26.00 PREPARING CABLE FOR TERMINATION AND SPLICING

26.01 PRIMARY SPLICES

26.02 SECONDARY SPLICES (600 VOLT)

26.03 T-BODIES/BOLTED ELBOWS

26.04 LOADBREAK ELBOWS

26.05 DEADBREAK ELBOWS

26.06 CABLE TERMINATORS

26.07 FAULT INDICATORS

FOR MAINTENANCE ONLY DRAWINGS

THE FOR MAINTENANCE ONLY DRAWINGS LISTED BELOW ARE NOT CONTAINED IN THE PRINTED SPEC BOOK, BUT ARE AVAILABLE ONLINE

PREPARING CONCENTRIC NEUTRAL CABLE FOR TERMINATION

1. POSITION CABLE INTO FINAL LOCATION AND CUT OFF ANY SURPLUS LENGTH. AT THE LOCATION SPECIFIED BY THE ACCESSORY INSTALLATION INSTRUCTIONS, REMOVE THE JACKET AND SECURE THE NEUTRAL AS SPECIFIED.

2. REMOVE THE SEMI-CONDUCTING SHIELD AS FOLLOWS:

NOTE: ONLY THE APPROVED CABLE SKINNING TOOLS SHALL BE ALLOWED FOR THIS PROCESS. THE USE OF A KNIFE TO SCORE CABLE INSULATION IS STRONGLY PROHIBITED.

(A) AT THE PROPER LOCATION, SCORE THE INSULATION SHIELD BY MAKING A CIRCULAR CUT PARTIALLY THROUGH THE SHIELD USING THE PROPER SHIELD REMOVAL TOOL (CN 33028903). DO NOT CUT THE UNDERLYING INSULATION. (SUGGESTION: PRACTICE WITH A SCRAP PIECE OF CABLE TO BE STRIPPED TO SET THE BLADE OF THE STRIPPING TOOL TO THE PROPER DEPTH.)

(B) SCORE THE SEMI-CONDUCTING SHIELD TO BE REMOVED BY MAKING A SPIRAL CUT FROM THE CIRCULAR CUT OUT TO THE END OF THE CABLE. DO NOT CUT THE UNDERLYING INSULATION. THE BLADE DEPTH OF THE TOOL MAY BE INCREASED TO CUT ALL THE WAY THROUGH THE SHIELD IN THE LAST 1/2" TO HELP START THE REMOVAL OF THE SHIELD.

(C) USING PLIERS WITH CLOSE FITTING JAWS (NEEDLE NOSE), LIFT THE SEMI-CONDUCTING SHIELD FROM THE INSULATION. THIS OPERATION IS MUCH EASIER WHEN THE CABLE IS CUT WITH A HACKSAW. WHEN APPROXIMATELY 1/4 OF THE SHIELD IS FREE, GRIP THE SHIELD BY HAND AND REMOVE IT TO WITHIN 1/2" OF THE CIRCULAR CUT.

(D) HOLDING A KNIFE-EDGE IN THE CIRCULAR CUT, CONTINUE TO PULL THE SHIELD OFF THE CABLE. HOLDING A KNIFE-EDGE IN THE CIRCULAR CUT AS THE SHIELD IS REMOVED PREVENTS THE SHIELD FROM LIFTING OFF THE INSULATION BEYOND THE CIRCULAR CUT. IF THE SHIELD IS LIFTED FROM THE INSULATION BEYOND THE CIRCULAR CUT, THE CABLE WILL FAIL PREMATURELY AT THIS POINT.

(3) CAUTION: BLACK DEPOSITS FROM THE SEMI-CONDUCTING SHIELD OR STRAND SHIELD THAT REMAIN ON THE SURFACE OF THE INSULATION MUST BE CAREFULLY AND COMPLETELY REMOVED. THIS IS ACCOMPLISHED BY MOISTENING A CLEAN CLOTH WITH CABLE CLEANING SOLVENT (CN 30525000) AND RUBBING BRISKLY OVER THE SURFACE OF THE INSULATION. DO NOT ALLOW ANY SOLVENT TO GET UNDER THE EDGE OF THE SEMI-CONDUCTING SHIELD AT THE CIRCULAR CUT. WIPE THOROUGHLY WITH A CLEAN CLOTH. THE APPROVED NON-METALLIC SANDPAPER MAY BE USED TO REMOVE RESIDUE WHERE THE CLEANER WILL NOT DO SO.

OUTER JACKET REMOVAL TOOL
FOR LC SHIELD CABLE
CN 9220100534

SEMI-CON SHIELD REMOVAL TOOL
CN 33028903

INSULATION STRIPPER #2 - 350 KCM
CN 9220101868

INSULATION STRIPPER #350 - 1000 KCM
CN 9220101869

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

PREPARING PRIMARY CABLE
FOR TERMINATION AND SPLICING

Duke Energy®

CAR

DWG.
26.00-01

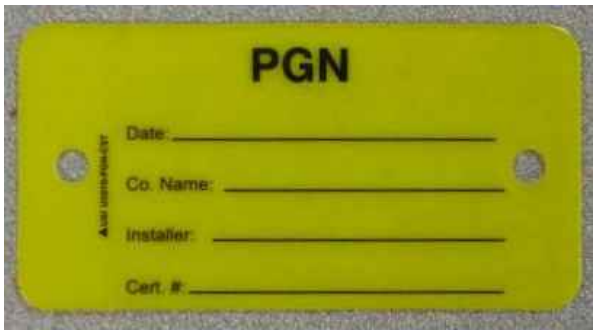
INSTALLATION OF BULK FEEDER SPLICES, TERMINATORS AND ELBOW

PROGRESS ENERGY CAROLINAS REQUIRES BULK FEEDER SPLICES, TERMINATIONS AND ELBOWS TO BE INSTALLED BY A CERTIFIED INSTALLER OR INSTALLED UNDER THE DIRECTION OF A CERTIFIED INSTALLER.

THE TERMINATION AND SPLICING CERTIFICATION PROGRAM IS BEING MAINTAINED BY CRAFT AND TECHNICAL TRAINING. CERTIFICATION RECORDS ARE KEPT ON LINE AT THE WEB-SITE LISTED BELOW.

http://progressnet/moss/edc-bu/resourcemgtconstr/cttrng/pages/default.aspx

AN INSTALLER IDENTIFICATION TAG WILL BE COMPLETED BY THE CERTIFIED INSTALLER AND ATTACHED TO EACH BULK FEEDER TERMINATION OR SPLICE AROUND THE OUTER JACKET AND JUST BELOW THE LC SHIELD TERMINATION. TAGS ARE AVAILABLE AT GMX: CN 9220208940.



A PERMANENT PAINT MARKER PEN HAS ALSO BEEN SET UP AND SHALL BE USED TO FILL OUT THE TAG. THE PEN APPLIES PERMANENT PAINT WHEN USED AND WILL LAST MUCH LONGER THAN TRADITIONAL MARKERS. PENS ARE ALSO AVAILABLE AT GMX: CN 9220208980.

SEE DWG. 26.01-00F FOR THE LOCATION TO ATTACH THE TAG TO A STRAIGHT SPLICE.

SEE DWG. 26.03-01D TO ATTACH THE TAG TO 600 AMP ELBOWS.

SEE DWG. 26.06-00D TO ATTACH THE TAG TO A TERMINATOR.

3				
2				
1				
0	8/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

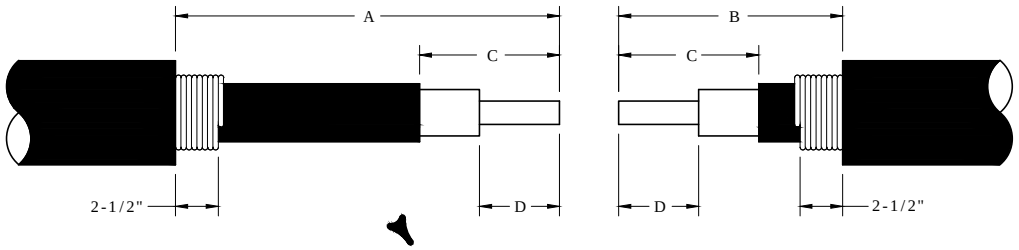
CERTIFICATION REQUIREMENTS TO INSTALL
BULK FEEDER SPLICES, TERMINATORS AND ELBOWS

Duke Energy®

CAR

DWG. 26.00-02

STEP 1: PREPARE CABLE



COMPATIBLE UNIT	CABLE TO BE SPLICED	CATALOG NUMBER	MANUFACTURER CATALOG NUMBER	CUTBACK DIMENSIONS IN INCHES			
				A	B	C	D
SPPRI75025KC	750, 25KV	11174406	ELASTIMOLD #25PCJ1N1380	21"	11"	6-1/2"	2-3/4"
			3M, #5426	19"	11"	5-1/4"	2-1/2"
SPPRI35025KC	350, 25KV	11173804	3M, #5423	19"	11"	5-1/4"	2"

A. PREPARE CABLE AS SHOWN IN THE VIEW ABOVE. CHECK THE TABLE ABOVE FOR THE PROPER CUTBACK DIMENSIONS.

LC SHIELD IS SHARP, WEAR WORK GLOVES

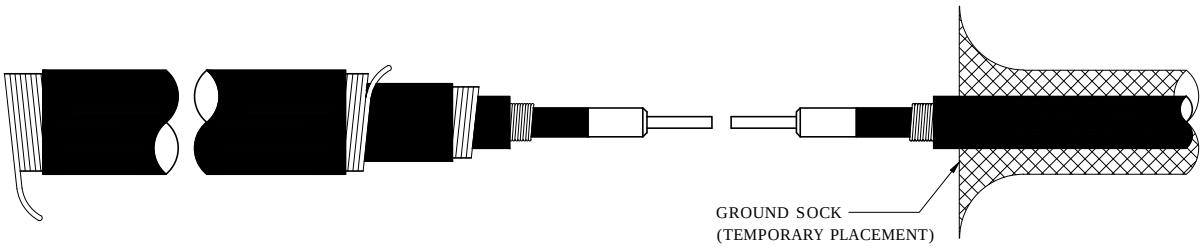
1. TO REMOVE LC SHIELD, TEMPORARILY PLACE A HOSE CLAMP OR THE CONSTANT FORCE SPRING AT THE CUTBACK POINT. USING NEEDLE NOSE PLIERS, PULL THE LC SHIELD DOWN ALONG THE SEALED EDGE. THIS WILL SEPARATE THE LC SHIELD. USING PLIERS, GRAB THE LC SHIELD NEAR CUT BACK POINT (TENSION SPRING) AND TEAR OFF SHIELD AROUND THE CABLE. THE SHIELD WILL "TEAR" AWAY AT THE EDGE OF THE CLAMP.

IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH INSULATION SHIELD (SEMI-CON) INTO INSULATION.

NOTE: USE APPROVED PRE-SETTABLE DEPTH TOOLS TO REMOVE THE OUTER JACKET, INSULATION SHIELD (SEMI-CON) AND INSULATION.

B. BEVEL NO MORE THAN 1/4" OF THE INSULATION. THIS IS A MUST FOR EASE OF INSTALLATION OF THIS SPLICE.

STEP 2: INSTALL COLD SHRINK AND GROUND SOCK (CN 9220101218)



A. PLACE THE COLD-SHRINK SPLICE JACKET ASSEMBLY ONTO EITHER ONE OF THE CABLES AND SLIDE THEM OUT OF THE WAY. POSITION THE END OF THE ASSEMBLY AS SHOWN WITH THE CORE STRANDS IN A MANNER THAT WILL ALLOW THE CORES TO BE REMOVED IN THE EASIEST MANNER.

B. PLACE A GROUND SOCK ONTO THE OTHER END OF THE CABLE AND SLIDE IT BACK OUT OF THE WAY.

3				
2				
1	6/23/11	ROBESON	BURLISON	ELKINS
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350 & 750 SPLICES

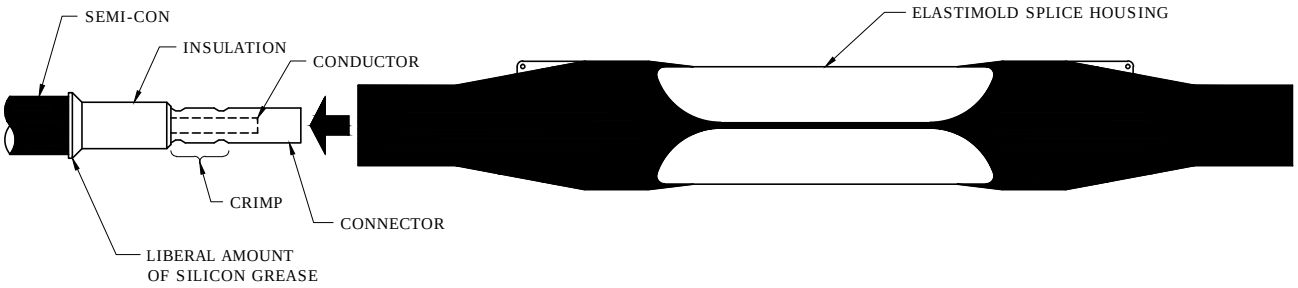
(LC TO LC) ALL VOLTAGES

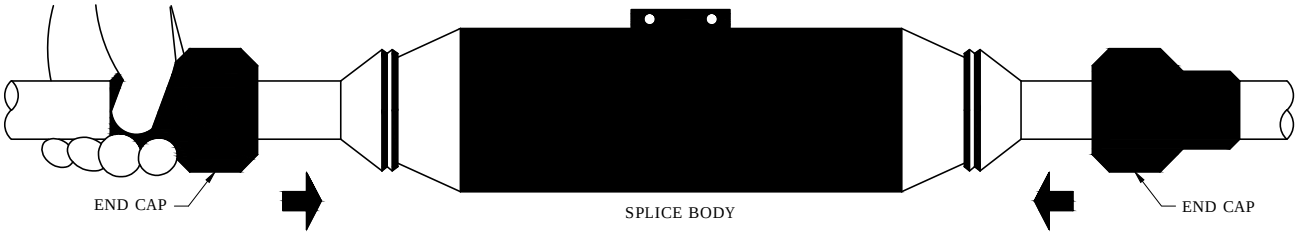
Duke Energy®

CAR

DWG. 26.01-00A

STEP 3: INSTALL CONNECTOR AND SPLICE HOUSING





3M SPLICE BODY

A. ON THE CABLE WITH THE LONG CUTBACK DIMENSION, WIRE BRUSH BARE CONDUCTOR WITH LAY OF STRAND TOWARD END OF CABLE CLEANING ALL "STRAND SEAL" FROM THE OUTER SURFACE BETWEEN STRANDS. WIPE CONDUCTORS THOROUGHLY WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. DO NOT POUR FLUID DIRECTLY ON CONDUCTOR. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING.

B. CRIMP THE ONE END OF THE CONNECTOR ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AS SHOWN ABOVE. MAKE THE FIRST CRIMP NEAR THE CENTER OF THE CONNECTOR AND WORK TOWARD ITS END UNTIL THE APPROPRIATE NUMBERS OF CRIMPS HAVE BEEN MADE. BE CERTAIN TO ROTATE THE CRIMP 90 DEGREES BETWEEN CRIMPS.

C. REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

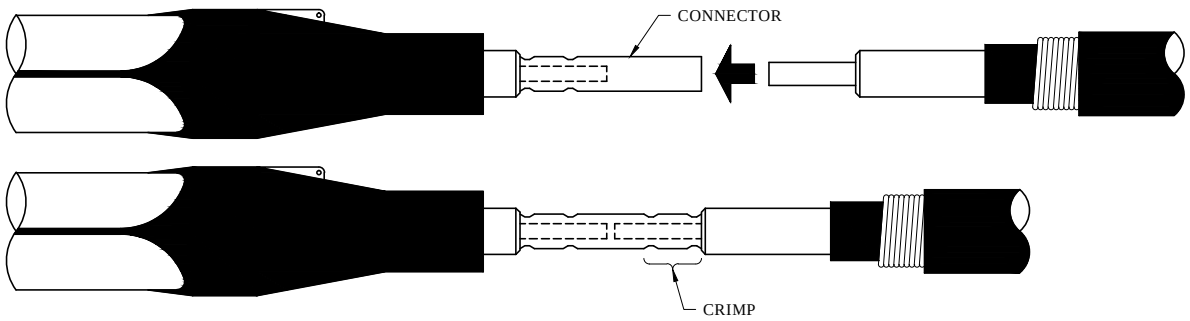
D. WIPE EXPOSED INSULATION THOROUGHLY WITH CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. WIPE IN DIRECTION AWAY FROM SEMI-CONDUCTING SHIELD.

NOTE: REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH.

NOTE: DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO DRY COMPLETELY BEFORE PROCEEDING.

E. LUBRICATE THE CABLE INSULATION AND INSULATION SHIELD WITH THE SILICONE GREASE PROVIDED IN THE SPLICE KIT. BE CERTAIN TO APPLY A LIBERAL AMOUNT OF SILICONE GREASE AT THE END OF THE SEMI-CONDUCTIVE SHIELD TO ELIMINATE THE POSSIBILITY OF AIR GAPS DEVELOPING IN THIS AREA.

F. SLIDE THE SPLICE HOUSING (AND ONE END CAP IF INSTALLING THE 3M SPLICE) ONTO THE CABLE WITH THE LONG CUTBACK DIMENSION. THE HOUSING MUST BE PUSHED FAR ENOUGH TO EXPOSE THE CRIMP AREA OF THE CONNECTOR FOR THE OTHER CABLE END.



3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750, & 1000 SPLICES

(LC TO LC) ALL VOLTAGES

Duke Energy®

PGN DWG. 26.01-00B

STEP 4: SPLICE CONDUCTOR

A. WIRE BRUSH THE CONDUCTOR ON THE OTHER CABLE END (SLIDE END CAP OVER CABLE IF USING A 3M SPLICE), INSERT THE CONDUCTOR INTO THE SLEEVE, AND CRIMP IT AS DONE IN STEP #3 ABOVE FOR THE OTHER END.

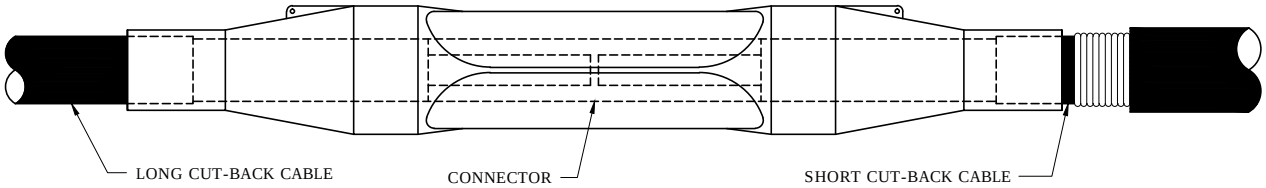
NOTE: ENSURE THE GROUND SLEEVE AND ONE PIECE JACKET KIT ARE IN PLACE BEFORE MAKING THE FINAL CONNECTION.

B. CLEAN OXIDE INHIBITOR FROM SLEEVE, CLEAN INSULATION AND APPLY SILICONE GREASE TO THE INSULATION AS DONE FOR THE OTHER CABLE SIDE IN STEP 3.

C. SLIDE THE SPLICE HOUSING INTO FINAL POSITION BY CENTERING IT BETWEEN THE SEMI-CONDUCTING SHIELD CUTBACKS AS SHOWN BELOW (ON THE ELASTIMOLD YOU CAN SEE THE IMPRINT OF THE ENDS OF THE SEMI-CONDUCTING SHIELD).

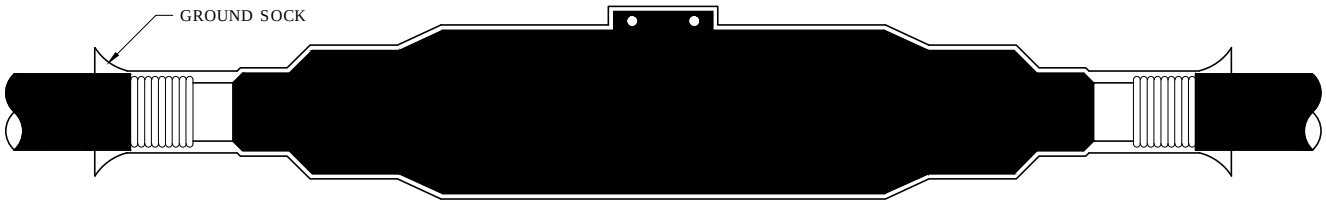
IF A 3M SPLICE IS BEING USED, THE SPLICE HOUSING IS CENTERED WHEN YOU HAVE BETWEEN 1/16 AND 1/2 INCH BETWEEN THE SPLICE BODY END AND THE END OF THE SEMI-CONDUCTING SHIELD. APPLY SILICONE GREASE TO AREA AT SEMI-CON STEP. THIS WILL PREVENT AIR VOIDS. SLIDE END CAPS INTO PLACE USING A TWISTING MOTION. BE SURE YOU FEEL TWO SNAPS DURING THE INSTALLATION OF THE END CAPS TO ENSURE THEY ARE FULLY SEATED.

IMPRINT OF SEMI-CONDUCTING SHIELD

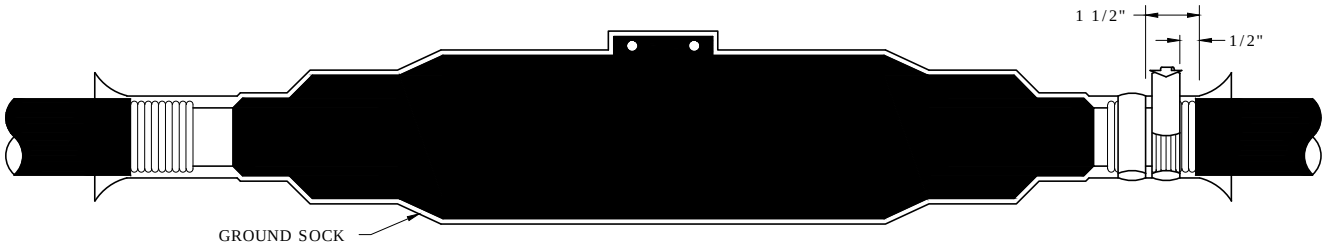


STEP 5: INSTALL GROUND SOCK AND TENSION SPRING

A. CLEAN THE LAST FIVE INCHES OF THE CABLE JACKET IN PREPARATION FOR SEALING THE SPLICE INSTALLATION.



B. POSITION THE GROUND SOCK OVER THE CENTER OF THE CABLE JACKET CUTBACKS AND, STARTING AT EITHER END, FORM THE SOCK TO THE SPLICE AND CABLE. TWISTING THE SOCK WILL HELP FORM IT TO THE SHAPE OF THE SPLICE BODY AND CABLE.



C. ON THE SHORT CUTBACK CABLE END, INSTALL TWO CONSTANT TENSION SPRINGS OVER THE GROUND SOCK AND LC SHIELD AS SHOWN ABOVE. THE FIRST SPRING IS INSTALLED 1/2" FROM THE EDGE OF JACKET AND THE SECOND ONE 1-1/2" FROM THE JACKET. CINCH (TIGHTEN) LAST LAP OF SPRING.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

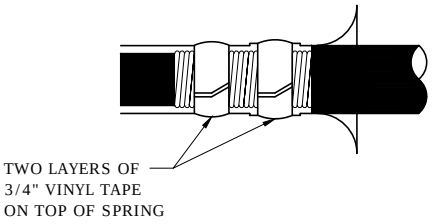
(LC TO LC) ALL VOLTAGES

Duke Energy®

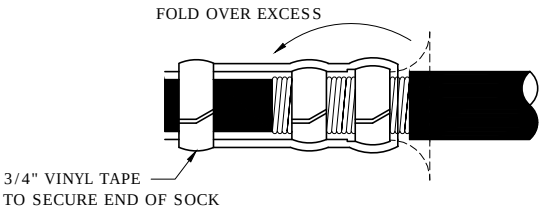
PGN

DWG. 26.01-00C

D. IN THE DIRECTION OF THE SPRING WRAP, APPLY TWO LAYERS OF 3/4" VINYL TAPE OVER THE CONSTANT TENSION SPRINGS AS SHOWN IN VIEW 'A'.



VIEW 'A'



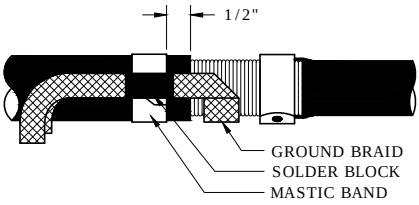
VIEW 'B'

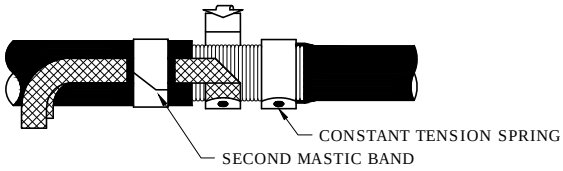
E. AS SHOWN IN VIEW 'B', FOLD THE EXCESS ENDS OF THE GROUND SOCK BACK OVER THE CONSTANT TENSION SPRINGS AND INTO CONTACT WITH THE MIDDLE PORTION OF THE SOCK. SECURE THE ENDS BY WRAPPING THEM WITH 3/4 INCH VINYL TAPE.

STEP 6: INSTALL GROUND BRAID

A. AS SHOWN BELOW ON THE LONG CUTBACK CABLE END, WRAP A CONSTANT TENSION SPRING OVER THE GROUND SOCK AND OVER THE LC SHIELD 1-1/2" FROM THE EDGE OF THE JACKET.

NOTE: IF NO EQUIPMENT GROUND OR GROUND ROD ATTACHMENT IS REQUIRED, SECURE GROUND SOCK WITH SECOND TENSION SPRING AND ADVANCE TO STEP 7.





B. CUT THE ENDS OF THE GROUND SOCK AT THE POINT WHERE IT MEETS THE CABLE JACKET USING SCISSORS OR OTHER APPROPRIATE TOOLS. THE GROUND SOCK MUST NOT EXTEND ONTO THE CABLE JACKET.

