


REVISIONS				
REV	CO	DESCRIPTION	DATE	APPROVED
A				
B	74.001	REWRITTEN	1-18-07	RDG
C	70.696	SCO WAS SC	4-4-07	RDG
D	114.396	MOLEX USES SLOT G	7-30-09	RDG

SAFECONN CONNECTOR FOR PUMP END (OLD PHI WITH ISOLATED GROUND)



FIRST PAGE REVISION IS THE CURRENT REVISION OF THIS DOCUMENT. REVISION
LETTERS ON SUBSEQUENT PAGES ONLY UPDATE WHEN A CHANGE IS MADE TO THAT PAGE.

PREPARED BY R GOLLA	DATE 1-17-07	CHECKED AND APPROVED BY M CORPRON	DATE 1-17-07
 Gamma Vacuum, LLC 2915 133 rd Street West, Shakopee, MN 55379		SHEET 1 OF 19	
TITLE PROC,CA ASM,SCO,PUMP		NUMBER 430018	REV D

1.0 GENERAL

The purpose of this procedure is to give detailed instructions for the assembly of Gamma pump safeconn connector and attachment to cable 380052.

2.0 BILL OF MATERIALS

ITEM	PART NO.	QTY	DESCRIPTION
1	100436	5	SCR-PANH,PHIL,M2 X4,SST
2	100494	2	SCR-SET,HEX,M3 X 5,SST
3	100648	4	WASHER-LOCK,M2 SER BRZ
4	100967	2	NUT-HEX,M2,SST
5	320050	2	SPRING-CONTACT,SAFECONN
6	370003	1	CONN BODY-SAFECONN,PEEK
7	370007	1	CONN-COAX,10KV,SAFE,BAKE
8	380052	SEE JOB	CA-4 COND,SAFECONN,HTEMP
9	390009	2	LUG-RING,26-22 GA,#2 SCR
10	390015	1	CLAMP-CABLE,CPC,SZ17,STR
11	390078	2"	SHRINK TUBING-1/2",VITON
12	390080	1	SHELL-CONN,SAFE,SILIGLASS
13	390079	1	SLEEVE-CRIMP,TIN
14	390787	1.187"	SHRINK TUBING-1/4",VITON
15	101138	A/R	HI-TEMP SOLDER 300C

NOTE: If this BOM does not match Traveler, the Traveler takes precedence.

3.0 TOOLS REQUIRED

- Crimper



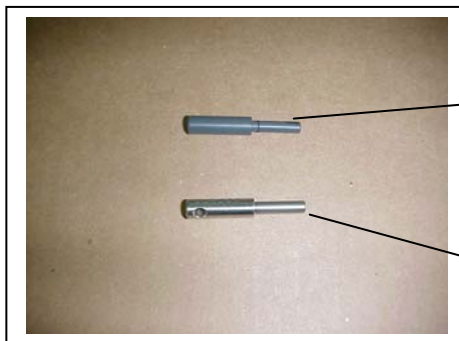
- Crimper- Sargent Crimper with die #KTH 2061.



- Small Phillips screwdriver, knife, 1.5mm hex wrench, and tweezers



- SHV10 Pin Depth Gauges



Depth gauge-with tolerance groove

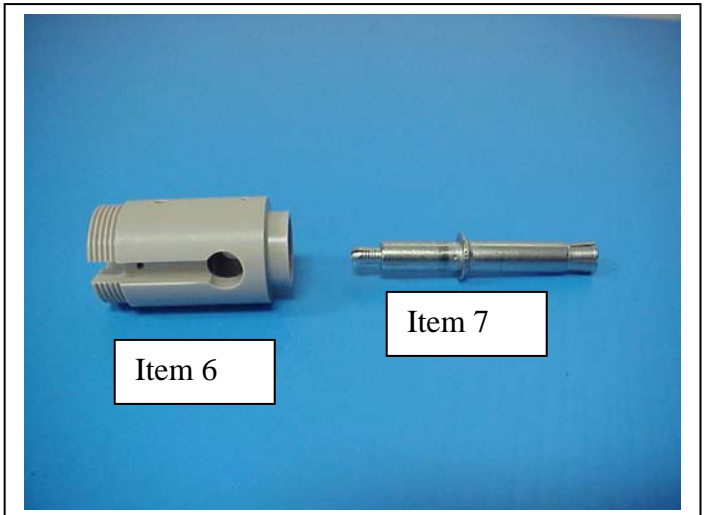
Depth gauge-no tolerance groove

- SHV10 (Kings) Feedthru tooling

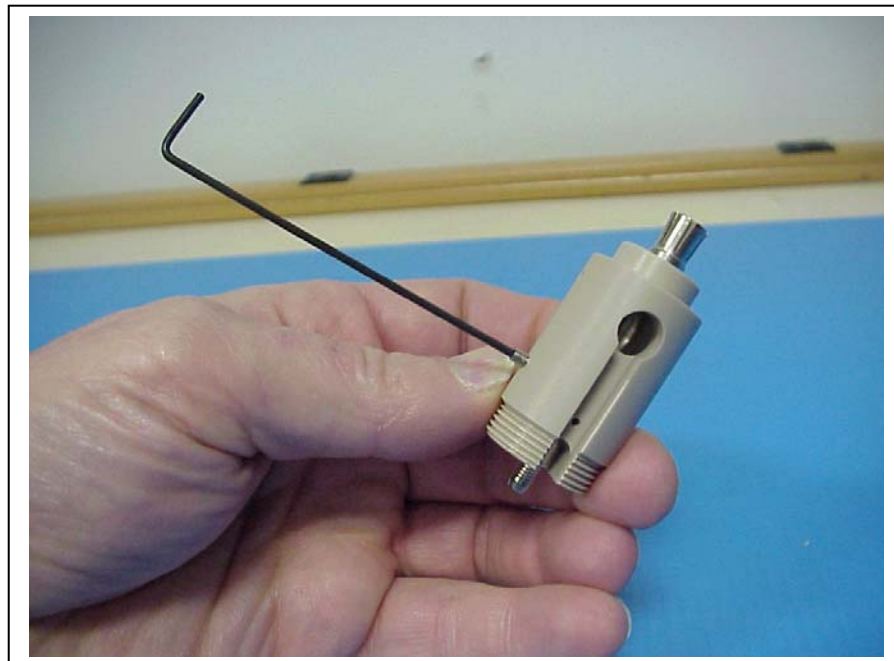


4.0 ASSEMBLY INSTRUCTIONS:

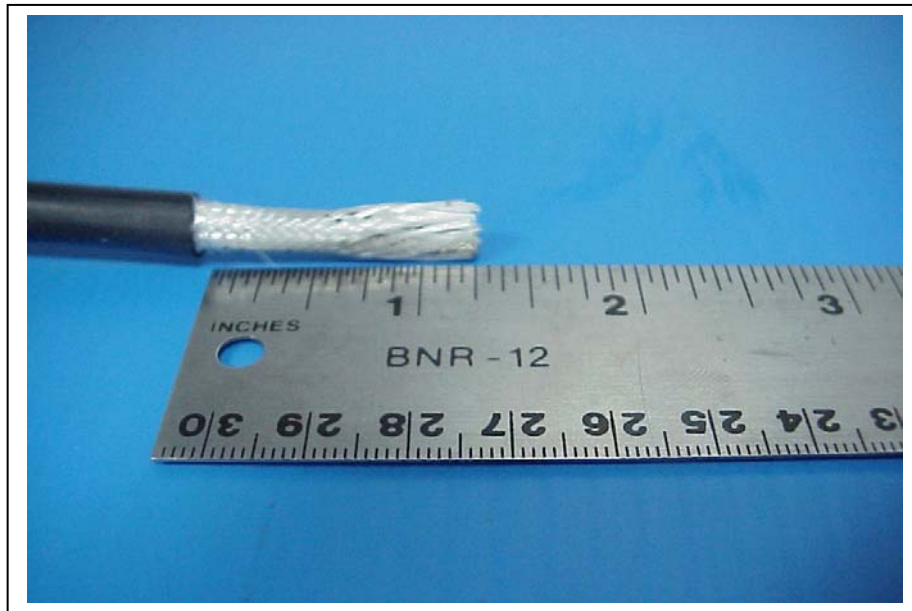
4.1 PREPARE CONNECTOR-Locate the following items:



