U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE USA/0331/S-96, REVISION 10

This certifies that the sources described have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and United States of America[2] for the transport of radioactive material.

1. Source Identification - Gammatron AN-HP Series Models 1-8.

2. Source Description - Either a:

   Cylindrical double encapsulation made of ARMCO 17-4 (USN N05500) stainless steel and inert gas welded. Approximate exterior dimensions are either 12.7 mm (0.5 in.) in diameter and 12.7 mm (0.5 in.) in length (Model 1); or 12.7 mm (0.5 in.) in diameter and 19.0 mm (0.75 in.) in length (Model 2); or 15.9 mm (0.625 in.) in diameter and 15.9 mm (0.625 in.) in length (Model 3); or 19.0 mm (0.75 in.) in diameter and 50.8 mm (2.0 in.) in length (Model 4); or 19.0 mm (0.75 in.) in diameter and 76.2 mm (3.0 in.) in length (Model 5); or 26.7 mm (1.05 in.) in diameter and 109.2 mm (4.3 in.) in length (Model 6). Construction shall be in accordance with attached Gammatron Drawing Nos. A-2002 (Model 1), A-2004 (Model 2), A-2006 (Model 3), A-2008 (Model 4), A-2040 (Model 5), or A-2012 (Model 6); or,

   Cylindrical double encapsulation made of Type 304 stainless steel (inner encapsulation) and MP35N alloy (outer encapsulation) and heliarc seal welded. Approximate exterior dimensions are either 26.7 mm (1.05 in.) in diameter and 109.2 mm (4.3 in.) in length (Model 7) or 31.24 mm (1.23 in.) in diameter and 57.15 mm (2.25 in.) in length (Model 8). Construction shall be in accordance with attached Gammatron Drawing Nos. A-2012 (Model 7) or A-2014 (Model 8).

   Capsules constructed in accordance with Gammatron Drawing No. A-2012 may be up to an additional 31.75 mm (1.25 in.) in length.

   Capsules constructed in accordance with Gammatron Drawing No. A-2014 may be up to an additional 25.4 mm (1.0 in.) in length.

3. Radioactive Contents -

   For the ARMCO 17-4 (USNN0550) stainless steel capsules, no more than either 0.74 TBq (20.0 Ci) of Americium-241 or 0.0185 TBq (0.5 Ci) of Californium-252. The Am-241 is in oxide form and may be mixed with beryllium. The Cf-252 is in the form of metal pellets or a wire.

   For the Type 304 stainless steel/MP35N capsules, no more than 0.74 TBq (20.0 Ci) of Americium-241. The Am-241 is in oxide form and is mixed with beryllium.

4. Quality Assurance - Records of Quality Assurance activities required by paragraph 310 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.

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[1] "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2] Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

5. Expiration Date - This certificate expires on November 30, 2014. On February 28, 2013, this certificate supersedes all previous revisions of USA/0331/S-96.

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the August 23, 2012 petition by Gammatron, Houston, TX and in consideration of other information on file in this Office.

