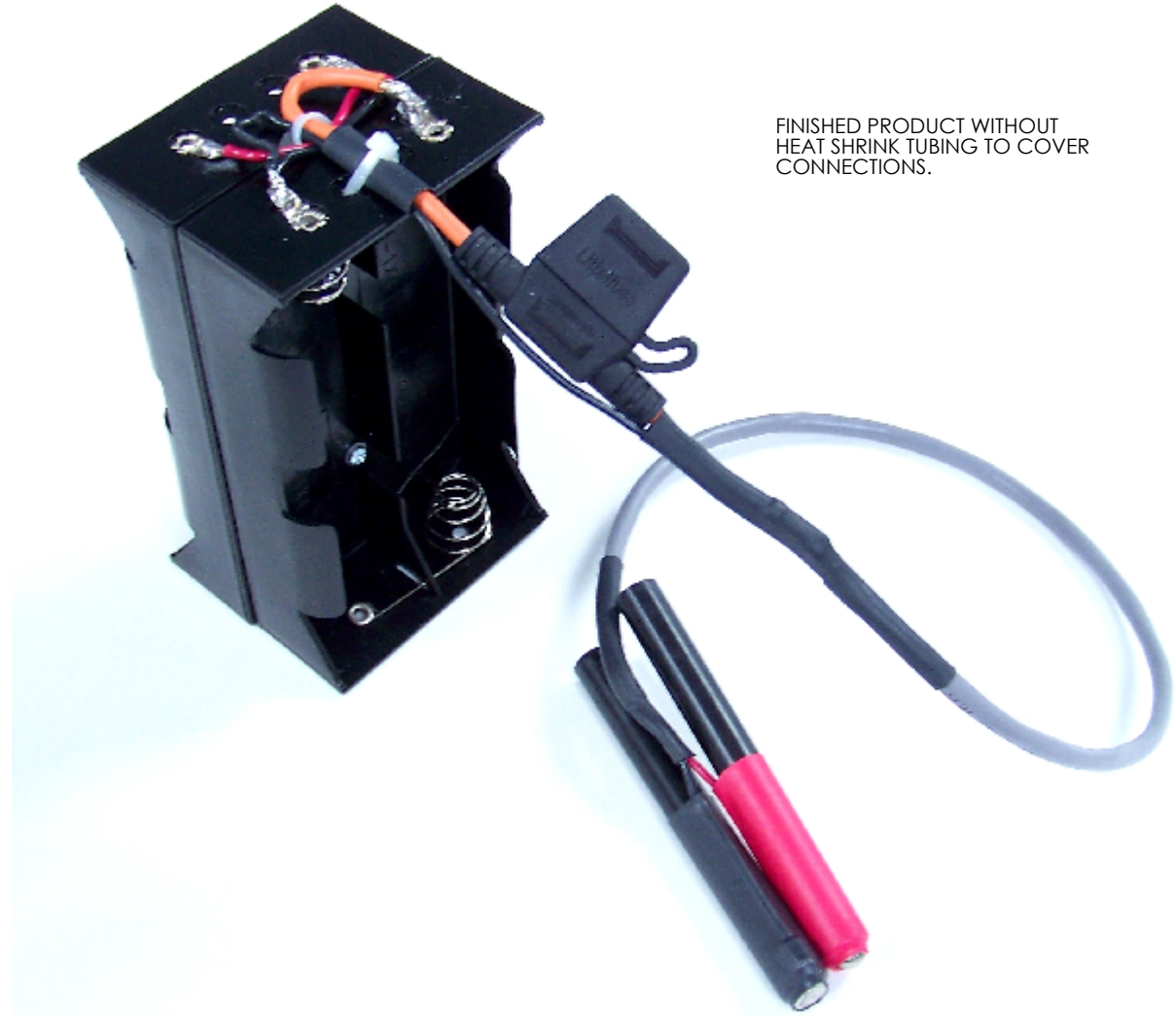


LEAD FREE

REV.	REVISION DESCRIPTION	DATE	BY	ECO
A	DRAWING CREATED.	01/30/2012	WS	4069
B	CHANGED OUTER TAPE TO PVC HEATSHRINK TUBING. CLARIFIED ASSEMBLY PROCESS.	6/26/2013	EB	4236
C	RED LINE EDITS FROM PRODUCTION.	10/24/2013	EB	4266
D	CHANGE RIVET SOLDER TO EPOXY	8/25/2017	DWA	4622
E	REVISED INSTRUCTIONS AND FIXED DIMENSIONS	9/25/2018	DCW	4740
F	CLARIFIED ASSEMBLY INSTRUCTIONS, REMOVED SBAT015.01 AND SBAT015.02	4/10/2019	DPW	4802
G	REPLACED 0220.0016 DP100 WITH LOCITITE EA 9462	3/5/2020	DCW	4954

