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NRC FORM 313 (03-2014) 10 CFR 30, 32, 33, 34 35, 36, 37, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 **EXPIRES: 05/31/2015**

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING,

SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [x] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [ ] C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

CSECO
875A Island Dr. #356
Alameda CA 94502

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Not Applicable (Application is for an Exempt Distribution License). Our physical address is:
CSECO
2209 Harbor Bay Parkway
Alameda CA 94502

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Doug Broadwell

BUSINESS TELEPHONE NUMBER	BUSINESS CELLULAR TELEPHONE NUMBER
510-864-80	

BUSINESS EMAIL ADDRESS

doug@cseco.com

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
   a. Element and mass number; b. chemical and/or physical form; and c. maiximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (Fees required only for new applications, with few exceptions*) *(See 10 CFR 170 and Section 170.31)*

FEE CATEGORY: 3H

AMOUNT ENCLOSED: $ 5,100.00

13. CERTIFICATION. *(Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.*

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35 , 36, 37, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.
WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A C RIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Doug Broadwell, Operations Manager		4/1/15

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED $	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

CSECO
Campbell/Harris
SECURITY EQUIPMENT COMPANY

875–A Island Drive #356, Alameda, CA 94502-6768 USA Ph: 510-864-8010 Fx: 510-864-8013 info@cseco.com

Application for Exempt Materials License

32.30

b-1) The K9 family of Portable Gamma Detector are hand-held or extension-pole held devices for the purpose of detecting hidden contraband materials. The K9 family of devices is only sold to governmental law enforcement personnel: Homeland Security including Customs and Border Protection, the US Coastguard, Police, Sheriffs, Drug Enforcement, the Military, the US State Department, etc.

The K9 products have been sold under California General License 6156-01GL since 1990.

b-2) The device uses a sealed source of 0.37 MBq or less of Ba133.

b-3) The Ba133 is contained in a ceramic matrix which is contained in a welded stainless steel capsule, Sealed Source and Device Registry: CA0207D101B. There are no chemical or physical form changes that occur during the life of the product other than the decay of the nuclide. See Appendix A-1.

b-4) The chemical form of the nuclide is Barium Chloride. Because it is encased in a ceramic matrix its solubility in water is minimal.

b-5) The source is contained in the capsule described in b-3 above. This capsule is then contained in a tungsten carbide rotor and shield assembly as shown in Appendix A-2. The entire device is contained in an aluminum case, partially cast aluminum and partially drawn aluminum, see Appendix A-3. The device and its accessories are stored in a padded case, see Appendix A-4. Over the last 20 years, with thousands of units in use, some have been dropped from large heights and several have been run over; never has the integrity of the shutter mechanism been compromised.

b-6) With the shutter closed the maximum exposures are: 5 cm = 0.08 uSv, 30 cm = 0.01 uSv. With the shutter open the maximum exposures are: 5 cm = 0.5 uSv, 30 cm = 0.065 uSv. Measurements were taken with an ion chamber.

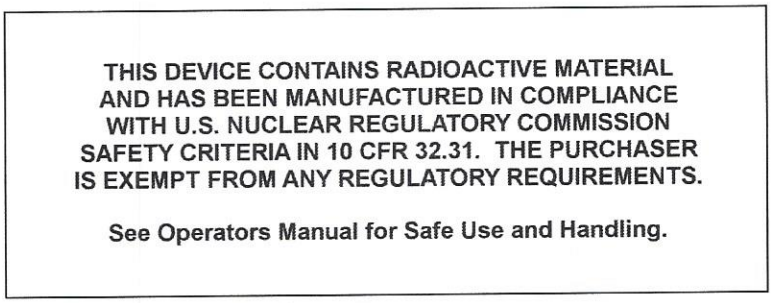
b-7) Because the device is only used by trained governmental law enforcement personnel access to the device by the general public is very rare. Mobile users keep the device in a locked part of a car/truck when not in use, non-mobile users keep the device in a secure area when not in use. When in use the device is kept in a belt holster when not actively scanning for contraband.

b-8) The estimated annual sales of the device is 500 units and therefore the maximum total quantity of material is for this level of sales is 18.5 MBq. The actual quantity will probably be 13.9 MBq as our standard product uses 0.2775 MBq of material.

b-9) The expected useful life of the product is the half-life of the nuclide: 10.5 years.

b-10) The external labeling of the device consists of two labels:

The "S/N" is the serial number of the specific unit. "Date" is the assay date of the source. The MBq is the actual activity of the source, typically 0.2775 MBq.



