

LUDLUM MODEL 44-32
SHIELDED GAMMA
SCINTILLATOR DETECTOR
JANUARY 1990

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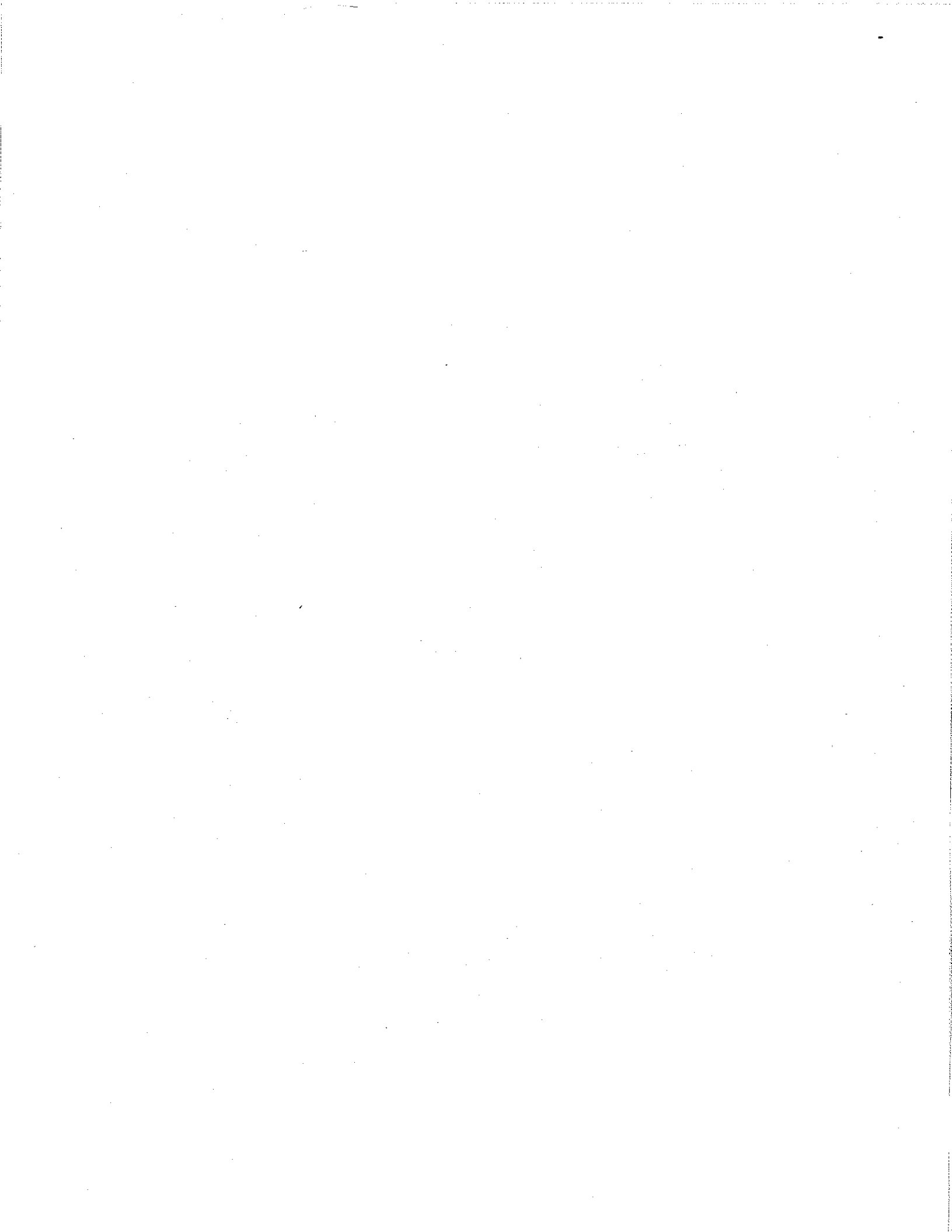
LUDLUM MEASUREMENTS, INC.
SWEETWATER, TX 79556
(325) 235-5494 FAX: (325) 235-4672