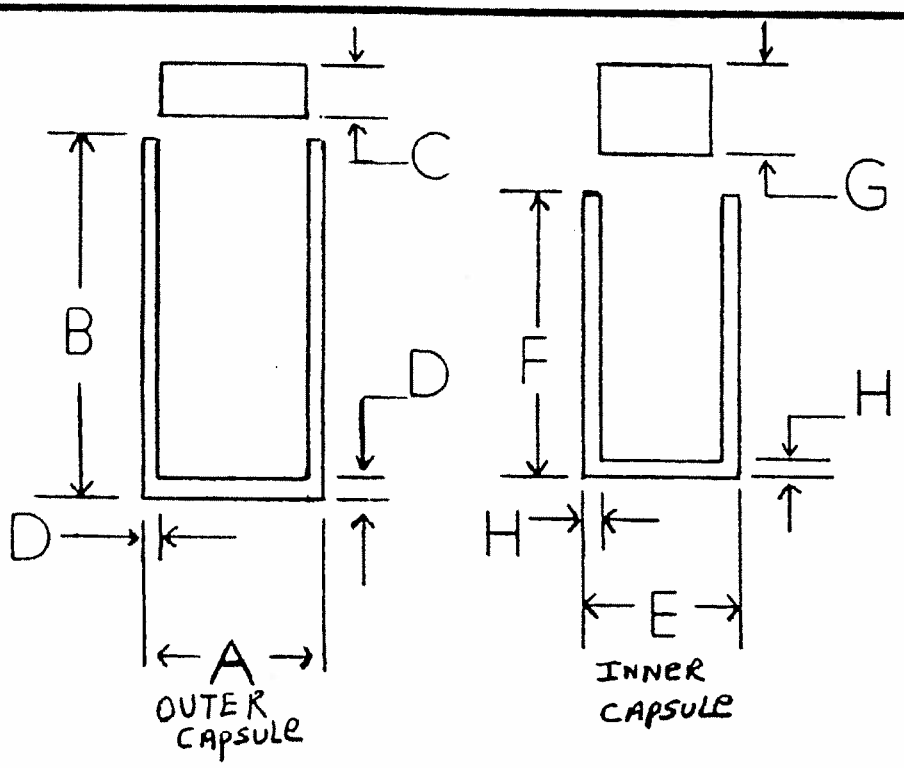
Certified by:

NOV 14 2012

Dr. Magdy El-Sibaie
Associate Administrator for
Hazardous Materials Safety

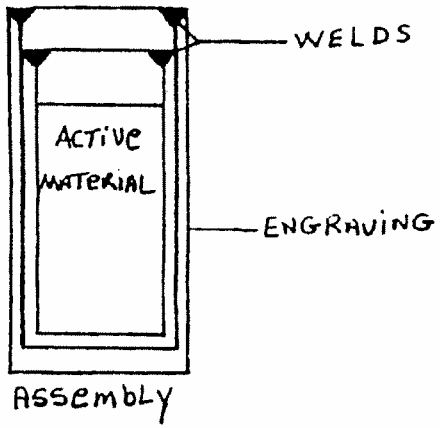
(DATE)

Revision 10 - Issued to change the model name.



A	0.500 ± .005
B	0.500 ± .010
C	0.060 MINIMUM
D	0.040 MINIMUM
E	0.420 MAXIMUM
F	B. MINUS D AND C
G	0.100 MINIMUM
H	0.030 MINIMUM

