isotopes specialties company

p. o. box 688 • 170 west providencia • burbank, california

twx brb 9831
victoria 9-2273 burbank
state 2-3000 chicago
locust 8-0124 philadelphia
plaza 8-0700 n.y.

sales offices:
p.o. box 90
glen ellyn, ill.
p.o. box 1797
philadelphia 5, pa.

January 26, 1959

OK make sheet to file 0720 in SS files

United States Atomic Energy Commission
Washington 25, D. C.

Attention: Senior Reviewer
Isotopes Branch
Division of Licensing and Regulation

Gentlemen:

On December 17, 1958, Mr. Robert E. Brinkman wrote a letter to Isotopes Specialties Company stating that he had received an application from Dr. G. M. Brownell of Winnipeg, Canada requesting authorization for the use of Antimony 124. Mr. Brownell referred to our series 30 sealed source capsule which according to the letter from Mr. Brinkman is not clearly understood by your office. Enclosed are two copies of our specification sheets describing the Type 1032 gamma source capsule. We hope that this will clarify this matter in your office.

12997

On December 19, Mr. Brinkman wrote to Dr. Harold M. Matthews at Santa Rosa Junior College, Santa Rosa, California stating that your office had no record of an Isotopes Specialties Company Type 39, Cobalt-60 source capsule. The specifications on this source capsule had been sent to your office sometime last year and have apparently been mislaid. We are enclosing two copies of these specifications for your files.

14367

We would appreciate your promptness in handling these difficulties.

Sincerely,

Joan Trumbull for

R. N. Donelson
Chief Engineer

9810080188 980922
PDR FOIA
FRESQUE98-196 PDR

RND
Encl: Specs. Type 39 Capsule (2)
Specs. Type 1032 capsule (2)

RECEIVED
JAN 28 1959
U.S.A.E.C.
Isotopes Branch
Div. of L & R

Sealed Source Files

MAR 3 - 1959

R/82

9810080188

February 12, 1959
REVISED

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 21 BETA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 3/8 inch diameter by 5/16 inch long, threaded outside with 3/8-32-NEF. See attached drawing.

2. Capsule material: Brass.

3. Window: 0.001 inch type 302 stainless steel.

4. Method of sealing: Window and planchet sealed by silver brazing, press fit plug sealed by silver-bearing solder.

5. Isotope: Ru-106, Sr-90, Tl-204, or Pm-147.

6. Method of deposition of isotope: Evaporation on planchet.

7. Maximum activity: One millicurie.

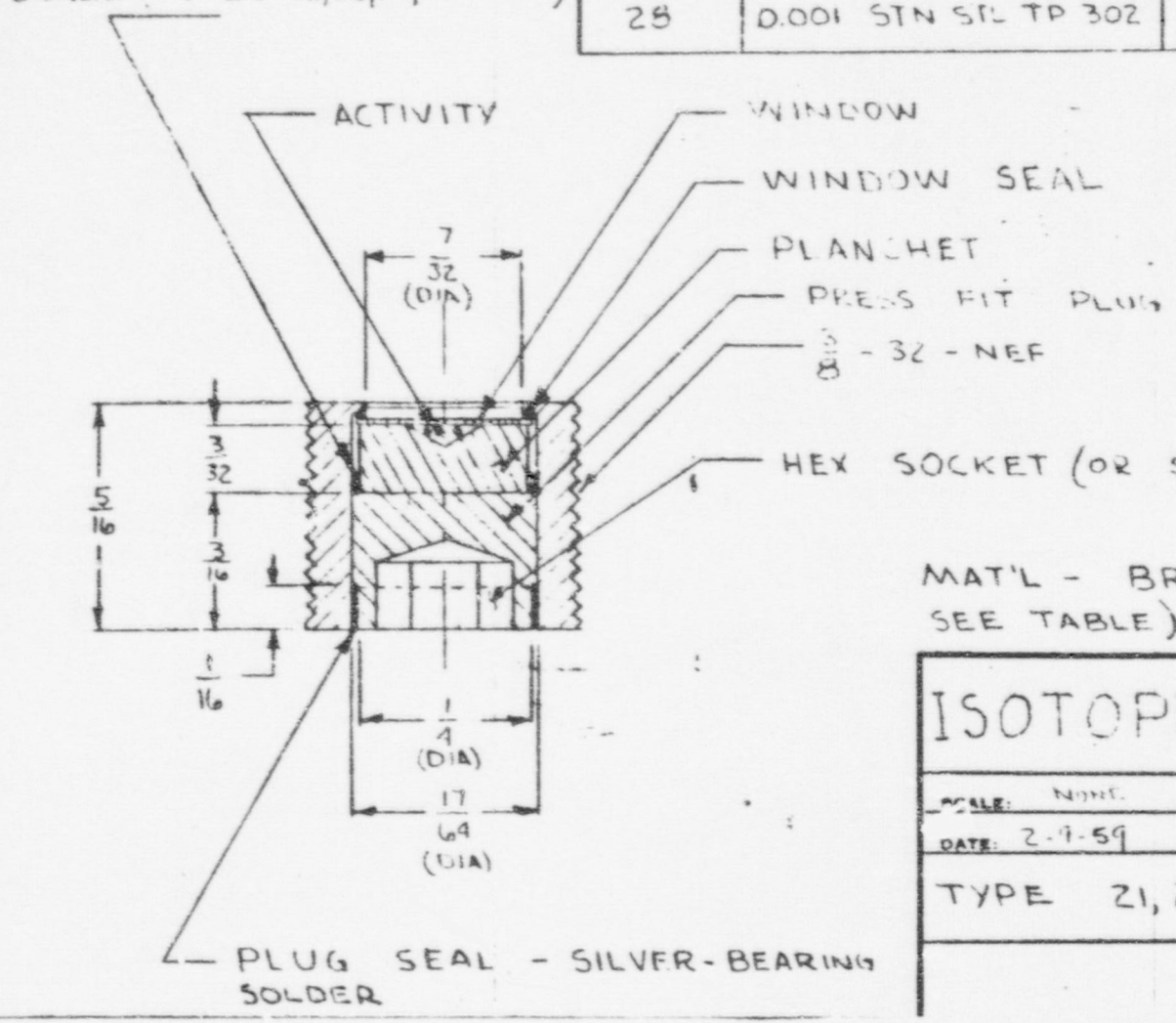
8. Mounting: The 3/8 inch threads on the capsule are designed for incorporation in a device. The rear of the capsule is supplied with a hex socket or a screw driver slot for ease in installation.

9. Marking: Capsules are not marked. They are designed for incorporation in a labeled device.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to the manufacturer's tests, the A.E.C. requires leak testing at six-month intervals for sources of this type.

B/83

TYPE	WINDOW MAT'L	WINDOW SEAL	PLANCHET MAT'L
21	0.001" STN STL TP 302	SILVER BRAZE	BRASS
22	0.002		BRASS
25	0.002		TUNGSTEN ALLOY
26	0.001 ALUM	PLASTIC CEMENT	BRASS
27			TUNGSTEN ALLOY
28	0.001 STN STL TP 302	SILVER BRAZE	TUNGSTEN ALLOY



Sealed Source Files

MAR 2 - 1959

MAT'L - BRASS (EXCEPT WINDOW & PLANCHET SEE TABLE)

ISOTOPES SPECIALTIES CO, INC

SCALE: NONE	APPROVED BY:	DRAWN BY
DATE: 2-9-59		REVISED

TYPE 21, 22, 25, 26, 27, 28 BETA CAPSULES

DRAWING NUMBER B-0040

February 12, 1959
REVISED

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 22 BETA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 3/8 inch diameter by 5/16 inch long, threaded outside with 3/8-32-NEF. See attached drawing.

2. Capsule material: Brass.

3. Window: 0.002 inch type 302 stainless steel.

4. Method of sealing: Window and planchet sealed by silver brazing, press fit plug sealed by silver-bearing solder.

5. Isotope: Ru-106, Sr-90, Tl-204, or Pm-147.

6. Method of deposition of activity: Less than one millicurie - by evaporation on planchet; one millicurie or more - Ru-106 and Tl-204, by plating as the metal on planchet, Sr-90 and Pm-147, by fusing in glass on planchet.