LUIDLUM MODEL 44-32 SHIELDED GAMMA SCINTILLATOR DETECTOR

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LUDLUM MODEL 44-32 SHIELDED GAMMA SCINTILLATOR DETECTOR

1. GENERAL:

The Model 44-32 utilizes a 1 inch diameter by 1/2 inch thick NaI (Tl) crystal coupled to a photomultiplier tube to detect gamma radiation. A suggested energy range of use is 60 keV to 300 keV. The detector is energy dependent with an approximate factor of 30 over response in the 60 keV to 100 keV range, when normalized to Cs-137 response. The crystal portion of the detector is shielded by 1/8 inch thick lead collimator to provide directional detection capability.

The detector may be used with any of the Ludlum instruments or equivalent instruments that provide 400 to 1200 volts of 2-100 mV.

2. SPECIFICATIONS:

Scintillator: 1 inch diameter by 1/2 inch thick NaI(Tl)

Photomultiplier Tube: 1 1/2 inch diameter, 10 stage, head-on type

Voltage Range: 400-1200 volts

Efficiency: 100,000 cpm/mR/hr for Cs-137

Lead Collimator: 1.7 inch diameter by 1.5 inch long by 1/8 inch thick

Weight: 1 lb.

Finish: Computer beige polyurethane paint

Size: 8 inches long by 2 inch diameter



LUDLUM MODEL 44-32 SHIELDED GAMMA SCINTILLATOR DETECTOR

3. REPLACEMENT PARTS LIST:

PART NO.	DESCRIP.	QTY.
47-1561	COMPLETE M44-32 GAMMA SCINTILLATOR	
01-5001	PHOTOMULTIPLIER TUBE	1 EA.
01-5158	NaI(Tl) CRYSTAL	1 EA.
7002-144	TOP HAT CAP	1 EA.
7002-143	LEAD COLLIMATOR	1 EA.
13-7751	CONNECTOR UG706/U	1 EA.
7002-029-28	PLEXIGLASS SPACER	1 EA.
40-4006	TUBE SHIELD	1 EA.
7002-029-04	PLEXIGLASS LIGHT PIPE	1 EA.
40-4039	TUBE SOCKET	1 EA.
7002-029-01	M 44-32 PROBE BODY	1 EA.
7002-029-05	SPONGE	1 EA.
7002-029-02	CONNECTOR END CAP	1 EA.
03-5374	COUPLING SILICONE GREASE	
17-8811	4-40 X 3/16 BH SCREW	4 EA.
7085-064	CONNECTOR WRENCH (FOR "C" CONN.)	



