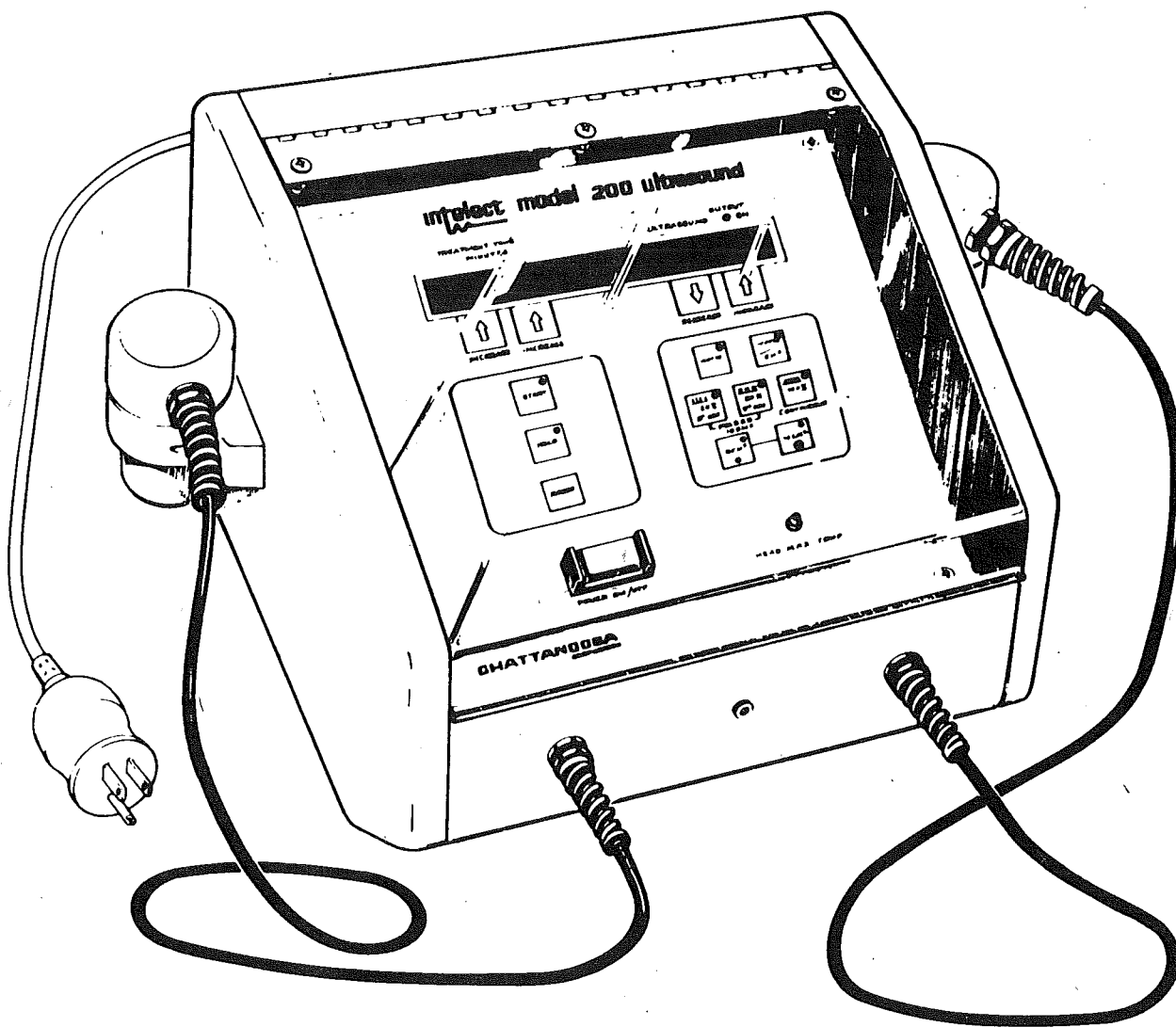


INSTRUCTIONS FOR USE AND OPERATION OF intelect[®] MODEL 200 ULTRASOUND



P/N 70479
12/84 A

CHATTANOOGA
CORPORATION

101 MEMORIAL DR P O BOX 4287 CHATTANOOGA TN 37405 - 615-870-2281

SAME
205 NC

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foreword

This manual has been prepared for the owners and operators of the Intellect® Model 200 . It contains general instructions on operation, safety practices, maintenance and parts information. In order to obtain maximum life and efficiency from your Model 200 and to aid in the safe operation of the unit, read and understand this manual thoroughly and become totally familiar with the controls on the panel and the applicators that come with the unit before operating it. The specifications put forth in this manual were in effect at the time of publication. However, due to Chattanooga Corporation's policy of continuous improvement, changes to these specifications may be made at any time without obligation on the part of Chattanooga Corporation.

safety instructions

1. Read, understand and practice the safety and operating instructions. Know the limitations and hazards associated with the Ultrasound. Observe the safety and operational decals placed on the unit.
2. Grounding — Make certain that the unit is electrically grounded by plugging into an electrical outlet with a ground terminal receptable (U-ground outlet). Follow the National Electric Code.
3. The Intellect Model 200 should not be connected to any other electrical device when in use.
4. **CAUTION:** Federal law restricts this device to sale by, or on the order of, a physician or licensed practitioner.
5. The generator should be routinely checked before each use to determine that all controls function normally; especially that the INTENSITY control does properly adjust the intensity of ultrasonic power output in a stable manner. Also determine that the TREATMENT TIME control does actually terminate ultrasonic output power when the control reaches zero time (off).
6. **"CAUTION** - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous exposure to ultrasonic energy."

full one year warranty

Chattanooga Corporation ("Company") warrants that Intellect® Model 200 ("Product") is free of defects in material and workmanship.

This warranty shall remain in effect for one (1) year from the date of the original consumer purchase of this Product and extends to any owner of the Product during the warranty period. If this Product fails to function during the one year warranty period because of a defect in material and workmanship, Company or the selling dealer will replace or repair this Product without charge within a period of thirty (30) days from the date on which the defective Product is returned to the Company or the dealer. Company or the dealer will ship the replacement or the repaired product to the consumer's residence.

THIS WARRANTY DOES NOT COVER

1. Replacement parts or labor furnished by anyone other than the Company, the dealer or an approved Company service agent.
2. Defects or damage caused by labor furnished by someone other than the Company, the dealer, or an approved Company service agent.
3. Any malfunction or failure in the Product while it is in the possession of the owner during the warranty period if the malfunction or failure is not caused by a defect in material and workmanship or if the malfunction or failure is caused by unreasonable use, including the failure to provide reasonable and necessary maintenance.

COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES TO PROPERTY OR BUSINESS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

TO OBTAIN SERVICE from the Company or the selling dealer under this warranty, the owner must do or abide by the following:

1. A written claim must be made within the warranty period to the Company or the selling dealer. If the claim is made to the Company, the written claim should be sent to P.O. Box 4287, 101 Memorial Drive, Chattanooga, Tennessee 37405.
2. The Product must be returned to the Company or the selling dealer by the owner.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Company does not authorize any person or representative to create for it any other obligation or liability in connection with the sale of this Product. Any representative or agreement not contained in the warranty shall be void and of no effect.

A. INDICATIONS FOR ULTRASOUND THERAPY❖

Some indications for the use of ultrasound include adhesive capsulitis, bursitis with slight calcification, myositis, soft tissue injuries, shortened tendons due to past injury, healing scar tissue, and plantar warts. Ultrasound is an efficient modality when used for the treatment of all types of joint contractures resulting from capsular tightness and scarring. Ultrasound is the modality of choice to obtain therapeutic levels of heating with in body structures covered by thick layers of soft tissue. Neither shortwave nor microwave diathermy is able to heat these underlying structures to produce results comparable to ultrasound.

B. CONTRAINDICATIONS OF ULTRASOUND THERAPY❖

Ultrasound should not be used over the eyes or the reproductive organs. Also ultrasound should not be used over a pregnant uterus. Other contraindications include acute infection or sepsis, deep vein thrombosis, or arterial disease, and over anesthetized areas or conditions that cause impairment of sensations, such as chemotherapy. Ultrasound is not to be used over cancerous lesions.

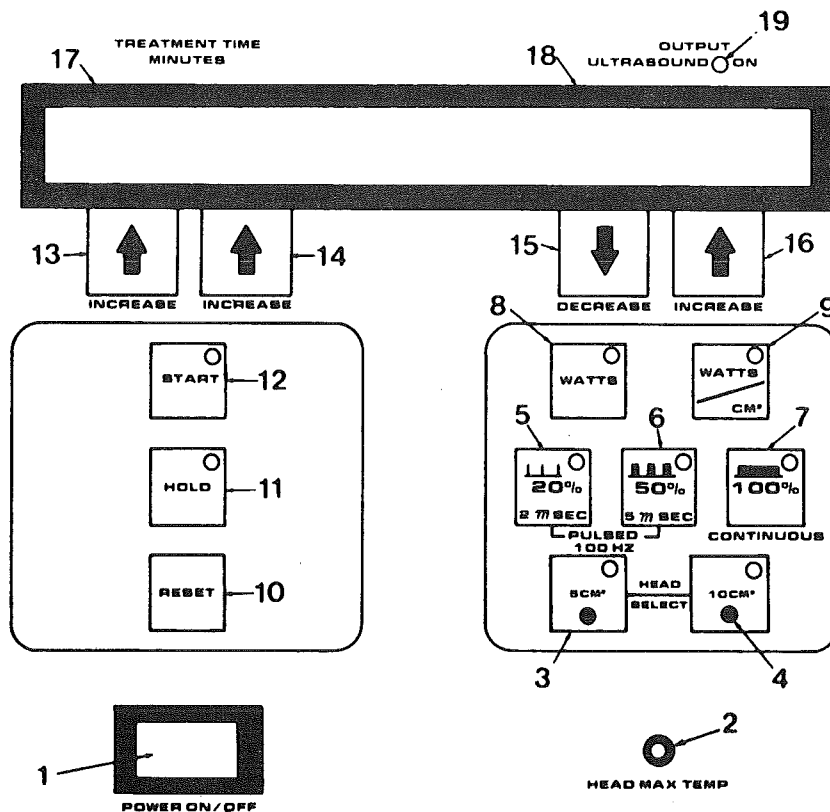
C. OPERATING CONTROLS

1. **POWER ON/OFF SWITCH.** This is a push on/push off switch. When the power to the unit is on, the switch is illuminated.
2. **HEAD MAX TEMP LED.** This red LED comes on when the temperature of the ultrasound head (transducer) reaches approximately 140° F. At the time the LED comes on, the unit will stop producing ultrasound, the Ultrasound On LED will go out, the unit will go to Hold, the Timer will stop counting down, and a pulsed alarm will sound momentarily. When the ultrasound head (transducer) cools, the Head Max Temp LED will go out. (Note: You can speed the cooling process by running cold water over the head.) You can resume the ultrasound treatment by pressing the Start Switch.
3. **5 CM² HEAD SELECT SWITCH.** By pressing this switch, the operator can select the 5 CM² Ultrasound Head (Transducer), which is located on the left side of the unit.
4. **10 CM² HEAD SELECT SWITCH.** By pressing this switch, the operator can select the 10 CM² Ultrasound Head (Transducer), which is located on the right side of the unit.

