electronics Div. of Globe-Union, Inc. 5757 N. Green Bay Ave. Milwaukee, WI 53201	81073	Grayhill, Inc. 561 Hillgrove Ave. La Grange, IL 60525
71785	TRW Electronic Components Cinch Connector Operations 1501 Morse Ave. Elk Grove Village, IL 60007	81348	Federal Specifications
		81349	Military Specifications
		81350	Joint Army-Navy Specifications

section 6

parts list

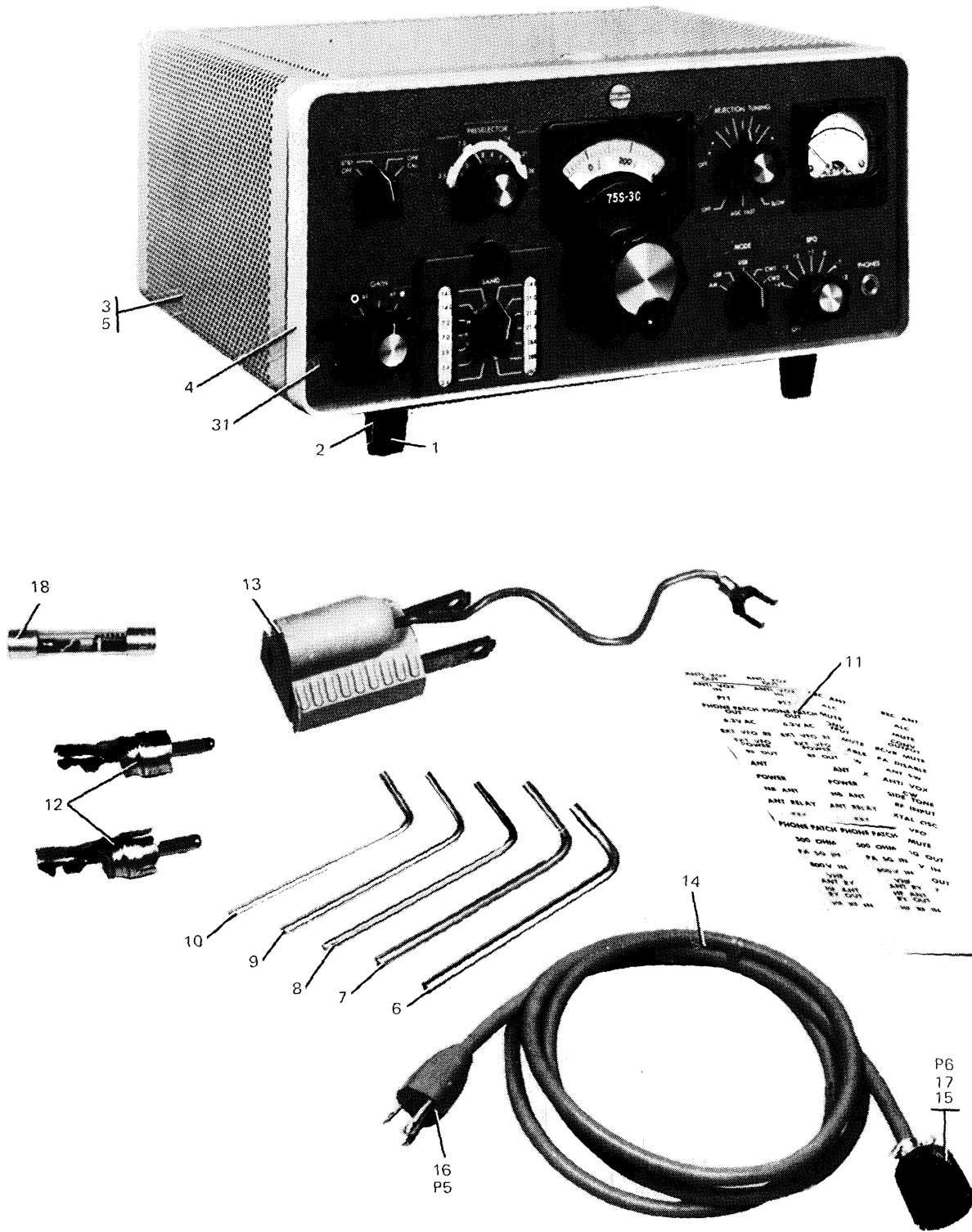
CODE	MANUFACTURER'S NAME AND ADDRESS	USABLE ON CODES	UNIT PART NUMBER	FIG-ITEM
81815	Communication Coil Co. 2839 N. Narragansett Ave. Chicago, IL 60634	A	522-3316-000	6-1-
		B	522-3317-000	6-1-
		C	554-2551-000	6-2-
		D	544-2555-000	6-2-
82389	Switchcraft, Inc. 5555 N. Elston Ave. Chicago, IL 60630	6.1.8 Configuration Identifiers		
82893	Vector Electronics Co. Glendale, CA 91200	The following CI/s/REV LTR's were used in compiling data for this manual:		
85480	Brady, W. H., Co. 727 W. Glendale Ave. Milwaukee, WI 53209	CI/ REV LTR	UNIT PART NUMBER	FIG-ITEM
		M	522-3316-000	6-1-
86684	RCA Corp. Electronic Components 415 S. 5th St. Harrison, NJ 07029	U	522-3317-000	6-1-
		72114	543-8018-005	6-1-3
		BS	554-2551-000	6-1-31
		BS	554-2555-000	6-1-31
		E	546-7829-004	6-2-256
		AK	522-1093-000	6-2-99
91459	Alcon Metal Products, Inc. 1750 N. Kimball Ave. Chicago, IL 60647			
91663	Armel Electronics, Inc. 1601 75th St. North Bergen, NJ 07047			
94148	TRW, Inc. Semiconductor Div. 14520 Aviation Blvd. Lawndale, CA 90260			
96906	Military Standards			
99800	American Precision Industries, Inc. Delevan Div. 270 Quaker Rd. East Aurora, NY 14052			
99934	Renbrandt, Inc. 6 Parmelee St. Boston, MA 02118			

6.1.7 Usable on Codes

The following usable on codes have been
assigned in this manual:

6.2 GROUP ASSEMBLY PARTS LIST

section 6
parts list

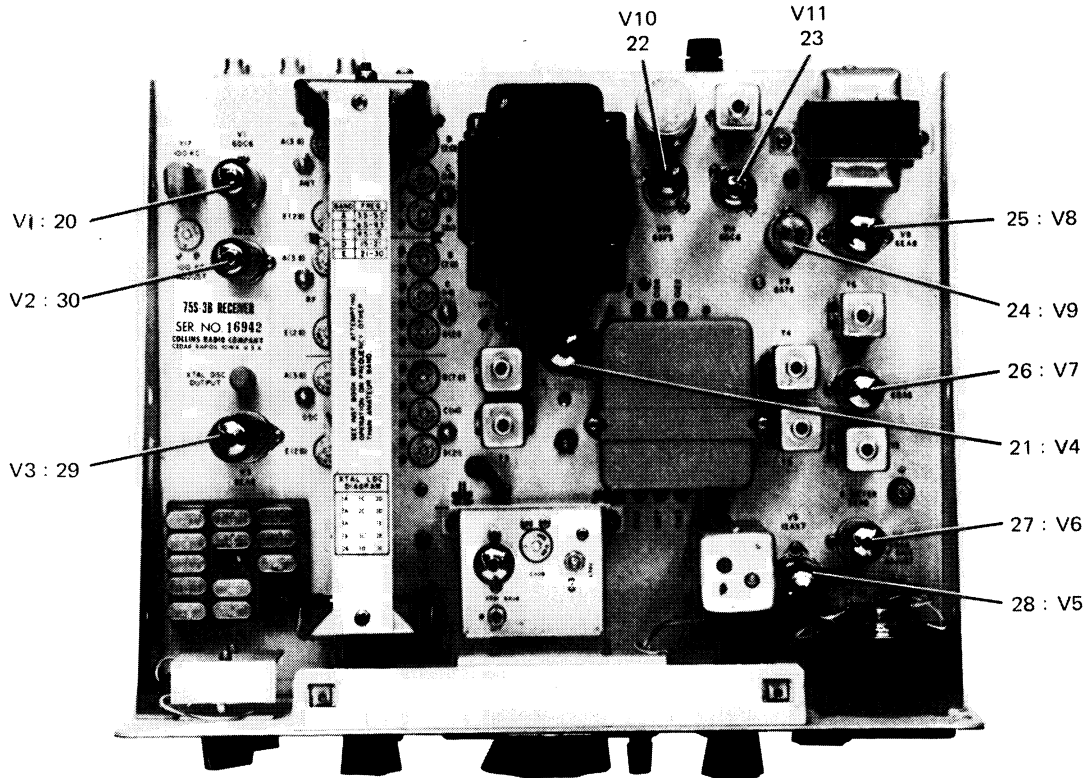


TP3-8068-027

75S-3B/3C Receiver
Figure 6-1 (Sheet 1 of 2)

Revised 15 November 1975

GROUP ASSEMBLY PARTS LIST



TP3-8068-027

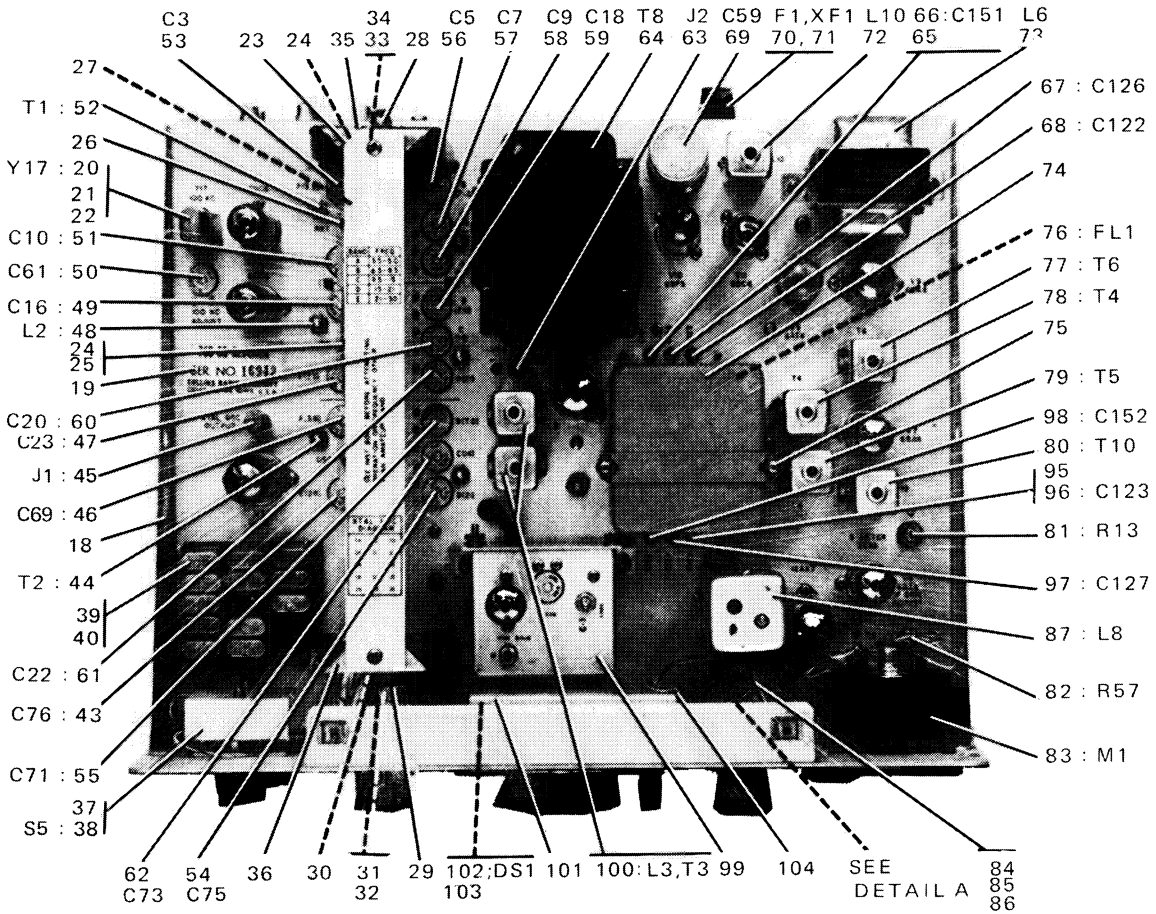
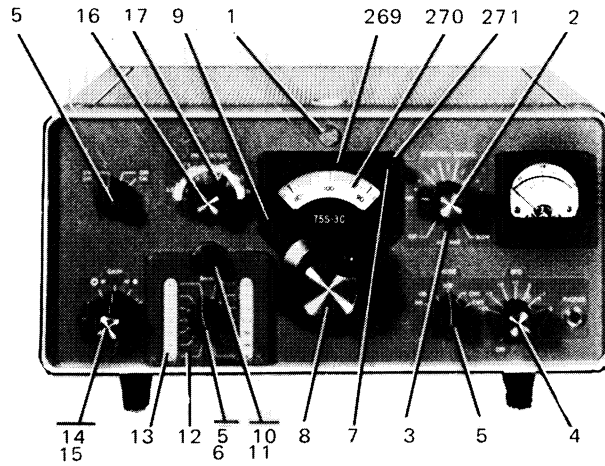
75S-3B/3C Receiver
Figure 6-1 (Sheet 2)

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-1 -	522-3316-000	1	RADIO RECEIVER 75S-3B	A	1
-	522-3317-000	1	RADIO RECEIVER 75S-3C	B	1
1	747PHLACK	2	BUMPER,RDR (V75543) 200-5010-000		4
2	543-8101-002	2	FOOT,CABINET		2
3	543-8018-005	2	CABINET FINAL		1
4	609-0573-001	3	FRAME		1
	503-2604-001	3	WASHER,FLAT (AP)		2
	543-8116-002	3	SCREW (AP)		2
5	543-8013-005	3	CABINET		1
6	111CDPL	2	KEY,SKT SCR (V08664) 024-9710-000		1
7	S096CADPL	2	KEY,SKT SCR (V08664) 024-0019-000		1
8	S072CHEMBLK	2	KEY,SKT SCR (V08664) 024-0167-000		1
9	S076-4	2	KEY,SCH SCR (V08664) 024-9730-000		1
10	TYIICL1-062	2	KEY,SCH SCR (V81348) 024-2900-000		1
11	280-2946-000	2	MARKER,LABEL (V85480) 280-2946-000		1
12	350IMC	2	PLUG,TEL (V82389) 361-0062-000		2
13	350	2	CONNECTOR,ADPTR ELEC (V08556) 368-0138-000		1
14	544-3121-000	2	POWER CORD		1
15	78S11M1005	3	SOCKET,TUBE (V02660) 372-1952-000 P6		1
16	KH3491	3	CABLE ASSY,PWR (V70903) 426-1464-000 P5		1
17	3-24	3	SHIELD,FLEC CON (V02660) 372-1762-000 (REPLACE WITH 372-2270-010)		1
17	3-858	3	CLAMP,CABLE (V02660) 372-2270-010 (REPLACES 372-1762-000)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-1 18	F02B25GV1AS	2	FUSE, CRTG (V81349) 264-4280-000		1
19			NOT USED		
20	6DC6	2	ELECTRON TUBE (V86684) 255-0226-000 V1		1
21	6EA8	2	ELECTRON TUBE (V49671) 255-0379-000 V4		1
22	6BF5	2	ELECTRON TUBE (V33173) 255-0330-000 V10		1
23	6DC6	2	ELECTRON TUBE (V86684) 255-0226-000 V11		1
24	6AT6	2	ELECTRON TUBE (V86684) 255-0190-000 V9		1
25	6FA8	2	ELECTRON TUBE (V49671) 255-0379-000 V8		1
26	6BA6	2	ELECTRON TUBE (V33173) 255-0185-000 V7		1
27	6BA6	2	ELECTRON TUBE (V33173) 255-0185-000 V6		1
28	12AX7A	2	ELECTRON TUBE (V86684) 255-0201-000 V5		1
29	6EA8	2	ELECTRON TUBE (V49671) 255-0379-000 V3		1
30	6DC6	2	ELECTRON TUBE (V86684) 255-0226-000 V2		1
31	554-2551-000	2	RECEIVER, SUBASSEMBLY (SEE FIG 2)	A	1
31	554-2555-000	2	RECEIVER, SUBASSEMBLY (SEE FIG 2)	B	1

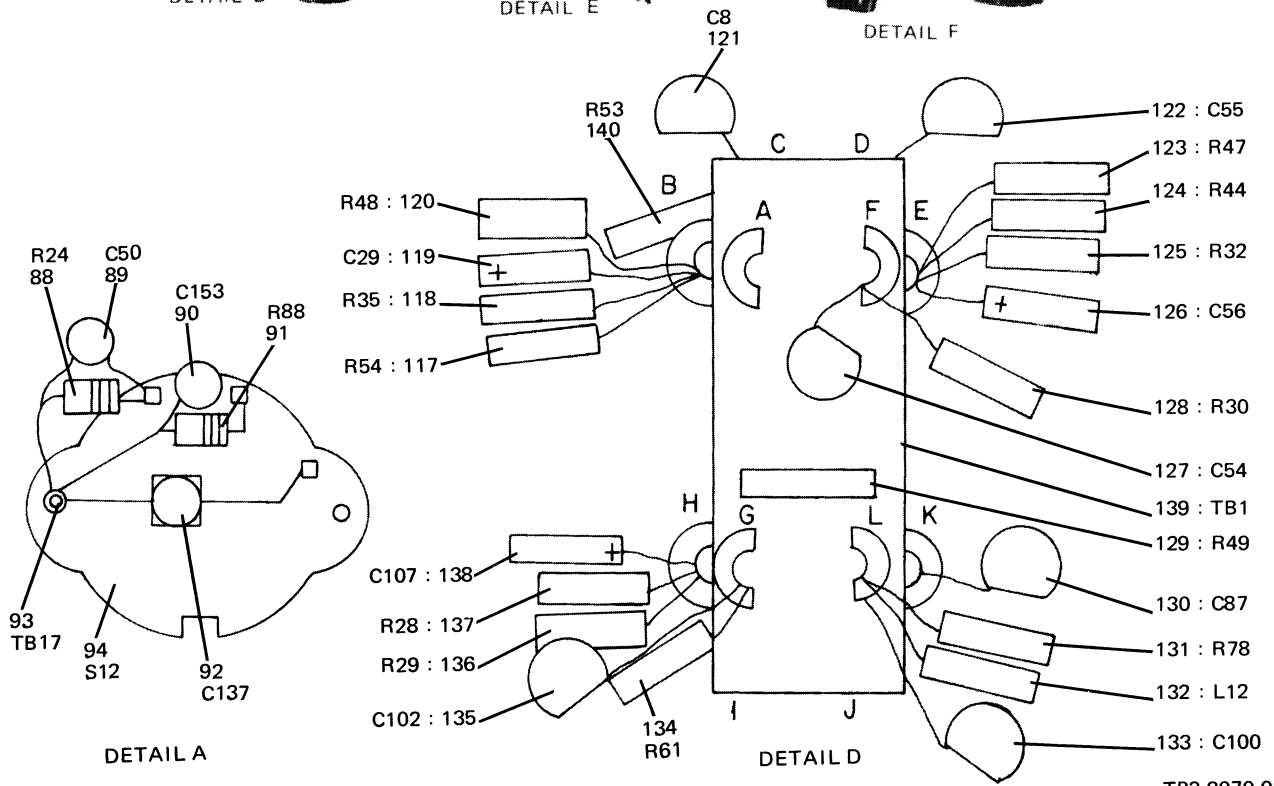
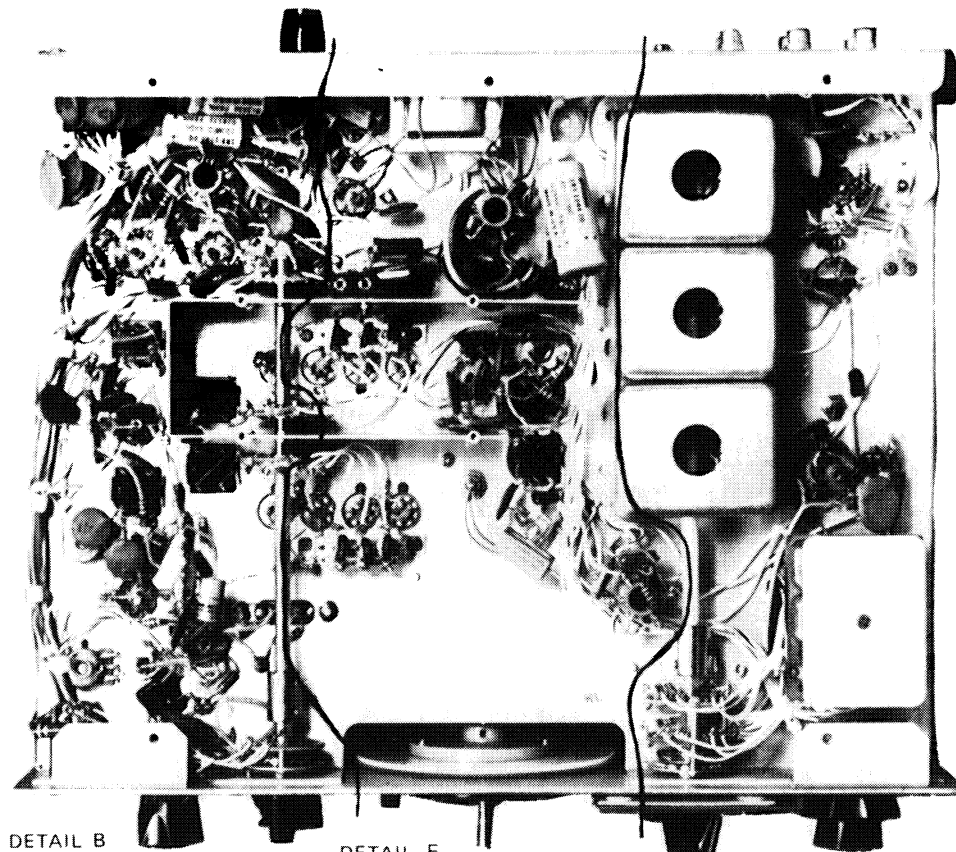
GROUP ASSEMBLY PARTS LIST