USE THIS DRAWING WITH SPECIFICATION SHEET SS 2002

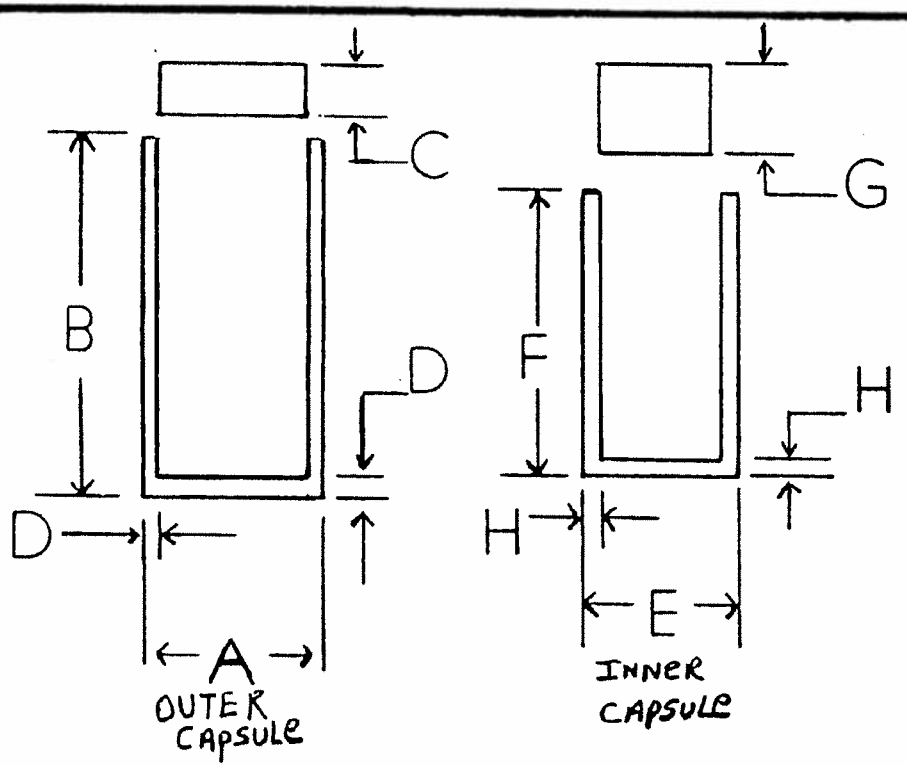


Assembly

GAMMATRON

SCALE: NONE DATE: 4/84	APPROVED BY	DRAWN BY DCJ
AN-HP		
PHYSICAL SIZE — 0.5 X 0.5		DRAWING NUMBER A — 2002

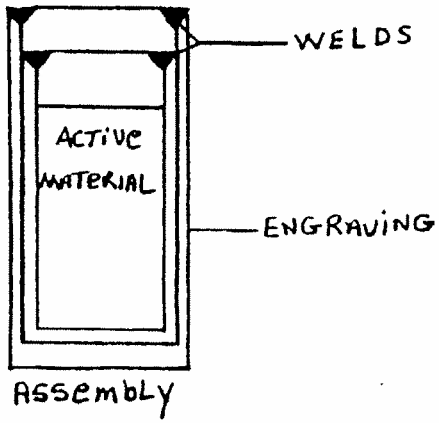
NO. 1088-8½x11



A	0.500 ± .005
B	0.750 ± .010
C	0.060 MINIMUM
D	0.040 MINIMUM
E	0.420 MAXIMUM
F	B MINUS D AND C
G	0.250 MINIMUM
H	0.030 MINIMUM

USE THIS DRAWING WITH SPECIFICATION SHEET SS 2004

Up to .250 may be added to dim. B for thread extension to aid in handling. ¼-20 Thds Typ