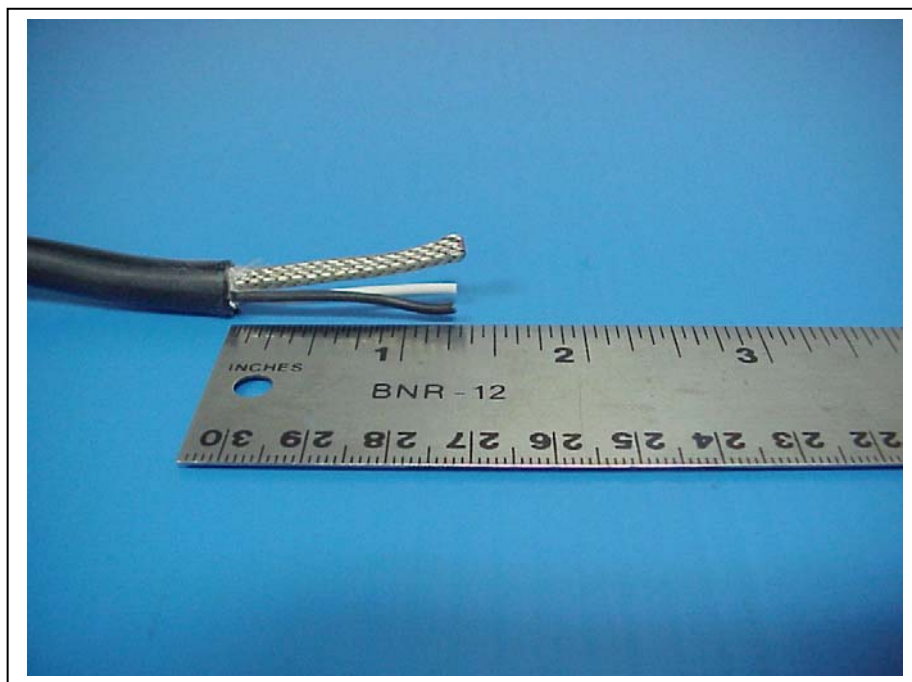
- 4.2 Install SHV10 connector (Item 7) into PEEK housing (Item 6). Secure connector in housing by installing two setscrews (Item 2). Do not make the set screws too tight at this time. If set screws are made too tight, connector housing will deform, preventing the insertion of HV contact. Set screws will be made tight later.



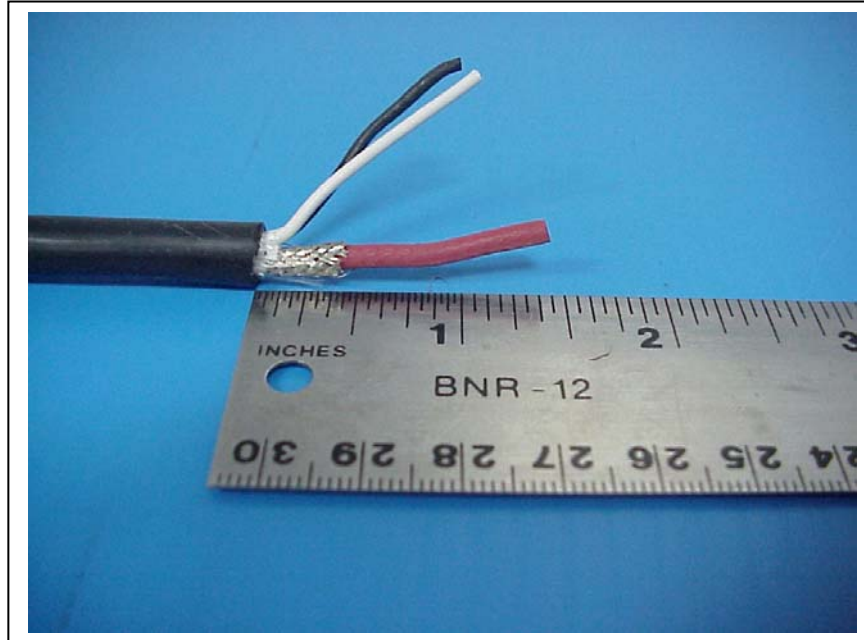
4.3 Strip outer cable jacket (Item 8) 1.25" as shown.



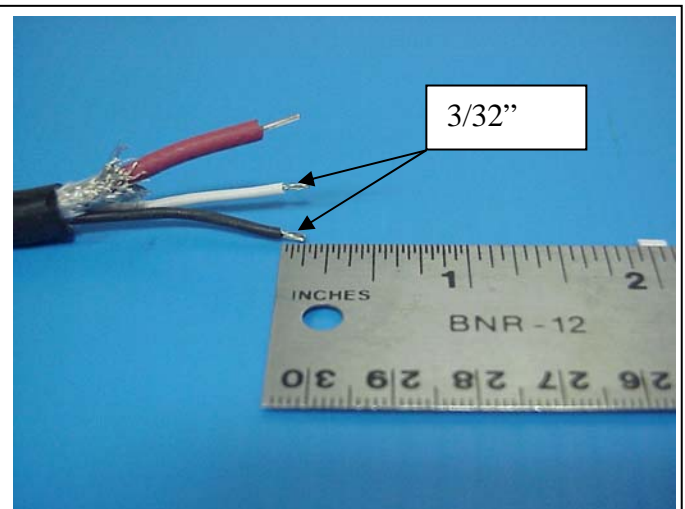
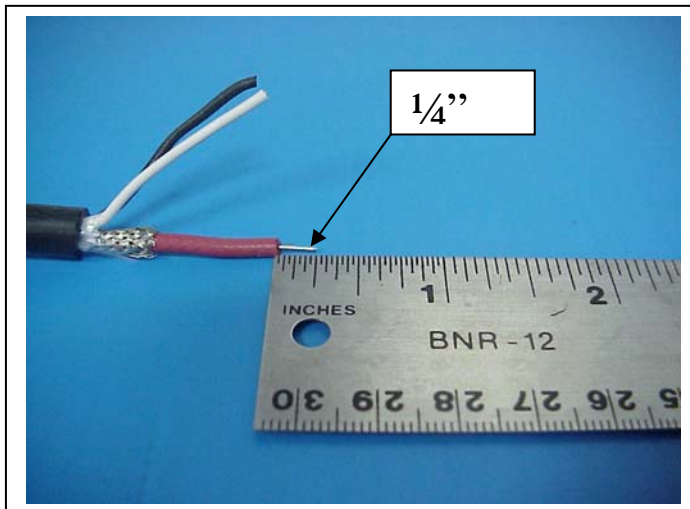
4.4 Remove fiberglass sheath to expose two safeconn wires (black and white), and shielded center conductor. Remove clear plastic wrap from braided shield.