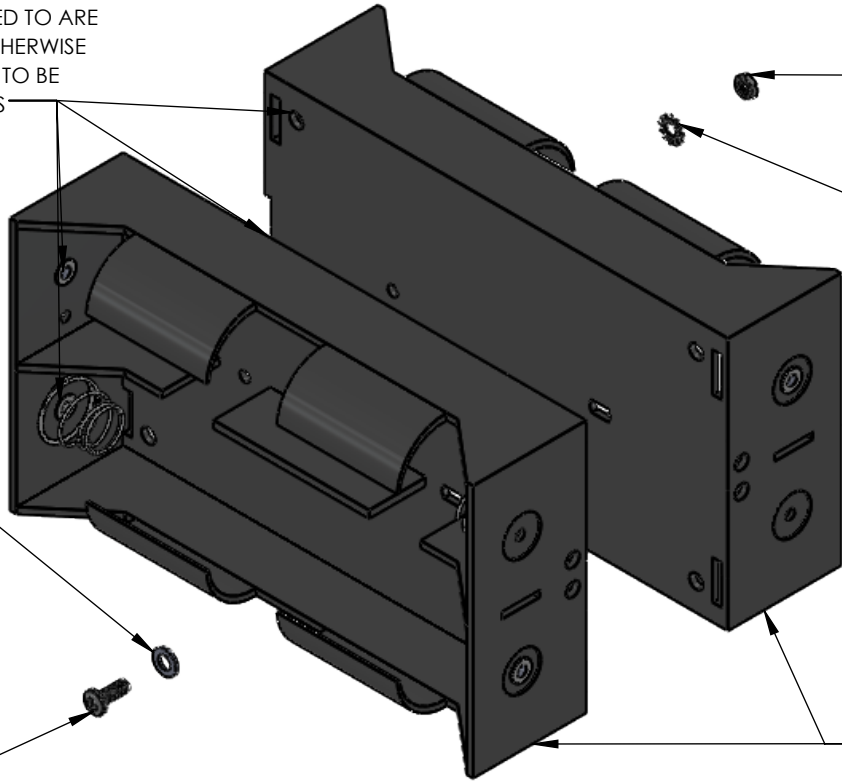


FINISHED PRODUCT WITHOUT HEAT SHRINK TUBING TO COVER CONNECTIONS.

BE SURE THAT THAT THE EYELETS THAT CAN BE SOLDERED TO ARE ON THE SAME SIDE, OTHERWISE ONE 0285.0023 NEEDS TO BE ROTATED 180 DEGREES

7065.0005 WASHER, 0.255" X 0.135" SS

5290.0016 SCREW, PHILLIPS 4-40 X 5/16"



3825.0004 NUT, 4-40 AND LOC-TITE 271

7100.0005 WASHER, INTERNAL STAR, #4

0285.0023 BATT HOLDER, 4 X D

USE **LOC-TITE 271** (RED) ON SCREWS AND NUTS. SIDE OR ORIENTATION THROUGH THE BATTERY TRAYS DOES NOT MATTER, BUT INSTALL BOTH SETS OF SCREWS/WASHERS/NUTS IN THE SAME ORIENTATION.

Notes:

1. See BOM as provided by PCB Engineering.
2. All equivalencies must be approved by PCB Engineering.
3. All components and processes must be ROHS compliant.