There is no "Point of Sale" packaging for this device.

b-11) As mentioned in #5, above, "Over the last 20 years, with thousands of units in use, some have been dropped from large heights and several have been run over; never has the integrity of the shutter mechanism been compromised."

b-12) See #11, above.

b-13) In the event that a person remove the source capsule and was able to open it:

a) The dose of .37 MBq of Ba133 at 1 meter is 0.01749567 uSv/hr. for 1000 hours the total dose would be 17.49567 uSv.

Source: http://www.radprocalculator.com/Gamma.aspx

b) Intake of 1000 pCi (.037 KBq) of Ba133:

1000 pCi x 2.22 dpm/pCi x 1.532×10^{-6} mrem/dpm = 0.0034 mrem = 0.034 uSv

Source: FGR 11.

Alternate:

For Ingestion: 2000 uCi = 5 rem Whole Body TEDE so 1nCi = 0.0025 mrem.
For Inhalation: 700 uCi = 5 rem Whole Body TEDE so 1nCi = 0.0071 mrem.

Source: Radionuclide Data Sheet from th University of California at San Diego

c) Exposure of .37 MBq in a pocket for 80 hours:

Assuming the distance from the source to the skin was 0.05":

10.888 mSv/hr x 80hr = 0.871 Sv

Source: http://www.radprocalculator.com/Gamma.aspx

b-14) Because of the design of the capsule and shutter mechanism, and the actual experience of over 20 years with dropped and run-over devices with no failure of the integrety of the shutter mechanism, and the small activity of the source, it is extremely unlikely that a person could receive a dose in excess of 5mSv.

Besides mechanical abuse, a fire could compromise the source containment. In the April 2000 report from the National Institute of Standards and Technology, FR 4009, in which a two story single-family house was instrumented and set on fire (see Appendix A-5 for more details) the peak tempreature in the house never exceeded 750° C. The melting point of Stainless Steel of the capsule and the shutter brackets is 1510° C, and that of the Nickel "glue" of the sinitered Tungsten Carbide in the source shield is 1455° C it is extremely unlikely that a fire would expose the raw radioactive ceramic source.

b-15) Incoming sources are 100% tested for activity against a known calibration source using a calibration fixture. Incoming parts are inspected for complience with specifications. All devices are checked for correct operation on a calibration table. Two different people check the shutter mechanism for proper operation before packaging the unit for shipping.

The prototype of the device was tested in accordance with ANSI N.538 (1979) and has been assigned classification ANSI-95-675-785-R2. The source and tungsten carbide shutter meet ANSI fire condition 6 (1092° C for 4 hours). The source capsules have the ANSI N542-1977 classification 77C44222.

c-1) See section 32.31 below.

c-2) See sections b-1 and b-7 above.

c-3) The Sealed Source and Device Registry is CA0207D101B.

32.31

a-1) The estimated exposure to an individual using the device *full time* is from 15 to 20 uSv/year.

The second group of individuals most exposed to radiation would be the subcontractor(s) that Customs and Border Protection (CBP) use to repair units from the field. Their level of service is only to exchange internal electronics that are deemed to be defective with a stock of exchange electronics that they keep. The defective electronics are returned to us for repair. Any units with mechanical issues are returned to us as whole inits. Assuming the technicians spend 15 minutes swapping electronics at a working distance of 30cm they would receive a dose of 0.015 uSv/15 minutes or 0.06 uSv/hr. We receive an average of 260 of these types of repairs per year which means that if there were only one technician doing this work they would receive a total dose of 15.6 uSv/year. Assuming more time in proximity to the device for shipping and receiving and movement within the facility that person's total exposure would still be much less than 200 uSv/year.

a-2) It is estimated that the majority of devices disposed of under an Exempt license would end up dispersed in landfill and as such it would be highly unlikely that a person could receive a 10 uSv exposure.

a-3) See section 32.30 b-14 above.

a-4) See section 32.30 b-14 above.