C. REMOVE THE LINERS FROM ONE OF THE THREE MASTIC STRIPS PROVIDED IN THE KIT AND WRAP THE MASTIC AROUND THE CABLE 1/2" FROM THE EDGE OF THE JACKET AS SHOWN IN THE LEFT VIEW ABOVE. INSTALL ONLY ONE LAYER OF MASTIC, DISCARD ANY EXCESS MASTIC.

D. POSITION THE GROUND BRAID WITH THE U SECTION OVER THE LC SHIELD AND THE SOLDER BLOCK OVER THE MASTIC TO PROVIDE A SEAL.

E. SECURE THE GROUND BRAID TO THE CABLE BY WRAPPING A CONSTANT TENSION SPRING AROUND THE PORTION OF THE BRAID THAT IS POSITIONED OVER THE LC SHIELD AS SHOWN IN THE VIEW ABOVE ON THE RIGHT. CINCH (TIGHTEN) LAST LAP OF SPRING.

F. IN THE DIRECTION OF THE SPRING WRAP, APPLY TWO LAYERS OF 3/4" VINYL TAPE OVER THE CONSTANT TENSION SPRINGS.

G. WRAP A SECOND MASTIC STRIP DIRECTLY OVER THE FIRST ONE. IF THE TWO BRAID ENDS OVERLAP EACH OTHER, WRAP THIS MASTIC STRIP OVER THE FIRST (LOWER) BRAID END AND UNDER THE SECOND END. APPLY A THIRD MASTIC STRIP OVER THE TWO BRAID ENDS. MASH THE MASTIC AT THE SOLDER BACK TO ENSURE TO A GOOD SEAL, THIS WILL PROVIDE A MOISTURE BLOCK.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

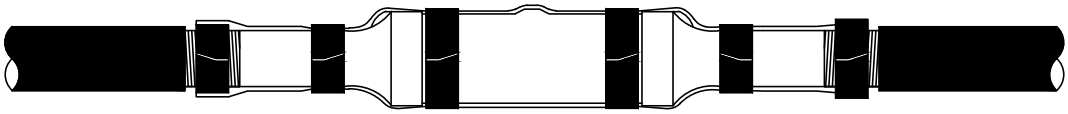
(LC TO LC) ALL VOLTAGES

Duke Energy®

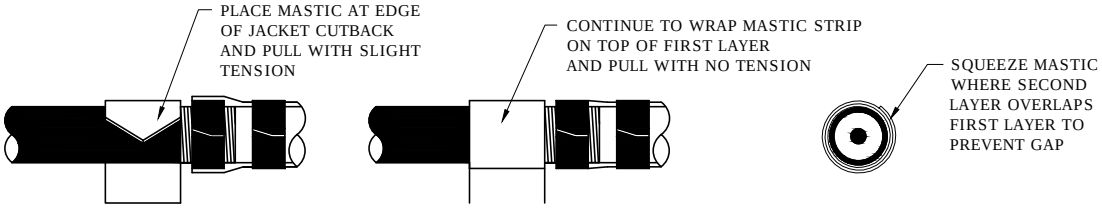
PGN

DWG. 26.01-00D

STEP 7: PREPARE FOR COLD SHRINK ASSEMBLY



A. PLACE SEVERAL WRAPS OF 3/4" VINYL TAPE AROUND THE GROUND SOCK IN VARIOUS LOCATIONS AS SHOWN ABOVE TO HOLD IT TO THE SPLICE BODY.



B. APPLY ONE ROLL OF RUBBER MASTIC PROVIDED IN THE KIT ON EACH CABLE JACKET ENDS AS SHOWN ABOVE. PLACE THE STICKY SIDE TOWARD THE CABLE JACKET AND USE SLIGHT TENSION ON THE FIRST LAP. DO NOT APPLY TENSION ON THE REMAINING LAPS. MASH THE MASTIC WHERE THE SECOND LAYER OVERLAPS THE FIRST TO PREVENT A GAP FROM FORMING AT THIS OVERLAP. STRETCH AND TEAR OFF THE END OF THE MASTIC AT THE END OF THE ROLL. THIS WILL PROVIDE A SMOOTH TRANSITION ON TOP LAYER OF MASTIC.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

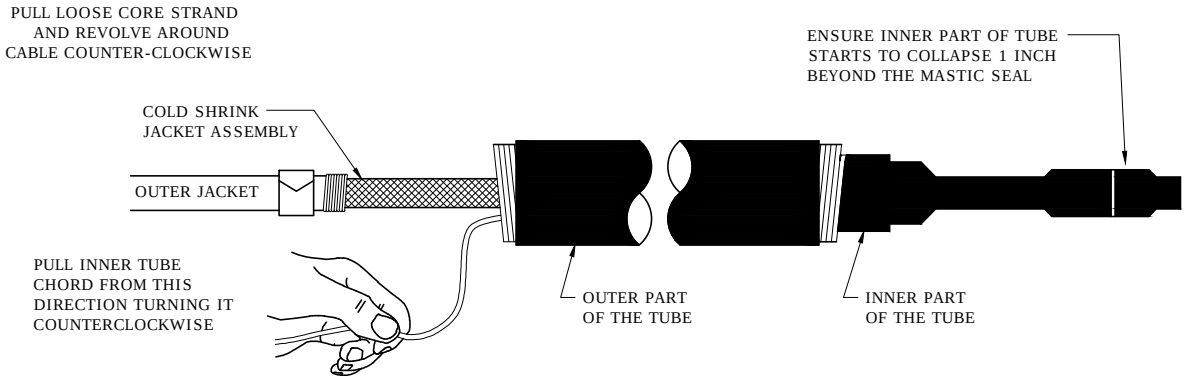
(LC TO LC) ALL VOLTAGES

Duke Energy®

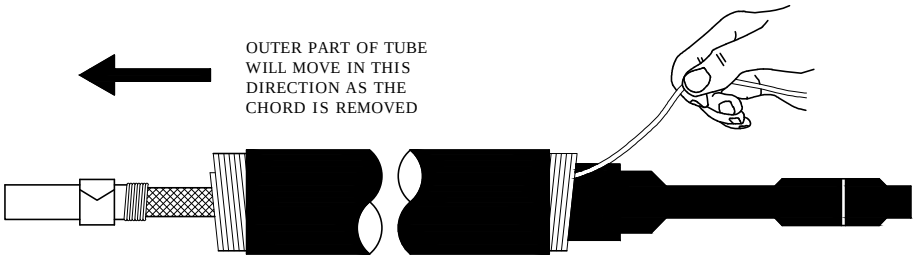
PGN

DWG. 26.01-00E

STEP 8: INSTALL COLD SHRINK ASSEMBLY

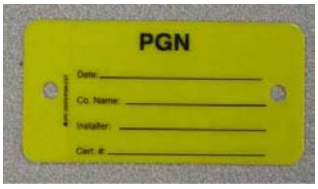


A. BEGIN TO INSTALL THE COLD SHRINK TUBE BY COMPLETELY COVERING THE RUBBER MASTIC, AND SLOWLY PULLING AND UNWINDING THE INNER CORE COUNTERCLOCKWISE TOWARD THE SPLICE BODY. THE OUTER CORE SHOULD REMAIN RELATIVELY STATIONARY WHILE UNWINDING THE INNER CORE. IF THE OUTER CORE BEGINS TO MOVE TOWARDS THE FIRST MASTIC SEAL, GENTLY PULL THE OUTER CORE AND JACKETING TUBE TOWARDS THE SECOND MASTIC SEAL AND CONTINUE UNWINDING THE INNER CORE.



B. CONTINUE TO INSTALL THE COLD SHRINK TUBE OVER THE RUBBER MASTIC ON THE OTHER CABLE BY SLOWLY PULLING AND UNWINDING THE OUTER CORE COUNTERCLOCKWISE. THIS PORTION OF THE COLD SHRINK TUBE INSTALLS DIFFERENTLY THAN TYPICAL COLD SHRINK PRODUCTS IN THAT AS THE TUBE SHRINKS, THE END ROLLS UNDER. THE TUBE MAY NEED A SLIGHT PUSH TO GET OVER THE SECOND MASTIC SEAL.

C. IF REQUIRED, ATTACH BRAIDED TAIL TO GROUNDING SYSTEM USING A SPLIT BOLT OR OTHER APPROPRIATE CONNECTOR.



INSTALLER IDENTIFICATION TAG
CN 9220208940

NOTES:

1. THE INSTALLER IDENTIFICATION TAG WILL BE COMPLETED BY THE CERTIFIED INSTALLER USING THE PAINT PEN (CN 9220208980) AND THE TAG ATTACHED TO THE CABLE AS SHOWN ABOVE.

2. SEE DWG 26.00-02 FOR INFORMATION ON INSTALLER CERTIFICATION REQUIREMENTS.

3				
2				
1				
0	8/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

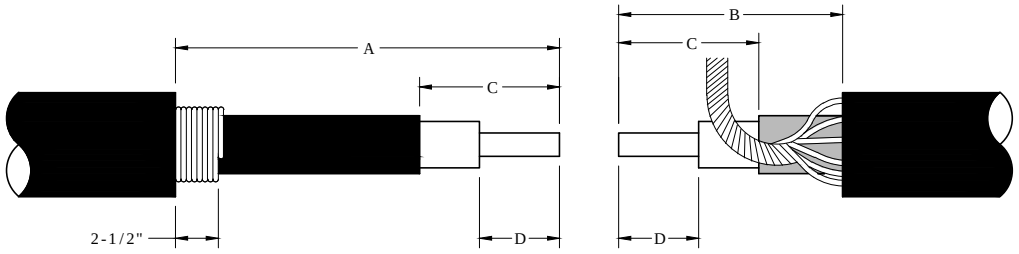
(LC TO LC) ALL VOLTAGES

Duke Energy

CAR

DWG. 26.01-00F

STEP 1: PREPARE CABLE



COMPATIBLE UNIT	CABLE TO BE SPLICED	ITEM NUMBER	CUTBACK DIMENSIONS IN INCHES			
			A	B	C	D
SPPRI75025KC	750, 25KV	11174406	21"	11"	6-1/2"	2-3/4"
			19"	11"	5-1/4"	2-1/2"
SPPRI35025KC	350, 25KV	11173804	21"	11"	5-1/4"	2"

A. PREPARE CABLE AS SHOWN IN THE VIEW ABOVE. CHECK THE TABLE ABOVE FOR THE PROPER CUTBACK DIMENSIONS.

NOTE: CABLE CUTBACKS FOR SHORT AND LONG DIMENSIONS CAN BE REVERSED DEPENDING ON WORKING SPACE AVAILABLE.

LC SHIELD IS SHARP, WEAR WORK GLOVES

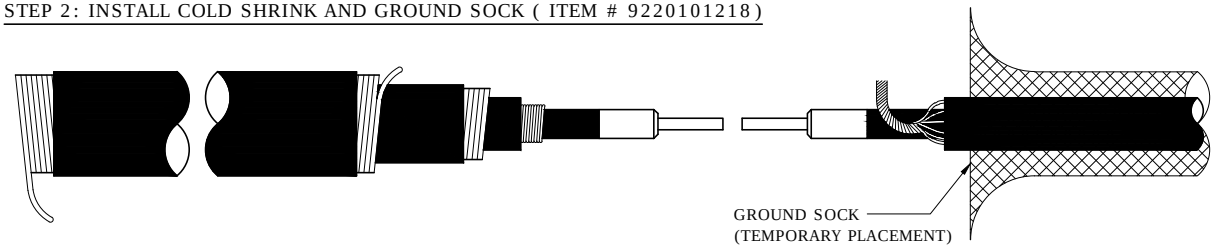
1. TO REMOVE LC SHIELD, TEMPORARILY PLACE A HOSE CLAMP OR THE CONSTANT FORCE SPRING AT THE CUTBACK POINT. USING NEEDLE NOSE PLIERS, PULL THE LC SHIELD DOWN ALONG THE SEALED EDGE. THIS WILL SEPARATE THE LC SHIELD. USING PLIERS, GRAB THE LC SHIELD NEAR CUT BACK POINT (TENSION SPRING) AND TEAR OFF SHIELD AROUND THE CABLE. THE SHIELD WILL "TEAR" AWAY AT THE EDGE OF THE CLAMP.

IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH INSULATION SHIELD (SEMI-CON) INTO INSULATION.

NOTE: USE APPROVED PRE-SETTABLE DEPTH TOOLS TO REMOVE THE OUTER JACKET, INSULATION SHIELD (SEMI-CON) AND INSULATION.

B. BEVEL NO MORE THAN 1/4" OF THE INSULATION. THIS IS A MUST FOR EASE OF INSTALLATION OF THIS SPLICE.

STEP 2: INSTALL COLD SHRINK AND GROUND SOCK (ITEM # 9220101218)



A. PLACE THE COLD-SHRINK SPLICE JACKET ASSEMBLY ONTO EITHER ONE OF THE CABLES AND SLIDE THEM OUT OF THE WAY. POSITION THE END OF THE ASSEMBLY AS SHOWN WITH THE CORE STRANDS IN A MANNER THAT WILL ALLOW THE CORES TO BE REMOVED IN THE EASIEST MANNER.

B. PLACE A GROUND SOCK ONTO THE OTHER END OF THE CABLE AND SLIDE IT BACK OUT OF THE WAY.

REVISED		BY	CK'D	APPR.
3				
2				
1	7/24/15	ROBESON	BURLISON	ADCOCK
0	6/8/10	ROBESON	GUINN	ELKINS

350 & 750 SPLICES

(LC TO JCN) ALL VOLTAGES

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	

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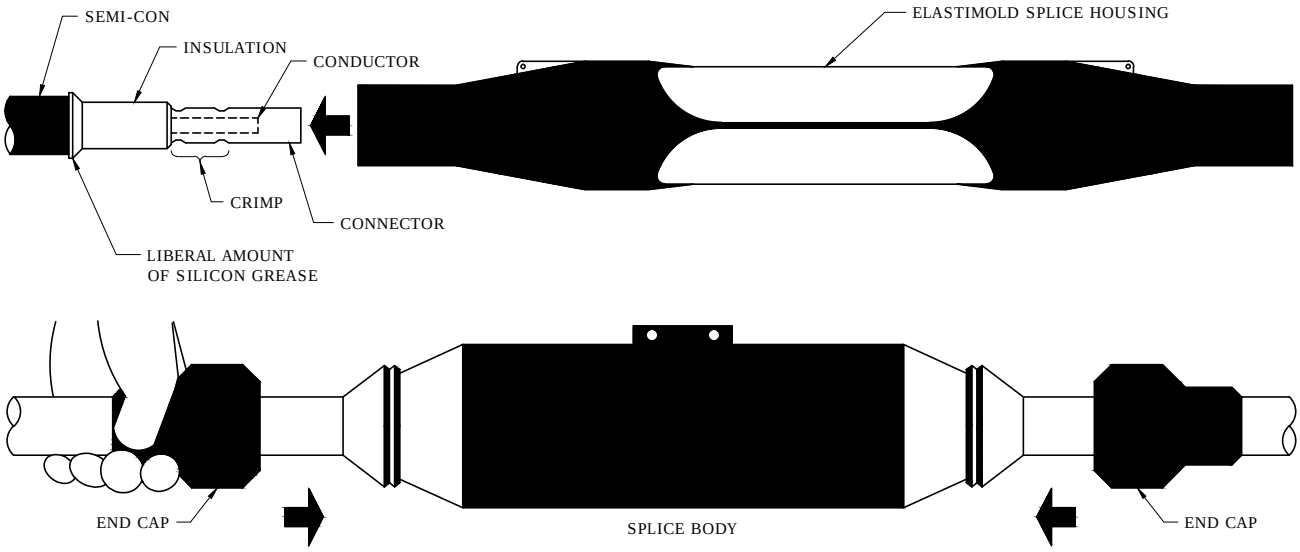
STEP 3: INSTALL CONNECTOR AND SPLICE HOUSING



3M SPLICE BODY

A. ON THE CABLE WITH THE LONG CUTBACK DIMENSION, WIRE BRUSH BARE CONDUCTOR WITH LAY OF STRAND TOWARD END OF CABLE CLEANING ALL "STRAND SEAL" FROM THE OUTER SURFACE BETWEEN STRANDS. WIPE CONDUCTORS THOROUGHLY WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. DO NOT POUR FLUID DIRECTLY ON CONDUCTOR. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING.

B. CRIMP THE ONE END OF THE CONNECTOR ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AS SHOWN ABOVE. MAKE THE FIRST CRIMP NEAR THE CENTER OF THE CONNECTOR AND WORK TOWARD ITS END UNTIL THE APPROPRIATE NUMBERS OF CRIMPS HAVE BEEN MADE. BE CERTAIN TO ROTATE THE CRIMP 90 DEGREES BETWEEN CRIMPS.

C. REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

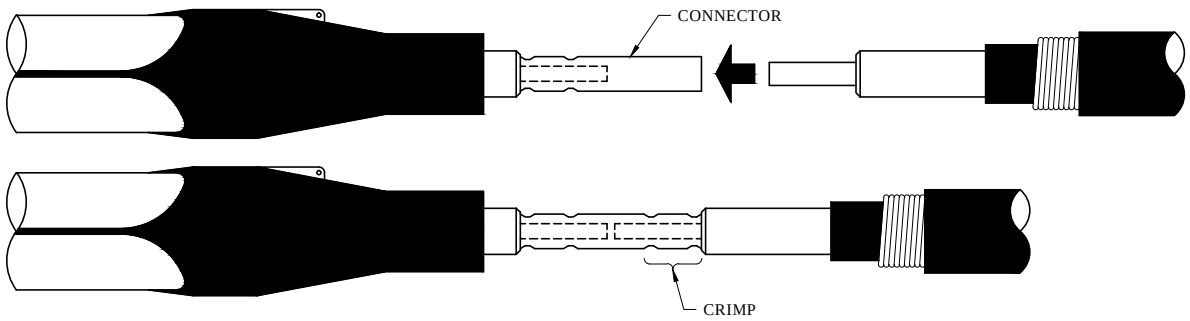
D. WIPE EXPOSED INSULATION THOROUGHLY WITH CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. WIPE IN DIRECTION AWAY FROM SEMI-CONDUCTING SHIELD.

NOTE: REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH.

NOTE: DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO DRY COMPLETELY BEFORE PROCEEDING.

E. LUBRICATE THE CABLE INSULATION AND INSULATION SHIELD WITH THE SILICONE GREASE PROVIDED IN THE SPLICE KIT. BE CERTAIN TO APPLY A LIBERAL AMOUNT OF SILICONE GREASE AT THE END OF THE SEMI-CONDUCTIVE SHIELD TO ELIMINATE THE POSSIBILITY OF AIR GAPS DEVELOPING IN THIS AREA.

F. SLIDE THE SPLICE HOUSING (AND ONE END CAP IF INSTALLING THE 3M SPLICE) ONTO THE CABLE WITH THE LONG CUTBACK DIMENSION. THE HOUSING MUST BE PUSHED FAR ENOUGH TO EXPOSE THE CRIMP AREA OF THE CONNECTOR FOR THE OTHER CABLE END.



REVISED	BY	CK'D	APPR.
3				
2				
1				
0 6/9/10	ROBESON	GUINN	ELKINS

350, 500, 750, & 1000 SPLICES

(LC TO JCN) ALL VOLTAGES

Duke Energy®

PGN DWG. 26.01-00H

STEP 4: SPLICE CONDUCTOR

A. WIRE BRUSH THE CONDUCTOR ON THE OTHER CABLE END (SLIDE END CAP OVER CABLE IF USING A 3M SPLICE), INSERT THE CONDUCTOR INTO THE SLEEVE, AND CRIMP IT AS DONE IN STEP #3 ABOVE FOR THE OTHER END.

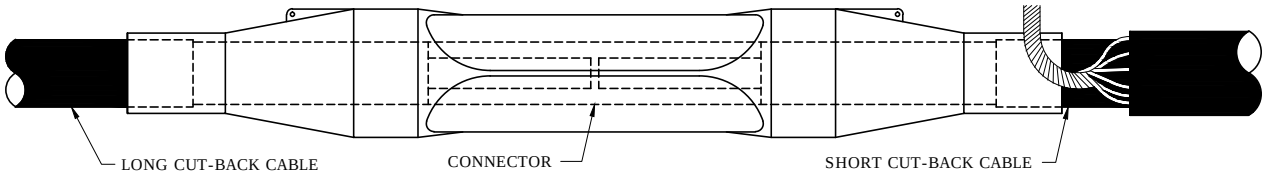
NOTE: ENSURE THE GROUND SLEEVE AND ONE PIECE JACKET KIT ARE IN PLACE BEFORE MAKING THE FINAL CONNECTION.

B. CLEAN OXIDE INHIBITOR FROM SLEEVE, CLEAN INSULATION AND APPLY SILICONE GREASE TO THE INSULATION AS DONE FOR THE OTHER CABLE SIDE IN STEP 3.

C. SLIDE THE SPLICE HOUSING INTO FINAL POSITION BY CENTERING IT BETWEEN THE SEMI-CONDUCTING SHIELD CUTBACKS AS SHOWN BELOW (ON THE ELASTIMOLD YOU CAN SEE THE IMPRINT OF THE ENDS OF THE SEMI-CONDUCTING SHIELD).

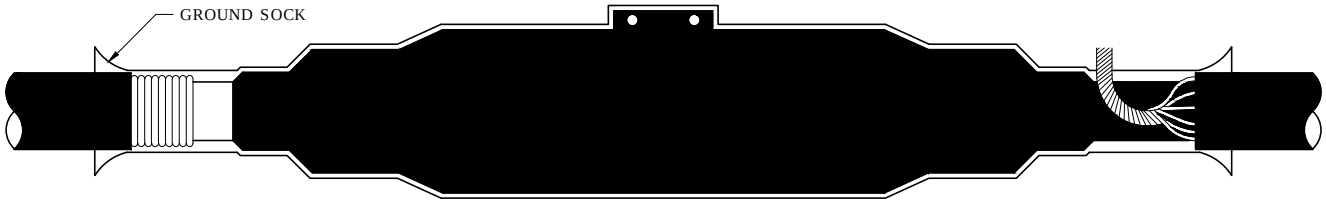
IF A 3M SPLICE IS BEING USED, THE SPLICE HOUSING IS CENTERED WHEN YOU HAVE BETWEEN 1/16 AND 1/2 INCH BETWEEN THE SPLICE BODY END AND THE END OF THE SEMI-CONDUCTING SHIELD. APPLY SILICONE GREASE TO AREA AT SEMI-CON STEP. THIS WILL PREVENT AIR VOIDS. SLIDE END CAPS INTO PLACE USING A TWISTING MOTION. BE SURE YOU FEEL TWO SNAPS DURING THE INSTALLATION OF THE END CAPS TO ENSURE THEY ARE FULLY SEATED.

IMPRINT OF SEMI-CONDUCTING SHIELD

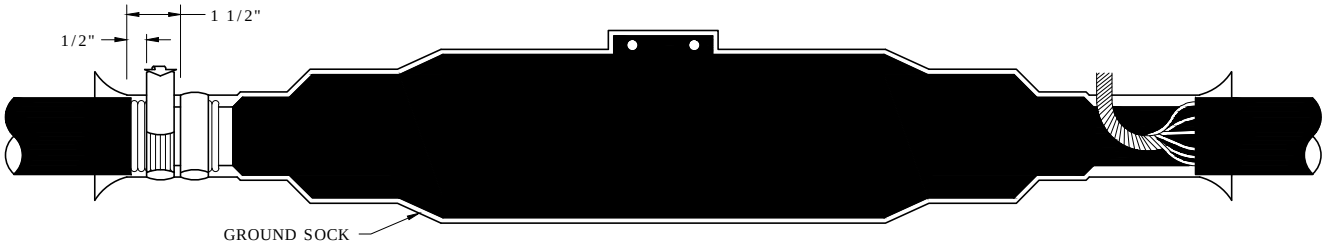


STEP 5: INSTALL GROUND SOCK AND TENSION SPRING

A. CLEAN THE LAST FIVE INCHES OF THE CABLE JACKET IN PREPARATION FOR SEALING THE SPLICE INSTALLATION.



B. POSITION THE GROUND SOCK OVER THE CENTER OF THE CABLE JACKET CUTBACKS AND, STARTING AT EITHER END, FORM THE SOCK TO THE SPLICE AND CABLE. TWISTING THE SOCK WILL HELP FORM IT TO THE SHAPE OF THE SPLICE BODY AND CABLE.



NOTE: WHEN EQUIPMENT GROUND OR GROUND ROD IS AVAILABLE, ADVANCE TO STEP 6.

C. STARTING WITH THE (LC) SHEILDED CABLE END, INSTALL TWO CONSTANT TENSION SPRINGS OVER THE GROUND SOCK AND LC SHIELD AS SHOWN ABOVE. THE FIRST SPRING IS INSTALLED 1/2" FROM THE EDGE OF JACKET AND THE SECOND ONE 1-1/2" FROM THE JACKET. CINCH (TIGHTEN) LAST LAP OF SPRING.

