WAR DEPARTMENT TECHNICAL MANUAL

TM 8-627

DIATHERMY APPARATUS,

SHORT WAVE, COMPLETE,

110 VOLT, 60 CYCLE,

ITEM 7105505

WAR DEPARTMENT • *NOVEMBER 1944*

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WAR DEPARTMENT,
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TM 8–627, Diathermy Apparatus, Short Wave, Complete, 110 Volt, 60 Cycle, Item 7105505, is published for the information and guidance of all concerned.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. SCOPE. a. These instructions are published for the information and guidance of all personnel charged with the operation and maintenance of Diathermy Apparatus, Medical Department item No. 7105505 (fig. 1) in the field. They contain information on the operation and maintenance of the equipment with illustrations showing the various parts referred to in the instructions. They are arranged in three parts: Chapter 1—Introduction; Chapter 2—Operating Instructions; Chapter 3—Maintenance Instructions.

b. A list of all service parts is included in the appendix. Those parts keyed with an asterisk are spare parts regularly stocked for issue. Those parts not keyed with an asterisk are available through special purchase only.

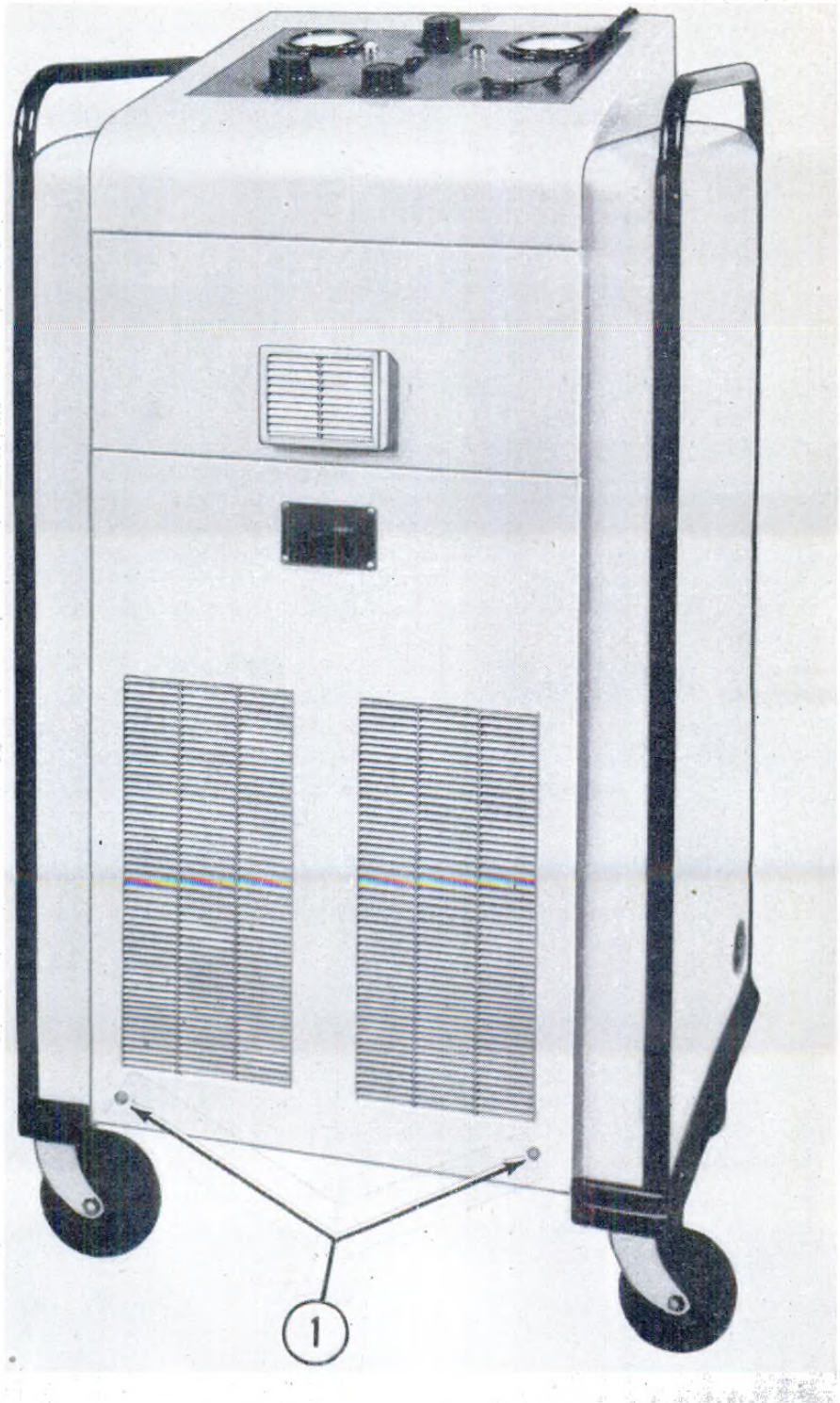
Section II. DESCRIPTION AND DATA

2. DESCRIPTION. The Burdick Model SWDX–80 Crystal Controlled Short Wave Diathermy supplies high frequency energy to either an inductance cable applicator, or a drum applicator, at a frequency of 13.660 megacycles (approximately 22 meters). Frequency control devices within the unit actuated by a piezoelectric quartz crystal maintain the frequency within a band width of plus or minus 0.05 percent of 13.660 mc, regardless of how the controls are operated or the applications to patient are made.

3. DATA. a. Performance. This machine is designed to operate on 100–130 volt, 50–60 cycles, alternating current.

b. Manufacturer. This machine is manufactured by The Burdick Corporation, Milton, Wisconsin.

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Med. Dept. No.	Nomenclature
7R08170	Screw, 1/4–20 X 3/4 Inch, Thumb, Brass.

Figure 1. Item No. 7105505 Diathermy apparatus.

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CHAPTER 2

OPERATING INSTRUCTIONS

Section I. GENERAL

4. SCOPE. The professional use of the Diathermy Apparatus is the responsibility of the Medical Officer. However, chapter 2 contains information on assembling and the mechanics of operating the equipment.

Section II. SERVICE UPON RECEIPT OF EQUIPMENT

5. UNPACKING. This unit is shipped in two cases, one of which contains the cabinet assembly and the other contains the arm, arm holder, treatment drum, cables and tubes. Open the case containing the cabinet and remove all supporting braces, screws and bolts. Remove packing materials and lift apparatus from the case. Open the other case to provide access to the contents.

6. ASSEMBLING. **a.** Remove both front and rear doors of cabinet. Front door is removed by taking out the two knurled head screws, 7R08170 (fig. 1), at bottom edge of door and pulling bottom of door out and down. Rear door is removed by taking out the 10 screws, SR00575 (fig. 2), which hold it on.

b. Carefully inspect the interior for parts loosened or broken in shipment. Remove all strings used to tie down tube connectors.