Assembly

GAMMATRON

SCALE: NONE

DATE: 4/84

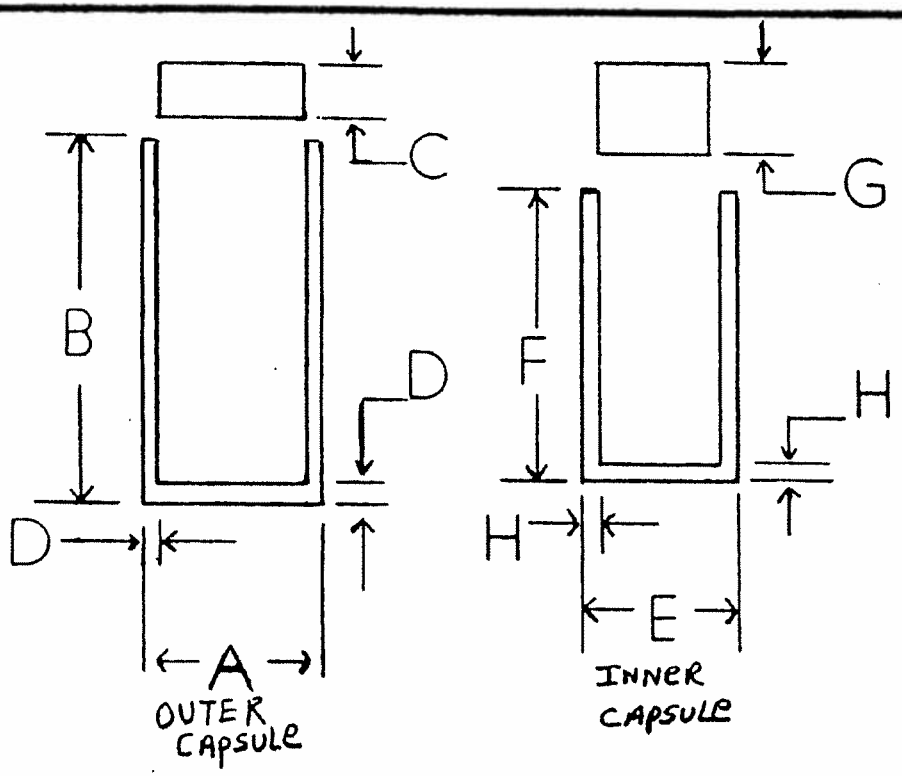
APPROVED BY

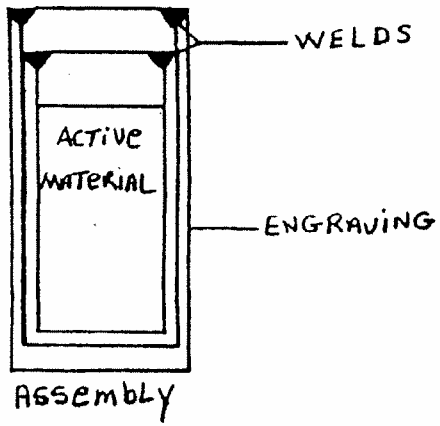
DRAWN BY DCJ

AN-HP

PHYSICAL SIZE — ½"X3/4"

DRAWING NUMBER A — 2004





A	0.625 ± .005
B	0.625 ± .010
C	0.080 MINIMUM
D	0.060 MINIMUM
E	0.500 ± .005 / .000
F	B MINUS C AND D .50 Typ.
G	0.150 MINIMUM
H	0.040 MINIMUM

USE THIS DRAWING WITH SPECIFICATION SHEET SS 2006

Up to .800 may be added to Dim B for threaded extension.

3/4 -12 Thd .800 Long Typical

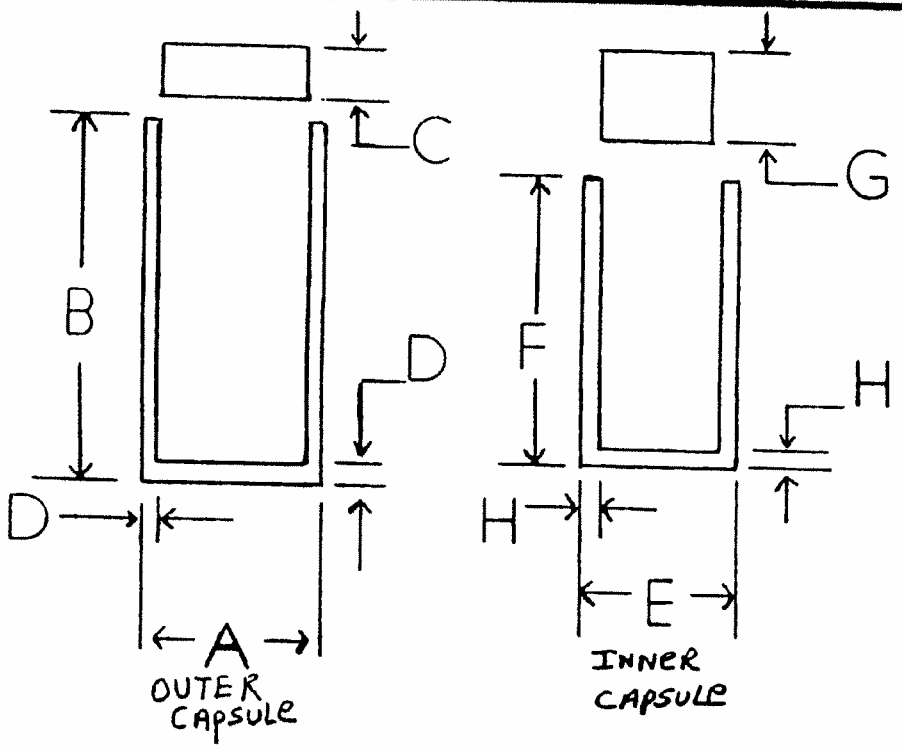
GAMMATRON

SCALE: NONE	APPROVED BY	DRAWN BY DCJ
DATE: 4/84		

AN-HP

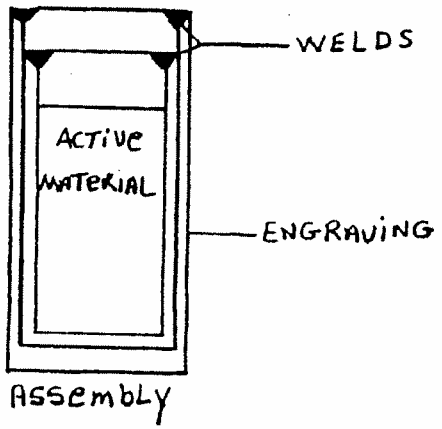
PHYSICAL SIZE — 5/8"X5/8"