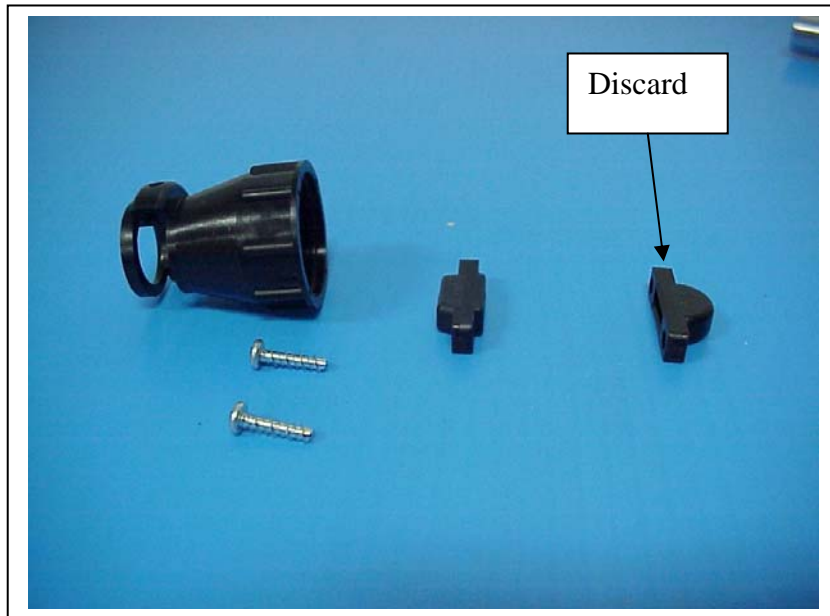
4.5 Strip braided shield to 7/16" length as shown.



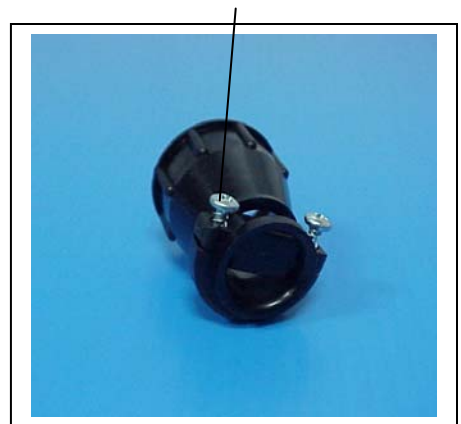
4.6 Strip wires by pinching insulation with fingernails and pulling. Strip red center conductor 1/4". Strip black and white wires 3/32".



4.7 Prepare cable clamp (Item 10).



Keep screws loose for now



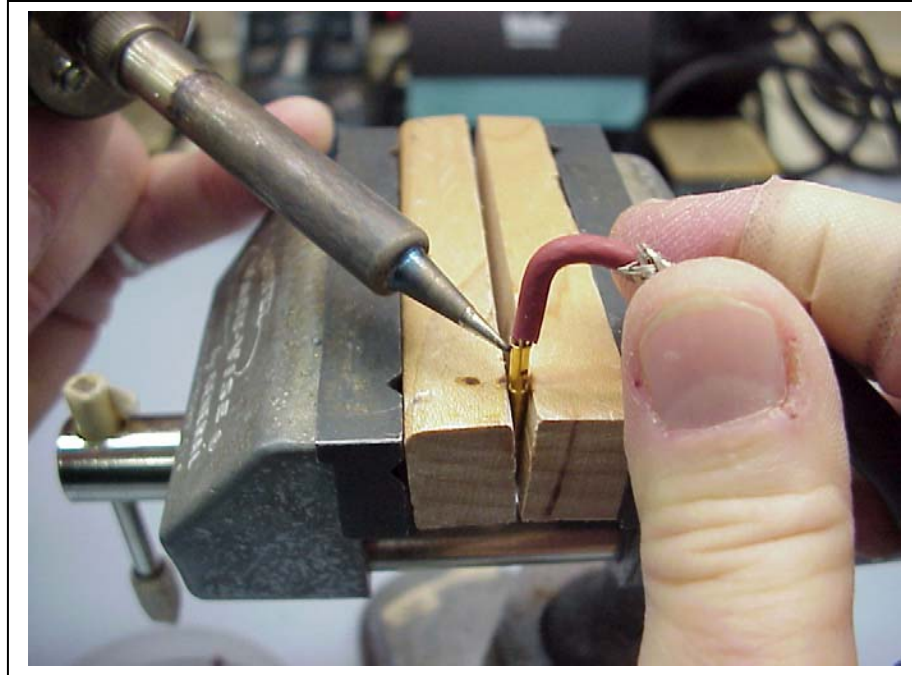
4.8 Cut shrink tubing (Item 11) to 2" length.



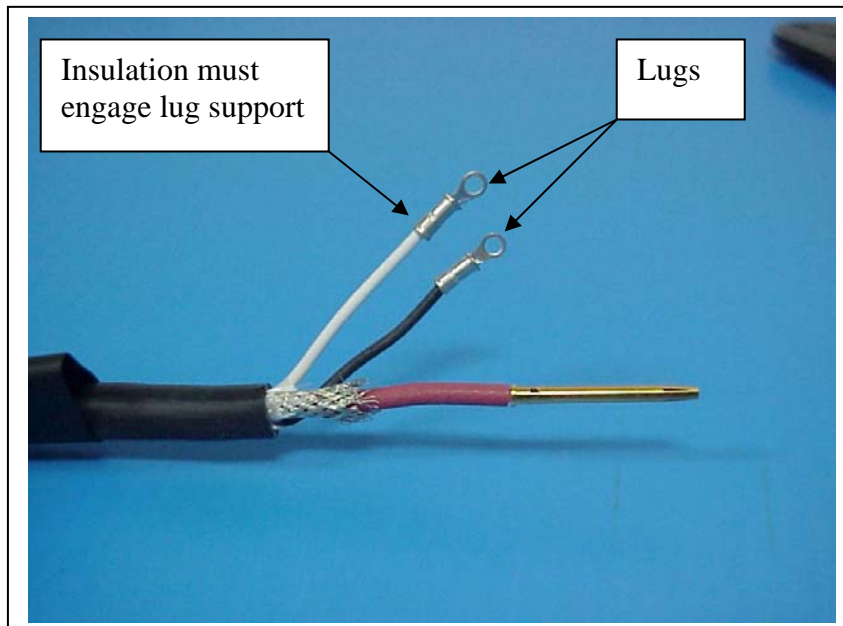
4.9 Slide cable clamp and shrink tubing over cable as shown.



- 4.10 Install red center conductor into HV contact (supplied with Item 7) until contact meets wire insulation (no gap). Use Hi-temp solder. Remove excess solder and flux when done.