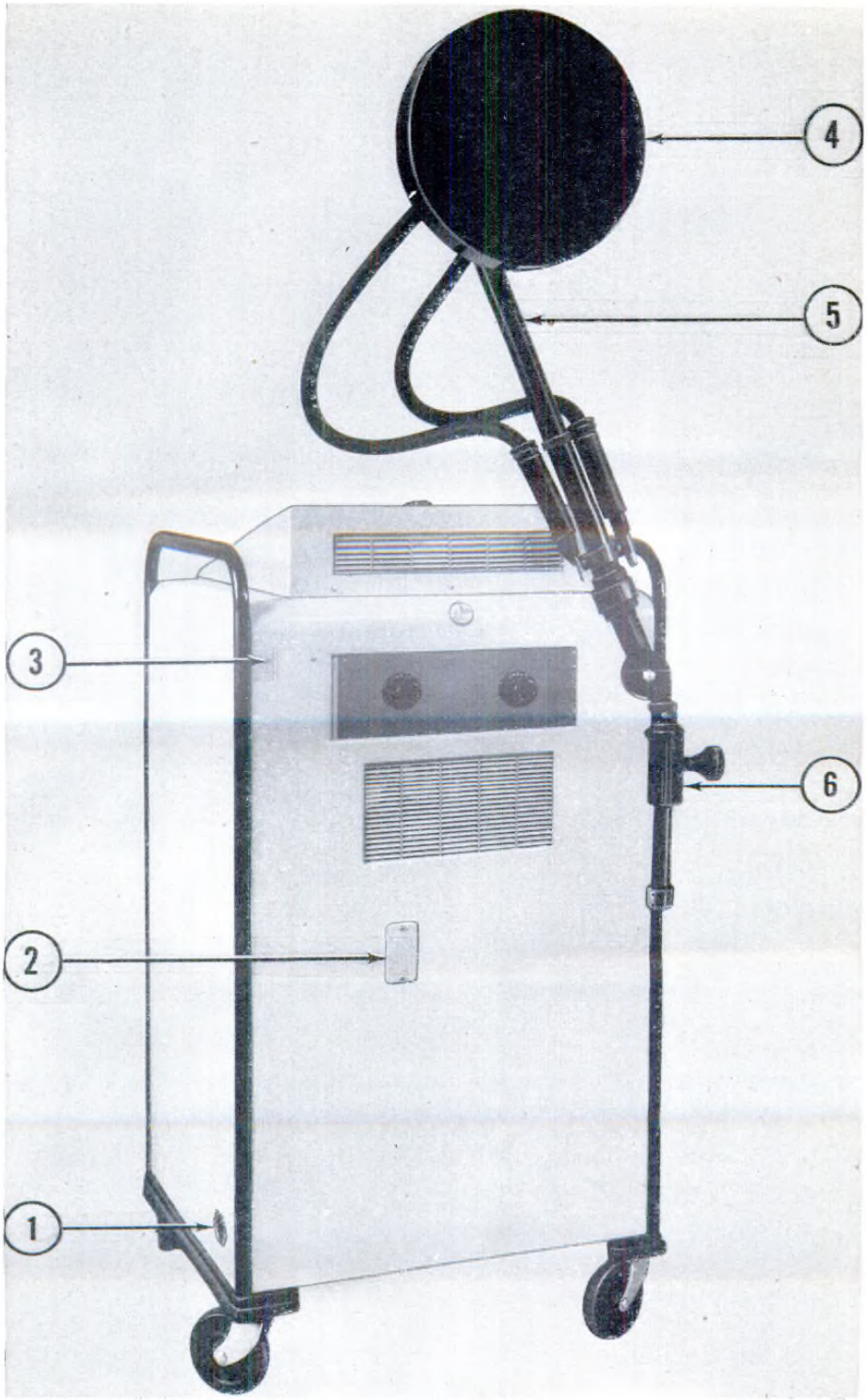
c. Attach the arm holder, 7R08252 (figs. 2 and 3), to cabinet in the position shown in figure 3. Before tightening the clamp, check the vertical position to be sure it registers with the notch in rear door.

d. Install the following tubes:

Two FP–265 final amplifiers, 7R08104 (see fig. 3).
One GL–814 exciter amplifier, SR00061 (see fig. 4).
One RCA–6–L6 Metal, oscillator, SR00062 (see fig. 4).
One RCA–5Y3GT exciter power supply rectifier, SR00064 (fig. 4).
Two RCA–866A high voltage supply rectifier, SR00063 (fig. 4).

(1) Insert the FP–265 tubes, 7R08104 (fig. 3), in the sockets at either side of final amplifier tank. These tubes fit in the sockets located directly behind the shield plates, 7R08280 (see fig. 3). Carefully rotate the tubes so the tube base pins will register with the socket holes, then push tube down as far as it will go. Attach the plate clips, 7R08188 (fig. 3), on top caps of tubes. The clips should not be snapped into position from the side, but forced gently over the ends of top caps on tubes. These leads are very short and care must be exercised not to damage them or put a strain on the tank coil when placing the clips on the tube caps.

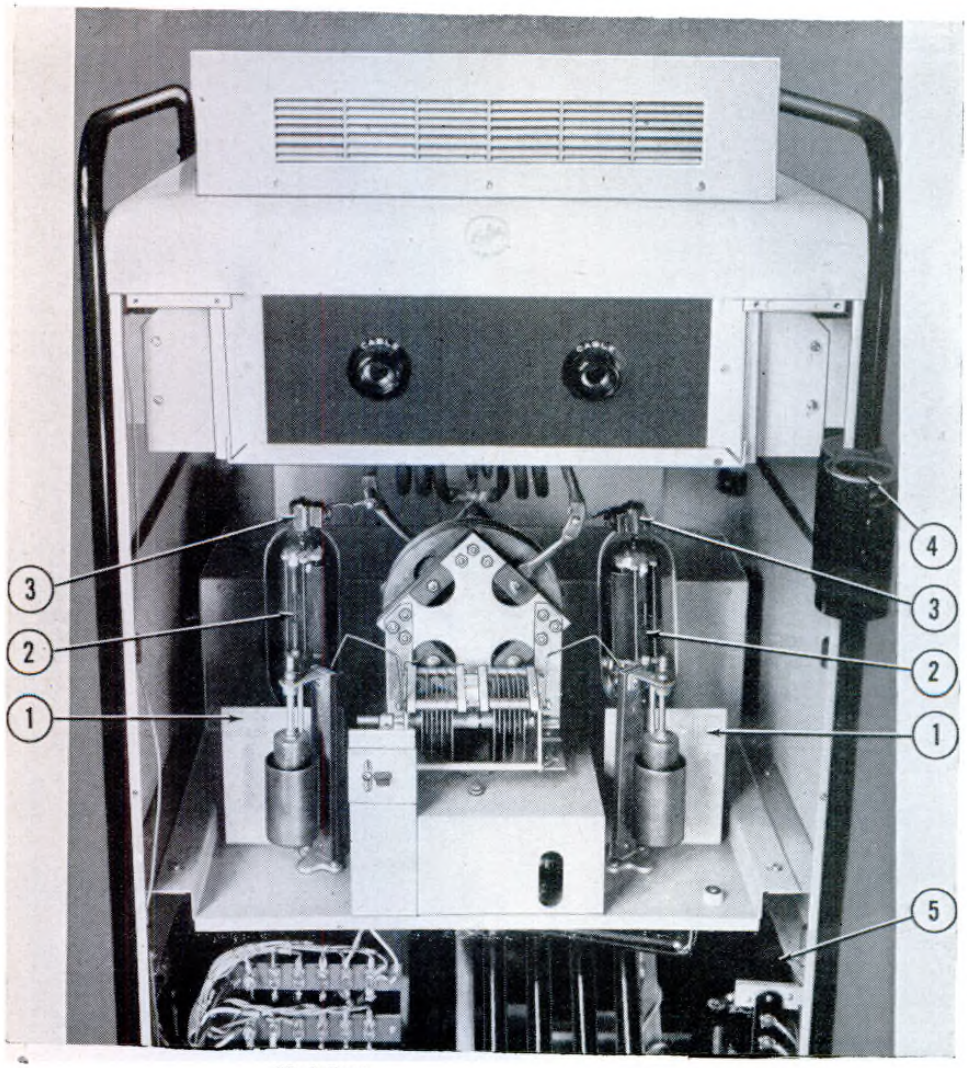
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Med. Dept. No.	Nomenclature	Med. Dept. No.	Nomenclature
1. SR00426	Receptacle, Male, Twist Lock, Three Wire, Hubbell No. 7556.	4. 7R08148	Drum, Treatment, Complete.
2. 7R08250	Plate, Cover, "Trimmer" Condenser.	5. 7R08278	Arm, Treatment Drum, Adjustable.
3. SR00575	Screw, 6-32 X 1/2-Inch, FL. H. M.	6. 7R08252	Holder, Treatment Arm, Complete.