DRAWING NUMBER A- 2006



A	.750 ± .005
B	2.00 ± .010
C	0.100 MINIMUM
D	0.060 MINIMUM
E	.630 MAXIMUM
F	B MINUS D AND C
G	0.200 MINIMUM
H	0.050 MINIMUM

USE THIS DRAWING WITH SPECIFICATION SHEET SS 2008



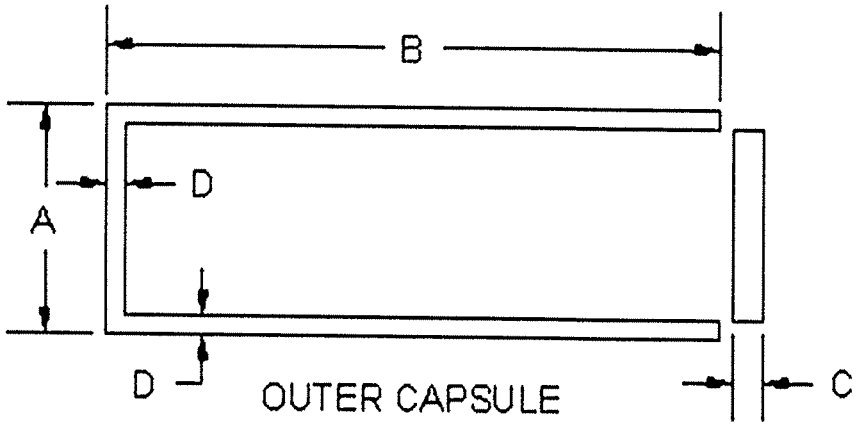
GAMMATRON

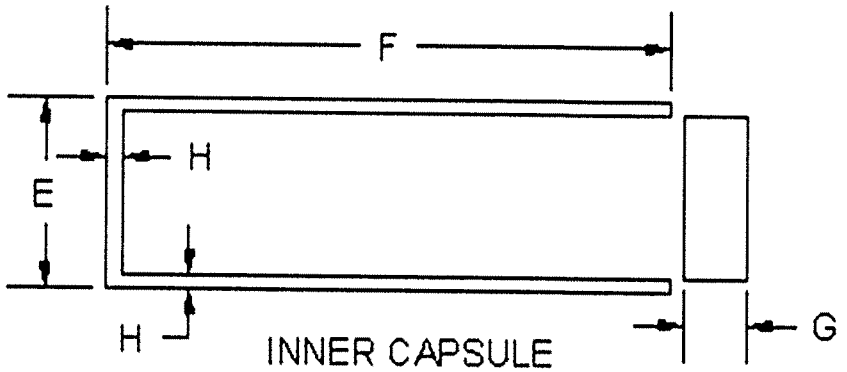
SCALE: NONE
DATE: 4/84
APPROVED BY
DRAWN BY DCJ

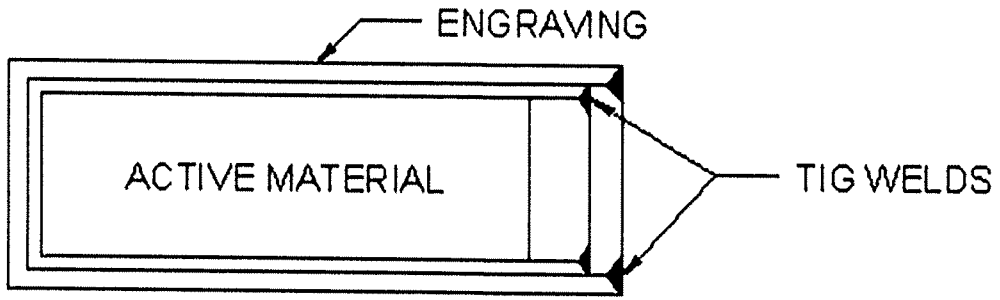
AN-HP

PHYSICAL SIZE — 3/4"X2"