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0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

(LC TO JCN) ALL VOLTAGES

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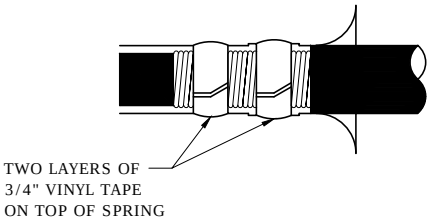
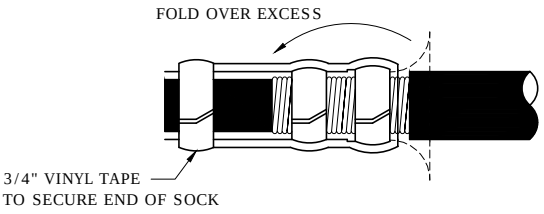
D. IN THE DIRECTION OF THE SPRING WRAP, APPLY TWO LAYERS OF 3/4" VINYL TAPE OVER THE CONSTANT TENSION SPRINGS AS SHOWN IN VIEW 'A'



VIEW 'A'

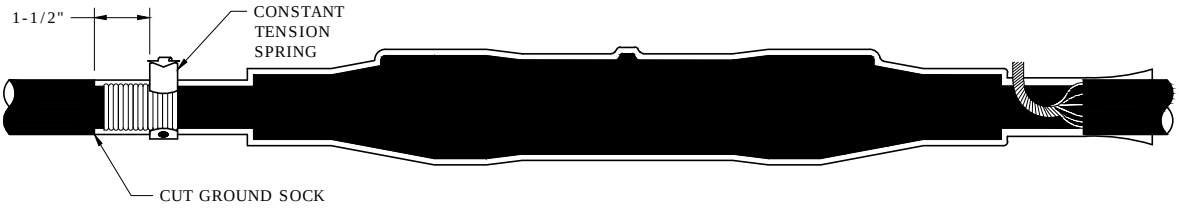


VIEW 'B'

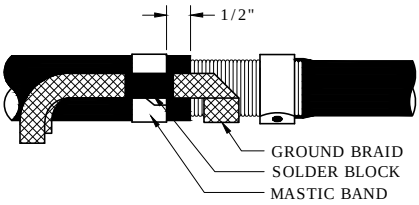
E. AS SHOWN IN VIEW 'B', FOLD THE EXCESS ENDS OF THE GROUND SOCK BACK OVER THE CONSTANT TENSION SPRINGS AND INTO CONTACT WITH THE MIDDLE PORTION OF THE SOCK. SECURE THE ENDS BY WRAPPING THEM WITH 3/4 INCH VINYL TAPE.

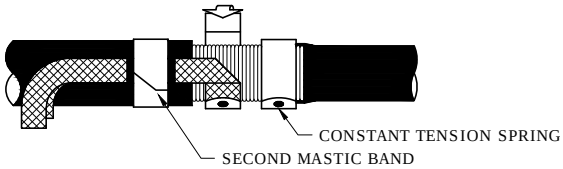
STEP 6: INSTALL GROUND BRAID

A. AS SHOWN BELOW ON THE LONG CUTBACK CABLE END, WRAP A CONSTANT TENSION SPRING OVER THE GROUND SOCK AND OVER THE LC SHIELD 1-1/2" FROM THE EDGE OF THE JACKET.



NOTE: IF NO EQUIPMENT GROUND OR GROUND ROD ATTACHMENT IS REQUIRED, SECURE GROUND SOCK WITH SECOND TENSION SPRING AND ADVANCE TO STEP 7.





B. CUT THE ENDS OF THE GROUND SOCK AT THE POINT WHERE IT MEETS THE CABLE JACKET USING SCISSORS OR OTHER APPROPRIATE TOOLS. THE GROUND SOCK MUST NOT EXTEND ONTO THE CABLE JACKET.

C. REMOVE THE LINERS FROM ONE OF THE THREE MASTIC STRIPS PROVIDED IN THE KIT AND WRAP THE MASTIC AROUND THE CABLE 1/2" FROM THE EDGE OF THE JACKET AS SHOWN IN THE LEFT VIEW ABOVE. INSTALL ONLY LAYER OF MASTIC, DISCARD ANY EXCESS MASTIC.

D. POSITION THE GROUND BRAID WITH THE U SECTION OVER THE LC SHIELD AND THE SOLDER BLOCK OVER THE MASTIC TO PROVIDE A SEAL.

E. SECURE THE GROUND BRAID TO THE CABLE BY WRAPPING A CONSTANT TENSION SPRING AROUND THE PORTION OF THE BRAID THAT IS POSITIONED OVER THE LC SHIELD AS SHOWN IN THE VIEW ABOVE ON THE RIGHT. CINCH (TIGHTEN) LAST LAP OF SPRING.

F. IN THE DIRECTION OF THE SPRING WRAP, APPLY TWO LAYERS OF 3/4" VINYL TAPE OVER THE CONSTANT TENSION SPRINGS.

G. WRAP A SECOND MASTIC STRIP DIRECTLY OVER THE FIRST ONE. IF THE TWO BRAID ENDS OVERLAP EACH OTHER, WRAP THIS MASTIC STRIP OVER THE FIRST (LOWER) BRAID END AND UNDER THE SECOND END. APPLY A THIRD MASTIC STRIP OVER THE TWO BRAID ENDS. MASH THE MASTIC AT THE SOLDER BACK TO ENSURE A GOOD SEAL, THIS WILL PROVIDE A MOISTURE BLOCK.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

(LC TO JCN) ALL VOLTAGES

Duke Energy®

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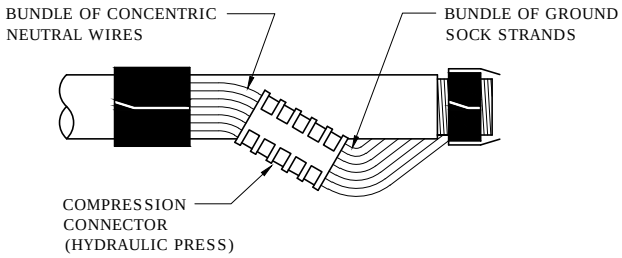
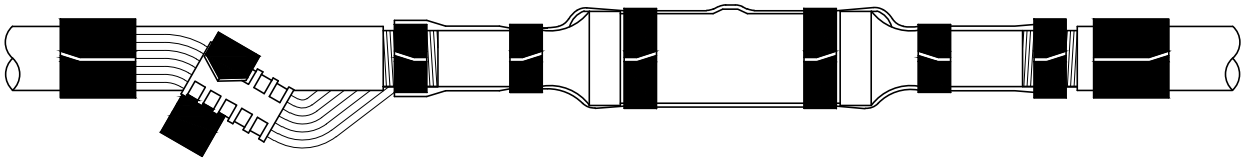
STEP 7: CONNECTING CONCENTRIC NEUTRAL WIRES TO SPLICE SLEEVE

A. TWIST THE STRAND ON THE OTHER END OF THE GROUND SOCK INTO A BUNDLE.

B. TWIST THE CONCENTRIC NEUTRAL WIRES INTO A BUNDLE. CONNECT THE BUNDLE OF CONCENTRIC NEUTRAL WIRE TO THE BUNDLE OF GROUND SOCK STRANDS WITH A COMPRESSION CONNECTED AS SHOWN BELOW.

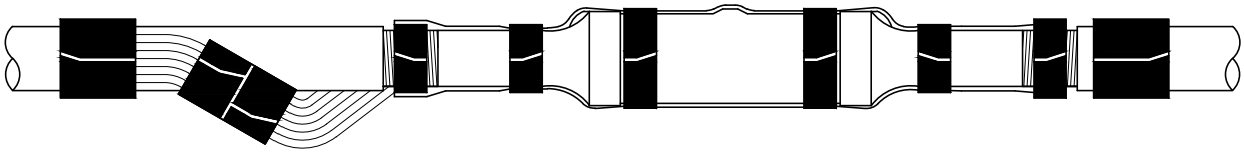


C. TWIST THE GROUND SOCK TO ENSURE THAT IT IS TIGHTLY FORMED AGAINST THE SPLICE HOUSING. PLACE SEVERAL WRAPS OF 3/4" VINYL TAPE AROUND THE GROUND SOCK IN VARIOUS LOCATIONS TO HOLD IT IN TIGHT CONTACT WITH THE SPLICE HOUSING.

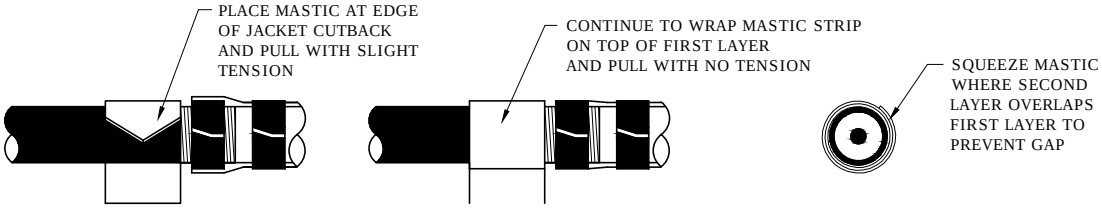


D. FILE ANY SHARP EDGES FROM NEUTRAL CONNECTION. APPLY A LAYER OF VINYL PLASTIC SEAL AROUND THE NEUTRAL CONNECTION TO PREVENT DAMAGE TO THE SEMI-CON AND SPLICE JACKET. SECURE IN PLACE WITH 3/4" VINYL TAPE.

STEP 8: PREPARE FOR COLD SHRINK ASSEMBLY



A. PLACE SEVERAL WRAPS OF 3/4" VINYL TAPE AROUND THE GROUND SOCK IN VARIOUS LOCATIONS AS SHOWN ABOVE TO HOLD IT TO THE SPLICE BODY.



B. APPLY ONE ROLL OF RUBBER MASTIC PROVIDED IN THE KIT ON EACH CABLE JACKET ENDS AS SHOWN ABOVE. PLACE THE STICKY SIDE TOWARD THE CABLE JACKET AND USE SLIGHT TENSION ON THE FIRST LAP. DO NOT APPLY TENSION ON THE REMAINING LAPS. MASH THE MASTIC WHERE THE SECOND LAYER OVERLAPS THE FIRST TO PREVENT A GAP FROM FORMING AT THIS OVERLAP. STRETCH AND TEAR OFF THE END OF THE MASTIC AT THE END OF THE ROLL. THIS WILL PROVIDE A SMOOTH TRANSITION ON TOP LAYER OF MASTIC.

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0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

(LC TO JCN) ALL VOLTAGES

Duke Energy®

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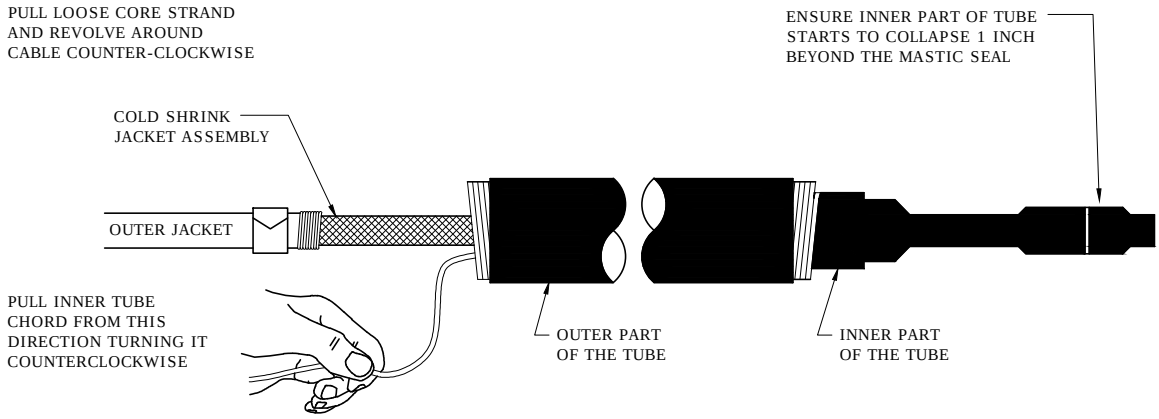
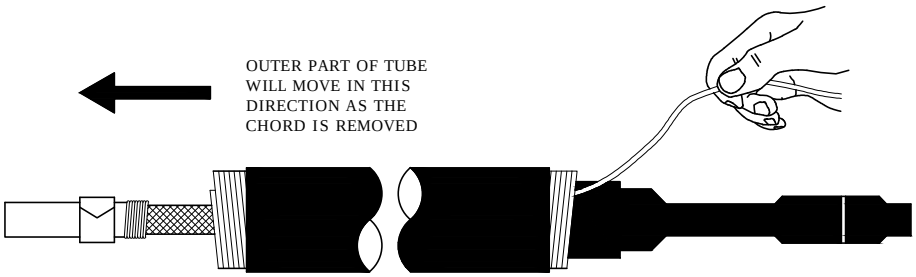
STEP 9: INSTALL COLD SHRINK ASSEMBLY



A. BEGIN TO INSTALL THE COLD SHRINK TUBE BY COMPLETELY COVERING THE RUBBER MASTIC, AND SLOWLY PULLING AND UNWINDING THE INNER CORE COUNTERCLOCKWISE TOWARD THE SPLICE BODY. THE OUTER CORE SHOULD REMAIN RELATIVELY STATIONARY WHILE UNWINDING THE INNER CORE. IF THE OUTER CORE BEGINS TO MOVE TOWARDS THE FIRST MASTIC SEAL, GENTLY PULL THE OUTER CORE AND JACKETING TUBE TOWARDS THE SECOND MASTIC SEAL AND CONTINUE UNWINDING THE INNER CORE.



B. CONTINUE TO INSTALL THE COLD SHRINK TUBE OVER THE RUBBER MASTIC ON THE OTHER CABLE BY SLOWLY PULLING AND UNWINDING THE OUTER CORE COUNTERCLOCKWISE. THIS PORTION OF THE COLD SHRINK TUBE INSTALLS DIFFERENTLY THAN TYPICAL COLD SHRINK PRODUCTS IN THAT AS THE TUBE SHRINKS, THE END ROLLS UNDER. THE TUBE MAY NEED A SLIGHT PUSH TO GET OVER THE SECOND MASTIC SEAL.

C. IF REQUIRED, ATTACH BRAIDED TAIL TO GROUNDING SYSTEM USING A SPLIT BOLT OR OTHER APPROPRIATE CONNECTOR.

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0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350, 500, 750 & 1000 SPLICES

(LC TO JCN) ALL VOLTAGES

Duke Energy®

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STEP A - PREPARE CABLE 1, INSTALL GROUNDING DEVICE AND STORE HOUSING ON CABLE.

1. REMOVE JACKET AND LC SHIELD PER DIMENSIONS SHOWN. MARK JACKET WITH TAPE 5/8" FROM END AS SHOWN.

2. TAPER EDGE OF CABLE FROM 1/2" TO 1-1/2", CLEAN, THEN LUBRICATE INSULATION SHIELD AND SHORT SECTION OF JACKET.

3. INSTALL GROUNDING DEVICE:

   A. PLACE THE TWO CLAMPS OVER THE HOUSING AND PUSH PROTECTIVE PLUG FROM INSIDE THE HOUSING (WITH SCREWDRIVER). LUBRICATE INSIDE BOTH ENDS OF THE HOUSING.

   B. SLIDE THE GROUNDING DEVICE ONTO THE CABLE WITH A BACK AND FORTH TWISTING MOTION UNTIL IT IS FLUSH WITH THE TAPE MARKER.

   C. TIGHTEN THE CLAMPS IN STAGES SO THAT THE CORRUGATED CONTACT IS TIGHT AGAINST THE LC SHIELD BUT NOT UNDER EXCESSIVE PRESSURE. BETWEEN STAGES, TEST THE TIGHTNESS BY ROTATING THE HOUSING BACK AND FORTH APPROXIMATELY 1/8 TURN. WHEN A DEFINITE DRAG IS FELT, THE CLAMP IS TIGHT ENOUGH.

4. SLIDE THE SPLICE HOUSING ON THE CABLE UP TO THE GROUNDING DEVICE.

STEP B - PREPARE CABLES FOR SPLICE INSTALLATION

1. PREPARE CABLE 2 AND INSTALL GROUNDING DEVICE PER 1, 2, 3A, 3B, AND 3C UNDER STEP A ABOVE.

2. CAREFULLY REMOVE THE CABLE INSULATION AND THEN THE INSULATION SHIELD FROM BOTH CABLES PER THE DIMENSIONS SHOWN. DO NOT CUT OR NICK THE CABLE INSULATION OR CONDUCTOR. THIS COULD RESULT IN FAILURE OF THE CABLE.

STEP C - SPLICE INSTALLATION

1. WIREBRUSH EXPOSED CONDUCTORS OF BOTH CABLES AND IMMEDIATELY INSERT INTO THE SPLICE. BE SURE THE CHECK DIMENSION IS NOT EXCEEDED.

2. CRIMP THE SLEEVE THE MAXIMUM NUMBER OF CRIMPS WITHOUT OVERLAPPING.

3. WIPE OFF ALL EXCESS INHIBITOR, THEN CHECK DISTANCE BETWEEN CABLE INSULATION. IF IT EXCEEDS THE MAXIMUM DIMENSION SHOWN, RE-DO ASSEMBLY.

4. CLEAN CABLES WHERE INDICATED. THEN LUBRICATE IN THE DIRECTION OF ARROWS TO PROVIDE A BUILD-UP OR RAMP OF LUBRICANT AT THE EDGE OF THE INSULATION SHIELDS.

STEP D

1. SLIDE HOUSING INTO FINAL POSITION. PROPER POSITIONING IS INSURED BY OBSERVING AND EQUALIZING THE DEFORMATION OF THE JOINT ENDS CAUSED BY THE UNDERLYING INSULATION SHIELD.

2. USING A STRAND OF CONCENTRIC NEUTRAL WIRE FROM 1/0 PRIMARY CABLE (APPROXIMATELY 50" LONG) RUN CONTINUOUSLY THROUGH BOTH BONDING EYES OF THE SPLICE HOUSING, LOOP AND TWIST THE WIRE TIGHTLY AT EACH EYE. GROUND EACH END OF THE CONCENTRIC NEUTRAL WIRE IN THE SQUEEZON WITH WIRE IN THE SQUEEZON WITH THE #2 BC JUMPER. (EXCESS CONCENTRIC WIRE MAY BE LOOPED AROUND THE CABLE ON THE CABLE 1 END).

3. WITH A #2 BC OR #2 WP (STRIPPED) GROUNDING JUMPER APPROXIMATELY 60" LONG, AT CABLE 1 GROUNDING DEVICE, ATTACH THE GROUNDING JUMPER WITH PROPER SQUEEZE (WITH STRAND OF CONCENTRIC NEUTRAL WIRE INSERTED). MAKE SEVERAL WRAPS AROUND THE CABLE 1 END AND THE SPLICE HOUSING AND TERMINATE THE GROUNDING JUMPER AT CABLE 2 END GROUNDING DEVICE (WITH THE CONCENTRIC WIRE INSERTED).

REVISED		BY	CK'D	APPR.
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS

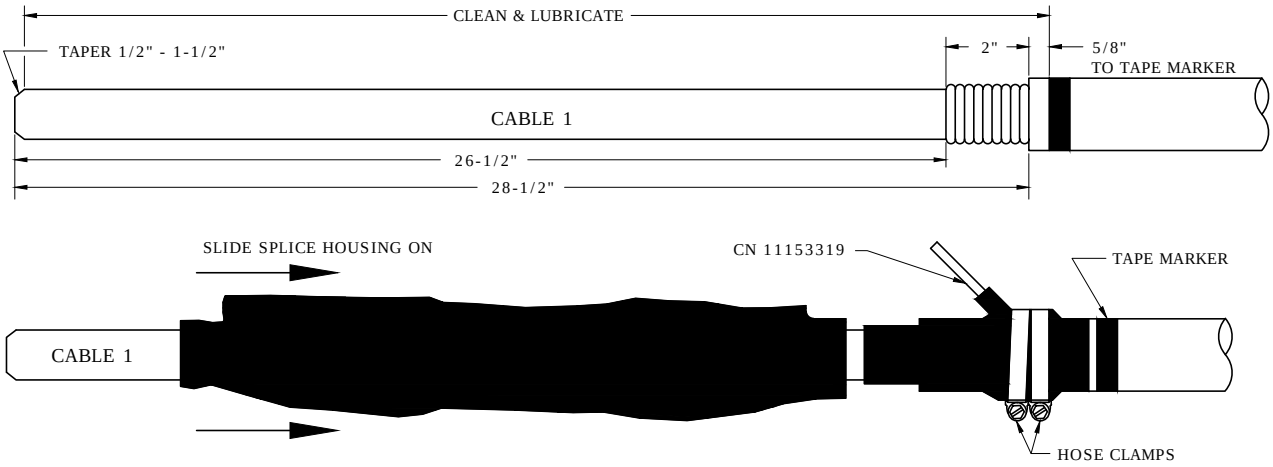
ELASTIMOLD,
1000 KCMIL STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS

Duke Energy®

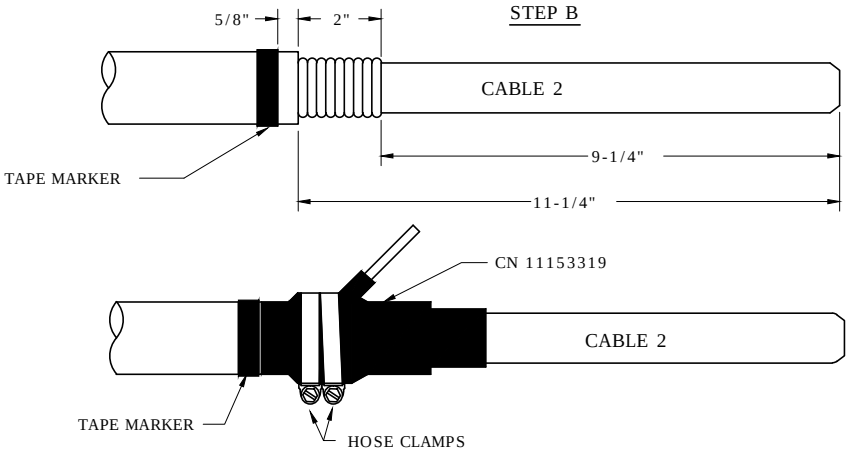
CAR

DWG. 26.01-02A

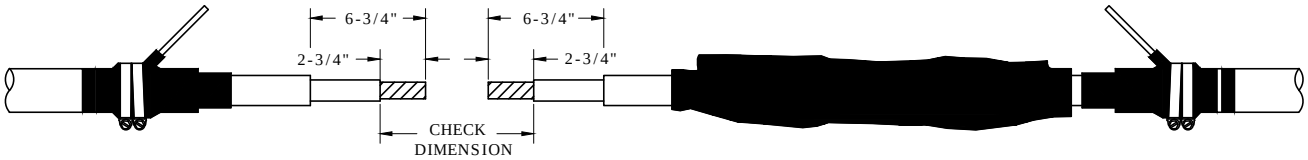
STEP A



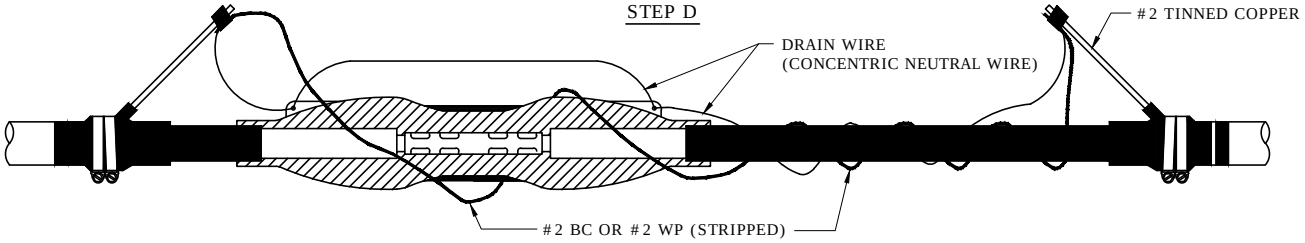
STEP B



STEP C



STEP D



COMPATIBLE UNIT	CATALOG NUMBER
SPLCP1K25KC	11189909

TOOL	DIE
BURNDY Y-46 HUSKIE	P44ART HT61FD
ALCOA 60A HUSKIE	6027AH HA-60-22

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

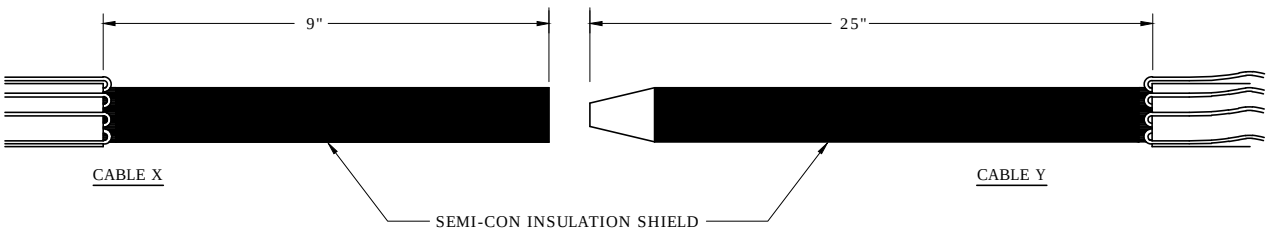
ELASTIMOLD, 1000 KCMIL STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

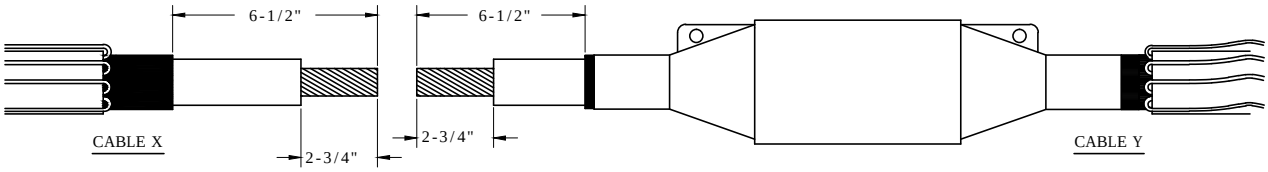
DWG. 26.01-02B

STEP 1



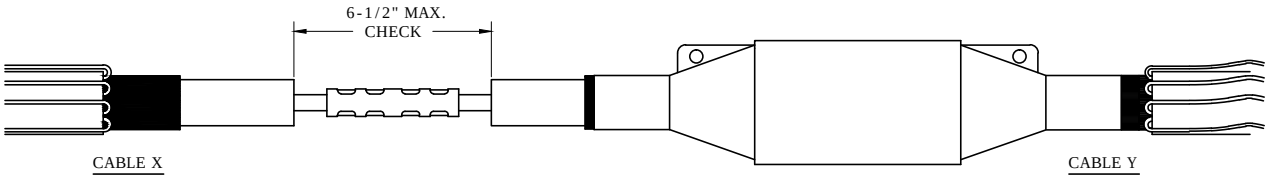
REMOVE OUTER JACKET 25" FROM END OF CABLE Y AND 9" FROM END OF CABLE X. FOLD CONCENTRIC NEUTRAL WIRES BACK. TAPER EDGE OF CABLE ON END "Y" FROM 1/2" TO 1-1/2" TO AID IN THE INSTALLATION OF THE SPLICE HOUSING. CLEAN, THEN LUBRICATE THE INSULATION SHIELD ON END "Y". LUBRICATE INSIDE BORE OF HOUSING (BOTH ENDS) AND SLIDE ONTO CABLE UP TO CONCENTRIC NEUTRAL WIRES.