NOTE: The operator must select either the 5 CM² Ultrasound Head (Transducer) or the 10 CM² Ultrasound Head (Transducer) before any other steps can be made to operate the unit.

5. **20% PULSED SWITCH.** By pressing this switch, the operator can select an ultrasound output of 1 MHz that is pulsed at 100 pulses per second. This produces rectangular pulses of 2 milliseconds duration, with an off time of 8 milliseconds between pulses.
6. **50% PULSED SWITCH.** By pressing this switch, the operator can select an ultrasound output of 1 MHz that is pulsed at 100 pulses per second. This produces rectangular pulses of 5 milliseconds duration with an off time of 5 milliseconds between pulses.
7. **100% CONTINUOUS SWITCH.** By pressing this switch, the operator can select an ultrasound output that is a continuous sinusoidal waveform at a frequency of 1 MHz nominal.
8. **WATTS SWITCH.** When this switch is pressed, the Output Meter (18) displays the average ultrasound output selected in Watts, if you have selected the 100% continuous duty cycle. It will display the peak ultrasound power in Watts if you have selected the 20% or 50% pulsed duty cycles.

infect[®] model 200 ultrasound



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CAUTION: Federal law restricts this device to sale by or on the order of a licensed physician or practitioner

9. **WATTS/CM² SWITCH.** When this switch is pressed, the Output Meter (18) displays the ultrasound power in Watts per centimeter². Note: The Watts per centimeter² is obtained by dividing the ultrasound output in Watts by the effective radiating area. The effective radiating area of the 5 CM² sound head is 3.8 centimeter² and the 10 CM² sound head has an effective radiating area of 8.5 centimeter². If you have selected the 100% Continuous mode, the reading will be average ultrasound output in watts divided by the effective radiating area; but, if you have selected either the 20% or the 50% pulsed mode, the reading will be the peak ultrasound power in watts divided by the effective radiating area.
10. **RESET SWITCH.** Pressing this switch resets both the Time Remaining and Ultrasound Output to zero.
11. **HOLD SWITCH.** Pressing this switch stops the timer and turns off the ultrasound output. To resume treatment, press the Start Switch (12). Note: It is possible to change (increase or decrease) the ultrasound power desired while in Hold, but the Treatment Time function cannot be changed.
12. **START SWITCH.** Pressing this switch starts the ultrasound treatment and the treatment timer (which counts down in tenths of a minute intervals) begins to count down, and the Ultrasound On LED comes on. You must have treatment time entered before you press the start switch.

- 13 & 14. **INCREASE SWITCHES.** These two switches are used to select treatment time. The left switch increases the tens digit and the right switch increases the units digit. Each time the switch is pressed the digit will increase by one. The maximum time that can be set is 99 minutes. If you go past nine the digit next displayed is zero. The timer counts down in tenths of seconds. You must enter time before you press the start switch.
15. **DECREASE SWITCH.** By pressing this switch, the operator can decrease the amount of ultrasound power selected, or if the unit is emitting ultrasound, the amount of power being delivered. If the switch is held down, the amount of ultrasound power being selected or being delivered will decrease continuously until the desired output is reached.
16. **INCREASE SWITCH.** Pressing this switch increases the amount of ultrasound power selected, or if the unit is emitting ultrasound, the amount of power being delivered. If the switch is held down, the amount of ultrasound power being selected or being delivered will increase continuously until the desired output is reached.
17. **TREATMENT TIME DISPLAY.** This display shows the amount of treatment time selected, and once the treatment has started, the time remaining in the treatment. The time may be selected in increments of one minute only, but the time remaining is displayed in tenths of minutes. The flashing decimal point indicates that the timer is counting down.
18. **ULTRASOUND OUTPUT DISPLAY.** This display shows the ultrasound power selected, or if the unit is emitting ultrasound, the amount of ultrasound power available at the transducer (sound head).
19. **ULTRASOUND ON LED.** This red LED is on when ultrasound power is being transmitted from the transducer (sound head). This LED comes on when you press the Start Switch.

D. INTELECT[®] 200 SEQUENCE OF OPERATION

1. Plug the unit into a properly grounded outlet of the proper voltage.
2. Turn the unit on by pressing Power On/Off Switch (1).
3. Select either the 5 CM² head or the 10 CM² head by pressing the appropriate switch (3 or 4). The operator must press either the 5 CM² switch or the 10 CM² switch.
4. When the unit is turned on the 20% Pulsed Mode (5) is automatically selected. If you do not want to use this mode, press either the 50% Pulsed Mode Switch (6) or the 100% Continuous Mode Switch (7).
5. When the unit is turned on the Watts Output (8) is selected. If you want to use the Watts/CM² (9) selection press the Watts/CM² Switch.
6. Use the two Treatment Time Increase Switches (13 & 14) to select the desired amount of treatment time. Treatment time may only be selected in one minute increments. You must have time entered before you press the start switch.
7. Preselect the amount of Ultrasound Output you desire by using the Increase and Decrease Switches (15 & 16).
8. At this point, you may begin the treatment by applying Intellect Ultrasound Gel to the area of the patient to be treated. You should then place the applicator in contact with the patient's body with firm uniform pressure. You must keep the applicator moving during treatment. Failure to keep the applicator moving may result in hazardous exposure to ultrasound energy.
9. Press the Start Switch (12) to begin the treatment. At this point, the Ultrasound On LED (19) will come on and the decimal point in the Treatment Time Display (17) will begin to flash.

10. Readjust the Ultrasound Output, if needed, by pressing the Increase and/or Decrease Switches (15 & 16) until you reach the desired output.
11. If you need to interrupt the treatment for any reason, you can press the Hold Switch (11) and the unit will retain the ultrasound power settings and the timer will hold its remaining time. Pressing the Start Switch (12) will allow you to resume the treatment.
12. At the end of treatment, the end of treatment alarm will sound and the ultrasound output will stop.

E. SPECIFICATIONS:

Frequency - 1.0 MHz \pm 5%

Duty Cycle - 100% (continuous mode)
 50% \pm 10% (pulse mode)
 20% \pm 10% (pulse mode)

Pulse Repetition Rate - 100 Hz \pm 20%

Pulse Duration - 5 msec \pm 20% (50% duty cycle pulsed mode)
 2 msec \pm 20% (20% duty cycle pulsed mode)

Ultrasonic Power - variable from 1 watt to 20 watts for 10 CM².
 variable from .5 watt to 10 watts for 5 CM².

Output Meter Accuracy - \pm 20% (for any output above 10% of maximum)

Temporal Peak/Average Intensity Ratio - 2:1 \pm 20% for 50% Duty Cycle; 5:1 \pm 20% for 20% Duty Cycle

Output:

1. Continuous - 1 MHz signal that is on as long as the timer is running.
2. Pulse - 1 MHz signal modulated 100% by the 100 Hz rectangular wave with the selected Duty Cycle.

Timer Accuracy \pm 0.1 minutes

Applicator:

1. Effective radiating area - 5 cm² head 3.8 cm² \pm 1.2 cm² (\pm 32%)
 10 cm² head 8.5 cm² \pm 1.5 cm² (\pm 18%)
2. Maximum beam non-uniformity ratio - 6.0:1
3. Beam type - collimating
4. Input Power Requirements:
 (Domestic) 120V/60Hz \pm 10%, 1.25 Amps
 (Export) 220V/50Hz \pm 10%, .8 Amps

F. DESCRIPTION OF ULTRASONIC FIELD

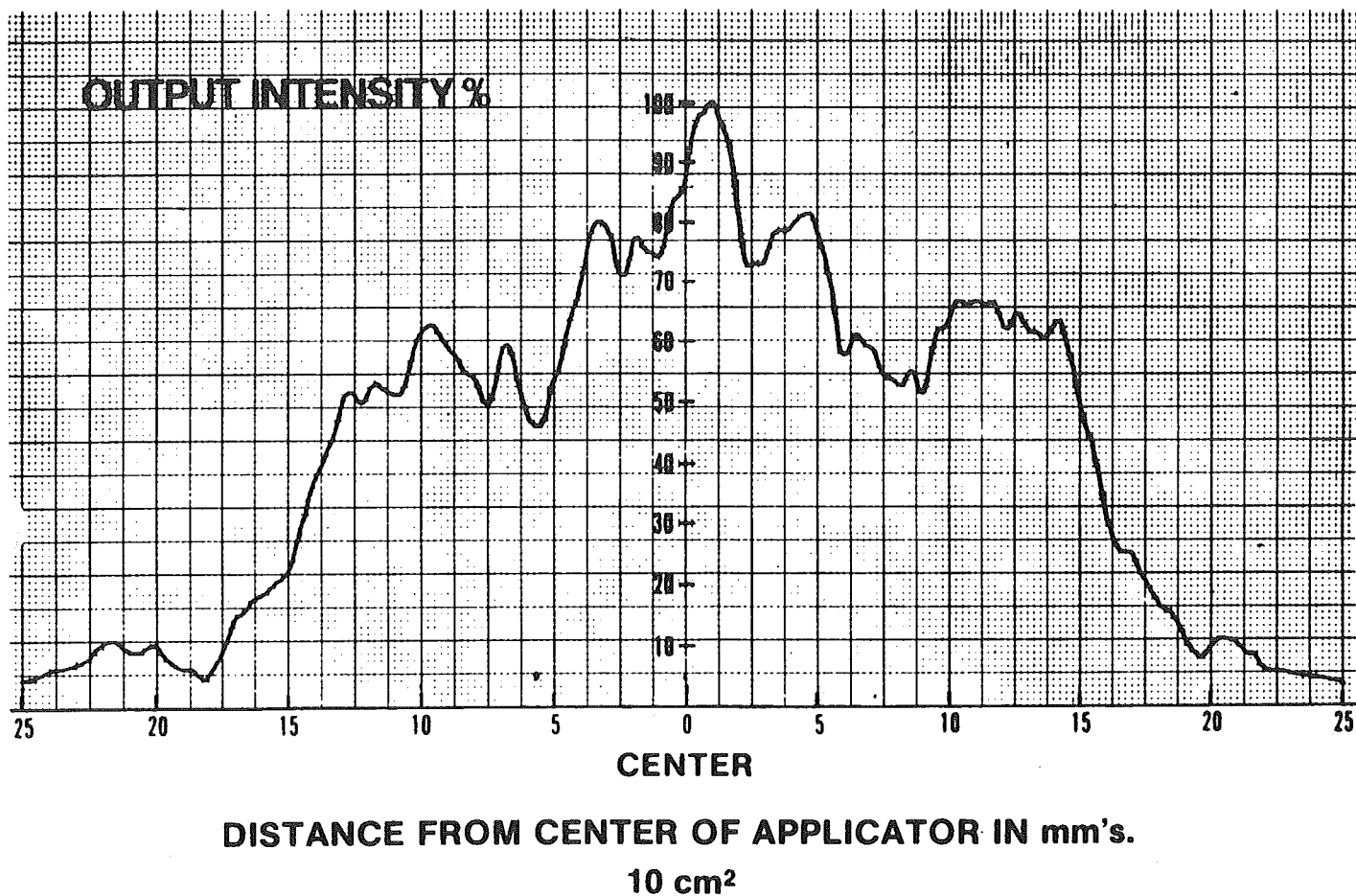
The spatial distribution of the radiated field is essentially a collimated beam of ultrasonic energy having a cross-sectional area of 8.5 CM² for the 10 CM² sound head when measured at a point 5 millimeters from the transducer face.