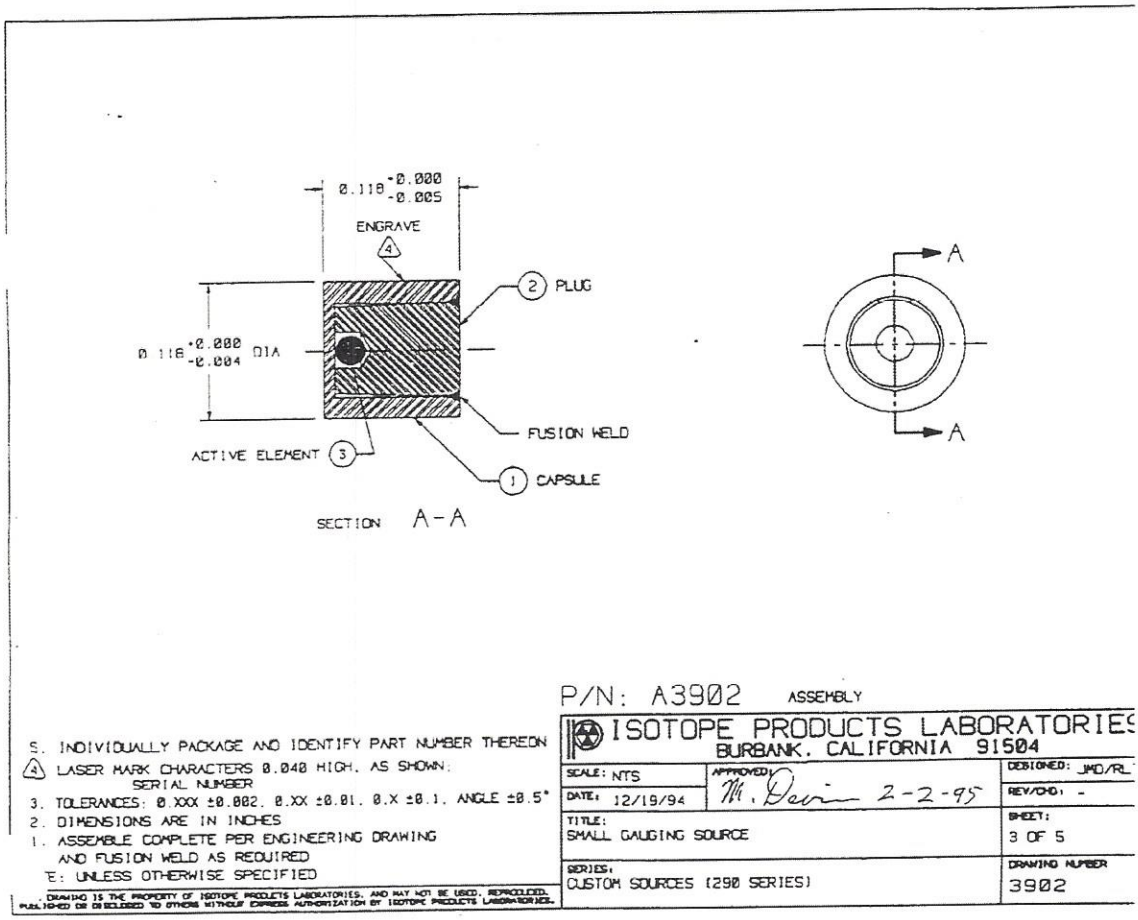
b) See section 32.30 b-13 above.

Mechanical

See Appendix A-6 for device mechanical drawings.

Appendix A

1)



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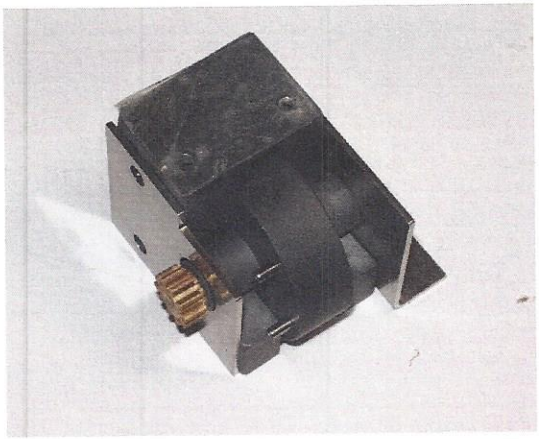
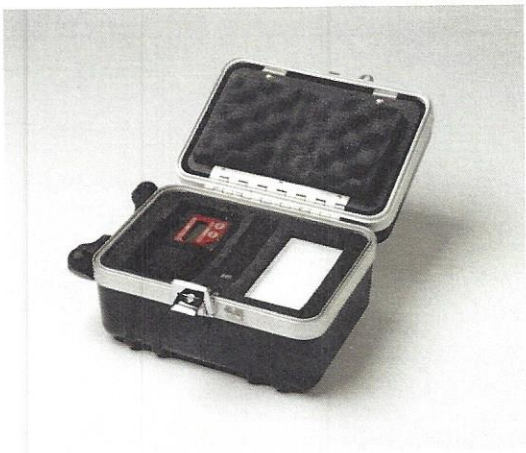