M 43-3
CONNECTOR END CAP
7002-029-02

PLEXIGLASS CAP
7002-029-04

SPONGE
SPACER
7002-029-05

TUBE
SOCKET
40-4039

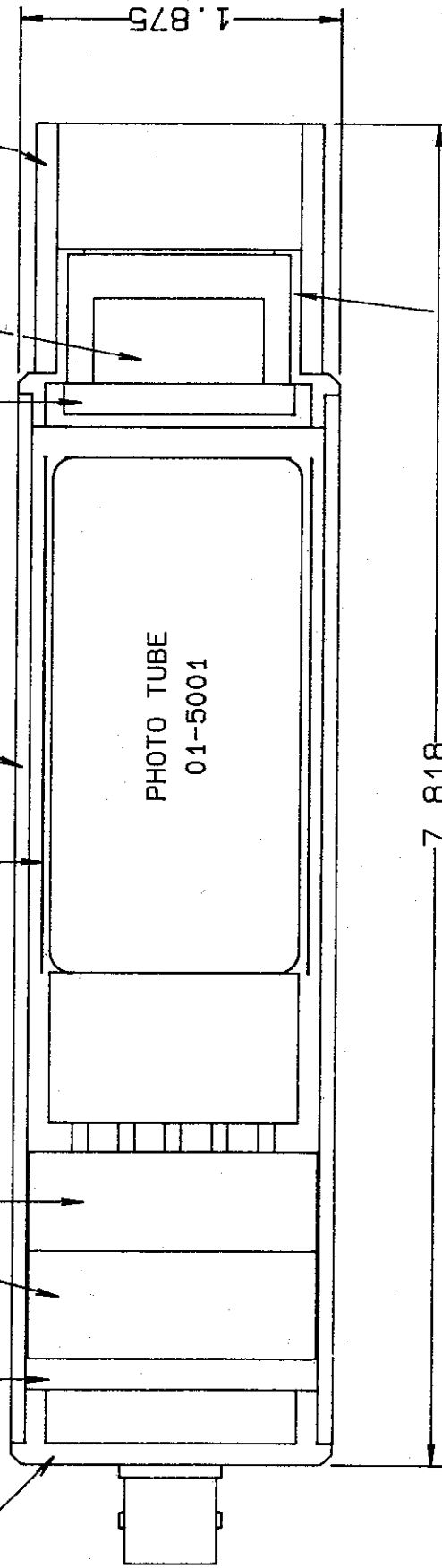
TUBE
SHIELD
40-4006

PROBE BODY
7002-029-01

PLEXIGLASS
SPACER
7002-029-28

1 X 1/2
X-TAL
01-5158

LEAD
COLLIMATOR
7002-143



DESC: ASSEMBLY VIEW

MODEL: 44-32

PART #: 4002-219

DWN: BK DATE: 1/19/90

DSGN: DATE:

CHG NO.	DWN	CHK	APP.
DWN DATE BK 1/19/90	CHK DATE	APP DATE	
TOL: SHOP STD <input type="checkbox"/>	OTHER <input type="checkbox"/>	SCALE: FULL <input type="checkbox"/>	OTHER <input type="checkbox"/>
TITLE: MODEL 44-32			
LUDTUM MEASUREMENTS, INC. SERIES 2 SHEET 180			