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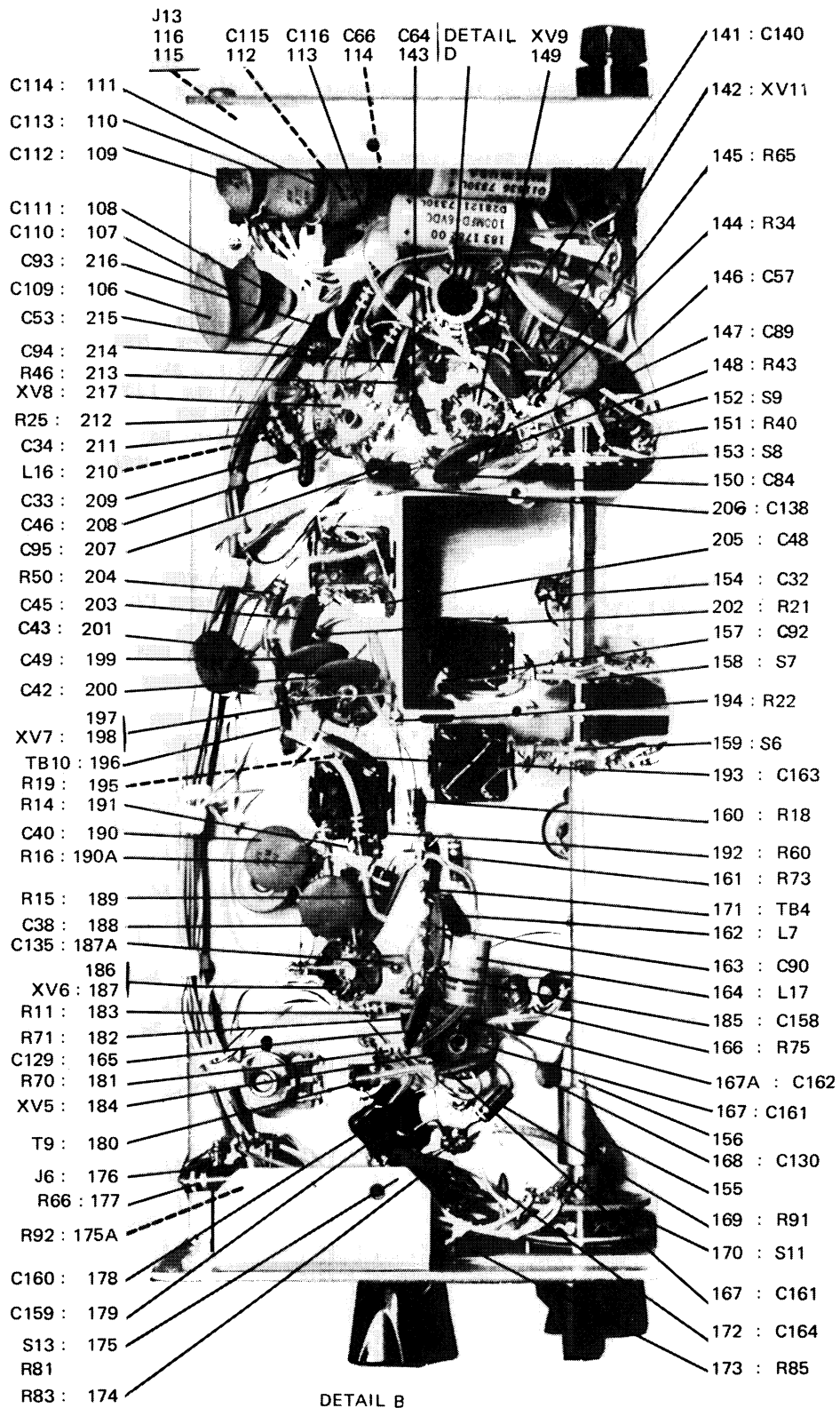
Receiver Subassembly
Figure 6-2 (Sheet 1 of 5)

GROUP ASSEMBLY PARTS LIST



Receiver Subassembly
Figure 6-2 (Sheet 2)

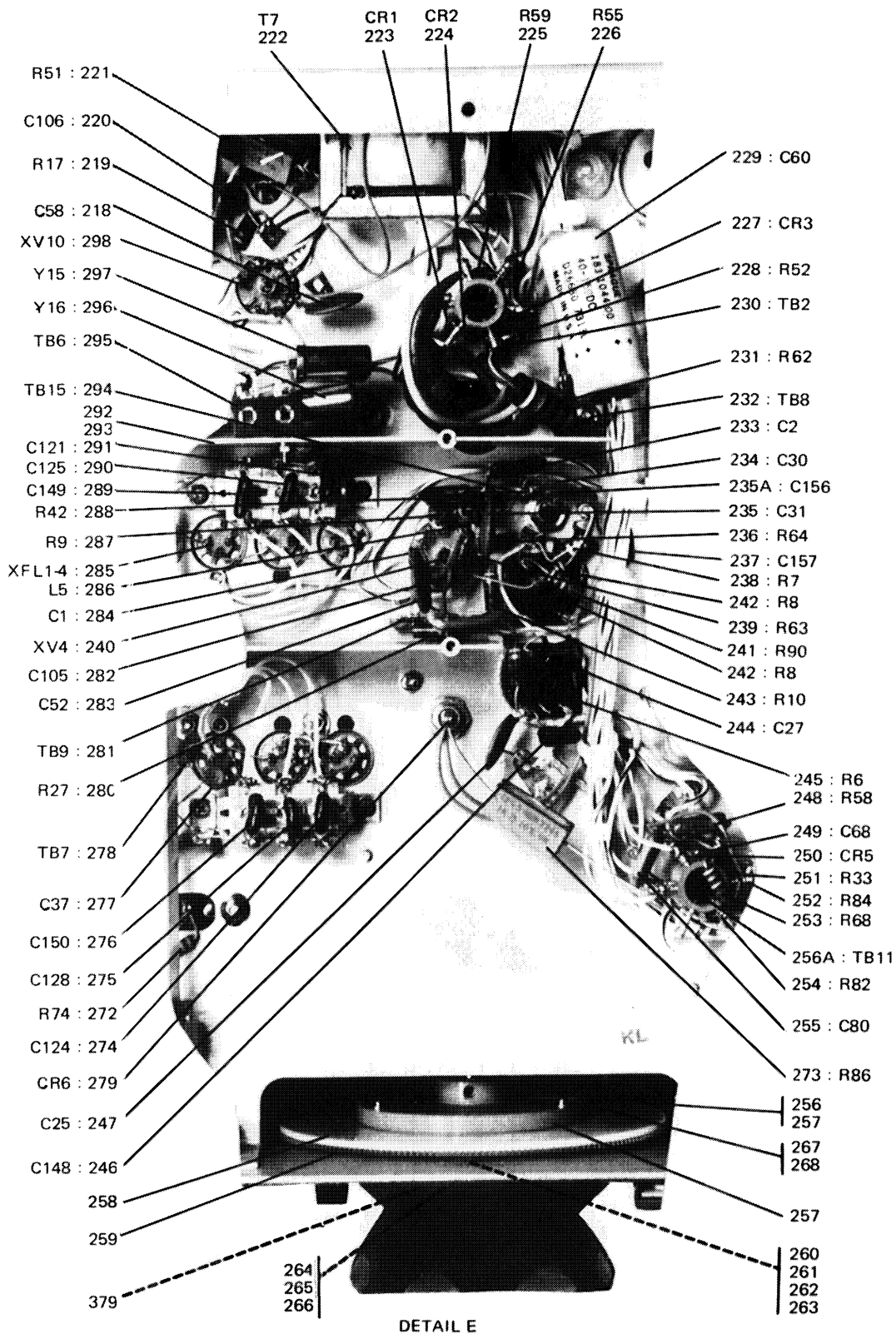
GROUP ASSEMBLY PARTS LIST



TP3-8070-057

Receiver Subassembly
Figure 6-2 (Sheet 3)

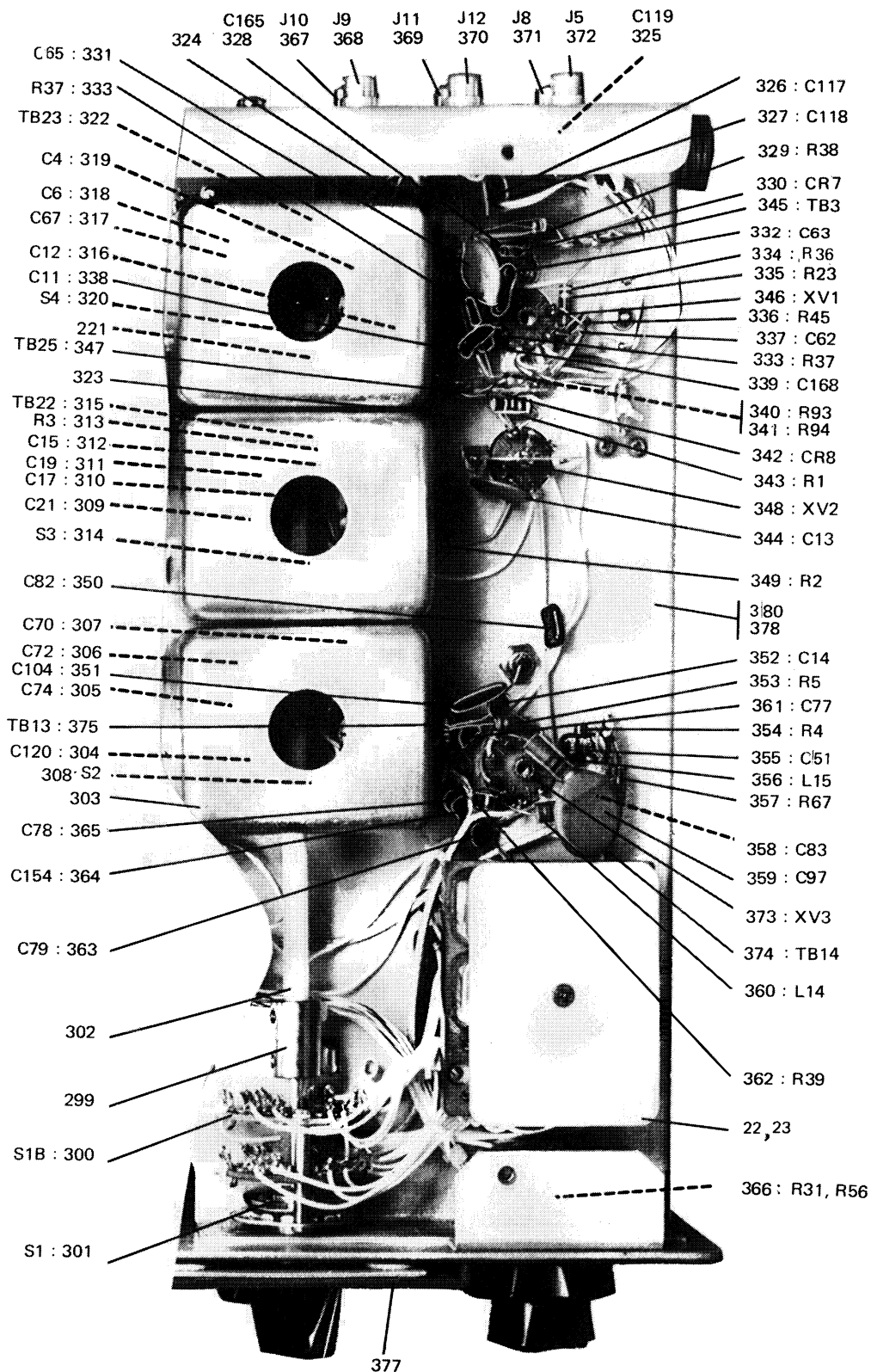
GROUP ASSEMBLY PARTS LIST



TP3-8070-057

Receiver Subassembly
Figure 6-2 (Sheet 4)