7. Maximum activity: Ru-106 and Sr-90 - 25 millicuries;
Tl-204 - 5 millicuries;
Pm-147 - one millicurie.

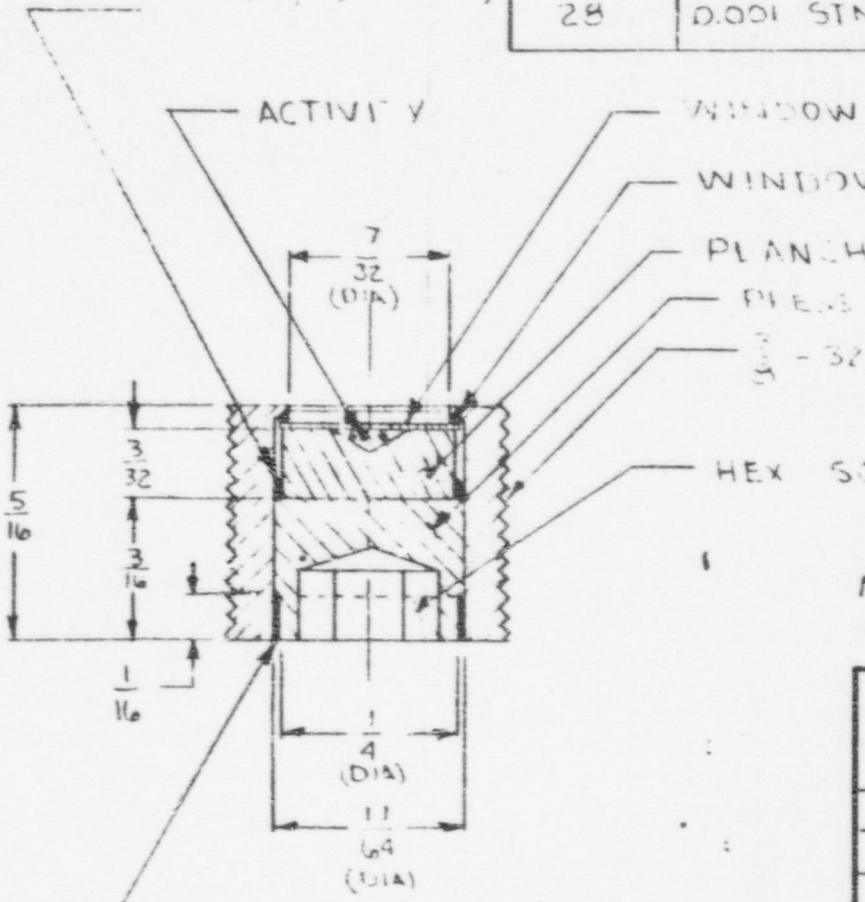
8. Mounting: The 3/8 inch threads on the capsule are designed for incorporation in a device. The rear of the capsule is supplied with a hex socket or a screw driver slot for ease in installation.

9. Marking: Capsules are not marked. They are designed for incorporation in a labeled device.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to the manufacturer's tests, the A.E.C. requires leak testing at six-month intervals for sources of this type.

TYPE	WINDOW MAT'L	WINDOW SEAL	PLANCHET MAT'L
21	0.001" STN STL TP 302	SILVER BRAZE	BRASS
22	0.002		BRASS
25	0.002		TUNGSTEN ALLOY
26	0.001 ALUM	PLASTIC CEMENT	BRASS
27			TUNGSTEN ALLOY
28	0.001 STN ST. TP 302	SILVER BRAZE	TUNGSTEN ALLOY

PLANCHET - SEAL - SILVER BRAZE (TYPES 21,22,25,28 ONLY)



Sealed Source Files

MAR 2 - 1959

MAT'L - BRASS (EXCEPT WINDOW & PLANCHET SEE TABLE)

ISOTOPES SPECIALTIES CO., INC

SCALE: NONE	APPROVED BY:	DRAWN BY
DATE: 2-1-59		REVISED

TYPE 21, 22, 25, 26, 27, 28 BETA CAPSULES

DRAWING NUMBER B-0040

FEBRUARY 12, 1959
REVISED

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 25 BETA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 3/8 inch diameter by 5/16 inch long, threaded outside with 3/8-32-NEF. See attached drawing.

2. Capsule material: Brass, except planchet is a tungsten alloy for increased reflection.

3. Window: 0.002 inch type 302 stainless steel.

4. Method of sealing: Window and planchet sealed by silver brazing, press fit plug sealed by silver-bearing solder.

5. Isotope: Ru-106, Sr-90, Tl-204, or Pm-147.

6. Method of deposition of activity: Less than one millicurie - by evaporation on planchet; one millicurie or more - Ru-106 and Tl-204, by plating as the metal on planchet, Sr-90 and Pm-147, by fusing in glass on planchet.

7. Maximum activity: Ru-106 and Sr-90 - 25 millicuries;
Tl-204 - 5 millicuries;
Pm-147 - one millicurie.

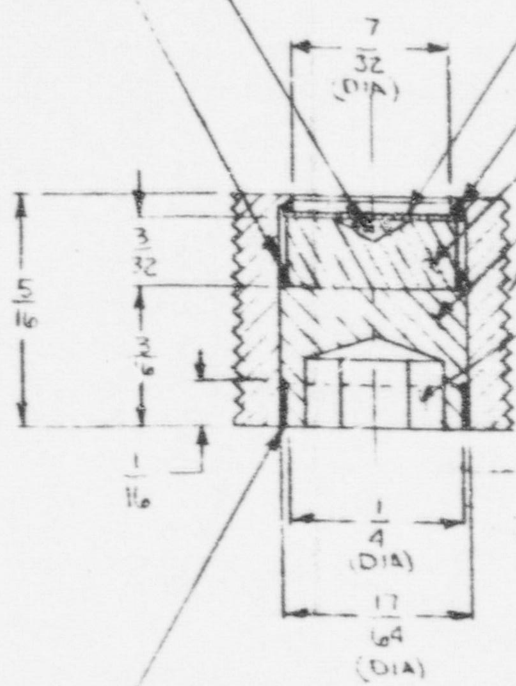
8. Mounting: The 3/8 inch threads on the capsule are designed for incorporation in a device. The rear of the capsule is supplied with a hex socket or a screw driver slot for ease in installation.

9. Marking: Capsulesare not marked. They are designed for incorporation in a labeled device.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to the manufacturer's tests, the A.E.C. requires leak testing at six-month intervals for sources of this type.

TYPE	WINDOW MAT'L	WINDOW SEAL	PLANCHET MAT'L
21	0.001" STN STL TP 30	SILVER BRAZE	BRASS
22	0.002 ↓ ↓ ↓	↓ ↓	BRASS
25	0.002 ↓ ↓ ↓ ↓	↓ ↓	TUNGSTEN ALLOY
26	0.001 ALUM	PLASTIC CEMENT	BRASS
27	↓ ↓	↓ ↓	TUNGSTEN ALLOY
28	0.001 STN STL TP 30	ER BRAZE	TUNGSTEN

PLANCHET SEAL - SILVER BRAZE 21,22,25,28 ONLY)



Sealed Source Files
MAR 2 - 1959

MAT'L - BRA (CEPT WINDOW & PLAN
SEE TABLE)

ISOT SPECIALTIE CO.

SCALE:	APPROVED BY:	DRAWN BY:
DATE: 2-1-59		REVISED

TYPE 21, 22, 25, 26, 27, 28 BETA CAPS

DRAWING NUMBER

February 12, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 28 BETA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 3/8 inch diameter by 5/16 inch long, threaded outside with 3/8-32-NEF. See attached drawing.