3)

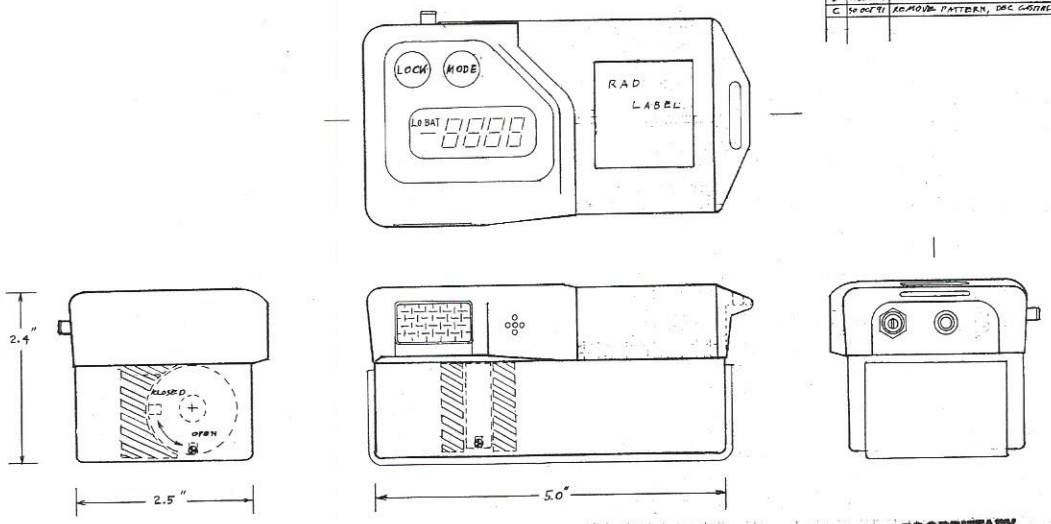
4)



5) The structure was a two story single-family dwelling with furnature, wood framed, sheetrock interior and wood clapboard siding. 45 seconds prior to ignition an excelerant of 1 liter of 2-stroke fuel (40-1 mixture of gas & oil) was released onto the livingroom floor. The full report is at http://fire.nist.gov/bfrlpubs/fire00/PDF/f00136.pdf

6)