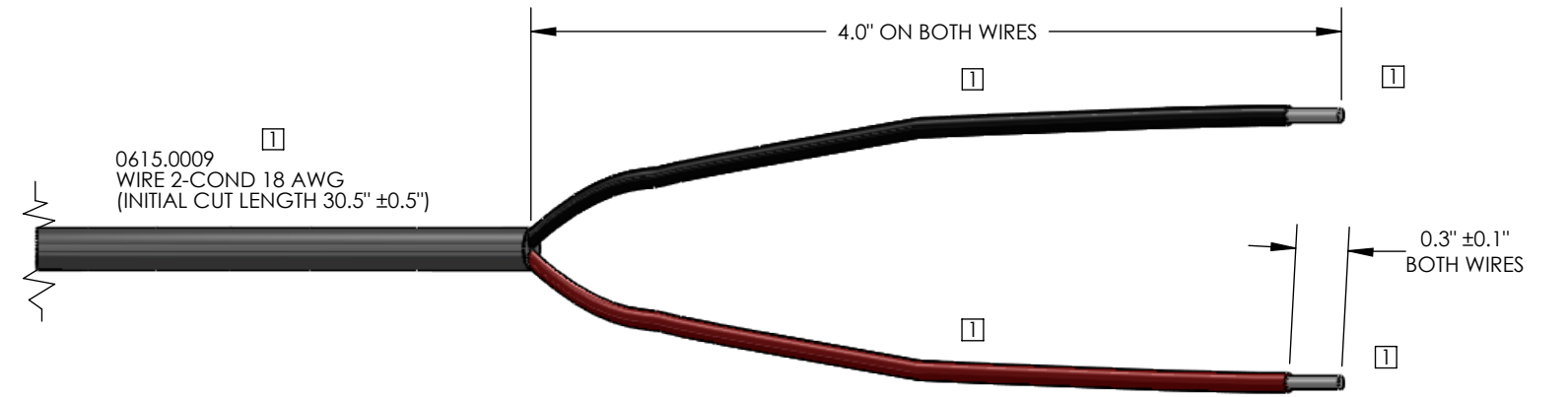
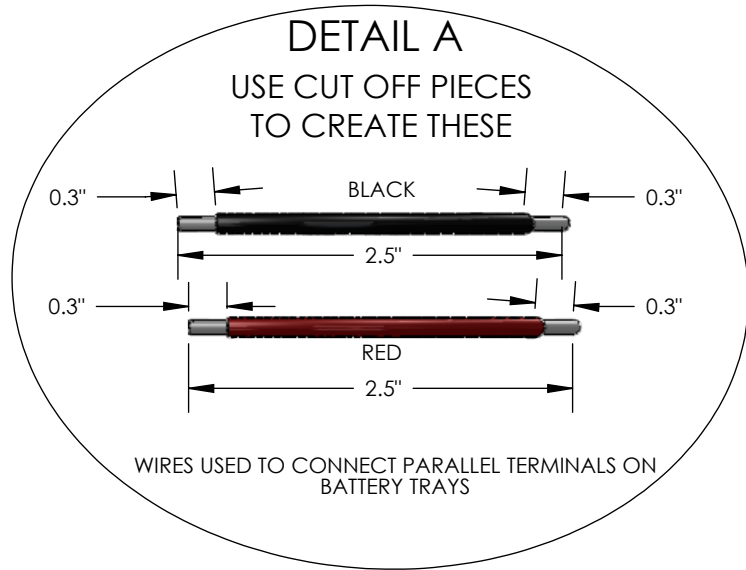
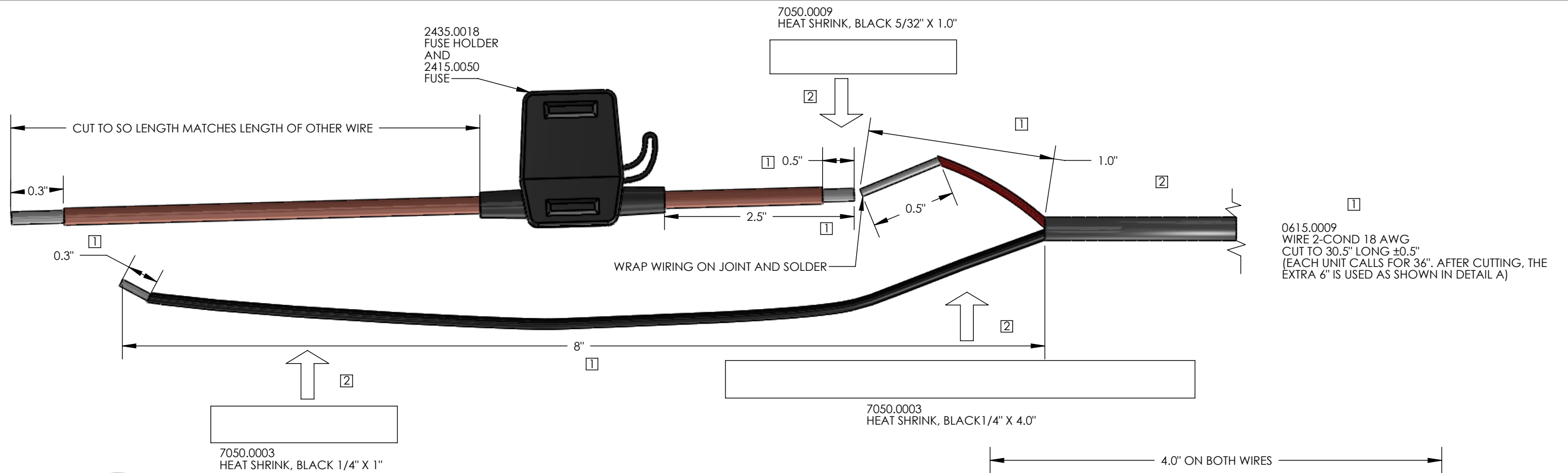