Figure 2. Rear View, Diathermy apparatus.

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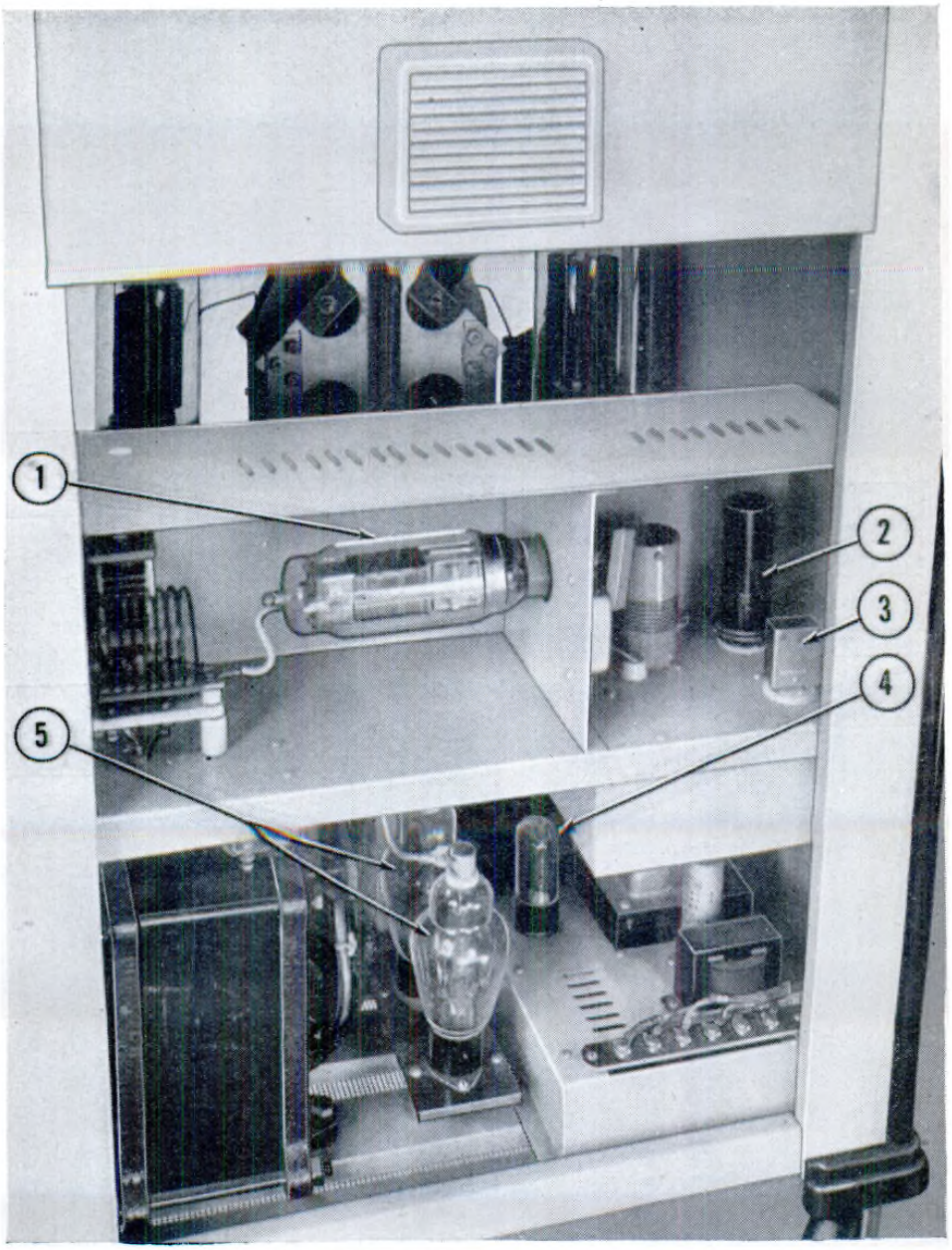


Med. Dept. No.	Nomenclature
1. 7R08280	Plate, Shield.
2. 7R08104	Tube, Amplifier, High Mu Triode.
3. 7R08188	Clip, Plate, Amplifier Tube, Complete.
4. 7R08252	Holder, Treatment Arm, Complete.
5. 7R08288	Cover, Relay.

Figure 3. Interior view of rear section of Diathermy apparatus.

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Med. Dept. No.	Nomenclature
1. SR00061	Tube, Amplifier, Beam Tetrode.
2. SR00062	Tube, Oscillator, Beam Tetrode, Metal.
3. 7R08102	Crystal, Quartz.
4. SR00064	Tube, Rectifier.
5. SR00063	Tube, Rectifier, Mercury.

Figure 4. Interior view of front section of Diathermy apparatus.

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(2) The GL–814 tube is mounted horizontally in a socket on the shield wall of the exciter unit as shown in figure 4. Rotate the tube carefully to locate base pins before pushing tube into socket. Be sure to push the tube into socket as far as possible. Attach plate clip to the top cap on the tube.

(3) Insert the RCA–6L6 tube in the socket at the extreme right rear of exciter unit as shown in figure 4. Rotate the tube carefully to locate base pins before pushing tube into socket.

(4) Insert the RCA–5Y3GT tube in the socket on the exciter power supply unit, as shown in figure 4. Rotate the tube carefully to locate base pins before pushing tube into socket.

(5) Insert the RCA–866A tubes in the two sockets between the exciter power supply unit and the plate transformer, as shown in figure 4. Rotate the tube carefully to locate base pins before pushing tube into socket. Attach the plate clips to the top caps of tubes.

(6) Insert the MC–5 Bliley 6830 KC piezoelectric quartz crystal in the socket at the right front to exciter unit, as shown in figure 4.

e. Replace both doors.

f. Attach the treatment drum, 7R08148 (fig. 2), and adjustable arm, 7R08278 (fig. 2), and mount in the arm holder, 7R08252 (see figs. 2 and 3).

7. CONDITIONING RECTIFIER TUBES. When new 866–A mercury rectifier tubes are first placed in operation, or tubes have been out of their sockets so the mercury has come in contact with either the filament or anode, the filaments should be operated at least 5 minutes with the plate voltage off. This is necessary in order to evaporate the mercury collected on the filament and anode, as otherwise the rectifier tubes will be damaged. To condition the rectifier tubes, start with oscillator switch in OFF position, turn on main switch, and turn voltage adjuster until pointer of voltmeter is in black area of scale. Allow filaments to run for at least 5 minutes. After at least 5 minutes have elapsed, with power controls and resonance control on ZERO, turn oscillator switch on. The rectifier tubes should have a steady blue color. If there is sparking or flashing in the tubes, the preheating must continue until flashing stops. This can be observed through the vents in front door. After this conditioning treatment, the preheating time is automatically maintained at 15 seconds by the time delay relay. This delay is necessary to protect the 866–A mercury rectifier tubes from receiving plate voltage before the filaments have reached normal operating temperature.