A	9 JUN 89	REDRAW - BRK	
B	11 SEP 90	CHG PATTERN ON PUSH BUTTON	
C	30 OCT 91	REMOVE PATTERN, DEC CASE HT	



PROPRIETARY

CSECO Campbell Security Equipment

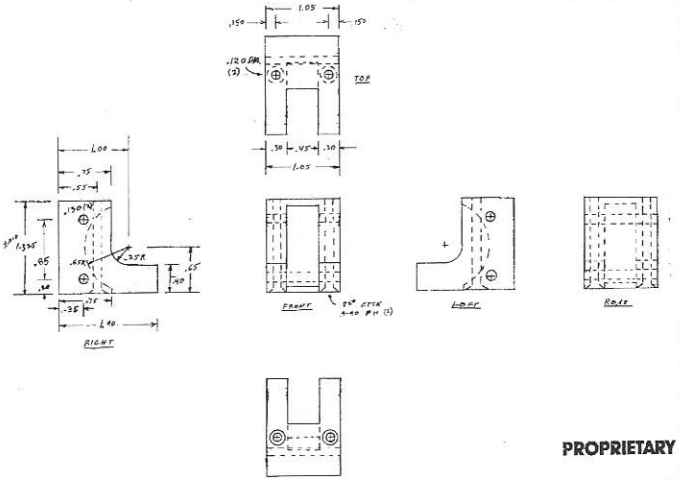
SCALE 1-1

DATE 10 JUL 89

K-910 B : EXTERNAL

DWG # RDK9-013-A

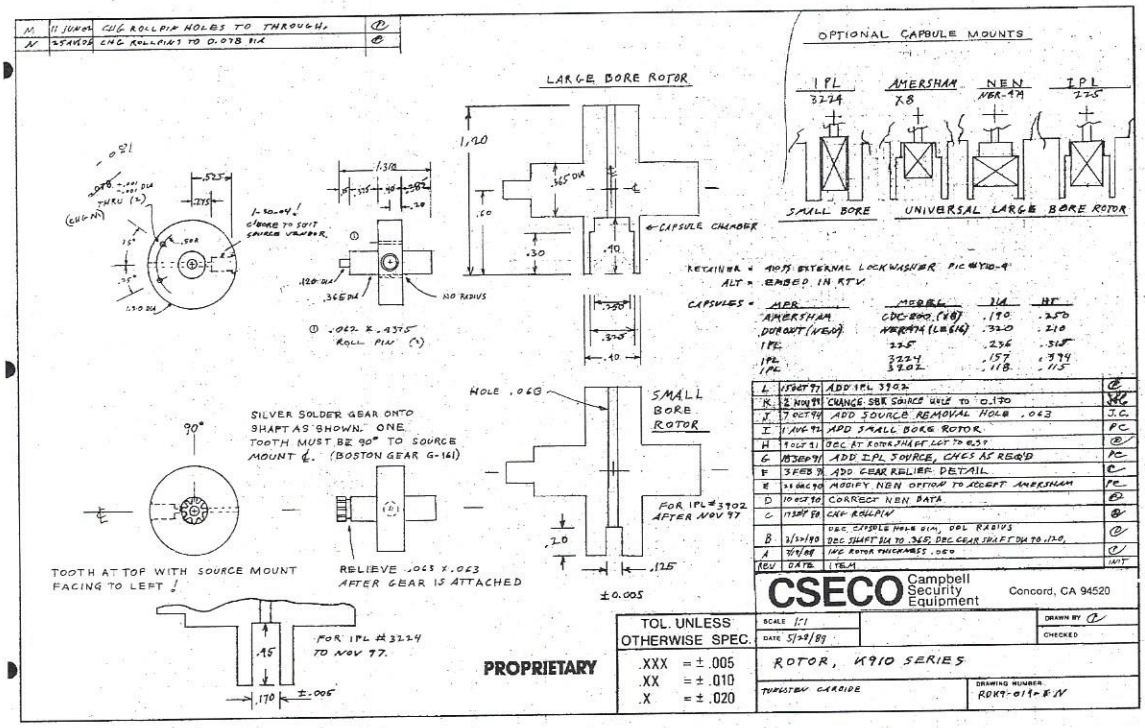
B	9/7/90	CHG TWO HOLES TO 4-40 THRU	PC
C	7/24/92	DELETE 4-40 HOLES, MOVE (2) HOLES FROM .20 TO .35 AND INC DIA FROM .125 TO .130	PC