TITLE
BAT015 EXTERNAL BATTERY PACK

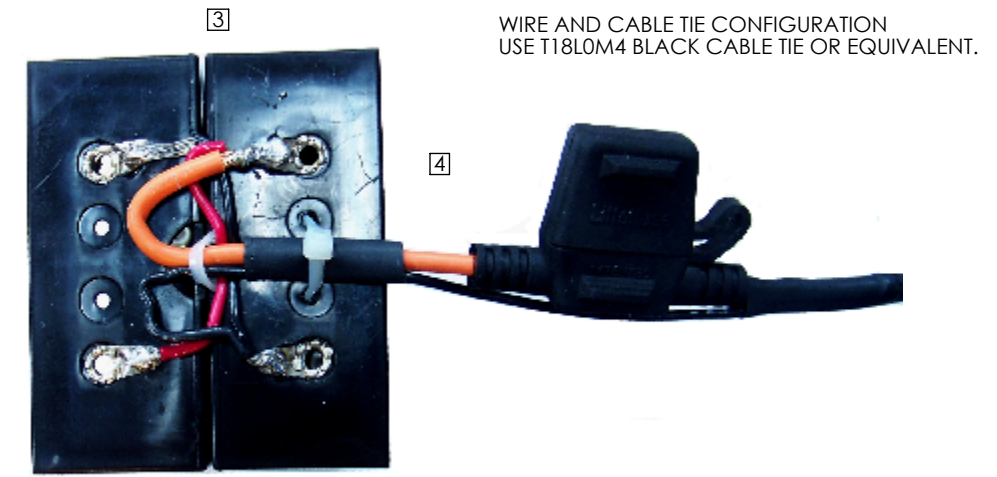
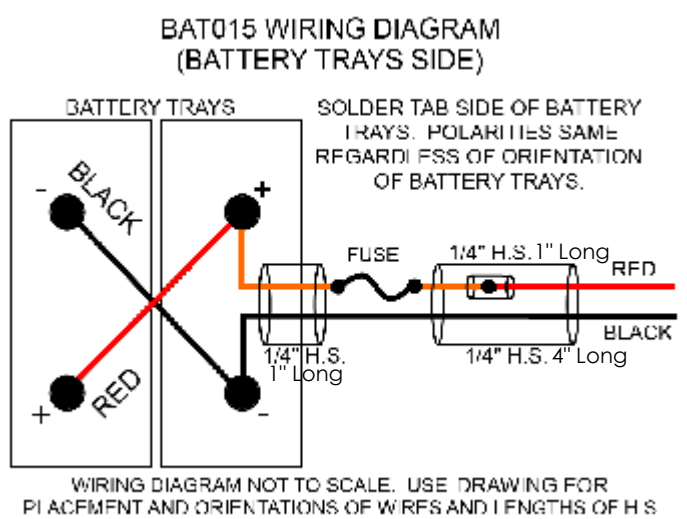
PROPRIETARY AND CONFIDENTIAL THIS DOCUMENT, SUBMITTED IN CONFIDENCE, CONTAINS PROPRIETARY INFORMATION WHICH SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF PCB PIEZOTRONICS, INC.
COPYRIGHT © PCB PIEZOTRONICS, INC. FILE NAME: BAT015 BAT015 EXTERNAL BATTERY