Section III. CONTROLS AND INSTRUMENTS

8. CONTROLS. a. Main switch. The main switch, 7R08204 (fig. 5), turns on current to all tube filaments and exhaust blower. When the switch is in the ON position, the voltmeter is registering and the white pilot light, SR00071 (fig. 5), is lighted. The main switch is the circuit breaker type and takes the place of line fuses in addition to acting as the on-and-off switch.

b. Oscillator switch. This switch, 7R08166 (fig. 5), turns on current to the oscillator and amplifier circuits and must be in the ON position before any energy can be produced by the machine. The RED pilot light should light up and the plate current milliammeter indicate when oscillator

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switch is ON. However, due to the time delay relay, when oscillator switch is turned ON, the RED pilot light will not light and the plate current milliammeter will not indicate until approximately 15 seconds after the main switch is turned ON. Whenever the RED pilot light is out when oscillator switch is ON, it is because the overload relay has tripped. This is reset and power restored by turning power control below ZERO to position marked RESET.

c. Voltage adjuster. The voltage adjuster, 7R08282 (fig. 5), is a line voltage compensator by which variations in line voltage are adjusted to provide proper filament and plate voltage. This control and the voltmeter work in conjunction. Should the needle of the voltmeter fall below the black area, turn the voltage adjuster to a higher point. Should the reading be above the black area, turn the voltage adjuster to a lower point. Be sure to maintain the position of the needle in the black area as near the center arrow as possible, under all applications of the unit. Due to line voltage drop, it is usually necessary to turn up the voltage adjuster when treatment is started.

d. Resonance control. This control, 7R08284 (fig. 5), tunes the output or patient circuit so that it resonates with the final amplifier, an operation necessary to transfer energy to the patient. This control must always be adjusted to give maximum plate current, which is the indication of resonance. The position on the resonance control dial at which resonance occurs depends on the particular application given patient. This control does not act the same as the power control, because after resonance has been reached (maximum plate current) further increase of the resonance control causes a reduction in plate current. It is necessary to adjust resonance control for maximum plate current (resonance) in order for the plate current to be an indication of power output.

e. Power control. This control, 7R08286 (fig. 5), is a variable magnetic coupling of the output (patient) circuit to the final power amplifier, and provides a continuously variable control of the energy reaching the patient, indicated by the plate current millammeter. If the control is turned too high so the plate current exceeds 350 ma, an overload relay trips and shuts off power. Power is restored by turning power control down below ZERO to a position marked RESET.

f. Patient's emergency cut-off. This cord, 7R08176 (fig. 5), to be held by the patient, is attached to the oscillator switch and when pulled from any position it will open the switch.

9. INSTRUMENTS. a. Voltmeter. The purpose of the voltmeter, 7R08130 (fig. 5), is to indicate the voltage which is being supplied to the tube filaments and plates. Proper voltage is being supplied when the meter registers in the black area as near as possible to arrow in the center. This is necessary to the proper operation of the unit and to maintain normal tube life. Control is accomplished by use of the voltage adjuster explained in paragraph 8c.

b. Plate current d-c milliammeter. This milliammeter, 7R08132 (fig. 5), indicates the d-c plate current and is directly proportionate to the radio frequency power which is being drawn from the oscillator by the patient circuit. In other words, this is an arbitrary guide to the amount of energy being generated. In order for the plate current to be a true indication of power output it is necessary that (1) the unit should operate long enough with power control and resonance control on ZERO to allow

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Med. Dept. No.	Nomenclature
1 7R08282	Adjuster, Voltage.
2 7R08204	Switch, Voltage Control, Complete.
3 7R08130	Voltmeter, 3 1/2-Inch, Triplett.
4 SR00071	Bulb, Pilot, 6-8 V, Miniature Screw Base.
5 7R08286	Control, Power.
6 SR00071	Bulb, Pilot, 6-8 V, Miniature Screw Base.
7 7R08132	Milliammeter, 3 1/2-Inch, Triplett.
8 7R08176	Lever, Patient, Pull-Off, Complete.
9 7R08166	Switch, Toggle, Oscillator.
10 7R08284	Control, Resonance.

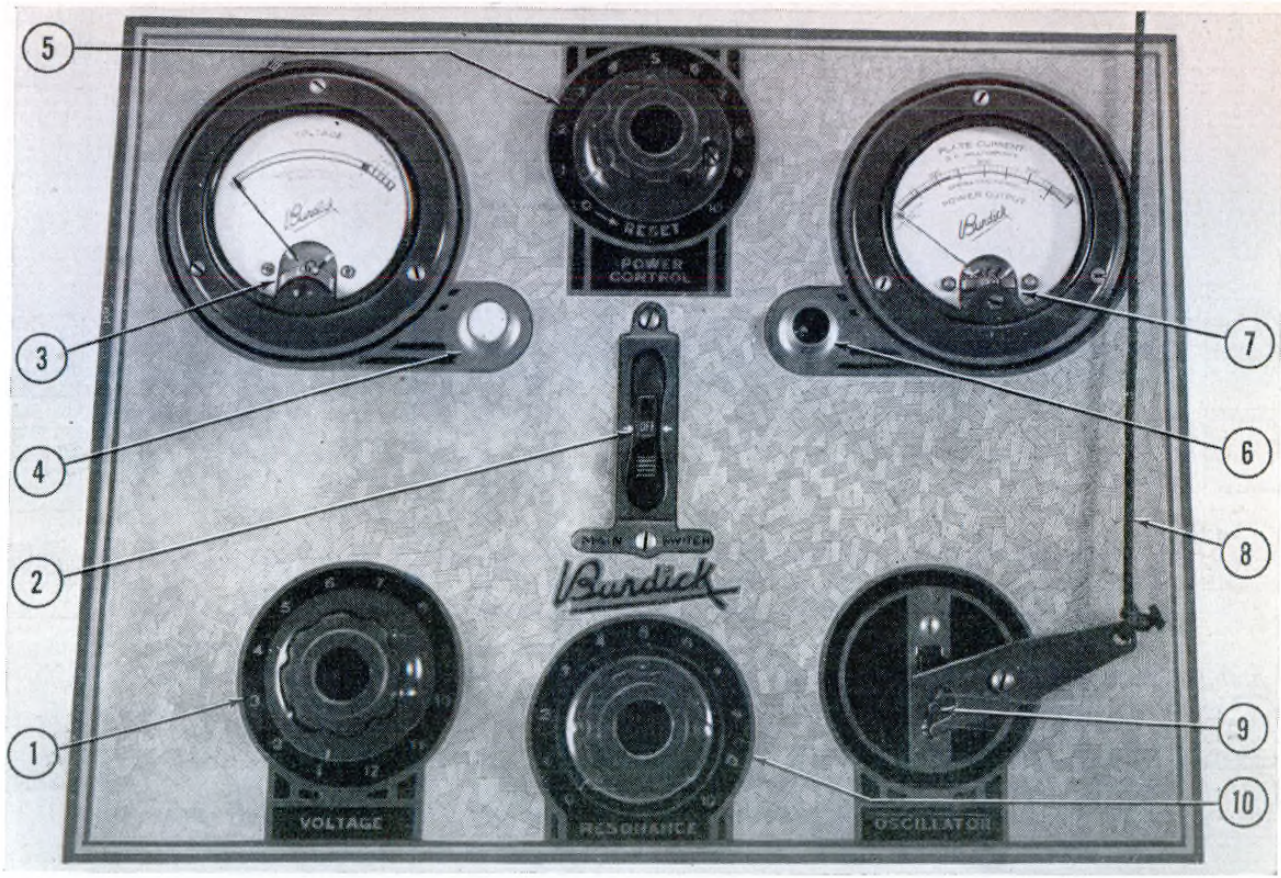


Figure 5. The control panel.