GROUP ASSEMBLY PARTS LIST



DETAIL F

TP3-8070-057

Receiver Subassembly
Figure 6-2 (Sheet 5)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 -	554-2551-000	1	RECEIVER SUBASSEMBLY (SEE FIG 1-31 FOR NHA)	C	REF
-	544-2555-000	1	RECEIVER SUBASSEMBLY (SEE FIG 1-31 FOR NHA)	D	REF
1	280-3423-00	2	INSIGNIA (VA1334) 280-3423-000 (FOR EARLY PRODUCTION MODELS ONLY)		1
2	548-9321-000	2	KNOB,CEMENTED		1
3	548-9342-003	2	LEVER,SWITCH		1
4	548-9325-000	2	KNOB,CEMENTED		1
5	543-8039-000	2	KNOB	C	3
5	543-8039-000	2	KNOB	D	2
6	544-0779-004	2	KNOB	D	1
7	543-8078-002	2	KNOB,FIDUCIAL		1
8	553-5787-003	2	KNOB,SPINNER		1
9	553-5713-004	2	PLATE ,ESCUTCHEON	C	1
9	553-5714-004	2	PLATE ,ESCUTCHEON	D	1
10	544-7268-002	2	KNOB,BAR	D	1
11	790-0408-001	2	ARM,PIVOT	D	1
12	544-7277-004	2	FRAME ,FREQ SELECTOR	D	1
13	544-7262-000	2	CARD ,FREQ SELECTOR	D	1
14	548-9322-000	2	KNOB		1
15	548-9335-004	2	KNOB,CONCENTRIC		1
16	543-8043-000	2	KNOB		1
17	543-8088-002	2	POINTFP		1
18	280-3013-000	2	LABEL (VA0473) 280-3013-000 (FOR EARLY PRODUCTION MODELS ONLY)		1
19	280-3415-000	2	PLATE,IDENT 280-3415-000 (FOR EARLY PRODUCTION MODELS ONLY)	C	1
19	280-3416-000	2	PLATE,IDENT 280-3416-000 (FOR EARLY PRODUCTION MODELS ONLY)	D	1
20	8L290-8454-000	2	XTAL UNIT,QTZ, 100.00000KHZ (V71034) 290-8454-000 Y17		1
21	T90205C01	2	SOCKET,XTAL (V81349) 292-0082-000 XY17		1
22	544-2844-002	2	CLIP,CRYSTAL		1
23	543-8062-002	2	BAR,SUPPORT		1
24	544-3140-002	2	SPRING,SHORT		1
25	A238-5MILL6085A	2	BEARING,SLV (V73417) 309-0424-000		3
	500-1073-003	2	WASHER,FLAT (AP)		1
26	543-8030-000	2	TABLE,SLUG		1
	543-8103-002	2	SPRING,SLUG RACK (AP)		2
27	288-2214-000	2	CORE 288-2214-000		3
28	1-8SSBALL	2	BEARING,BALL (V27545) 309-0019-000		1
29	543-8063-002	2	SHAFT,SUN		1
30	309-5300-000	2	BALL BEARING (V43991) 309-5300-000		4
31	546-2130-002	2	STOP,THREADED (AP)		1
32	543-8073-003	2	SHAFT PLANETARY		1
33	543-8065-002	2	POST		2
34	543-8087-002	2	PULLY,IDLER		2
35	543-8071-003	2	BRACKET,FEAR		1
36	543-8072-003	2	BRACKET,FRONT		1
37	544-3143-002	2	SHIELD,SWITCH		1
38	259-0949-000	2	SWITCH,RTRY (V76854) 259-0949-000 S5		1
39	NO NUMBER	2	CRYSTAL SELECTION GROUP (SEE FIG 3)		1
40	544-2825-002	2	SOCKET,CRYSTAL XY12		1
41	544-2825-002	2	SOCKET,CRYSTAL XY14		1
	540-9049-003	2	POST,SPACER (AP)		2
42	544-7261-000	2	COVER		1
	540-9049-003	2	POST,SPACER (AP)		1
43	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C76 (REPLACE WITH 917-1196-000)		1
43	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C76 (REPLACES 917-1075-000)		1
44	543-8122-000	2	TRANSFORMER T2		1
45	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J1		1
46	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C69 (REPLACE WITH 917-1196-000)		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDE NT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 46	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C69 (REPLACES 917-1075-000)		1
47	557-018-5-25A	2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C23 (REPLACE WITH 917-1194-000)		1
47	557006COP039R	2	CAPACITOR,VAR, 5PF TO 25PF, 350V (V72982) 917-1194-000 C23 (REPLACES 917-1073-000)		1
48	543-8025-002	2	COIL,RF L2		1
49	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C16 (REPLACE WITH 917-1196-000)		1
49	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C16 (REPLACES 917-1075-000)		1
50	557-018-5-25A	2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C61 (REPLACE WITH 917-1194-000) /5/		1
50	557006COP039R	2	CAPACITOR,VAR, 5PF TO 25PF, 350V (V72982) 917-1194-000 C61 (REPLACES 917-1073-000) /5/		1
51	557-018-5-25A	2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C10 (REPLACE WITH 917-1194-000)		1
51	557006COP039R	2	CAPACITOR,VAR, 5PF TO 25PF, 350V (V72982) 917-1194-000 C10 (REPLACES 917-1073-000)		1
52	543-8120-002	2	TRANSFORMER,RF T1		1
53	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C3 (REPLACE WITH 917-1196-000)		1
53	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C3 (REPLACES 917-1075-000)		1
54	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C75 (REPLACE WITH 917-1196-000)		1
54	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C75 (REPLACES 917-1075-000)		1
55	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C71 (REPLACE WITH 917-1196-000)		1
55	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C71 (REPLACES 917-1075-000)		1
56	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C5 (REPLACE WITH 917-1196-000)		1
56	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C5 (REPLACES 917-1075-000)		1
57	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C7 (REPLACE WITH 917-1196-000)		1
57	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C7 (REPLACES 917-1075-000)		1
58	557-018-5-25A	2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C9 (REPLACE WITH 917-1194-000)		1
58	557006COP039R	2	CAPACITOR,VAR, 5PF TO 25PF, 350V (V72982) 917-1194-000 C9 (REPLACES 917-1073-000)		1
59	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C18 (REPLACE WITH 917-1196-000)		1
59	557006U2P034R	2	CAPACITOR,VAR, 8 TO 50PF, 350V (V72982) 917-1196-000 C18 (REPLACES 917-1075-000)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 60	557-018-8-50E	2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C20 REPLACE WITH 917-1196-000)		1
68	T50411	3	CAPACITOR,VAR, MICA DIEL, 7 TO 60 PF, 350V (V72136) 918-0052-000 C122		1
69	183-1764-000	2	CAPACITOR,FXD, ELEC, 40UF, M10%P10%, 250V, 3SECT 183-1764-000 C59		1
70	F02R250V1AS	2	FUSE,CRTG (V81349) 264-4280-000 F1		1
71	HKP1 1-4X1-4	2	FUSEHOLDER (V71400) 265-1002-000 XF1		1
72	A159	2	COIL,RF (V81815) 278-0319-010 L10		1
73	BE0584	2	INDUCTOR,FLTR, 3H (V03333) 668-0020-000 L6		1
74	553-4353-001	2	COVER,FILTER		1
75	540-9065-003	2	POST		2
76	526-9427-000	2	FILTER, MECHANICAL FL1		1
77	X083	2	TRANSFORMER,IF (V81815) 278-0281-000 T6		1
78	X083	2	TRANSFORMER,IF (V81815) 278-0281-000 T4		1
79	X083	2	TRANSFORMER,IF (V81815) 278-0281-000 T5		1
80	X083	2	TRANSFORMER,IF (V81815) 278-0281-000 T10		1
81	WR5437	2	RESISTOR,VAR, 500 OHMS, 20%, 0.2W (V71450) 376-4605-000 R13		1
82	WR5438	2	RESISTOR,VAR, 1K, 20%, 0.2W (V71450) 376-4606-000 R57		1
83	4743	2	METER,AUDIO LVL (V55026) 458-0044-000 M1		1
84	A201-5N	2	COUPLING,SHAFT (V99934) 015-0514-000		1
	6-32X1-8 6SPLINE 416SST	2	SFTSCREW, SST, 6-32 X 1/8 (V08664) 328-0507-010 (AP)		4
85	A201-94	3	COUPLING,SHAFT (V99934) 015-0514-010		1
86	G34C 3-8	3	LINK,CH,END (V75535) 015-1504-000		1
87	X565-1	2	COIL ASSY,IF (V81815) 278-0653-000 L8		1
88	RCR20G155KS	2	RESISTOR,FXD, CMPSN, 1.5MEGO, 10%, 1/2W (V81349) 745-1485-000 R24		1
89	41C92	2	CAPACITOR,FXD, CER DIEL, 0.1UF, M20%P80%, 500V (V56289) 913-3152-000 C50		1
90	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C153		1
91	RCR20G684KS	2	RESISTOR,FXD, CMPSN, 0.68MEGO, 10%, 1/2W (V81349) 745-1471-000 R88		1
92	5C11A	2	CAPACITOR,FXD, CER DIEL, 0.47UF, M20%P80%, 25V (V56289) 913-3804-000 C137		1
93	RTMT12M	2	TERMINAL,STUD (V91663) 306-0976-000 TB17 (REPLACE WITH 306-0977-000)		1
93	RTMT16M	2	TERMINAL,STUD (V91663) 306-0977-000 TB17 (REPLACES 306-0976-000)		1
94	259-1491-000	2	SWITCH,ROTARY 259-1491-000 S12		1
95	T50410ANDT16328	2	CAPACITOR ASSY (V72136) 918-0059-000		1
96	T50411	3	CAPACITOR,VAR, MICA DIEL, 7 TO 60 PF, 350V (V72136) 918-0052-000 C123		1
97	T50411	3	CAPACITOR,VAR, MICA DIEL, 7 TO 60 PF, 350V (V72136) 918-0052-000 C127		1
98	T50411	3	CAPACITOR,VAR, MICA DIEL, 7 TO 60 PF, 350V (V72136) 918-0052-000 C152		1
99	522-1093-000	2	OSCILLATOR 70K-2 (NON-REPAIRABLE)		1
100	X185-1	2	TRANSFORMER,IF (V81815) 278-1721-000 L3,T3 (PURCHASED AS MATCHED UNITS)		1
101	515-0325	2	SHIELD,LAMP (V72619) 262-1239-000		1
102	M915571-2	2	LAMP,INCAND (V96906) 262-3240-000 DS1		1
103	4159-043	2	LAMPHOLDER (V72765) 262-1210-000 XDS1		1
104	543-8060-002	2	BRACKET,LIGHT		1
	541-5999-002	2	SPACER (AP)		2
105	41C157	2	CAPACITOR,FXD, CER DIEL, 0.010UF, 20%, 125V (V56289) 913-6921-030 C101		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 106	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C109		1
107	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C110		1
108	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C111		1
109	41C157	2	CAPACITOR,FXD, CER DIEL, 0.010UF, 20%, 125V (V56289) 913-6921-030 C112		1
110	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C113		1
111	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C114		1
112	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C115		1
113	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C116		1
114	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C66		1
115	554-2554-000	2	HARNES, WIRING		1
116	86CP11-1008	3	CONNECTOR, PLUG, ELEC (V02660) 372-1950-000 J13		1
116	61-61	3	RECEPTACLE, SHL (V02660) 372-1761-000		1
117	RCR20G223KS	2	RESISTOR,FXD, CMPSN, 22K, 10%, 1/2W (V81349) 745-1408-000 R54		1
118	RCR20G224KS	2	RESISTOR,FXD, CMPSN, 0.22MEGO, 10%, 1/2W (V81349) 745-1450-000 R35		1
119	D31582	2	CAPACITOR,FXD, ELCTLT, 8UF, M10%P75%, 25V (V56289) 183-1167-000 C29		1
120	RCR20G224KS	2	RESISTOR,FXD, CMPSN, 0.22MEGO, 10%, 1/2W (V81349) 745-1450-000 R48		1
121	41C92	2	CAPACITOR,FXD, CER DIEL, 0.1UF, M20%P80%, 500V (V56289) 913-3152-000 C8		1
122	55C30	2	CAPACITOR,FXD, CER DIEL, 0.025UF, M20%P80%, 500V (V56289) 913-3154-000 C55		1
123	RCR20G155KS	2	RESISTOR,FXD, CMPSN, 1.5MEGO, 10%, 1/2W (V81349) 745-1485-000 R47		1
124	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R44		1
125	RCR20G822KS	2	RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/2W (V81349) 745-1391-000 R32		1
126	D28121	2	CAPACITOR,FXD, ELCTLT, 100UF, M10%P100%, 6V (V56289) 183-1782-000 C56		1
127	55C30	2	CAPACITOR,FXD, CER DIEL, 0.025UF, M20%P80%, 500V (V56289) 913-3154-000 C54		1
128	RCR20G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/2W (V81349) 745-1422-000 R30		1
129	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R49		1
130	55C30	2	CAPACITOR,FXD, CER DIEL, 0.025UF, M20%P80%, 500V (V56289) 913-3154-000 C87		1
131	RCR20G274KS	2	RESISTOR,FXD, CMPSN, 0.27MEGO, 10%, 1/2W (V81349) 745-1454-000 R78		1
132	M990539-08	2	COIL,RF, 510UH (V96906) 240-2533-000 L12 (REPLACE WITH 240-2715-450)		1
132	MS75089-19	2	COIL,RF, 470UH (V96906) 240-2715-450 L12 (REPLACES 240-2533-000)		1
133	36C175A	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V56289) 913-3013-000 C100		1
134	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R61		1
135	33C58	2	CAPACITOR,FXD, CER DIEL, 0.05UF, M20%P80%, 500V (V56289) 913-3153-000 C102		1
136	RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349) 745-1387-000 R29		1
137	RCR20G683KS	2	RESISTOR,FXD, CMPSN, 68K, 10%, 1/2W (V81349) 745-1429-000 R28		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 138	E26A817	2	CAPACITOR,FXD, ELCTLT, 10UF, M10%P100%, 150V (V04222) 183-1040-000 C107		1
139	6H12	2	TERMINAL BOARD (V82893) 306-0909-000 TB1		1
140	RCR20G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/2W (V81349) 745-1426-000 R53		1
141	33C58	2	CAPACITOR,FXD, CER DIEI, 0.05UF, M20%P80%, 500V (V56289) 913-3153-000 C140		1
142	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV11		1
143	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C64		1
144	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R34		1
145	RCR20G105KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/2W (V81349) 745-1478-000 R65		1
146	55C30	2	CAPACITOR,FXD, CER DIEI, 0.025UF, M20%P80%, 500V (V56289) 913-3154-000 C57		1
147	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C89		1
148	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R43		1
149	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV9		1
150	DM15F471K300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 470PF, 10%, 300V (V72136) 912-2865-000 C84		1
151	RCR20G683KS	2	RESISTOR,FXD, CMPSN, 68K, 10%, 1/2W (V81349) 745-1429-000 R40		1
152	232507F	2	SWITCH SECT,RTR (V76854) 269-2468-000 S9		1
153	232097F	2	SWITCH SECT,RTR (V76854) 269-2465-000 S8		1
	8980-2 1-4	2	SPACER,SLV (V76854) 269-1403-000 (AP)		4
154	CC20CH6R0D	2	CAPACITOR,FXD, CER DIEI, 6PF, 1/2PF, 500V (V81349) 916-0122-000 C32 (REPLACE WITH 912-2757-000) /1/		1
154	DM15C120K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 12PF, 10%, 500V (V72136) 912-2757-000 C32 (REPLACES 916-0122-000) /1/		1
155	390C3	2	COUPLING,SHAFT (V76487) 015-0257-000		1
156	554-2559-002	2	SHAFT,STREIGHT		1
157	CC20CJ030C	2	CAPACITOR,FXD, CER DIEI, 3PF, 1/4PF, 500V (V81349) 916-0144-000 C92 (REPLACE WITH 916-0122-000)		1
157	CC20CH6R0D	2	CAPACITOR,FXD, CER DIEI, 6PF, 1/2PF, 500V (V81349) 916-0122-000 C92 (REPLACES 916-0144-000)		1
158	232505F	2	SWITCH SECT,RTR (V76854) 269-2466-000 S7		1
	8980-2 3-16	2	SPACER,SLV (V76854) 269-1402-000 (AP)		2
159	232506F	2	SWITCH SECT,RTR (V76854) 269-2467-000 S5		1
	8980-2 3-16	2	SPACER,SLV (V76854) 269-1402-000 (AP)		1
160	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R18		1
161	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R73		1
162	M990539-15	2	COIL,RF, 1000UH (V96906) 240-2540-000 L7		1
163	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C90		1
164	18-257	2	COIL,RF, 10MH (V09250) 240-0199-000 L17		1
165	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C129		1
166	RCR20G470KS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/2W (V81349) 745-1296-000 R75		1
167	CC20CH7R0D	2	CAPACITOR,FXD, CER DIEI, 7PF, 1/2PF, 500V (V81349) 916-0126-000 C161		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 167A	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C162		1
168	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C130		1
169	RCR20G182KS	2	RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/2W (V81349) 745-1363-000 R91		1
170	255920F1	2	SWITCH,RTRY (V76854) 259-2533-010 S11		1
171	1534A	2	TERMINAL BOARD (V71785) 306-2240-000 TB4		1
172	19C264A1	2	CAPACITOR,FXD, CER DIEI, 1500PF, 20%, 500V (V56289) 913-3010-000 C164		1
173	RN65D5112F	2	RESISTOR,FXD, FILM, 51.1K, 1%, 1/2W (V81349) 705-7178-000 R85 (REPLACE WITH 705-7160-000) /3/		1
173	RN65D2152F	2	RESISTOR,FXD, FILM, 21.5K, 1%, 1/2W (V81349) 705-7160-000 R85 (REPLACES 705-7178-000) /3/		1
174	RN65D5112F	2	RESISTOR,FXD, FILM, 51.1K, 1%, 1/2W (V81349) 705-7178-000 R83 (REPLACE WITH 705-7160-000) /3/		1
174	RN65D2152F	2	RESISTOR,FXD, FILM, 21.5K, 1%, 1/2W (V81349) 705-7160-000 R83 (REPLACES 705-7178-000) /3/		1
175	376-2530-000	2	RESISTOR,VAR, CMPSN, 100,000 OHMS, 10%, 1/4W (V13499) 376-2530-000 R81,S13		1
175A	RCR32G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1W (V81349) 745-3352-000 R92		1
176	11J1043	2	JACK,TEL (V82389) 360-0433-010 J6		1
177	RCR20G121KS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 10%, 1/2W (V81349) 745-1314-000 R66		1
178	CM06FD242J03	2	CAPACITOR,FXD, MICA DIEI, 2400PF, 5%, 500V (V81349) 912-3028-000 C160		1
179	CM06FD681J03	2	CAPACITOR,FXD, MICA DIEI, 680PF, 5%, 500V (V81349) 912-2989-000 C159		1
180	16-144-02	2	TRANSFORMER,IF (V06978) 278-2080-010 T9		1
181	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R70		1
182	RCR20G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/2W (V81349) 745-1412-000 R71		1
183	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R11		1
184	59-412-1000	2	SOCKET,ELECTRON (V02660) 220-1054-000 XV5		1
185	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C158		1
186	502-1427-002	2	SHIELD		1
187	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV6		1
187A	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C135		1
188	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C38		1
189	RCR32G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1W (V81349) 745-3401-000 R15		1
190	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C40		1
190A	RCR20G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/2W (V81349) 745-1426-000 R16		1
191	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R14		1
192	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R60		1
193	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C163		1
194	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R22		1
195	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R19		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 196	152CA	2	TERMINAL BOARD (V71785) 306-9033-000 TR1J		1
197	502-1427-002	2	SHIELD		1
198	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV7		1
199	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C49		1
200	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C42		1
201	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C43		1
202	RCR20G390KS	2	RESISTOR,FXD, CMPSN, 39 OHMS, 10%, 1/2W (V81349) 745-1293-000 R21		1
203	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C45		1
204	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R50		1
205	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C48		1
206	855-502X5V0203Z	2	CAPACITOR,FXD, CER DIEI, 0.02UF, M20%P80%, 100V (V72982) 913-3678-000 C138		1
207	CM05FD241J03	2	CAPACITOR,FXD, MICA DIEI, 240PF, 5%, 500V (V81349) 912-2843-000 C95		1
208	DM15C100K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 10PF, 10%, 500V (V72136) 912-2754-000 C46		1
209	DM15F221K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 220PF, 10%, 500V (V72136) 912-2841-000 C33		1
210	1537-732	2	COIL,RF, 100UH (V99800) 240-2141-000 L16 (REPLACE WITH 240-2715-370		1
210	MS75089-11	2	COIL,RF, 100UH (V96906) 240-2715-370 L16 (REPLACES 240-2141-000)		1
211	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C34		1
212	RCR20G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R25		1
213	RCR20G105KS	2	RESISTOR,FXD, CMPSN, 1MFG0, 10%, 1/2W (V81349) 745-1478-000 R46		1
214	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C94		1
215	DM15F471K300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 470PF, 10%, 300V (V72136) 912-2865-000 C53		1
216	DM15C150K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 15PF, 10%, 500V (V72136) 912-2760-000 C93		1
217	59-412-1000	2	SOCKET,ELECTRON (V02660) 220-1054-000 XV8		1
218	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C58		1
219	RCR20G27CKS	2	RESISTOR,FXD, CMPSN, 27 OHMS, 10%, 1/2W (V81349) 745-1286-000 R17		1
220	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C106		1
221	PW5-1001-10	2	RESISTOR,FXD,WW 1K, 10%, 5W (V07716) 710-9113-000 R51		1
222	E13657	2	TRANSFORMER,AF (V32712) 667-0302-000 I7		1
223	353-1661-010	2	SEMICONV DEVICE CR1 (REPLACE WITH 353-6442-050) /2/		1
223	1N4005	2	SEMICONV DEVICE (V04713) 353-6442-050 CR1 (REPLACES 353-1661-010) /2/		1
224	353-1661-010	2	SEMICONV DEVICE CR2 (REPLACE WITH 353-6442-050) /2/		1
224	1N4005	2	SEMICONV DEVICE (V04713) 353-6442-050 CR2 (REPLACES 353-1661-010)		1
225	RW69V821	2	RESISTOR,FXD,WW 820 OHMS, 5%, 3W (V81349) 747-5358-000 R59		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 226	RCR20G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/2W (V81349) 745-1398-000 R55		1
227	353-1661-010	2	SEMICOND DEVICE CR3 (REPLACE WITH 353-6442-050) /2/		1
227	1N4005	2	SEMICOND DEVICE (V04713) 353-6442-050 CR3 (REPLACES 353-1661-010) /2/		1
228	RCR42G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 2W (V81349) 745-5684-000 R52		1
229	TC48	2	CAPACITOR,FXD, ELCTLT, 40UF, M10%P100%, 150V (V37942) 183-1044-000 C60		1
230	6H12	2	TERMINAL BOARD (V82893) 306-0909-000 TB2		1
231	RCR42G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 2W (V81349) 745-5687-000 R62		1
232	332-1403-165	2	TERMINAL BOARD (V71785) 306-0001-000 TB8		1
233	DM15F511J300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 510PF, 5%, 500V (V72136) 912-2867-000 C2 (REPLACE WITH 912-2986-000) /4/		1
233	CM06FD621J03	2	CAPACITOR,FXD, MICA DIEI, 620PF, 5%, 500V (V81349) 912-2986-000 C2 (REPLACES 912-2867-000) /4/		1
234	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C30		1
235	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C31		1
235A	DM15C100K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 10PF, 10%, 500V (V72136) 912-2754-000 C156		1
236	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R64		1
237	DM15E200K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 20PF, 10%, 500V (V72136) 912-2766-000 C157		1
238	RCR20G224KS	2	RESISTOR,FXD, CMPSN, 0.22MEGO, 10%, 1/2W (V81349) 745-1450-000 R7		1
239	RCR20G105KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/2W (V81349) 745-1478-000 R63		1
240	59-412-1000	2	SOCKET,ELECTRON (V02660) 220-1054-000 XV4		1
241	RCR20G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/2W (V81349) 745-1412-000 R90		1
242	RCR20G680KS	2	RESISTOR,FXD, CMPSN, 68 OHMS, 10%, 1/2W (V81349) 745-1303-000 R8		1
243	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R10		1
244	DM15C100K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 10PF, 10%, 500V (V72136) 912-2754-000 C27		1
245	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R6		1
246	DM15E300K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 30PF, 10%, 500V (V72136) 912-2778-000 C148		1
247	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C25		1
248	RCR20G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/2W (V81349) 745-1398-000 R58		1
249	33C58	2	CAPACITOR,FXD, CER DIEI, 0.05UF, M20%P80%, 500V (V56289) 913-3153-000 C68		1
250	1N732	2	SEMICOND DEVICE (V12954) 353-2762-000 CR5 (REPLACE WITH 353-3190-000) /9/		1
250	1N979R	2	SEMICOND DEVICE (V04713) 353-3190-000 CR5 (REPLACES 353-2762-000) /9/		1
251	RCR20G271KS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/2W (V81349) 745-1328-000 R33		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 252	RN6506811F	2	RESISTOR,FXD, FILM, 6.81K, 1%, 1/2W (V81349) 705-7136-000 R84		1
253	RCR 20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R68		1
254	RCR 20G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/2W (V81349) 745-1412-000 R82		1
255	36C 175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C80		1
256	546-7829-004	2	DRUM ASSY		1
256A	6H12	2	TERMINAL BOARD (V82893) 306-0909-000 TB11		1
257	543-8076-002	3	DRUM,DIAL		1
	543-5577-003	3	WASHER,FLAT (AP)		1
258	543-8034-002	3	DIAL,NUMBER		1
259	543-8033-002	3	DIAL,GRADUATED		1
260	543-8104-002	3	WASHER,FELT		1
261	546-7823-004	3	RING,DRIVE		1
262	543-8084-002	3	WASHER		1
263	543-8104-002	2	WASHER,FELT		1
264	548-9326-000	2	SHAFT ASSY ,TUNING		1
265	543-8109-002	3	WASHER,SHIM		1
266	543-8035-000	2	BUSHING		1
267	545-6002-002	2	PINION,PRESSED		1
268	545-6000-002	2	HUB,IDLER		1
269	544-3128-002	2	SUPPORT,WINDOW		1
270	543-8093-003	2	DISC,FIDUCIAL		1
271	543-8042-000	2	SHAFT,FIDUCIAL		1
272	RCR 20G334KS	2	RESISTOR,FXD, CMPSN, 0.33MEGO, 10%, 1/2W (V81349) 745-1457-000 R74		1
273	PW5-1001-10	2	RESISTOR,FXD,WW 1K, 10%, 5W (V07716) 710-9113-000 R86		1
274	DM15E820K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 82PF, 10%, 500V (V72136) 912-2811-000 C124		1
275	DM15E820K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 82PF, 10%, 500V (V72136) 912-2811-000 C128		1
276	DM15E820K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 82PF, 10%, 500V (V72136) 912-2811-000 C150		1
277	40C 73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C37		1
278	332-14-02-005	2	TERMINAL BOARD (V71785) 306-2220-000 TB7 (REPLACE WITH 306-0006-000)		1
278	4-1001XP	2	TERMINAL BOARD (V91459) 306-0006-000 TB7 (REPLACES 306-2220-000)		1
279	1N3010A	2	SEMICOND DEVICE (V04713) 353-1470-000 CR6 (REPLACE WITH 353-1955-000) /11/		1
279	1N3010B	2	SEMICOND DEVICE (V04713) 353-1955-000 CR6 (REPLACES 353-1470-000) /11/		1
280	RCR 20G101KS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349) 745-1310-000 R27		1
281	1529A	2	TERMINAL BOARD (V71785) 306-0587-000 TB9		1
282	40C 73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C105		1
283	36C 175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C52		1
284	DM15F511J300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 510PF, 5%, 500V (V72136) 912-2867-000 C1 (REPLACE WITH 912-2986-000) /4/		1
284	CM06FD621J03	2	CAPACITOR,FXD, MICA DIEI, 620PF, 5%, 500V (V81349) 912-2986-000 C1 (REPLACES 912-2867-000) /4/		1
285	22-16-3	2	SOCKET,TSTR (V81073) 220-1545-000 XFL1-XFL4		8
	5115-31MD	2	RING,RTNG (V79136) 340-1021-000 (AP)		8