M 43-3
CONNECTOR END CAP
7002-029-02

SPONGE
SPACER
7002-029-05

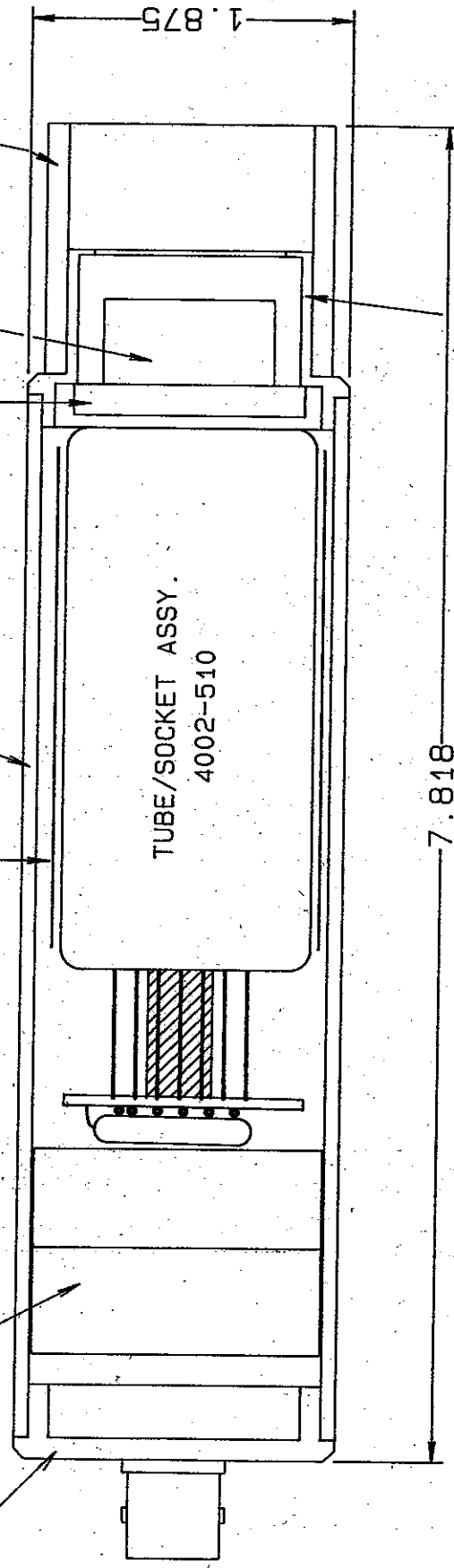
PLEXIGLASS
SPACER
7002-029-28

TUBE
SHIELD
40-4006

PROBE BODY
7002-029-01

1 X 1/2
X-TAL
01-5158

LEAD
COLLIMATOR
7002-143



TUBE/SOCKET ASSY.
4002-510

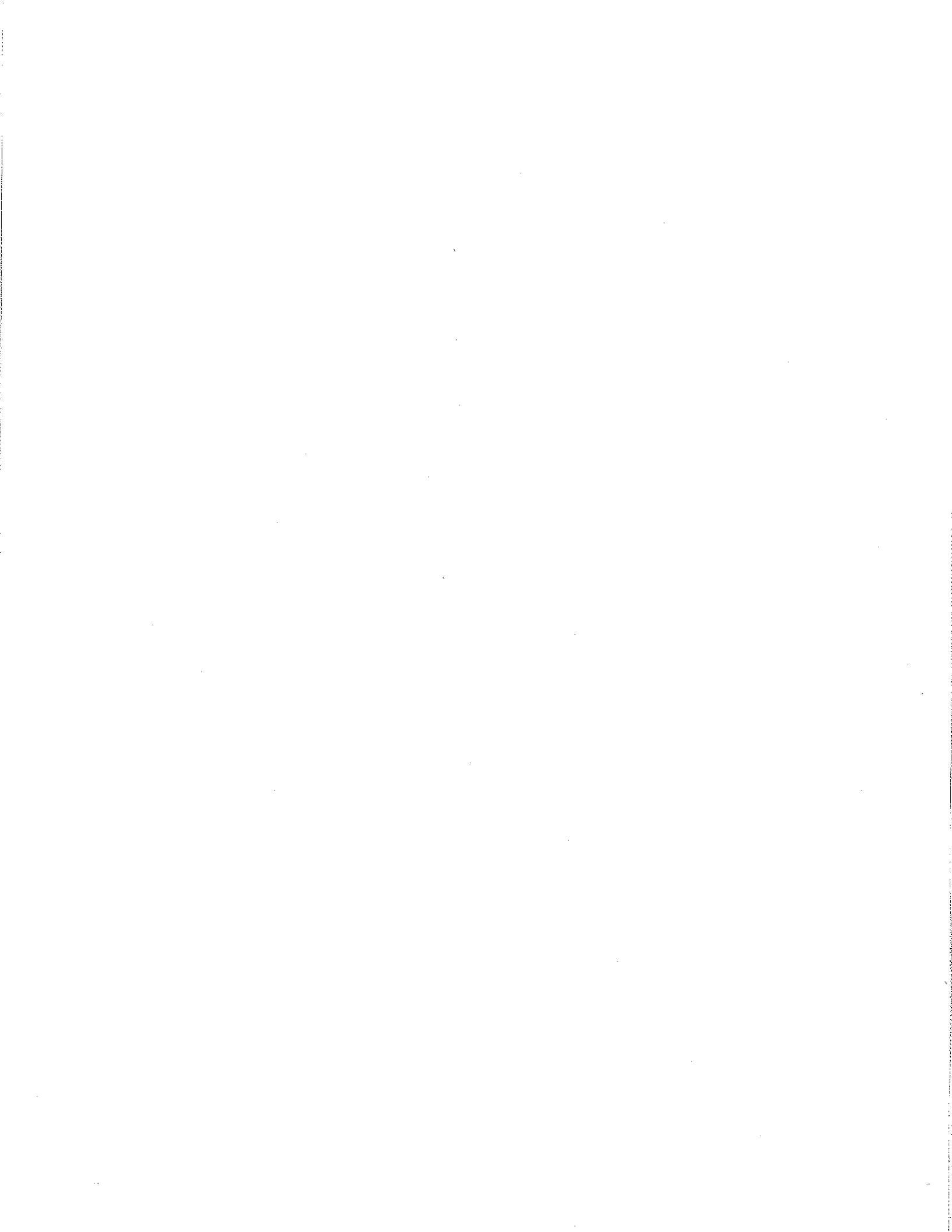
CAP TOPHAT
7002-144

7.818

1.875

DESC: ASSEMBLY VIEW	
MODEL: 44-32	
PART #: 4002-219	
DWN: NG	DATE: 8/14/96
DSGN:	DATE:

CHG NO.	DATE	BY	APP	DATE	BY	APP
NG	8/14/96	NG	10-8-96	10-9-96		
TOL: SHOP STD		SCALE: FULL		OTHER		
TITLE: MODEL 44-32		LUDLUM INSTRUMENTS, INC.				
LUDLUM INSTRUMENTS, INC.		2		SHEET		
1508 7000		2		150		



LUDLUM MODEL 44-32 SHIELDED GAMMA SCINTILLATOR DETECTOR

BILL OF MATERIALS

EBY SOCKET #9058, DWG. NO. 2 X 147

CAPACITORS

C1 0.01uF, 2kV, C 04-5525

RESISTORS

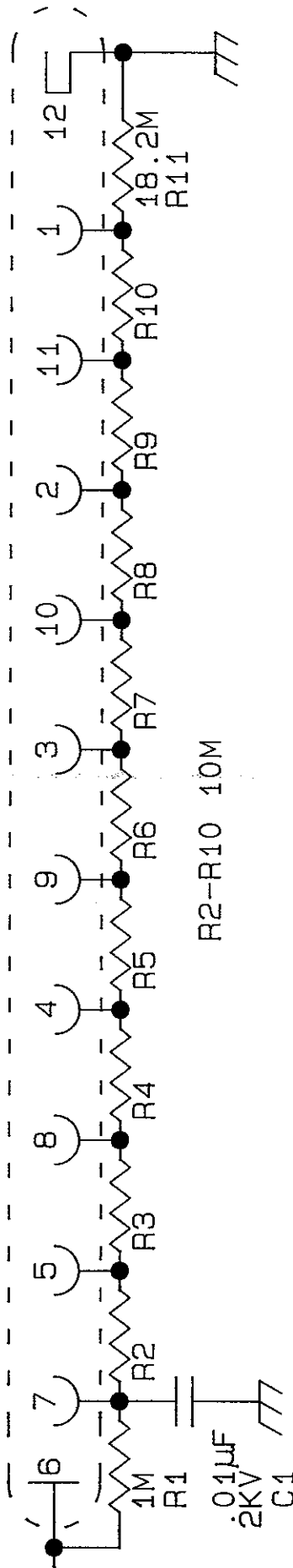
R1 1 MEG 10-7028
R2-R10 10 MEG 10-7031
R11 18.2 MEG 10-7033

MISCELLANEOUS

1 EA. TUBE SOCKET 7002-112
* TEFLON WIRE 21-9362
* BLK #26 WIRE 21-9432

ASSEMBLED EBY SOCKET 40-4039





DESC: EBY SOCKET #9058 TUBE BASING

MODEL: 44-2

PART #: 40-4039

DWN: PW DATE: 7/5/89

DSGN: DATE:

CHR NO.		DWN	CHK	APP
DWN DATE	7/5/89	CHK DATE		APP DATE
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TOL: OTHER		SCALE: OTHER		
TITLE 40-4039 BASING DIAGRAM				
LUDLOW MEASUREMENTS, INC.		SERIES	SHEET	
201 DAK STREET		2	147	
SHELWATER, TEXAS 75686				