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plate current to reach a minimum value before starting treatment (2) resonance control must be tuned for maximum plate current during treatment.

c. White pilot light. This light, SR00071 (fig. 5), indicates when main switch is ON and tube filaments and blower are operating.

d. Red pilot light. This light, SR00071 (fig. 5), indicates when oscillator switch is ON and unit is generating high frequency energy. If the red pilot is out when oscillator switch is ON, the indication is that the overload relay has tripped.

Section IV. OPERATION

10. PROCEDURE FOR OPERATION. **a.** See that the current supply is 60-cycle (or 50-cycle) a-c of a voltage between 100 and 130 volts.

b. The short wire extending from the wall outlet plug on line cable is to be connected to a good ground. If the building wiring has been installed in properly grounded conduit and iron outlet boxes, it is sufficient to attach this ground lead to the outlet box by means of one of the screw plugs supplied with each unit. If the wiring is not in grounded conduit, it will be necessary to extend this ground lead to a water pipe, radiator or some other approved ground connection. This ground wire in the line cord connects to the steel cabinet when the line cable is plugged into cabinet receptable. Grounding the cabinet is not essential to the proper functioning of the unit, but is a safety measure. It prevents any possible danger to patient and operator.

c. See that both switches, "Main" and "Oscillator," are in the OFF position. Turn Power Control and Resonance Control to ZERO.

d. Plug line cable into the three-wire receptacle, SR00426 (fig. 2), on the right rear of cabinet near base.

e. Turn on main switch and adjust voltage to upper range of black area on voltmeter scale. After about 15 seconds the time delay relay will click and oscillator switch can be turned on.

f. Wait several minutes for the plate current to come down to its minimum value, (90 ma or less). This preheating period is necessary to allow the final amplifier to reach operating temperature.

g. With the cable or drum applied to patient, and cable jacks plugged into outlets at rear of cabinet marked "Cable" (fig. 2) and after enough time has elapsed for plate current to reach a minimum value, the treatment can be started.

h. Advance power control to about 1 or 2 and tune to resonance with resonance control. The exact resonance peak is indicated by maximum reading on the plate current milliammeter. Slowly adjust the resonance control to obtain maximum plate current. Rock the control back and forth to find the exact peak. If the resonance control is turned too fast, the resonance peak may be passed over unnoticed.

i. Now with the circuit tuned to resonance, advance the power control to give the desired amount of energy to the patient, indicated (relatively) by the plate current.

j. When the plate current exceeds 350 ma an overload relay trips and shuts off the high frequency power, indicated by the RED pilot light going out. The relay is reset and power restored by turning power control below ZERO to the position marked RESET.

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CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. GENERAL

11. SCOPE. Chapter 3 contains information for first and second echelon maintenance of The Short Wave Diathermy Apparatus. There are no organizational tools or equipment for use in conjunction with this equipment.

Caution: NEVER remove doors of cabinet unless line cable is disconnected from receptacle. This is a precautionary measure due to high voltage.

Section II. LUBRICATION

12. BLOWER MOTOR. The exhaust blower motor must be lubricated every 3 months with SAE No. 30 engine OIL (OE). Remove the four screws holding the blower panel to front of cabinet, as shown in figure 7. With one hand, hold the top of front door and bottom of blower panel, and tilt top of blower panel forward exposing oil holes in motor, which can be oiled with the other hand as shown in figure 6.

Section III. PREVENTIVE MAINTENANCE SERVICES

13. DAILY. Adjust "trimmer" if required. See paragraph 19.

14. THREE MONTHS. a. Lubricate blower motor. See paragraph 12.
b. Dust. See paragraph 18.

Section IV. TROUBLE SHOOTING

15. WHITE PILOT LIGHT NOT LIT WHEN MAIN SWITCH IS TURNED ON.

Possible Cause	*Possible Remedy*
Line fuse blown.	Replace line fuse.
Line cord broken or not plugged in.	Replace or insert plug.
Pilot bulb burned out.	Replace pilot bulb.

16. PLATE CURRENT TOO HIGH.

Possible Cause	*Possible Remedy*
"Trimmer" out of adjustment.	Adjust "trimmer". See paragraph 19.

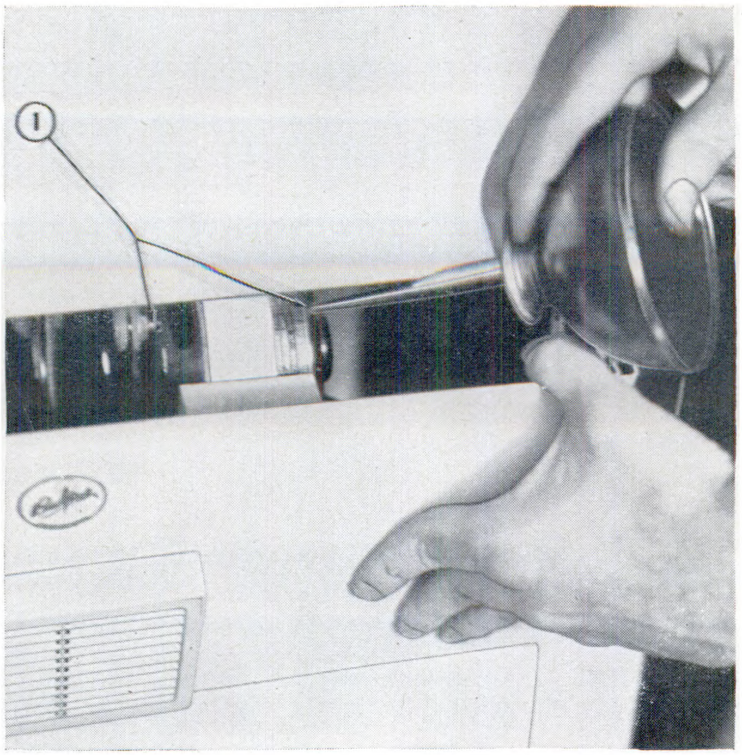
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17. HEAT NOT REACHING PATIENT BUT VOLTMETER REGISTERING.

Possible Cause	*Possible Remedy*
Patient cable not plugged in.	Plug in patient cable.

Section V. MAINTENANCE OPERATIONS

18. DUSTING. Every 3 months, or oftener if necessary, the dust should be cleaned off of the parts inside of cabinet. The best way to do this is to remove both front and rear doors and use an electric hand blower, suction pressure apparatus, or compressed air. DO NOT wipe with a cloth as this will disturb parts that might be thrown out of adjustment. Be careful not to blow dust under dust cover, 7R08288 (fig. 3), on relay panel.



Med. Dept. No.	Nomenclature
1 SR00107	Screw, 6-32 X 1/2-Inch, R. H. M.

Figure 6. Oil holes.

19. "TRIMMER" ADJUSTMENT. a. If any of the following actions occur when the oscillator switch is turned on, the "trimmer" must be adjusted.

(1) Plate current exceeds 150 ma.

