

Operating Manual DTR-1200L

Serial # 240

Purchased

12/10/50

1-6-14

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NRNW

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Dentron



MAKE NO ATTEMPT TO PUT THE AMPLIFIER IN SERVICE OUTSIDE OF THE CABINET! CONTACT WITH VOLTAGES IN THIS AMPLIFIER CAN BE FATAL!

Unpacking Instructions

Carefully remove your DTR-1200L from its packing carton making sure there is no damage evident on shipping. If there is any damage, notify the delivering shipper immediately, fully describing the damage.

Fully complete the DenTron Warranty Registration card included in this manual and return it to DenTron. Do not destroy the packing material, since it will be usable later should you require factory service or need to transport the amplifier for any other reason.

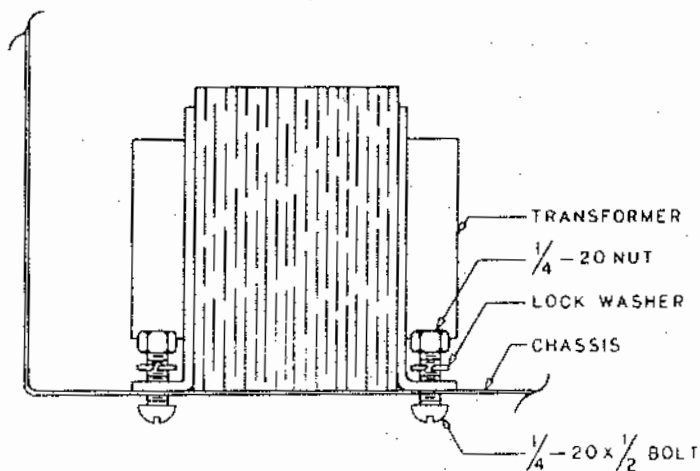
In general, the location of your new DTR-1200L is not critical. Be certain, however, to leave enough room behind the unit to allow for proper air flow.

Installation

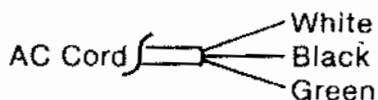
The DTR-1200L is factory wired to operate from 117 VAC line. If 234 VAC is desired, you will have to rewire the power transformer primary per the schematic diagram. The terminal block is located on the rear panel, under cover box.

Remove the eight screws (three each side and two in rear) holding the top of cabinet in place and remove top.

CAREFULLY install transformer in upper left corner and secure with $\frac{1}{4}$ x 20 bolts, lockwashers and nuts as shown in Index 1.

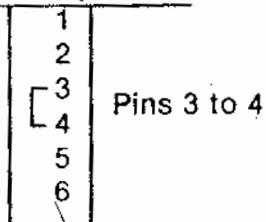


3. Connect the two mox plugs between the transformer and the 1200L wiring. Make sure the plugs are fully mated.
4. Position the DTR-1200L so that the rear of the unit is clear of all obstructions. This will assure adequate air circulation.
5. Connect a wattmeter and a 50 ohm load (such as DenTron Big Dummy), to the output connector using RG8/U or its equivalent.
6. Connect the 1200L keying lead to your transmitter using shield cable (See the interconnect diagram). The 1200L requires closed contacts to ground on transmit.
7. Connect the RF input jack to the transmitter Rf output using 50 ohm coax.
8. Connect the 1200L ALC output to the transmitter ALC input using shielded cable. (See your exciter owner manual.)
9. Connect as short a ground lead as possible from a good earth ground to the unit's rear panel GND terminal.