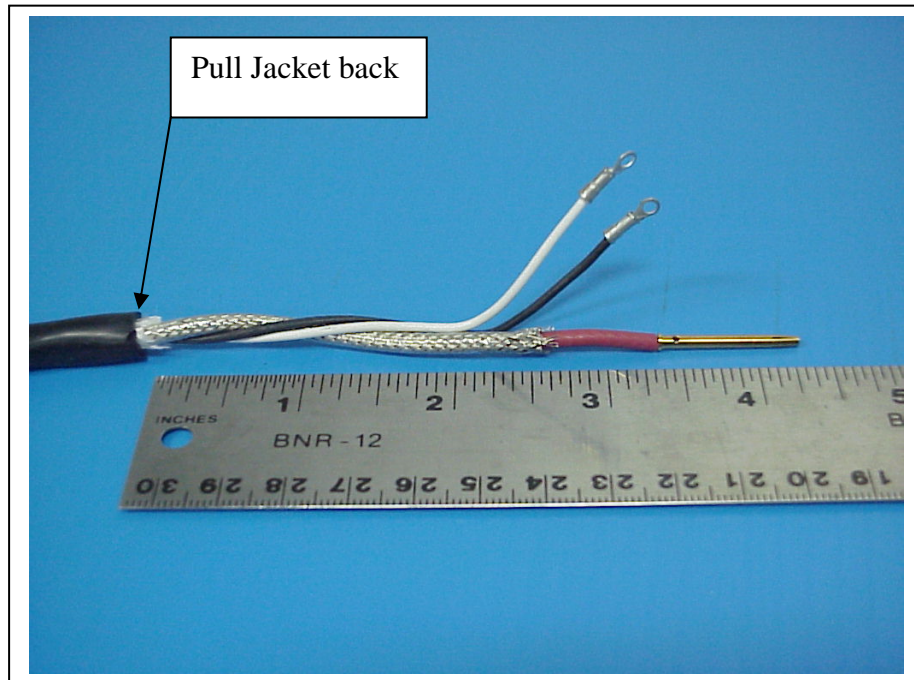
- 4.11 Install ring lugs (Item 9) onto black and white wires. Make sure insulation protrudes into insulation support on lug. Crimp both lugs.



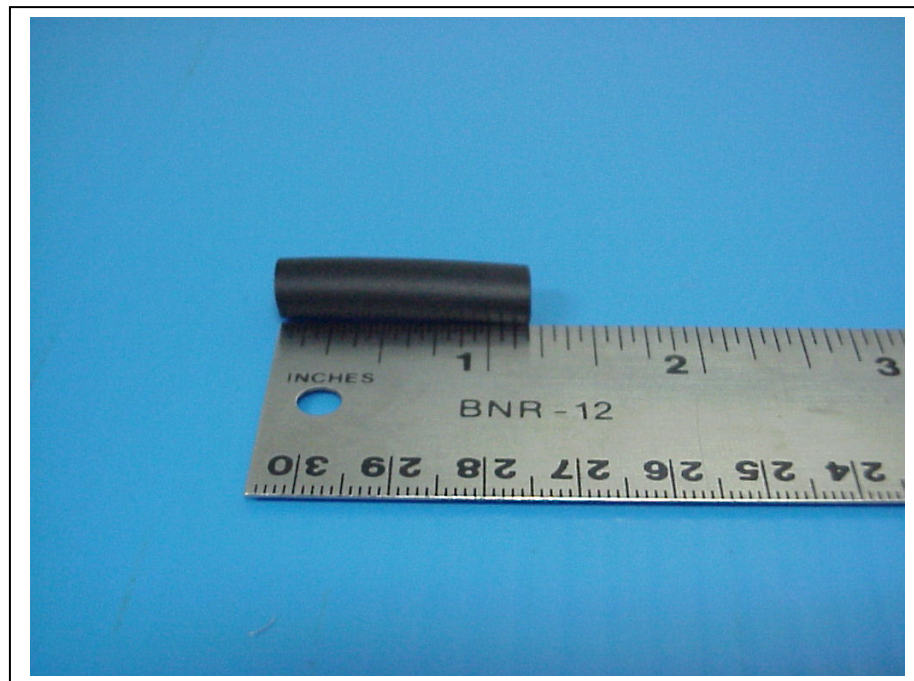
Use smallest crimp die



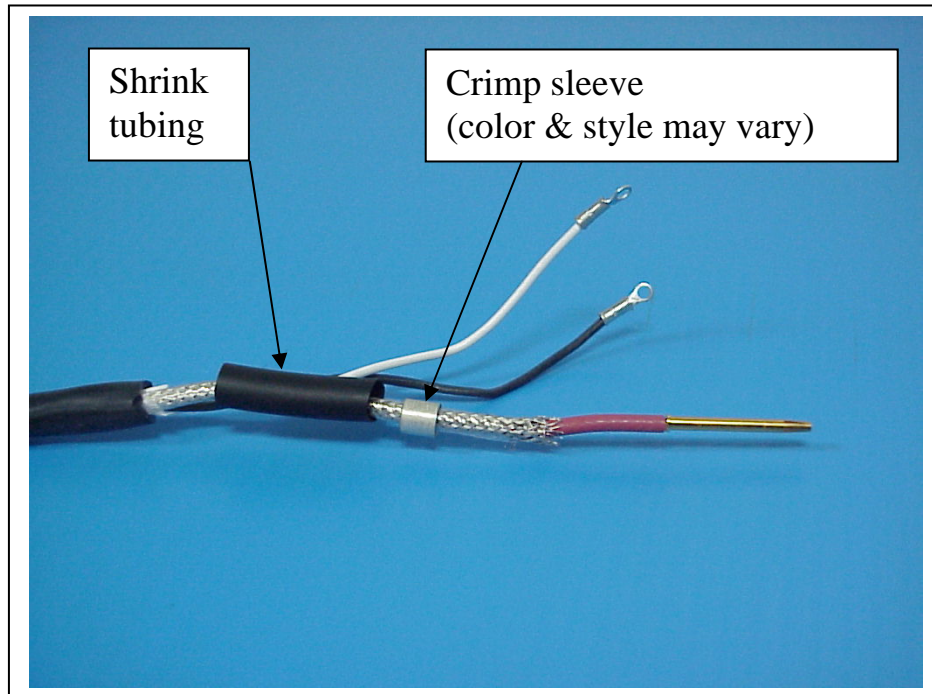
4.12 Pull cable jacket back approximately 2”.



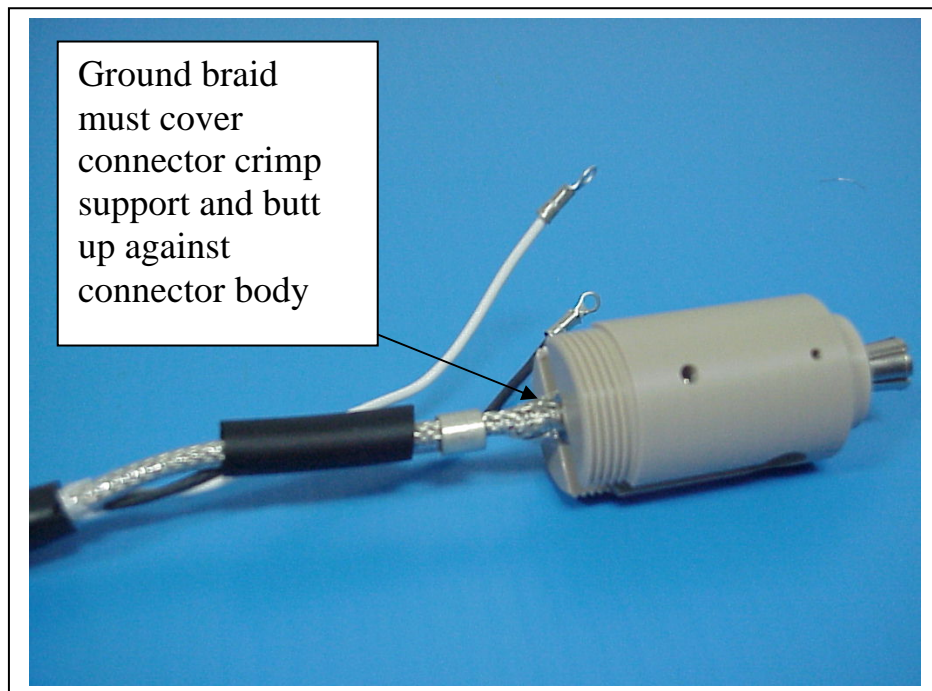
4.13 Cut Hi-Temp shrink tubing (Item 14) to 1.187” length.