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 286	MS75008-40	2	COIL,RF, 10UH (V96906) 240-0149-000 L5 (REPLACE WITH 240-1600-000)		1
286	MS75101-7	2	COIL,RF, 10UH (V96906) 240-1600-000 L5 (REPLACES 240-0149-000)		1
287	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R9		1
288	RCR20G681KS	2	RESISTOR,FXD, CMPSN, 680 OHMS, 10%, 1/2W (V81349) 745-1345-000 R42		1
289	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C149		1
290	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C125		1
291	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C121		1
292	554-2570-004	2	SHIELD ,RADIO FREQUENCY		1
293	763-1323-001	2	COVER,RF		1
294	1520A	2	TERMINAL BOARD (V71785) 306-9033-000 TB15		1
295	332-14-02-005	2	TERMINAL BOARD (V71785) 306-2220-000 TB6 (REPLACE WITH 306-0006-000)		1
295	4-1C01XP	2	TERMINAL BOARD (V91459) 306-0006-000 TB6 (REPLACES 306-2220-000)		1
296	BL290-8706-000	2	XTAL UNIT,QTZ, 456.3500KHZ (V71034) 290-8706-000 Y16		1
297	BL290-8705-000	2	XTAL UNIT,QTZ, 453.6500KHZ (V71034) 290-8705-000 Y15		1
298	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV10		1
299	39003	2	COUPLING,SHAFT (V76487) 015-0257-000		1
300	118126CK 8980-2 1-2	2	SWITCH SECT,RTR (V76854) 269-1977-000 S1B	D	1
301	191873-CK1 544-7266-002	2	SPACER,SLV (V76854) 269-1407-000 (AP)	D	2
301	191873-CK1 544-7266-002	2	SWITCH,RTRY (V76854) 259-0981-000 S1		1
302	544-3138-002	2	NUT (AP)		1
302	544-3138-002	2	SHAFT, ,BANDSWITCH		1
303	544-9729-003	2	CAN,SHIELD		3
304	DM15C150K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 15PF, 10%, 500V (V72136) 912-2760-000 C120		1
305	DM15E680K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 68PF, 10%, 500V (V72136) 912-2805-000 C74		1
306	CM05FD131J03	2	CAPACITOR,FXD, MICA DIEI, 130PF, 5%, 500V (V81349) 912-2825-000 C72		1
307	CM05FD201J03	2	CAPACITOR,FXD, MICA DIEI, 200PF, 5%, 500V (V81349) 912-2837-000 C70		1
308	269-2027-000	2	SWITCH WAFFER 269-2027-000 S2		1
309	DM15E680K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 68PF, 10%, 500V (V72136) 912-2805-000 C21		1
310	DM15F511G300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 510PF, 2%, 300V (V72136) 912-2866-000 C17		1
311	CM05FD221J03	2	CAPACITOR,FXD, MICA DIEI, 220PF, 5%, 500V (V81349) 912-2840-000 C19		1
312	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C15		1
313	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R3		1
314	269-2027-000	2	SWITCH WAFFER 269-2027-000 S3		1
315	4-1C01XP	2	TERMINAL BOARD (V91459) 306-0006-000 TB22		1
316	CC20CK010C	2	CAPACITOR,FXD, CER DIEI, 1PF, 1/4PF, 500V (V81349) 916-0070-000 C12 (REPLACE WITH 916-0145-000) /6/		1
316	CC20CJ03CD	2	CAPACITOR,FXD, CER DIEI, 3PF, 1/2PF, 500V (V81349) 916-0145-000 C12 (REPLACES 916-0070-000) /6/		1

GROUP ASSEMBLY PARTS LIST

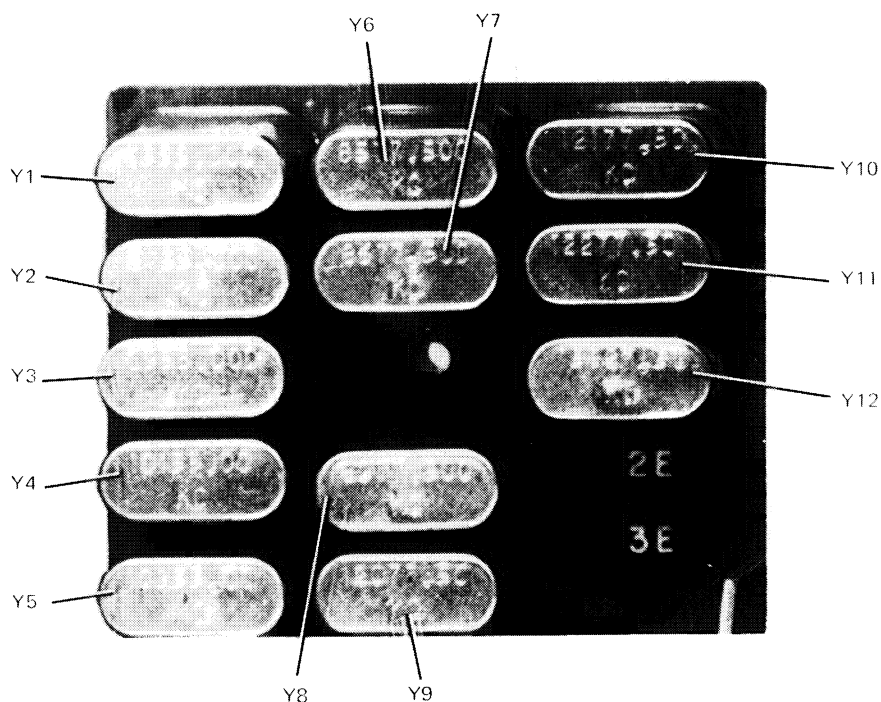
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 317	DM15F200K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 20PF, 10%, 500V (V72136) 912-2766-000 C67		1
318	CM05FD101J03	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 500V (V81349) 912-2816-000 C6		1
319	CM05FD241J03	2	CAPACITOR,FXD, MICA DIEI, 240PF, 5%, 500V (V81349) 912-2843-000 C4		1
320	269-2027-000	2	SWITCH WAFFER 269-2027-000 S4		1
321	543-8061-002	2	BRACKET,SWITCH		3
322	4-1001XP	2	TERMINAL BOARD (V91459) 306-0006-000 TB23		1
323	545-7785-003	2	STRIP,GROUNDING		1
324	545-7786-003	2	STRIP,GROUNDING		1
325	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C119		1
326	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C117		1
327	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C118		1
328	33C58	2	CAPACITOR,FXD, CER DIEI, 0.05UF, M20xP80%, 500V (V56289) 913-3153-000 C165		1
329	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R38		1
330	LA352BJPDETN	2	SEMICOND DEVICE L NTWK (V14140) 353-0205-000 CR7		1
331	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C65		1
332	DM15F101K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 100PF, 10%, 500V (V72136) 912-2817-000 C63 (REPLACE WITH 912-2866-000) /5/		1
332	DM15F511G300WV4C R	2	CAPACITOR,FXD, MICA DIEI, 510PF, 2%, 300V (V72136) 912-2866-000 C63 (REPLACES 912-2817-000) /5/		1
333	RCR20G184KS	2	RESISTOR,FXD, CMPSN, 0.18MEGO, 10%, 1/2W (V81349) 745-1447-000 R37		1
334	RCR20G105KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/2W (V81349) 745-1478-000 R36		1
335	RCR20G184KS	2	RESISTOR,FXD, CMPSN, 0.18MEGO, 10%, 1/2W (V81349) 745-1447-000 R23		1
336	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R45		1
337	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C62		1
338	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C11		1
339	DM15C100K500WV4C R	2	CAPACITOR,FXD, MICA DIEI, 10PF, 10%, 500V (V72136) 912-2754-000 C168 /6/		1
340	RCR20G225KS	2	RESISTOR,FXD, CMPSN, 2.2MEGO, 10%, 1/2W (V81349) 745-1492-000 R93		1
341	RCR20G105KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/2W (V81349) 745-1478-000 R94 (ADDED)		1
342	1N82AG	2	SEMICOND DEVICE (V81350) 353-9012-010 CR8 (REPLACE WITH 353-3644-010) /7/,/6/		1
342	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 CR8 (REPLACES 353-9012-010) /7/,/6/		1
343	RCR20G225KS	2	RESISTOR,FXD, CMPSN, 2.2MEGO, 10%, 1/2W (V81349) 745-1492-000 R1		1
344	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C13		1
345	1542A	2	TERMINAL BOARD (V71785) 306-0550-000 TB3		1
346	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV1		1
347	332-1403-165	2	TERMINAL BOARD (V71785) 306-0001-000 TB25		1
348	147-500-1001	2	SOCKET,ELECTRON (V02660) 220-1044-000 XV2		1
349	RCR20G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/2W (V81349) 745-1422-000 R2		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 350	DM15E200K500WV4C	2	CAPACITOR,FXD, MICA DIEI, 20PF, 10%, 500V (V72136) 912-2766-000 C82		1
	R				
351	36C175A	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 500V (V56289) 913-3013-000 C104		1
352	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C14		1
353	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R5		1
354	RCR20G224KS	2	RESISTOR,FXD, CMPSN, 0.22MEGO, 10%, 1/2W (V81349) 745-1450-000 R4		1
355	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C51		1
356	MS90539-15	2	COIL,RF, 1000UH (V96906) 240-2540-000 L15 /10/		1
357	RCR20G122KS	2	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/2W (V81349) 745-1356-000 R67		1
358	DM15F181K500WV4C	2	CAPACITOR,FXD, MICA DIEI, 180PF, 10%, 500V (V72136) 912-2835-000 C83		1
	R				
359	41C92	2	CAPACITOR,FXD, CER DIEI, 0.1UF, M20%P80%, 500V (V56289) 913-3152-000 C97		1
360	MS90540-07	2	COIL,RF, 2000UH (V96906) 240-2547-000 L14		1
361	40C73A1	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 500V (V56289) 913-3009-000 C77		1
362	RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R39		1
363	DM15F470K500WV4C	2	CAPACITOR,FXD, MICA DIEI, 47PF, 10%, 500V (V72136) 912-2793-000 C79		1
	R				
364	CM06FD132G03	2	CAPACITOR,FXD, MICA DIEI, 1300PF, 2%, 500V (V81349) 912-3009-000 C154		1
365	DM15C150K500WV4C	2	CAPACITOR,FXD, MICA DIEI, 15PF, 10%, 500V (V72136) 912-2760-000 C78	C	1
	R				
365	DM15C100K500WV4C	2	CAPACITOR,FXD, MICA DIEI, 10PF, 10%, 500V (V72136) 912-2754-000 C78	D	1
	R				
366	376-2151-000	2	RESISTOR,VAR, 10K,500K, 30%, 1/4W, 2 SECT (V71590) 376-2151-000 R31,R56		1
367	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J10		1
368	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J9		1
369	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J11		1
370	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J12		1
371	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J8		1
372	3501FP	2	PHONO-JACK (V82389) 360-0148-000 J5		1
373	59-412-1000	2	SOCKET,ELECTRON (V02660) 220-1054-000 XV3		1
374	1532A	2	TERMINAL BOARD (V71785) 306-9032-000 TB14		1
375	4-1001XP	2	TERMINAL BOARD (V91459) 306-0006-000 TB13		1
376	554-2553-000	2	CHASSIS ,ELECTRICAL EQUIPMENT	C	1
376	554-2557-000	2	CHASSIS ,ELECTRICAL EQUIPMENT	D	1
377	554-2572-004	3	PANEL,OVERLAY	C	1
377	554-2573-004	2	PANEL,OVERLAY	D	1
378	554-2563-003	3	CHASSIS,PRESSED		1
379	543-8080-002	4	BEARING ,OSCILLATOR		1
380	554-2578-006	4	CHASSIS		1

