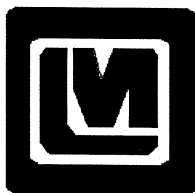


LUDLUM MODEL 44-9
ALPHA-BETA-GAMMA DETECTOR

Revised: September 1991



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M44-9 Alpha-Beta-Gamma Detector

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1. GENERAL

The Model 44-9 GM (Pancake) Detector will detect Alpha, Beta, and Gamma radiation. Its size and shape provides easy handling for surveying or personal monitoring. The detector is energy dependent, over responding by a factor of six in the 60 keV to 100 keV range when normalized to ^{137}Cs .

The thin window is protected by an 79% open beryllium copper screen. The GM tube can easily be removed for repair. Refer to drawing for detail of construction and parts.

The GM detector operates at 850-1000 volts. The tube manufacturer recommends operation at 900V. The recommended

instrument input sensitivity is approximately 30 mV or higher to keep the detector from double pulsing. The double pulse is caused by the size of the after pulse exceeding the instrument threshold.

The GM tube face is also susceptible to rupture above 8000 feet altitude pressure. Consequently, detectors carried in unpresurized aircraft above this altitude would be subject to failure.

The Model 44-9 will operate with any of the Ludlum instruments or equivalent instruments that provide 900 V and an input sensitivity of approximately 30 mV or higher.

2. SPECIFICATIONS

- | | |
|--|--|
| ● OPERATING VOLTAGE: 900-1100 volts (900 volts typical) | ● EFFICIENCY: |
| ● WINDOW THICKNESS: 1.7 ± 0.3 mg/cm ² mica | Alpha $\approx 30\%$; $^{14}\text{C} \approx 10\%$;
$^{90}\text{Sr}/^{90}\text{Y} \approx 60\%$
Gamma ≈ 3000 cpm/mR/hr |
| ● WINDOW AREA: 15.5 cm ² | ● WEIGHT: 1 lb. |
| ● WINDOW PROTECTIVE SCREEN: 79% open | ● SIZE: 8.25" long X 2.75" diameter (head) |

3. TUBE INSTALLATION

✓NOTE: In most cases the Model 44-9 is shipped completely assembled. However, when shipping a Model 44-9 by air, it is necessary to ship the tube in a sealed container to avoid sudden atmospheric changes.

To install the tube:

- ☐ Remove the back plate (3 screws).
- ☐ Loosen set screws (3).

☐ Push clip into anode housing. Do not flex wire when installing clip.

☐ Carefully install tube with window facedown in housing and tighten set screws evenly. Tube should be flush against the screen.

☐ Replace back plate.

✓CAUTION: Mica window is extremely thin and will easily break. Do not touch.