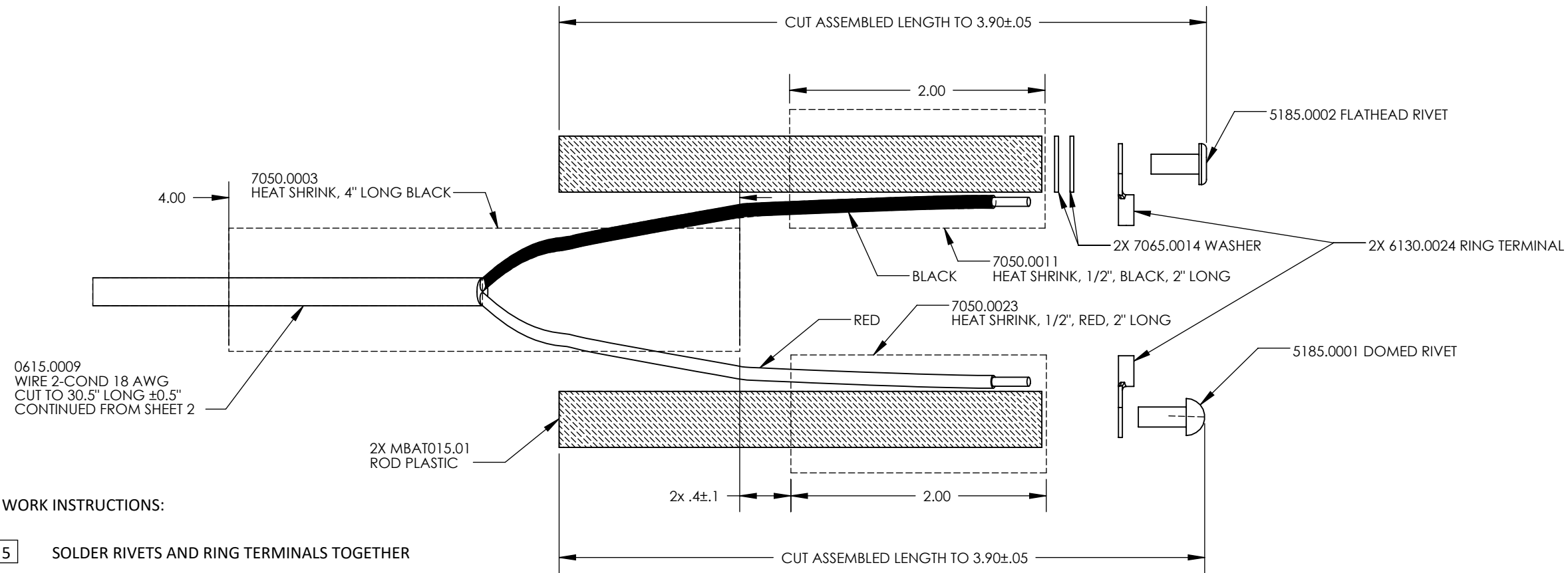
AUTHOR
C. THOMPSON
DATE
1/30/2012

SIZE
B
NUMBER
BAT015
SCALE 1:8
REV.
G
SHEET 1 OF 4



- WORK INSTRUCTIONS:**
- 1 CUT WIRE TO SPECIFICATIONS.
 - 2 REMEMBER TO SLIDE ON HEAT SHRINKS BEFORE SOLDERING.
 - 3 SOLDER WIRES TO BATTERY TRAYS AS SHOWN IN PHOTO.
 - 4 LACE 8" CABLE TIE THROUGH BATTERY TRAY AND WIRE TO SECURE WIRE IN TWO LOCATIONS, AS SHOWN IN FIGURE. TIGHTEN CABLE TIGHT ENOUGH THAT CABLE CANNOT SLIDE THROUGH IT.

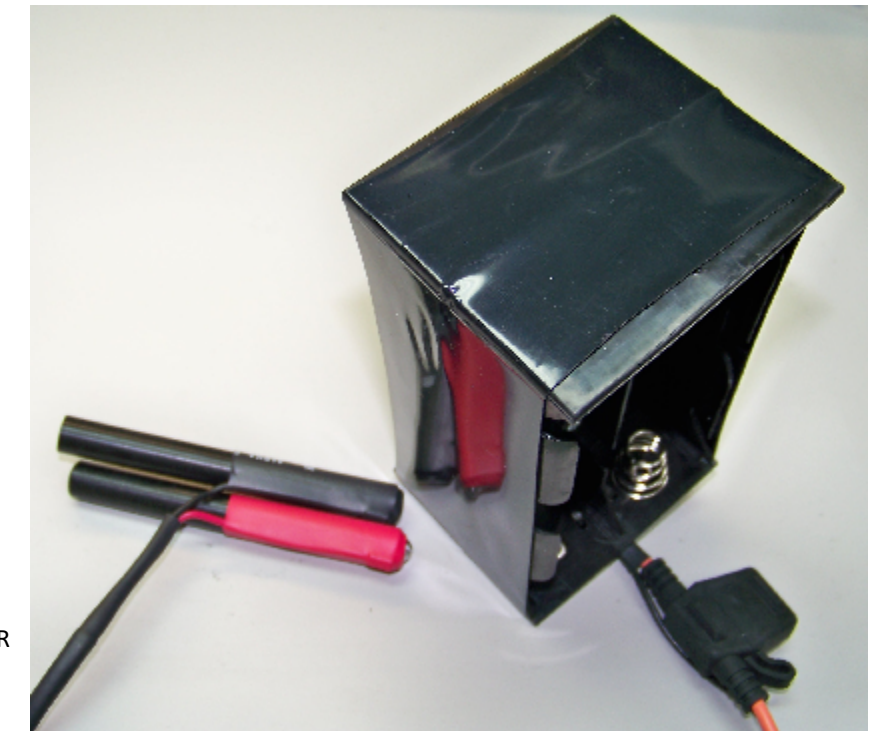




FINISHED ROD ENDS

WORK INSTRUCTIONS:

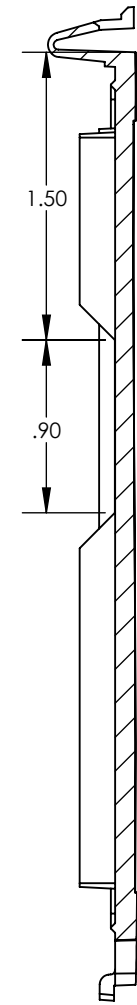
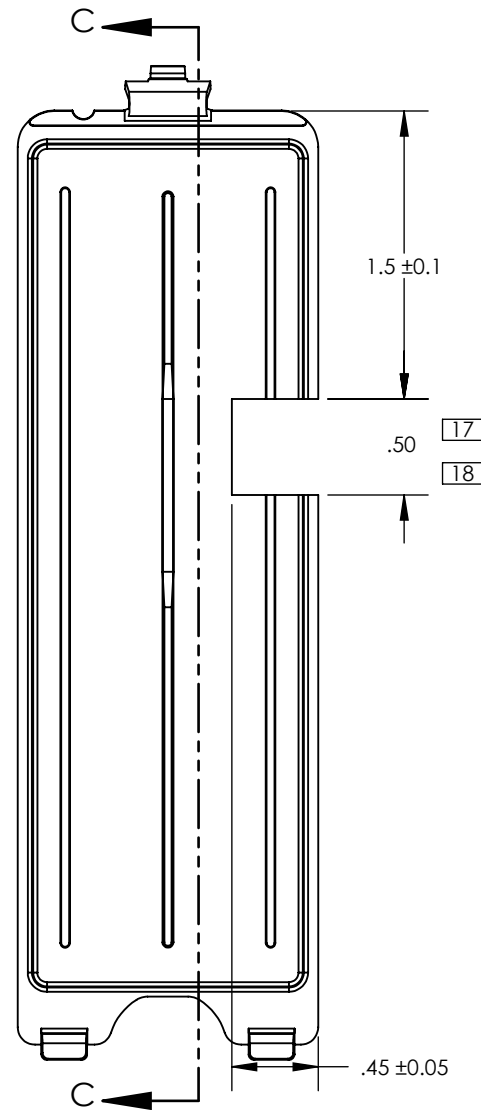
- 5 SOLDER RIVETS AND RING TERMINALS TOGETHER
- 6 PUT A SMALL AMOUNT OF LOCTITE EA 9462 EPOXY ON SHAFT OF DOMED RIVET AND PRESS INTO ONE OF THE MBAT015.01 BLACK RODS.
- 7 PUT TWO 7065.0014 FLAT WASHERS ON SHAFT OF FLAT RIVET. PUT SMALL AMOUNT OF LOCTITE EA 9462 EPOXY ON SHAFT OF FLAT RIVET AND PRESS INTO THE OTHER MBAT015.01 BLACK ROD.
- 8 IF NEEDED CUT OR GRIND THE ASSEMBLED LENGTH OF EACH BATTERY ROD TO 3.90" ±0.05" ON THE LARGE DREMEL WHEEL. END RESULT SHOULD HAVE A FLAT BACK IF CUT OR GROUND.
- 9 PUT ON 7050.0003 1/4" HEAT SHRINK (4" LONG) BEFORE DOING STEPS BELOW.
- 10 CRIMP THE WIRES INTO THE RING TERMINALS USING ANDERSON CONNECTOR CRIMPERS, THEN SOLDER.
- 11 BEND THE RING TERMINALS 90 DEGREES. COMPRESS THE TERMINALS FLAT TO THE MBAT015.01 RODS WITH PLIERS.
- 12 SHRINK HEAT SHRINK WITH SLIGHT OVERLAP OVER RIVET HEADS. ENSURE THAT THE RED HS INSTALLED WITH DOMED RIVET, AND BLACK HS INSTALLED WITH FLAT RIVET.
- 13 SHRINK 4" LONG 7050.0003 HEAT SHRINK, 0.4" ±0.1" AWAY FROM 2" LONG 7050.0023 RED HEAT SHRINK.
- 14 CAREFULLY CUT 7050.0027 (WIDE) HEAT SHRINK TUBING TO 2 AND 5/16" (±1/16") WIDE ALL THE WAY ACROSS. THIS CUT SHOULD BE AS STRAIGHT AS POSSIBLE FOR AESTHETICS. CAN USE PAPER CUTTER FOR THIS PROCESS.
- 15 INSTALL CUT 7050.0027 SHRINK TUBING OVER THE BATTERY ASSEMBLY AS SHOWN IN FINISHED ASSEMBLY FIGURE AND CAREFULLY SHRINK ON WITH HEAT. IT IS RECOMMENDED TO USE THE CREST DRYER AT 180 °F FOR THIS PROCESS. SHRINK THE TUBING TO THE BATTERY ASSEMBLY JUST ENOUGH TO BECOME SNUG AND WITH MINIMAL WRINKLES. DO NOT OVER SHRINK THE TUBING TO THE POINT THAT IT BECOMES WARPED OR HEAT INCONSISTENTLY TO WHERE THE SHRINK TUBING BECOMES IRREGULARLY SHAPED.
- 16 TRY TO KEEP THE OUTSIDE APPEARANCE OF THIS SHRINK TUBING AS CLEAN AS POSSIBLE. MINIMIZE FINGERPRINTS, SCRATCHES, AND SMUDGES. WEAR GLOVES WHEN HANDLING.
- 17 PLACE LABEL ON CABLE, LABELING THE PRODUCT AS "BAT015" WITH THE CURRENT PRODUCT REVISION.