The energy distribution within the radiated field is 2.4 W/CM² maximum, and takes a generally conic shape having decreasing intensity at progressively increasing distance from the face of the transducer.

This field distribution applies for the radiation emitted into the equivalent of an infinite medium of distilled degassed water at 30^o C. and with line voltage variations in the range of \pm 10 percent of 120 VOLTS RMS. The ultrasonic field spatial distribution of the 5 cm² sound head is essentially the same as the field of the 10 cm² sound head.

F. 1.

PLOT OF ULTRASONIC FIELD SPATIAL DISTRIBUTION



G. ABBREVIATIONS

The following abbreviations are used on the applicator heads of the Intellect[®] 200.

- Area = Effective Radiating Area
- Coll. = Collimating
- BNR = Beam Non-Uniformity Ratio
- Freq. = Frequency

H. TROUBLE SHOOTING

The following problems and solutions are presented to assist you in solving some of the minor problems that sometimes happen with your Intellect®200.

PROBLEM	CAUSE	SOLUTION
No power to unit.	Unit not plugged in. No power to the receptacle. Fuse blown inside unit.	Plug in unit. Check for tripped circuit breaker or blown fuse on circuit. Change 1/4 amp 250V Slo-Blo fuse.
Unit has power but no US output.	Fuse blown inside unit.	Change 1/4 amp 250V Slo-Blo fuse.
Switches do not respond when pressed	Dirty switch contacts. Switches not pressed in center.	Send to factory for repair. Make sure you hear audible feed back when you press a switch.
Cannot change time when unit is running.	Time CANNOT be changed while unit is running.	Enter time before starting unit.
Power meter goes to zero when start is pressed.	Time not entered.	Enter time before starting unit.

I. MAINTENANCE AND SERVICE INSTRUCTIONS

1. To fully maintain compliance with Federal Regulation Title 21 (21 CFR) this unit must be recalibrated annually. It's recommended that all Chattanooga Corporation Ultra-sound Products be returned to the factory or an authorized servicing dealer for repairs or recalibration. It's also recommended after the replacement or repair of any major component. (See Section J for Calibration Procedures.)
2. The following items should be checked at least monthly to insure proper operation of this unit:
 - A. Power cord and plug. Check to make sure the cord is not frayed, kinked or has torn or cut insulation.
 - B. Transducer (applicator) Cable. Check to make sure the cable is flexible, free of kinks, not frayed and that the insulation is intact.
 - C. Transducer (applicator) Handle. Check to make sure that it is not cracked or broken.
 - D. Transducer (applicator) Face. Check to see that there is no build-up or gel or foreign material on the stainless steel face.
 - E. Fan. (If your Unit has a fan). Check to make sure that the fan is operating.
 - F. LED's. Check each function to see if the LED is on when you are using that function.

J. ULTRASOUND CALIBRATION

1. SPECIFICATIONS

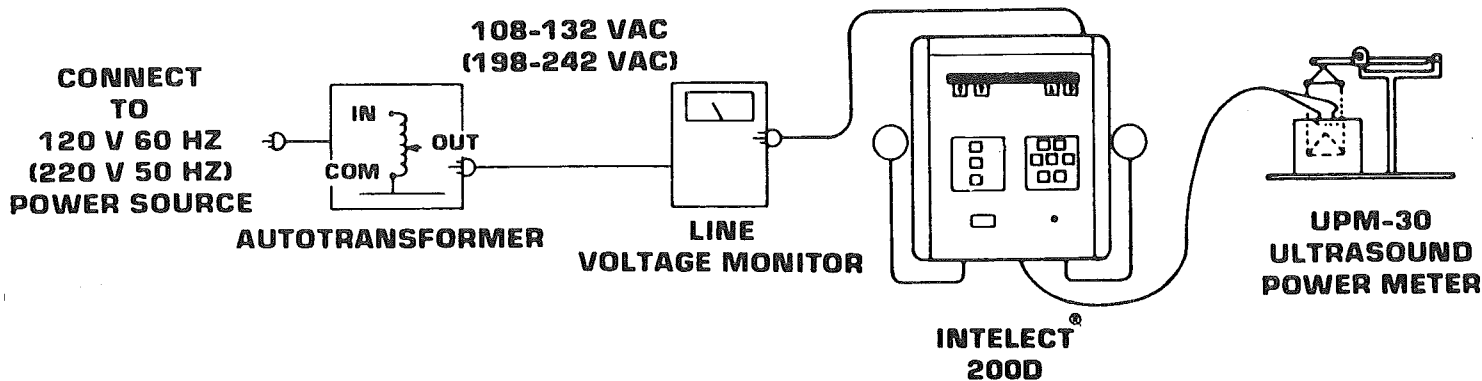
The specifications listed in section E, page 5 are the correct specifications. Due to the uncertainty of the accuracy of the instruments used in the calibrating your Intellect®200 the nominal specification should be modified by $\pm 14\%$ rather than the $\pm 20\%$ used in the specification. For example: the US power at 20 watts should fall between 22.8 watts and 17.2 watts during calibration.

2. TEST EQUIPMENT REQUIRED

- 2.1 Power line monitor (expanded scale voltmeter for rated line voltage $\pm 10\%$), VIZ model WV-120B or equivalent for 120VAC line.
- 2.2 Autotransformer, adjustable from 90% to 110% of rated line voltage, 150 watts or greater.
- 2.3 Ultrasound Power Meter, Ohmic Instruments Model UPM-30 or equivalent.
- 2.4 Oscilloscope, Hameg Hm 204-2 or equivalent.
- 2.5 Probe, voltage, X10, Scope, low capacitance.
- 2.6 Probe, current, Tektronix P6021 AC current probe or equivalent.
- 2.7 Voltmeter, Digital, 3-1/2 digits, Simpson Model 461 or equivalent.
- 2.8 Probe, temperature, Fluke Model 80T-150 or equivalent.
- 2.9 Source of approximately 1/2 gallon of distilled de-oxygenated (<5 PPM) water at 30 degrees Celsius for use in UPM-30 power meter (Item 3).
- 2.10 Counter, frequency, 10MHz, Triplet 7000 or equivalent.
- 2.11 Stopwatch, Siliconix Model 705 or equivalent.
- 2.12 Applicator current transformer adapter.

3. SUGGESTED TEST PROCEDURE

- 3.1 Connect the test set-up as shown.
- 3.2 Set AC input voltage with the autotransformer to 120(220) VAC line monitor.
- 3.3 See OHMIC INSTRUMENTS clinical engineering notes AN-330 for operation of the UPM-30 U.S. Power Meter.



4. INSTRUMENT PREPARATION

- 4.1 Make certain that all power is removed from the cabinet.
- 4.2 Remove the four truss head screws at the corners of the front panel.
- 4.3 Carefully remove the front panel from the cabinet.

5. CALIBRATION PREPARATION

5.1 PRELIMINARY VARIABLE RESISTOR SETTINGS

- 5.1A Control P/C Board
 - R16 fully CCW.
 - All other variable resistors to mid-range.
- 5.1B Display P/C Board.
 - All variable resistors to mid-range.
- 5.1C Power supply P/C Board
 - R41 fully CW.
 - R20 to mid-range.

5.2 PRELIMINARY CONNECTION

- 5.2A Mount 10 CM sound head to UPM-30 ultrasound power meter.
- 5.2B Install oscillator current probe adapter cable between both oscillator output connectors and both output coax cables.
- 5.2C Connect oscilloscope channel 1 to monitor 10 CM oscillator output voltage waveform.
- 5.2D Connect oscilloscope channel 2 to monitor 10 CM oscillator output current waveform.
- 5.2E Connect unit under test to a suitable AC power source.
- 5.2F Position unit power to on. Insure:
 - 5.2F 1. Power switch illuminates.
 - 5.2F 2. Output duty cycle is at 20%.
 - 5.2F 3. Output power monitor is in watts.
 - 5.2F 4. Timer display is 000.

5.3 OUTPUT POWER DISPLAY CALIBRATION

- 5.3A Select 10 CM head.
- 5.3B Adjust R7 (Display P/C Board) for equal brightness of the Timer and Power displays.
- 5.3C Select Watts/CM².
- 5.3D Adjust R3 (Display P/C Board) for 000 indication on Power display.
- 5.3E Alternate between Watts/CM² and Watts and insure the Power Display remains at 000 indication.

5.4 SQUARING CIRCUIT CALIBRATION

- 5.4A Install Jumper between TP1 (R72) and TP2 (R81) on Control P/C Board.
- 5.4B Set Voltmeter to 200 mv DC scale and connect negative lead to Analog Ground of Unit under test.
- 5.4C Connect positive lead of Voltmeter to TP3 (U23, pin 1) on Control P/C Board.
- 5.4D Adjust R76 (Control P/C Board) for a Voltmeter indication of Zero plus/minus 5 mv DC.
- 5.4E Move Jumper to TP4 (U7, pin 5) and TP5 (U13, pin 16) on Control P/C Board.
- 5.4F Insure Unit is in Hold Mode, if not put in Hold Mode.
- 5.4G Connect positive lead of Voltmeter to TP2 (R81) on Control P/C Board.
- 5.4H Using Up and Down Power Output Adjust Switches obtain a reading of 1 volt plus/minus 20 mv DC on Voltmeter.
- 5.4I Connect positive lead of Voltmeter to TP3 (U23, pin 1) on Control P/C Board.
- 5.4J Adjust R75 on Control P/C Board for a 0.1 volt DC indication on the Voltmeter.