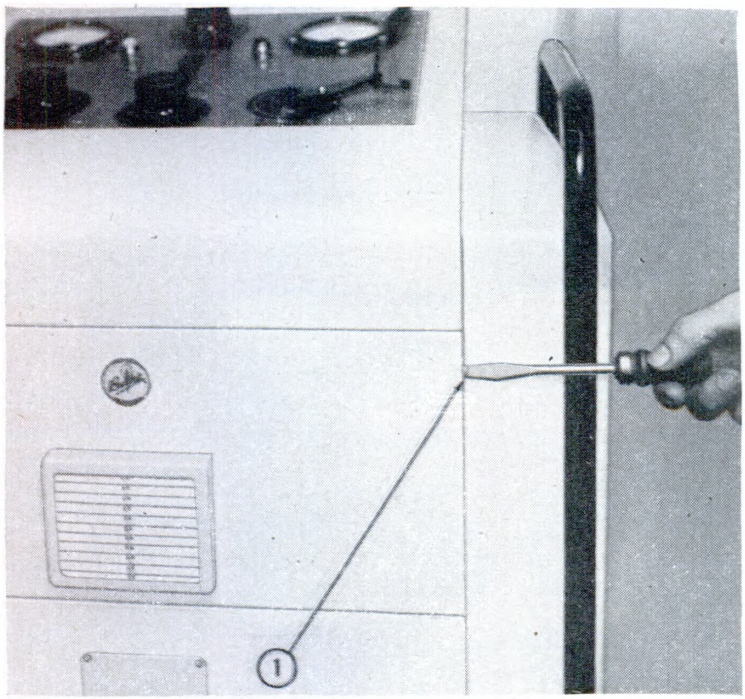
(2) Plate current does not reach a minimum of 90 ma or less, even after operating 10 minutes.

(3) Plate current increases instead of decreases.

b. "Trimmer" adjustment. With power control and resonance control on ZERO, and with nothing plugged in outlet panel, operate the unit

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with oscillator switch on for at least 10 minutes. Remove cover plate, 7R08250 (see figs. 2 and 8), and loosen lock screw shown. Move the adjusting lever, 7R08190 (fig. 8), up or down very slightly and watch plate current milliammeter. The purpose of this adjustment is to tune the "trimmer" condenser for minimum plate current, and it has to be done very carefully by moving the lever very slowly. If the lever is moved too far, the plate current may exceed 350 ma and trip the overload relay. The current is restored by turning power control to RESET. Rock the lever, 7R08190 (fig. 8), slowly up and down until the minimum plate current position is found, and then tighten the lock screw, SR00611 (fig. 8), and replace cover plate, 7R08250 (fig. 8). If the plate current exceeds 150 ma, even after operating a few minutes, it is best to make a preliminary adjustment first and then wait 10 minutes for a final adjustment.



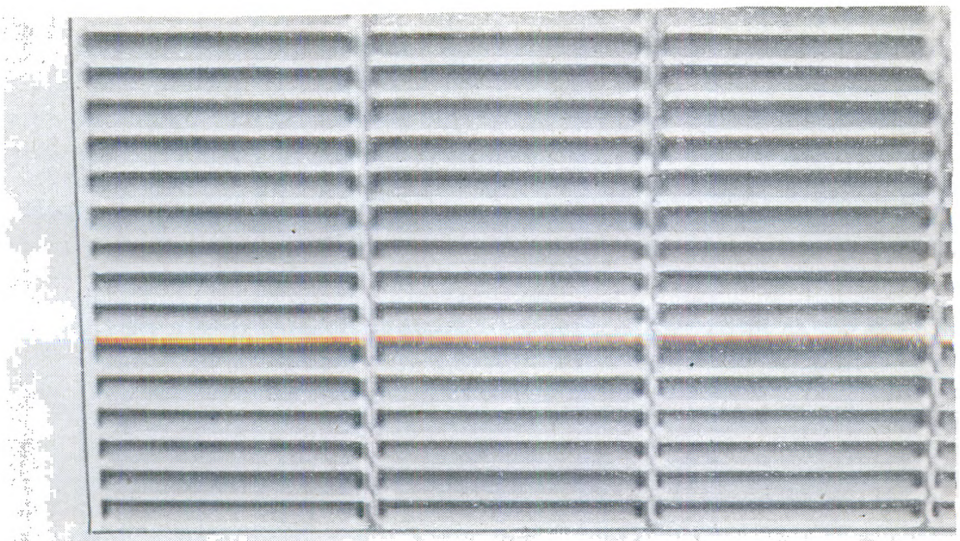
Med. Dept. No.		Nomenclature
1	SR00107	Screw, 6-32 X 1/2-inch, R. H. M.

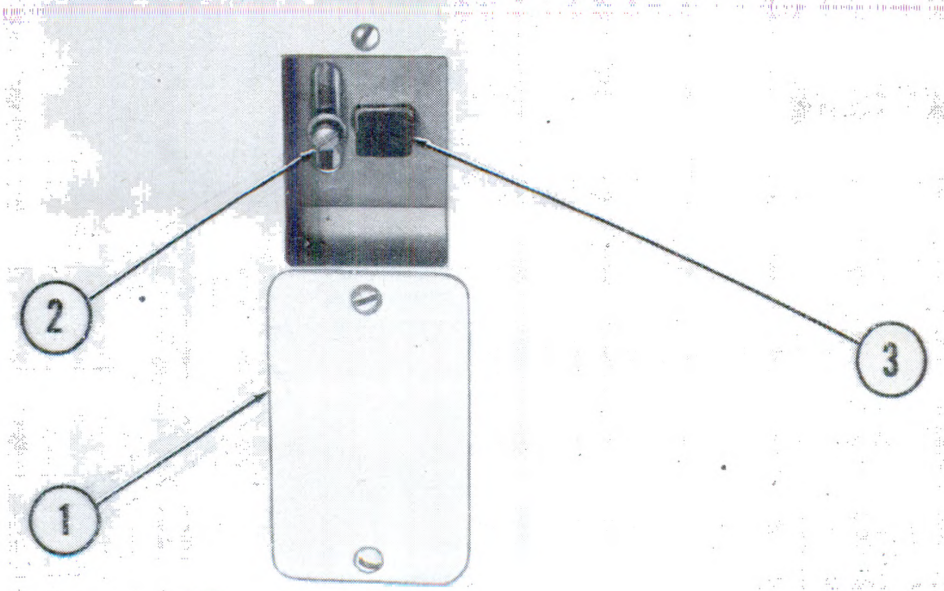
Figure 7. Holes for oiling blower motor.

c. If the "trimmer" adjustment has been made as outlined in paragraph 19, and it is impossible to get a minimum plate current of 90 ma or less, or if the overload relay opens the circuit whenever the oscillator switch is turned on, then it will be necessary to have the tubes and neutralization checked.

d. If, sometime after the "trimmer" adjustment has been made, the no load plate current does not decrease to 90 ma or less in 4 minutes after turning on oscillator switch (with power control and resonance control on ZERO), then the adjustment must be repeated.

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Med. Dept. No.	Nomenclature	Med. Dept. No.	Nomenclature
1. 7R08250	Plate, Cover, "Trimmer" Condenser.	3. 7R08190	Lever, Adjustment, "Trimmer" Condenser, Complete.
2. SR00611	Screw, 6-32 X 3/8-inch, Fill. H. M.		

Figure 8. "Trimmer" adjustment.