DRAWING NUMBER A— 2008







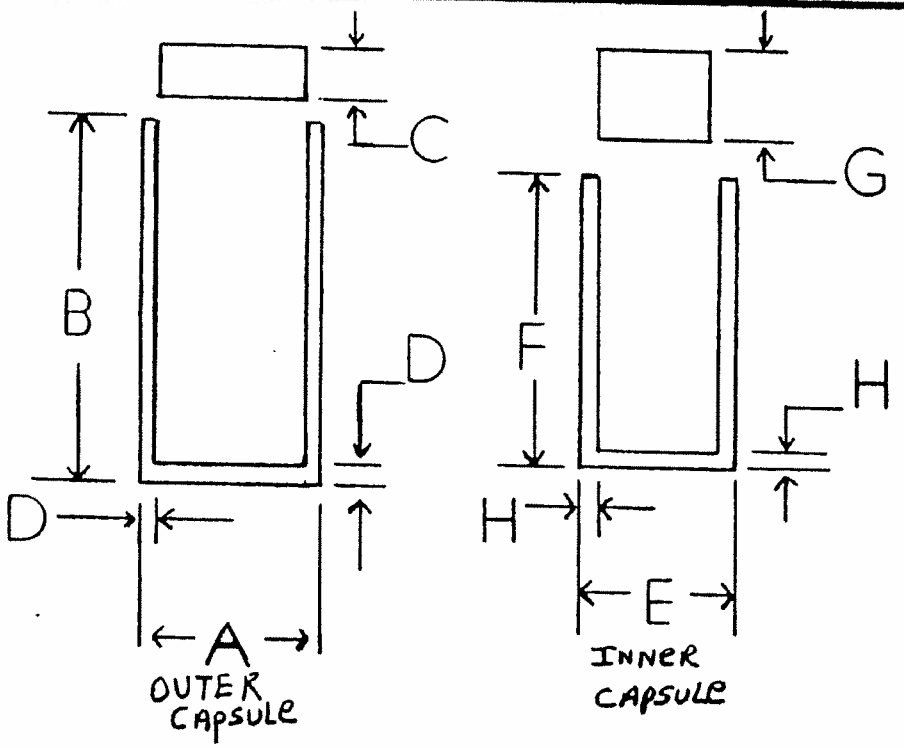
ASSEMBLY

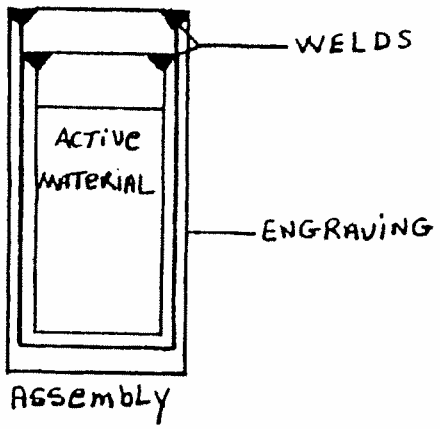
A	0.750 ± 0.005
B	3.000 ± 0.010
C	0.100 MINIMUM
D	0.060 MINIMUM
E	0.630 MAXIMUM
F	B - (C + D)
G	0.200 MINIMUM
H	0.050 MINIMUM

USE THIS DRAWING WITH SPECIFICATIOI SHEET SS 2008

NOTE: OUTER & INNER CAPSULE MADE OF ARMCO 17-4 STAINLESS STEEL

GAMMATRON INC.	
SCALE: ½:1	DRAWN BY: RCG
DATE: 11/10	APPROVED BY:
AN-HP	DRAWING NUMBER: A-2040
PHYSICAL SIZE: ¾ X 3.0	





A	1.050 ± .010
B	4.300
C	.200 MINIMUM
D	.100 MINIMUM
E	.850 MAXIMUM
F	B MINUS D AND C
G	0.500 MINIMUM
H	0.060 MINIMUM

USE THIS DRAWING WITH SPECIFICATION SHEET SS 2012

NOTE: Dimension B may b increased by not more than 1.250" to allow for thread extension, hexs, or flats to aid in handli