2. Capsule material: Brass, except planchet is a tungsten alloy for increased reflection.

3. Window: 0.001 inch type 302 stainless steel.

4. Method of sealing: Window and planchet sealed by silver brazing, press fit plug sealed by silver-bearing solder.

5. Isotope: Ru-106, Sr-90, Tl-204, or Pm-147.

6. Method of deposition of isotope: Evaporation on planchet.

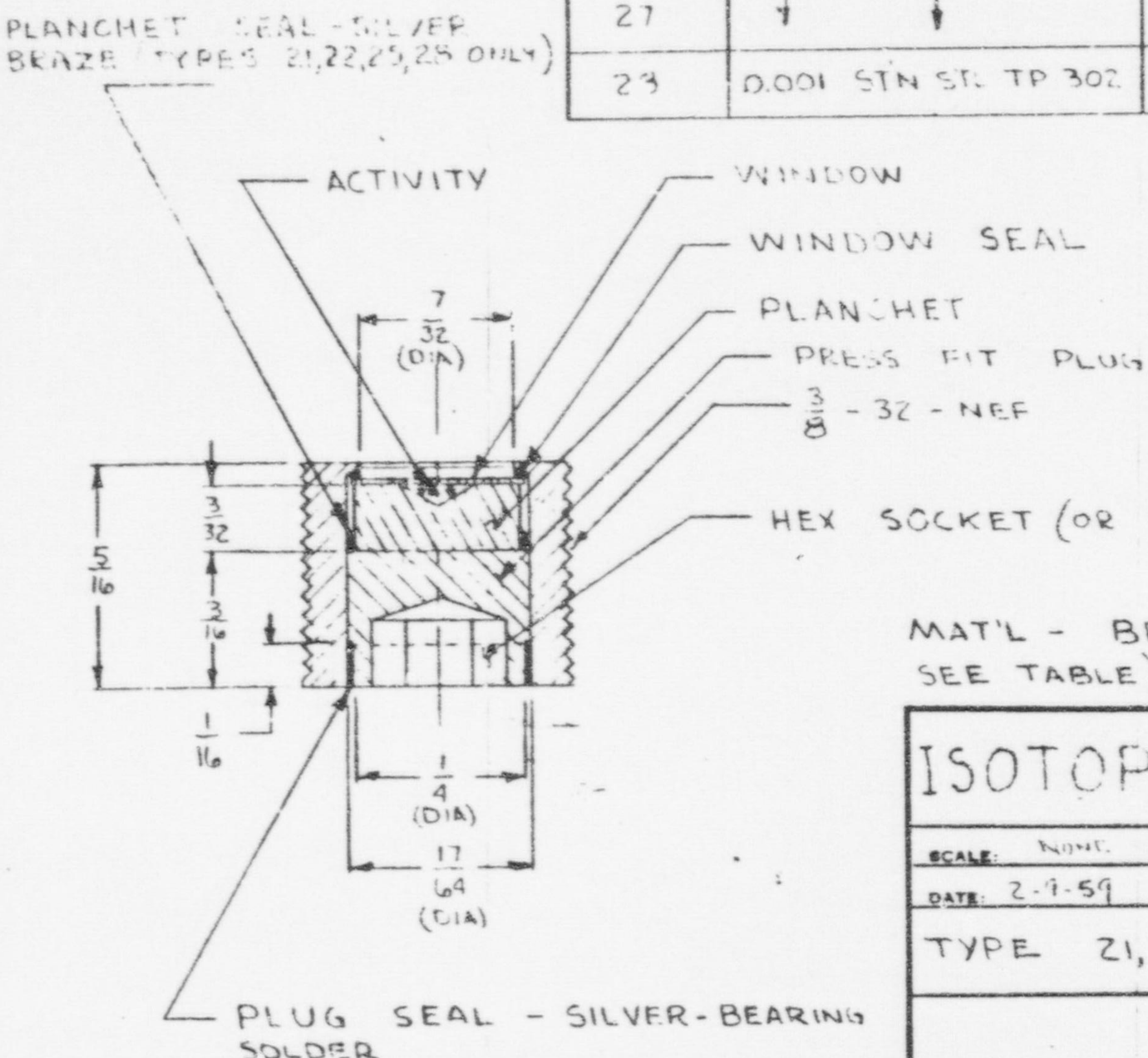
7. Maximum activity: One millicurie. -

8. Mounting: The 3/8 inch threads on the capsule are designed for incorporation in a device. The rear of the capsule is supplied with a hex socket or a screw driver slot for ease in installation.

9. Marking: Capsules are not marked. They are designed for incorporation in a labeled device.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to the manufacturer's tests, the A.E.C. requires leak testing at six-month intervals for sources of this type.

TYPE	WINDOW MAT'L	WINDOW SEAL	PLANCHET MAT'L
21	0.001" STN STL TP 302	SILVER BRAZE	BRASS
22	0.002 ↓	↓	BRASS
25	0.002 ↓	↓	TUNGSTEN ALLOY
26	0.001 ALUM	PLASTIC CEMENT	BRASS
27	↓	↓	TUNGSTEN ALLOY
28	0.001 STN STL TP 302	SILVER BRAZE	TUNGSTEN ALLOY



Sealed Source Files

MAR 2 - 1959

MAT'L - BRASS (EXCEPT WINDOW & PLANCHET SEE TABLE)

ISOTOPES SPECIALTIES CO., INC		
SCALE: NONE	APPROVED BY: [signature]	DRAWN BY: [illegible]
DATE: 2-7-59		REVISED
TYPE 21, 22, 25, 26, 27, 28 BETA CAPSULES		
		DRAWING NUMBER B-0040

September 25, 1958

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 39 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 1/4 inch diameter by 5/8 inch long. See attached drawing.

2. Capsule material: 430 (magnetic) stainless steel.

3. Window: None.

3a. Minimum wall thickness: .043 inch.

4. Method of sealing: Screw plug and silver-bearing solder.

5. Isotope: Cobalt-60 or Iridium-192.

6. Method of deposition of isotope: Solid cobalt, gold plated, or iridium placed in cavity.

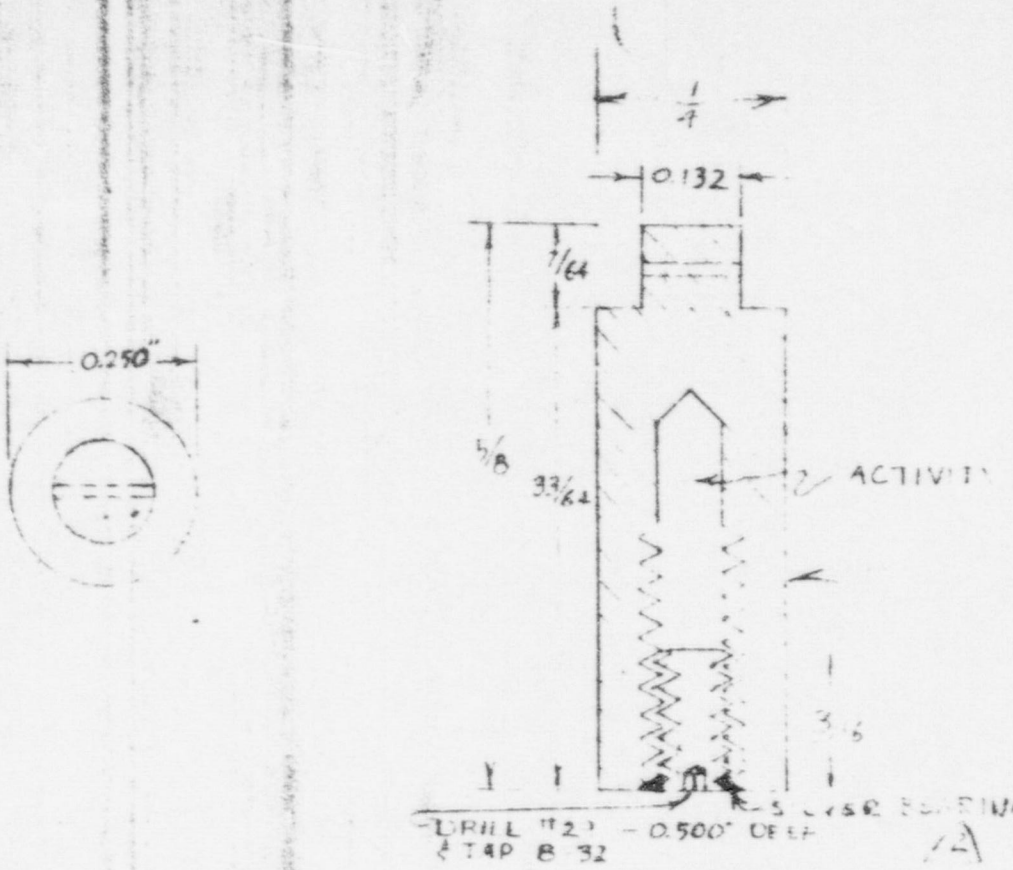
7. Maximum activity: Co-60 - 25 curies; Ir-192 - 200 curies.