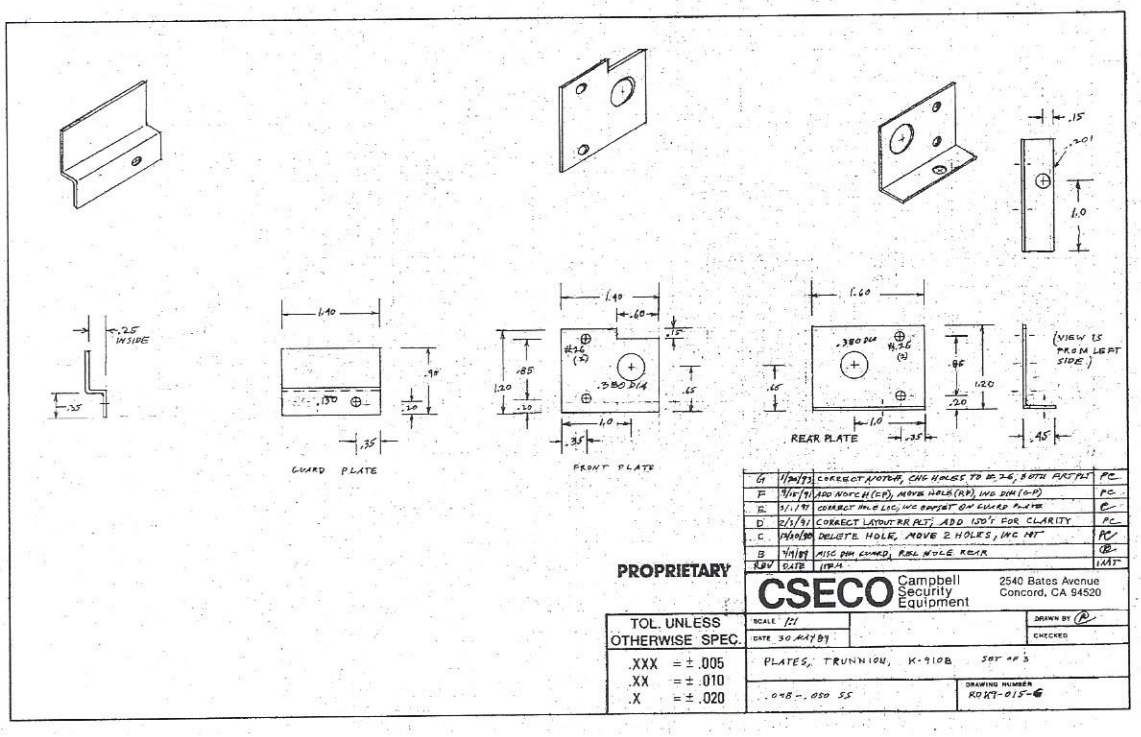
PROPRIETARY

CSECO Campbell Security Equipment
2540 Bates Avenue
Concord, CA 94520

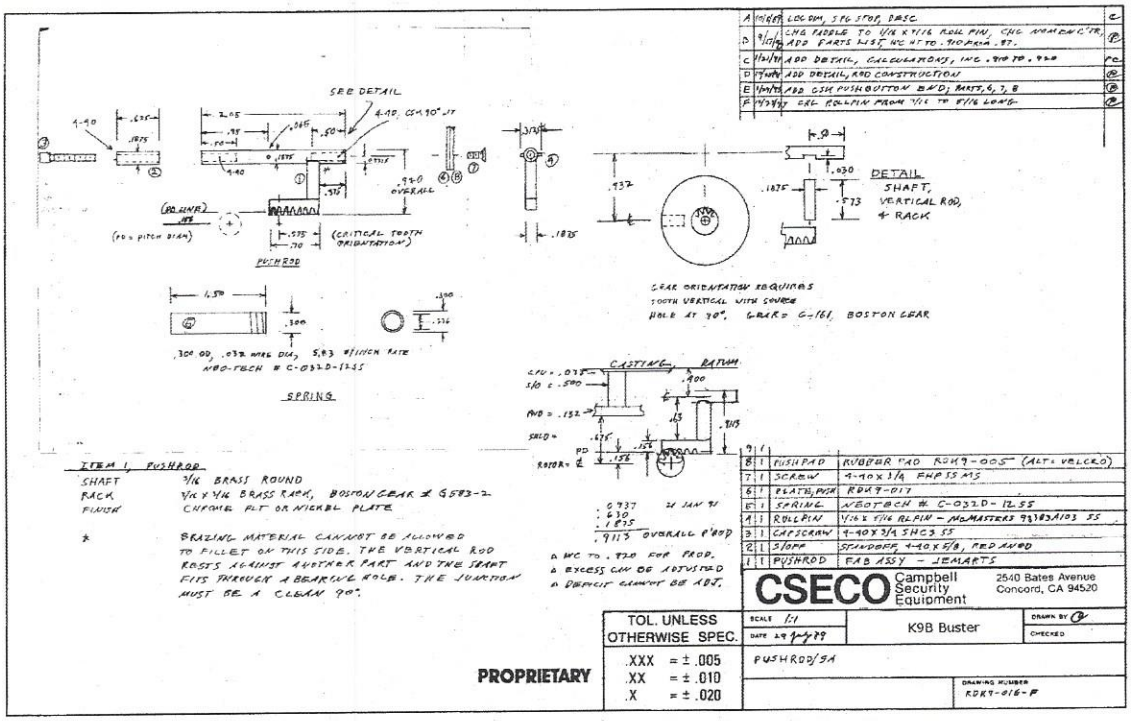
TOL. UNLESS OTHERWISE SPEC.	SCALE 1:1	DRAWN BY PC
.XXX = ± .005	DATE 5/24/89	CHECKED
.XX = ± .010	SHIELD, K-910B	
.X = ± .020	TUNGSTEN CARBIDE	DRAWING NUMBER RDK9-013-B



REV	DATE	ITEM	INIT
M	11 JUN 99	CHG ROLLPIN HOLES TO THROUGH.	℄
N	25 AUG 99	CHG ROLLPIN TO 0.078 DIA	℄
L	15 OCT 97	ADD IPL 3902	℄
K	2 NOV 99	CHANGE SBR SOURCE HOLE TO 0.190	JC
J	7 OCT 99	ADD SOURCE REMOVAL HOLE .063	J.C.
I	1 AUG 97	ADD SMALL BORE ROTOR	PC
H	9 OCT 91	DOC AT ROTOR SHAFT SET TO 0.39	℄
G	18 SEP 91	ADD IPL SOURCE, CHGS AS REQ'D	PC
F	3 FEB 91	ADD GEAR RELIEF DETAIL	PC
E	26 DEC 90	MODIFY NEN OPTION TO ACCEPT AMERSHAM	PC
D	10 OCT 90	CORRECT NEN DATA	℄
C	17 SEP 90	CHG ROLLPIN	℄
B	2/22/90	DOC CAPSULE HOLE DIM, DOC RADIUS DOC SHAFT DIA TO .365, DOC GEAR SHAFT DIA TO .130,	℄
A	7/9/89	INC ROTOR THICKNESS .060	℄