M 43-3
CONNECTOR END CAP
7002-029-02

SPONGE
SPACER
7002-029-05

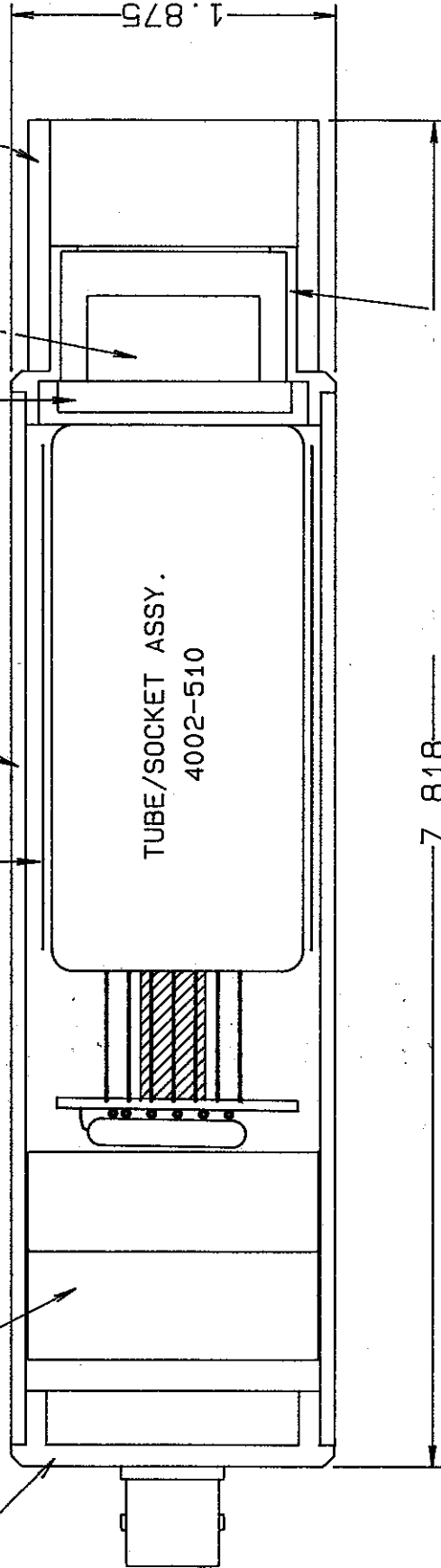
TUBE
SHIELD
40-4006

PROBE BODY
7002-029-01

PLEXIGLASS
SPACER
7002-029-28

1 X 1/2
X-TAL
01-5158

LEAD
COLLIMATOR
7002-143



Current
drawing

CAP TOPHAT
— 7002-144

TUBE/SOCKET ASSY.
4002-510

7.818

1.875

DESC: ASSEMBLY VIEW

MODEL: 44-32

PART #: 4002-219

DWN: NG DATE: 8/14/96

DSGN: DATE:

CHK NO.	DWN	CHK	APP
NG	8/14/96	RC	10-8-96
TOL: SHOP STD		SCALE:	FILL
OTHER		OTHER	
TITLE MODEL 44-32			
LUDLUM MEASUREMENTS, INC.			
801 OAK STREET			
BIRMINGHAM, ALABAMA 35205			
SECTORS	2	SHEET	160