8. Mounting: None.

9. Marking: Sources are marked with company initials (ISC), name of isotope, and manufacturer's number. If the source is not intended for use in a device, a metal tag bearing the radiation symbol is wired to the source. The shield containing the source is marked with a radiation symbol decal and a metal name plate, stating activity, number, and date.

10. Leak testing: All capsules undergo the manufacturer's contamination test and are decontaminated, if necessary. The test is sufficiently sensitive to detect the presence of removable contamination in excess of 0.05 uc. Sources of solid Ir-192 and plated Co-60 do not require subsequent leak tests by A.E.C. regulations.

REVISIONS	
1	ADDED TYPE 39 9-24-58
2	CHANGED TO SILVER BEARING SOLDER 9-24-58
3	ADDED MARKING 9-24-58



3

ENGRAVE :

[ISO - ISOTOPE SOURCE #

LETTERS 1/8" HIGH

PARALLEL TO AXIS

MAT'L: TYPE 38 : 303 ST. STL. 1

39 : 430 ST. STL.

Sealed Source Files

MAR 31 1959

ISOTOPES SPECIALTIES

SCALE: NONE	APPROVED BY:	DRAWN BY
DATE: 8-28-58	1	REVISED

TYPE 38, 39 GAMMA

SOURCE CAPSULE

DRAWING NUMBER

February 12, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 69 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 0.344 inch diameter by 1 3/4 inches long. See attached drawing.

1a. Inner capsule dimensions: 0.271 inch diameter by 7/8 inch long. See attached drawing.

2. Capsule material: Inner capsule - 303 or 304 stainless steel.
Outer capsule - 321 stainless steel.

3. Window: None.

3a. Minimum wall thickness: Inner capsule - 0.025 inches.
Outer capsule - 0.030 inches.

4. Method of sealing: Inner capsule - press fit plug and silver-bearing solder; outer capsule - heliarc welding.

5. Isotope: Cs-137, Ce-144, Tm-170, Ir-192, or Co-60.

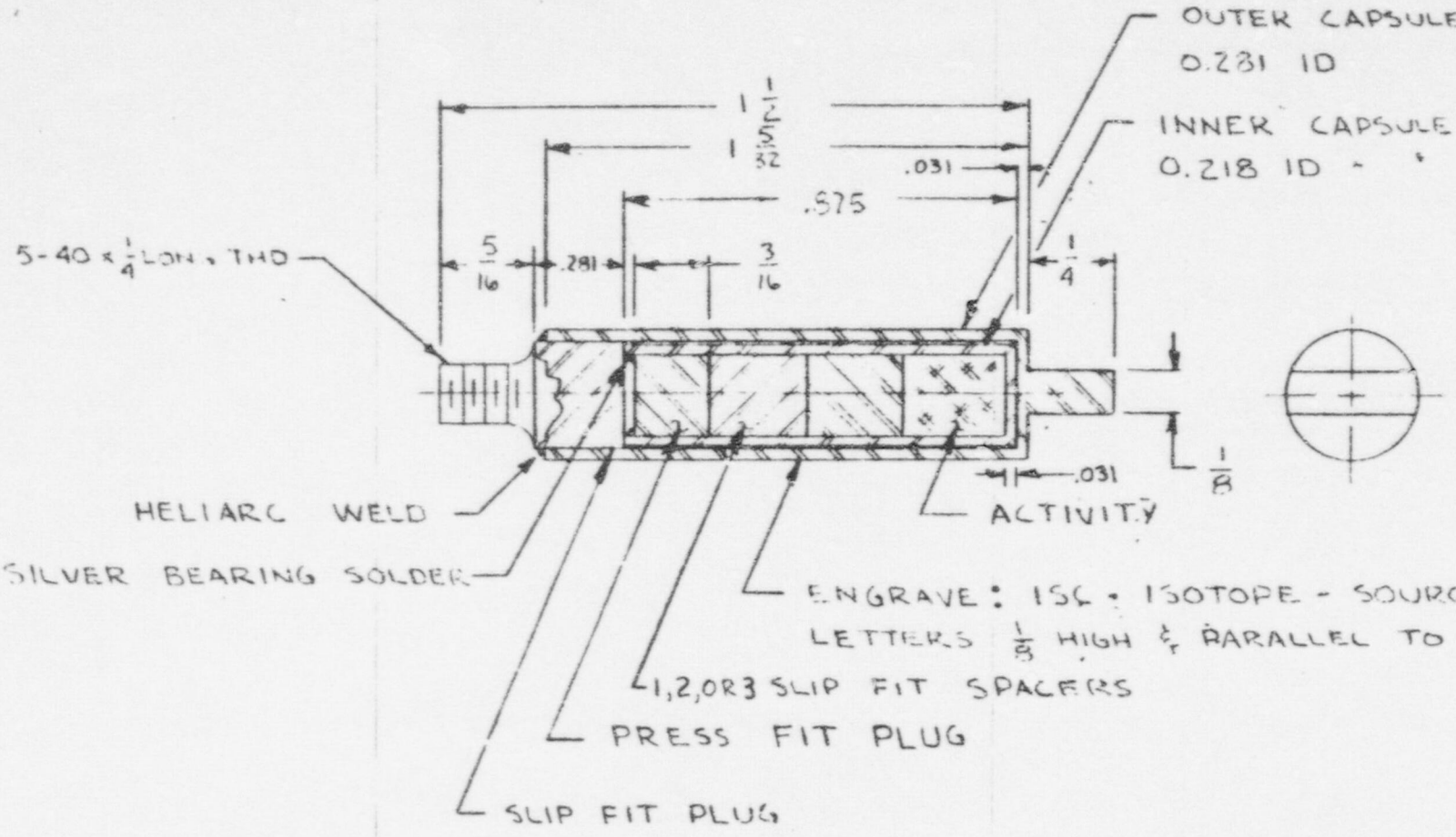
6. Method of deposition of isotope: Evaporation of salt solution, or deposition as powdered or fused oxide or salt, or (for Tm, Ir, and Co) solid metallic element placed in cavity.

7. Maximum activity: Cs-137 - 25 curies; Ce-144 - 25 curies; Tm-170 - 100 curies; Ir-192 - 100 curies; Co-60 - 25 curies.

8. Mounting: Source is provided with a flattened end to match the shield in which it is stored, with a threaded tip on the opposite end for attaching a handler.

9. Marking: Sources are engraved with company initials (ISC), name of isotope, and manufacturer's number.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to the manufacturer's tests, Cs-137, Ce-144, and Tm-170 sources require leak testing at six month intervals. Sources of solid Ir-192 and nickel or gold plated Co-60 do not require subsequent leak tests.



MAT'L

OUTER CAPSULE & PLUG - STN STL TP- 321

INNER CAPSULE, SPACERS & PLUG - STN STL TP 303 OR 304

ISOTOPES SPECIALTIES CO., INC.

SCALE: NONE	APPROVED BY:	DRAWN BY: PECHMANN
DATE: 2-10-59		REVISED

TYPE 69 GAMMA SOURCE CAPSULE

ASSEMBLY

DRAWING NUMBER B-0043

February 12, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 142 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 0.187 inch diameter by 0.531 inches long. See attached drawing.

2. Capsule material: 303 or 304 stainless steel.

3. Window: None.

3a. Minimum wall thickness: 0.025 inches.