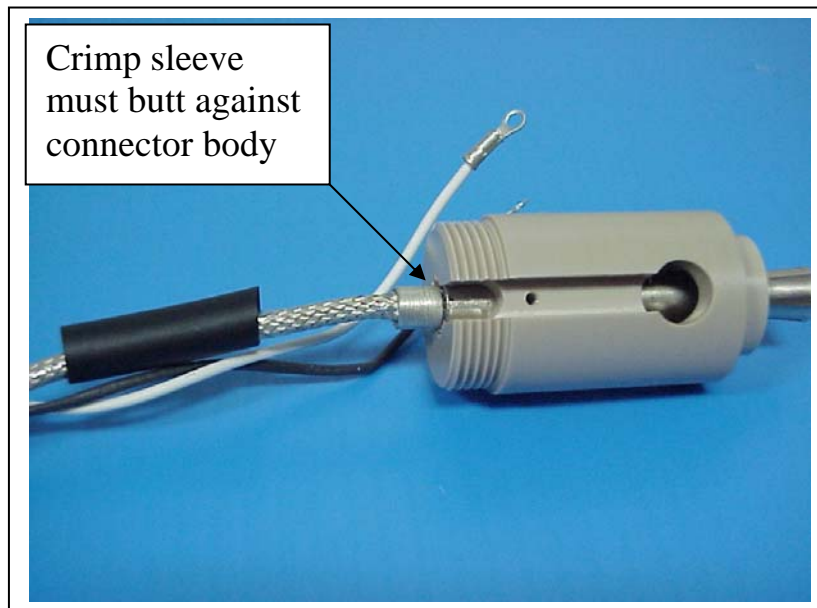
4.14 Slide the shrink tubing (Item 14) and crimp sleeve (Item 13) onto cable.



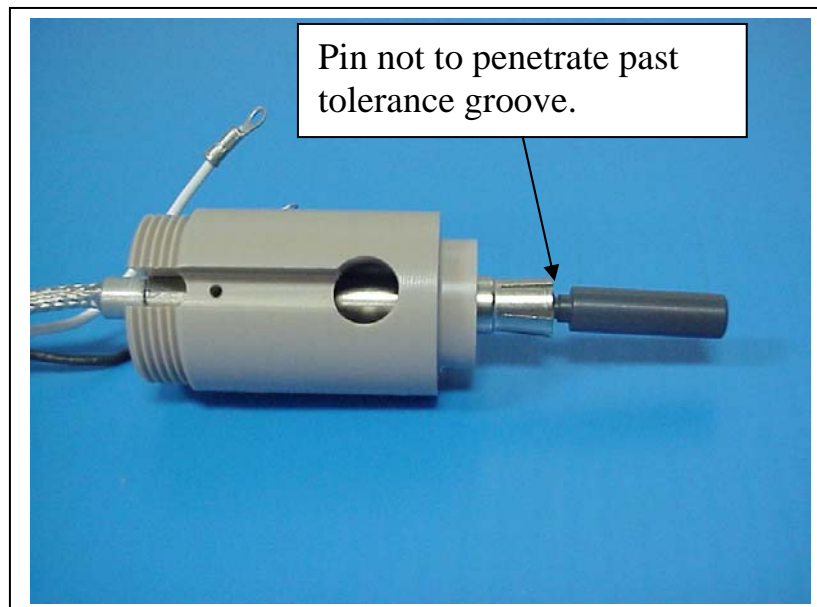
4.15 Insert HV contact into SHV10 connector until it snaps into place. Make sure ground braid covers crimp support on connector and butts up against connector body.



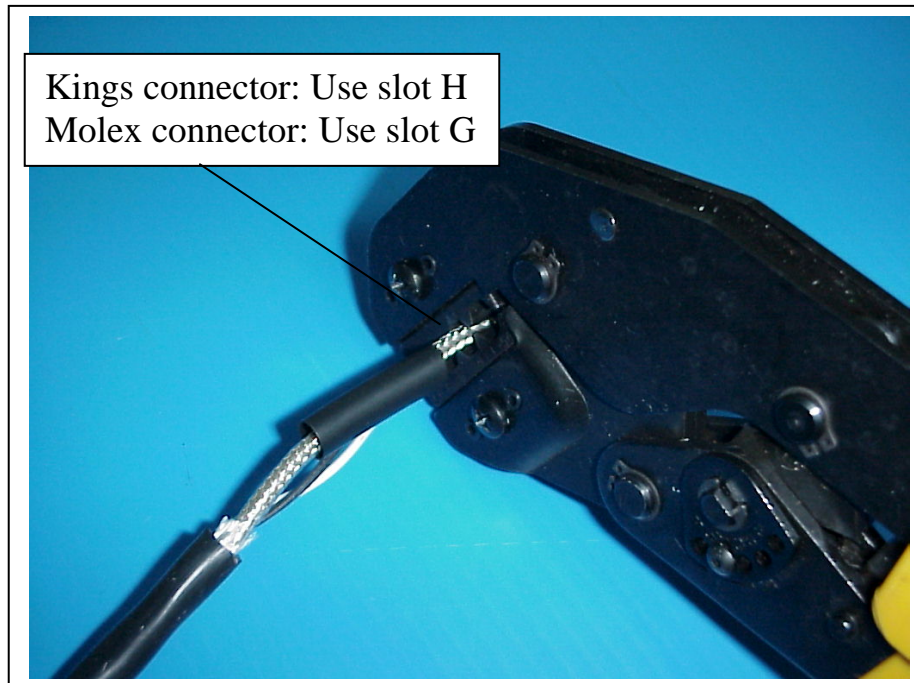
- 4.16 Slide crimp sleeve (Item 13) over connector crimp support. It may be a tight fit, but crimp sleeve must butt up against connector body. Trim excess ground braid sticking up between connector body and crimp sleeve.