STEP 2



AFTER THE HOUSING IS SLID ONTO THE CABLE, REMOVE 6" OF INSULATION SHIELD FROM EACH END AND 2-3/4" OF INSULATION AS SHOWN. SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30520500).

STEP 3



WIRE BRUSH CONDUCTOR AND IMMEDIATELY INSERT INTO CONNECTOR. BE SURE THAT CHECK DIMENSION DOES NOT EXCEED 6-1/2", OTHERWISE REDO ASSEMBLY. SEE TABLE BELOW FOR CRIMPING TOOL AND DIE INFORMATION. FILE ANY SHARP CRIMP FLASH AND REMOVE EXCESS CONTACT AID. WIPE OFF ALL EXCESS INHIBITOR, THEN RECHECK THE DISTANCE BETWEEN CABLE INSULATIONS. IF IT EXCEEDS 6-1/2" REDO ASSEMBLY.

COMPATIBLE UNIT	CATALOG NUMBER
SPCNP750C	11174406

CRIMP CHART		
WIRE SIZE	TOOL	DIE
750	ALCOA 60A HUSKIE	6024AH HA-60-21
	BURNDY Y46 HUSKIE	P39ART HT61FC

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

ELASTIMOLD, 600 AMP STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS

Duke Energy®

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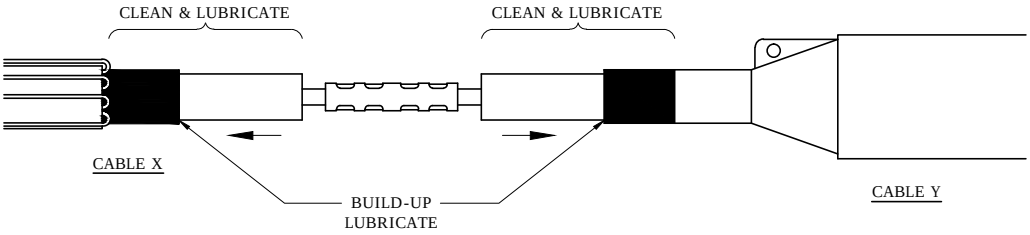
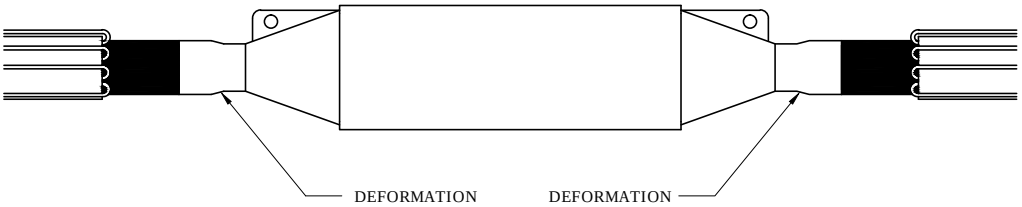
STEP 4



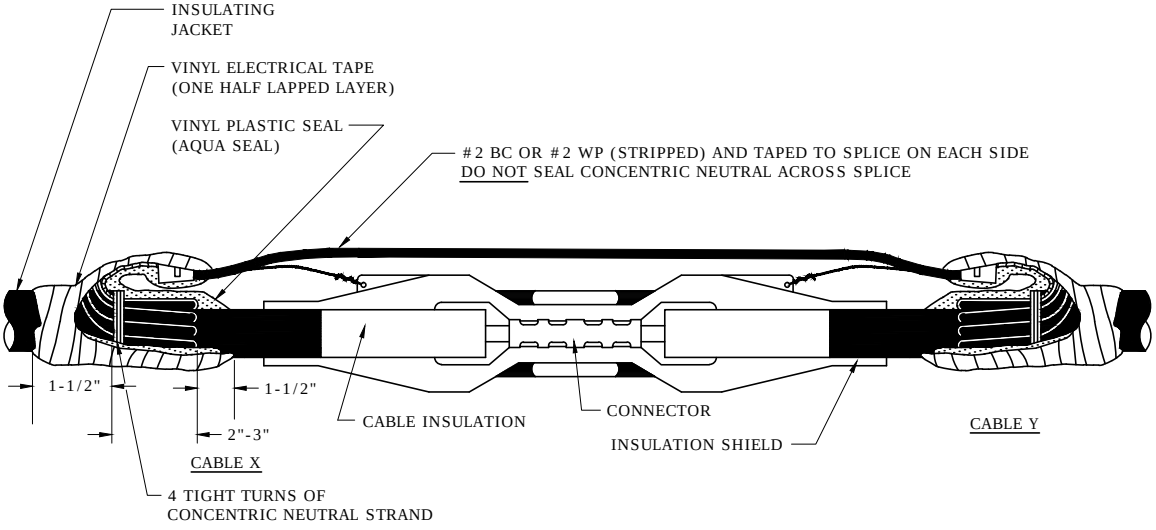
CLEAN CABLES WHERE INDICATED. THEN LUBRICATE IN THE DIRECTION OF THE ARROWS TO PROVIDE A BUILDUP OR RAMP OF LUBRICANT AT THE EDGE OF THE INSULATION SHIELDS.

STEP 5



SLIDE HOUSING INTO FINAL POSITION. PROPER POSITIONING IS INSURED BY OBSERVING AND EQUALIZING THE DEFORMATION OF THE JOINT ENDS CAUSED BY THE UNDERLYING CABLE INSULATION SHIELD. RESHAPE SHIELD WIRES AND SECURE AT EACH END OF JOINT AS SHOWN.

STEP 6



CONCENTRIC NEUTRALS SHOULD BE SEALED AS SHOWN ABOVE. GROUND SPLICE HOUSING BY ATTACHING A PIECE OF CONCENTRIC NEUTRAL WIRE TO EACH GROUNDING EYE AS SHOWN.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

ELASTIMOLD, 600 AMP STRAIGHT SPLICE

INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

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GENERAL SPLICE INFORMATION

1. ALL SPLICES ARE RATED FOR 200 AMPS.
2. REPAIR SPLICES ARE LONGER THAN OUR NORMAL SPLICES IN ORDER TO SPAN THE GAP THAT OCCURS WHEN A CABLE FAILURE IS CUT OUT OF A RUN OF CABLE. THIS WILL HELP TO ELIMINATE THE OCCASIONAL NEED TO INSTALL TWO SPLICES AND A SHORT LENGTH OF CABLE WHEN A NORMAL SPLICE WILL NOT SPAN THE GAP THAT REMAINS AFTER REMOVING A CABLE FAILURE. DO NOT USE THIS SPLICE FOR NEW INSTALLATIONS BECAUSE IT IS MUCH MORE EXPENSIVE THAN OUR NORMAL SPLICE.
3. BE CERTAIN TO WATERPROOF ALL SPLICES. FAILURE TO DO SO WILL JEOPARDIZE THE LIFE OF THE CABLE.
4. WHEN INSTALLING TRANSITION SPLICES, ALWAYS PUSH THE HOUSING ONTO THE SMALLER CABLE FIRST AND THEN PULL IT BACK TO THE PROPER POSITION ON THE LARGER CABLE AFTER CRIMPING THE CONNECTOR.
5. ALWAYS USE THE CONNECTOR PROVIDED IN THE SPLICE KIT IF IT IS PROVIDED WITH THE KIT . DO NOT SUBSTITUTE CONNECTORS.
6. GROUND RODS DO NOT HAVE TO BE INSTALLED WITH SPLICES IN DIRECT BURIED APPLICATIONS.

INSTALLATION INSTRUCTIONS

STEP 1: FOLLOW ALL SAFETY RULES AND PROCEDURES TO INSURE CONDUCTORS ARE SAFE TO HANDLE.

STEP 2: CUT CABLES TO THE DESIRED LENGTH.

STEP 3: REMOVE THE AMOUNT OF CABLE JACKET ON THE SHORT AND LONG END SHOWN IN FIGURE 1 AND TABLE 1.

STEP 4: REMOVE THE LC SHIELD, EXCEPT FOR THE LENGTH SHOWN IN FIGURE 1 WHICH WILL EXTEND BEYOND THE END OF THE CABLE JACKET.

THE LC SHIELD IS TO BE REMOVED BY PLACING ONE OF THE CONSTANT TENSION SPRINGS PROVIDED IN THE GROUND SOCK KIT ON THE LC SHIELD AT THE POINT WHERE THE SHIELD IS TO END, SEPARATING THE OVERLAP OF THE LC SHIELD, AND THEN TEARING OFF THE LC SHIELD AT THE CONSTANT TENSION SPRING. THE LC SHIELD OVERLAP MAY BE SEPARATED BY ROLLING THE GAP OPEN WITH CHANNEL-LOCK PLIERS, TEARING OFF THE OVERLAP BY TWISTING IT AROUND NEEDLE-NOSE PLIERS, OR BY TEARING OFF THE OVERLAP BY GRABBING THE OVERLAP WITH PLIERS AND PULLING IT STRAIGHT DOWN THE CABLE.

STEP 5: USE AN APPROPRIATE TOOL AND SCORE THE SEMI-CONDUCTIVE INSULATION SHIELD SO THE LENGTH OF SHIELD SHOWN IN FIGURE 1 AND TABLE 2 CAN BE REMOVED; HOWEVER, DO NOT REMOVE THE SHIELD AT THIS TIME.

NEVER USE A KNIFE TO REMOVE THIS SHIELD.

STEP 6: REMOVE THE AMOUNT OF INSULATION "D" DIMENSION AS SHOWN IN TABLE 2.

BEVEL NO MORE THAN THE LAST 1/4" OF THE INSULATION WHEN INSTALLING AN ELASTIMOLD SPLICE. THIS BEVEL CAN BE MADE WITH A BEVELING TOOL OR WITH A KNIFE.

STEP 7: REMOVE THE PORTION OF THE SEMI-CONDUCTIVE INSULATION SHIELD SCORED IN STEP 5.

DO NOT SAND THE INSULATION EXCEPT WHEN IT IS NECESSARY.

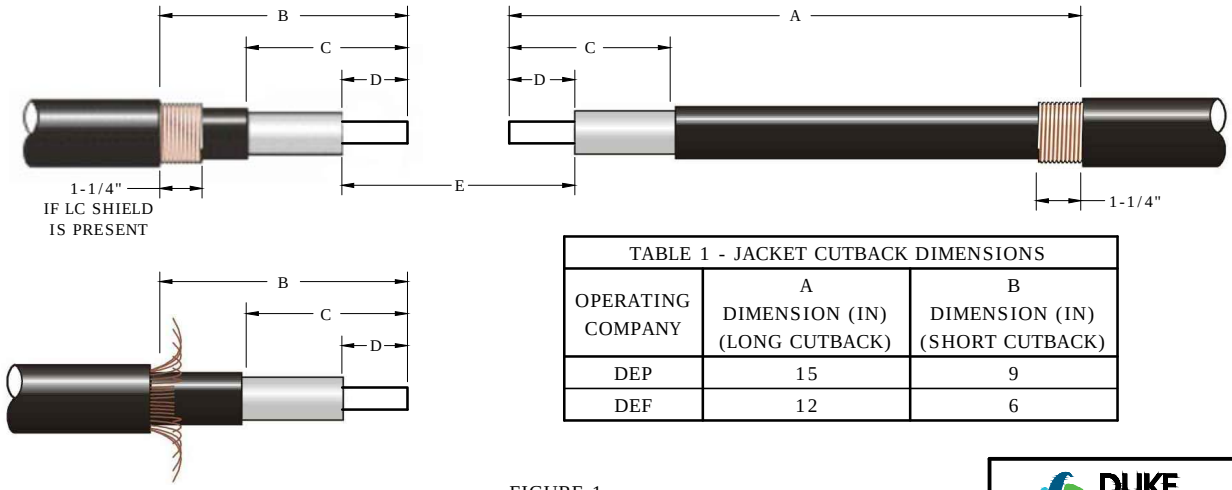

TABLE 1 - JACKET CUTBACK DIMENSIONS		
OPERATING COMPANY	A DIMENSION (IN) (LONG CUTBACK)	B DIMENSION (IN) (SHORT CUTBACK)
DEP	15	9
DEF	12	6

FIGURE 1
PREPARING CABLE ENDS

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DEC	DEM	DEP	DEF
		X	X

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REVISED	BY	CK'D	APPR.
0 12/16/14	EANES	FLETCHER	ADCOCK
1			
2			
3			

INSTALLING 200 AMP PRIMARY SPLICES:

LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

LC SHIELDED CABLE TO LC SHIELDED CABLE

DEC	DEM	DEP	DEF
		X	X

DUKE ENERGY.

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TABLE 2 - SEMI-CON AND INSULATION CUTBACK DIMENSIONS FOR 200 AMP SPLICES

OPERATING COMPANY AND ITEM NUMBER/ CAT ID	CONDUCTOR TO BE SPLICED	MANUFACTURER, HOUSING SIZE OR CATALOG NO.	C DIMENSION (IN) (SEMI-CON CUTBACK)	D DIMENSION (IN) (INSULATION REMOVAL)	E DIMENSION (IN) (CHECK DIMENSION)	SPLICING SLEEVES (ITEM NUMBER/ CAT ID)
DEF - CN 326456	#2- 15 KV TO #2 -15 KV	ELASTIMOLD SIZE F	4	1-3/4	4	DEF - #2 TO #2 (CN 326475)
		3-M 5411	3-5/8	1-1/4	N/A	
DEF - CN 326456	#2- 15 KV TO #1/0 -25 KV	3M 5411 "TRANSITION"	3-1/2	1-1/4	N/A	DEF -#2 TO #1/0 (CN 140120)
DEF - CN 326456	#1/0- 15 KV TO #1/0 -25 KV	3M-5411	3-5/8	1-1/4	N/A	N/A
		ELASTIMOLD SIZE F (DEF ONLY)	4	1-3/4	4	DEF -#1/0 TO #1/0 (CN 326478)
DEP - CN 11173705 DEP - CN 11173606	#2-25KV TO #2-25 KV	ELASTIMOLD SIZE G OR H	6	2	5" UNCRIMPED	DEP - #2 TO #2 (CN 11169703)
		3M 5420	5-1/8	1-5/8	N/A	-
		3M 5451 (DEP ONLY)	6	1-5/8	N/A	DEP -#2 TO #2 (CN 11169406)
DEP - CN 11173705	#1/0-25KV TO #1/0-25 KV	ELASTIMOLD SIZE G OR H	6	2	5" UNCRIMPED	DEP -#1/0 TO #1/0 (CN 11169604)
		3M-5451	6	1-5/8	N/A	DEP -#1/0 TO #1/0 (CN 11169901)
DEP - CN 11173705	#2-25KV TO #1/0-25 KV	3M 5451	6	1-5/8	N/A	DEP -#2 TO #1/0 (CN 11170107)
		ELASTIMOLD SIZE H (DEP ONLY)	6	2	5" UNCRIMPED	DEP -#2 TO #1/0 (CN 11169802)
DEP - CN 11139300	#1/0-25KV TO #1/0-25 KV	3M 54511R "REPAIR"	4-3/4	1-1/2	N/A	N/A

STEP 8: VERIFY THAT ALL CUTBACKS HAVE BEEN MADE TO THE PROPER DIMENSION. CORRECT THE INSULATION AND SEMI-CONDUCTIVE SHIELD CUTBACKS IF THEY ARE NOT WITHIN 1/8" OF THE DIMENSIONS PROVIDED IN TABLE 2.

STEP 9: VERIFY THAT THE RING CUT ON THE SEMI-CONDUCTIVE SHIELD IS STRAIGHT AND SMOOTH ALL THE WAY AROUND THE CABLE. NO POINTS OR UNEVENNESS MAY EXIST. CORRECT ANY IRREGULARITIES THAT EXIST. THESE IRREGULARITIES MAY BE REMOVED WITH A KNIFE AS LONG AS EXTREME CAUTION IS USED AND THAT NO NICKS ARE MADE INTO THE CABLE INSULATION.

STEP 10: VERIFY THAT THE INSULATION IS SMOOTH AND FREE OF ANY NICKS OR CUTS BY CAREFULLY RUBBING IT WITH YOUR FINGERS. ANY NICKS, CUTS, OR DENTS MUST BE REMOVED WITH 240 GRIT ALUMINUM OXIDE CLOTH, SEE TABLE 3. DO NOT USE 120 GRIT ALUMINUM OXIDE CLOTH.

TABLE 3- NON-METALLIC ALUMINUM OXIDE CLOTH	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	30633705
DEF	9220275434

IF CUTS WERE MADE INTO THE INSULATION AS A RESULT OF THE STRIPPING TOOL BEING SET TOO DEEP, THEN THE RING CUT MUST BE RELOCATED TO ALLOW THIS CUT TO BE SANDED OUT OF THE INSULATION. THIS CAN BE ACCOMPLISHED BY CUTTING AT LEAST 3/4" OFF THE CONDUCTOR AND THEN REMAKING ALL CUTBACKS FROM THAT POINT.

STEP 11: PLACE THE TWO COLD-SHRINK SPLICE JACKET ASSEMBLIES, SEE TABLE 4, ONTO EITHER ONE OF THE CABLES AND SLIDE THEM OUT OF THE WAY. THESE ASSEMBLIES WILL BE INSTALLED LATER. POSITION THE ENDS OF THE ASSEMBLIES WITH THE LOOSE CORE STRANDS IN A MANNER THAT WILL ALLOW THE CORES TO BE REMOVED IN THE EASIEST MANNER. SEE FIGURE 2.

TABLE 4 - COLD SHRINK SPLICE JACKET ASSEMBLY	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	9220271256
DEF	9220271257

FIGURE 2
PLACING COLD-SHRINK JACKET ONTO CABLE

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DEC	DEM	DEP	DEF
		X	X

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STEP 12: PLACE A GROUND SOCK, SEE TABLE 5, ONTO EITHER ONE OF THE CABLES AND SLIDE IT OUT OF THE WAY. THIS GROUND SOCK WILL BE INSTALLED LATER. SEE FIGURE 3.

TABLE 5 - COLD SHRINK SPLICE JACKET ASSEMBLY	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	9220271258
DEF	9220271259

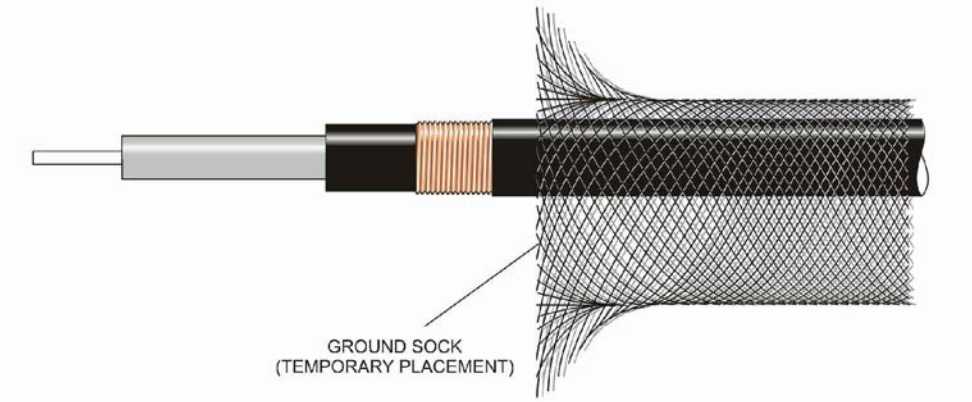


FIGURE 3
PLACING GROUND SOCK ON CABLE

STEP 13: WIRE BRUSH THE CONDUCTOR OF THE CABLE WITH THE LONG CUTBACK DIMENSION AND IMMEDIATELY PUSH THE CONNECTOR ONTO IT.

DO NOT USE OXIDE CLOTH TO BRUSH THE CONDUCTOR.

DO NOT REMOVE ANY OF THE OXIDE INHIBITOR FROM THE CONNECTOR BEFORE PUSHING IT ONTO THE CONDUCTOR.

STEP 14: CRIMP THE CONNECTOR WITH A 5/8″ OR BG DIE. MAKE THE FIRST CRIMP NEAR THE CENTER OF THE CONNECTOR AND WORK TOWARD ITS END UNTIL THE APPROPRIATE NUMBER OF CRIMPS HAVE BEEN MADE. BE CERTAIN TO ROTATE THE CRIMP TOOL 90° BETWEEN EACH CRIMP.

STEP 15: REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

STEP 16: CLEAN THE CABLE INSULATION ON THE CABLE WITH THE LONG CUTBACK DIMENSION WITH A CLEAN TOWEL AND CABLE CLEANING FLUID, SEE TABLE 6, TO REMOVE ANY CONTAMINATION OR PARTICLES OF THE SEMI-CONDUCTING SHIELD THAT MIGHT BE PRESENT ON THE INSULATION.

TABLE 6 - TOWEL AND CLEANING FLUID		
OPERATING AREA	TOWEL ITEM NUMBER OR CAT ID	CLEANING FLUID ITEM NUMBER OR CAT ID
DEP	2054	30525000
DEF	2054	2055

ALWAYS CLEAN FROM THE CONNECTOR TOWARDS THE SEMI-CONDUCTING SHIELD. DO NOT EVER TOUCH THE INSULATION WITH THE AREA ON A TOWEL THAT HAS TOUCHED THE SEMI-CONDUCTING SHIELD.

DUKE ENERGY.

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DEC	DEM	DEP	DEF
		X	X

26.01-04D

STEP 17: LUBRICATE THE CABLE INSULATION AND INSULATION SHIELD WITH THE SILICONE GREASE PROVIDED IN THE SPLICE KIT OR WITH STOCKED GREASE, SEE TABLE 7. BE CERTAIN TO APPLY A LIBERAL AMOUNT OF SILICONE GREASE AT THE END OF THE SEMI-CONDUCTIVE SHIELD TO ELIMINATE THE POSSIBILITY OF AIR GAPS DEVELOPING IN THIS AREA.

TABLE 7 - SILICONE GREASE	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	30520803
DEF	403133

APPLY SILICONE GREASE WITH A CLEAN TOWEL OR A PLASTIC BAG TURNED INSIDE OUT.

STEP 18: SLIDE THE SPLICE HOUSING ONTO THE CABLE WITH THE LONG CUTBACK DIMENSION. THE HOUSING MUST BE PUSHED FAR ENOUGH TO EXPOSE THE CRIMP AREA ON THE CONNECTOR FOR THE OTHER CABLE.

STEP 19: VERIFY THAT THE SPLICE JACKET ASSEMBLIES AND THE GROUND SOCK HAVE BEEN PLACED ONTO ONE OF THE CONDUCTORS. IF NOT, SLIDE THEM OVER ONE OF THE CABLES NOW AND PUSH THEM OUT OF THE WAY. THEY WILL BE INSTALLED LATER.

STEP 20: WIRE BRUSH THE CONDUCTOR OF THE CABLE WITH THE SHORT CUTBACK DIMENSION AND IMMEDIATELY PUSH THE CONNECTOR ONTO IT.

DO NOT USE OXIDE CLOTH TO BRUSH THE CONDUCTOR.

DO NOT REMOVE ANY OF THE OXIDE INHIBITOR FROM THE CONNECTOR BEFORE PUSHING IT ONTO THE CONDUCTOR.

STEP 21: CRIMP THE CONNECTOR WITH A 5/8″ OR BG DIE. MAKE THE FIRST CRIMP NEAR THE CENTER OF THE CONNECTOR AND WORK TOWARD ITS END UNTIL THE APPROPRIATE NUMBER OF CRIMPS HAVE BEEN MADE. BE CERTAIN TO ROTATE THE CRIMP TOOL 90° BETWEEN EACH CRIMP.

STEP 22: REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

STEP 23: CLEAN THE CABLE INSULATION WITH A CLEAN TOWEL AND CABLE CLEANING FLUID. SEE TABLE 6, TO REMOVE ANY CONTAMINATION OR PARTICLES OF THE SEMI-CONDUCTING SHIELD THAT MIGHT BE PRESENT ON THE INSULATION.

ALWAYS CLEAN FROM THE CONNECTOR TOWARDS THE SEMI-CONDUCTING SHIELD. DO NOT EVER TOUCH THE INSULATION WITH THE AREA ON A TOWEL THAT HAS TOUCHED THE SEMI-CONDUCTING SHIELD.

STEP 24: LUBRICATE THE CABLE INSULATION AND INSULATION SHIELD WITH THE SILICONE GREASE PROVIDED IN THE SPLICE KIT OR WITH THE STOCKED GREASE, SEE TABLE 7. BE CERTAIN TO APPLY A LIBERAL AMOUNT OF SILICONE GREASE AT THE END OF THE SEMI-CONDUCTIVE SHIELD TO ELIMINATE THE POSSIBILITY OF AIR GAPS DEVELOPING IN THIS AREA.

APPLY SILICONE GREASE WITH A CLEAN TOWEL OR A PLASTIC BAG TURNED INSIDE OUT.

STEP 25: SLIDE THE SPLICE HOUSING INTO FINAL POSITION BY CENTERING IT BETWEEN THE SEMI-CONDUCTING SHIELD CUTBACKS AS SHOWN IN FIGURE 4 OR FIGURE 5.