4. Method of sealing: Silver brazing.

5. Isotope: Any gamma emitter between atomic numbers 3 and 83.

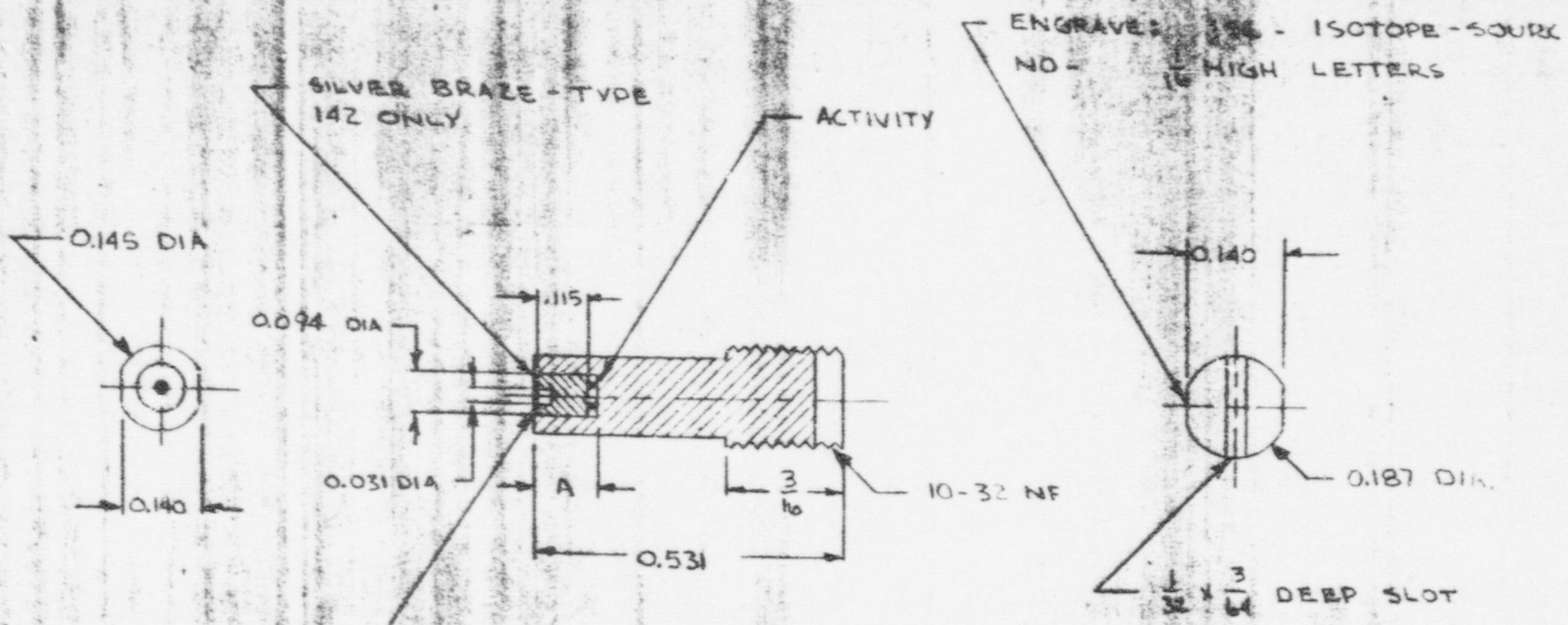
6. Method of deposition of isotope: Evaporation of salt solution, fusing in glass, or placing of solid metal in cavity.

7. Maximum activity: 25 millicuries.

8. Mounting: Capsules are provided with a threaded end for mounting in a device.

9. Marking: Capsules are marked with company initials (ISC), name of isotope, and manufacturer's number.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to manufacturer's tests, sources of this type require leak testing at six-month intervals. Exceptions to these requirements are sources containing Ir-192, Ta-182, Au-198, Sb-124, and plated Co-60 in solid metallic form, which do not require periodic leak testing.



MAT'L:

TYPE 142	ST'N STL	TP 303 OR 304
TYPE 143	ST'N STL	TP 321

DIM A: 0.131 TO 0.40 - BORE TO GIVE REQ'D ACTIVE VOLUME

Sealed Source Files

MAR 2 - 1959

ISOTOPES SPECIALTIES CO., IN

SCALE: NONE	APPROVED BY: RMS	DRAWN BY: P.E. KNAPP
DATE: 2-11-59		REVISED

TYPE 142 & 143 GAMMA SOURCE CAPSUL

DRAWING NUMBER

February 12, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 143 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 0.187 inch diameter by 0.531 inches long. See attached drawing.

2. Capsule material: 321 stainless steel.

3. Window: None.

3a. Minimum wall thickness: 0.023 inches.

4. Method of sealing: Heliarc welding.

5. Isotope: Any gamma emitter between atomic numbers 3 and 83.

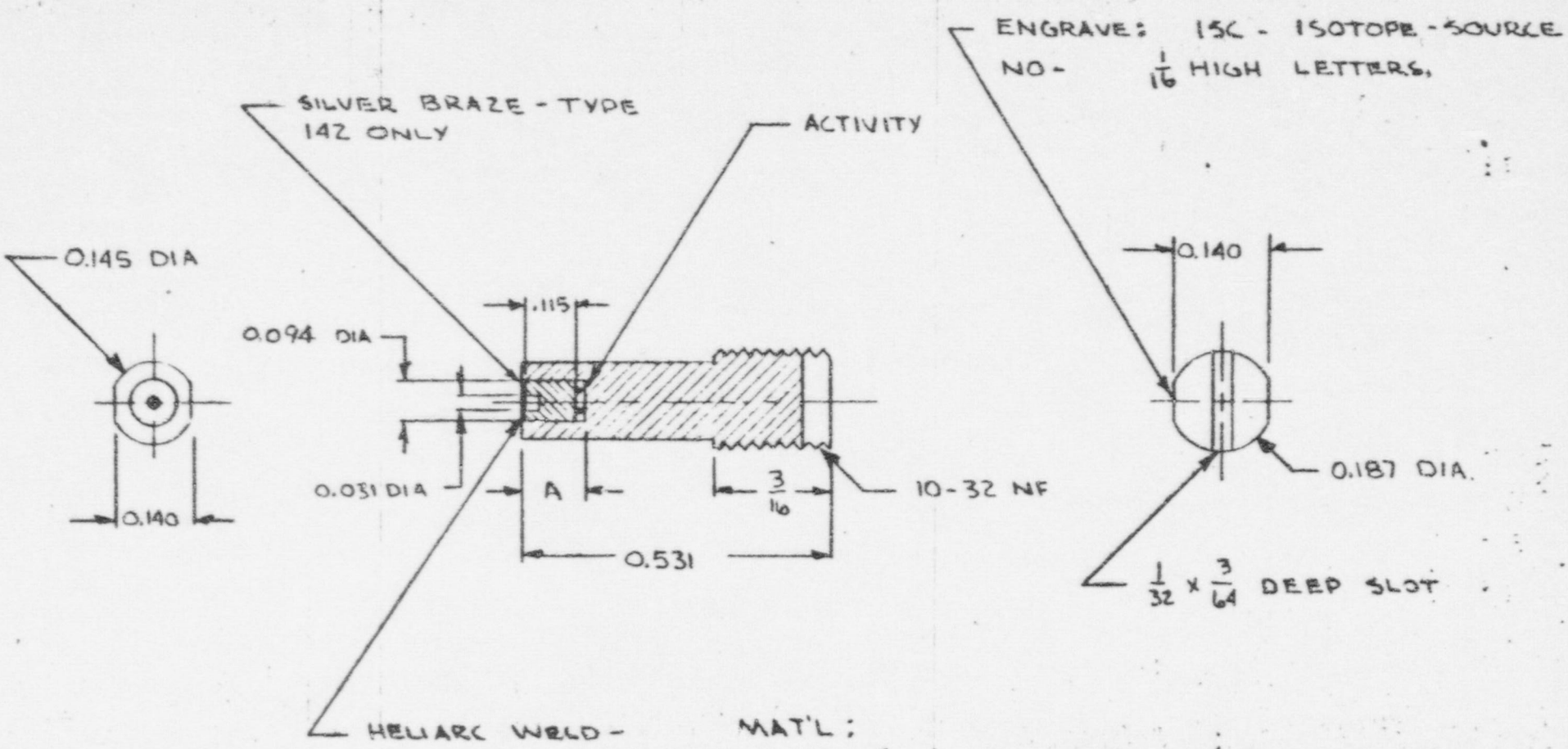
6. Method of deposition of isotope: Evaporation of salt solution, fusing in glass, or placing of solid metal in cavity.