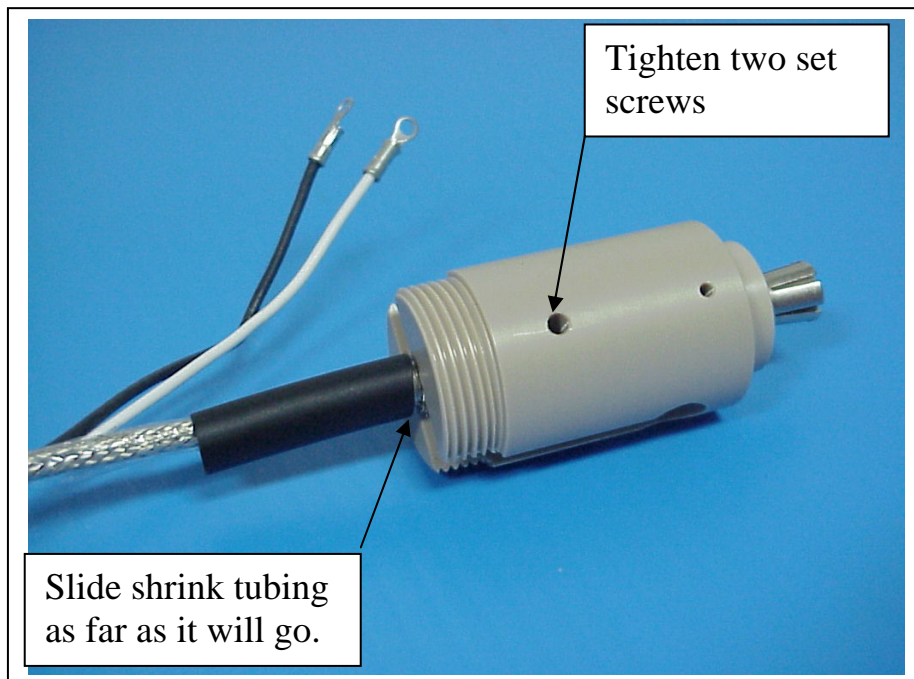
- 4.17 Check pin depth with Depth Gauge with tolerance groove. The depth gauge is not to penetrate beyond tolerance groove. (The depth can be checked with a caliper. It must not exceed .582" (14.7mm). If pin depth is correct, proceed to step 4.18.



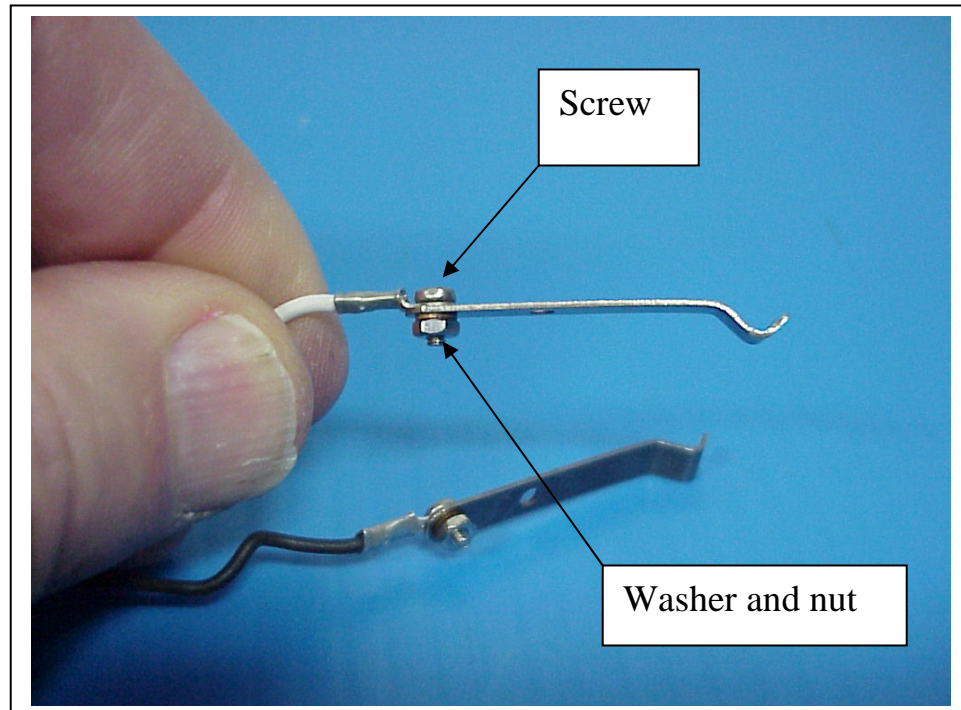
4.18 Crimp ferrule using crimper slot shown. Recheck pin depth after crimping.



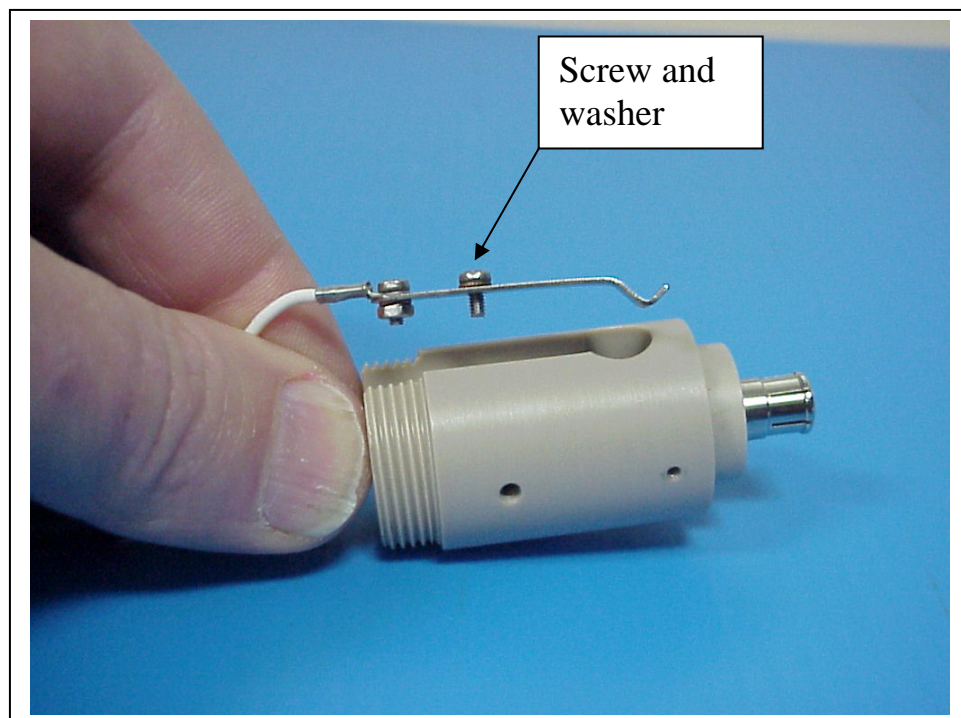
4.19 The set screws that hold the SHV connector in the housing can now be tightened. Also, slide shrink tubing (Item 14) over crimp sleeve. Tubing should butt up against connector body. Shrink the tubing.



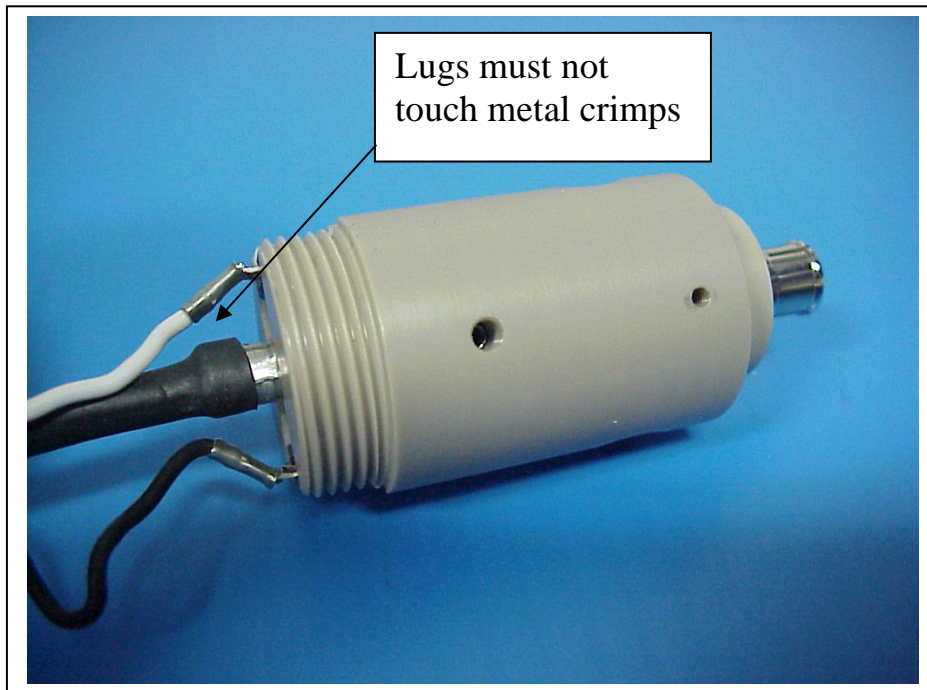
- 4.20 Assemble formed spring contacts (Item 5) to lugs on black and white wires using screw (Item 1), washer (Item 3), and nut (Item 4) as shown.