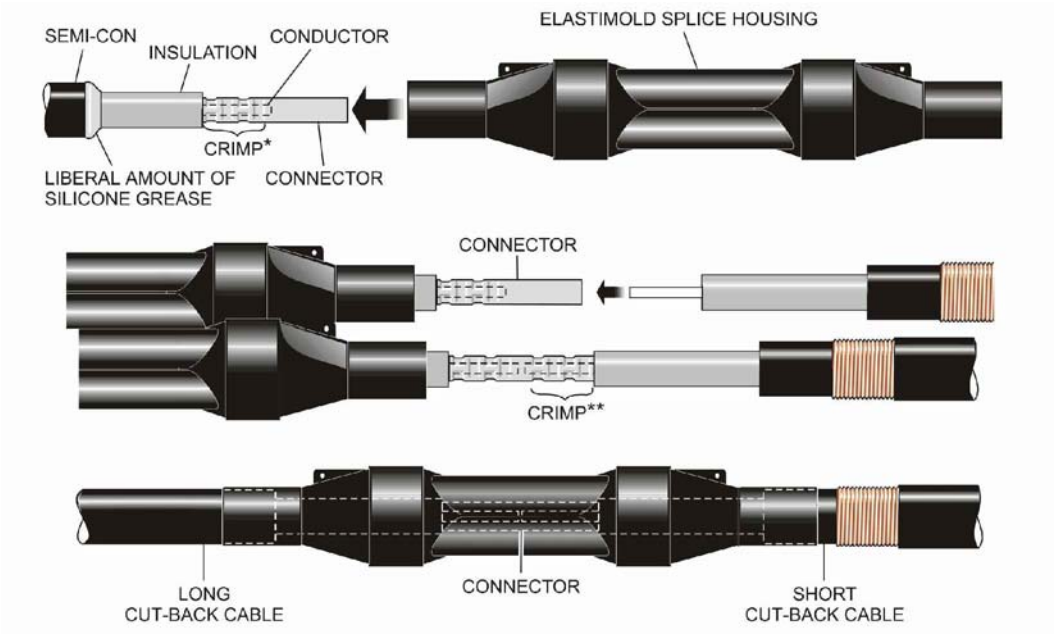


FIGURE 4
ELASTIMOLD SPLICE HOUSING

STEP 26: IF A 3M MODEL 5451 SPLICE IS BEING INSTALLED, USE THE FINGERTIPS OF BOTH HANDS TO ROLL OUT THE FOLDBACKS ON BOTH ENDS OF THE HOUSING. SEE FIGURE 5.

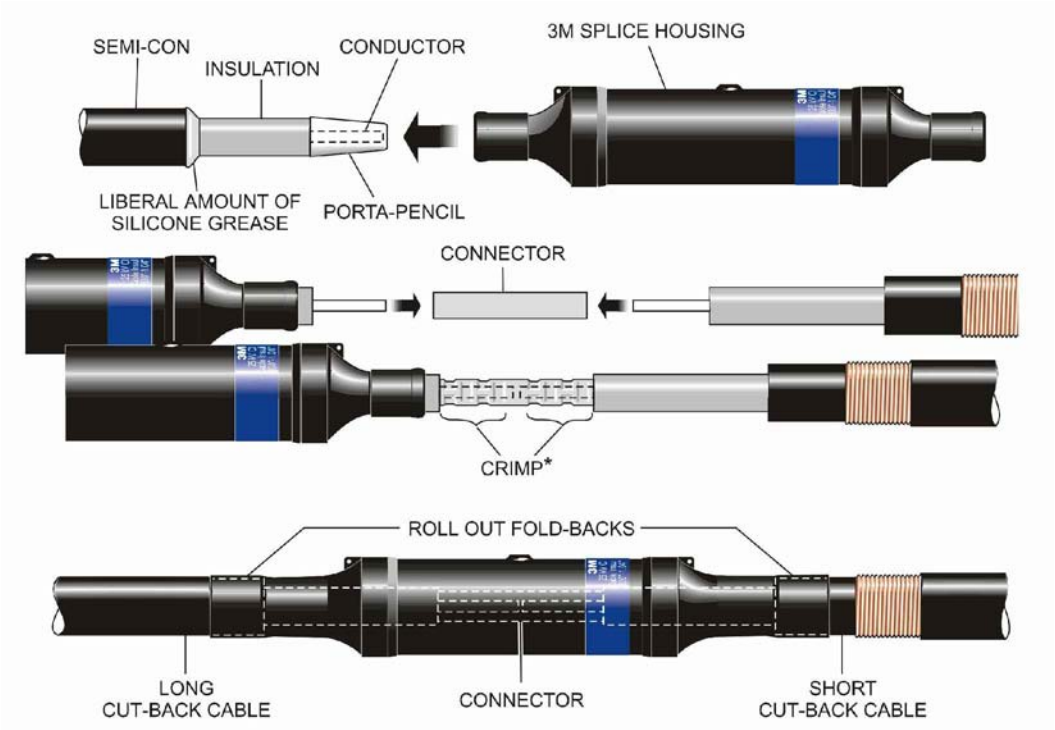


FIGURE 5
3M MODEL 5451 SPLICE HOUSING

DUKE ENERGY.

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DEC	DEM	DEP	DEF
		X	X

26.01-04F

STEP 27: RUB THE EXPOSED PORTION OF THE LC SHIELD WITH 240 GRIT ALUMINUM OXIDE CLOTH IN ORDER TO REMOVE ANY SURFACE FILM THAT MIGHT BE PRESENT. (WIRE BRUSHING COULD DAMAGE THE LC SHIELD.) POSITION THE GROUND SOCK OVER THE CENTER OF THE CABLE JACKET CUTBACKS AND, STARTING AT EITHER END, FORM THE SOCK TO THE SHAPES COVERED. SEE FIGURE 6. TWISTING THE GROUND SOCK WILL HELP TO MOLD IT TO THE SHAPE OF THE SPLICE HOUSING AND CABLE.

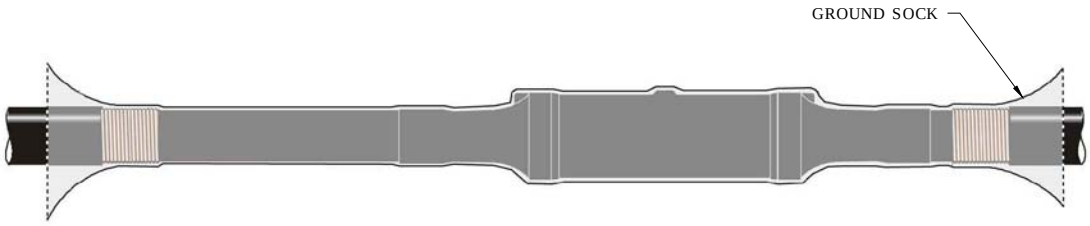


FIGURE 6
POSITIONING GROUND SOCK ON CABLE

STEP 28: WRAP ONE OF THE CONSTANT TENSION SPRINGS OVER THE GROUND SOCK AND LC SHIELD 1/4" FROM THE JACKET CUTBACK AS SHOWN IN FIGURE 7 PULL THE FINAL WRAP OF THE SPRING TO INSURE A TIGHT CONNECTION.

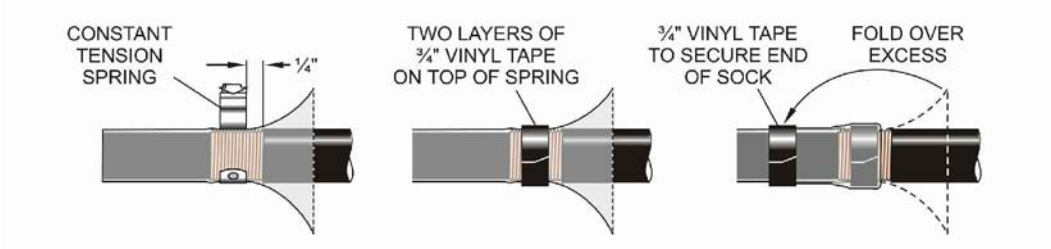


FIGURE 7
INSTALLING CONSTANT TENSION SPRING

STEP 29: TIGHTLY WRAP THE CONSTANT TENSION SPRING WITH TWO LAYERS OF 3/4" VINYL TAPE. BE CERTAIN TO WRAP THIS TAPE IN THE SAME DIRECTION AS THE WRAP OF THE SPRING. SEE FIGURE 7.

STEP 30: FOLD THE EXCESS END OF THE GROUND SOCK BACK OVER THE CONSTANT TENSION SPRING AND INTO CONTACT WITH THE MIDDLE PORTION OF THE SOCK. SECURE THIS END BY WRAPPING THEM WITH 3/4" VINYL TAPE. SEE FIGURE 7.

NOTE: IF THE OTHER END IS LC SHIELD, REPEAT STEPS 27 THRUGH 30, THEN GO TO STEP 33

STEP 31: TWIST THE STRANDS ON THE OTHER END OF THE GROUND SOCK INTO A BUNDLE.

STEP 32: TWIST THE CONCENTRIC NEUTRAL WIRES INTO A BUNDLE. CONNECT THE BUNDLE OF CONCENTRIC NEUTRAL WIRES TO THE BUNDLE OF GROUND SOCK STRANDS WITH AN APPROPRIATE CONNECTOR AS SHOWN IN FIGURE 8A. CUT OFF ANY EXCESS LENGTHS OF CONCENTRIC NEUTRAL WIRES.

FILE ANY SHARP EDGES FROM NEUTRAL CONNECTION. APPLY A LAYER OF VINYL PLASTIC SEAL AROUND THE NEUTRAL CONNECTION TO PREVENT DAMAGE TO THE SEMI-CON AND SPLICE JACKET. SECURE IN PLACE WITH 3/4" VINYL TAPE. SEE FIGURE 8B.

DUKE ENERGY.

3				
2				
1				
0	12/15/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DEC	DEM	DEP	DEF
		X	X

26.01-04G

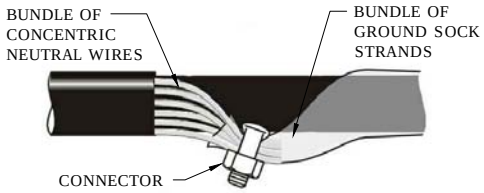


FIGURE 8A
CONNECTING CONCENTRIC NEUTRAL WIRES TO SPLICE SLEEVE

FIGURE 8B
TAPING CONNECTOR

STEP 33: TWIST THE GROUND SOCK TO INSURE THAT IT IS TIGHTLY FORMED AGAINST THE SPLICE HOUSING. PLACE SEVERAL WRAPS OF 3/4" VINYL TAPE AROUND THE GROUND SOCK IN VARIOUS LOCATIONS TO HOLD IT IN TIGHT CONTACT WITH THE SPLICE HOUSING. SEE FIGURE 9.

FIGURE 9
APPLYING VINYL TAPE AND MASTIC STRIPS

STEP 34: CLEAN THE LAST FIVE (5) INCHES OF BOTH CABLE JACKETS WITH CABLE CLEANING FLUID AND A CLEAN TOWEL. THEN SAND THIS AREA WITH 240 GRIT ALUMINUM OXIDE CLOTH.

STEP 35: APPLY THE RUBBER MASTIC PROVIDED IN THE KIT ON BOTH CABLE JACKET ENDS AS SHOWN IN FIGURE 10. PLACE THE STICKY SIDE TOWARD THE CABLE JACKET AND USE SLIGHT TENSION. APPLY FIVE (5) WRAPS OF MASTIC ON 1/0 25KV JACKETED CABLE AND USE THE ENTIRE ROLL FOR ANY 15KV CABLE OR 25KV UNJACKETED CABLE.

IF NECESSARY, IT IS ALLOWABLE TO APPLY VINYL TAPE TO THE EDGE OF THE MASTIC AFTER IT HAS BEEN WRAPPED ONTO THE CABLE IN ORDER TO MAKE IT EASIER TO REMOVE THE SPLICE JACKET CORE. HOWEVER, DO NOT COVER MORE THAN 1/2" OF THE TOP OF THE MASTIC WITH TAPE.

IT IS ALSO ALLOWABLE FOR SILICONE GREASE TO BE APPLIED OVER THE ENTIRE SURFACE OF THE MASTIC IN ORDER TO MAKE IT EASIER TO REMOVE THE SPLICE JACKET CORE.

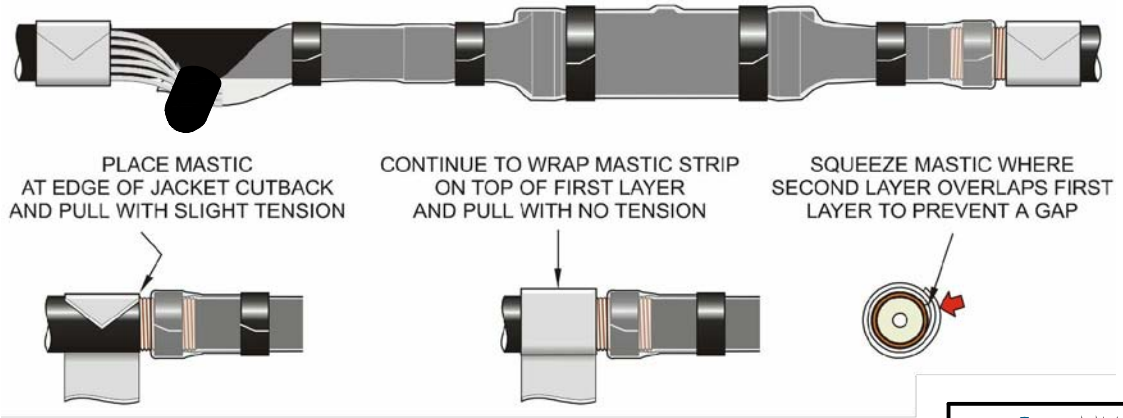


FIGURE 10
APPLYING RUBBER MASTIC

3				
2				
1				
0	12/15/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	X

26.01-04H

STEP 36: INSTALL THE SMALL COLD-SHRINK JACKET ASSEMBLY ONTO THE CABLE WITH THE SHORT CUTBACK DIMENSION BY PULLING AND WINDING ITS CORE STRAND IN A COUNTER-CLOCKWISE MOTION.

IT IS CRITICAL TO WIND THE LOOSE CORE STRAND AROUND THE CABLE AS YOU PULL IT SO THAT THE STRAND WILL STAY EQUAL WITH THE POINT ON THE OTHER END OF THE CORE WHERE THE STRAND IS TEARING AWAY FROM THE CORE. THIS WILL PREVENT THE STRAND FROM WINDING AROUND THE SPLICE AND BINDING TO IT. AN OCCASIONAL TUG OF THE STRAND WHILE UNWINDING WILL OFTEN MAKE THE CORE REMOVAL EASIER AS WELL.

THIS SMALL COLD-SHRINK ASSEMBLY MUST COVER AT LEAST 3″ OF THE LARGER DIAMETER PORTION OF THE SPLICE HOUSING AND AT LEAST 1″ OF THE CABLE JACKET BEYOND THE MASTIC. SEE FIGURE 11.

FIGURE 11
INSTALLING SMALL COLD-SHRINK JACKET ASSEMBLY

STEP 37: INSTALL THE LARGE COLD-SHRINK JACKET ASSEMBLY ONTO THE CABLE WITH THE LONG CUTBACK DIMENSION BY PULLING AND WINDING ITS CORE STRAND IN A COUNTER-CLOCKWISE MOTION.

IT IS CRITICAL TO WIND THE LOOSE CORE STRAND AROUND THE CABLE AS YOU PULL IT SO THAT THE STRAND WILL STAY EQUAL WITH THE POINT ON THE OTHER END OF THE CORE WHERE THE STRAND IS TEARING AWAY FROM THE CORE. THIS WILL PREVENT THE STRAND FROM WINDING AROUND THE SPLICE AND BINDING. AN OCCASIONAL TUG OF THE STRAND WHILE UNWINDING WILL OFTEN MAKE THE CORE REMOVAL EASIER AS WELL.

THIS LARGE COLD-SHRINK ASSEMBLY MUST COVER AT LEAST 2″ OF THE PREVIOUSLY INSTALLED SMALL ASSEMBLY AND AT LEAST 1″ OF THE CABLE JACKET BEYOND THE MASTIC. SEE FIGURE 12.

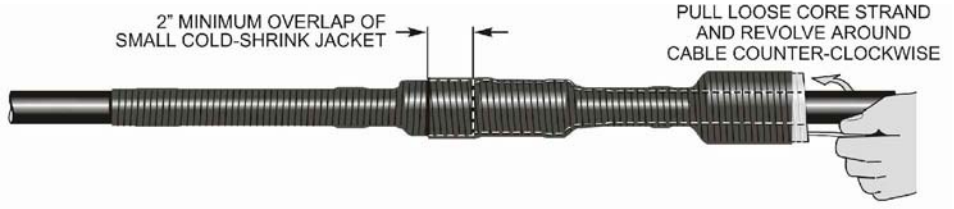


FIGURE 12
INSTALLING LARGE COLD-SHRINK JACKET ASSEMBLY

3				
2				
1				
0	12/15/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTALLING 200 AMP PRIMARY SPLICES:
LC SHIELDED CABLE TO LC SHIELDED CABLE
LC SHIELDED CABLE TO CONCENTRIC NEUTRAL CABLE

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	X

26.01-04I

"3M" 200 AMP STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS

1. REMOVE OUTER JACKET 16" FROM END OF CABLE X AND 10" FROM END OF CABLE Y. FOLD CONCENTRIC NEUTRAL WIRES BACK.

   CAREFULLY REMOVE INSULATION SHIELD 6" FROM END OF CABLE AND REMOVE INSULATION 1-5/8" FROM END OF CABLE. PREPARE BOTH CABLE ENDS IN THIS MANNER.

   SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000).

2. A "PORTA-PENCIL" IS INCLUDED WITH EACH SPLICE KIT. THE "PORTA-PENCIL" PROVIDES FOR EASE IN SLIDING THE SPLICE HOUSING ONTO THE CABLE AND PROTECTION OF THE SPLICE BORE FROM THE EXPOSED CONDUCTOR.

   PLACE "PORTA-PENCIL" OVER CONDUCTOR OF CABLE X.

   LUBRICATE "PORTA-PENCIL", CABLE INSULATION, SPLICE BORE, AND SEMI-CON OF CABLE X, WITH SILICONE GREASE FURNISHED.

   SLIDE SPLICE HOUSING ONTO CABLE X.

   REMOVE "PORTA-PENCIL" AND DISCARD.

3. WIRE BRUSH EXPOSED CONDUCTOR OF BOTH CABLES AND IMMEDIATELY INSERT INTO CONNECTOR. CRIMP BOTH SIDES OF CONNECTOR COMPLETELY.

   NOTE: IF REPLACEMENT CONTACT IS REQUIRED, USE ONLY THOSE CONTACTS GIVEN IN TABLE ON DWG. 26.01-20B. DO NOT SUBSTITUTE "ELASTIMOLD" CONTACTS FOR "3M" CONTACTS OR VICE-VERSA.

   SLIDE SPLICE BODY INTO FINAL POSITION BY CENTERING BETWEEN SEMI-CON CUTBACKS. USE EXCESS GREASE TO FILL AREA AT FOLD-BACK ON CABLE X END.

   USE FINGER TIPS OF BOTH HANDS TO ROLL OUT FOLD-BACKS ON BOTH ENDS OF SPLICE. SPLICE ENDS MUST OVERLAP CABLE SEMI-CON.

4. SEAL CONCENTRIC NEUTRALS AT OUTER JACKET CUT-BACK LOCATION. SEE DWG. 26.01-20B FIGURE 4.

   GROUND SPLICE HOUSING BY ATTACHING A PIECE OF CONCENTRIC NEUTRAL WIRE TO EACH GROUNDING EYE. RECONNECT THE TWO NEUTRALS WITH A PIECE OF #2 B.C.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, 200 AMP STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS

Duke Energy®

CAR DWG. 26.01-20A

WIRE SIZE	CN	COMP. UNIT	REPLACEMENT SLEEVES CN
#2 AL. - 2 AL.	11173705	SPCNP10C	11169406
#1/0 AL. - 1/0 AL	11173705	SPCNP10C	11169901
#2 AL. - 1/0 AL.	11173705	SPCNP10C	11170107

FIGURE 1

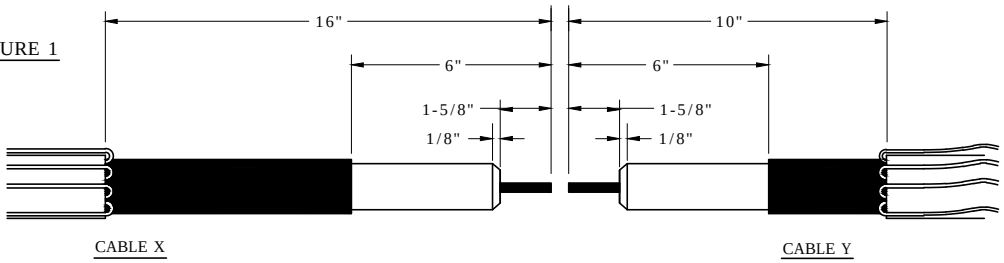


FIGURE 2

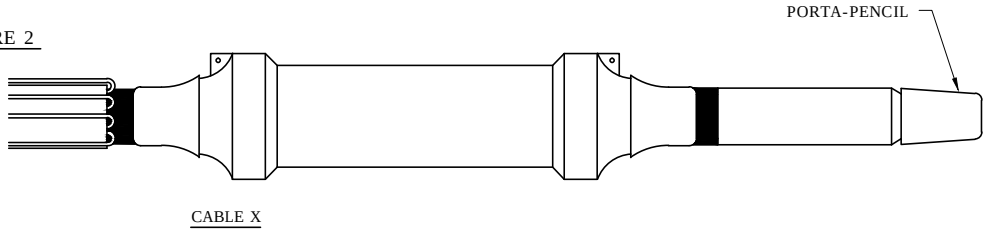


FIGURE 3

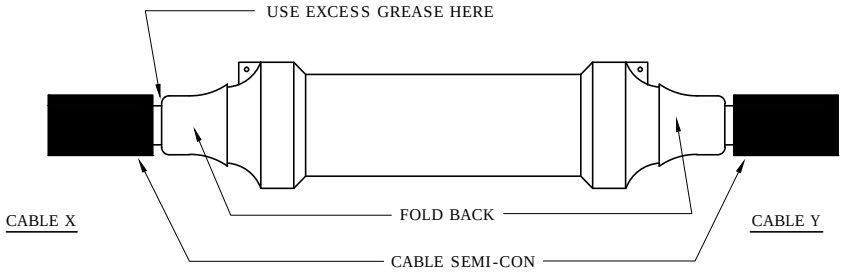
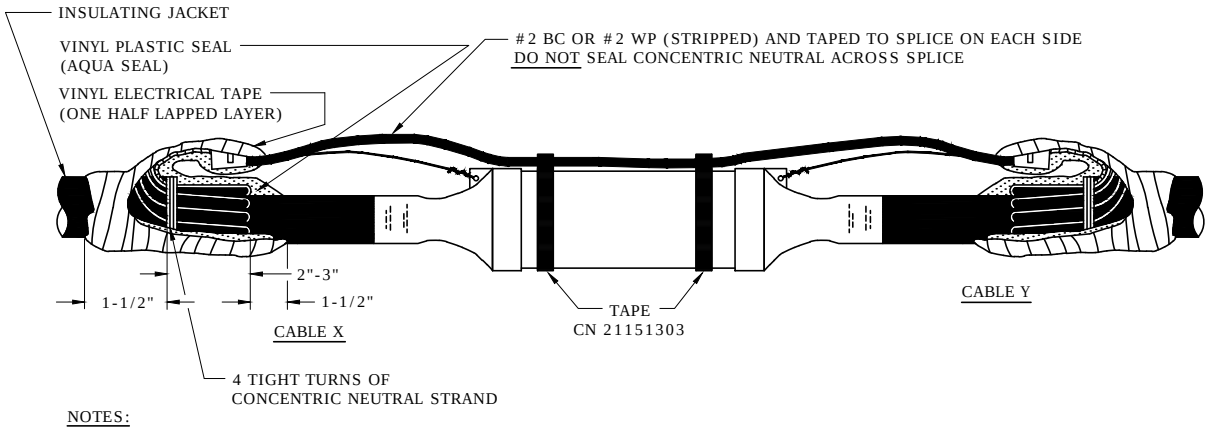


FIGURE 4



NOTES:

1. NEVER SUBSTITUTE ELASTIMOLD COMPRESSION SLEEVES FOR 3M SLEEVES OR VICE-VERSA.
2. SPLICE HOUSING IS SIZED FOR USE WITH #2 OR 1/0 PRIMARY CABLE. TO SPLICE 1/0 TO #2 OR #2 TO #2, SUBSTITUTE COMPRESSION SLEEVE GIVEN IN TABLE ABOVE FOR THE #1/0 TO #1/0 SLEEVE INCLUDED WITH SPLICE KIT.
3. CONCENTRIC NEUTRALS SHOULD BE SEALED AS SHOWN IN FIG. 4 ABOVE.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, 200 AMP STRAIGHT SPLICE

INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.01-20B

"3M" 200 AMP REPAIR SPLICE

INSTALLATION INSTRUCTIONS

CN 11139300

NOTE: THE "3M" REPAIR SPLICE IS DESIGNED TO REPLACE UP TO 6" OF DAMAGED CABLE. IF MORE THAN 6" IS NEEDED, USE TWO STRAIGHT SPLICES (DWGS. 26.01-20A AND 26.01-20B) AND A SECTION OF NEW CABLE.

CABLE PREPARATION (FIGURE 1)

1. CUT OUT DAMAGED SECTION OF CABLE, BUT DO NOT EXCEED 6". REMOVE OUTER JACKET 15" FROM END OF CABLE X AND 7" FROM CABLE Y. FOLD CONCENTRIC NEUTRAL WIRES BACK.

   CAREFULLY REMOVE INSULATION SHIELD 4-3/4" FROM END OF CABLE AND REMOVE INSULATION 1-1/2" FROM END OF CABLE. PREPARE BOTH CABLE ENDS IN THIS MANNER.

   SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000).