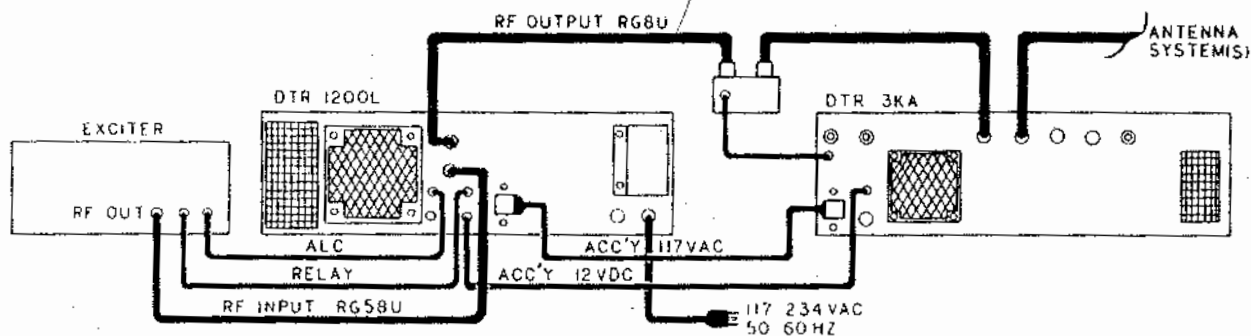
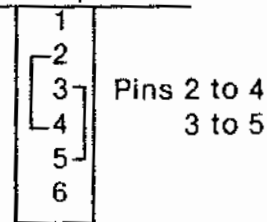


White = 1 side of 234V (117V)
 Black = other side of 234V (117V)
 Green = Ground

234 Volt Operation



117 Volt Operation



INTER-CONNECTION DIAGRAM

Theory of Operation

AC power is supplied to the DTR-1200L through fuse F1 and PWR Switch SW-3. 117 or 234 Volt operation is obtained by changing jumpers on PWR network terminal block.

This puts AC PWR to the transformer T1. The first secondary winding of T1 supply AC PWR to the voltage doubler. The voltage doubler consists of diodes M4G5 (12) and Capacitors .01 (12). The voltage doubler provides 2200 VDC to the plates of the 572B tubes in idle condition. Plate current is measured across R23, and Plate Voltage through R20, R21, and R22.

Another secondary winding of T1 supplies 12V circuit for relay and lamp operation.

A third secondary winding of T1 provides 6.3VAC for filaments of 572B tubes. RFC-2 is a filament choke.

The two 1 ohm resistors R1 and R2 act as safety valves for B+ to the tubes in case of tube shorts. These are one ohm, one watt carbon resistors in parallel.

In operation to cathode function L2, L3 through DC potential off the feedline and antenna.

!!WARNING!!

TO TAKE FULL ADVANTAGE OF THE DIRECT COOLING SYSTEM, IT IS HIGHLY RECOMMENDED THAT THE UNIT BE CHECKED FOR PROPER CLEARANCE BEHIND THE INTAKE AND EXHAUST IN THE REAR OF THE UNIT.

ALC is derived from dividers C17 and C18, and rectified negative by D2 and limited by R10, R9, and R8 back to the exciter for ALC control.

If at any time you require service on DenTron equipment, feel free to contact our Service Department for assistance.

Cautions

1. Make no attempt to put the DTR-1200L in service outside the cabinet. Contact with voltages in this amplifier can be *fatal to the human body*.
2. Never attempt to operate the DTR-1200L with drive power of more than 150 watts!
3. Never attempt to operate the DTR-1200L without first connecting it to an antenna with a SWR of less than 2:1, or a 50 Ohm dummy load of sufficient power handling capacity or serious damage may result to the amplifier.
4. Never run amplifier from an extension cord.
5. Do not attempt to change jumper connections on back of the amplifier without first removing power plug from the DTR-1200L.
6. Do not cover the rear of the DTR-1200L with books, papers, buttons or other pieces of equipment or overheating may result.
7. Do not use different tuning procedures than indicated in this manual.
8. When cleaning the DTR-1200L, never blow high pressure air directly into the fan blades. Spinning the fan at higher speeds than it was designed for can cause damage and freeze the rotor assembly of the fan. Use brush in cleaning the fan assembly.

!!WARNING!!

IF ANY PROBLEMS OCCUR THAT ARE NOT EASILY REPAIRED IN THE FIELD, PLEASE CONTACT DENTRON RADIO COMPANY, 2501 N. CALIFORNIA AVE., DENVER, CO. 80216.

