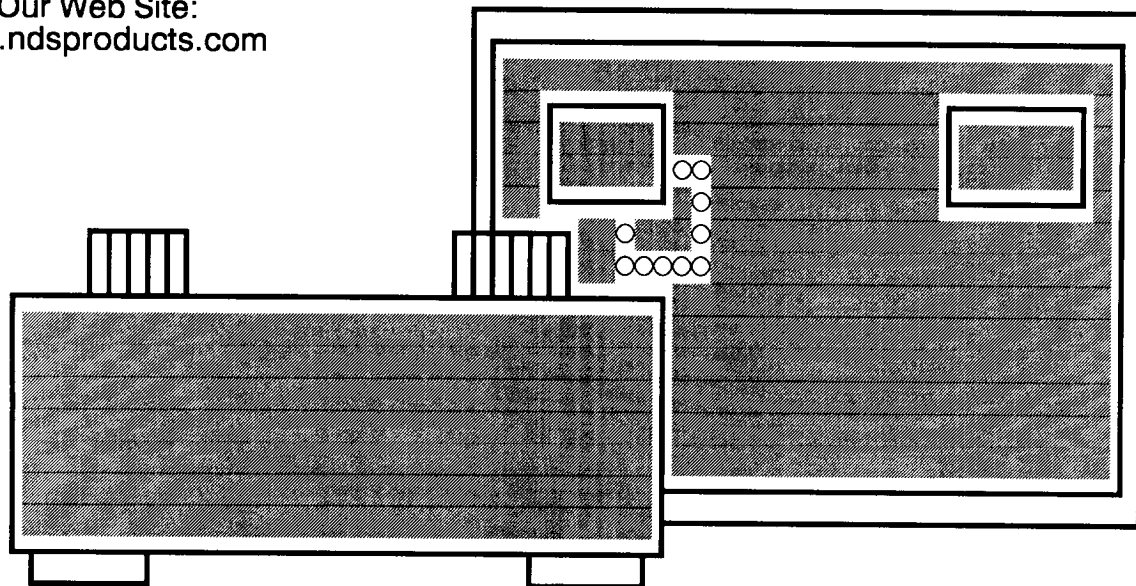


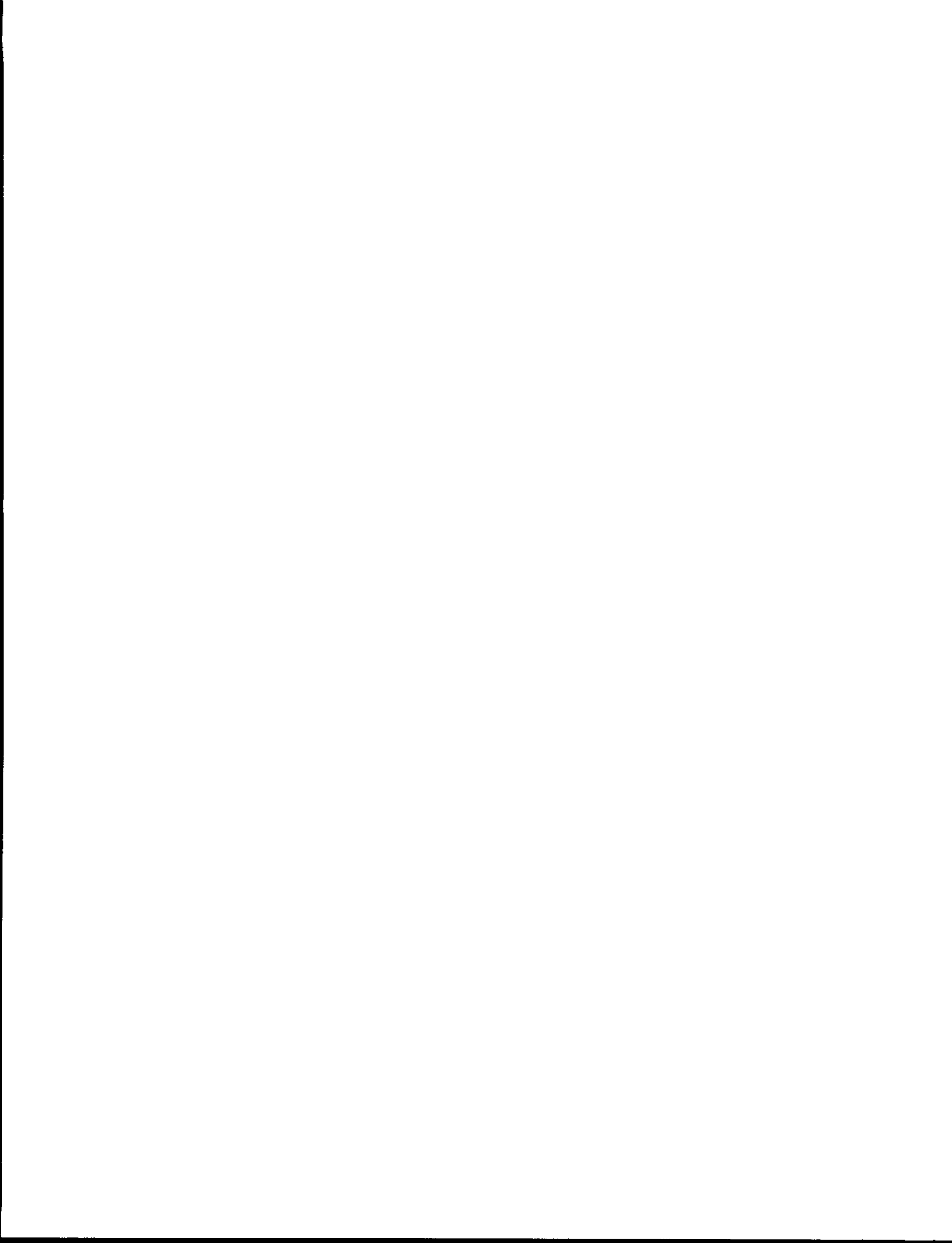
NDS PRODUCTS

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ND-100 DOSIMETER CHARGER OPERATION MANUAL

111 ANDERSON, PASADENA TX 77506, PHONE 713/475-2986, FAX 713/477-6741



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NOTE: DUE TO NDS PRODUCTS' CONTINUING PROGRAM OF RESEARCH & DEVELOPMENT, ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AND MAY BE VARIED AT OUR DISCRETION.

1.0 WARRANTY:

NDS PRODUCTS WARRANTS THAT THE PRODUCTS COVERED HEREBY SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF NDS PRODUCTS' SHIPMENT (GM TUBE IS WARRANTED BY THE OEM FOR 90 DAYS). THE FOREGOING WARRANTY DOES NOT APPLY TO ANY PRODUCTS WHICH HAVE BEEN SUBJECT TO MISUSE (INCLUDING STATIC DISCHARGE), NEGLIGENCE, ACCIDENT, OR MODIFICATION. NDS PRODUCTS' SOLE OBLIGATION TO BUYER HEREUNDER FOR PRODUCTS FAILING TO MEET THE AFORESAID WARRANTY SHALL BE, AT NDS PRODUCTS' DISCRETION, TO REPAIR AND RECALIBRATE THE NONCONFORMING PRODUCT OR TO REPLACE THE NONCONFORMING PRODUCT WHERE WITHIN THE WARRANTY PERIOD: 1) THE BUYER HAS RETURNED THE NONCONFORMING PRODUCT TO NDS PRODUCTS, FREIGHT PREPAID, & 2) NDS PRODUCTS HAS DETERMINED THE PRODUCT IS NONCONFORMING AND THAT SUCH NONCONFORMITY IS NOT A RESULT OF IMPROPER USE, REPAIR, MODIFICATION OR OTHER MISUSE BY BUYER.