- 5.4K Connect positive lead of Voltmeter to TP2 (R81) on Control P/C Board.
- 5.4L Using Up and Down Power Output Adjust Switches obtain a reading of 5 volts plus/minus 20 mv DC on Voltmeter.
- 5.4M Connect positive lead of Voltmeter to TP3 (U23, pin 1) on Control P/C Board.
- 5.4N Adjust R74 on Control P/C Board for a 2.5 volt plus/minus 5 mv DC indication on Voltmeter.
- 5.4O Remove Jumper and Voltmeter leads from instrument.

5.5 10 CM POWER OUTPUT AND POWER OUTPUT METER CALIBRATION

- 5.5A Enter some time on Timer and press Start Switch.
- 5.5B Using Up Power Switch obtain Maximum output from Unit as indicated on the UPM-30 Ultrasound Power Meter.
- 5.5C Adjust R41 (Power Supply P/C Board) for 22 plus/minus 0.2 watts as indicated on the UPM-30 Ultrasound Power Meter.
- 5.5D Connect Voltmeter between TP1 (Q4 emitter) and TP2 (Q4 collector) on the Power Supply P/C Board.
- 5.5E Adjust R20 (Power Supply P/C Board) for a 1.5 VDC indication on the Voltmeter.
- 5.5F Remove Voltmeter leads from the Power Supply P/C Board.
- 5.5G Adjust R89 (Control P/C Board) for 22.0 watts as indicated on the Power Output Display. (Insure Display is set to indicate Watts.)
- 5.5H Put Unit in Hold Mode.
- 5.5I Adjust R15 (Control P/C Board) for 21.0 watts as indicated on the Power Output Display. (Insure Display is set to indicate Watts.)
- 5.5J Using Up and Down Power Switches obtain a Power Output Display indication of 20 watts. Set as close to 20.0 watts as possible. (Insure Display is set to indicate Watts.)
- 5.5K Set Power Output Display to Watts/CM².
- 5.5L Adjust R88 (Control P/C Board) for 2.35 watts as indicated on the Power Output Display.

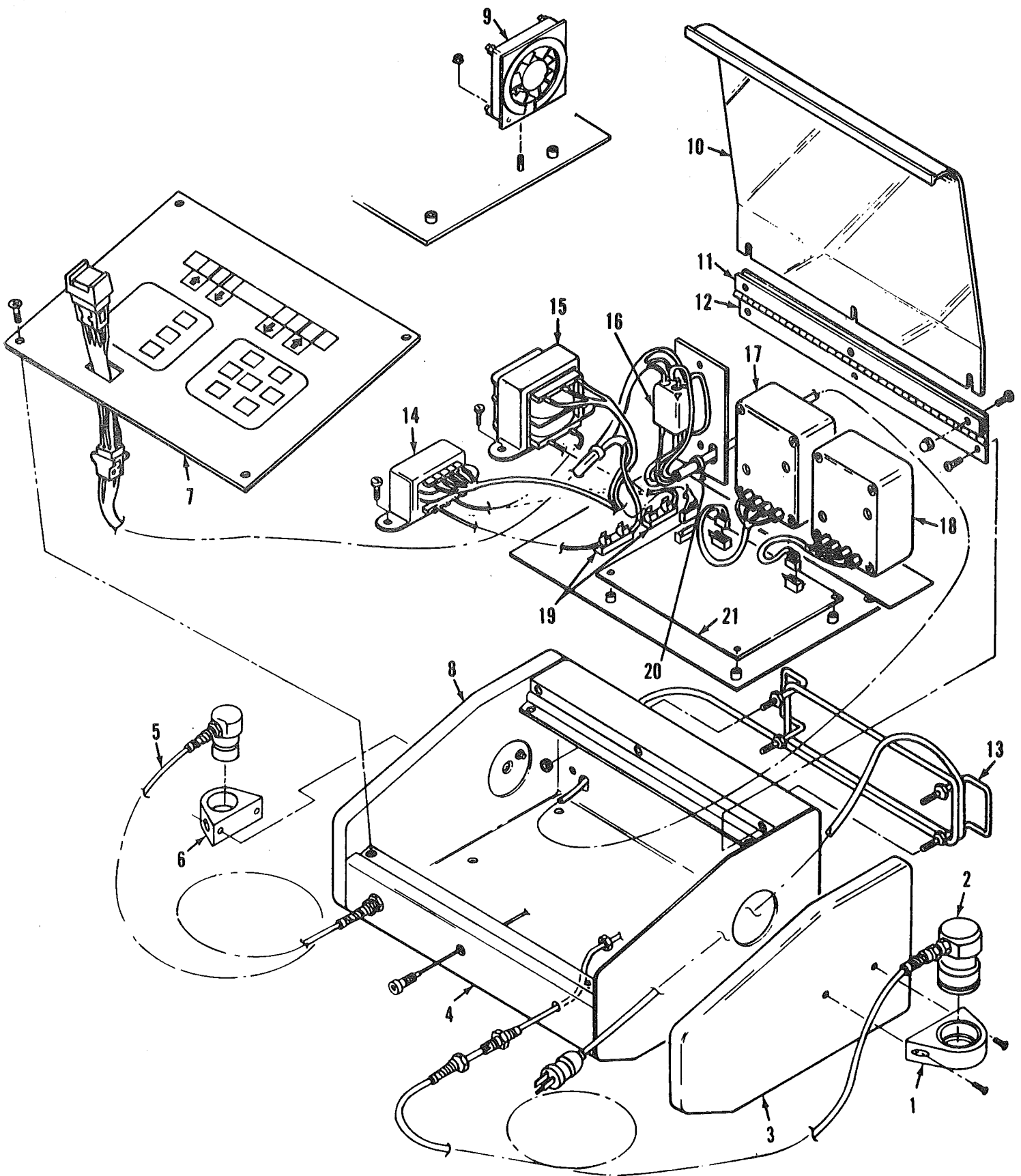
5.6 5CM POWER OUTPUT AND POWER OUTPUT METER CALIBRATION

- 5.6A Insure Unit is in Hold Mode.
- 5.6B Connect Oscilloscope channel 1 to monitor 5CM oscillator output voltage waveform.
- 5.6C Connect Oscilloscope channel 2 to monitor 5CM oscillator output current waveform.
- 5.6D Mount 5CM Sound Head to UPM-30 Ultrasound Power Meter.
- 5.6E Select 5CM Head and press Start Switch.
- 5.6F Using Up Power Switch obtain Maximum output power from Unit as indicated on the UPM-30 Ultrasound Power Meter. Indicated Power should be 11 watts minimum.
- 5.6G Adjust R63 (Control P/C Board) for 11.0 watts as indicated on the Power Output Display. (Insure Display is set to indicate Watts.)
- 5.6H Put Unit in Hold Mode.
- 5.6I Adjust R16 (Control P/C Board) for 10.5 watts as indicated on Power Output Display. (Insure Display is set to indicate Watts.)
- 5.6J Using Up and Down Power Switches obtain a Power Output Display indication of 10 watts. Set as close as possible to 10.0 watts. (Insure Display is set to indicate Watts.)
- 5.6K Set Power Output Display to Watts/CM².
- 5.6L Adjust R62 (Control P/C Board) for 2.63 watts as indicated on Power Output Display.

5.7 DUTY CYCLE CALIBRATION

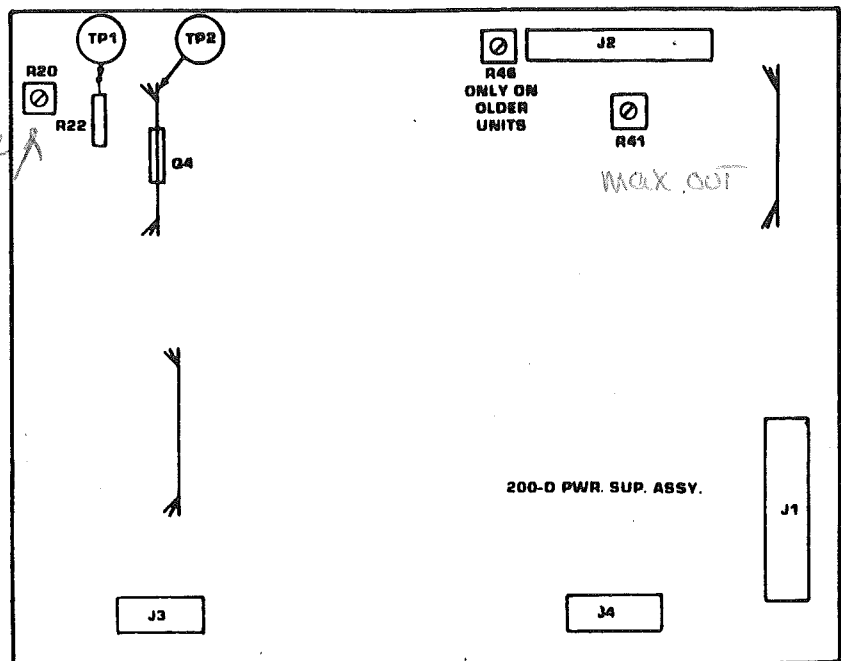
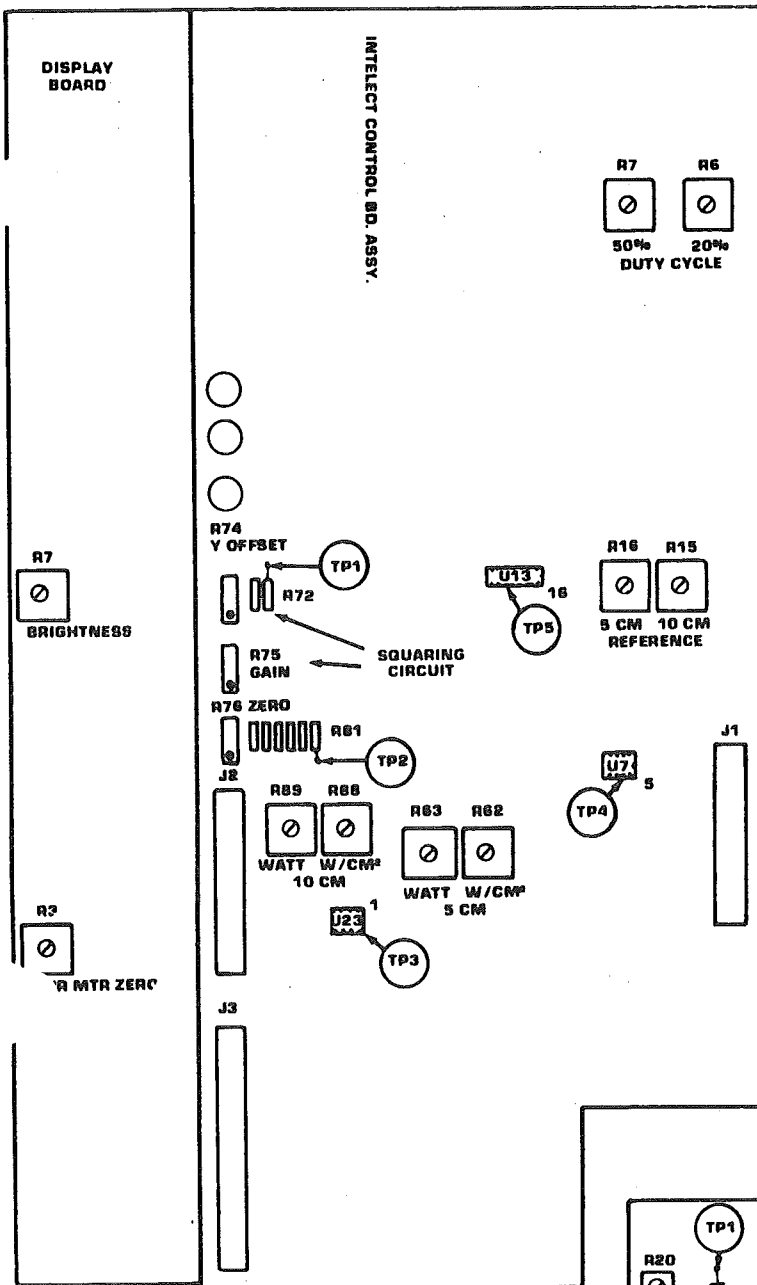
- 5.7A Set Unit for 20% Duty Cycle output.
- 5.7B Adjust R6 (Control P/C Board) for 20% active, 80% inactive Cycle as monitored on Oscilloscope. Measure at 10% amplitude point.
- 5.7C Set Unit for 50% Duty Cycle output.
- 5.7D Adjust R7 (Control P/C Board) for 50% active, 50% inactive Cycle as monitored on Oscilloscope. Measure at 10% amplitude point.
- 5.7E Alternate between 20%, 50%, and 100% Duty Cycle outputs and insure amplitude of waveform displayed on Oscilloscope does not change. Also insure that a single cycle (in 20% and/or 50%) is 10 plus/minus 2 msec.