INSTALLATION (FIGURE 2)

2. WIREBRUSH EXPOSED CONDUCTOR OF BOTH CABLES AND IMMEDIATELY INSERT CONNECTOR PROVIDED ONTO CABLE X ONLY AND CRIMP CONNECTOR ONTO CABLE X. REMOVE EXCESS CONTACT AID FROM CONNNECTOR END AND FILE OFF ANY SHARP CRIMP FLASHING.

   LUBRICATE THE CONNECTOR, CABLE X INSULATION AND BOTH ENDS OF SPLICE BORE WITH SILICONE GREASE PROVIDED.

   SLIDE THE SPLICE BODY ONTO CONNECTOR AND CABLE X UNTIL UNCRIMPED CONNECTOR END IS EXPOSED. FOR EASE IN INSTALLATION, THE SPLICE BODY MAY BE ROTATED WHILE BEING INSTALLED.

(FIGURE 3)

CONNECT EXPOSED CONNECTOR END TO CABLE Y AND CRIMP. REMOVE EXCESS CONTACT AID FROM CONNECTOR END AND FILE OFF ANY SHARP CRIMP FLASHING. PLACE A TAPE MARKER ON CABLE Y SEMI-CONDUCTIVE INSULATION SHIELD, 1/2" FROM END OF CABLE SEMI-CON.

(FIGURE 4)

LUBRICATE EXPOSED CONNECTOR AND CABLE Y INSULATION WITH SILICONE GREASE. CENTER SPLICE BODY OVER CONNECTOR, SO LEADING EDGE ALIGNS WITH TAPE MAKER. REMOVE TAPE MARKER.

GROUNDING SPLICE (FIGURE 5)

3. SEAL CONCENTRIC NEUTRALS AT OUTER JACKET CUT-BACK LOCATION. SEE DWG. 26.03-02 FIGURE 5.

GROUND SPLICE HOUSING BY ATTACHING A PIECE OF CONCENTRIC NEUTRAL WIRE TO EACH GROUNDING EYE. RECONNECT THE TWO NEUTRALS WITH A PIECE OF #2 BC.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, #1/0, 200 AMP REPAIR SPLICE

Duke Energy

CAR

DWG. 26.01-24A

FIGURE 1

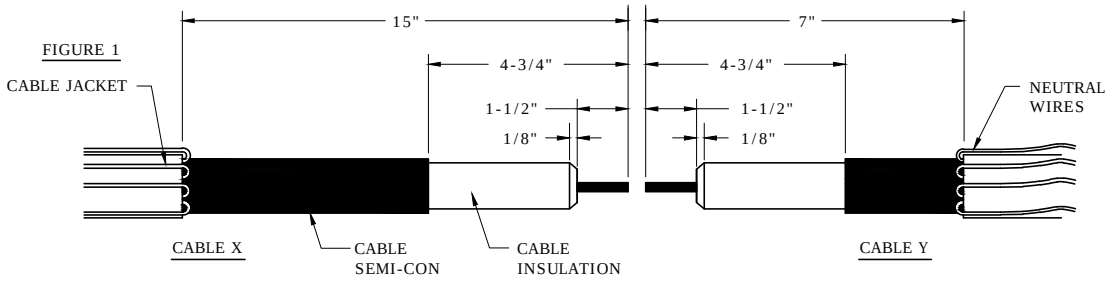


FIGURE 2

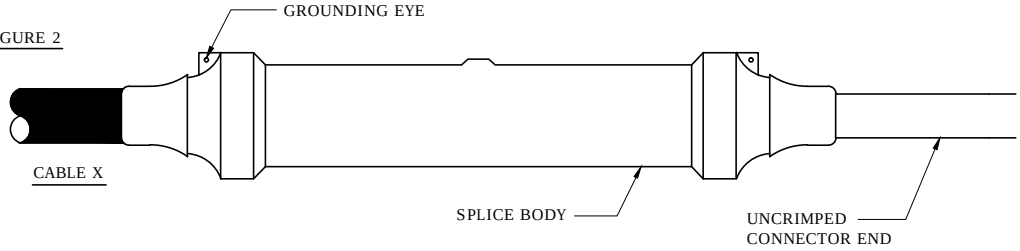


FIGURE 3

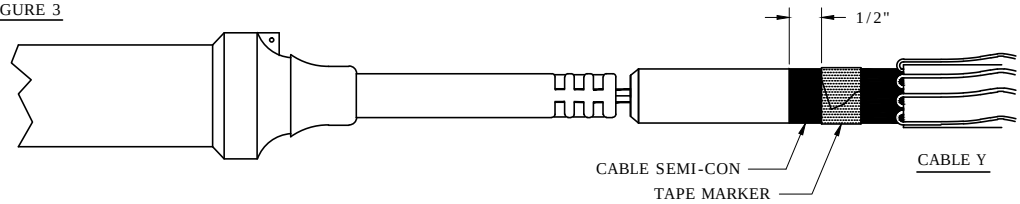


FIGURE 4

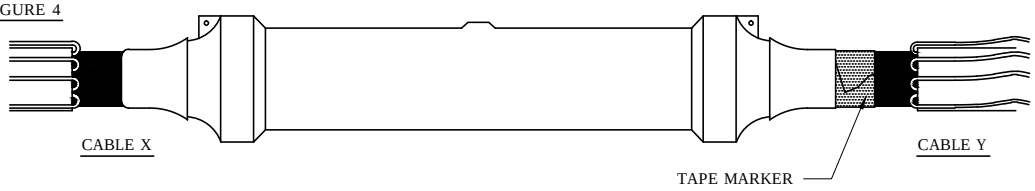
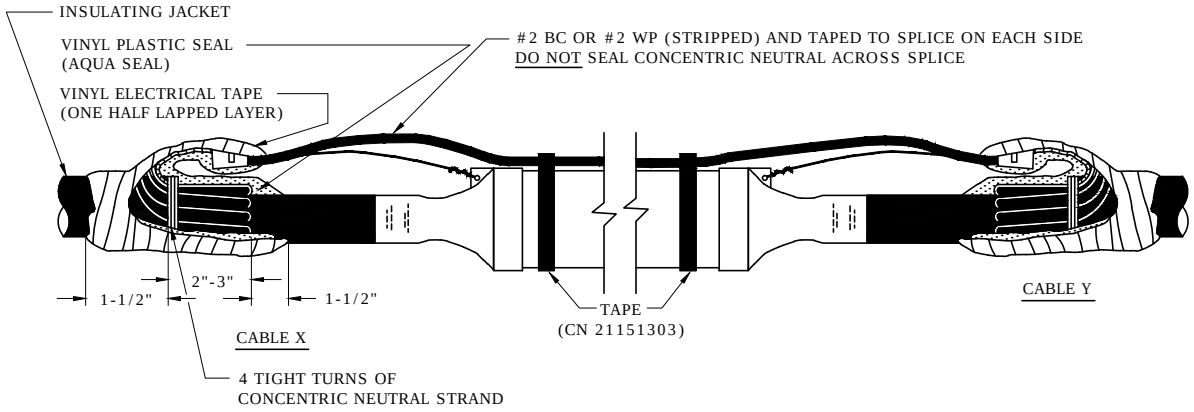


FIGURE 5



NOTES:

1. CONCENTRIC NEUTRALS SHOULD BE SEALED AS SHOWN IN FIGURE 5 ABOVE.

CN 11139300

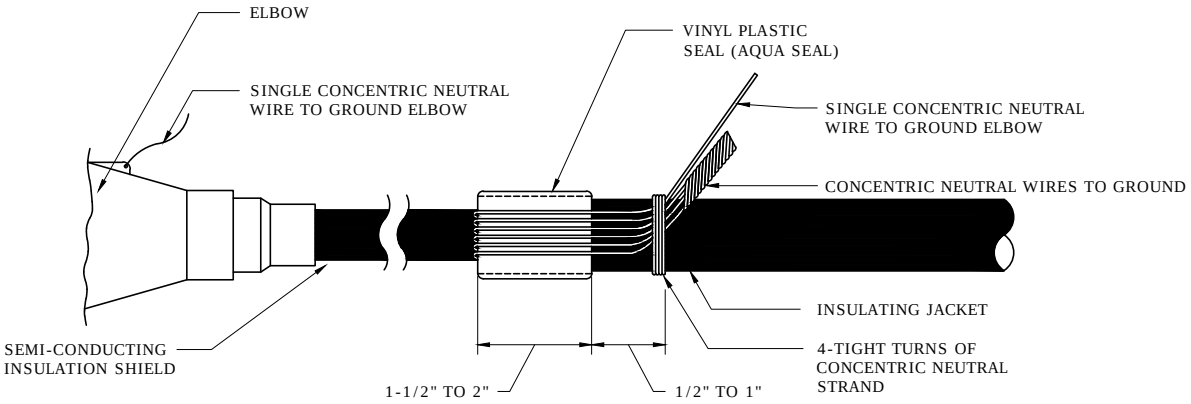
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, #1/0, 200 AMP REPAIR SPLICE

Duke Energy®

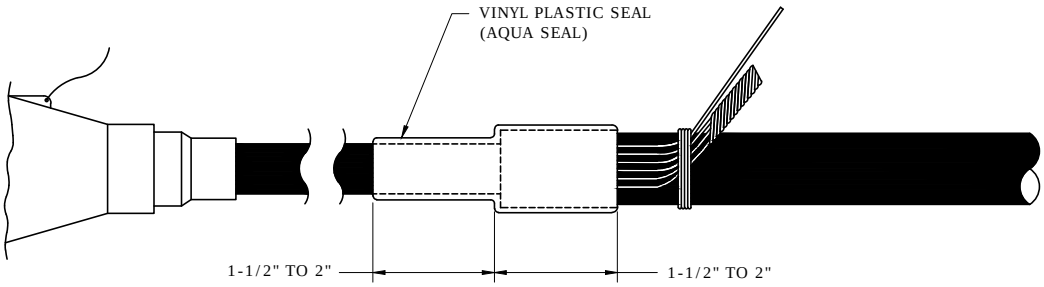
CAR

DWG. 26.01-24B



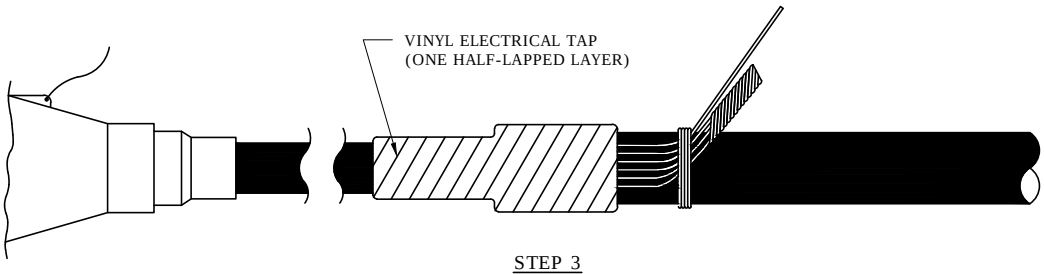
STEP 1

APPLY VINYL PLASTIC SEAL OVER INSULATING JACKET AND PRESS CONCENTRIC NEUTRALS BACK INTO VINYL PLASTIC SEAL.



STEP 2

APPLY VINYL PLASTIC SEAL OVER CONCENTRIC NEUTRALS AND OVERLAP ON SEMI-CONDUCTING INSULATION SHIELD.



STEP 3

APPLY ONE HALF-LAPPED LAYER OF VINYL ELECTRICAL TAPE OVER VINYL PLASTIC SEAL.

NOTES:

1. AS SHOWN ABOVE, SEAL THE JACKETS OF #2 AND #1/0 PRIMARY CABLES BY PLACING A LAYER OF VINYL PLASTIC SEAL TAPE UNDER AND OVER THE CONCENTRIC NEUTRAL WIRES. USE A HALF-LAP LAYER OF VINYL ELECTRICAL TAPE OVER THE VINYL PLASTIC SEAL AS A PROTECTIVE COATING. FOR 350 AND 750 KCMIL CABLES, USE THE JACKET SEALING KIT PER DWG. 26.03-02. SEE DWG. 26.01-01B FOR PROPER JACKET SEALING OF UNDERGROUND SPLICES.
2. USE CARE TO PREVENT BREAKING OF ANY CONCENTRIC NEUTRAL STRAND WIRES.
3. SEE SECTION 26.06 FOR TERMINATION INSTRUCTIONS.

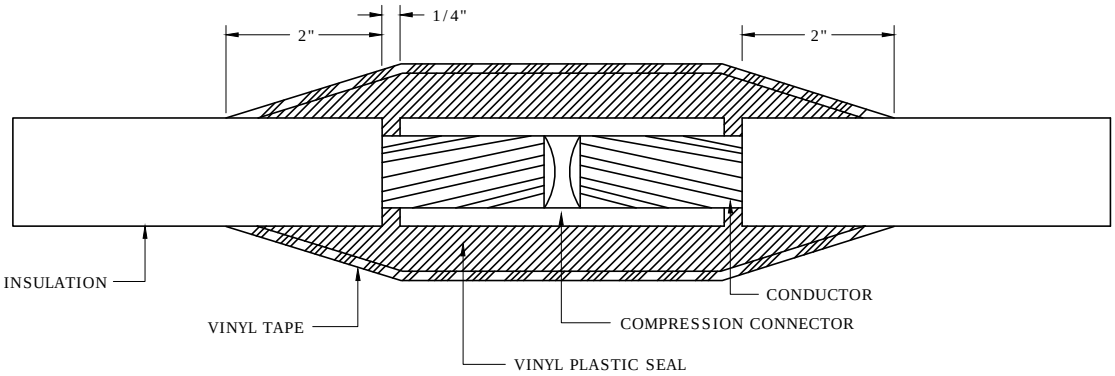
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

TAPE SEALING OF #2, #1/0 JACKETED CONCENTRIC NEUTRAL CABLE

Duke Energy®

CAR

DWG. 26.01-26



NOTES:

1. REMOVE INSULATION ON EACH END OF CABLE ONE-HALF THE LENGTH OF THE CONNECTOR PLUS 1/4" BE CAREFUL NOT TO NICK THE CONDUCTOR.

2. JOIN THE CONDUCTORS WITH PROPER SEMI-TENSION CONNECTOR. THEN WIPE OFF EXCESS INHIBITOR. THOROUGHLY CLEAN INHIBITOR AND DIRT FROM LAST 3" OF CABLE INSULATION ON EACH END.

3. FILL IN LOW PLACES BETWEEN CABLE INSULATION AND CONNECTOR WITH VINYL PLASTIC SEAL, CN 21154208 TO ELIMINATE VOIDS. APPLY 2 LAYERS OF 1/8" VINYL PLASTIC SEAL OVER CONNECTOR AND EXTEND 2" OVER INSULATION ON EACH SIDE.

4. WRAP THE ENTIRE JOINT WITH 2 HALFLAPPED LAYERS OF VINYL TAPE CN 21151204. STRETCH 3/4" TAPE TO TAPE TO 5/8" DURING APPLICATION.

5. USE EXTREME CARE TO AVOID HAVING ROCKS OR OTHER SHARP OBJECTS NEAR SPLICE OR IN BACKFILL.

6. INSULATED NEUTRAL CONDUCTORS MUST ALSO BE SPLICED TOGETHER AS SHOWN ABOVE.

ALUMINUM SLEEVE				
CONDUCTOR	ALUMINUM SLEEVE CATALOG NUMBER	DIES - UG SECONDARY		
		BURNDY	ALCOA	HUSKIE
750	11164803	P39ART	6024AH	HT61FC

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

STRAIGHT SPLICE - TAPED

600 VOLT CABLE

Duke Energy®

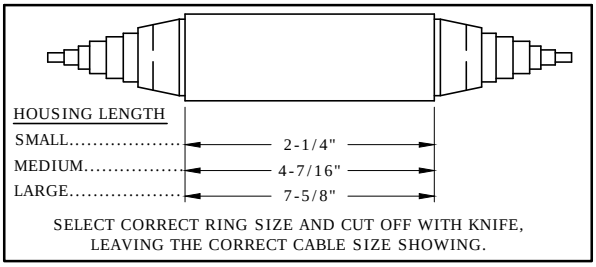
CAR

DWG. 26.02-10

SMALL SPLICE HOUSING - CN 21035308		
CABLE SIZE	SLEEVE CN	CABLE CUTBACK
10 TO 10	11141108	DIE SIZE-5/8"
#6 AL TO #6 AL	140106	
4 TO 4	11164209	
2 TO 2	11164308	1-1/8"
2 TO 4	11161106	

MEDIUM SPLICE HOUSING - CN 21035100		
CABLE SIZE	SLEEVE CN	CABLE CUTBACK
1/0 TO 1/0	9220254360	"X"=CHECK SLEEVE FOR CUTBACK LENGTH AND DIE SIZE
1/0 TO 2/0	9220101181	
2/0 TO 2/0	11164407	
2/0 TO 4	11161205	
2/0 TO 2	11160108	
4/0 TO 4/0	11164506	
4/0 TO 2	11160504	"X"
4/0 TO 2/0	11160603	
350 TO 350	11164605	
350 TO 2/0	11160306	
350 TO 4/0	11160405	

LARGE SPLICE HOUSING - CN 21035118		
CABLE SIZE	SLEEVE CN	CABLE CUTBACK
500 TO 500	11164704	DIE SIZE-1-5/16" "X"=CHECK SLEEVE
500 TO 350	11160702	"X"



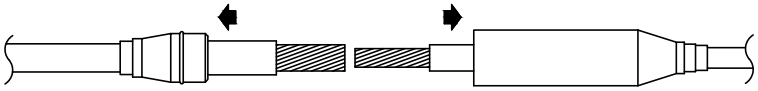
NOTES:

1. COMPLETED SPLICE AND CABLE MUST BE STRAIGHT TO PREVENT LEAKING.

INSTALLATION INSTRUCTIONS

STEP 1:

CHECK ABOVE FOR THE INSULATION REMOVAL LENGTH AND REMOVE THIS AMOUNT FROM BOTH ENDS OF THE CABLE. SELECT THE CORRECT RING DIAMETER AND CUT OFF BOTH ENDS OF THE SPLICE HOUSING LEAVING THE CORRECT CABLE SIZE SHOWING ON THE OPEN SPLICE COVER. USE SILICONE LUBRICANT TO LUBRICATE EACH CABLE ENTRANCE AND THE CONNECTING PARTS OF THE HOUSING. SLIDE AN END OF THE SPLICE HOUSING ONTO EACH END OF THE CABLE.

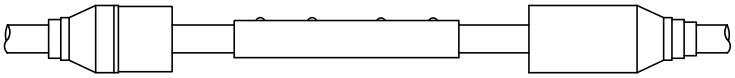


STEP 2:

WIRE BRUSH CONDUCTOR AND IMMEDIATELY INSERT INTO SLEEVE, MAKING SURE THE PROPER DIE AND TOOL IS USED, AND THE PROPER NUMBER OF CRIMPS ARE MADE. ROTATE SUCCESSIVE CRIMPS TO KEEP SPLICE STRAIGHT. CLEAN OFF INHIBITOR WITH A CLEAN CLOTH MOISTENED WITH SOLVENT.

COMPRESSION

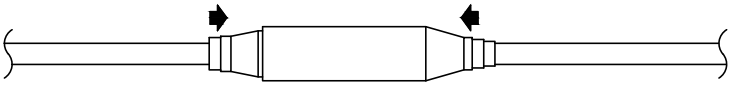
WIRE BRUSH THE CONDUCTORS AND IMMEDIATELY INSERT CONDUCTORS INTO THE MECHANICAL SLEEVE AND TIGHTEN SET SCREWS TO MANUFACTURER'S SPECIFICATIONS. CLEAN OFF INHIBITOR WITH A CLEAN CLOTH MOISTENED WITH SOLVENT.



MECHANICAL

STEP 3:

POSITION THE SHORT END OF THE SPLICE HOUSING OVER THE SLEEVE AND SLIDE THE OTHER END OF THE HOUSING ONTO THE SHORT END TO ENSURE PROPER POSITIONING OF THE HOUSING.



REVISED		BY	CK'D	APPR.
3				
2				
1	5/15/13	ROBESON	GUINN	ADCOCK
0	6/8/10	ROBESON	GUINN	ELKINS

STRAIGHT SPLICE - MOLDED

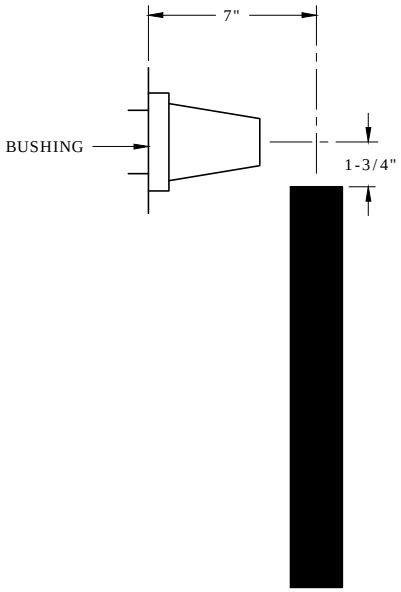
600 VOLT CABLE

DUKE ENERGY.

CAR

DWG. 26.02-11

STEP 1: TRAIN CABLE

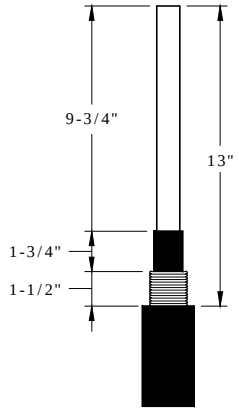


A. POSITION CABLE VERTICALLY SO THAT IT IS CENTERED BETWEEN APPARATUS BUSHING AND PARKING POCKET, PARALLEL TO AND 7" FROM APPARATUS FRONT PLATE.

B. PROVIDE ADEQUATE CABLE SLACK FOR CABLE MOVEMENT BETWEEN STANDOFF BUSHING AND APPARATUS BUSHING.

C. CUT CABLE 1-3/4" FROM CENTERLINE OF BUSHING.

STEP 2: PREPARE CABLE



A. PREPARE CABLE AS SHOWN IN THE VIEW ABOVE.

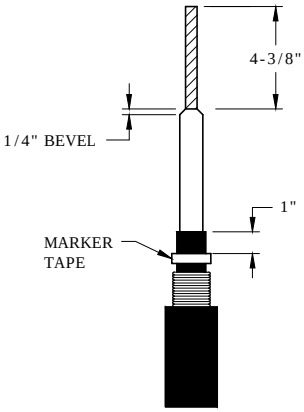
1. TO REMOVE LC SHIELD, TEMPORARILY PLACE A HOSE CLAMP OR THE CONSTANT FORCE SPRING AT THE CUTBACK POINT. USING NEEDLE NOSE PLIERS, PULL THE LC SHIELD DOWN ALONG THE EDGE. THIS WILL SEPARATE THE LC SHIELD. USING PLIERS, GRAB THE LC SHIELD NEAR CUT BACK POINT (TENSION SPRING) AND TEAR OFF SHIELD AROUND CABLE. THE SHIELD WILL RIP AWAY AT THE EDGE OF THE CLAMP.

   IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH INSULATION SHIELD (SEMI-CON) INTO INSULATION.

   NOTE: USE APPROVED PRE-SETTABLE DEPTH TOOLS TO REMOVE THE OUTER JACKET, INSULATION SHIELD (SEMI-CON) AND INSULATION.

LC SHIELD IS SHARP, WEAR WORK GLOVES

STEP 3: REMOVE INSULATION

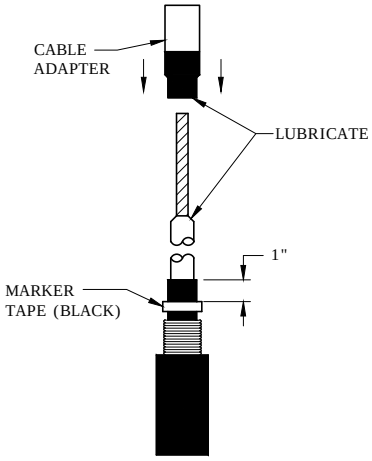


A. REMOVE INSULATOR 4-3/8" FROM END OF CABLE.

B. PLACE MARKER TAPE 1" FROM END OF INSULATION SHIELD.

C. BEVEL INSULATION 45° FOR APPROXIMATELY 1/4"

STEP 4: INSTALL CABLE ADAPTER



A. WIPE EXPOSED INSULATION THOROUGHLY WITH CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. WIPE IN DIRECTION AWAY FROM SEMI-CONDUCTING SHIELD. DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO DRY COMPLETELY BEFORE PROCEEDING.

IF NEEDED: REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING PARTICLES RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH.

CABLE ADAPTER WITH SILICONE GREASE PROVIDED. SLIDE CABLE ADAPTER OVER CABLE UNTIL BACK END OF ADAPTER IS FLUSH WITH MARKING TAPE ON SEMI-CONDUCTING INSULATION SHIELD.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

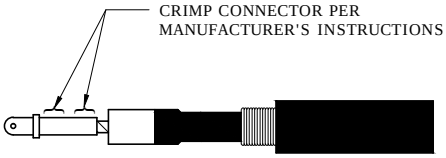
600 AMP DEADBREAK ELBOW INSTALLATION INSTRUCTIONS FOR ALL LC SHIELD CABLES BOTH 15KV AND 25KV

Duke Energy®

PGN

DWG. 26.03-01A

STEP 5: INSTALL CONNECTOR

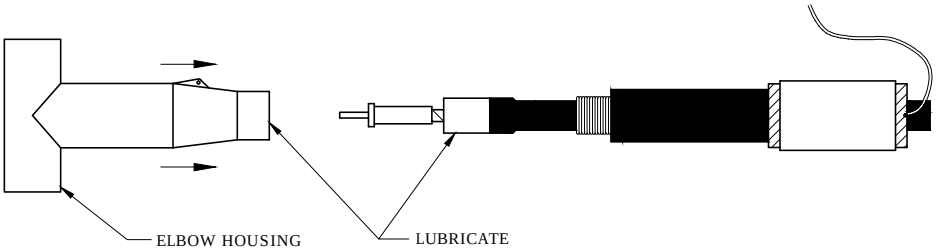


A. WIRE BRUSH BARE CONDUCTOR WITH LAY OF STRAND TOWARD END OF CABLE CLEANING ALL "STRAND SEAL" FROM THE OUTER SURFACE.

B. PLACE TERMINAL LUG ON CONDUCTOR. BEFORE MAKING FIRST CRIMP, ALIGN THE TERMINAL LUG SO THE HOLE IN THE LUG WILL ALIGN WITH THE THREADED STUD ON THE CONNECTOR PLUG OR APPARATUS BUSHING.