REV	DATE	ITEM	INIT
G	11/20/93	CORRECT MOTOR, CHG HOLES TO Ø.26, BOTH PLATES	PC
F	9/15/93	ADD NOTCH (TOP), MOVE HOLE (RP), INC DIM (A-P)	PC
E	9/1/93	CORRECT HOLE LOC, INC GASKET ON GUARD PLATE	PC
D	2/5/93	CORRECT LAYOUT RR PLT, ADD .120'S FOR CLARITY	PC
C	10/20/92	DELETE HOLE, MOVE 2 HOLES, INC MT	PC
B	7/7/89	MISC DIM CHANGES, REL HOLE REAR	℄
A	30 MAY 89		



A	10/6/88	LOCKW, STG STOP, DESC	C
B	9/10/89	CHG PADDLE TO 1/16 X 1/16 ROLL PIN, CHG MATERIAL C'TR, ADD PARTS LIST, WC #1 TO .930 DIA .87.	PC
C	11/21/89	ADD DETAIL, CALCULATIONS, INC .900 TO .930	PC
D	7/24/90	ADD DETAIL, ROD CONSTRUCTION	PC
E	1/14/91	ADD CSK PUSHBUTTON BWD, PARTS, 6, 7, 8	PC
F	7/23/91	CHG ROLLPIN FROM 1/16 TO 5/16 LONG	PC

ITEM 1, PUSHROD

SHAFT 3/16 BRASS ROUND
RACK 3/16 X 3/16 BRASS RACK, BOSTON GEAR # G583-2
FINISH CHROME PLT OR NICKEL PLATE

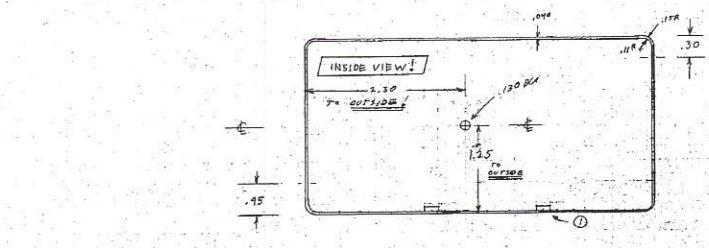
* BRAZING MATERIAL CANNOT BE ALLOWED TO FILLET ON THIS SIDE. THE VERTICAL ROD ROSES AGAINST ANOTHER PART AND THE SHAFT FITS THROUGH A BEARING HOLE. THE JUNCTION MUST BE A CLEAN 90°.

8	1	PUSHPAD	RUBBER PAD RDK9-005 (ALT = VELCRO)
7	1	SCREW	4-40 X 3/8 FHP SMS
6	1	PLATE, PWR	RDK9-017
5	1	SPRING	NEOTOECH # C-0320-1255
4	1	ROLLPIN	1/16 X 5/16 RLPIN - McMASTER 98383A103 SS
3	1	CAPSCREW	4-40 X 3/4 SHCS SS
2	1	STOPP	STANDOFF, 4-40 X 5/8, RED ANOD
1	1	PUSHROD	FAB ASSY - JEMARTS

CSECO Campbell Security Equipment
2540 Bates Avenue
Concord, CA 94520

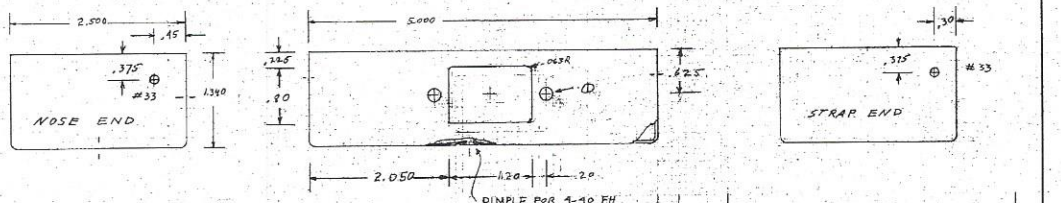
TOL. UNLESS OTHERWISE SPEC.	SCALE 1:1	K9B Buster	DRAWN BY CP
.XXX = ± .005	DATE 29 July 89		CHECKED
.XX = ± .010	PUSHROD/SA		
.X = ± .020			DRAWING NUMBER RDK9-016-F