7. Maximum activity: 25 millicuries.

8. Mounting: Capsules are provided with a threaded end for mounting in a device.

9. Marking: Capsules are marked with company initials (ISC), name of isotope, and manufacturer's number.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customer. Subsequent to manufacturer's tests, sources of this type require leak testing at six-month intervals. Exceptions to these requirements are sources containing Ir-192, Ta-182, Au-198, Sb-124, and plated Co-60 in solid metallic form, which do not require periodic leak testing.



MAT'L:

TYPE 142 ST'N STL TP 303 OR 304

TYPE 143 ST'N STL TP 321

DIM A: 0.131 TO 0.40 - BORE TO GIVE REQ'D ACTIVE VOLUME

Sealed Source Files

MAR 2 - 1959

ISOTOPES SPECIALTIES CO., INC

SCALE: NONE	APPROVED BY: RNS	DRAWN BY: PECKINPAUGH
DATE: 2-11-59		REVISED

TYPE 142 & 143 GAMMA SOURCE CAPSULE

DRAWING NUMBER B-0044

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 1030 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 1/4 inch diameter by 7 1/2 inches long. See attached drawing.

2. Capsule material: Brass.

3. Window: None.

3a. Minimum wall thickness: 0.045 inches.

4. Method of sealing: Press fit plug and silver-bearing solder.

5. Isotope: Co-60 or Ir-192.

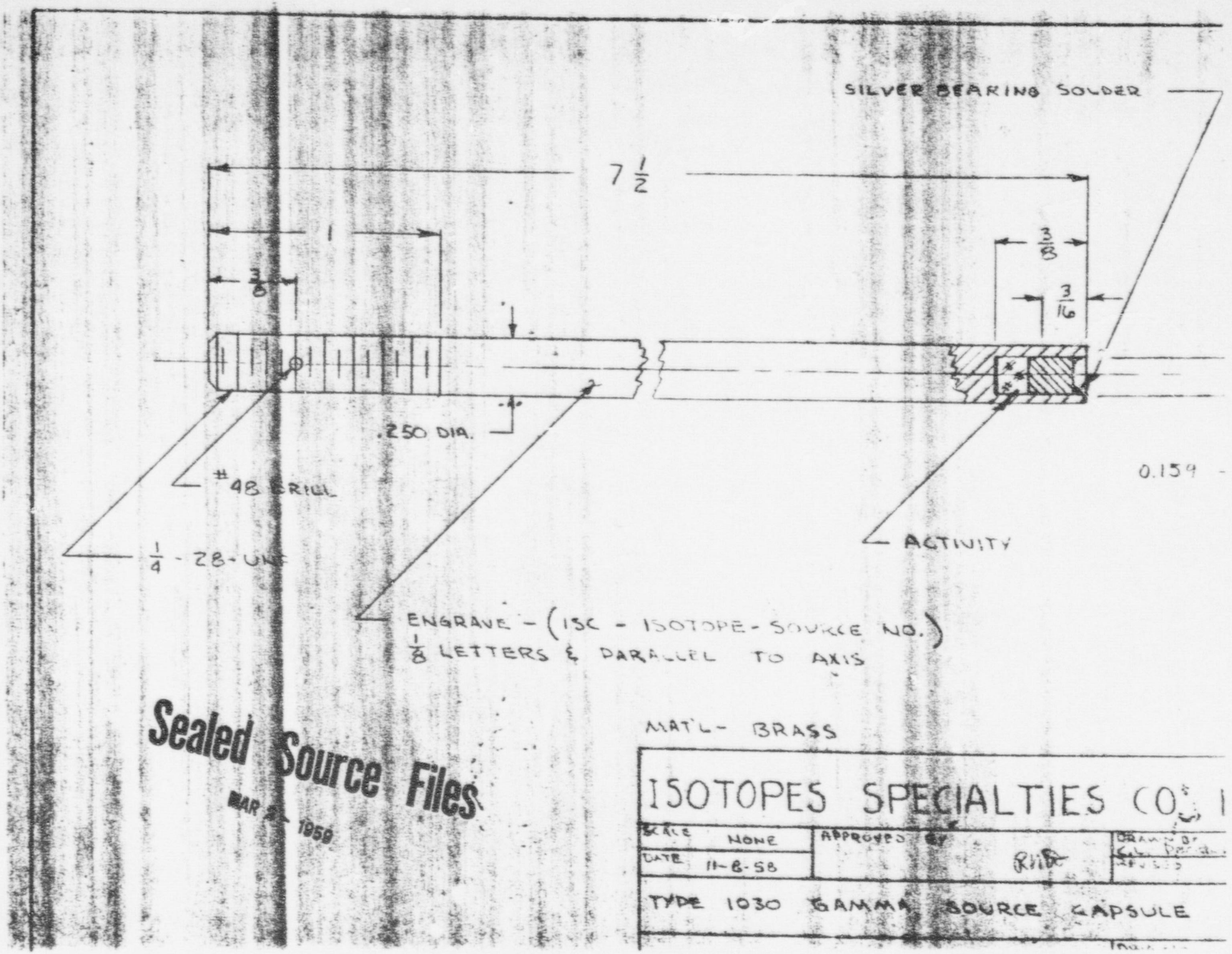
6. Method of deposition of isotope: Solid cobalt, nickel or gold plated, or solid iridium placed in cavity.

7. Maximum activity: Co-60 - 10 curies; Ir-192 - 25 curies.

8. Mounting: The capsule is provided with a threaded fitting for insertion in a device by means of threading and pinning.

9. Marking: Sources are engraved with company initials (ISC), name of isotope, and manufacturer's number.

10. Leak testing: All capsules undergo the manufacturer's contamination test and are decontaminated, if necessary. The test is sufficiently sensitive to detect the presence of removable contamination in excess of 0.05 uc. [Sources of plated cobalt and solid iridium do not require subsequent leak tests by Atomic Energy Commission regulations.



January 9, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 1032 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 0.289 inches (1/4 hex) by 1/2 inch long. See attached drawing.

2. Capsule material: 303 stainless steel.

3. Window: None.

3a. Minimum wall thickness: 0.047 inches.