C. MAKE FIRST CRIMP AT SHOULDER ON TERMINAL LUG. BE SURE TO KEEP CABLE BOTTOMED IN THE TERMINAL LUG WHEN MAKING THE FIRST CRIMP. ROTATE ALTERNATE CRIMPS 90 DEGREES.

STEP 6: INSTALL ELBOW HOUSING

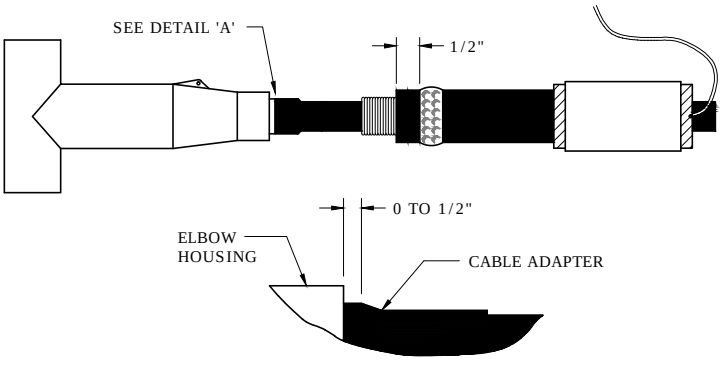


A. WIPE ALL EXCESS INHIBITOR FROM TERMINAL LUG AND ADAPTER SURFACE.

B. SLIDE COLD SHRINK SEALING TUBE (PGN CN 9220098623) OVER CABLE AND POSITION BACK OUT OF THE WAY.

C. REMOVE PROTECTIVE CAP FROM ELBOW HOUSING CABLE ENTRANCE. LUBRICATE CABLE ADAPTER AND INSIDE OF ELBOW HOUSING WITH SILICONE LUBRICANT PROVIDED. SLIDE THE CABLE INTO THE BODY OF ELBOW HOUSING UNTIL THE CABLE CANNOT ADVANCE FURTHER.

STEP 7: INSTALL MASTIC SEAL



DETAIL 'A'

A. VERIFY PROPER INSTALLATION OF ELBOW HOUSING IN ACCORDANCE WITH DETAIL 'A'.

B. SELECT ONE OF THREE-MASTIC STRIP FROM LC SHIELD GROUNDING KIT (PGN CN 9220098623). REMOVE LINER AND WRAP MASTIC AROUND CABLE JACKET 1/2 INCH FROM CUT EDGE. DISCARD ANY EXCESS.

3				
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1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

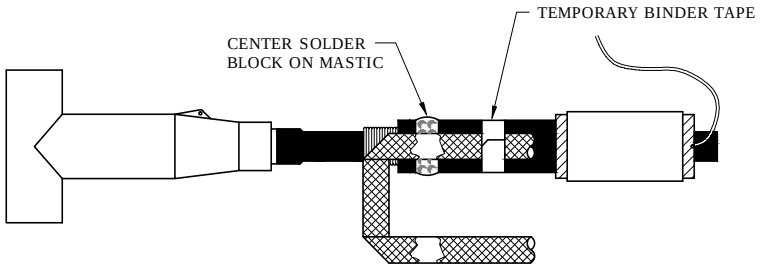
600 AMP DEADBREAK ELBOW INSTALLATION INSTRUCTIONS FOR ALL LC SHIELD CABLES BOTH 15KV AND 25KV

Duke Energy®

PGN

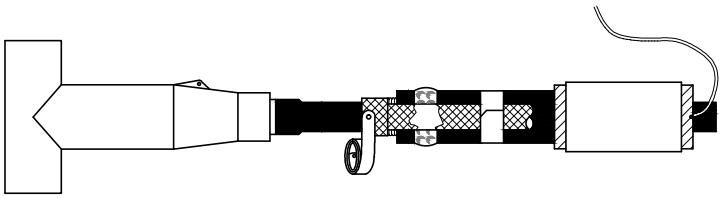
DWG. 26.03-01B

STEP 8: INSTALL GROUND BRAID/BLEEDER WIRE



A. POSITION TWIN PRE-FORMED GROUND BRAID WITH ONE TAIL ALONG CABLE JACKET AND SOLDER-BLOCK CENTERED ON MASTIC STRIP. A TEMPORARY BINDER OF VINYL TAPE WILL EASE STRAP INSTALLATION.

STEP 9: INSTALL CONSTANT FORCE SPRING



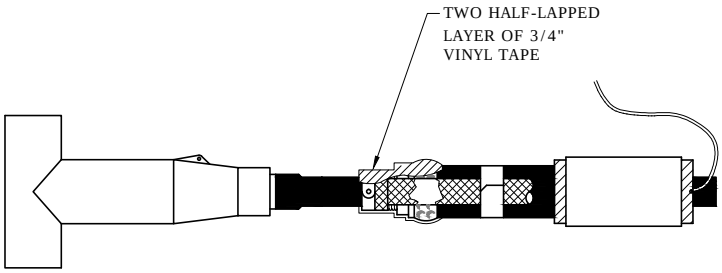
A. WRAP BRAID AROUND CABLE METALLIC SHIELD AND SECURE IN PLACE WITH CONSTANT FORCE SPRING. CLINCH (TIGHTEN) LAST LAP OF SPRING.

B. POSITION SECOND TAIL OF THE PRE-FORMED GROUND BRAID ALONG CABLE JACKET WITH SOLDER-BLOCK CENTERED ON MASTIC STRIP. (A SECOND TEMPORARY BINDER OF VINYL TAPE MAY EASE STRAP INSTALLATION).

C. APPLY A SECOND MASTIC STRIP LAYER OVER SOLDER BLOCKS OF GROUND BRAID.

NOTE: IF TAIL OF GROUND STRAP OVERLAPS AT MASTIC, BE SURE TO APPLY STRIP OF MASTIC BETWEEN SOLDER BLOCK OF GROUND STRAPS.

STEP 10: INSTALL VINYL 3/4" TAPE



A. STARTING ON THE CABLE LC SHIELD (AHEAD OF THE CONSTANT FORCE SPRING) WRAP TWO HALF-LAPPED LAYERS OF 3/4 INCH INCH VINYL TAPE EXTENDING 1/4 INCH BEYOND MASTIC ONTO CABLE JACKET. RETURN TO STARTING POINT TO COMPLETE SECOND LAYER.

NOTE: APPLY 3/4" TAPE IN THE SAME DIRECTION OF CONSTANT FORCE SPRING. THIS WILL CINCH CONSTANT FORCE SPRING DOWN.

3				
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1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

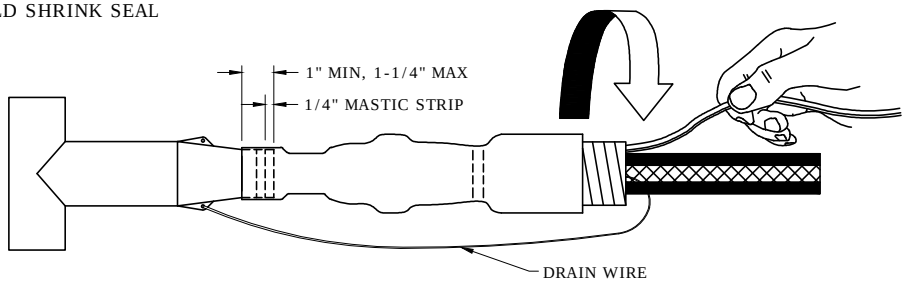
600 AMP DEADBREAK ELBOW INSTALLATION INSTRUCTIONS FOR ALL LC SHIELD CABLES BOTH 15KV AND 25KV

Duke Energy®

PGN

DWG. 26.03-01C

STEP 11: INSTALL COLD SHRINK SEAL



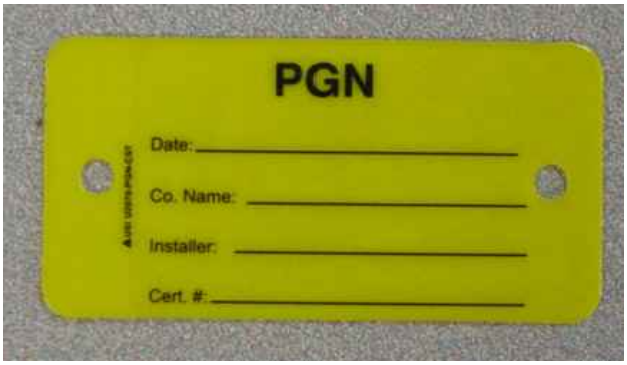
A. APPLY A THIRD MASTIC STRIP TO SEAL AREA 1/4" ABOVE BOTTOM OF ELBOW HOUSING COVER WITH ONE LAYER OF VINYL TAPE.

B. POSITION COLD-SHRINK INSULATOR TO ALIGN WITH STEP IN THE T-BODY AS SHOWN (OVERLAP AT LEAST 1" MIN. TO 1-1/4" MAX).

C. REMOVE INSULATOR CORE BY PULLING WHILE UNWINDING (COUNTER-CLOCKWISE).

D. TRAIN LEAKAGE/DRAIN WIRE TO T-BODY. BE SURE NO PULLING STRESS IS AT COLD SHRINK LOCATION

LOCATION OF INSTALLER
INDENTIFICATION TAG



INSTALLER IDENTIFICATION TAG
CN 9220208940

NOTES:

1. THE INSTALLER IDENTIFICATION TAG WILL BE COMPLETED BY THE CERTIFIED INSTALLER USING THE PAINT PEN (CN 9220208980) AND THE TAG ATTACHED TO THE CABLE AS SHOWN ABOVE.

2. SEE DWG 26.00-02 FOR INFORMATION ON INSTALLER CERTIFICATION REQUIREMENTS.

3				
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1				
0	8/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

600 AMP DEADBREAK ELBOW
INSTALLATION INSTRUCTIONS
FOR ALL LC SHIELD CABLES BOTH 15KV AND 25KV

Duke Energy®

CAR

DWG. 26.03-01D

NOTES:

FOR 350, 750 KCMIL AND ELASTIMOLD TERMINATORS

1. REMOVE CABLE JACKET BACK FROM CABLE END AS SPECIFIED BY THE APPLICABLE SPECIFICATION DRAWING.

2. WRAP 1 LAYER OF MASTIC (PROVIDED IN KIT) AROUND END OF CABLE JACKET (FIG. 1). DO NOT STRETCH MASTIC. (SAVE LEFT-OVER MASTIC TO SEAL ELBOW END. BEND THE CONCENTRIC WIRES BACK OVER THE MASTIC AND ALONG THE JACKET, PRESSING THEM INTO THE MASTIC.

   NOTE: NEUTRAL WIRES SHOULD NOT TOUCH EACH OTHER WHEN PRESSED INTO THE MASTIC.

3. USING SECOND MASTIC STRIP, WRAP 1 LAYER OVER CONCENTRIC WIRES, PRESSING TO FILL VOIDS (FIG. 2).

4. OVERWRAP THE MASTIC AND WIRES TIGHTLY WITH VINYL TAPE FOR A WIDTH OF APPROXIMATELY 1-1/2" (FIG. 2).

5. SLIDE ON THE PST COLD SHRINK TUBE WITH LOOSE CORE END AWAY FROM THE CONNECTOR (FIG. 3).

6. INSTALL 600 AMP ELBOW PER DWGS. 26.03-04A, 26.03-04B AND 26.03-04C.

7. USING MASTIC SAVED IN STEPS 2 AND 3, WRAP 1 NARROW STRIP AROUND ELBOW END.

8. REMOVE COLD SHRINK CORE BY UNWINDING COUNTER-CLOCKWISE STARTING WITH THE LOOSE END. NOTE: PST MUST OVERLAP ELBOW END AT LEAST 1" FOR A PROPER SEAL.

9. CONNECT CONCENTRIC WIRE TO "ELBOW" PER INSTRUCTIONS. (FIG. 5)

CABLE SIZE	CN
#350/#750KCMIL	21154315

STEP 1

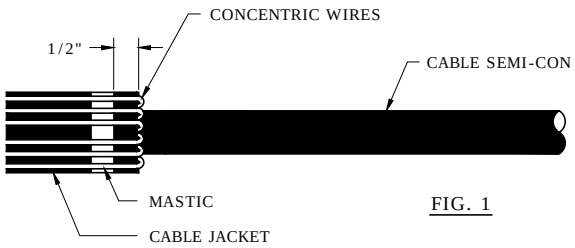


FIG. 1

STEPS 2,3,4

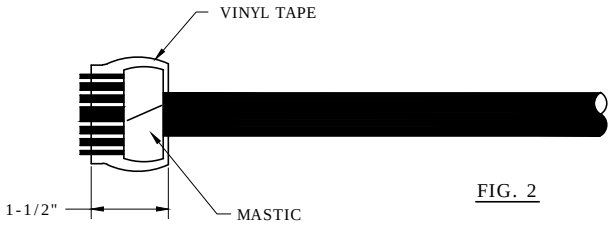


FIG. 2

STEP 5

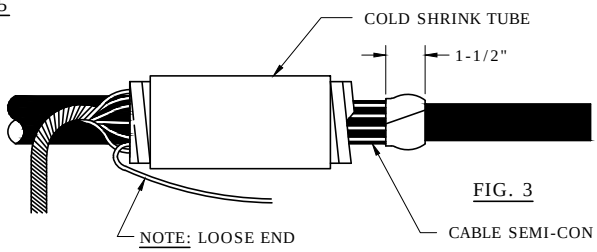


FIG. 3

STEP 6

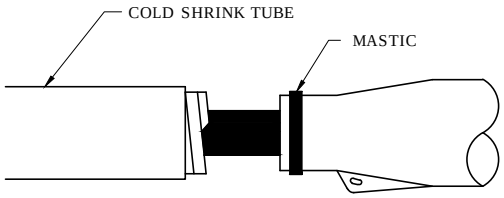


FIG. 4

STEPS 7

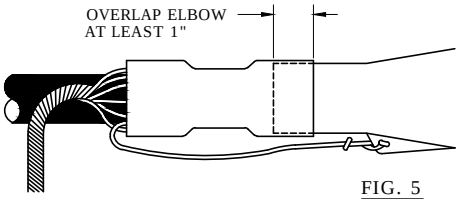


FIG. 5

NOTES:

1. JACKET SEALING KITS ARE TO BE USED FOR SEALING 600 AMP ELBOWS AND TERMINATIONS. DO NOT USE THIS CABLE JACKET SEALING KIT ON ANY UNDERGROUND SPLICE.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

JCN CABLE JACKET SEALING KIT FOR

600 AMP ELBOWS

Duke Energy

CAR

DWG. 26.03-02

STEP 1: TRAIN CABLE INTO POSITION FOR MOUNTING LOCATION OF ELBOW AND CUT TO APPROPRIATE LENGTH FOR TERMINATION.

STEP 2: CABLE PREPARATION

A. 1. REMOVE JACKET AND LC SHIELD PER DIMENSIONS SHOWN. MARK JACKET WITH TAPE 5/8" FROM END AS SHOWN.

2. TAPER EDGE OF CABLE FROM 1/2" TO 1-1/2", CLEAN, THEN LUBRICATE INSULATION SHIELD AND SHORT SECTION OF JACKET.

3. INSTALL GROUNDING DEVICE:

A. PLACE THE TWO CLAMPS OVER THE HOUSING AND PUSH PROTECTIVE PLUG FROM INSIDE THE HOUSING (WITH SCREWDRIVER). LUBRICATE INSIDE BOTH ENDS OF THE HOUSING.

B. SLIDE THE GROUNDING DEVICE ONTO THE CABLE WITH A BACK AND FORTH TWISTING MOTION UNTIL IT IS FLUSH WITH THE TAPE MARKER.

C. TIGHTEN THE CLAMPS IN STAGES SO THAT THE CORRUGATED CONTACT IS TIGHT AGAINST THE LC SHIELD BUT NOT UNDER EXCESSIVE PRESSURE. BETWEEN STAGES, TEST THE TIGHTNESS BY ROTATING THE HOUSING BACK AND FORTH APPROXIMATELY 1/8 TURN. WHEN A DEFINITE DRAG IS FELT, THE CLAMP IS TIGHT ENOUGH.

B. SEE DWG. 26.00-01 FOR INSTRUCTIONS ON PREPARING CABLE FOR TERMINATION.

C. RING CUT AND REMOVE SEMI-CONDUCTING SHIELD A DISTANCE OF 9-1/2" FROM END OF CABLE. CARE MUST BE USED TO AVOID CUTTING CABLE INSULATION.

STEP 3: REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NONMETALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION THOROUGHLY WITH CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). WIPE IN DIRECTION SHOWN. DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING.

STEP 4: MARK THE SEMI-CONDUCTING INSULATION SHIELD BY WRAPPING A PIECE OF TAPE EXACTLY 1" FROM THE CUT END OF THE SHIELD.

LUBRICATE CABLE INSULATION AND INSIDE SURFACE OF CABLE ADAPTER WITH SILICONE GREASE PROVIDED. SLIDE CABLE ADAPTER OVER CABLE UNTIL BACK END OF ADAPTER IS FLUSH WITH MARKING TAPE ON SEMI-CONDUCTING INSULATION SHIELD.

STEP 5: WITH CABLE ADAPTER IN POSITION, REMOVE INSULATION FROM PROTRUDING CABLE BY CUTTING EVEN WITH END OF ADAPTER. CUT SQUARELY; DO NOT PENCIL CABLE OR ADAPTER.

VERIFY BY MEASURING THAT EXPOSED CONDUCTOR LENGTH IS 4-3/8" TO 4-11/16".

STEP 6: WIRE BRUSH BARE CONDUCTOR WITH LAY OF STRANDS TOWARD END OF CABLE CLEANING ALL "STRAND SEAL" FROM THE OUTER INTERSTICES. ONCE CLEAN, WIPE CONDUCTORS THOROUGHLY WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT POUR FLUID DIRECTLY ON CONDUCTORS. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING.

STEP 7: ONCE CONDUCTOR HAS DRIED, IMMEDIATELY PLACE TERMINAL LUG ON CONDUCTOR. BEFORE MAKING FIRST CRIMP, ALIGN THE TERMINAL LUG SO THAT THE HOLE IN THE LUG WILL ALIGN WITH THE THREADED STUD ON THE CONNECTOR PLUG OR APPARATUS BUSHING.

STEP 8: MAKE FIRST CRIMP AT SHOULDER ON TERMINAL LUG. BE SURE TO KEEP CABLE BOTTOMED IN TERMINAL LUG WHEN MAKING FIRST CRIMP. ROTATE SECOND CRIMP 180°.

STEP 9: WIPE ALL EXCESS INHIBITOR FROM TERMINAL LUG AND ADAPTER SURFACE.

REMOVE PROTECTIVE CAP FROM ELBOW HOUSING CABLE ENTRANCE. LUBRICATE CABLE ADAPTER AND INSIDE OF ELBOW HOUSING WITH SILICON LUBRICANT PROVIDED. SLIDE THE CABLE INTO BODY OF ELBOW HOUSING UNTIL THE CABLE CANNOT ADVANCE FURTHER.

STEP 10: VERIFY PROPER INSTALLATION OF ELBOW HOUSING IN ACCORDANCE WITH DETAIL "A".

STEP 11: USING A STRAND OF CONCENTRIC NEUTRAL WIRE (FROM 1/0 PRIMARY CABLE), TWIST IN GROUNDING EYE OF ELBOW AND INSERT OTHER END OF WIRE IN GROUNDING CONNECTOR AS SHOWN. RUN #2 SOL. CU GROUND AS SHOWN.

EB1000AL6DB25C CN 11106903

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

1000 KCMIL DEADBREAK ELBOW CONNECTOR

INSTALLATION INSTRUCTIONS

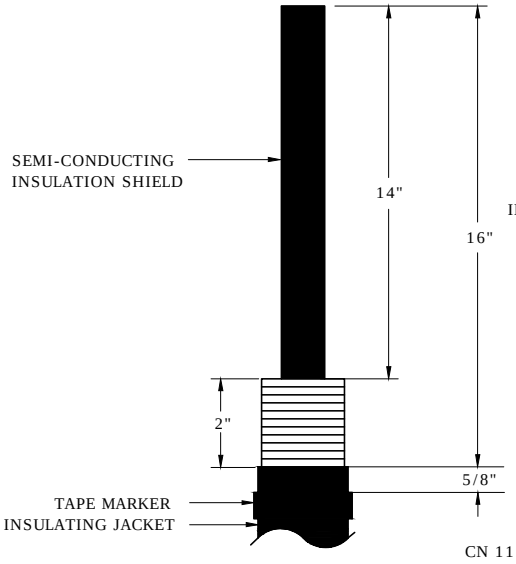
Duke Energy®

CAR

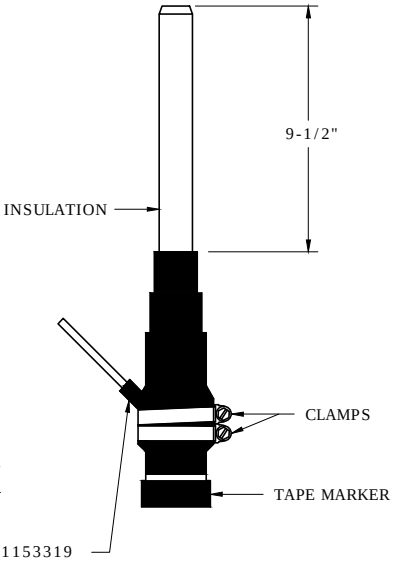
DWG. 26.03-03A

TOOL AND DIE FOR COMPRESSING TERMINAL LUG		
WIRE SIZE	TOOL	DIE
1000 KCMIL	BURNDY Y46	P44ART
	ALCOA 60A	6030AH

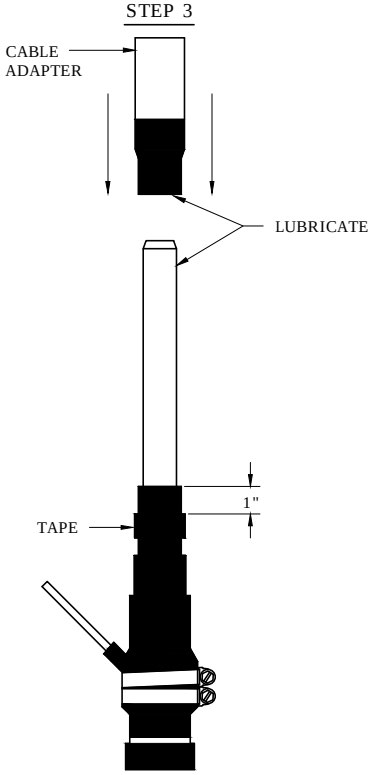
STEP 1



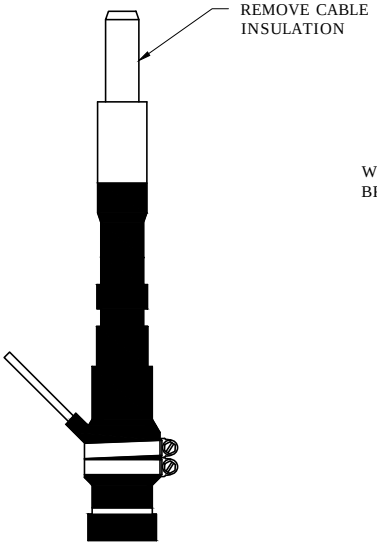
STEP 2



STEP 3

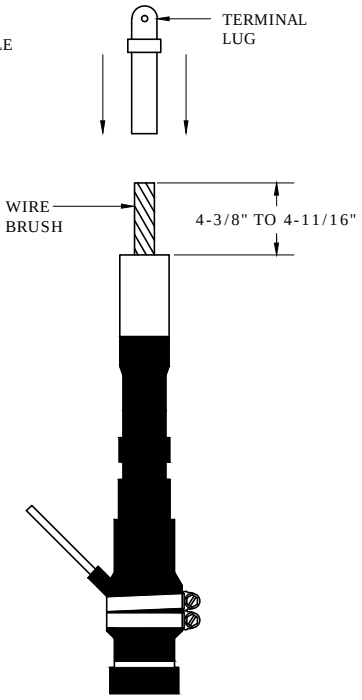


STEP 4

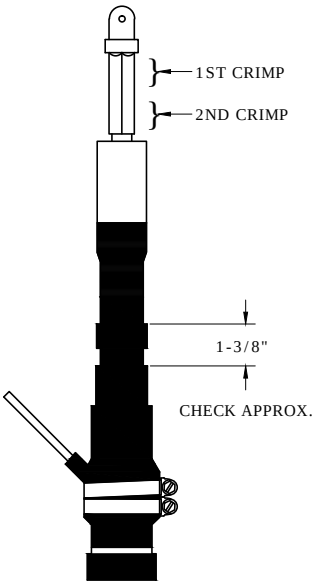


EB1000AL6DB25C
CN 11106903

STEP 5



STEP 6



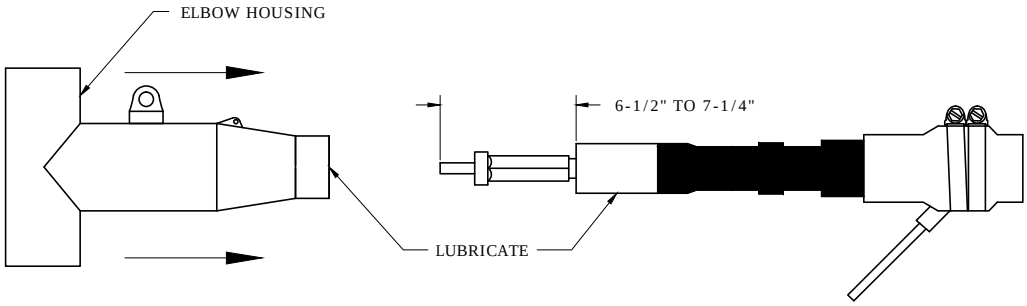
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

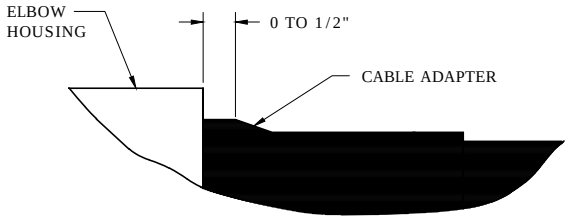
1000 KCMIL DEADBREAK ELBOW CONNECTOR INSTALLATION

Duke Energy®

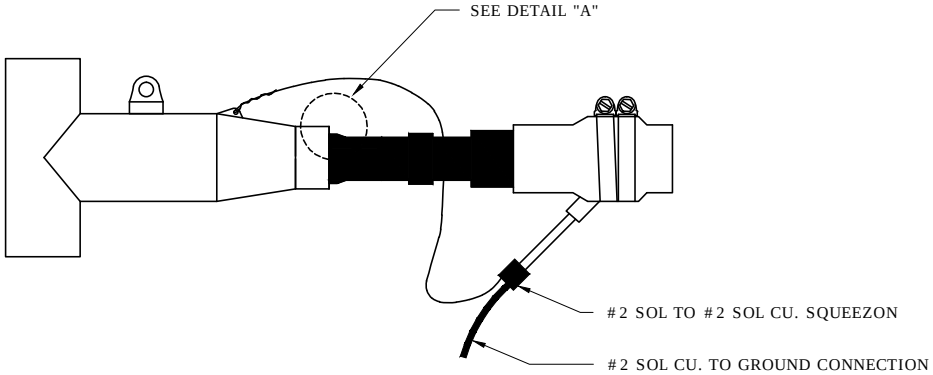
CAR

DWG. 26.03-03B





DETAIL "A"



NOTES:

1. FOR DETAILS ON NEUTRAL TERMINATION, SEE DWG. 23.01-01.
2. FOR INSTALLATION INSTRUCTIONS, SEE DWG. 26.03-03A.

EB1000AL6DB25C
CN 11106903

3				
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0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

1000 KCMIL DEADBREAK ELBOW CONNECTOR INSTALLATION

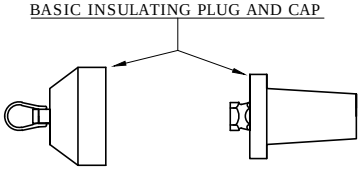
Duke Energy

CAR

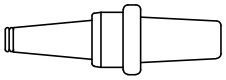
DWG. 26.03-03C

CABLE SIZE	CATALOG NUMBER	COMPATIBLE UNIT
350 KCMIL	11188307	EB350AL6DB25C
750 KCMIL	11187309	EB750AL6DB25C
1000 KCMIL	11106903	EB1000AL6DB25C
CATALOG NUMBER INCLUDES ONE 600 AMP ELBOW HOUSING, TERMINAL LUG AND CABLE ADAPTER.		