THE FOREGOING WARRANTY AND REMEDIES ARE EXCLUSIVE AND ARE MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE. NDS PRODUCTS NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OR USE OF ITS PRODUCTS, AND NDS PRODUCTS MAKES NO WARRANTY WHATSOEVER FOR PRODUCTS NOT MANUFACTURED BY NDS PRODUCTS. NDS PRODUCTS SHALL NOT BE LIABLE FOR DAMAGES DUE TO DELAYS IN DELIVERIES OR USE AND SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND; WHETHER ARISING FROM CONTRACT, TORT, OR NEGLIGENCE, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF GOODWILL, OVERHEAD OR OTHER LIKE DAMAGES.

WNDS101

2.0 SPECIFICATIONS:

THIS BATTERY OPERATED INSTRUMENT WILL CHARGE (ZERO) ANY SELF-READING DOSIMETER HAVING A STANDARD CHARGING END. THE CHARGER IS CONTAINED IN A TWO-PIECE ALUMINUM CASE WHICH IS SECURED BY FOUR THREADED FASTENERS, EACH HAVING A RUBBER BOOT FOR EASY REMOVAL.

3.0 OPERATION:

3.1 TO CHARGE (ZERO) DOSIMETER:

IF DOSIMETER HAS A PROTECTIVE CONTACT CAP, REMOVE IT. PRESS THE DOSIMETER CONTACT LIGHTLY INTO THE CHARGER CONTACT TO ILLUMINATE THE DOSIMETER SCALE.

PRESS THE DOSIMETER FIRMLY UNTIL THE HAIRLINE RESPONDS TO ADJUSTMENT OF THE ZERO ADJUST KNOB AND PROCEED TO ADJUST HAIRLINE TO ZERO. THE HAIRLINE MAY HAVE TO BE PLACED TO THE LEFT OF ZERO TO COMPENSATE FOR A KICK TO THE RIGHT WHEN THE DOSIMETER IS REMOVED. ALWAYS REMOVE DOSIMETER SLOWLY BY RELAXING THE PRESSURE FROM THE CHARGER.

TO READ THE DOSIMETER, POINT THE CONTACT END TOWARD AN EXTERNAL LIGHT SOURCE AND LOOK THROUGH THE EYEPIECE. IF NO LIGHT SOURCE IS AVAILABLE, PLACE DOSIMETER ON CHARGING CONTACT AND PRESS LIGHTLY TO ILLUMINATE SCALE.

4.0 MAINTENANCE:

ALWAYS KEEP THE CHARGER AND ESPECIALLY THE CHARGING CONTACT CLEAN BY USING A SOFT CLOTH. DO NOT USE A SOLVENT OR CLEANING FLUID ON PLASTIC. ALWAYS KEEP THE PROTECTIVE CAP ON THE CHARGING CONTACT WHEN NOT IN USE. REMOVE THE TWO 1.5V "C" CELL BATTERIES WHEN STORING THE CHARGER FOR MORE THAN TWO MONTHS. KEEP BATTERY CONTACTS CLEAN BY USING STEEL WOOL OR EQUIVALENT.

DO NOT USE ALKALINE BATTERIES!!!!!!!!!!!!!!

5.0 TROUBLE-SHOOTING:

5.1 IF THE LIGHT IS WEAK OR FAILS TO GO ON WHEN CONTACT IS DEPRESSED:

- 5.1.1 REPLACE BATTERIES.
DO NOT USE ALKALINE BATTERIES!!!!!!!!!!!!!!!!!!!!!!!!!!!!**
- 5.1.2 CLEAN BATTERY AND LIGHT SWITCH CONTACTS.**
- 5.1.3 TIGHTEN OR REPLACE LIGHT BULB.**