GROUP ASSEMBLY PARTS LIST



FP3 8069 017

Crystal Selection Group
Figure 6-3

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	NO NUMBER	1	CRYSTAL SELECTION GROUP (SEE FIG 2-39 FOR NHA)		REF
	290-9009-000	2	XTAL UNIT,QTZ, 6555.000KHZ (V32897) 290-9009-000 Y1		1
	290-9010-000	2	XTAL UNIT,QTZ, 6755.000KHZ (V32897) 290-9010-000 Y2		1
	290-9011-000	2	XTAL UNIT,QTZ, 6955.000KHZ (V32897) 290-9011-000 Y3		1
	290-9012-000	2	XTAL UNIT,QTZ, 7155.000KHZ (V32897) 290-9012-000 (OPTIONAL)		1
	290-9013-000	2	XTAL UNIT,QTZ, 7355.000KHZ (V32897) 290-9013-000 (OPTIONAL)		1
	290-9014-000	2	XTAL UNIT,QTZ, 7555.000KHZ (V32897) 290-9014-000 (OPTIONAL)		1
	290-9015-000	2	XTAL UNIT,QTZ, 7755.000KHZ (V32897) 290-9015-000 (OPTIONAL)		1
	290-9016-000	2	XTAL UNIT,QTZ, 7955.000KHZ (V32897) 290-9016-000 (OPTIONAL)		1
	290-9025-000	2	XTAL UNIT,QTZ, 9755.000KHZ (V32897) 290-9025-000 (OPTIONAL)		1
	290-9026-000	2	XTAL UNIT,QTZ, 9955.000KHZ (V32897) 290-9026-000 (OPTIONAL)		1
	290-9027-000	2	XTAL UNIT,QTZ, 10155.00KHZ (V32897) 290-9027-000 Y4		1
	290-9028-000	2	XTAL UNIT,QTZ, 10355.00KHZ (V32897) 290-9028-000 Y5		1
	290-9029-000	2	XTAL UNIT,QTZ, 10555.00KHZ (V32897) 290-9029-000 (OPTIONAL)		1
	290-9030-000	2	XTAL UNIT,QTZ, 10755.00KHZ (V32897) 290-9030-000 (OPTIONAL)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDET	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	290-9031-000	2	XTAL UNIT,QTZ, 10955.00KHZ (V32897) 290-9031-000 (OPTIONAL)		1
	290-9032-000	2	XTAL UNIT,QTZ, 11155.00KHZ (V32897) 290-9032-000 (OPTIONAL)		1
	290-9033-000	2	XTAL UNIT,QTZ, 11355.00KHZ (V32897) 290-9033-000 (OPTIONAL)		1
	290-9034-000	2	XTAL UNIT,QTZ, 11555.00KHZ (V32897) 290-9034-000 (OPTIONAL)		1
	290-9035-000	2	XTAL UNIT,QTZ, 11755.00KHZ (V32897) 290-9035-000 (OPTIONAL)		1
	290-9036-000	2	XTAL UNIT,QTZ, 11955.00KHZ (V32897) 290-9036-000 (OPTIONAL)		1
	290-9037-000	2	XTAL UNIT,QTZ, 12155.00KHZ (V32897) 290-9037-000 (OPTIONAL)		1
	290-9038-000	2	XTAL UNIT,QTZ, 12355.00KHZ (V32897) 290-9038-000 (OPTIONAL)		1
	290-9039-000	2	XTAL UNIT,QTZ, 12555.00KHZ (V32897) 290-9039-000 (OPTIONAL)		1
	290-9040-000	2	XTAL UNIT,QTZ, 12755.00KHZ (V32897) 290-9040-000 (OPTIONAL)		1
	290-9041-000	2	XTAL UNIT,QTZ, 12955.00KHZ (V32897) 290-9041-000 (OPTIONAL)		1
	290-9042-000	2	XTAL UNIT,QTZ, 13155.00KHZ (V32897) 290-9042-000 (OPTIONAL)		1
	290-9043-000	2	XTAL UNIT,QTZ, 13355.00KHZ (V32897) 290-9043-000 (OPTIONAL)		1
	290-9044-000	2	XTAL UNIT,QTZ, 13555.00KHZ (V32897) 290-9044-000 (OPTIONAL)		1
	290-9045-000	2	XTAL UNIT,QTZ, 13755.00KHZ (V32897) 290-9045-000 (OPTIONAL)		1
	290-9046-000	2	XTAL UNIT,QTZ, 13955.00KHZ (V32897) 290-9046-000 (OPTIONAL)		1
	290-9047-000	2	XTAL UNIT,QTZ, 14155.00KHZ (V32897) 290-9047-000 (OPTIONAL)		1
	290-9048-000	2	XTAL UNIT,QTZ, 14355.00KHZ (V32897) 290-9048-000 (OPTIONAL)		1
	290-9049-000	2	XTAL UNIT,QTZ, 14555.00KHZ (V32897) 290-9049-000 (OPTIONAL)		1
	290-9050-000	2	XTAL UNIT,QTZ, 14755.00KHZ (V32897) 290-9050-000 (OPTIONAL)		1
	290-9051-000	2	XTAL UNIT,QTZ, 14955.00KHZ (V32897) 290-9051-000 (OPTIONAL)		1
	290-9052-000	2	XTAL UNIT,QTZ, 7577.500KHZ (V32897) 290-9052-000 (OPTIONAL)		1
	290-9053-000	2	XTAL UNIT,QTZ, 7677.500KHZ (V32897) 290-9053-000 (OPTIONAL)		1
	290-9054-000	2	XTAL UNIT,QTZ, 7777.500KHZ (V32897) 290-9054-000 (OPTIONAL)		1
	290-9055-000	2	XTAL UNIT,QTZ, 7877.500KHZ (V32897) 290-9055-000 (OPTIONAL)		1
	290-9056-000	2	XTAL UNIT,QTZ, 7977.500KHZ (V32897) 290-9056-000 (OPTIONAL)		1
	290-9057-000	2	XTAL UNIT,QTZ, 8077.500KHZ (V32897) 290-9057-000 (OPTIONAL)		1
	290-9058-000	2	XTAL UNIT,QTZ, 8177.500KHZ (V32897) 290-9058-000 (OPTIONAL)		1
	290-9059-000	2	XTAL UNIT,QTZ, 8277.500KHZ (V32897) 290-9059-000 (OPTIONAL)		1
	290-9060-000	2	XTAL UNIT,QTZ, 8377.500KHZ (V32897) 290-9060-000 (OPTIONAL)		1
	290-9061-000	2	XTAL UNIT,QTZ, 8477.500KHZ (V32897) 290-9061-000 (OPTIONAL)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	290-9062-000	2	XTAL UNIT,QTZ, 8577.500KHZ (V32897) 290-9062-000 Y6		1
	5290-9179-000	2	XTAL UNIT,QTZ, 8627.500KHZ (V94148) 290-9179-000 (OPTIONAL)		1
	290-9063-000	2	XTAL UNIT,QTZ, 8677.500KHZ (V32897) 290-9063-000 Y7		1
	290-9064-000	2	XTAL UNIT,QTZ, 8777.500KHZ (V32897) 290-9064-000 (OPTIONAL)		1
	290-9065-000	2	XTAL UNIT,QTZ, 8877.500KHZ (V32897) 290-9065-000 (OPTIONAL)		1
	290-9066-000	2	XTAL UNIT,QTZ, 8977.500KHZ (V32897) 290-9066-000 Y8		1
	290-9067-000	2	XTAL UNIT,QTZ, 9077.500KHZ (V32897) 290-9067-000 (OPTIONAL)		1
	290-9068-000	2	XTAL UNIT,QTZ, 9177.500KHZ (V32897) 290-9068-000 (OPTIONAL)		1
	290-9069-000	2	XTAL UNIT,QTZ, 9277.500KHZ (V32897) 290-9069-000 (OPTIONAL)		1
	290-9070-000	2	XTAL UNIT,QTZ, 9377.500KHZ (V32897) 290-9070-000 (OPTIONAL)		1
	290-9071-000	2	XTAL UNIT,QTZ, 9477.500KHZ (V32897) 290-9071-000 (OPTIONAL)		1
	290-9072-000	2	XTAL UNIT,QTZ, 9577.500KHZ (V32897) 290-9072-000 (OPTIONAL)		1
	290-9073-000	2	XTAL UNIT,QTZ, 9677.500KHZ (V32897) 290-9073-000 (OPTIONAL)		1
	290-9074-000	2	XTAL UNIT,QTZ, 9777.500KHZ (V32897) 290-9074-000 (OPTIONAL)		1
	290-9075-000	2	XTAL UNIT,QTZ, 9877.500KHZ (V32897) 290-9075-000 (OPTIONAL)		1
	290-9076-000	2	XTAL UNIT,QTZ, 9977.500KHZ (V32897) 290-9076-000 (OPTIONAL)		1
	290-9077-000	2	XTAL UNIT,QTZ, 10077.50KHZ (V32897) 290-9077-000 (OPTIONAL)		1
	290-9078-000	2	XTAL UNIT,QTZ, 10177.50KHZ (V32897) 290-9078-000 (OPTIONAL)		1
	290-9079-000	2	XTAL UNIT,QTZ, 10277.50KHZ (V32897) 290-9079-000 (OPTIONAL)		1
	290-9080-000	2	XTAL UNIT,QTZ, 10377.50KHZ (V32897) 290-9080-000 (OPTIONAL)		1
	290-9081-000	2	XTAL UNIT,QTZ, 10477.50KHZ (V32897) 290-9081-000 (OPTIONAL)		1
	290-9082-000	2	XTAL UNIT,QTZ, 10577.50KHZ (V32897) 290-9082-000 (OPTIONAL)		1
	290-9083-000	2	XTAL UNIT,QTZ, 10677.50KHZ (V32897) 290-9083-000 (OPTIONAL)		1
	290-9084-000	2	XTAL UNIT,QTZ, 10777.50KHZ (V32897) 290-9084-000 (OPTIONAL)		1
	290-9085-000	2	XTAL UNIT,QTZ, 10877.50KHZ (V32897) 290-9085-000 (OPTIONAL)		1
	290-9086-000	2	XTAL UNIT,QTZ, 10977.50KHZ (V32897) 290-9086-000 (OPTIONAL)		1
	290-9087-000	2	XTAL UNIT,QTZ, 11077.50KHZ (V32897) 290-9087-000 (OPTIONAL)		1
	290-9088-000	2	XTAL UNIT,QTZ, 11177.50KHZ (V32897) 290-9088-000 (OPTIONAL)		1
	290-9089-000	2	XTAL UNIT,QTZ, 11277.50KHZ (V32897) 290-9089-000 (OPTIONAL)		1
	290-9090-000	2	XTAL UNIT,QTZ, 11377.50KHZ (V32897) 290-9090-000 (OPTIONAL)		1
	290-9091-000	2	XTAL UNIT,QTZ, 11477.50KHZ (V32897) 290-9091-000 (OPTIONAL)		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	290-9092-000	2	XTAL UNIT,QTZ, 11577.50KHZ (V32897) 290-9092-000 (OPTIONAL)		1
	290-9093-000	2	XTAL UNIT,QTZ, 11677.50KHZ (V32897) 290-9093-000 (OPTIONAL)		1
	290-9094-000	2	XTAL UNIT,QTZ, 11777.50KHZ (V32897) 290-9094-000 (OPTIONAL)		1
	290-9095-000	2	XTAL UNIT,QTZ, 11877.50KHZ (V32897) 290-9095-000 (OPTIONAL)		1
	290-9096-000	2	XTAL UNIT,QTZ, 11977.50KHZ (V32897) 290-9096-000 (OPTIONAL)		1
	290-9097-000	2	XTAL UNIT,QTZ, 12077.50KHZ (V32897) 290-9097-000 Y9		1
	290-9098-000	2	XTAL UNIT,QTZ, 12177.50KHZ (V32897) 290-9098-000 Y10		1
	290-9099-000	2	XTAL UNIT,QTZ, 12277.50KHZ (V32897) 290-9099-000 Y11		1
	290-9100-000	2	XTAL UNIT,QTZ, 12377.50KHZ (V32897) 290-9100-000 (OPTIONAL)		1
	290-9101-000	2	XTAL UNIT,QTZ, 12477.50KHZ (V32897) 290-9101-000 (OPTIONAL)		1
	290-9102-000	2	XTAL UNIT,QTZ, 12577.50KHZ (V32897) 290-9102-000 (OPTIONAL)		1
	290-9103-000	2	XTAL UNIT,QTZ, 12677.50KHZ (V32897) 290-9103-000 (OPTIONAL)		1
	290-9104-000	2	XTAL UNIT,QTZ, 12777.50KHZ (V32897) 290-9104-000 (OPTIONAL)		1
	290-9105-000	2	XTAL UNIT,QTZ, 12877.50KHZ (V32897) 290-9105-000 (OPTIONAL)		1
	290-9106-000	2	XTAL UNIT,QTZ, 12977.50KHZ (V32897) 290-9106-000 (OPTIONAL)		1
	290-9107-000	2	XTAL UNIT,QTZ, 13077.50KHZ (V32897) 290-9107-000 (OPTIONAL)		1
	290-9108-000	2	XTAL UNIT,QTZ, 13177.50KHZ (V32897) 290-9108-000 (OPTIONAL)		1
	290-9109-000	2	XTAL UNIT,QTZ, 13277.50KHZ (V32897) 290-9109-000 (OPTIONAL)		1
	290-9110-000	2	XTAL UNIT,QTZ, 13377.50KHZ (V32897) 290-9110-000 (OPTIONAL)		1
	290-9111-000	2	XTAL UNIT,QTZ, 13477.50KHZ (V32897) 290-9111-000 (OPTIONAL)		1
	290-9112-000	2	XTAL UNIT,QTZ, 13577.50KHZ (V32897) 290-9112-000 (OPTIONAL)		1
	290-9113-000	2	XTAL UNIT,QTZ, 13677.50KHZ (V32897) 290-9113-000 (OPTIONAL)		1
	290-9114-000	2	XTAL UNIT,QTZ, 13777.50KHZ (V32897) 290-9114-000 (OPTIONAL)		1
	290-9115-000	2	XTAL UNIT,QTZ, 13877.50KHZ (V32897) 290-9115-000 (OPTIONAL)		1
	290-9116-000	2	XTAL UNIT,QTZ, 13977.50KHZ (V32897) 290-9116-000 (OPTIONAL)		1
	290-9117-000	2	XTAL UNIT,QTZ, 14077.50KHZ (V32897) 290-9117-000 (OPTIONAL)		1
	290-9118-000	2	XTAL UNIT,QTZ, 14177.50KHZ (V32897) 290-9118-000 (OPTIONAL)		1
	290-9119-000	2	XTAL UNIT,QTZ, 14277.50KHZ (V32897) 290-9119-000 (OPTIONAL)		1
	290-9120-000	2	XTAL UNIT,QTZ, 14377.50KHZ (V32897) 290-9120-000 (OPTIONAL)		1
	290-9122-000	2	XTAL UNIT,QTZ, 14577.50KHZ (V32897) 290-9122-000 (OPTIONAL)		1
	290-9123-000	2	XTAL UNIT,QTZ, 14677.50KHZ (V32897) 290-9123-000 (OPTIONAL)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	S29C-9124-000	2	XTAL UNIT,QTZ, 14777.50KHZ (V94148) 290-9124-000 (OPTIONAL)		1
	S29C-9125-000	2	XTAL UNIT,QTZ, 14877.50KHZ (V94148) 290-9125-000 (OPTIONAL)		1
	S29C-9126-000	2	XTAL UNIT,QTZ, 14977.50KHZ (V94148) 290-9126-000 (OPTIONAL)		1
	S29C-9127-000	2	XTAL UNIT,QTZ, 15077.50KHZ (V94148) 290-9127-000 (OPTIONAL)		1
	S29C-9128-000	2	XTAL UNIT,QTZ, 15177.50KHZ (V94148) 290-9128-000 (OPTIONAL)		1
	S29C-9129-000	2	XTAL UNIT,QTZ, 15277.50KHZ (V94148) 290-9129-000 (OPTIONAL)		1
	S29C-9130-000	2	XTAL UNIT,QTZ, 15377.50KHZ (V94148) 290-9130-000 (OPTIONAL)		1
	S29C-9131-000	2	XTAL UNIT,QTZ, 15477.50KHZ (V94148) 290-9131-000 (OPTIONAL)		1
	S29C-9142-000	2	XTAL UNIT,QTZ, 15527.50KHZ (V94148) 290-9142-000 (OPTIONAL)		1
	S29C-9132-000	2	XTAL UNIT,QTZ, 15577.50KHZ (V94148) 290-9132-000 (OPTIONAL)		1
	S29C-9143-000	2	XTAL UNIT,QTZ, 15627.50KHZ (V94148) 290-9143-000 (OPTIONAL)		1
	S29C-9133-000	2	XTAL UNIT,QTZ, 15677.50KHZ (V94148) 290-9133-000 (OPTIONAL)		1
	S29C-9144-000	2	XTAL UNIT,QTZ, 15727.50KHZ (V94148) 290-9144-000 (OPTIONAL)		1
	S29C-9134-000	2	XTAL UNIT,QTZ, 15777.50KHZ (V94148) 290-9134-000 (OPTIONAL)		1
	S29C-9201-000	2	XTAL UNIT,QTZ, 15827.50KHZ (V94148) 290-9201-000 Y12		1
	S29C-9135-000	2	XTAL UNIT,QTZ, 15877.50KHZ (V94148) 290-9135-000 (OPTIONAL)		1
	S29C-9145-000	2	XTAL UNIT,QTZ, 15927.50KHZ (V94148) 290-9145-000 (OPTIONAL)		1
	S29C-9136-000	2	XTAL UNIT,QTZ, 15977.50KHZ (V94148) 290-9136-000 (OPTIONAL)		1
	S29C-9146-000	2	XTAL UNIT,QTZ, 16027.50KHZ (V94148) 290-9146-000 (OPTIONAL)		1
	S29C-9137-000	2	XTAL UNIT,QTZ, 16077.50KHZ (V94148) 290-9137-000 (OPTIONAL)		1
	S29C-9147-000	2	XTAL UNIT,QTZ, 16127.50KHZ (V94148) 290-9147-000 (OPTIONAL)		1
	S29C-9138-000	2	XTAL UNIT,QTZ, 16177.50KHZ (V94148) 290-9138-000 (OPTIONAL)		1
	S29C-9148-000	2	XTAL UNIT,QTZ, 16227.50KHZ (V94148) 290-9148-000 (OPTIONAL)		1
	S29C-9139-000	2	XTAL UNIT,QTZ, 16277.50KHZ (V94148) 290-9139-000 (OPTIONAL)		1
	S29C-9149-000	2	XTAL UNIT,QTZ, 16327.50KHZ (V94148) 290-9149-000 (OPTIONAL)		1
	S29C-9140-000	2	XTAL UNIT,QTZ, 16377.50KHZ (V94148) 290-9140-000 (OPTIONAL)		1
	S29C-9141-000	2	XTAL UNIT,QTZ, 16477.50KHZ (V94148) 290-9141-000 (OPTIONAL)		1

section 6
parts list

6.3 NUMERIAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
A159	6-2-72	1	DM15F471K300WV4C	6-2-150	1
A201-5N	6-2-84	1	R		
A201-94	6-2-85	1		6-2-215	1
A238-5MILL6085A	6-2-25	3	DM15F511G300WV4C	6-2-310	1
BE0584	6-2-73	1	R		
BL290-8454-000	6-2-20	1		6-2-332	1
BL290-8705-000	6-2-297	1	DM15F511J300WV4C	6-2-233	1
BL290-8706-000	6-2-296	1	R		
CC20CH6R0D	6-2-154	1		6-2-284	1
	6-2-157	1	D28121	6-2-126	1
CC20CH7R0D	6-2-167	1	D31582	6-2-119	1
CC20CJ030C	6-2-157	1	E13657	6-2-222	1
CC20CJ030D	6-2-316	1	E26A817	6-2-138	1
CC20CK010C	6-2-316	1	F02B250V1AS	6-1-18	1
CM05FD101J03	6-2-318	1		6-2-70	1
CM05FD131J03	6-2-306	1	G340 3-8	6-2-86	1
CM05FD201J03	6-2-307	1	HKP1 1-4X1-4	6-2-71	1
CM05FD221J03	6-2-311	1	KH3491	6-1-16	1
CM05FD241J03	6-2-207	1	LA352BJPDET	6-2-330	1
	6-2-319	1	MS15571-2	6-2-102	1
CM06FD132G03	6-2-364	1	MS75008-40	6-2-286	1
CM06FD242J03	6-2-178	1		6-2-286	1
CM06FD621J03	6-2-233	1	MS75089-11	6-2-210	1
	6-2-284	1	MS75089-19	6-2-132	1
CM06FD681J03	6-2-179	1	MS75101-7	6-2-286	1
DM15C100K500WV4C	6-2-208	1		6-2-286	1
R			MS90539-08	6-2-132	1
	6-2-235A	1	MS90539-15	6-2-162	1
	6-2-244	1		6-2-356	1
	6-2-339	1	MS90540-07	6-2-360	1
	6-2-365	1	NO NUMBER	6-2-39	1
DM15C120K500WV4C	6-2-154	1		6-3-	REF
R			PW5-1001-10	6-2-221	1
DM15C150K500WV4C	6-2-216	1		6-2-273	1
R			RCR20G101KS	6-2-280	1
	6-2-304	1	RCR20G102KS	6-2-129	1
	6-2-365	1		6-2-160	1
DM15E200K500WV4C	6-2-237	1		6-2-161	1
R				6-2-191	1
	6-2-317	1		6-2-194	1
	6-2-350	1		6-2-243	1
DM15E300K500WV4C	6-2-246	1		6-2-245	1
R				6-2-287	1
DM15E470K500WV4C	6-2-363	1		6-2-313	1
R				6-2-329	1
DM15E680K500WV4C	6-2-305	1		6-2-336	1
R				6-2-353	1
	6-2-309	1	RCR20G104KS	6-2-124	1
DM15E820K500WV4C	6-2-274	1		6-2-144	1
R				6-2-148	1
	6-2-275	1		6-2-181	1
	6-2-276	1		6-2-183	1
DM15F101K500WV4C	6-2-143	1		6-2-192	1
R				6-2-195	1
	6-2-214	1		6-2-236	1
	6-2-289	1		6-2-362	1
	6-2-290	1	RCR20G105KS	6-2-145	1
	6-2-291	1		6-2-213	1
	6-2-332	1		6-2-239	1
DM15F181K500WV4C	6-2-358	1		6-2-334	1
R				6-2-341	1
DM15F221K500WV4C	6-2-209	1	RCR20G121KS	6-2-177	1
R			RCR20G122KS	6-2-357	1

NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
RCR20G123KS	6-2-226	1	S290-9134-000	6-3-	1
	6-2-248	1	S290-9135-000	5-3-	1
RCR20G153KS	6-2-134	1	S290-9136-000	6-3-	1
RCR20G155KS	6-2-88	1	S290-9137-000	6-3-	1
	6-2-123	1	S290-9138-000	6-3-	1
RCR20G182KS	6-2-169	1	S290-9139-000	6-3-	1
RCR20G184KS	6-2-333	1	S290-9140-000	6-3-	1
	6-2-335	1	S290-9141-000	5-3-	1
RCR20G223KS	6-2-117	1	S290-9142-000	5-3-	1
RCR20G224KS	6-2-118	1	S290-9143-000	6-3-	1
	6-2-120	1	S290-9144-000	6-3-	1
	6-2-238	1	S290-9145-000	6-3-	1
	6-2-354	1	S290-9146-000	6-3-	1
RCR20G225KS	6-2-340	1	S290-9147-000	6-3-	1
	6-2-343	1	S290-9148-000	5-3-	1
RCR20G270KS	6-2-219	1	S290-9149-000	5-3-	1
RCR20G271KS	6-2-251	1	S290-9179-000	6-3-	1
RCR20G273KS	6-2-182	1	S290-9201-000	6-3-	1
	6-2-241	1	TC48	6-2-229	1
	6-2-254	1	TS0205C01	6-2-21	1
RCR20G274KS	6-2-131	1	TYIICL1-062	6-1-10	1
RCR20G334KS	6-2-272	1	T50410ANDT16328	6-2-95	1
RCR20G390KS	6-2-202	1	T50411	5-2-68	1
RCR20G470KS	6-2-166	1		6-2-96	1
RCR20G472KS	6-2-204	1		6-2-97	1
	6-2-253	1		6-2-98	1
RCR20G473KS	6-2-128	1	WR5437	6-2-81	1
	6-2-349	1	WR5438	5-2-82	1
RCR20G562KS	6-2-212	1	XG83	6-2-77	1
RCR20G563KS	6-2-140	1		6-2-78	1
	6-2-190A	1		5-2-79	1
RCR20G680KS	6-2-242	1		5-2-80	1
RCR20G681KS	6-2-288	1	X185-1	6-2-100	1
RCR20G682KS	6-2-136	1	X565-1	5-2-87	1
RCR20G683KS	6-2-137	1	1-8SSBALL	6-2-28	1
	6-2-151	1	1N3010A	5-2-279	1
RCR20G684KS	6-2-91	1		6-2-279	1
RCR20G822KS	6-2-125	1	1N3010B	6-2-279	1
RCR32G102KS	6-2-175A	1		5-2-279	1
RCR32G153KS	6-2-189	1	1N4005	6-2-223	1
RCR42G562KS	6-2-228	1		5-2-224	1
RCR42G682KS	6-2-231	1		6-2-227	1
RN65D2152F	6-2-173	1	1N4454	5-2-342	1
	6-2-174	1	1N732	5-2-250	1
RN65D5112F	6-2-173	1	1N82AG	5-2-342	1
	6-2-174	1	1N979B	5-2-250	1
RN65D6811F	6-2-252	1	11J1043	5-2-176	1
RTMT12M	6-2-93	1	111CDPL	5-1-6	1
RTMT16M	6-2-93	1	118126CK	6-2-300	1
RW69V821	6-2-225	1	12AX7A	5-1-28	1
S072CHEMBLK	6-1-8	1	147-500-1001	5-2-142	1
S076-4	6-1-9	1		6-2-149	1
S096CADPL	6-1-7	1		5-2-187	1
S290-9124-000	6-3-	1		6-2-198	1
S290-9125-000	6-3-	1		6-2-298	1
S290-9126-000	6-3-	1		5-2-346	1
S290-9127-000	6-3-	1		6-2-348	1
S290-9128-000	6-3-	1	1520A	6-2-196	1
S290-9129-000	6-3-	1		6-2-294	1
S290-9130-000	6-3-	1	1529A	5-2-281	1
S290-9131-000	6-3-	1	1532A	6-2-374	1
S290-9132-000	6-3-	1	1534A	6-2-171	1
S290-9133-000	6-3-	1	1537-732	5-2-210	1

NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
1542A	6-2-345	1	290-9057-000	6-3-	1
16-144-02	6-2-180	1	290-9058-000	6-3-	1
18-257	6-2-164	1	290-9059-000	6-3-	1
183-1764-000	6-2-69	1	290-9060-000	6-3-	1
19C264A1	6-2-172	1	290-9061-000	6-3-	1
191873-CK1	6-2-301	1	290-9062-000	6-3-	1
22-16-3	6-2-285	8	290-9063-000	6-3-	1
232097F	6-2-153	1	290-9064-000	6-3-	1
232505F	6-2-158	1	290-9065-000	6-3-	1
232506F	6-2-159	1	290-9066-000	6-3-	1
232507F	6-2-152	1	290-9067-000	6-3-	1
255920F1	6-2-170	1	290-9068-000	6-3-	1
259-0949-000	6-2-38	1	290-9069-000	6-3-	1
259-1491-000	6-2-94	1	290-9070-000	6-3-	1
269-2027-000	6-2-308	1	290-9071-000	6-3-	1
	6-2-314	1	290-9072-000	6-3-	1
	6-2-320	1	290-9073-000	6-3-	1
280-2946-000	6-1-11	1	290-9074-000	6-3-	1
280-3013-000	6-2-18	1	290-9075-000	6-3-	1
280-3415-000	6-2-19	1	290-9076-000	6-3-	1
280-3416-000	6-2-19	1	290-9077-000	6-3-	1
280-3423-00	6-2-1	1	290-9078-000	6-3-	1
288-2214-000	6-2-27	3	290-9079-000	6-3-	1
290-9009-000	6-3-	1	290-9080-000	6-3-	1
290-9010-000	6-3-	1	290-9081-000	6-3-	1
290-9011-000	6-3-	1	290-9082-000	6-3-	1
290-9012-000	6-3-	1	290-9083-000	6-3-	1
290-9013-000	6-3-	1	290-9084-000	6-3-	1
290-9014-000	6-3-	1	290-9085-000	6-3-	1
290-9015-000	6-3-	1	290-9086-000	6-3-	1
290-9016-000	6-3-	1	290-9087-000	6-3-	1
290-9025-000	6-3-	1	290-9088-000	6-3-	1
290-9026-000	6-3-	1	290-9089-000	6-3-	1
290-9027-000	6-3-	1	290-9090-000	6-3-	1
290-9028-000	6-3-	1	290-9091-000	6-3-	1
290-9029-000	6-3-	1	290-9092-000	6-3-	1
290-9030-000	6-3-	1	290-9093-000	6-3-	1
290-9031-000	6-3-	1	290-9094-000	6-3-	1
290-9032-000	6-3-	1	290-9095-000	6-3-	1
290-9033-000	6-3-	1	290-9096-000	6-3-	1
290-9034-000	6-3-	1	290-9097-000	6-3-	1
290-9035-000	6-3-	1	290-9098-000	6-3-	1
290-9036-000	6-3-	1	290-9099-000	6-3-	1
290-9037-000	6-3-	1	290-9100-000	6-3-	1
290-9038-000	6-3-	1	290-9101-000	6-3-	1
290-9039-000	6-3-	1	290-9102-000	6-3-	1
290-9040-000	6-3-	1	290-9103-000	6-3-	1
290-9041-000	6-3-	1	290-9104-000	6-3-	1
290-9042-000	6-3-	1	290-9105-000	6-3-	1
290-9043-000	6-3-	1	290-9106-000	6-3-	1
290-9044-000	6-3-	1	290-9107-000	6-3-	1
290-9045-000	6-3-	1	290-9108-000	6-3-	1
290-9046-000	6-3-	1	290-9109-000	6-3-	1
290-9047-000	6-3-	1	290-9110-000	6-3-	1
290-9048-000	6-3-	1	290-9111-000	6-3-	1
290-9049-000	6-3-	1	290-9112-000	6-3-	1
290-9050-000	6-3-	1	290-9113-000	6-3-	1
290-9051-000	6-3-	1	290-9114-000	6-3-	1
290-9052-000	6-3-	1	290-9115-000	6-3-	1
290-9053-000	6-3-	1	290-9116-000	6-3-	1
290-9054-000	6-3-	1	290-9117-000	6-3-	1
290-9055-000	6-3-	1	290-9118-000	6-3-	1
290-9056-000	6-3-	1	290-9119-000	6-3-	1

NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
290-9120-000	6-3-	1	39003	6-2-155	1
290-9122-000	6-3-	1		6-2-299	1
290-9123-000	6-3-	1	4-1001XP	6-2-278	1
3-24	6-1-17	1		5-2-295	1
3-858	6-1-17	1		5-2-315	1
309-5300-000	6-2-30	4		6-2-322	1
33C58	6-2-135	1		6-2-375	1
	6-2-141	1	40C73A1	5-2-163	1
	6-2-249	1		6-2-168	1
	6-2-328	1		5-2-187A	1
332-14-02-005	6-2-278	1		5-2-205	1
	6-2-295	1		5-2-211	1
332-1403-165	6-2-232	1		6-2-220	1
	6-2-347	1		5-2-277	1
350	6-1-13	1		6-2-282	1
3501FP	6-2-45	1		5-2-338	1
	6-2-367	1		5-2-352	1
	6-2-368	1		5-2-355	1
	6-2-369	1		5-2-361	1
	6-2-370	1	41C157	5-2-105	1
	6-2-371	1		5-2-109	1
	6-2-372	1	41C92	6-2-89	1
3501MC	6-1-12	2		5-2-121	1
353-1661-010	6-2-223	1		6-2-359	1
	6-2-224	1	4159-043	5-2-103	1
	6-2-227	1	4743	6-2-83	1
36C175A	6-2-90	1	5C11A	5-2-92	1
	6-2-106	1	500-1073-003	5-2-25	1
	6-2-107	1	502-1427-002	5-2-186	1
	6-2-108	1		6-2-197	1
	6-2-110	1	503-2604-001	6-1-4	2
	6-2-111	1	5115-31MD	6-2-285	8
	6-2-112	1	515-0325	6-2-101	1
	6-2-113	1	522-1093-000	5-2-99	1
	6-2-114	1	522-3316-000	6-1-	1
	6-2-133	1	522-3317-000	6-1-	1
	6-2-147	1	526-9427-000	6-2-76	1
	6-2-165	1	540-9049-003	5-2-41	2
	6-2-167A	1		5-2-42	1
	6-2-185	1	540-9065-003	6-2-75	2
	6-2-188	1	541-5999-002	5-2-104	2
	6-2-190	1	543-5577-003	6-2-257	1
	6-2-193	1	543-8013-005	5-1-5	1
	6-2-199	1	543-8018-005	6-1-3	1
	6-2-200	1	543-8025-002	5-2-48	1
	6-2-201	1	543-8030-000	6-2-26	1
	6-2-203	1	543-8033-002	5-2-259	1
	6-2-218	1	543-8034-002	5-2-258	1
	6-2-234	1	543-8035-000	5-2-266	1
	6-2-235	1	543-8039-000	5-2-5	3
	6-2-247	1		6-2-5	2
	6-2-255	1	543-8042-000	6-2-271	1
	6-2-283	1	543-8043-000	5-2-16	1
	6-2-312	1	543-8060-002	6-2-104	1
	6-2-325	1	543-8061-002	5-2-321	3
	6-2-326	1	543-8062-002	6-2-23	1
	6-2-327	1	543-8063-002	5-2-29	1
	6-2-331	1	543-8065-002	6-2-33	2
	6-2-337	1	543-8071-003	5-2-35	1
	6-2-344	1	543-8072-003	5-2-36	1
	6-2-351	1	543-8073-003	6-2-32	1
376-2151-000	6-2-366	1	543-8076-002	5-2-257	1
376-2530-000	6-2-175	1	543-8078-002	5-2-7	1

NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
543-8080-002	6-2-379	1		5-2-50	1
543-8084-002	6-2-262	1		5-2-51	1
543-8087-002	6-2-34	2		6-2-58	1
543-8088-002	6-2-17	1	557-018-8-50E	6-2-43	1
543-8093-003	6-2-270	1		6-2-46	1
543-8101-002	6-1-2	2		6-2-49	1
543-8103-002	6-2-26	2		6-2-53	1
543-8104-002	6-2-260	1		6-2-54	1
	6-2-263	1		5-2-55	1
543-8109-002	6-2-265	1		5-2-56	1
543-8116-002	6-1-4	2		6-2-57	1
543-8120-002	6-2-52	1		6-2-59	1
543-8122-000	6-2-44	1		6-2-60	1
544-0779-004	6-2-6	1	557006C0P039R	6-2-47	1
544-2555-000	6-2-	REF		5-2-50	1
544-2825-002	6-2-40	1		5-2-51	1
	6-2-41	1		5-2-58	1
544-2844-002	6-2-22	1	557006U2P034R	6-2-43	1
544-3121-000	6-1-14	1		6-2-46	1
544-3128-002	6-2-269	1		6-2-49	1
544-3138-002	6-2-302	1		6-2-53	1
544-3140-002	6-2-24	1		6-2-54	1
544-3143-002	6-2-37	1		6-2-55	1
544-7261-000	6-2-42	1		5-2-56	1
544-7262-000	6-2-13	1		6-2-57	1
544-7266-002	6-2-301	1		6-2-59	1
544-7268-002	6-2-10	1	59-412-1000	6-2-184	1
544-7277-004	6-2-12	1		6-2-217	1
544-9729-003	6-2-303	3		6-2-240	1
545-6000-002	6-2-268	1		5-2-373	1
545-6002-002	6-2-267	1	6-32X1-8 6SPLINE	6-2-84	4
545-7785-003	6-2-323	1	416SST		
545-7786-003	6-2-324	1	6AT6	6-1-24	1
546-2130-002	6-2-31	1	6BA6	6-1-26	1
546-7823-004	6-2-261	1		6-1-27	1
546-7829-004	6-2-256	1	6RF5	5-1-22	1
548-9321-000	6-2-2	1	6DC6	5-1-20	1
548-9322-000	6-2-14	1		6-1-23	1
548-9325-000	6-2-4	1		6-1-30	1
548-9326-000	6-2-264	1	6EA8	6-1-21	1
548-9335-004	6-2-15	1		5-1-25	1
548-9342-003	6-2-3	1		6-1-29	1
55C30	6-2-122	1	6H12	6-2-139	1
	6-2-127	1		6-2-230	1
	6-2-130	1		6-2-256A	1
	6-2-146	1	609-0573-001	6-1-4	1
553-4353-001	6-2-74	1	61-61	6-2-116	1
553-5713-004	6-2-9	1	747RBLACK	6-1-1	4
553-5714-004	6-2-9	1	763-1323-001	6-2-293	1
553-5787-003	6-2-8	1	78S11M1005	6-1-15	1
554-2551-000	6-1-31	1	790-0408-001	5-2-11	1
	6-2-	REF	855-502X5V0203Z	5-2-206	1
554-2553-000	6-2-376	1	86CP11-1008	5-2-116	1
554-2554-000	6-2-115	1	8980-2 1-2	6-2-300	2
554-2555-000	6-1-31	1	8980-2 1-4	5-2-153	4
554-2557-000	6-2-376	1	8980-2 3-16	5-2-158	2
554-2559-002	6-2-156	1		6-2-159	1
554-2563-003	6-2-378	1			
554-2570-004	6-2-292	1			
554-2572-004	6-2-377	1			
554-2573-004	6-2-377	1			
554-2578-006	6-2-380	1			
557-018-5-25A	6-2-47	1			

6.4 REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
CR1	6-2-223	353-1661-010	C149	6-2-289	DM15F101K500WV4C R
CR1	6-2-223	1N4005	C15	6-2-312	36C175A
CR2	6-2-224	353-1661-010	C150	6-2-276	DM15E820K500WV4C R
CR2	6-2-224	1N4005	C152	6-2-98	T50411
CR3	6-2-227	353-1661-010	C153	6-2-90	36C175A
CR3	6-2-227	1N4005	C154	6-2-364	CM06FD132G03
CR5	6-2-250	1N732	C156	6-2-235A	DM15C100K500WV4C R
CR5	6-2-250	1N979B	C157	6-2-237	DM15E200K500WV4C R
CR6	6-2-279	1N3010A	C158	6-2-185	36C175A
CR6	6-2-279	1N3010A	C159	6-2-179	CM06FD681J03
CR6	6-2-279	1N3010E	C16	6-2-49	557-018-8-50E
CR6	6-2-279	1N3010E	C16	6-2-49	557006U2P034R
CR7	6-2-330	LA352B JPDETN	C160	6-2-178	CM06FD242J03
CR8	6-2-342	1N82AG	C161	6-2-167	CC20CH7R0D
CR8	6-2-342	1N4454	C162	6-2-167A	36C175A
C1	6-2-284	DM15F511J300WV4C R	C163	6-2-193	36C175A
C1	6-2-284	CM06FD621J03	C164	6-2-172	19C264A1
C10	6-2-51	557-018-5-25A	C165	6-2-328	33C58
C10	6-2-51	557006COP039R	C168	6-2-339	DM15C100K500WV4C R
C100	6-2-133	36C175A	C17	6-2-310	DM15F511G300WV4C R
C101	6-2-105	41C157	C18	6-2-59	557-018-8-50E
C102	6-2-135	33C58	C18	6-2-59	557006U2P034R
C104	6-2-351	36C175A	C19	6-2-311	CM05FD221J03
C105	6-2-282	40C73A1	C2	6-2-233	DM15F511J300WV4C R
C106	6-2-220	40C73A1	C2	6-2-233	CM06FD621J03
C107	6-2-138	E26A817	C20	6-2-60	557-018-8-50E
C109	6-2-106	36C175A	C21	6-2-309	DM15E680K500WV4C R
C11	6-2-338	40C73A1	C23	6-2-47	557-018-5-25A
C110	6-2-107	36C175A	C23	6-2-47	557006COP039R
C111	6-2-108	36C175A	C25	6-2-247	36C175A
C112	6-2-109	41C157	C27	6-2-244	DM15C100K500WV4C R
C113	6-2-110	36C175A	C29	6-2-119	D31582
C114	6-2-111	36C175A	C3	6-2-53	557-018-8-50E
C115	6-2-112	36C175A	C3	6-2-53	557006U2P034R
C116	6-2-113	36C175A	C30	6-2-234	36C175A
C117	6-2-326	36C175A	C31	6-2-235	36C175A
C118	6-2-327	36C175A	C32	6-2-154	CC20CH6R0D
C119	6-2-325	36C175A	C32	6-2-154	DM15C120K500WV4C R
C12	6-2-316	CC20CK10C	C33	6-2-209	DM15F221K500WV4C R
C12	6-2-316	CC20CJ300	C34	6-2-211	40C73A1
C120	6-2-304	DM15C150K500WV4C R	C37	6-2-277	40C73A1
C121	6-2-291	DM15F101K500WV4C R	C38	6-2-188	36C175A
C122	6-2-68	T50411	C4	6-2-319	CM05FD241J03
C123	6-2-96	T50411	C40	6-2-190	36C175A
C124	6-2-274	DM15E820K500WV4C R	C42	6-2-200	36C175A
C125	6-2-290	DM15F101K500WV4C R	C43	6-2-201	36C175A
C127	6-2-97	T50411	C45	6-2-203	36C175A
C128	6-2-275	DM15E820K500WV4C R	C46	6-2-208	DM15C100K500WV4C R
C129	6-2-165	36C175A	C48	6-2-205	40C73A1
C13	6-2-344	36C175A	C49	6-2-199	36C175A
C130	6-2-168	40C73A1	C5	6-2-56	557-018-8-50E
C135	6-2-187A	40C73A1			
C137	6-2-92	5C11A			
C138	6-2-206	855-502X5V0203Z			
C14	6-2-352	40C73A1			
C140	6-2-141	33C58			
C148	6-2-246	DM15E300K500WV4C R			