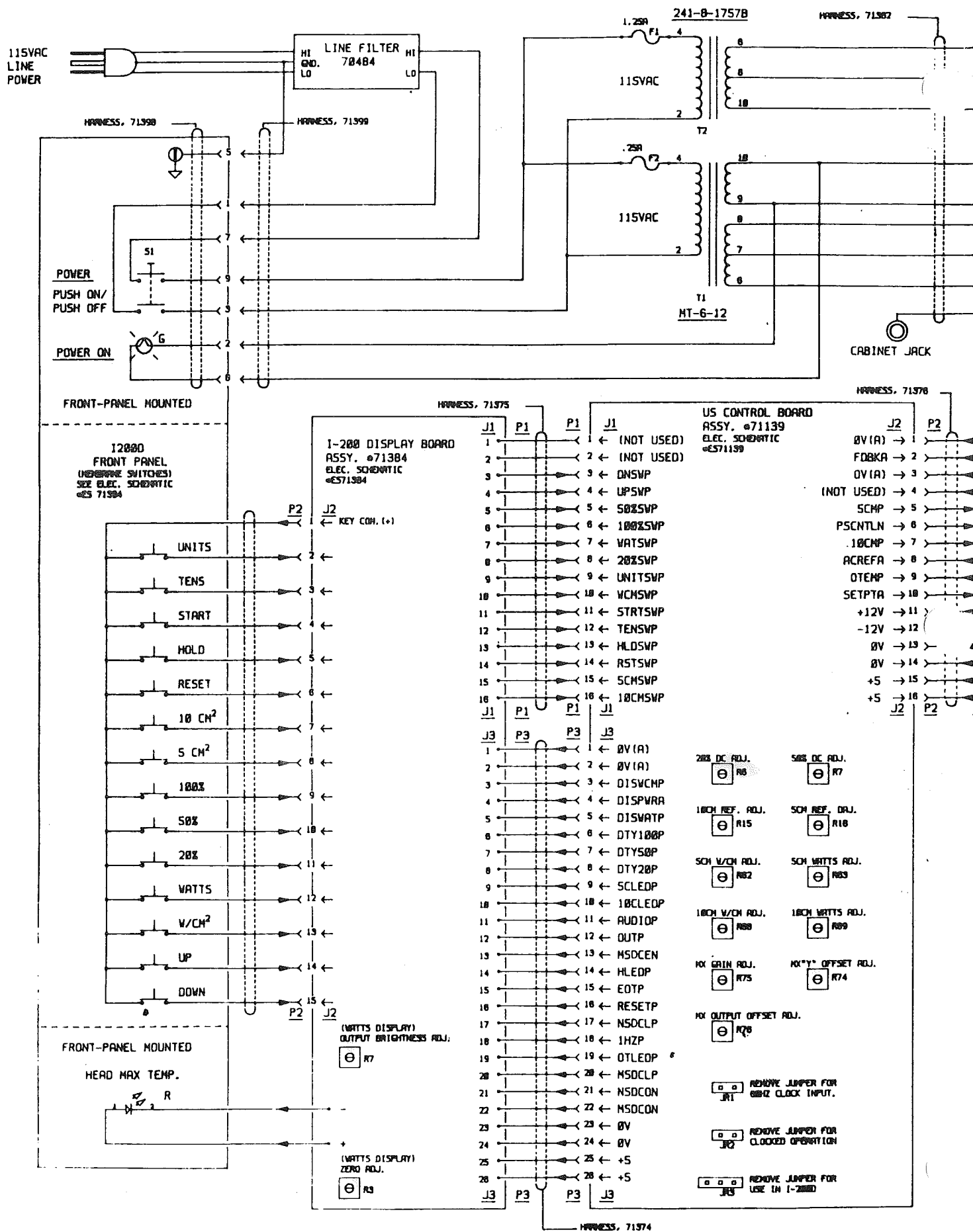
infelect[®] 200 parts list



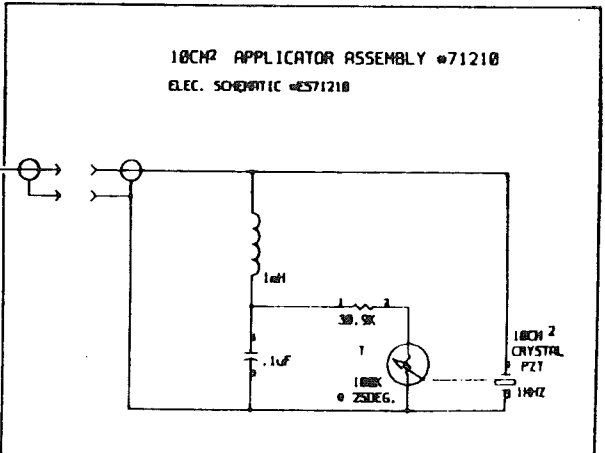
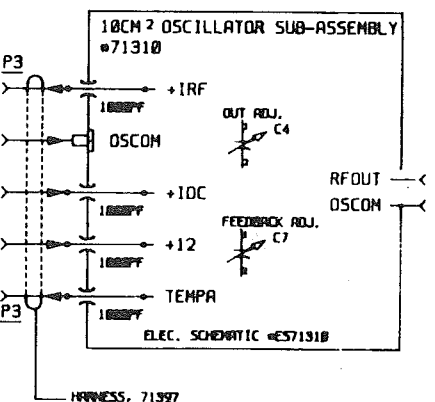
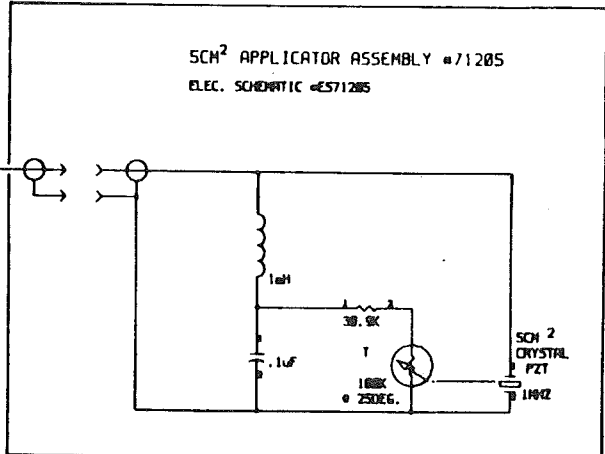
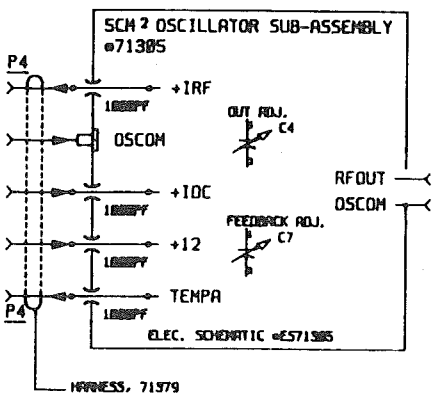
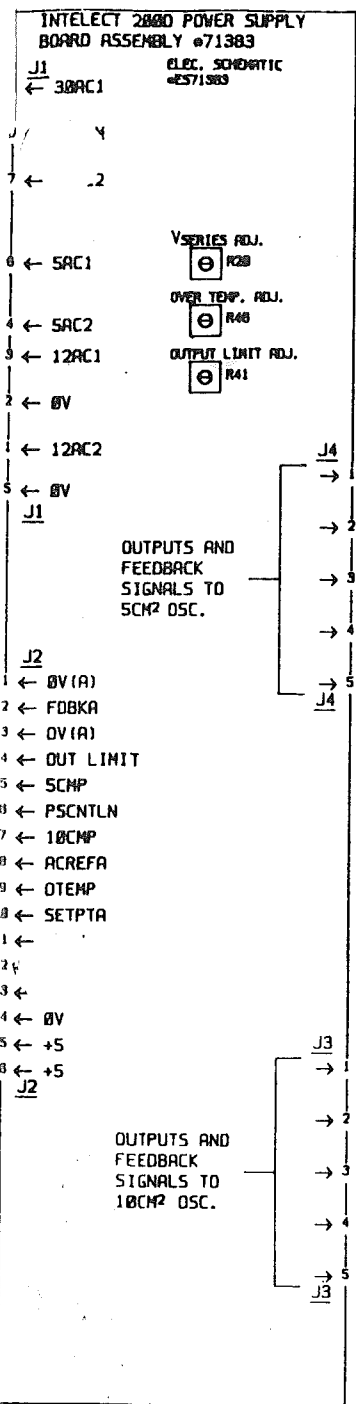
parts list