5.2 HAIRLINE MOVES FLUIDLY BUT WILL NOT ZERO:

- 5.2.1 REPLACE BATTERIES.
DO NOT USE ALKALINE BATTERIES!!!!!!!!!!!!!!!!!!!!!!!!!!!!**

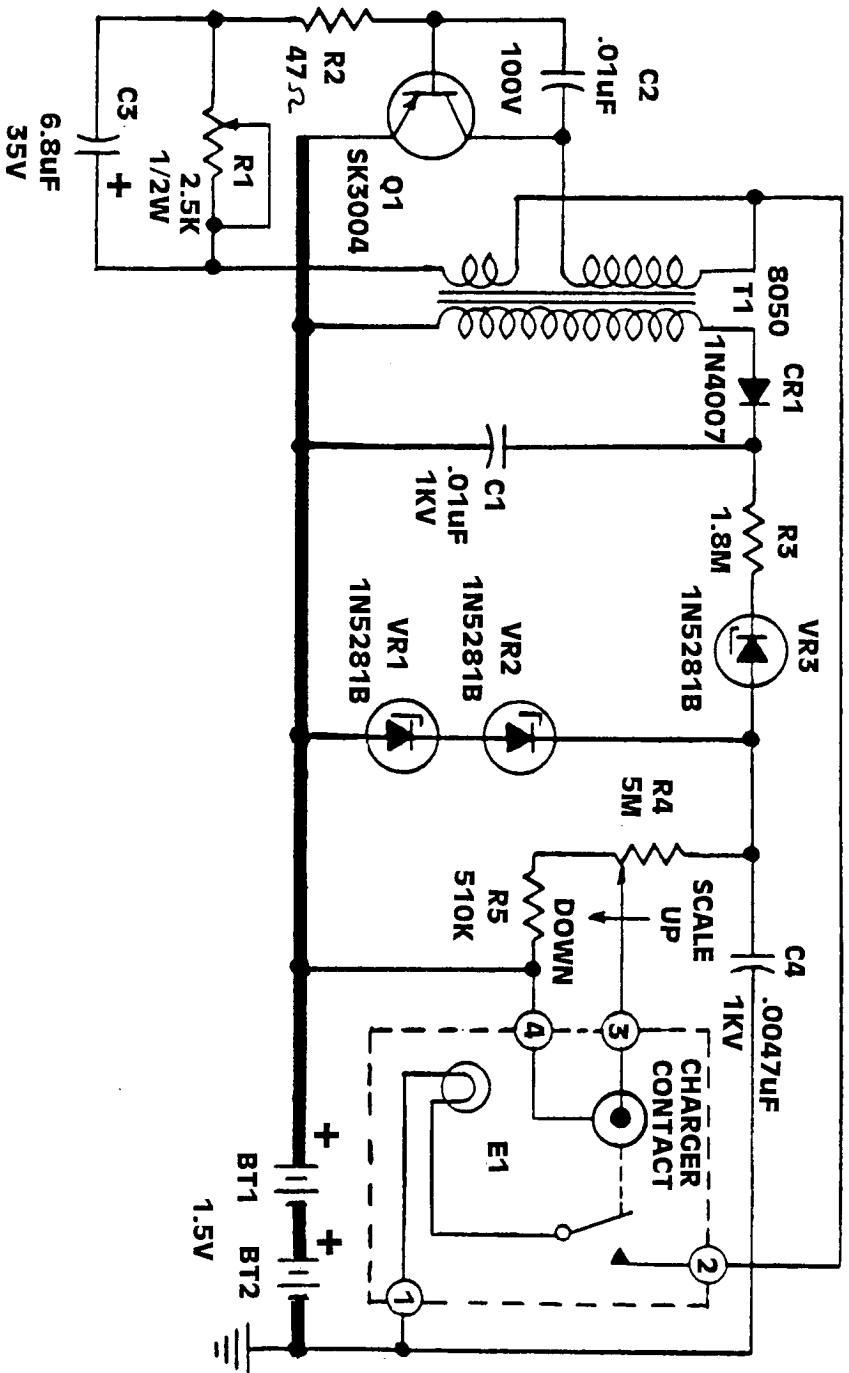
5.3 HAIRLINE MOVES ERRATICALLY:

- 5.3.1 CLEAN CHARGING CONTACTS ON CHARGER AND DOSIMETER.**
- 5.3.2 REPAIR OR REPLACE CHARGER.**
- 5.3.3 DOSIMETER IS FAULTY.**

22-Jun-98		BILL OF MATERIAL		
980-0100-001		ND-100 PC ASSY	REV B	
ITM	PART NUMBER	DESCRIPTION	QTY	REF DESIG
1	100-1000-472	CAP CER DISC .0047 uF 1 KV	1	C4
2	100-1000-103	CAP CER DISC .01 uF 1 KV	1	C1
3	100-0100-103	CAP CER DISC .01 uF 100V	1	C2
4	105-0035-685	CAP ELE ALUM 6.8 uF 35V	1	C3
5	150-0100-001	DIODE 1N4007 STANDARD RECOVERY	1	CR1
6	150-0400-001	DIODE 1N5281B ZENER	3	VR1-3
7	551-0100-002	CHARGER PC BOARD	1	
8	250-0500-185	RES CF 1/2W 5% 1.8 M OHM	1	R3
9	250-0100-470	RES CF 1/4W 5% 47.0 OHM	1	R2
10	250-0100-514	RES CF 1/4W 5% 510.0 K OHM	1	R5
11	265-0200-252	RES POT TRIMMER 2.5 K 1/2W	1	R1
12	450-8050-001	TRANSFORMER DC-DC	1	T1
13	475-0200-001	TRANSISTOR SK3004 POWER	1	Q1
14	755-0400-001	HDW NUT 4-40 HEX CRS	2	
15	750-0400-250	HDW SCREW 4-40 X .25 PAN HD CRS	2	
16	765-0400-001	HDW WASHER LOCK # 4 INT TOOTH CRS	2	

22-Jun-98		BILL OF MATERIAL		
990-0100-001		ND-100 UNIT ASSY	REV A	
ITM	PART NUMBER	DESCRIPTION	QTY	REF DESIG
1	600-0135-001	BATTERY 1.5V C CELL EV135	2	BT1-2
2	605-015C-001	BATTERY HOLDER 1.5V C CELL DOUBLE	1	
3	610-015C-001	BATTERY SLEEVE C CELL DOUBLE	1	
4	670-0100-001	CASE ALUM CHARGER	1	
5	720-0100-001	CHARGER ASSY CONTACT/CAP	1	E1
6	690-0100-001	DECAL ND-100	1	
7	660-0100-001	FOOT GROMMET	4	
8	755-0600-001	HDW NUT 6-32 HEX SMALL PATTERN CRS	6	
9	780-0100-001	HDW RIVET 1/8 DIA HD 1/8-3/16 GRIP	2	
10	750-0600-500	HDW SCREW 6-32 X .50 PAN HD SS	4	
11	750-0600-750	HDW SCREW 6-32 X .75 PAN HD SS	2	
12	765-0380-001	HDW WASHER LOCK 3/8 INT TOOTH CRS	2	
13	765-0600-001	HDW WASHER LOCK # 6 INT TOOTH CRS	8	
14	690-0100-001	KNOB BLK/ALUM INLAY	1	
15	575-0100-001	LAMP MINI 3V NO. 14	1	DS1
16	980-0100-000	ND-100 PC ASSY	1	
17	260-0100-506	RES POT CONTROL 5 MEG 10%/20% 2W	1	R4

REVISIONS				
REV	DESCRIPTION	DATE	BY	APVD



NBS PRODUCTS

CIRCUIT DIAGRAM
ND-100

DRAWN: H. SMITH
CHECKED: *[Signature]*
ENGINEER: *[Signature]*

DATE: 2/87
DATE: 2/87

DO NOT COPY, REPRODUCE, OR USE WITHOUT PERMISSION OF NBS

SCALE: 1/8" = 1"

SHEET 1 of 1

REV B