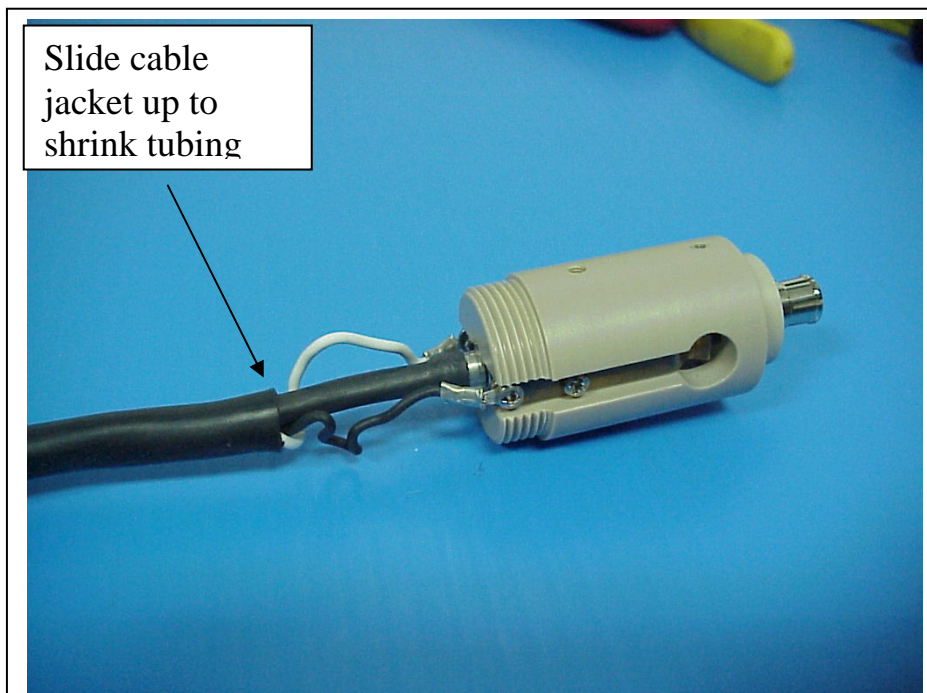
- 4.21 Assemble two spring contacts to PEEK connector housing using screw (Item 1) and washer (Item 3).



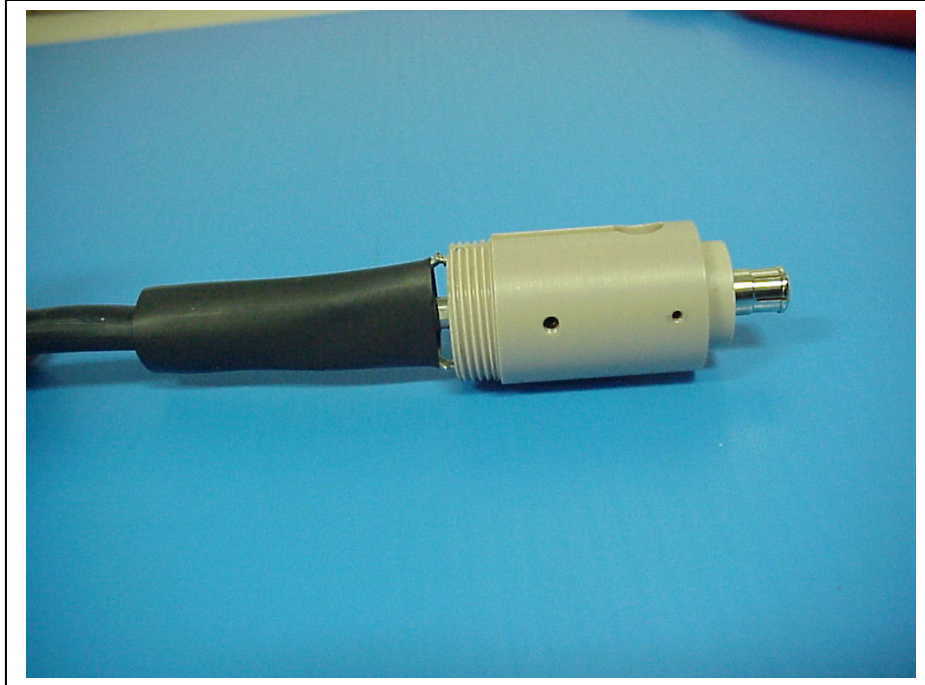
4.22 OPTIONAL: Bend lugs inward slightly. However, make sure lugs do not short out against crimp sleeves. Shrink tubing should prevent shorting, but leave gap at least as big as shown.



4.23 Push (stretch) the cable jacket forward until it meets the shrink tubing.



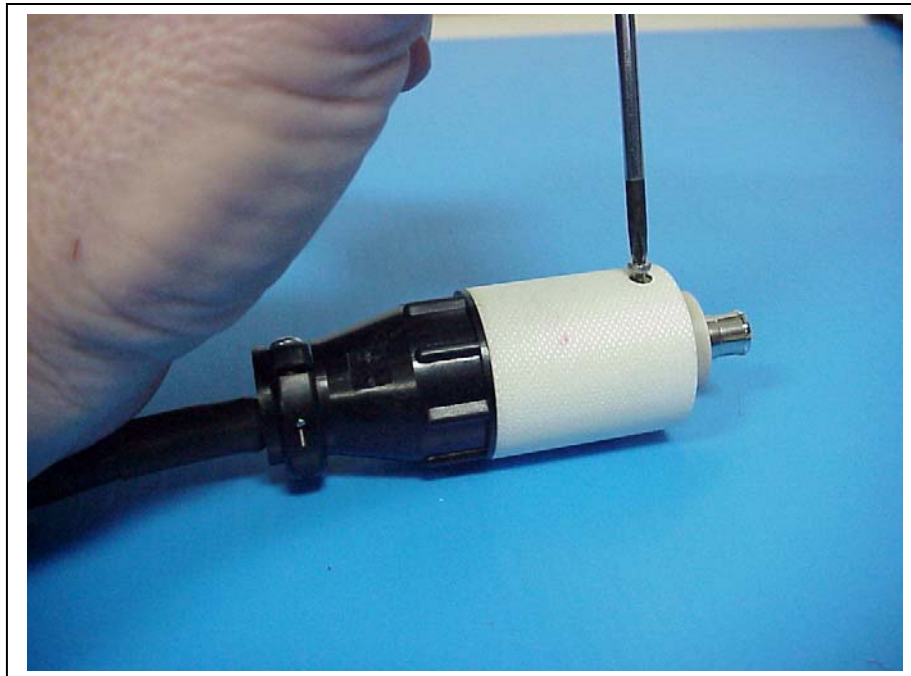
- 4.24 Slide shrink tubing (Item 11) as far as it will go over wires and lugs. Shrink the tubing.