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
C5	6-2-56	557006L2P034R	C92	6-2-157	CC20CH6R0D
C50	6-2-89	41C92	C93	6-2-216	DM15C150K500WV4C
C51	6-2-355	40C73A1			k
C52	6-2-283	36C175A	C94	6-2-214	DM15F101K500WV4C
C53	6-2-215	DM15F471K300WV4C			R
C54	6-2-127	55C30	C95	6-2-207	CM05FD241J03
C55	6-2-122	55C30	C97	6-2-359	41C92
C56	6-2-126	D28121	DS1	6-2-102	MS15571-2
C57	6-2-146	55C30	FL1	6-2-76	526-9427-000
C58	6-2-218	36C175A	F1	6-2-70	F02B250V1AS
C59	6-2-69	183-1764-000	J1	6-2-45	3501FP
C6	6-2-318	CM05FD101J03	J10	6-2-367	3501FP
C60	6-2-229	TC48	J11	6-2-369	3501FP
C61	6-2-50	557-018-5-25A	J12	6-2-370	3501FP
C61	6-2-50	557006COP039R	J13	6-2-116	86CP11-1008
C62	6-2-337	36C175A	J5	6-2-372	3501FP
C63	6-2-332	DM15F1C1K500WV4C	J6	6-2-176	11J1043
		R	J8	6-2-371	3501FP
C63	6-2-332	DM15F511G300WV4C	J9	6-2-368	3501FP
		R	L10	6-2-72	A159
C64	6-2-143	DM15F1C1K500WV4C	L12	6-2-132	MS90539-08
		R	L12	6-2-132	MS75089-19
C65	6-2-331	36C175A	L14	6-2-360	MS90540-07
C66	6-2-114	36C175A	L15	6-2-356	MS90539-15
C67	6-2-317	DM15E2C0K500WV4C	L16	6-2-210	1537-732
		R	L16	6-2-210	MS75089-11
C68	6-2-249	33C58	L17	6-2-164	18-257
C69	6-2-46	557-018-8-50E	L2	6-2-48	543-8025-002
C69	6-2-46	557006L2P034R	L3,T3	6-2-100	X185-1
C7	6-2-57	557-018-8-50E	L5	6-2-286	MS75008-40
C7	6-2-57	557006L2P034R	L5	6-2-286	MS75008-40
C7	6-2-57	557006L2P034R	L5	6-2-286	MS75101-7
C70	6-2-307	CM05FD201J03	L5	6-2-286	MS75101-7
C71	6-2-55	557-018-8-50E	L6	6-2-73	BE0584
C71	6-2-55	557006L2P034R	L7	6-2-162	MS90539-15
C72	6-2-306	CM05FD131J03	L8	6-2-87	X565-1
C74	6-2-305	DM15E680K500WV4C	M1	6-2-83	4743
		R	P5	6-1-16	KH3491
C75	6-2-54	557-018-8-50E	P6	6-1-15	78511M1005
C75	6-2-54	557006L2P034R	R1	6-2-343	RCR20G225KS
C76	6-2-43	557-018-8-50E	R10	6-2-243	RCR20G102KS
C76	6-2-43	557006L2P034R	R11	6-2-183	RCR20G104KS
C77	6-2-361	40C73A1	R13	6-2-81	WR5437
C78	6-2-365	DM15C150K500WV4C	R14	6-2-191	RCR20G102KS
		R	R15	6-2-189	RCR32G153KS
C78	6-2-365	DM15C1C0K500WV4C	R16	6-2-190A	RCR20G563KS
		R	R17	6-2-219	RCR20G270KS
C79	6-2-363	DM15E470K500WV4C	R18	6-2-160	RCR20G102KS
		R	R19	6-2-195	RCR20G104KS
C8	6-2-121	41C92	R2	6-2-349	RCR20G473KS
C80	6-2-255	36C175A	R21	6-2-202	RCR20G390KS
C82	6-2-350	DM15E2C0K500WV4C	R22	6-2-194	RCR20G102KS
		R	R23	6-2-335	RCR20G184KS
C83	6-2-358	DM15F181K500WV4C	R24	6-2-88	RCR20G155KS
		R	R25	6-2-212	RCR20G562KS
C84	6-2-150	DM15F471K300WV4C	R27	6-2-280	RCR20G101KS
		R	R28	6-2-137	RCR20G683KS
C87	6-2-130	55C30	R29	6-2-136	RCR20G682KS
C89	6-2-147	36C175A	R3	6-2-313	RCR20G102KS
C9	6-2-58	557-018-5-25A	R30	6-2-128	RCR20G473KS
C9	6-2-58	557006COP039R	R31,R56	6-2-366	376-2151-000
C90	6-2-163	40C73A1	R32	6-2-125	RCR20G822KS
C92	6-2-157	CC20CJC30C	R33	6-2-251	RCR20G271KS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
R34	6-2-144	RCR20G104KS	S2	5-2-308	269-2027-000
R35	6-2-118	RCR20G224KS	S3	5-2-314	269-2027-000
R36	6-2-334	RCR20G105KS	S4	5-2-320	269-2027-000
R37	6-2-333	RCR20G184KS	S5	5-2-38	259-0949-000
R38	6-2-329	RCR20G102KS	S6	5-2-159	232506F
R39	6-2-362	RCR20G104KS	S7	5-2-158	232505F
R4	6-2-354	RCR20G224KS	S8	5-2-153	232097F
R40	6-2-151	RCR20G683KS	S9	5-2-152	232507F
R42	6-2-288	RCR20G681KS	TR1	5-2-139	6H12
R43	6-2-148	RCR20G104KS	TR10	5-2-196	1520A
R44	6-2-124	RCR20G104KS	TR11	5-2-256A	6H12
R45	6-2-336	RCR20G102KS	TR13	5-2-375	4-1001XP
R46	6-2-213	RCR20G105KS	TR14	5-2-374	1532A
R47	6-2-123	RCR20G155KS	TR15	5-2-294	1520A
R48	6-2-120	RCR20G224KS	TR17	5-2-93	RTMT12M
R49	6-2-129	RCR20G102KS	TR17	5-2-93	RTMT16M
R5	6-2-353	RCR20G102KS	TR2	5-2-230	6H12
R50	6-2-204	RCR20G472KS	TR22	5-2-315	4-1001XP
R51	6-2-221	PW5-10C1-10	TR23	5-2-322	4-1001XP
R52	6-2-228	RCR42G562KS	TR25	6-2-347	332-1403-165
R53	6-2-140	RCR20G563KS	TR3	5-2-345	1542A
R54	6-2-117	RCR20G223KS	TR4	5-2-171	1534A
R55	6-2-226	RCR20G123KS	TR6	6-2-295	332-14-02-005
R57	6-2-82	WR5438	TR6	5-2-295	4-1001XP
R58	6-2-248	RCR20G123KS	TR7	6-2-278	332-14-02-005
R59	6-2-225	RW69V821	TR7	6-2-278	4-1001XP
R6	6-2-245	RCR20G102KS	TR8	5-2-232	332-1403-165
R60	6-2-192	RCR20G104KS	TR9	5-2-281	1529A
R61	6-2-134	RCR20G153KS	T1	5-2-52	543-8120-002
R62	6-2-231	RCR42G682KS	T10	5-2-80	X083
R63	6-2-239	RCR20G105KS	T2	5-2-44	543-8122-000
R64	6-2-236	RCR20G104KS	T4	6-2-78	X083
R65	6-2-145	RCR20G105KS	T5	5-2-79	X083
R66	6-2-177	RCR20G121KS	T6	5-2-77	X083
R67	6-2-357	RCR20G122KS	T7	5-2-222	E13657
R68	6-2-253	RCR20G472KS	T9	5-2-180	16-144-02
R7	6-2-238	RCR20G224KS	V1	5-1-20	60C6
R70	6-2-181	RCR20G104KS	V10	5-1-22	6BF5
R71	6-2-182	RCR20G273KS	V11	5-1-23	60C6
R73	6-2-161	RCR20G102KS	V2	5-1-30	60C6
R74	6-2-272	RCR20G234KS	V3	5-1-29	6EA8
R75	6-2-166	RCR20G470KS	V4	5-1-21	6EA8
R78	6-2-131	RCR20G274KS	V5	6-1-28	12AX7A
R8	6-2-242	RCR20G680KS	V6	5-1-27	6BA6
R81,S13	6-2-175	376-2530-000	V7	5-1-26	6BA6
R82	6-2-254	RCR20G273KS	V8	5-1-25	6EA8
R83	6-2-174	RN65D5112F	V9	6-1-24	6AT6
R83	6-2-174	RN65D2152F	XDS1	5-2-103	4159-043
R84	6-2-252	RN65D6E11F	XFL1-XFL4	6-2-285	22-10-3
R85	6-2-173	RN65D5112F	XF1	6-2-71	HKP1 1-4X1-4
R85	6-2-173	RN65D2152F	XV1	5-2-346	147-500-1001
R86	6-2-273	PW5-10C1-10	XV10	5-2-298	147-500-1001
R88	6-2-91	RCR20G684KS	XV11	5-2-142	147-500-1001
R9	6-2-287	RCR20G102KS	XV2	5-2-348	147-500-1001
R90	6-2-241	RCR20G273KS	XV3	5-2-373	59-412-1000
R91	6-2-169	RCR20G182KS	XV4	5-2-240	59-412-1000
R92	6-2-175A	RCR32G102KS	XV5	5-2-184	59-412-1000
R93	6-2-340	RCR20G225KS	XV6	5-2-187	147-500-1001
R94	6-2-341	RCR20G105KS	XV7	5-2-198	147-500-1001
S1	6-2-301	191873-CK1	XV8	5-2-217	59-412-1000
S18	6-2-300	118126CK	XV9	5-2-149	147-500-1001
S11	6-2-170	255920F1	XY12	5-2-40	544-2825-002
S12	6-2-94	259-1461-000	XY14	5-2-41	544-2825-002

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
XY17	6-2-21	TS0205C01			
Y1	6-3-	290-9069-000			
Y10	6-3-	290-9068-000			
Y11	6-3-	290-9069-000			
Y12	6-3-	S290-9201-000			
Y15	6-2-297	BL290-8705-000			
Y16	6-2-296	BL290-8706-000			
Y17	6-2-20	BL290-8454-000			
Y2	6-3-	290-9010-000			
Y3	6-3-	290-9011-000			
Y4	6-3-	290-9027-000			
Y5	6-3-	290-9028-000			
Y6	6-3-	290-9062-000			
Y7	6-3-	290-9063-000			
Y8	6-3-	290-9066-000			
Y9	6-3-	290-9067-000			

section **7**

illustrations

NOTE

The period covered by this instruction book is from February 1968 to the date on the book title page.

Each equipment that had circuit changes made during the period of time covered by this instruction has the changes identified on the applicable sheet of the schematic diagram and in the parts list. Circuit changes on the schematic diagram are flagged with a change identifier pointed at the component or group of components. The identifier indicates that the component or group of components has been changed, and the number in the identifier indexes the specific change. If several components have been changed by the same equipment change, there may be more than one identifier with the same index number.


The index changes are listed on the schematic changes and equipment difference sheet inserted in front of the schematic sheet to which they are indexed.

The identifier-description describes the differences and reasons for changes and includes a recommendation as to what action should be followed during repair on maintenance.

The reason for identifying changes in this manner is that the manufacturer has scrambled serial numbers on amateur products during the period covered by this instruction book. Therefore changes cannot be identified by conventional methods.

None of the equipment changes have been made because the equipment has failed to meet the equipment

specifications and are not recommended changes for all units. Equipment changes have been made to improve performance or reliability of radios that are built using different fabrication processes. These changes will not necessarily improve the operation of your equipment.

The change identifier number is used in the parts list section of this instruction book. However, in the parts list the identifier is enclosed in slashes (for example, /1/) instead of the  symbol.

Voltage and resistance measurements for the 75S-3B/3C are located in the service instructions section of this instruction book.

The following service bulletins have been written against the 75S-3B and 75S-3C Receivers:

<u>SERVICE BULLETIN</u>	<u>DESCRIPTION</u>	<u>DATE ISSUED</u>
1	Improved performance in presence of extremely strong signals, improved performance of mechanical filters, cw operation and headphone audio quality.	Sep 29/67 (2nd revision)
2	Minimize background hum levels.	May 10/62
3	Convert 75S-3B to 75S-3C.	Apr 15/73 (1st revision)

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
1	Changed value of C32 from 6 pF to 12 pF to provide tighter coupling between T4 and T5 and between T4 and FL1. An overall increase in gain (approximately 2 dB) should also result from this change.	Na	Na
2	CR1, CR2 and CR3 changed from 1N1492 to 1N4005 for cost reduction.	Na	Na
3	Resistor R83 changed from 17.8 to 28.7 k Ω and R85 changed from 51.1 to 21.5 k Ω to provide better tracking of variable bfo frequency with the front panel calibration points.	Na	Na
4	Changed value of C1 and C2 from 510 to 620 to correct low output injection from vfo.	Na	Na
5	Changed C63 from 100 to 510 and changed C61 from 8-50 to 5-25 to improve performance of crystal calibration.	Na	Na
6	Added R94, C168, and CR8 and changed value of C12 from 1 to 3 to improve the crystal calibrator harmonics.	Na	Na
7	Diode CR8 was changed from JAN 1N826 to 1N4454 to improve calibrator output.	Na	Na
8	CR301 in the 70K-2 Oscillator was changed from 1N34A to 1N4454 for greater reliability.	Na	Na

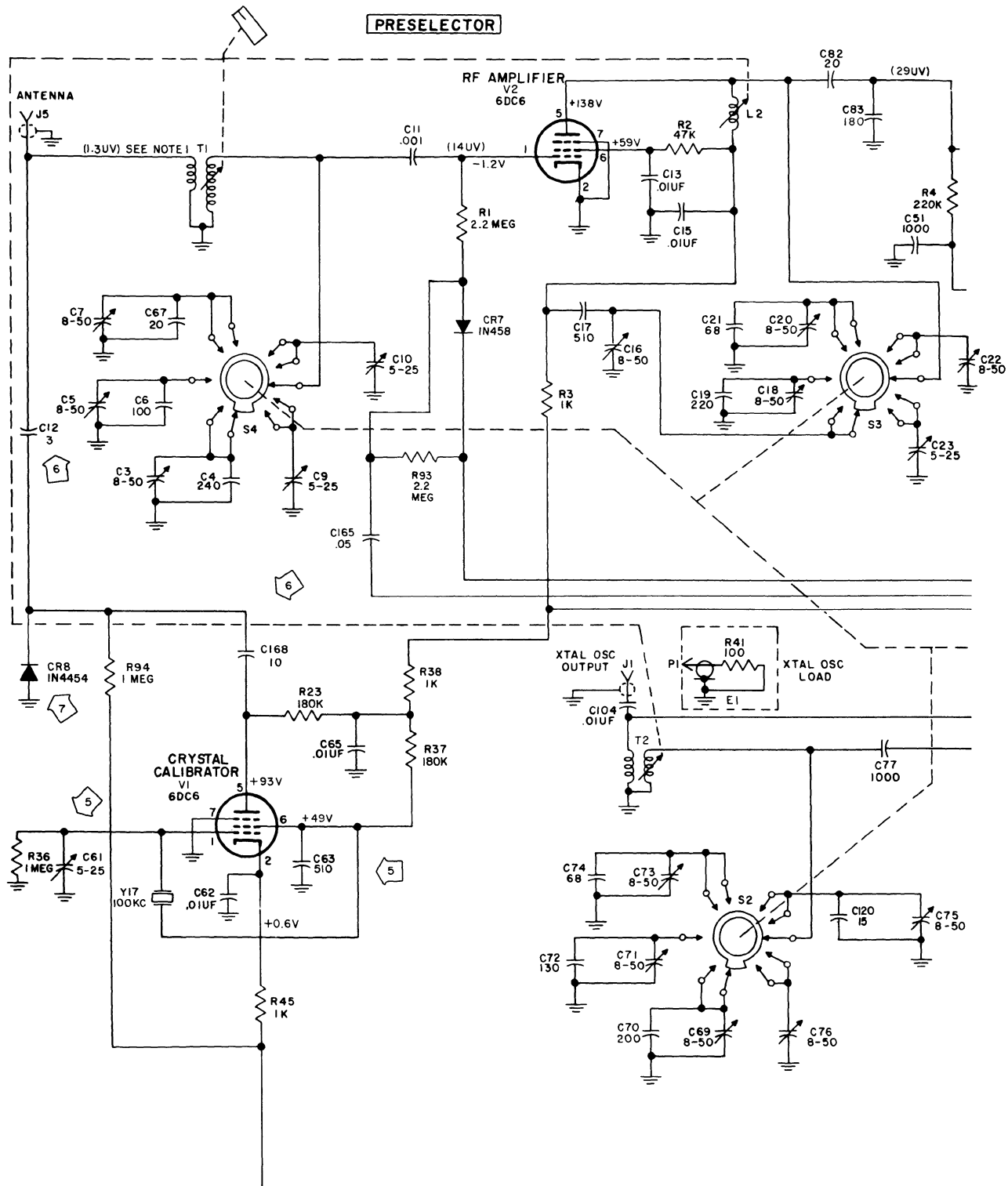
Figure 7-1. 75S-3B/3C Receiver, Schematic Diagram (Sheet A)

SECTION 7
Illustrations

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
9	Zener diode CR5 changed from 1N732 to 1N979B due to nonavailability of parts.	Na	Na
10	Changed screen grid choke L15, in hf oscillator from 2 mH to 1 mH to prevent spurious oscillations.	Na	Na
11	Changed zener type to allow tighter tolerances.		

Figure 7-1. 75S-3B/3C Receiver, Schematic Diagram (Sheet B)



