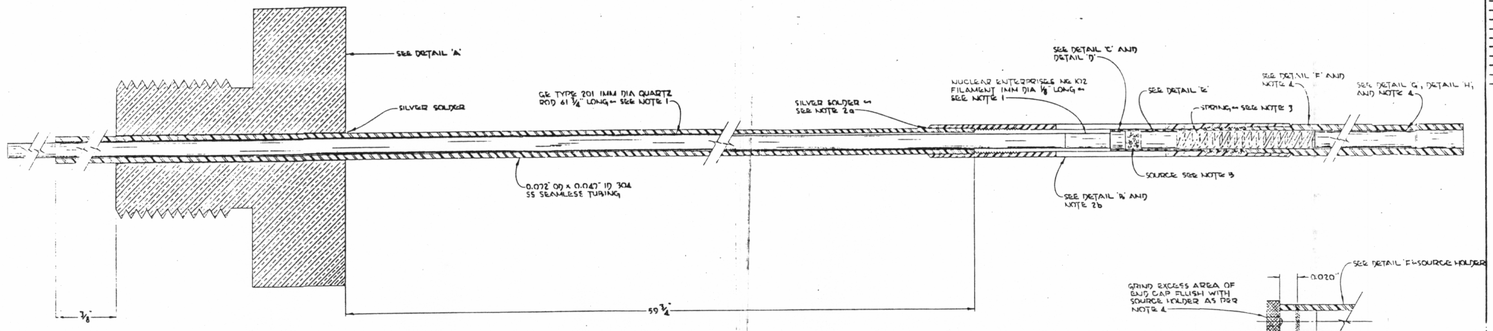
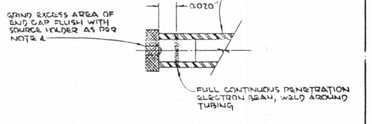
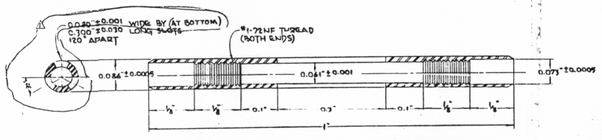
INDEX: "Y"				FINAL ASSY:
DWG NO	ITM	QTY	MATERIAL	DESCRIPTION



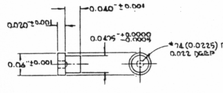
PROBE AND SOURCE HOLDER ASSEMBLY
SCALE: 10"=1"



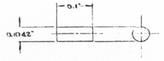
DETAIL 'D'
N.T.S
SEE NOTE 4



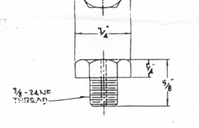
DETAIL 'B' ← SOURCE COUPLER AND CENTERING GUIDE
SCALE: 10"=1"
MAT'L: 304 SS TUBING
SEE NOTE 2a AND 2b



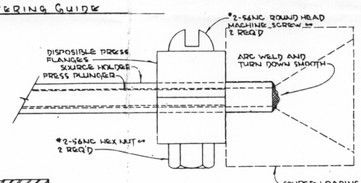
DETAIL 'C' ← FRONT END CAP
SCALE: 10"=1"
MAT'L: 304 SS



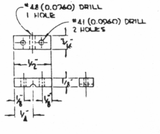
DETAIL 'E' ← SPRING BLOCK
SCALE: 10"=1"
MAT'L: 304 SS



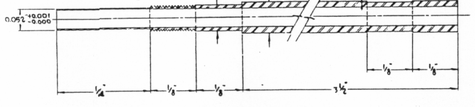
DETAIL 'A'
SCALE: 2"=1"
MAT'L: BRASS



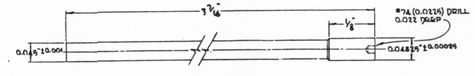
DETAIL 'H'
N.T.S
SEE NOTE 4



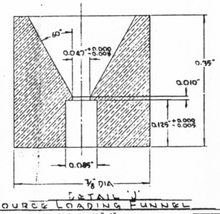
DETAIL 'I' ← DISPOSABLE PRESS FLANGE
SCALE: 2"=1"
MAT'L: BRASS 2 REQ'D



DETAIL 'F' ← SOURCE HOLDER
SCALE: 10"=1"
MAT'L: 304 SS TUBING



DETAIL 'G' ← PRESS PLUNGER
SCALE: 10"=1"
MAT'L: 304 SS



DETAIL 'J'
SOURCE LOADING FUNNEL
SCALE: 10"=1"
MAT'L: BRASS

NOTES

1. a) Both ends of the Quartz Rod are to have a No. 4 finish.

   b) Quartz Rod and Filament are covered with a rolled tube made from two layers of 0.001" aluminum foil approximately 1/2" long. Crimp the end of aluminum foil over the filament after it is rolled.

   c) Quartz Rod is coupled to the Filament using Dow Corning DC 200 silicone grease having 10M centistokes viscosity.

   d) After assembly the Quartz Rod and Filament are to be liquid checked.

   e) The Quartz Rod is very brittle and extreme care must be taken while welding and during installation.

2. a) Use a No. 1-72NF thread gauge to determine the best thread fit on the coupler. Silver solder opposite end to the 304 SS tubing as shown in assembly drawing.

   b) The Filament and Source must be as near the center of the slots in the coupler as possible.

3. The Spring is 0.035" piano wire and is wound on a 0.032" mandrel and should be 3/4" long uncompressed.

4. a) Insert Front End Cap (Detail 'C') into Source Holder Outside Tube (Detail 'F'), weld End Cap into place as shown by Detail 'D' by full continuous penetration electron beam, weld around the tubing.

   b) Leak check, Cap and Source Holder after weld, for less than 5×10^{-8} cc atmosphere helium leak test.

   c) Grind off shaded area (Detail 'D') after leak test and recheck for leaks. Do not use if measurable leaks above 5×10^{-8} cc atmosphere are detected.

   d) Place disposable press flanges (Detail 'I') in Source Holder as shown (Detail 'F'). Place Source Loading Funnel (Detail 'H') in Source Loading Funnel (Detail 'J') and place Source (Detail 'B') and press plunger (Detail 'G') into Funnel (Detail 'H'). Spring (See Note 3) and press plunger (Detail 'G') into Source Holder (Detail 'F'). The press flangers are to be used only to support the holder so that no pressure will be applied against the thin wall tubing.

   e) After the plunger is pressed into place, Arc weld the flanges and tubing as shown in Detail 'H' and turn down smooth. The whole Source Holder Assembly may now be screwed into the Probe.

5. Source Characteristics:

   a) At 70°C, flux at 24.5°C, screened 40-60 mesh, output after encapsulation equivalent to 3 $\times 10^{-8}$ cc atmosphere/sec helium at low chamber pressure to meet the requirements. Approximate total activity 30 mc.

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As per TELEPHONE INSTRUCTIONS FROM UCC 10/14/66

REFERENCE DRAWINGS

B-I-24708 DRAWING LIST

0	CHANGED SLOT SIZE (REF. 1 WT)	T.K.B.					
REVISION		BY	APP	DATE			

DRAWN					
TRACED					
CHECKED					
ENGINEER					
DESIGNED					
CHECKED					
APPROVED					
SCALE AS NOTED					

UNION CARBIDE NUCLEAR COMPANY DIVISION OF UNION CARBIDE CORPORATION

Y-12 PLANT OAK RIDGE, TENN.

BETA RAY SCATTER

PROBE ASSEMBLY

FULL SCALE

E-I-54431 0

MICROFILMED

D-1

7.7