4. Method of sealing: Screw plug and silver-bearing solder.

5. Isotope: Cobalt-60, iridium-192 or antimony-124.

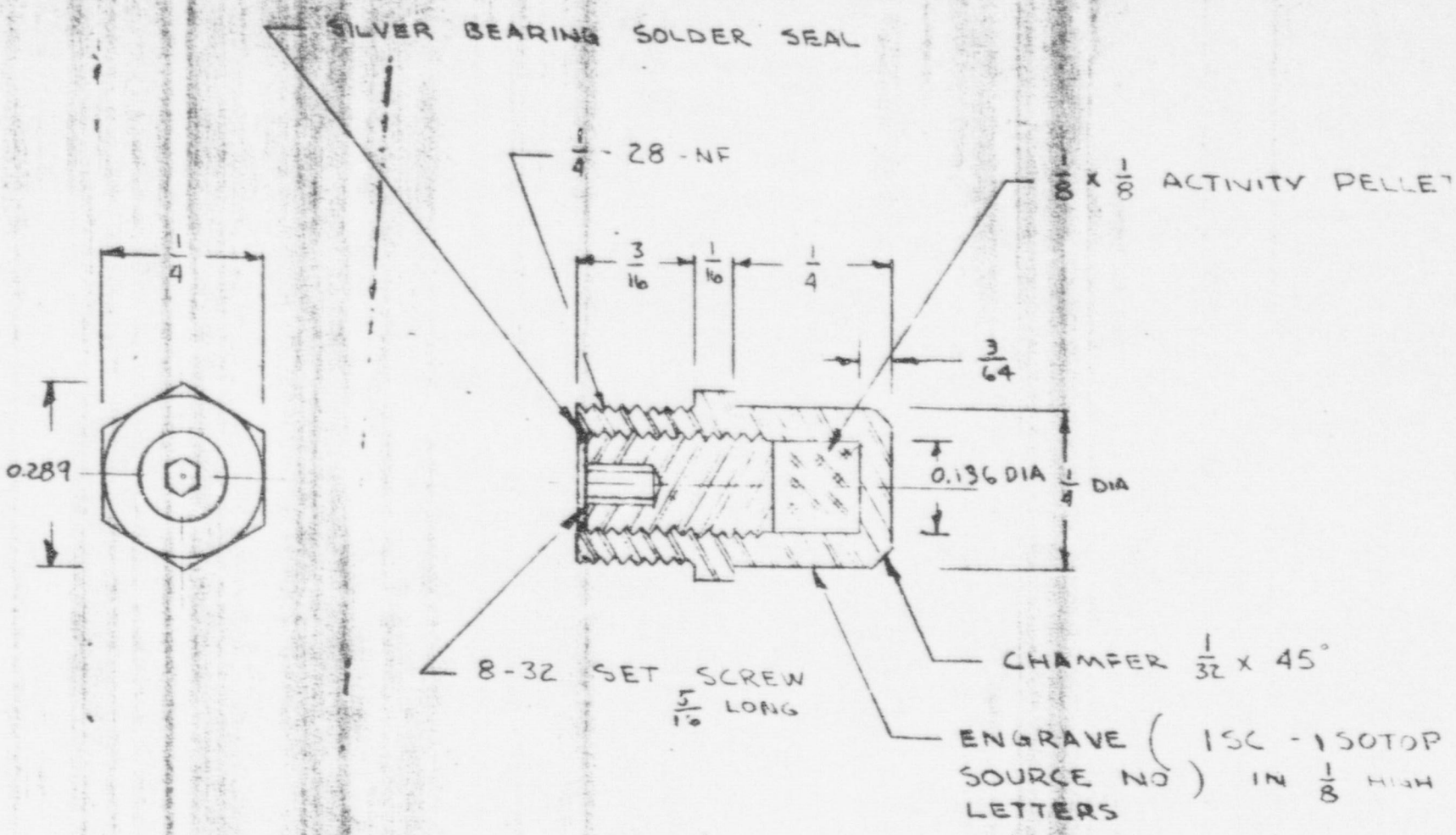
6. Method of deposition of isotope: Solid cobalt, gold or nickel plated, solid iridium, or solid antimony placed in cavity.

7. Maximum activity: Co-60 - 25 curies, Ir-192 - 200 curies, Sb-124 - 25 curies.

8. Mounting: Sources are equipped with a 1/4 - 28 thread and a hex collar for installing in a device by means of a socket wrench.

9. Marking: Sources are engraved with company initials (ISC), name of isotope and manufacturer's number.

10. Leak testing: All capsule undergo the manufacturer's contamination test and are decontaminated, if necessary. The test is sufficiently sensitive to detect the presence of removable contamination in excess of 0.05 uc. Sources of solid Ir-192, solid Sb-124 and plated Co-60 do not require subsequent leak tests by Atomic Energy Commission regulations.



MAT'L - STN STL - TP 303

ISOTOPES SPECIALTIES CO., IN		
XA-D NONE	APPROVED BY RHD	PERKIN DRAWN
DATE 12-14-58		REVISED
TYPE 1032 GAMMA SOURCE CAPSUL		
ASSEMBLY		DWG. NO. R-0036

February 6, 1959

ISOTOPES SPECIALTIES COMPANY, INC.

TYPE 1033 GAMMA SOURCE CAPSULE

SPECIFICATIONS

1. Outside dimensions: 1/4 inch diameter by 1/2 inch long. See attached drawing.

2. Capsule material: 321 stainless steel.

3. Window: 0.020-inch stainless steel (integral with capsule).

4. Method of sealing: Heliarc welding.

5. Isotope: Co-60; Ir-192, Tm-170.

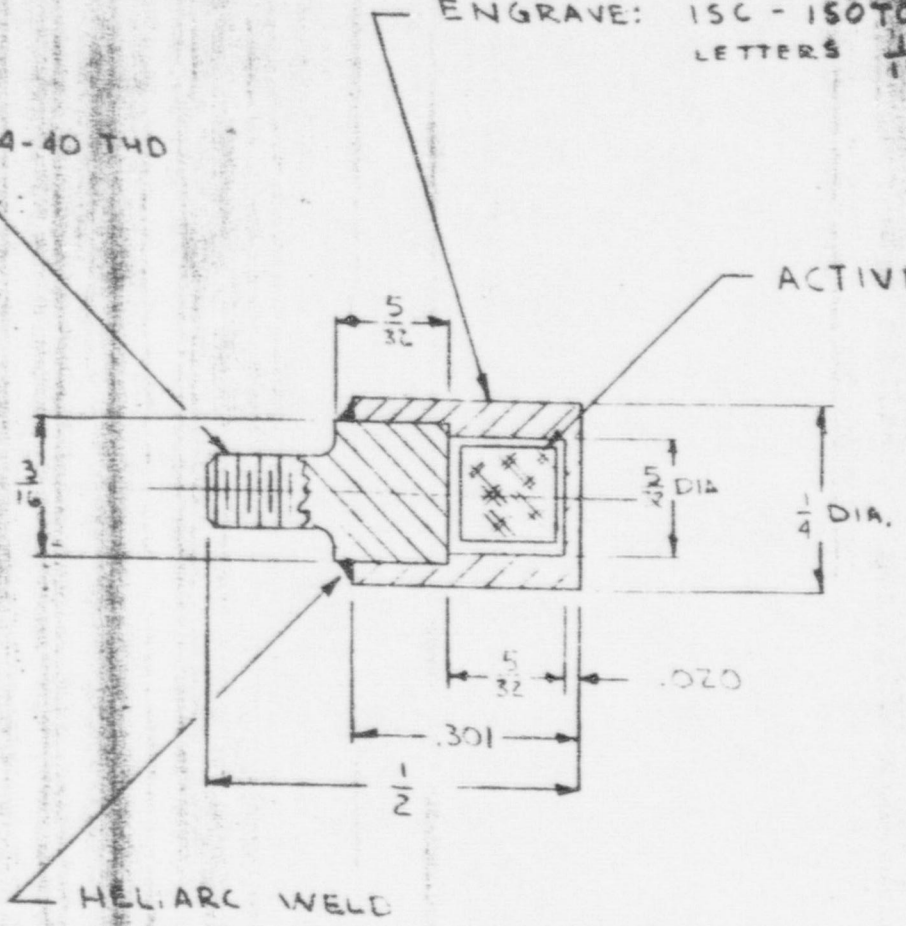
6. Method of deposition of isotope: Solid cobalt, nickel or gold plated, solid iridium, or solid thulium placed in cavity.

7. Maximum activity: Co-60 - 5 curies,
Ir-192 - 25 curies,
Tm-170 - 25 curies.

8. Mounting: None. The capsule is provided with a threaded fitting for handling by means of a threaded handler.

9. Marking: Sources are marked with company initials (ISC), name of isotope, and manufacturer's number.

10. Leak testing: All capsules pass the manufacturer's contamination and leak tests as required by Atomic Energy Commission regulations before distribution to customers. Subsequent to manufacturer's tests, Tm-170 sources require leak testing at six-month intervals. Sources of metallic Ir-192 and Co-60 (plated) do not require subsequent leak testing.



MAT'L - 321 STN STL

ISOTOPES SPECIALTIES CO., I

SCALE: NONE	APPROVED BY: RNB	DRAWN BY: C.L. D
DATE: 2-5-59		REVISED

TYPE 1033 - GAMMA SOURCE CAPSULE

DRAWING NUMBER

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif MANUFACTURED BY: Same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
device or radiography	25 c	Co-60	Type 39
SPECIAL REQUIREMENTS OR EXCEPTIONS	200 c	Ir-192	
	DESCRIPTION: $\frac{1}{4}$" dia, $\frac{5}{8}$" long.		