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APPENDIX

LIST OF ALL SERVICE PARTS

ITEM NO. 7105505 DIATHERMY APPARATUS, SHORT WAVE, COMPLETE, 110 VOLT, 60 CYCLE

Burdick Corporation
Model No. SWDX–80

Fig. No.	Medical Dept. No.	Nomenclature	Unit	Quantity
		Common Parts		
—	SR00003	Screw, 8–32 X ½-inch, R. H. M., 144 to pkg. Used in resistor bank frame.	pkg.	.....
—	SR00010	Screw, 8–32 X ⅜-inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
*—	SR00015	Screw, 8–32 X 1-inch, R. H. M., 144 to pkg. Used to secure FP 265 tube socket.	pkg.	.....
—	SR00017	Nut, 8 X 32, hex, 144 to pkg. Used in various mountings.	pkg.	.....
—	SR00040	Screw, 6–32 X ¼-inch, R. H. M., 144 to pkg. Used to secure bottom screen.	pkg.	.....
*—	SR00042	Washer, screw size 6, 1 lb. pkg., 1300 washers. Used in various mountings.	pkg.	.....
*—	SR00043	Nut, 6 X 32, hex, 144 to pkg. Used in various mountings.	pkg.	.....
*4—	SR00061	Tube, amplifier, beam tetrode, GL–814	ea.	1
*4—	SR00062	Tube, oscillator, beam tetrode, metal, 6L6	ea.	1
*4—	SR00063	Tube, rectifier, mercury, 866–A	ea.	2
*4—	SR00064	Tube, rectifier, 5Y3–GT	ea.	1
*—	SR00065	Resistor, 100-watt, 3000-ohms, wire-wound, vitreous enameled.	ea.	1
*—	SR00066	Resistor, 25-watt, 5000-ohms, wire-wound, vitreous enameled.	ea.	1
*—	SR00067	Resistor, 25-watt, 7000-ohms, wire-wound, vitreous enameled.	ea.	1
*—	SR00068	Resistor, 25-watt, 1500-ohms, wire-wound, vitreous enameled.	ea.	1
*—	SR00069	Resistor, 100-watt, 35000-ohms, wire-wound, vitreous enameled.	ea.	1
*—	SR00070	Resistor, 100-watt, 25000-ohms, wire-wound, vitreous enameled	ea.	1
*5	SR00071	Bulb, pilot, 6–8 V., miniature screw base	ea.	2
*—	SR00105	Screw 6–32 X ⅜-inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
*—	SR00106	Screw, 6–32 X 5/16-inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
*6–A	SR00107	Screw, 6–32 X ½-inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
*—	SR00108	Screw, 6–32 X ¾-inch, R. H. M., 144 to pkg. Used in relay board and resistor mountings.	pkg.	.....

See footnote at end of table.

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Fig. No.	Medical Dept. No.	Nomenclature	Unit	Quantity
—	SR00115	Screw, 8–32 X 7/8-inch, R. H. M., 144 to pkg. Used in frame clamps.	pkg.	.....
—	SR00151	Washer, lock, screw size 10, 1,000 to pkg. Used in blower mounting.	pkg.	.....
*—	SR00152	Washer, lock, screw size 8, 1,000 to pkg. Used in various mountings.	pkg.	.....
*—	SR00153	Washer, lock, screw size, 6, 1,000 to pkg. Used in various mountings.	pkg.	.....
*—	SR00154	Washer, lock, screw size 4, 1,000 to pkg. Used in meter mounting and power control.	pkg.	.....
—	SR00156	Washer, lock, screw size 5/16, 1,000 to pkg. Used in various mountings.	pkg.	.....
—	SR00226	Screw, 1/4-20 X 3/4 inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
—	SR00229	Washer, lock, screw size 1/4, 1,000 to pkg. Used to secure autotransformer.	pkg.	.....
—	SR00230	Nut, 1/4 X 20, hex, 144 to pkg. Used to secure autotransformer.	pkg.	.....
*—	SR00244	Washer, screw size 4, 1 lb. pkg., 2,400 washers. Used in meter mounting and power control.	pkg.	.....
*—	SR00255	Screw, 6–32 X 1/2-inch, Phillips O. H. M., 144 to pkg. Used in treatment drum.	pkg.	.....
*—	SR00265	Screw, 8–32 X 5/8-inch, R. H. M., 144 to pkg. Used in various mountings.	pkg.	.....
—	SR00293	Washer, screw size 1/4, 1 lb. pkg., 144 washers. Used in autotransformer mounting.	pkg.	.....
*—	SR00304	Washer, screw size 8, 1 lb. pkg., 1,300 washers. Used in various mountings.	pkg.	.....
—	SR00316	Plug, ground, male	ea.	1
—	SR00317	Plug, ground, female	ea.	1
—	SR00324	Screw, 8–32 X 3/4-inch, Fl. H. M., 144 to pkg. Used in top cabinet frame.	pkg.	.....
*—	SR00373	Setscrew, 10–32 X 3/8-inch, Bristo head, cup pt., 100 to pkg. Used in plastic control knobs.	pkg.	.....
*—	SR00377	Screw, 4–40 X 7/16 inch, R. H. M., 144 to pkg. Used in meter mountings.	pkg.	.....
*—	SR00385	Nut, 4 X 40, hex, 144 to pkg. Used in meter mounting and power control.	pkg.	.....
*—	SR00391	Setscrew, 1/4–20 X 1/4-inch, Allen head, cup pt., 144 to pkg. Used in treatment drum.	pkg.	.....
*—	SR00414	Screw, 4–40 X 1/2-inch, R. H. M., 144 to pkg. Used to secure cable on control pulley.	pkg.	.....
—	SR00415	Washer, screw size 8, fiber, 500 to pkg. Used in FP 265 tube socket mounting.	pkg.	.....
—	SR00416	Screw, 10–24 X 1 1/2-inch, R. H. M., 144 to pkg. Used in blower mounting.	pkg.	.....
—	SR00417	Nut, 10 X 24, hex, 144 to pkg. Used in blower mounting.	pkg.	.....
—	SR00418	Screw, 4–40 X 9/16-inch, O. H. M., 144 to pkg. Used in shaft guide.	pkg.	.....
—	SR00419	Screw, 7 X 1/4-inch, sheet metal, B. H., 144 to pkg. Used in front inner mounting panel.	pkg.	.....
—	SR00420	Screw, 6–32 X 1 3/4-inch, R. H. M., 144 to pkg. Used in 866–A tube socket mounting board.	pkg.	.....
—	SR00421	Screw, 5/16–18 X 1 1/4-inch, hex H. M., 144 to pkg. Used to secure plste transformer.	pkg.	.....
—	SR00422	Nut, 5/16 X 18, hex, 144 to pkg. Used in plate transformer mounting.	pkg.	.....

See footnote at end of table.