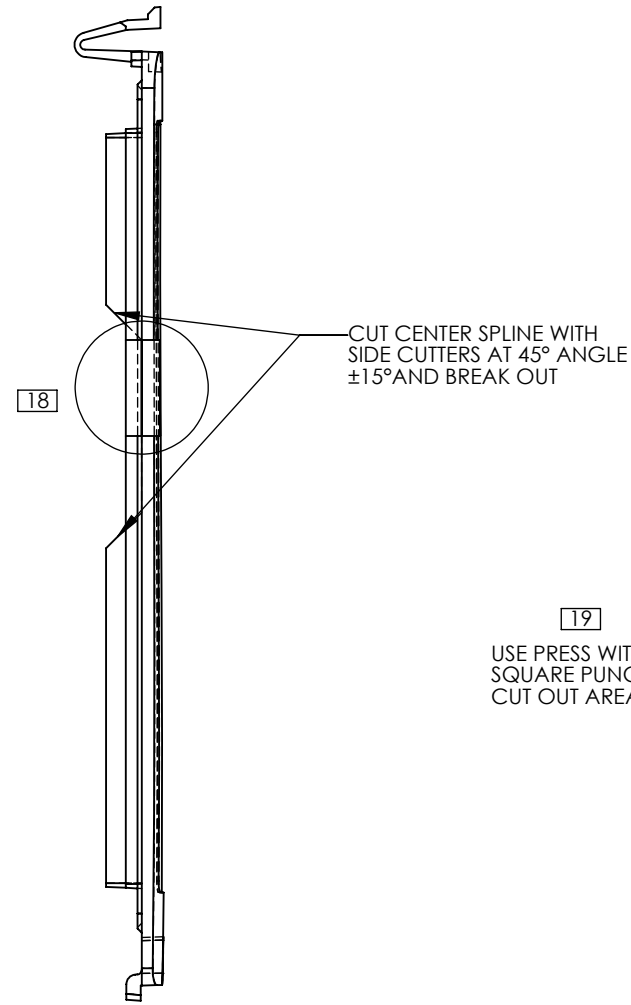
FINISHED ASSEMBLY

WORK INSTRUCTIONS:

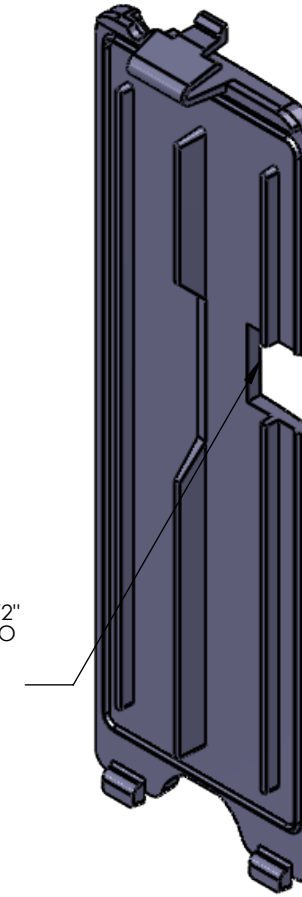
- [18] CAN USE A PREMODIFIED M770.0009, WITH KNOWN GOOD DIMENSIONS AS A TEMPLATE FOR MEASURING CUT DIMENSIONS.
- [19] USE PUNCH TO CUT OUT AREA. TO ENSURE CLEAN CUTS WHEN PUNCHING, MAKE SURE BATTERY DOOR IS ORIENTED WITH THE RIBS ON THE DOOR FACING THE PUNCH.
- [20] APPLY LBAT015.01 BACK LABEL TO MODIFIED M770.0009 BATTERY DOOR. CUT OUT NOTCHED AREA OF LABEL WITH SHARP KNIFE. CUT AT 45° ANGLE TO ENSURE NO LABEL OVERHANG. CUT ON DOWN STROKE TO PREVENT DAMAGE TO LABEL.
- [21] NO PRINTING ON EXTERNALLY SHOWN HEAT SHRINK.



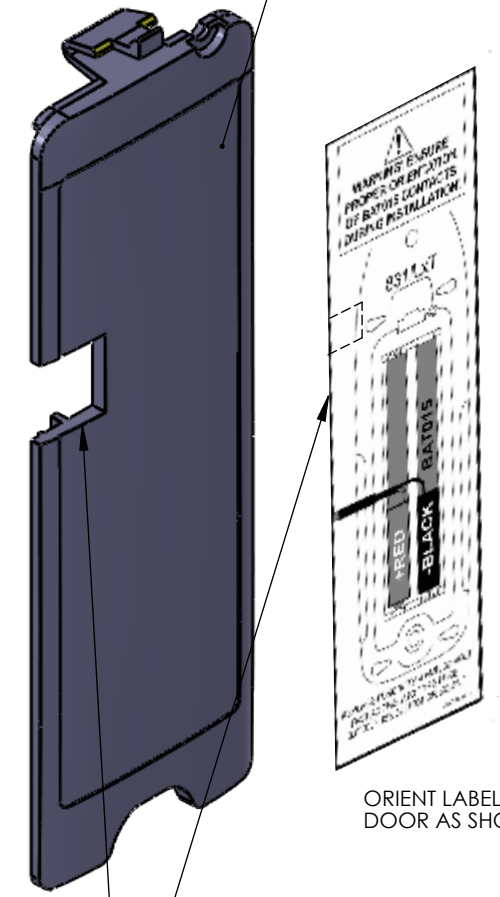
SECTION C-C



M770.0009 LxT CASE BATTERY DOOR



[19] USE PRESS WITH 1/2" SQUARE PUNCH TO CUT OUT AREA



APPLY LBAT015.01 BACK LABEL TO M770.0009 BACK DOOR

LBAT015.01 BACK LABEL

ORIENT LABEL ON BATTERY DOOR AS SHOWN HERE

AFTER LBAT015.01 BACK LABEL IS APPLIED TO MODIFIED M770.0009 CASE BATTERY DOOR, CUT OUT NOTCHED AREA OF LABEL WITH SHARP KNIFE.

TESTING REQUIREMENTS:

1. VERIFY LBAT015.01 LABEL IS ORIENTED CORRECTLY ON MODIFIED M770.0009 CASE DOOR.
2. CHECK TO BE SURE FUSE IS INSTALLED IN FUSE HOLDER.
3. USING OHM METER, VERIFY CONTINUITY $< 1\Omega$ FROM RED CONTACT ROD TO THE INNER POSITIVE TERMINALS (SMALLER BUTTON TERMINALS) OF BOTH BATTERY TRAYS.
4. USING OHM METER, VERIFY CONTINUITY $< 1\Omega$ FROM BLACK CONTACT ROD, TO THE INNER NEGATIVE SPRING TERMINALS OF BOTH BATTERY TRAYS.
5. VERIFY THAT THERE IS NO CONTINUITY FROM THE RED CONTACT ROD TO THE BLACK CONTACT ROD .
6. VERIFY BOTH POSITIVE AND NEGATIVE CONTACT RODS FIT INTO AN LxT OR 831 CASE, WITH CORRECT ORIENTATION. ALSO VERIFY THAT MODIFIED M770.0009 CASE DOOR CAN FIT ONTO CASE WITH BAT015 WIRES AND CONTACT RODS INSERTED, WITH MINIMAL BOWING OF THE CASE DOOR.