Ref.	Part No.	Description
1	71110	HOLDER APPLICATOR, INTELECT 210
2	71210	APPLICATOR, INTELECT 210
3	71182	COVER END RIGHT
4	71248	CABINET, INTELECT 200
5	71205	APPLICATOR, INTELECT 205
6	71105	HOLDER APPLICATOR, INTELECT 205
7	71116	PANEL ASSEMBLY, INTELECT 200
8	71181	COVER END LEFT
9	70153	FAN, INTELECT 200
10	71147	COVER DUST, INTELECT 200
11	20059	HINGE PART C
12	20060	HINGE SUB-ASSEMBLY
13	79102	HOLDER CARD (2)
14	71163	TRANSFORMER MT 6-12
15	70415	TRANSFORMER 241-8-1757B
16	70484	FILTER, LINE
17	71305	OSCILLATOR BOX, INTELECT 205
18	71310	OSCILLATOR BOX, INTELECT 210
19	70094	FUSE HOLDERS (2)
20	22004	STRAIN RELIEF 6P3-4
21	71383	PC BOARD POWER SUPPLY



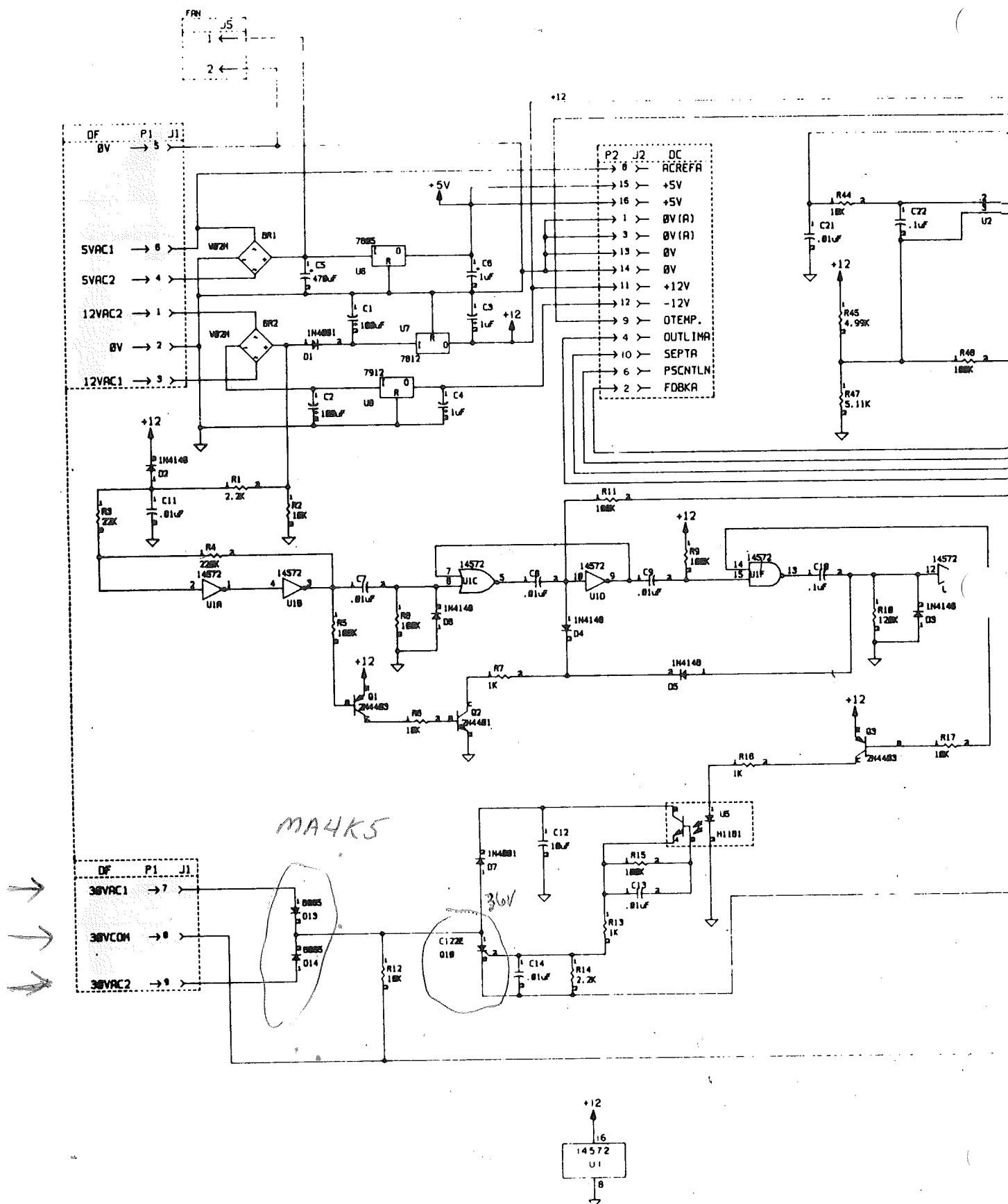


Check IC 205/210 10 21 19
 NO OUTPUT Q4 P.S.
 R2735
 Contain

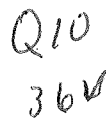


SOURCE — DESTINATION
 INDICATES SIGNAL FLOW

ELECTRICAL SCHEMATIC
ULTRASOUND UNIT, INTELECT 200, 115VAC 60 HZ
ES71447 1 of 1

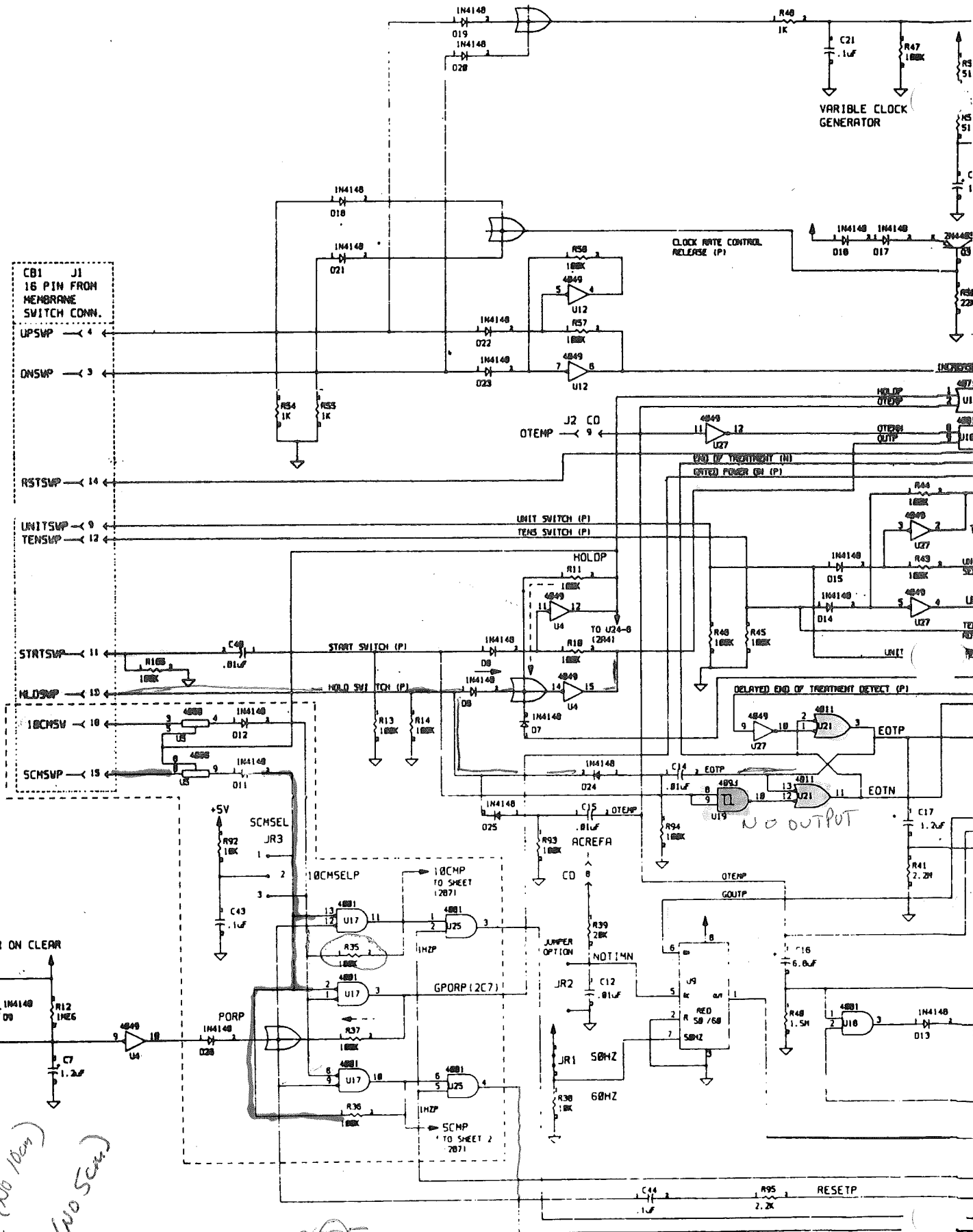


72.76



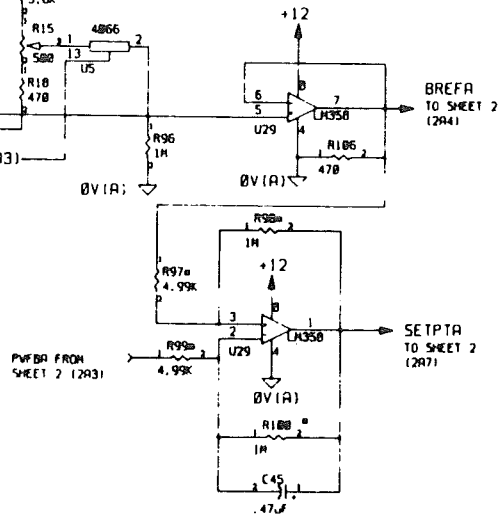
V 2
V 3

18



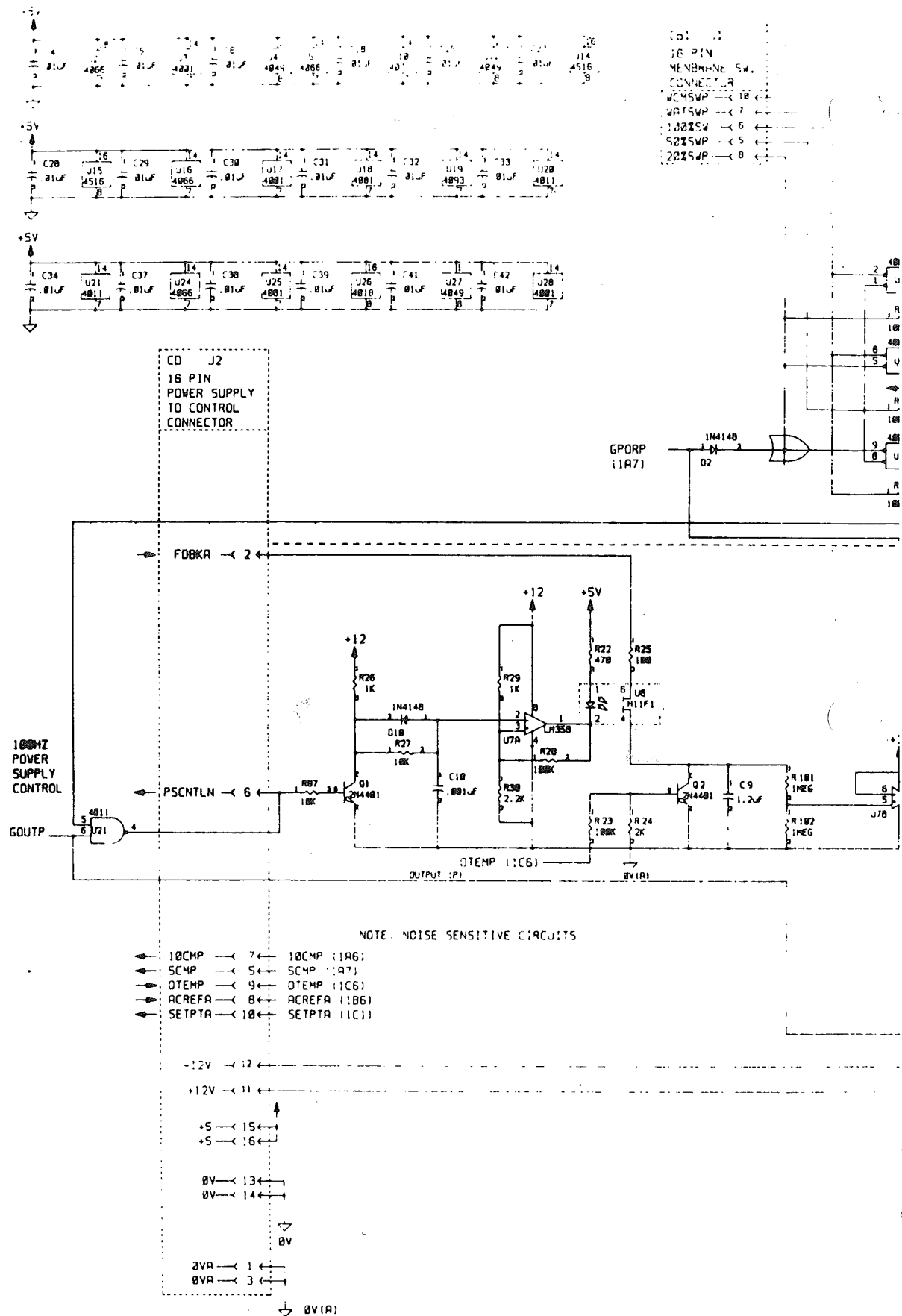
U17
LATCH (NO 10cm)
OR
LATCH (NO 5cm)

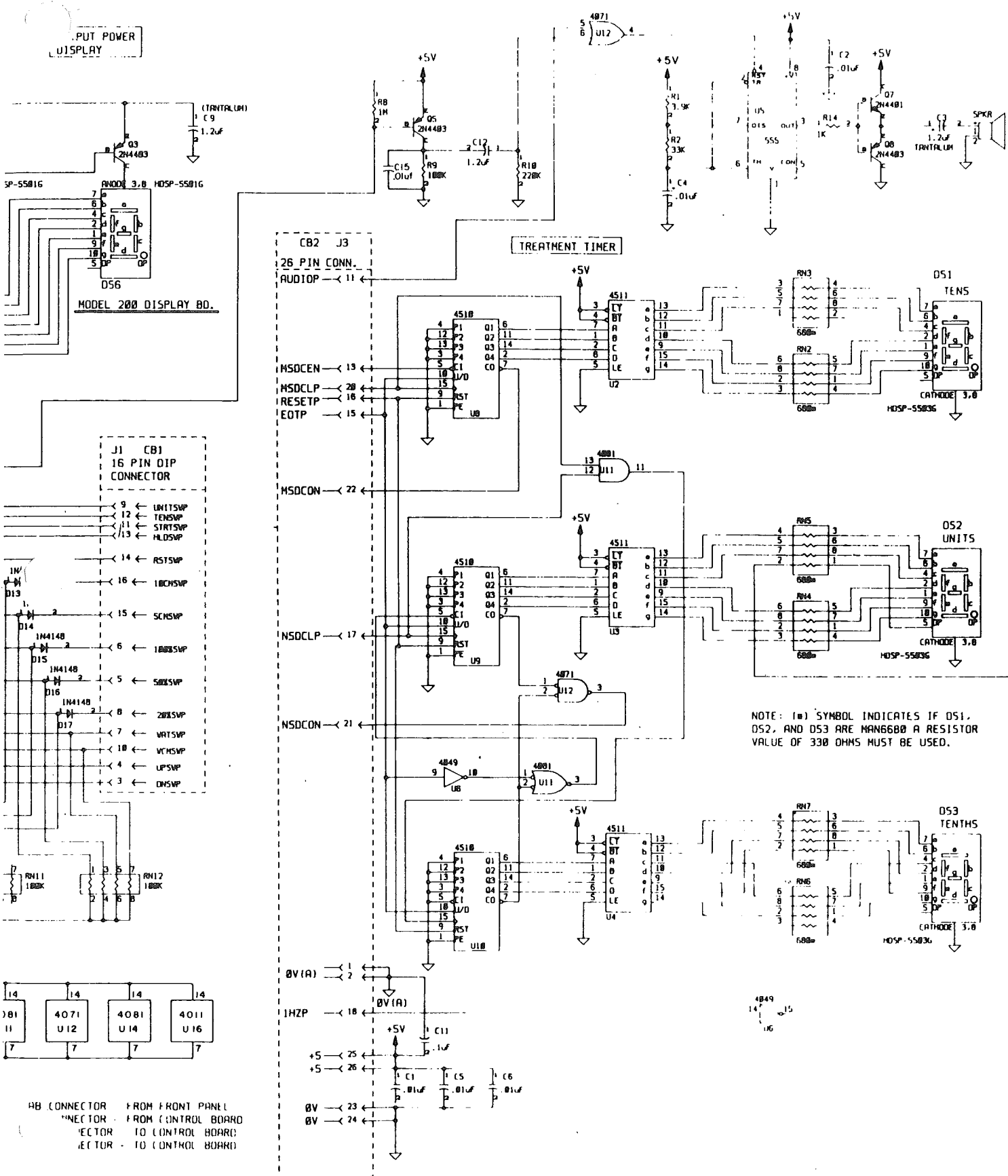
NO OUT PUT CK		CONTROL
R25	R35	IC 10, 19, 21
PWR SUP		IC 18, 25