Tuning Procedure

1. Position the 1200L front panel switches as follows:
PWR - OFF
STDBY/OPRTE - STDBY
PLATE VOLTAGE - OFF
METER SWITCH-PLATE VOLTAGE (Vp)
DUTY - NORMAL
2. Insert the AC line cord into the appropriate outlet.
3. Turn the main power switch to "ON." Turn plate voltage to "ON." Plate voltage should read approximately 2200 VDC, and plate current should read 0 MA.
4. Allow a few seconds for tube warm up.
5. (80M through 20M), set the load control at 1. (15M), set load control at 3.
6. Set the tune and band switch to the band being used.
7. Tune your transceiver as you normally would in the transmit position, i.e. tune for maximum power out of the transmitter and then back off to approximately 50 watt output point, (use carrier level control to set power level).
8. Set the standby/operate switch to the operate position and the meter switch to current (Ip).
9. Tune the DTR-1200L for maximum output on a wattmeter such as the DenTron W-2 Wattmeter. 1 KW DC input will not be achieved at this point. Increase drive level control and retune amplifier until 1 KW DC input is achieved.
NOTE: Check the position of the plate voltage switch to make sure it is in the on position.
10. Use the following formula to calculate the DC input level to the 1200L: $PLATE\ CURRENT \times PLATE\ VOLTAGE = POWER$.
EXAMPLE: 2000 Volts DC x .500 Amps DC = 1KW Input.
11. Once you have reached the 1 KW DC input level you need only put the exciter in the SSB position for voice operation.

RETAIN THIS SHEET WITH YOUR DTR-1200L MANUAL AS IT CONTAINS IMPORTANT CHANGES

TUNING PROCEDURE:

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APPROXIMATE SETTINGS FOR THE TUNE CONTROL ARE LISTED BELOW:

80 METERS: 75
40 METERS: 50
20 METERS: 25
15 METERS: 10

INSTALLATION:

PAGE 6, #3

CONNECT THE THREE (3) MOLEX PLUGS BETWEEN THE TRANSMITTER AND THE 1200L WIRING. MAKE SURE THE PLUGS ARE FULLY MATED AND THE NUMBERS ON THE TRANSFORMER WIRES AND THE 1200L WIRES MATCH.

INTERCONNECTION DIAGRAM:

PAGE 6

THE ACCESSORY JACK MARKED 12VDC IS A 12VAC OUTPUT JACK.

ALC ADJUSTMENT:

THE DTR-1200L IS SET FOR A NEGATIVE GOING ALC SYSTEM WHICH IS COMPATIBLE WITH MOST EXCITERS CURRENTLY AVAILABLE. IF THE EXCITER IN YOUR STATION REQUIRES A POSITIVE GOING ALC SYSTEM, DIODE D2, IN THE POWER DECK OF THE DTR-1200L, WILL HAVE TO BE REVERSED TO MAKE THE DTR-1200L COMPATIBLE.

ONCE THE DTR 1200L HAS BEEN PROPERLY TUNED FOR THE OPERATING FREQUENCY, A TWO-TONE MODULATED SIGNAL MAY BE APPLIED TO THE EXCITER AND THE ALC ADJUSTED FOR THE PROPER THRESHOLD AS FOLLOWS:

IF AN OSCILLOSCOPE IS AVAILABLE ADJUST THE ALC THRESHOLD FOR THE PROPER TRAPEZOIDAL OR CARRIER-WAVE PATTERN AS SHOWN BELOW:



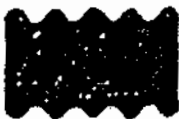
LESS THAN 100% MODULATION



100% MODULATION



OVERMODULATION



LESS THAN 100% MODULATION



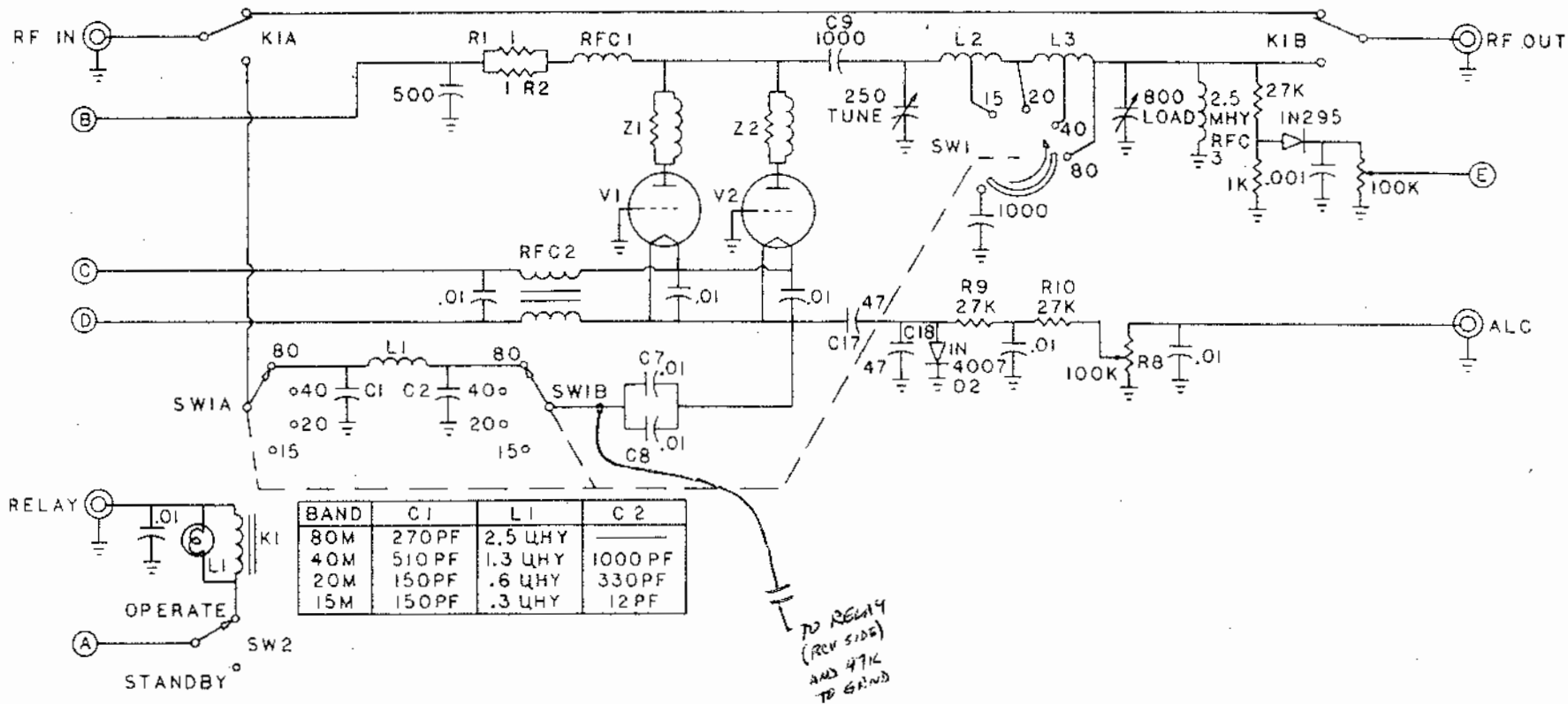
100% MODULATION



OVERMODULATION

IF AN OSCILLOSCOPE IS NOT AVAILABLE, SET THE DTR-1200L MULTIMETER SWITCH IN THE REL-OUT POSITION, AND ADJUST THE ALC CONTROL UNTIL A SLIGHT DECREASE IN THE METER READING IS OBSERVED.

Handwritten notes and diagrams at the bottom of the page. On the left, there is a hand-drawn waveform. In the center, the numbers "922" and "6545" are written. To the right, the word "Electron" is written. At the bottom center, the text "7A" is written in large, bold letters.



SCHEMATIC DTR-1200L

SCALE	APPROVED BY	DRAWN BY
DATE		CD
Denton RADIO CO.		REVISED
POWER DECK		DRAWING NUMBER
		19-013