O K	REFERENCES	INFORMATION
	dwg B-0030	Container--Window--Sealing: ss container, No window, silver soldered
	" "	Chemical Form--Method of Deposition: metallic
	" "	Tests and Results
	" "	Labeling: ISC, Isotope, mark no, appropriate symbol if radiography
		Instruction Sheet
	" "	Manufacturer's Leak Test: Yes
	" "	Recommended Periodic Leak Test: None

B/84

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date		
Reference ~~AEC 8 1958~~		

GPO 942874

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties Co., Burbank, Calif.
	MANUFACTURED BY: same

RECOMMENDED USES AND LIMITATIONS: same as Type	MAX. ACT.	ISOTOPE	MODEL NUMBER
	39		Type 38
SPECIAL REQUIREMENTS OR EXCEPTIONS:	DESCRIPTION:		

O K	REFERENCES	INFORMATION
		Container--Window--Sealing
		Chemical Form--Method of Deposition
		Test and Results
		Labeling
		Instruction Sheet
		Manufacturer's Leak Test
		Recommended Periodic Leak Test

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 3 - 1959		
Reference		

GPO 942874

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE Isotope Specialties, Co. Burbank, Calif. MANUFACTURED BY Same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
device	25C Co 200C	60, Sb124 Ir-192	Type 1032
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION ¼" dia, ½" long		

O K	REFERENCES	INFORMATION
	Dwg B-0036	Container--Window--Sealing SS container, NO window, silver soldered
	" " "	Chemical Form--Method of Deposition metal form
	" " "	Tests and Results
	" " "	Labeling ISC, Isotope, Manuf. No.
		Instruction Sheet
	" " "	Manufacturer's Leak Test Yes
	" " "	Recommended Periodic Leak Test None

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 3 - 1959		
Reference		

GPO 942874

(6-50)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE
	Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: Same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
devices	25 mc any & either between 3 and #3		Type 142
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION: .187" dia, 10-32 end, 0.531 long.		

O K	REFERENCES	INFORMATION
	Drwg B-0044	**Container--Window--Sealing**: SS container, NO window, silver brazed.
	" "	**Chemical Form--Method of Deposition**: evaporation of salt solution, fusing in glass, or solid metal
	" "	**Tests and Results**
	" "	**Labeling**: ISC, Name of isotope, manf. NO,
		Instruction Sheet
	" "	**Manufacturer's Leak Test**: Yes
	" "	**Recommended Periodic Leak Test**: 6 month except for Sol'd I-192, Ta-182, Au-198, Sb-124, Co-60

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 2 - 1959		
Reference		

GPO 942874

(6-50)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
radiography	25 c	Co-137, Ce 144 Co-60	Type 69
SPECIAL REQUIREMENTS OR EXCEPTIONS	100 c	Tm-170, Ir-192	
	DESCRIPTION: 0.344 OD, 1½ long.		

O K	REFERENCES	INFORMATION
	dwg - B-0043	Container--Window--Sealing: 2 55 containers, no window, silver soldered and heliarc welded
	" "	Chemical Form--Method of Deposition: see ref.
	" "	Tests and Results
	" "	Labeling: ISL, isotope, manf. no.
		Instruction Sheet
	" "	Manufacturer's Leak Test: yes
	" "	Recommended Periodic Leak Test: 6 month test except solid Ir-192, Co-60.

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 2 - 1959		
Reference		

GPO 942874

(6-58)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE
	Isotope Specialties, Inc Burbank, Calif.
	MANUFACTURED BY
	Same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
devices	1mc	Ru-106 Sr-90 Tl-204 Pm-147	Type 28
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION		
	Same as type 21		

O K	REFERENCES	INFORMATION
	BB-0040	Container--Window--Sealing brass container, .001" SS window, silver soldered.
	" "	Chemical Form--Method of Deposition evaporation on planchet
	" "	Tests and Results
	" "	Labeling none
		Instruction Sheet
	" "	Manufacturer's Leak Test yes
	" "	Recommended Periodic Leak Test 6 month

Additional Information

APPROVED	
Registered	
SUPERSEDED	
Model	
Date	MAR 2 - 1959
Reference	

(8-50)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: Same

RECOMMENDED USES AND LIMITATIONS: Same as Type F-2	MAX. ACT.	ISOTOPE	MODEL NUMBER: Type 25
SPECIAL REQUIREMENTS OR EXCEPTIONS			DESCRIPTION

O K	REFERENCES	INFORMATION
		Container--Window--Sealing
		Chemical Form--Method of Deposition
		Tests and Results
		Labeling
		Instruction Sheet
		Manufacturer's Leak Test
		Recommended Periodic Leak Test

Additional Information

APPROVED

Registered

SUPERSEDED

Model

Date MAR 2 - 1959

Reference

GPO 942874

(0-50)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co, Burbank, Calif.
	MANUFACTURED BY: Same.

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
devices	25 mc 5 mc 1 mc	Ru-106, Sr-90 Tl-204 Pm-147	Type-22
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION: same as Type 21		

O K	REFERENCES	INFORMATION
	Dwg BL-3040	Container--Window--Sealing: brass container, .002" ss window, silver soldered.
	" " "	Chemical Form--Method of Deposition: see ref.
		Tests and Results
	" " "	Labeling: none
		Instruction Sheet
	" " "	Manufacturer's Leak Test: Yes
	" " "	Recommended Periodic Leak Test: 6 month.

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 2 - 1959		
Reference		

GPO 942874

(6-58)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE
	Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY
	same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
devices	1mc	Ru-106 Sr-90 Tl-204	Type 21 Pm-147
SPECIAL REQUIREMENTS OR EXCEPTIONS	**DESCRIPTION**		
	1 3/8 - 32 - NEF on outside, 15/16" long, hex socket on one end.		

O K	REFERENCES	INFORMATION
	DWG B-0040	**Container--Window--Sealing** brass container, .001" SS window, silver soldered.
	" " "	**Chemical Form--Method of Deposition** evaporation on planchet.
	" " "	**Tests and Results** manuf. leak tests.
	" " "	**Labeling** none
		Instruction Sheet
	" " "	**Manufacturer's Leak Test** yes
	" " "	**Recommended Periodic Leak Test** 6 month

Additional Information	APPROVED
	Registered
	SUPERSEDED
	Model
	Date MAR 2 - 1959
	Reference

GPO 942874

(6-58)

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
← same as Type 142			Type 143
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION ↓		

O K	REFERENCES	INFORMATION
	8-0044	Container--Window--Sealing: same as Type 142 except heliarc welded
	"	Chemical Form--Method of Deposition
	"	Tests and Results
	"	Labeling
		Instruction Sheet
	"	Manufacturer's Leak Test
	"	Recommended Periodic Leak Test

Additional Information

APPROVED

Registered

SUPERSEDED

Model

Date MAR 2 - 1959

Reference

GPO 942874

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: Same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
radiography	5C 25C	Co-60 I_r-192 Tm-170	Type 103-5
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION: ¼" dia, ¼" long		

O K	REFERENCES	INFORMATION
	avg B-0040	Container--Window--Sealing: S.S. container, .020 ss window, heliarc welded.
	"	Chemical Form--Method of Deposition: see ref.
	"	Tests and Results
	"	Labeling: ISC, isotope, manuf. NO.
		Instruction Sheet
	"	Manufacturer's Leak Test: yes
	"	Recommended Periodic Leak Test: 6 month for Tm-170, 50 lb Co-60 and I_r-192 none

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 2 - 1959		
Reference		

GPO 942874

SEALED SOURCE SUMMARY

SPECIAL SERVICES OFFERED	MAKE: Isotope Specialties, Co. Burbank, Calif.
	MANUFACTURED BY: same

RECOMMENDED USES AND LIMITATIONS	MAX. ACT.	ISOTOPE	MODEL NUMBER
custom for Nuclear Corp. of America gauge	100 mc	Sr-90	Type 260
SPECIAL REQUIREMENTS OR EXCEPTIONS	DESCRIPTION: .6875 dia, 1" long.		

O K	REFERENCES	INFORMATION
	DWG-1030 letters attached	Container--Window--Sealing: S.S. container, .002 SS window, heliarc welded.
	" "	Chemical Form--Method of Deposition: see attached letter
	" "	Tests and Results
	" "	Labeling: none
		Instruction Sheet
	" "	Manufacturer's Leak Test: yes
	" "	Recommended Periodic Leak Test: none

Additional Information

APPROVED		
Registered		
SUPERSEDED		
Model		
Date MAR 2 - 1959		
Reference		

GPO 942674