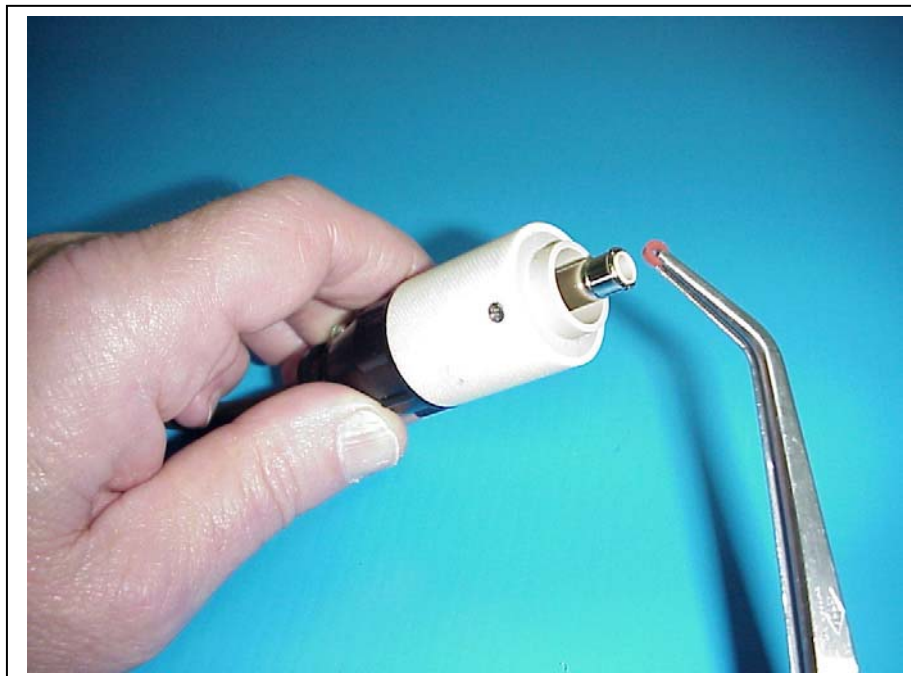
- 4.25 Screw cable clamp onto the housing. Tighten both screws. Make sure cable is secure in clamp. If loose, clamp may be installed upside down.



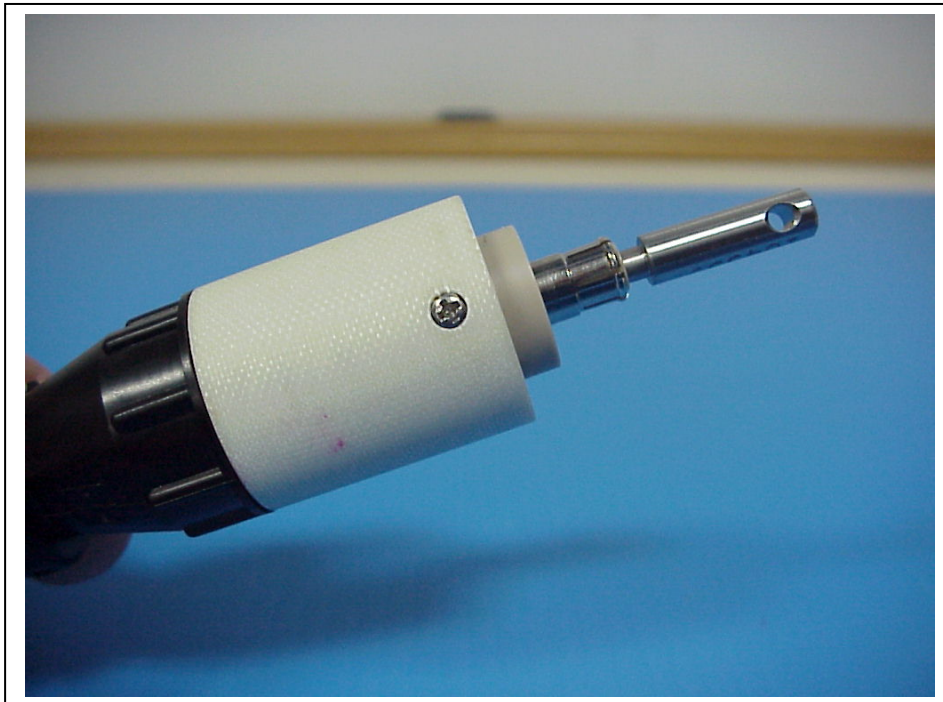
4.26 Install shell (Item 12) using screw (Item 1).



4.27 Install the red grommet supplied with SHV10 connector (Item 7). If two grommets are in the packet, use the larger one and discard the small one.

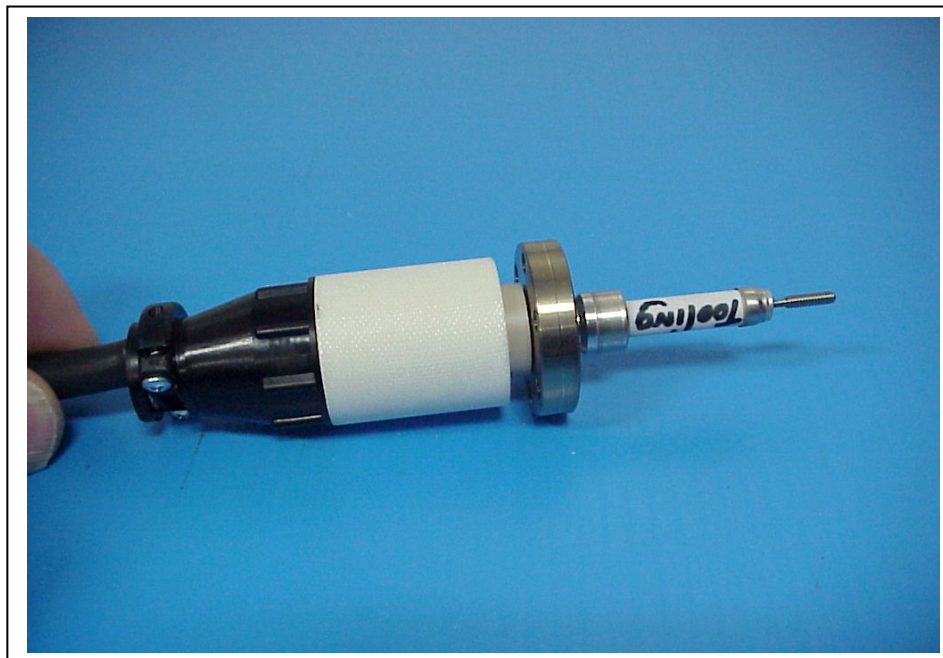


4.28 Use pin depth gauge to push grommet in as far as possible.



4.29 Install SHV10 feedthru tooling to fully eat the grommet.

NOTE- This step can also be accomplished later, when cable is connected to feedthru on cable test fixture during cable test procedure.



ASSEMBLY COMPLETE



2915 133rd Street West, Shakopee, MN 55379

SHEET 19 OF 19

TITLE
PROC,CA ASM,SCO,PUMP

NUMBER
430018

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