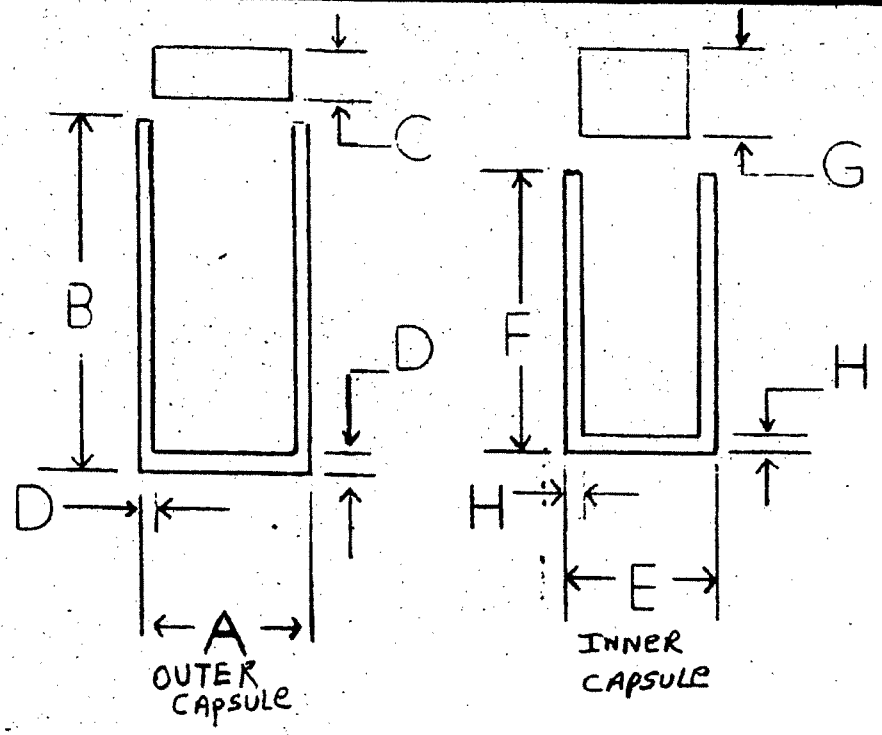
GAMMATRON

SCALE: NONE DATE: 4/84	APPROVED BY	DRAWN BY DCJ

AN-HP

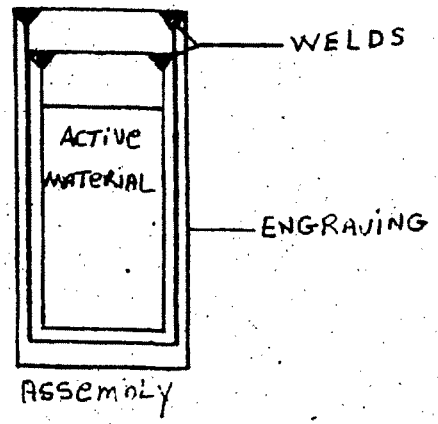
PHYSICAL SIZE — 1.050 Dia 4.30 Long	DRAWING NUMBER A — 2012

NO. 1054-0½X11



A	1.2" MINIMUM
B	2.25"
C	0.200" MINIMUM
D	0.100" MINIMUM
E	0.995"
F	1.75" MAXIMUM
G	0.150" MINIMUM
H	0.075"

NOTE: DIMENSION B MAY BE INCREASED BY NOT MORE THAN 1.0" TO ALLOW FOR THREADED EXTENSIONS, HEXES, OR FLATS TO AID HANDLING.



GAMMATRON

SCALE: NONE
DATE: 08/2006
APPROVED BY: C. GALLAGHER
DRAWN BY: DC

AN-HP

PHYSICAL SIZE — 1.20" DIA 2.25" LENGTH

DRAWING NUMBER: A-2014

U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

**East Building, PHH-23
1200 New Jersey Avenue SE
Washington, D.C. 20590**

CERTIFICATE NUMBER: USA/0331/S-96, Revision 10

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