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Fig. No.	Medical Dept. No.	Nomenclature	Unit	Quantity
—	SR00423	Cord, type "S", hard service rubber, No. 14, three-conductor.	ft.	10½
—	SR00424	Plug, male, two-prong, rubber covered	ea.	1
—	SR00425	Plug, female, twist lock, three-wire, Hubbell No. BC–11357.	ea.	1
2	SR00426	Receptacle, male, twist lock, three-wire, Hubbell No. 7556.	ea.	1
—	SR00427	Bracket, resistor, ohmite No. 12	ea.	12
—	SR00428	Bracket, resistor, ohmite No. 26	ea.	2
—	SR00429	Washer, screw size 6, fiber, 500 to pkg. Used in resistor mounting.	pkg.	.....
—	SR00430	Screw, 5/16–18 X ¾-inch, hex head machine, 144 to pkg. Used to secure base to cabinet.	pkg.	.....
—	SR00437	Screw, 10 X 1¾-inch, R. H. Wood, 144 to pkg. Used to secure cable rack.	pkg.	.....
*—	SR00538	Screw, 6–32 X ¼-inch, Fl. H. M., 144 to pkg. Used to secure main switch.	pkg.	.....
*2	SR00575	Screw, 6–32 X ½-inch, Fl. H. M., 144 to pkg. Used in rear panel and top.	pkg.	.....
*—	SR00576	Screw, 4–40 X 3/16-inch, Fl. H. M., 144 to pkg. Used to secure oscillator switch.	pkg.	.....
7	SR00611	Screw, 6–32 X ⅜-inch, Fill. H. M., 144 to pkg. Used on "Trimmer" condenser.	pkg.	.....
		Uncommon Parts		
*4	7R08102	Crystal, quartz	ea.	1
*3	7R08104	Tube, amplifier, high mu triode	ea.	2
*—	7R08106	Resistor, 2-watt, 100,000-ohm	ea.	1
*—	7R08108	Resistor, 2-watt, 400-ohm	ea.	1
*—	7R08110	Capacitor, mica, 50-mf., 500-v	ea.	1
*—	7R08112	Capacitor, mica, .005 mf, 500-v	ea.	3
*—	7R08114	Capacitor, mica, .05 mf, 500-v	ea.	1
*—	7R08116	Capacitor, mica, .03 mf, 1000-v	ea.	1
*—	7R08118	Capacitor, mica, .005 mf, 2000-v	ea.	4
*—	7R08120	Capacitor, mica, .002 mf, 3000-v	ea.	1
*—	7R08122	Capacitor, paper, .1 mf, 200-v	ea.	2
*—	7R08124	Capacitor, paper, .1–1 mf, 200-v	ea.	2
*—	7R08126	Capacitor, electrolytic, 8–8–8-mf, 450-v	ea.	1
*—	7R08128	Capacitor, tubular, .1 mf, 600-v	ea.	2
* 5	7R08130	Voltmeter, 3½-inch, triplett	ea.	1
* 5	7R08132	Milliammeter, 3½-inch, triplett	ea.	1
*—	7R08134	Choke, iron core, Thordarson	ea.	1
*—	7R08136	Choke, radio frequency, RFC–1	ea.	1
*—	7R08138	Choke, radio frequency, RFC–2	ea.	1
*—	7R08140	Choke, radio frequency, RFC–3A–3B	ea.	1
*—	7R08142	Relay, complete: assembly	ea.	1
*—	7R08144	Breaker, circuit, main switch	ea.	1
*—	7R08146	Cable, treatment	ea.	1
* 2	7R08148	Drum, treatment, complete. With cable less arm	ea.	1
*—	7R08150	Spacer, cable	ea.	1
*—	7R08152	Sleeve, cable, rubber	ea.	1
*—	7R08154	Cable, coupling coil pulley	ea.	1
*—	7R08156	Knob, treatment drum, arm	ea.	1
*—	7R08158	Tool, bulb, neon	ea.	0
*—	7R08160	Tool, screw driver, short	ea.	0
*—	7R08162	Tool, screw driver, long	ea.	0
*—	7R08164	Tool, clip and bulb	ea.	0

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Fig. No.	Medical Dept. No.	Nomenclature	Unit	Quantity
*5	7R08166	Switch, toggle, oscillator	ea.	1
*—	7R08168	Cover, treatment drum, plastic	ea.	1
*1	7R08170	Screw, ¼–20 X ¾ inch, thumb. brass. Used to secure front panel.	ea.	2
*—	7R08172	Knob, round, plastic. Used for various controls	ea.	3
*—	7R08174	Spacer, metal. Used in patient pull off lever	ea.	1
*5	7R08176	Lever, patient pull off, complete. With ball and cord.	ea.	1
*—	7R08178	Socket, screw, pilot bulb, complete. Assembly	ea.	2
*—	7R08180	Insulator, mounting, ½-inch hole, porcelain, complete. Assembly.	ea.	
*—	7R08182	Insulator, ½-inch hole, rubber	ea.	2
*—	7R08184	Board, terminal, autotransformer, complete. Assembly.	ea.	1
*—	7R08186	Insulator, ¾-inch hole, rubber	ea.	1
*3	7R08188	Clip, plate, amplifier tube, complete. Assembly	ea.	2
*7	7R08190	Lever, adjustment, "Trimmer" condenser, complete. Assembly.	ea.	1
*—	7R08192	Lock, "Trimmer" condenser adjustment lever, complete. Assembly.	ea.	1
*—	7R08194	Board, terminal, relay, complete assembly	ea.	1
—	7R08196	Resistor, 100-watt, 3,000-ohms	ea.	2
—	7R08198	Transformer, plate high voltage power, supply	ea.	1
—	7R08200	Autotransformer, 100–130-v., 50/60 cycles	ea.	1
—	7R08202	Transformer, plate, low voltage power supply	ea.	1
5	7R08204	Switch, voltage control, complete. Assembly	ea.	1
—	7R08206	Socket, FP–265 tube	ea.	2
—	7R08208	Socket, GL–814 tube	ea.	1
—	7R08210	Socket, 6L6 tube	ea.	1
—	7R08212	Socket, 5Y3–GT tube	ea.	1
—	7R08214	Socket, 866–A tube	ea.	2
—	7R08216	Socket, crystal	ea.	1
—	7R08218	Blower, complete. Assembly	ea.	1
—	7R08220	Panel, blower mounting, complete. Assembly	ea.	1
—	7R08222	Insulator, felt, 1-inch wide, ⅛-inch thick, 9 inches long. For blower mounting.	ea.	1
—	7R08224	Insulator, felt, 6¼-inch long, 1-inch wide, ⅜-inch thick. For blower mounting.	ea.	1
—	7R08226	Ventilator, blower, metal	ea.	1
—	7R08228	Guide, shaft, control. Used on control shaft assemblies.	ea.	2
—	7R08230	Strap, ground, woven, copper. 6 inches long	ea.	1
—	7R08232	Wire, glass insulated tips, woven copper cover, complete. With lamps.	ea.	1
—	7R08234	Panel, patient electrode receptacle mounting, complete. Assembly.	ea.	1
—	7R08236	Insulator, patient electrode receptacle, plastic	ea.	2
—	7R08238	Receptacle, patient electrode, complete. Assembly.	ea.	2
—	7R08240	Frame, resistor bank mounting	ea.	1
—	7R08242	Board, asbestos, resistor mounting	ea.	2
—	7R08244	Board, mounting FP–265 tube socket, complete. Assembly.	ea.	1
—	7R08246	Panel, exciter power supply mounting, complete	ea.	1
—	7R08248	Connector, plastic. For blower motor leads	ea.	2
2–7	7R08250	Plate, cover, "Trimmer" condenser	ea.	1
2–3	7R08252	Holder, treatment arm, complete. Assembly	ea.	1

See footnote at end of table.

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Fig. No.	Medical Dept. No.	Nomenclature	Unit	Quantity
—	7R08254	Panel, instrument, mounting, complete. Assembly.	ea.	1
—	7R08256			
—	7R08258	Frame, top, cabinet	ea.	1
		Frame, tubular, metal	ea.	2
—	7R08260	Clamp, tubular frame	ea.	16
—	7R08262	Cabinet, metal, complete. Assembly	ea.	1
—	7R08264	Base, metal, complete. Assembly	ea.	1
—	7R08266	Panel, front, inner mounting	ea.	1
—	7R08268	Cover, front, inner mounting panel	ea.	1
—	7R08270	Panel, rear, inner mounting	ea.	1
—	7R08272	Screen, wire, bottom	ea.	1
—	7R08274	Caster, swivel, 3-inch, complete. Assembly	ea.	4
—	7R08276	Rack, treatment cable	ea.	1
2	7R08278	Arm, treatment drum, adjustable	ea.	1
3	7R08280	Plate, shield	ea.	2
5	7R08282	Adjuster, voltage	ea.	1
5	7R08284	Control, resonance	ea.	1
5	7R08286	Control, power	ea.	1
3	7R08288	Cover, relay	ea.	1

*— To be requisitioned, when required, from the supply depot.

No asterisk indicates that the item is not stocked as a spare part, but can be obtained by special requisition.

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