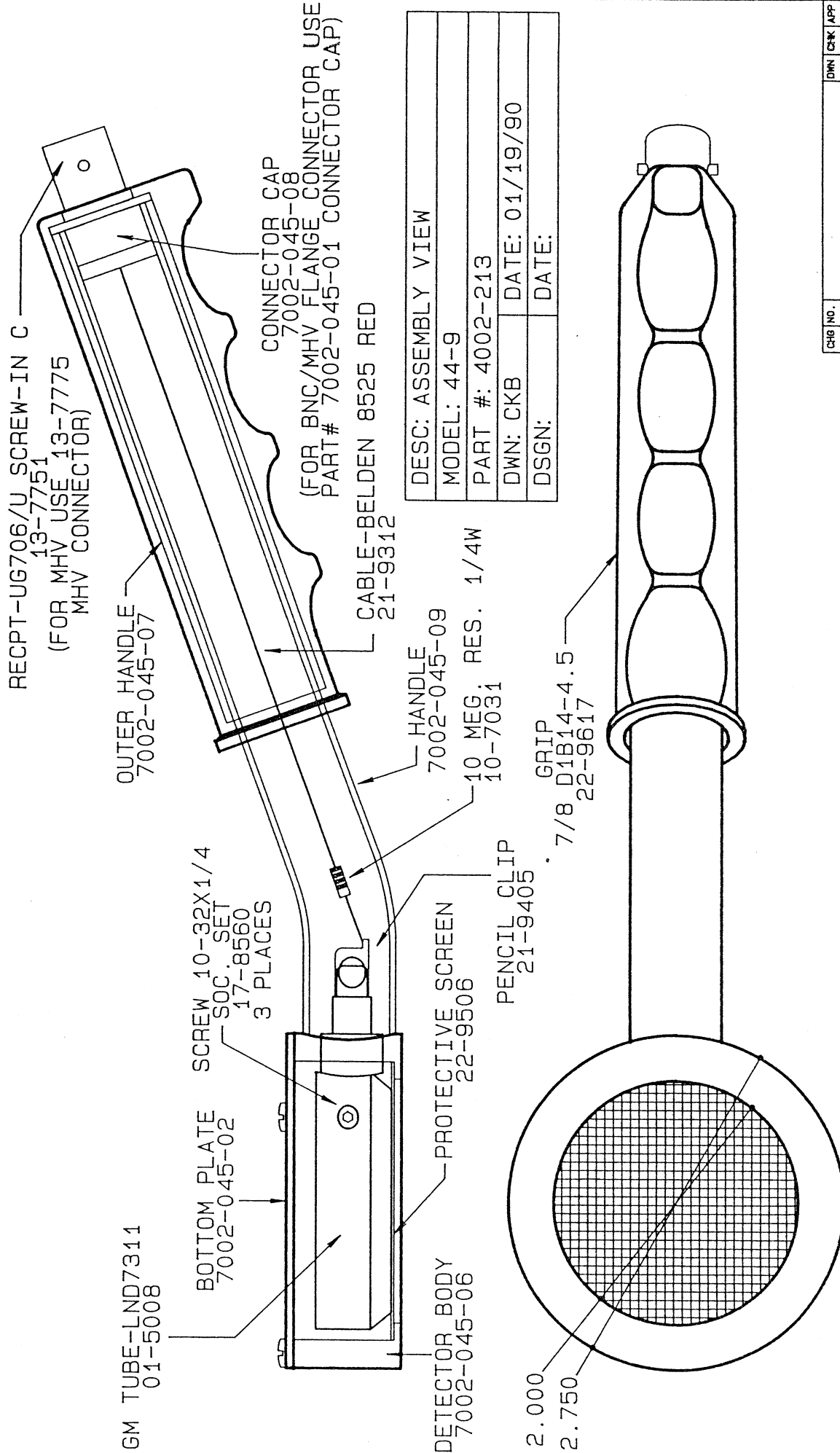
M44-9 Alpha-Beta-Gamma Detector

PARTS LIST

Ref. No.	Description	Part No.
Model 44-9 Alpha-Beta-Gamma Detector		
UNIT	Completely Assembled Model 44-9 Alpha-Beta-Gamma Detector	47-1539
*	GM TUBE (LND 7311, TGM N1002	01-5008
*	SOCKET SET SCREWS (10- 34 X 1/4), 3 EACH	17-8560
*	PENCIL CLIP	21-9405
*	RESISTOR, 10 MEGOHMS	10-7031
*	CONNECTOR, UG 706/U	13-7751
*	HV WIRE	21-9312
*	PROTECTIVE SCREEN	21-9506
*	RED PROTECTIVE CAP	N/A

DRAWINGS AND DIAGRAMS

Assembly View, Drawing 2 X 158



DESC: ASSEMBLY VIEW
MODEL: 44-9
PART #: 4002-213
DWN: CKB DATE: 01/19/90
DSGN: DATE:

CHK NO.	DWN	CHK	APP
DWN DATE	CHK	DATE	APP
CKB 01/19/80			
TOL: SHOP STD <input type="checkbox"/>	SCALE: FULL <input type="checkbox"/>	OTHER <input type="checkbox"/>	1-1.15
TITLE MODEL 44-9 PANCAKE G-M PROBE			
LUDLUM MEASUREMENTS, INC.		SERIES	SHEET
201 JAY STREET		2	158
DALLAS, TEXAS 75206			