PROPRIETARY



NOTES

① PART # HOLE SIZE
SOUTHCO SWIVELNUT 4-40 0.187
74-11-104-33
SPLINED PANEL NUT 4-40 0.166 - 0.169
McMASTER-CARR 94648A203 #19 DRILL
(PREFERRED)

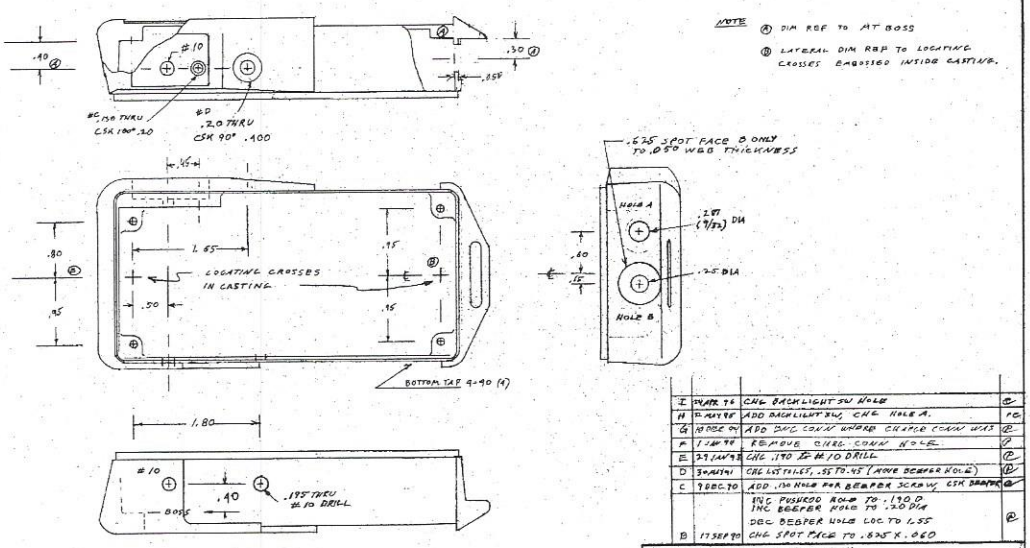


G	7/09/97	ADD RETAINER HOLES	PC
F	10/8/93	RELOCATE BATT HOLE	PC
E	7/25/91	MOVE .130 HOLE TO 1.25 (OW 2)	PC
D	1/22/91	RELOCATE BATT HOLE	PC
C	1/14/91	ADD BATT ACCESS HOLE	PC
B	4/29/98	CHG HOLE LOCATIONS	PC

PROPRIETARY

CSECO Campbell Security Equipment
2540 Bates Avenue
Concord, CA 94520

TOL. UNLESS OTHERWISE SPEC.	SCALE 1:1		DRAWN BY PC
.XXX = ± .005	DATE 5/28/99		CHECKED
.XX = ± .010	COVER, K-9NA		
.X = ± .020	ZERO # 27-40-80		DRAWING NUMBER RDK9-019-G



I	7MAR 96	CHG BACKLIGHT SW HOLE	C
H	10MAY88	ADD BACKLIGHT SW, CHG HOLE A.	PC
G	18DEC 87	ADD 'DVC CONN WHERE CHANGED CONN W/13	R
F	12JAN 88	REMOVE CIRC. CONN HOLE	R
E	29JAN 87	CHG .190 TO #10 DRILL	R
D	3MAY 87	CHG LOCATIONS, .55 TO .45 (ABOVE BEEPER HOLE)	R
C	9DEC 70	ADD .14 HOLE FOR BEEPER SCREW, CSK DRAWN	R
		INC PUSHROD HOLE TO .190 D INC BEEPER HOLE TO .20 DIA DEC BEEPER HOLE LOC TO 1.55	R
B	17SEP 70	CHG SPOT FACE TO .625 X .060	

CSECO Campbell Security Equipment — Concord, CA 94520

TOL. UNLESS OTHERWISE SPEC.	SCALE 1:1		DRAWN BY R
	DATE 2 SEP 87		CHECKED
.XX = ± .010 .X = ± .020	DRILLING LAYOUT - CASTING W910B		
		DRAWING NUMBER R049-020.5-I	

PROPRIETARY

CSECO
Campbell/Harris Security Equip. Co.
875-A Island Drive Suite 356
Alameda, CA 94502

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~~Margie Kotzalas~~, Chief

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U.S. Nuclear Regulatory Commission

Washington DC 20555