M 43-3

CONNECTOR END CAP
7002-029-02

SPONGE
SPACER
7002-029-05

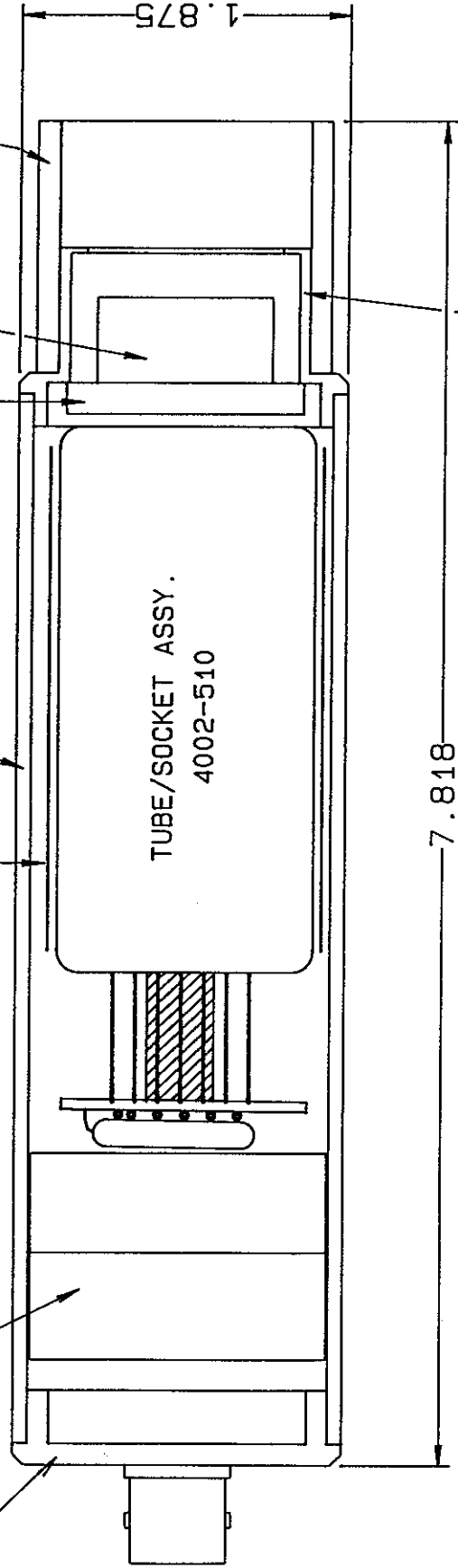
TUBE
SHIELD
40-4006

PROBE BODY
7002-029-01

PLEXIGLASS
SPACER
7002-029-28

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X-TAL
01-5158

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7002-143



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1.875

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MODEL: 44-32	
PART #: 4002-219	
DWN: NG	DATE: 8/14/96
DSGN:	DATE:

CR#	NO.	DWN	CHK	APP
DWN DATE	CHK DATE	APP DATE		
NG 8/14/96	NG 10-8-96	NG 10-9-96		
TOL: SHOP STD	OTHER	SCALE: FULL	OTHER	
TITLE MODEL 44-32				
LUDLUM MEASUREMENTS, INC.				
801 OAK STREET				
BOSTON, MASS 02114				
	SERIES	2	SHEET	160

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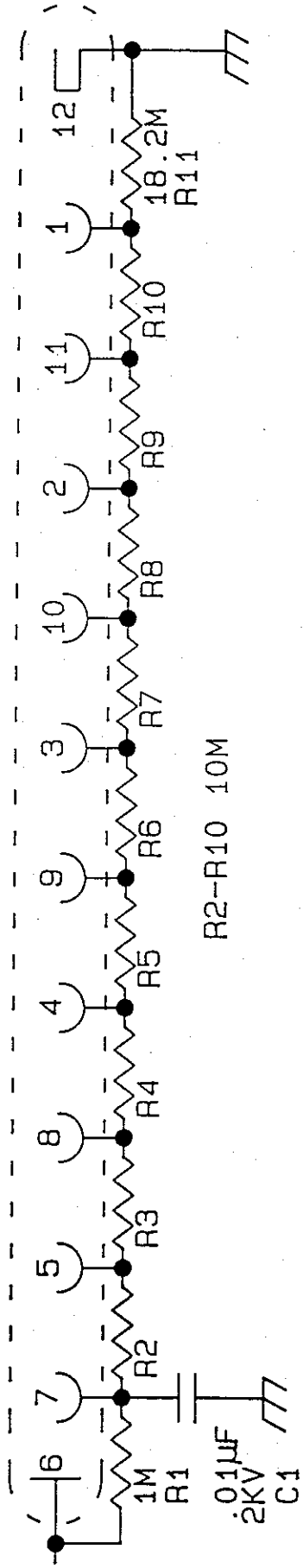
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R1 1 MEG 10-7028
R2-R10 10 MEG 10-7031
R11 18.2 MEG 10-7033

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1 EA. TUBE SOCKET 7002-112
* TEFLON WIRE 21-9362
* BLK #26 WIRE 21-9432

ASSEMBLED EBY SOCKET 40-4039



DESC: EB9058 TUBE BASING

MODEL: 44-2	
PART #: 40-4039	
DWN: PW	DATE: 7/5/89
DSGN:	DATE:

CHK NO.		CHK	CHK	APP
DES DATE	7/5/89	CHK DATE		APP DATE
TOL: SHOP STD	<input type="checkbox"/>	SCALE: FULL	<input type="checkbox"/>	
TITLE 40-4039 BASING DIAGRAM				
	LLC/LUM MEASUREMENTS INC.	SORTES	SHEET	
	2	147		