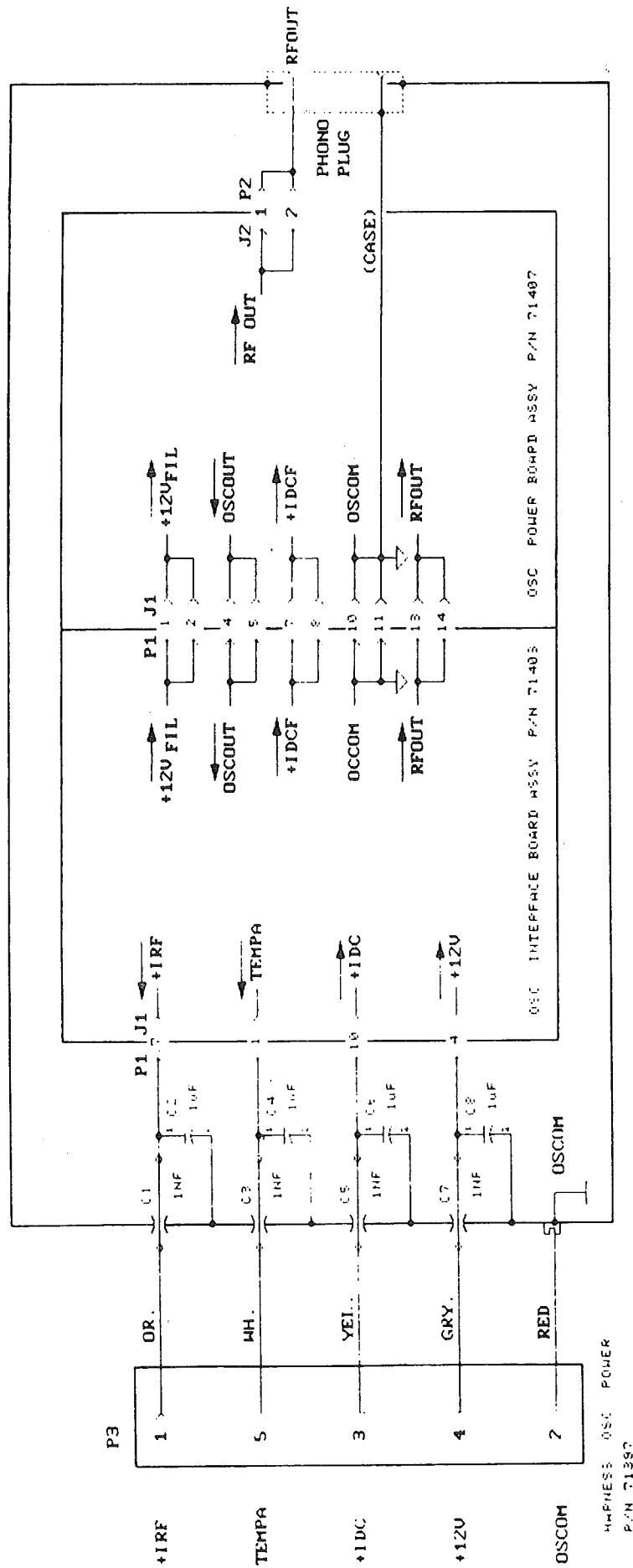
4071
4081
4093
4011

200 ONLY
THESE ARE NOT
USED IN 205/210
→ 10 > 10CLED
→ 9 > 5C1EP

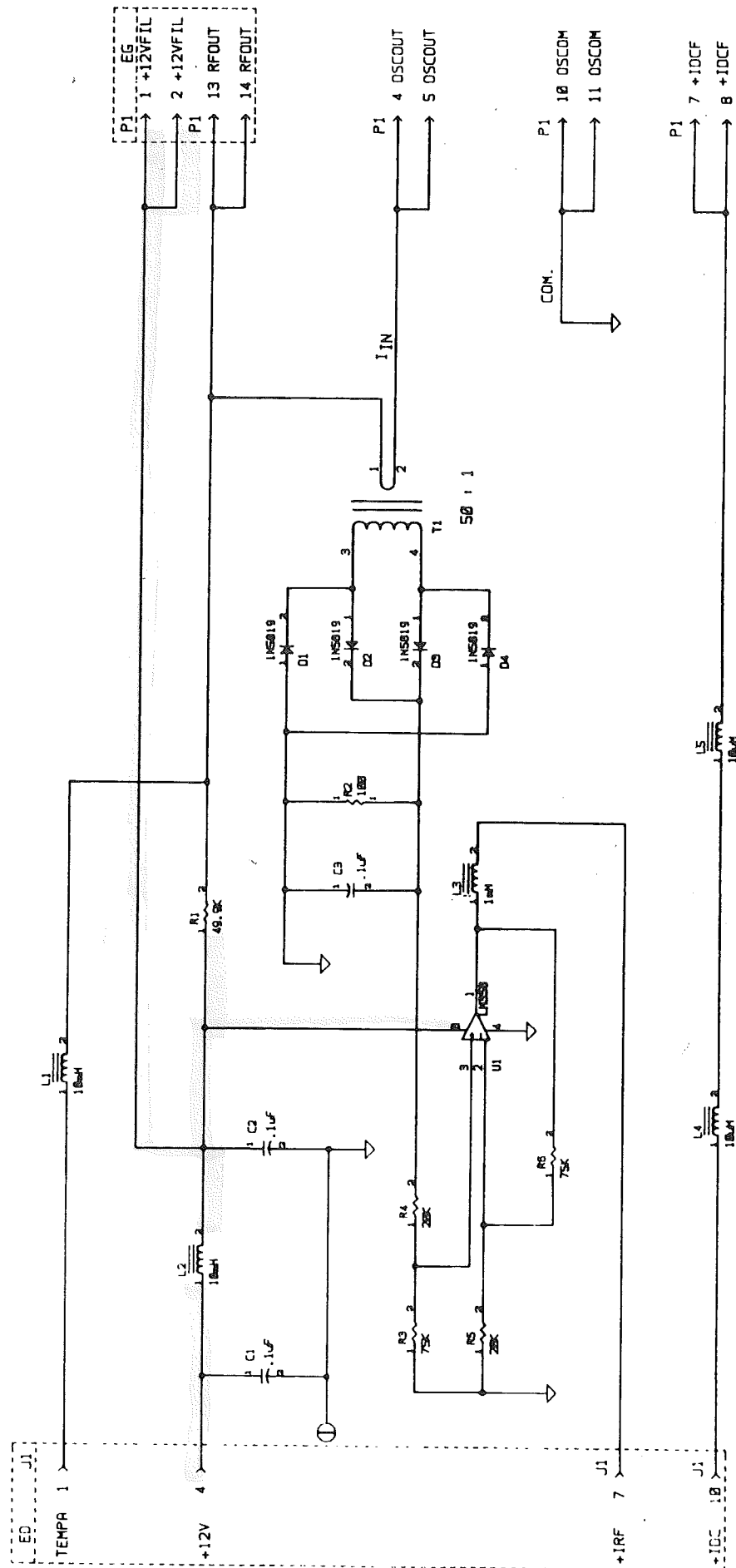




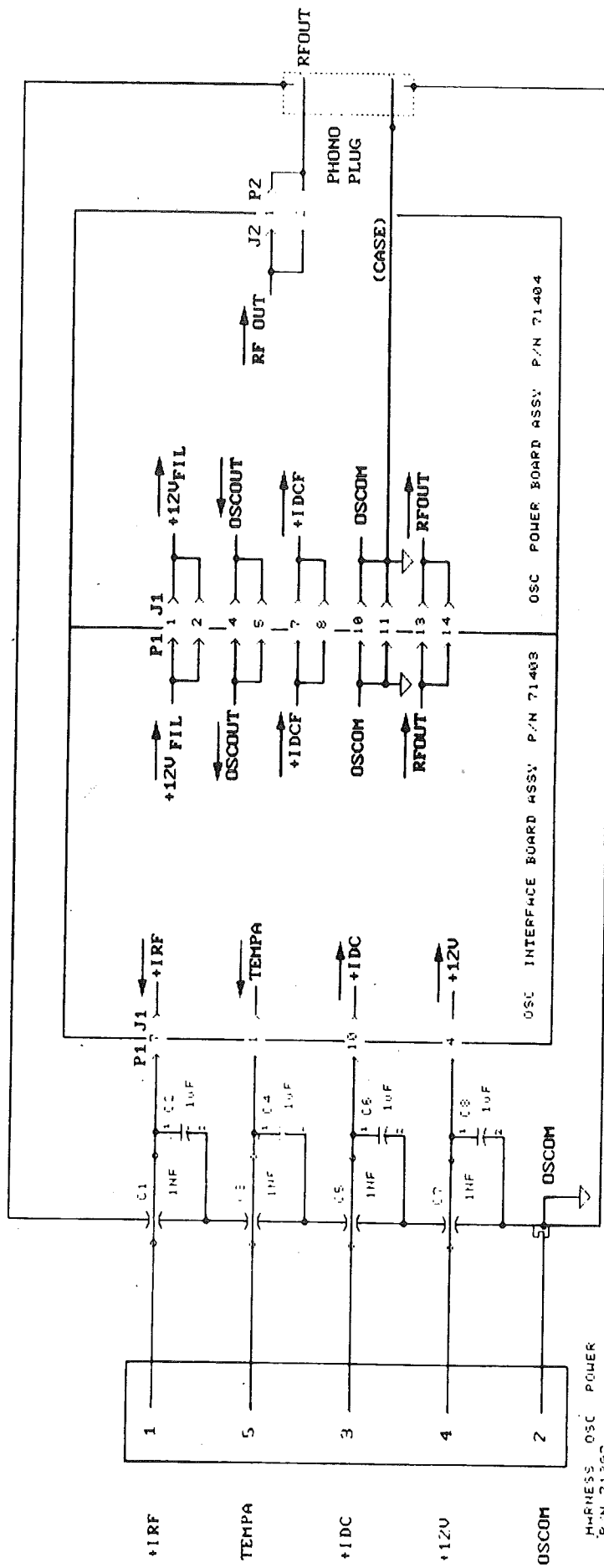
**ELECTRICAL SCHEMATIC
 ULTRA-SOUND DISPLAY, 2000
 ES71384 1 of 1**



ELECTRICAL SCHEMATIC
OSCILLATOR SUB-ASSY., 10 CM
E971310 1 of 1



ELECTRICAL SCHEMATIC
P.C. BOARD ASSY., OSC. INTERFACE
ES71403 Sheet 1 of 1



**ELECTRICAL SCHEMATIC
OSCILLATOR SUB-ASSY., 5 CM
ES71305 1 of 1**

notes

IF UNIT

goes Full, watts out
(20), check

← upon Select Sound Head.

Q-4 — Q-8

U10, U19, U21

R35 20K RBB

Q4	D45C11	-	ECG 378
Q5	D44C11	-	" 377
Q6	2N4401	-	123AP
Q7	D44C11	-	ECG 377
Q8	2N4401		123AP

MAJOR cause

U10	4071B
U19	4093
U21	4011

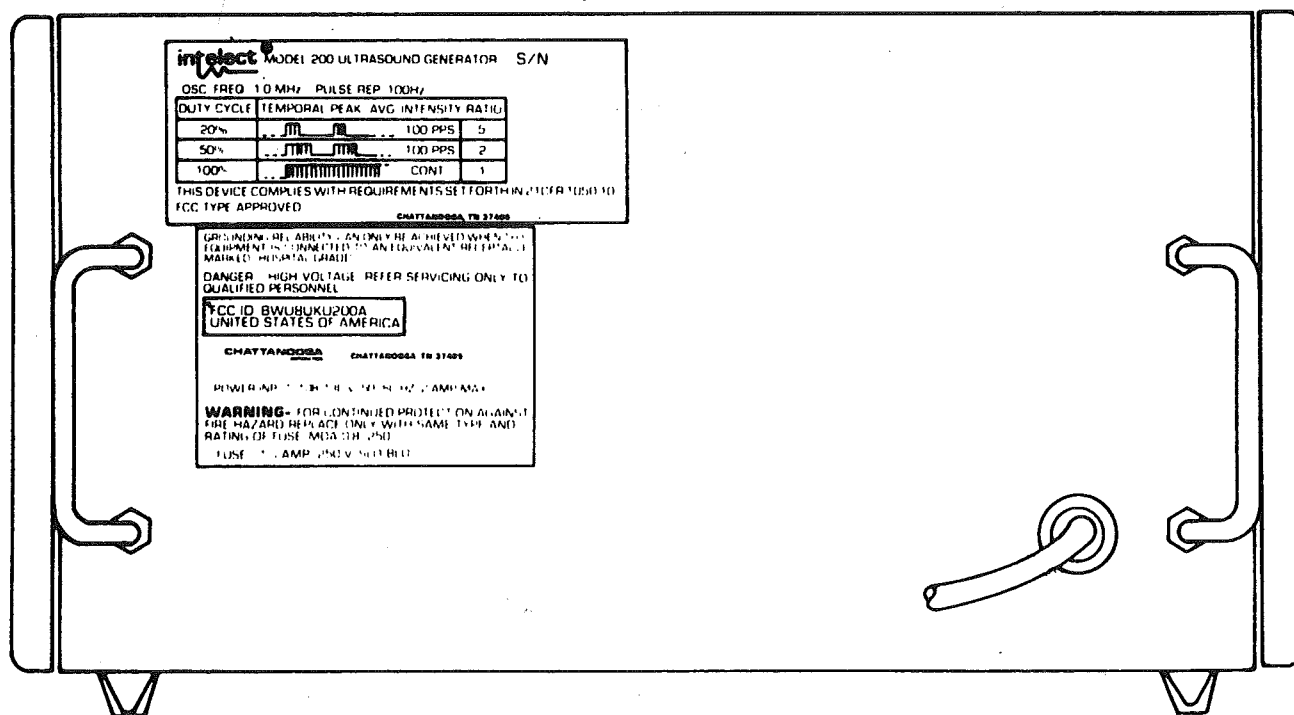
U17	4001
U25	4081
U7	LM 358 / ECG 928M
U22	MC 1495

WILL NOT Select Heads

notes

rear panel designations

This is the actual serial number of your Intellect® 200



CHATTANOOGA
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