SECTION 7
Illustrations

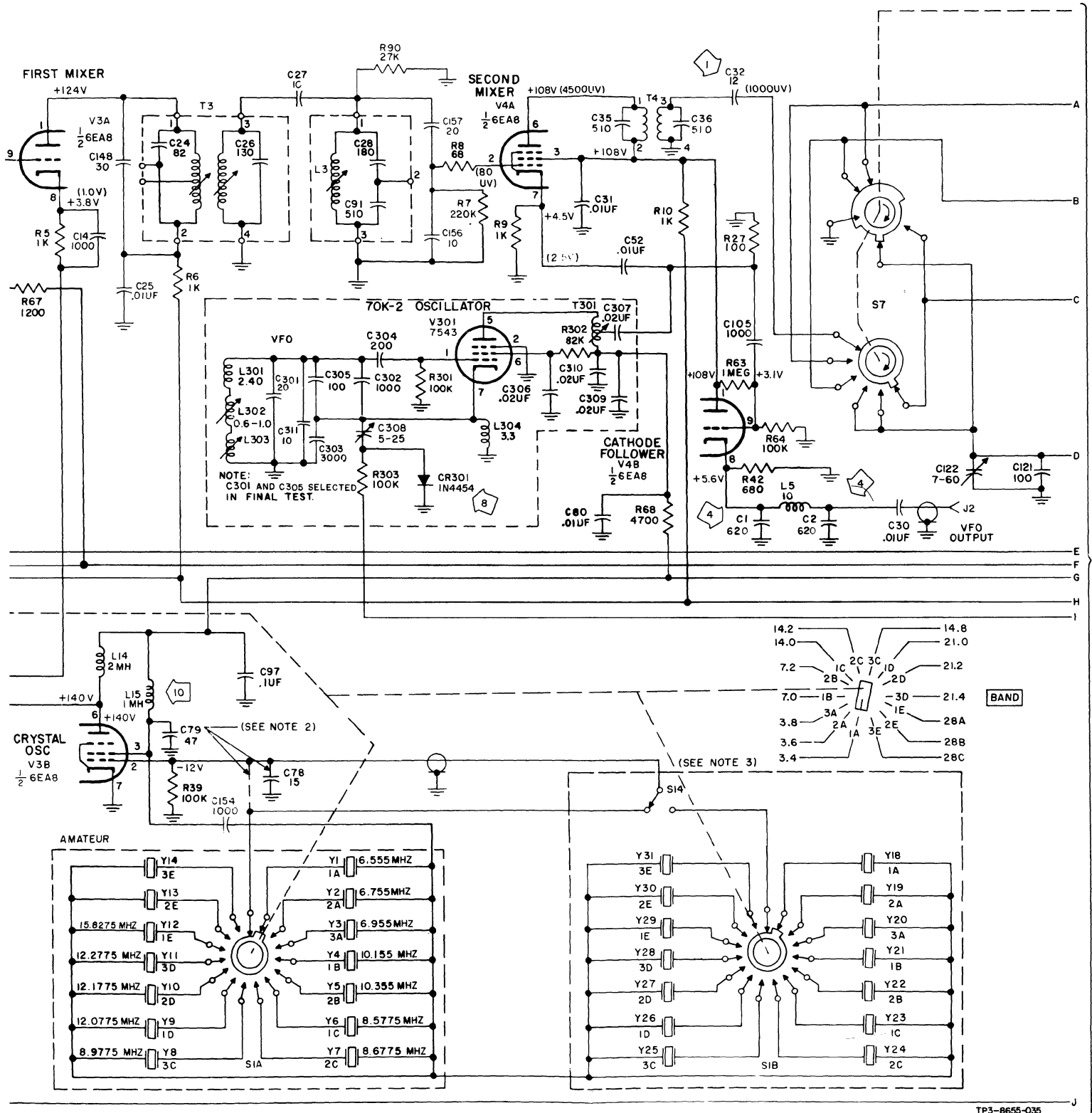
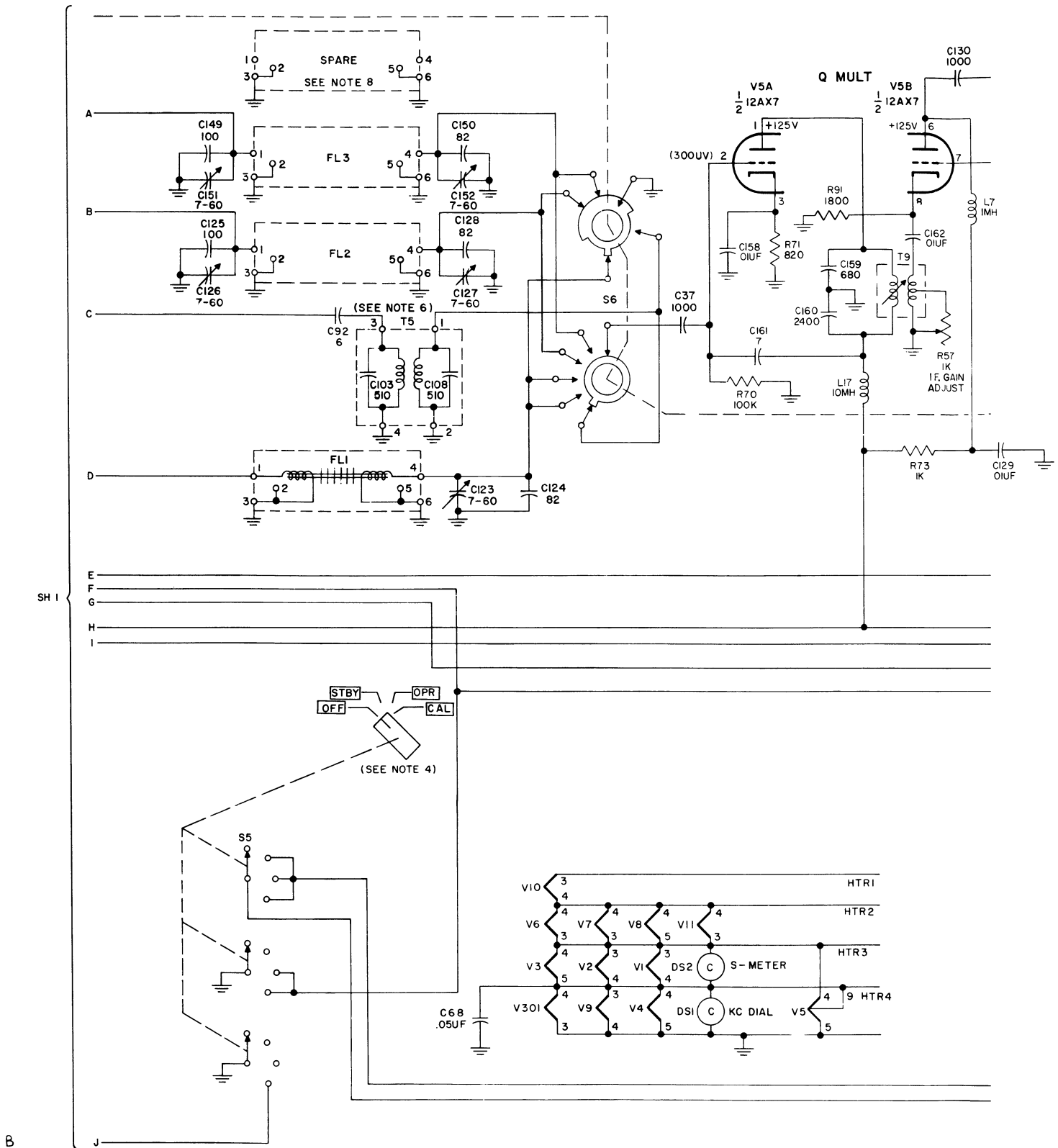


Figure 7-1. 75S-3B/3C Receiver, Schematic Diagram (Sheet 1 of 2)



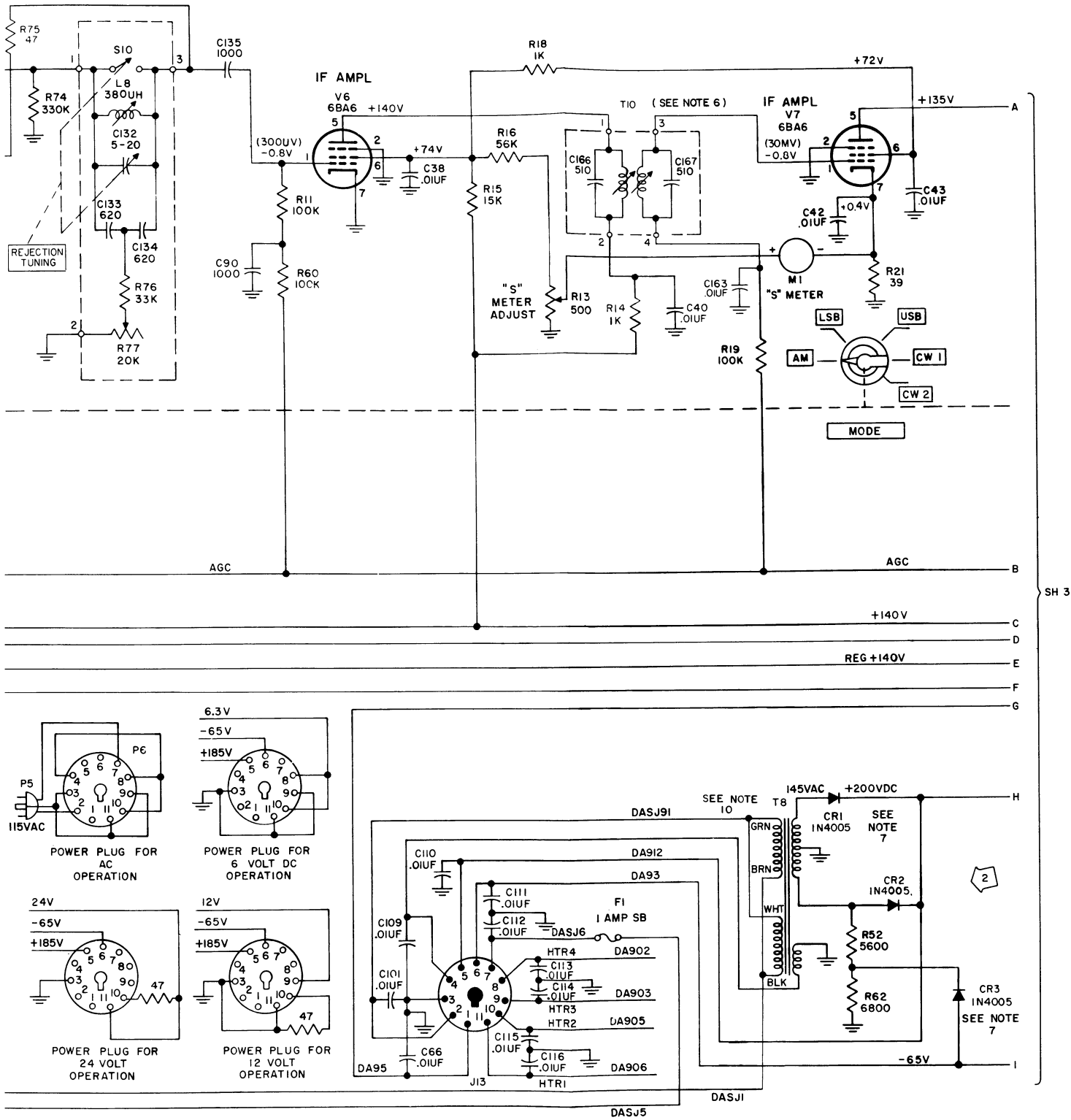
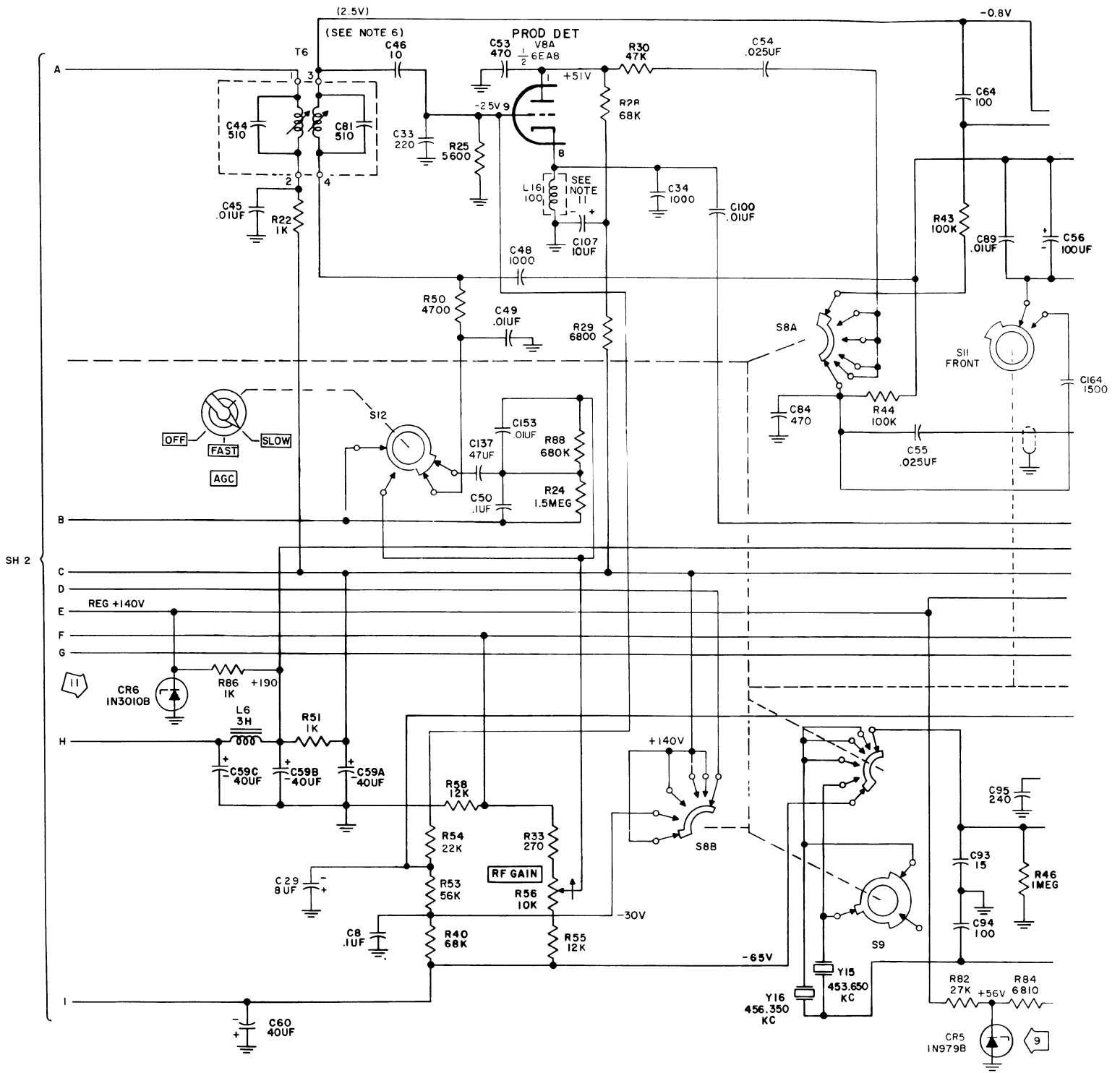


Figure 7-1. 75S-3B/3C Receiver, Schematic Diagram (Sheet 2)

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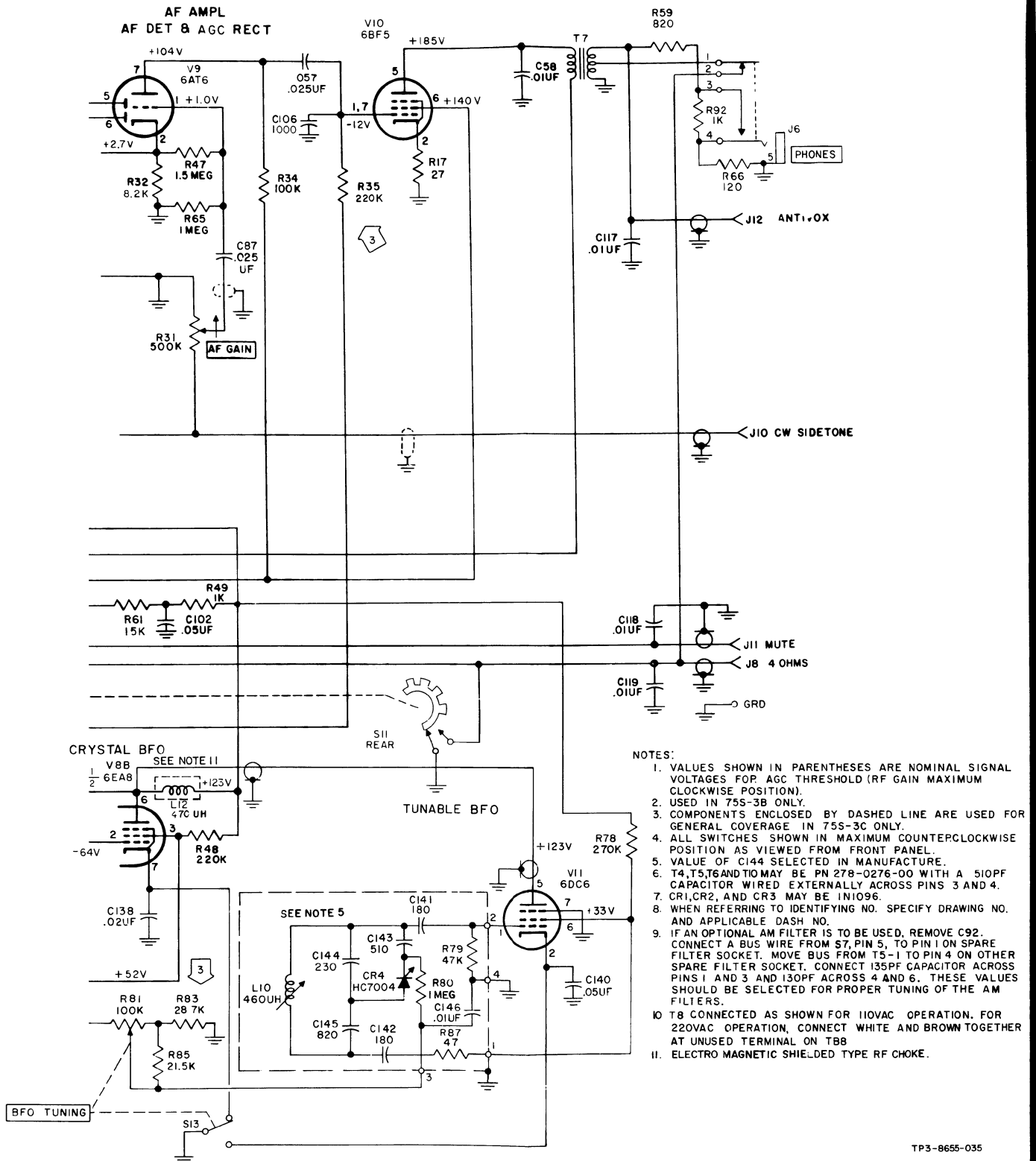


Figure 7-1. 75S-3B/3C Receiver, Schematic Diagram (Sheet 3)

Revised 15 November 1975

SECTION 7
Illustrations

NOTE:

ALL SWITCH WAFERS ARE MOUNTED WITH THEIR TOP FRONT IDENTIFICATION MARKS NEAREST THE CHASSIS AND TOWARD THE FRONT. TERMINAL NUMBER 1 IS THE FIRST TERMINAL CLOCKWISE FROM THE IDENTIFICATION MARK.

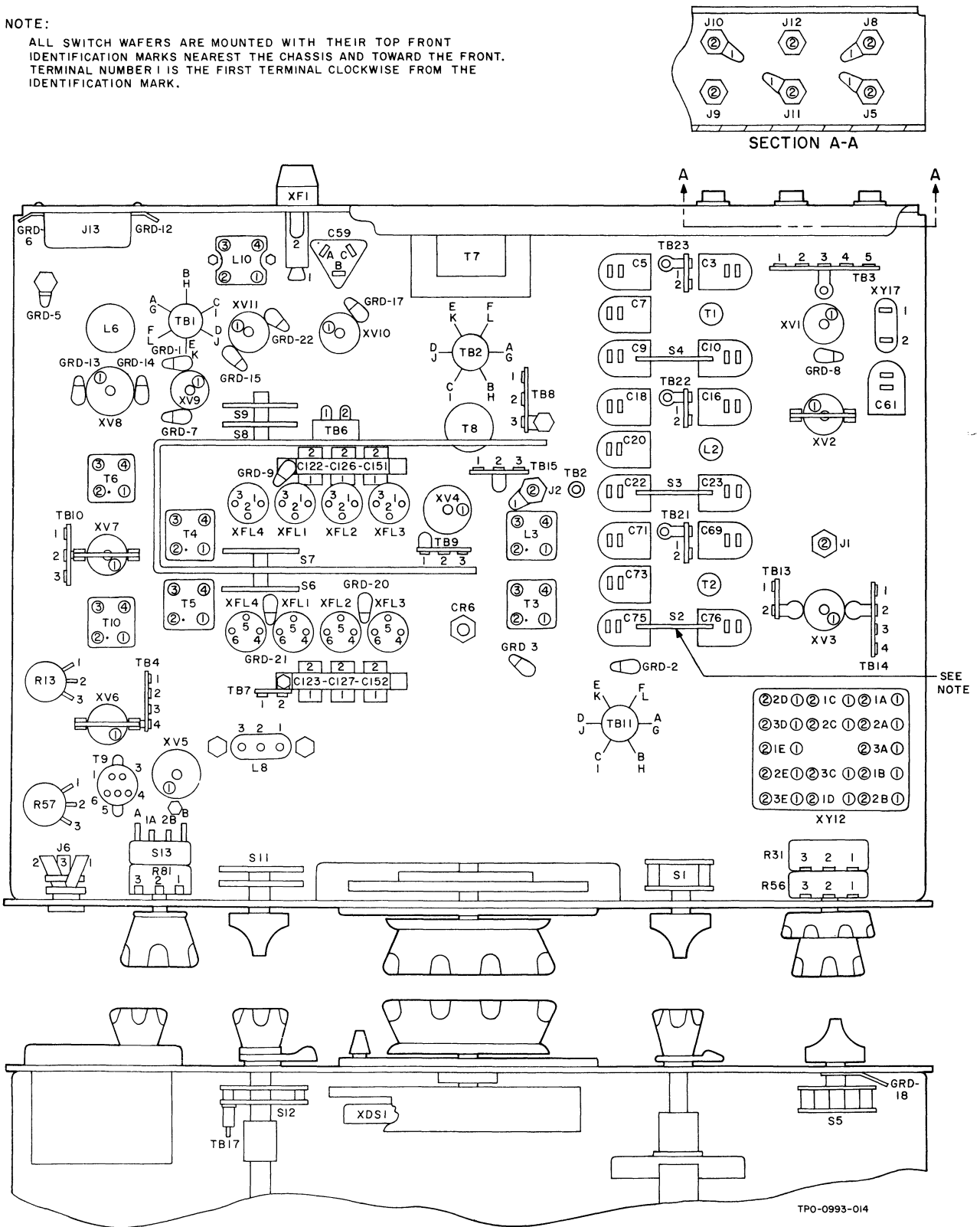


Figure 7-2. Chassis Component Location Display (Bottom View)



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