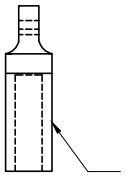
BASIC INSULATING PLUG AND CAP



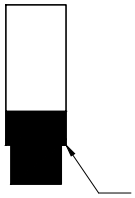
CU TUA25PLGINS6C
CN 11187903



600-200 TAP PLUG
CU PLUGTAP6225C
CN 9220181004

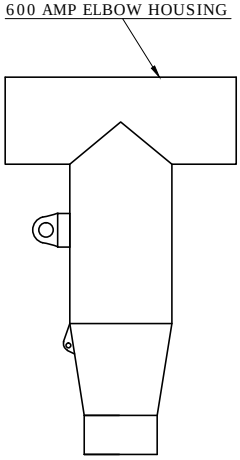


TERMINAL LUG

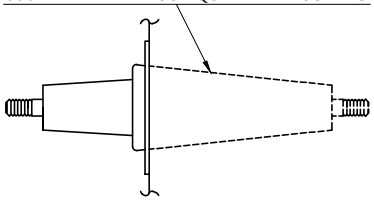


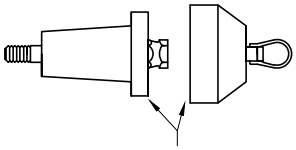
CABLE ADAPTER

600 AMP ELBOW HOUSING



600 AMP APPARATUS EQUIPMENT BUSHING





DEAD END PLUG AND CAP
CN 11187804
CU PLUGDE25C

ELBOW NOTES:

1. IF ELBOW IS TO BE REMOVED FROM APPARATUS BUSHING AND RE-ENERGIZED, INSERT DEADEND PLUG INTO BUSHING AS SHOWN ABOVE.

2. IF AN ARRESTER OR LOADBREAK ELBOW IS TO BE INSTALLED ON THE BACK OF THE 600 AMP ELBOW, INSTALL THE 600-200 TAP PLUG.

APPLICATION: ELBOW CONNECTOR FOR A 600 AMP OIL SWITCH OR OTHER DEVICES WITH 600 AMP APPARATUS BUSHINGS.

INSTALLATION: CONNECTORS MUST BE TORQUED TO A LEVEL OF 60 FT.-LBS. FOLLOW INSTRUCTIONS SHIPPED WITH ELBOW ASSEMBLY.

NOTES:

1. FOR CABLE PREPARATION AND CONNECTOR INSTALLATION, SEE DWGS. 26.03-01A, 26.03-01B, 26.03-01C, 26.03-01D, 26.03-02, 26.03-03A, 26.03-03B, 26.03-03C, 26.03-04A, 26.06-04B AND 26.03-04C.

2. REPLACEMENT STUD IS CN 9220103217.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

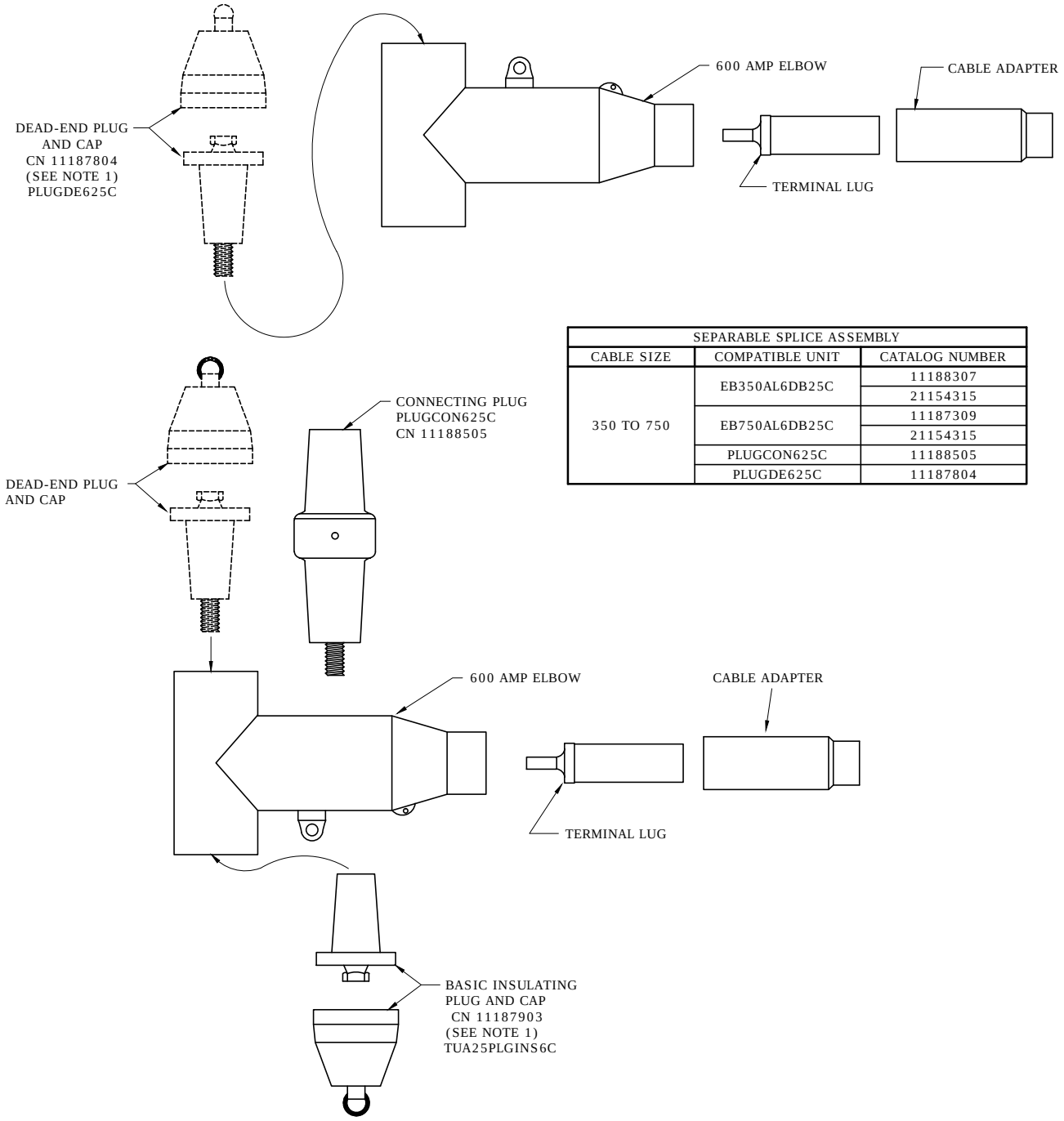
600 AMP DEADBREAK CONNECTORS

ELBOW ASSEMBLY

Duke Energy®

CAR

DWG. 26.03-05



SEPARABLE SPLICE ASSEMBLY		
CABLE SIZE	COMPATIBLE UNIT	CATALOG NUMBER
350 TO 750	EB350AL6DB25C	11188307
		21154315
	EB750AL6DB25C	11187309
		21154315
	PLUGCON625C	11188505
	PLUGDE625C	11187804

APPLICATION: TO PROVIDE AN OPENING POINT IN BULK UNDERGROUND FEEDER CIRCUITS OR FOR FUTURE INSTALLATION OF SWITCHING APPARATUS.

INSTALLATION: USE TORQUE WRENCH WITH A SPANNER WRENCH (CN 11188208). THE INDICATED TORQUE READING IS NOT THE ACTUAL TORQUE APPLIED. THE TORQUE WRENCH SHOULD MEASURE 48 FT.-LBS. WITH THE SPANNER WRENCH, TO BE EQUAL TO 60 FT.-LBS. WITHOUT THE SPANNER WRENCH. FOLLOW INSTRUCTIONS SHIPPED WITH EACH ITEM.

NOTES:

1. IF SPLICE IS TO BE SEPARATED AND RE-ENERGIZED, REMOVE THE CONNECTING PLUG AND REPLACE WITH A DEAD-END PLUG AND A BASIC INSULATING PLUG AS SHOWN IN DRAWING.
2. ADDITIONAL ASSEMBLIES ARE AVAILABLE AS SPECIAL ITEMS. CONTACT DISTRIBUTION DESIGN OFFICE FOR ORDERING INFORMATION.

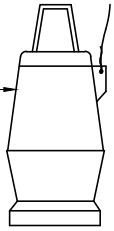
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

600 AMP DEADBREAK SEPARABLE SPLICE

Duke Energy®

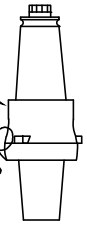
CAR

DWG. 26.03-06



200A DEAD-END RECEPTACLE
TUA25RECDELB2RC
CN 11186806

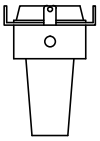
200 AMP LOADBREAK TAP APPLICATIONS		
COMPATIBLE UNIT	CATALOG NUMBER	CATALOG NUMBER
ARREL18C	11232204	23KV SYSTEM
ARREL10C	11232303	12KV SYSTEM
TUA25RECDELB2RC	11186806	DEAD END RECEPTACLE
-	6510	TEST POINT DEAD END RECEPTACLE
-	11171501	GROUNDING ELBOW



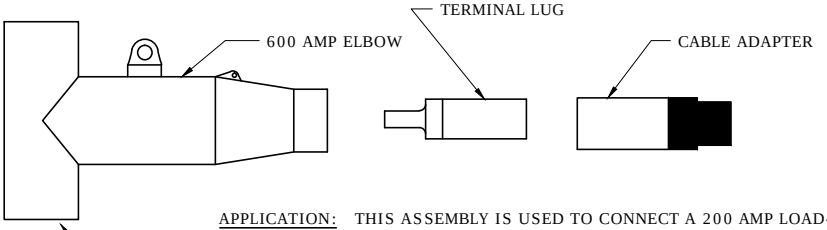
200A LOADBREAK BUSHING INSERT
TUA25BUSHINLBRC
CN 11186509

TO GROUND

600 AMP DEADBREAK SEPARABLE SPLICE WITH 200 AMP LOADBREAK TAP		
CABLE SIZE	COMPATIBLE UNIT	CATALOG NUMBER
350 TO 750	EB350AL6DB25C	11188307
		21154315
	EB750AL6DB25C	11187309
		21154315
	TUA25PLGINS6C	11188505
	PLUGDE625C	11187804
	TUA25RDTAP2LBC	11185501
	TUA25BUSHINLBRC	11186509



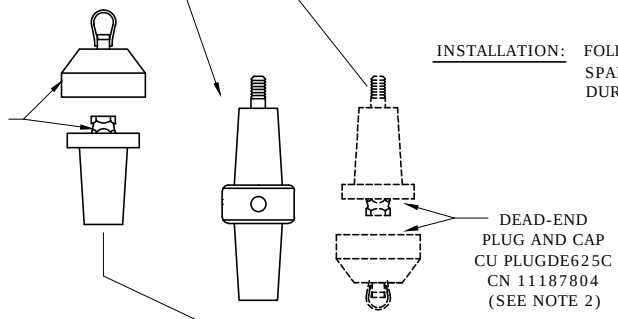
REDUCING TAP
WELL
CN 11185501
TUA25RDTAP2LBC



CONNECTING PLUG

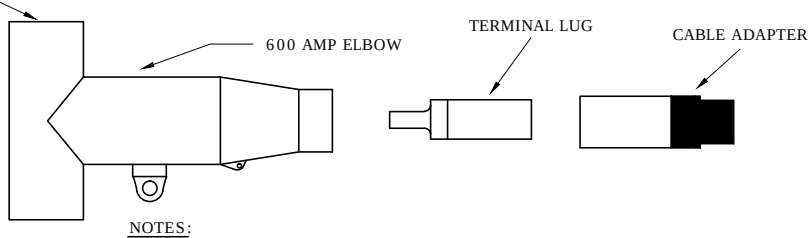
APPLICATION: THIS ASSEMBLY IS USED TO CONNECT A 200 AMP LOAD-BREAK DEVICE TO A 600 AMP SEPARABLE SPLICE.

INSTALLATION: FOLLOW INSTRUCTIONS SHIPPED WITH EACH ITEM. A SPANNER WRENCH (CN 11188208) IS REQUIRED DURING INSTALLATION OF THE ASSEMBLY.



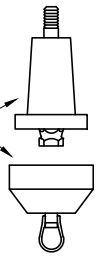
BASIC INSULATING
PLUG AND CAP
TUA25PLGINS6C
CN 11187903
(SEE NOTE 2)

DEAD-END
PLUG AND CAP
CU PLUGDE625C
CN 11187804
(SEE NOTE 2)



NOTES:

1. ALWAYS RE-GREASE ELBOW AND APPARATUS INTERFACES WHEN SPLICE IS SEPARATED.
2. IF SPLICE IS TO BE SEPARATED AND RE-ENERGIZED, REMOVE THE CONNECTING PLUG AND REPLACE WITH A DEAD-END PLUG AND A BASIC INSULATING PLUG AS SHOWN IN DRAWING.
3. 600 AMP CONNECTORS AND REDUCING TAP WELL ARE TO BE OPERATED DE-ENERGIZED.
4. LOADBREAK BUSHING INSERT IS TO BE INSTALLED INTO REDUCING TAP WELL DE-ENERGIZED.
5. 200 AMP LOADBREAK ELBOW IS SUITABLE FOR LOADBREAK AND LOADMAKE OPERATION ON LOADBREAK BUSHING INSERT.
6. ELBOW ARRESTER AND DEAD-END RECEPTACLE ARE SUITABLE FOR ENERGIZED OPERATION ON LOADBREAK BUSHING INSERT.



DEAD-END
PLUG AND CAP

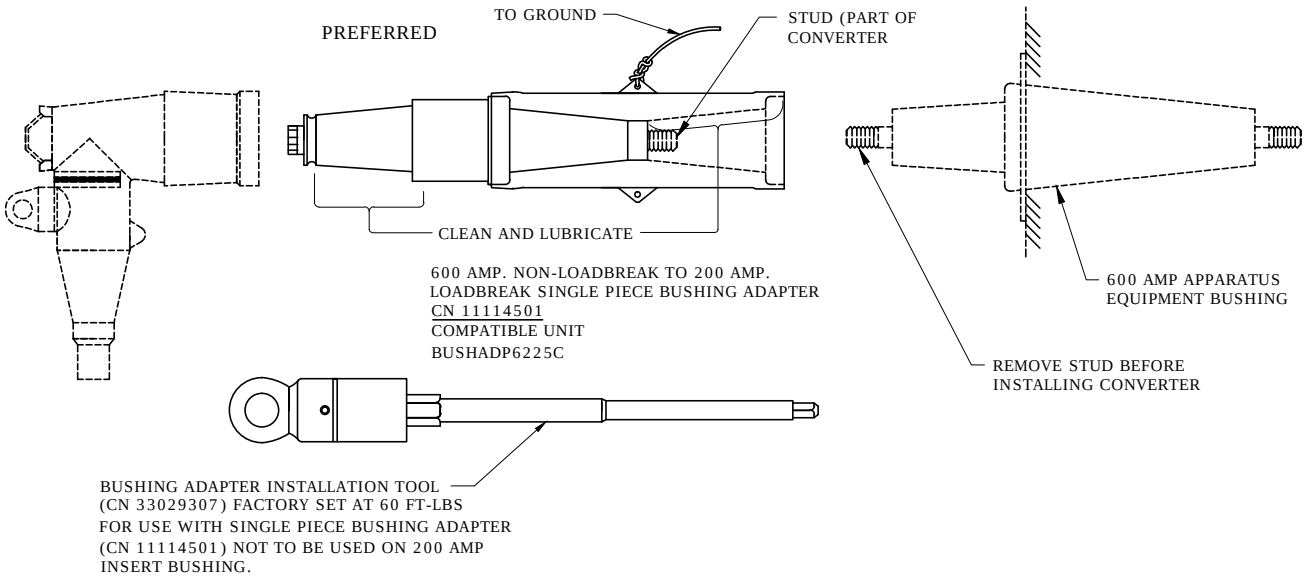
REVISED	BY	CK'D	APPR.
3			
2			
1			
0 6/8/10	ROBESON	GUINN	ELKINS

600 AMP DEADBREAK SEPARABLE SPLICE WITH 200 AMP LOADBREAK TAP

Duke Energy®

CAR

DWG. 26.03-07

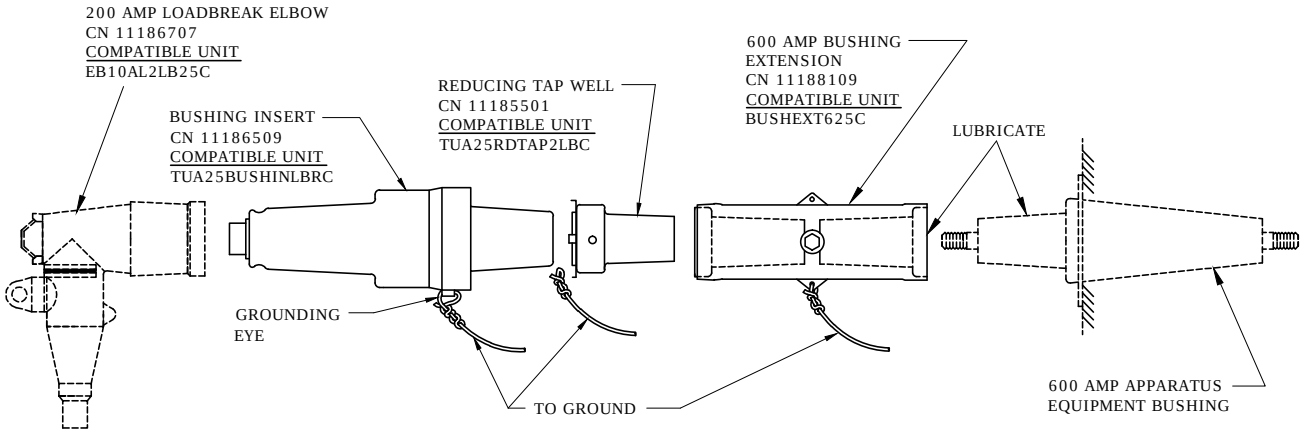


BUSHING REDUCTION ASSEMBLY (600 AMP TO 200 AMP)

APPLICATION: THIS ASSEMBLY IS USED TO CONNECT A 200 AMP LOADBREAK ELBOW TO A 600 AMP BUSHING ON AN OIL SWITCH OR OTHER EQUIPMENT APPARATUS.

INSTALLATION: CLEAN AND LUBRICATE ALL INTERFACES. INSERT OPERATING TOOL (CN 33029307) INTO TAP PLUG UNTIL FULLY SEATED. ASSEMBLE BUSHING CONVERTER ON APPARATUS BUSHING BY TURNING TOOL IN A CLOCKWISE DIRECTION. THIS MUST BE DONE WHILE PUSHING THE BUSHING ADAPTER TOWARDS THE APPARATUS BUSHING. TIGHTEN UNTIL INSTALLATION TOOL BEGINS TO RATCHET SIGNIFYING THAT PROPER TORQUE (20-25 FT-.LBS.) HAS BEEN ATTAINED. REMOVE INSTALLATION TOOL FROM BUSHING CONVERTER. CARE MUST BE TAKEN NOT TO CROSS THREAD THE STUD IN THE CONVERTER WHILE INSTALLING THE CONVERTER ON THE APPARATUS BUSHING.

ALTERNATE



APPLICATION: THIS ASSEMBLY IS USED TO CONNECT A 200 AMP LOADBREAK ELBOW TO 600 AMP BUSHING ON AN OIL SWITCH OR OTHER EQUIPMENT APPARATUS.

INSTALLATION: USE TORQUE WRENCH WITH A SPANNER WRENCH (CN 11188208). THE INDICATED TORQUE READING IS NOT THE ACTUAL TORQUE APPLIED. THE TORQUE WRENCH SHOULD MEASURE 48 FT.-LBS. WITH THE SPANNER WRENCH, TO BE EQUAL TO 60 FT.-LBS. WITHOUT THE SPANNER WRENCH. FOLLOW INSTRUCTIONS SHIPPED WITH EACH ITEM.

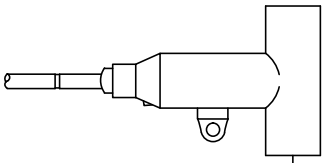
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

600 AMP DEADBREAK CONNECTORS
BUSHING REDUCTION ASSEMBLIES
(600 AMP TO 200 AMP)

Duke Energy®

CAR

DWG. 26.03-09



THREADED
STUD
CN 9220103217

INSULATING
PLUG
CU TUA25PLGINS6C
CN 11187903

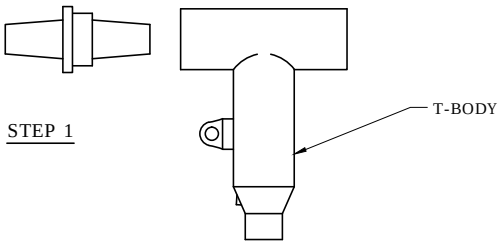
CONNECTOR PLUG
CU PLUGCON625C
CN 11188505
USE SPANNER WRENCH
(CN 11188208)
TORQUE 48 FT-LBS

REDUCING
TAP WELL
CU TUA25RDTAP2LBC
CN 11185501
USE SPANNER WRENCH
(CN 11188208)
TORQUE 48 FT-LBS

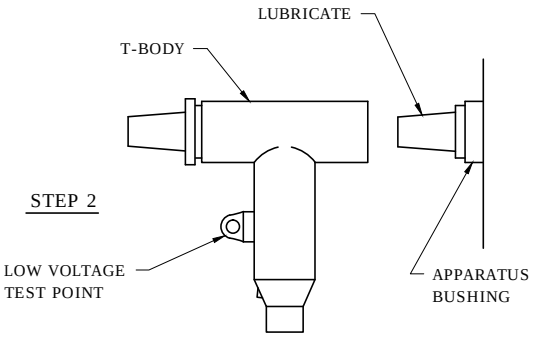
ELBOW TAP
PLUG
CU TUA25PLGINS6C
CN 9220181004
USE BUSHING ADAPTER
INSTALLATION TOOL
(CN 414683)
TORQUE 60 FT-LBS

T-BODY APPLICATIONS

600-200 AMP
ELBOW TAP
PLUG



STEP 1



STEP 2

EQUIPMENT APPLICATION

CLEAN AND LUBRICATE MATING INTERFACES OF T-BODY AND MATING PARTS (e.g., INSULATING PLUG, REDUCING WELL PLUG OR DEADBREAK TAP PLUG).

INSERT PLUG INTO T-BODY, LINING UP THE HOLE IN THE COMPRESSION CONNECTOR WITH THE STUD ON THE MATING PART.

CLEAN AND LUBRICATE MATING INTERFACES OF APPARATUS BUSHING AND T-BODY WITH LUBRICANT SUPPLIED.

3				
2				
1				
0	11/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

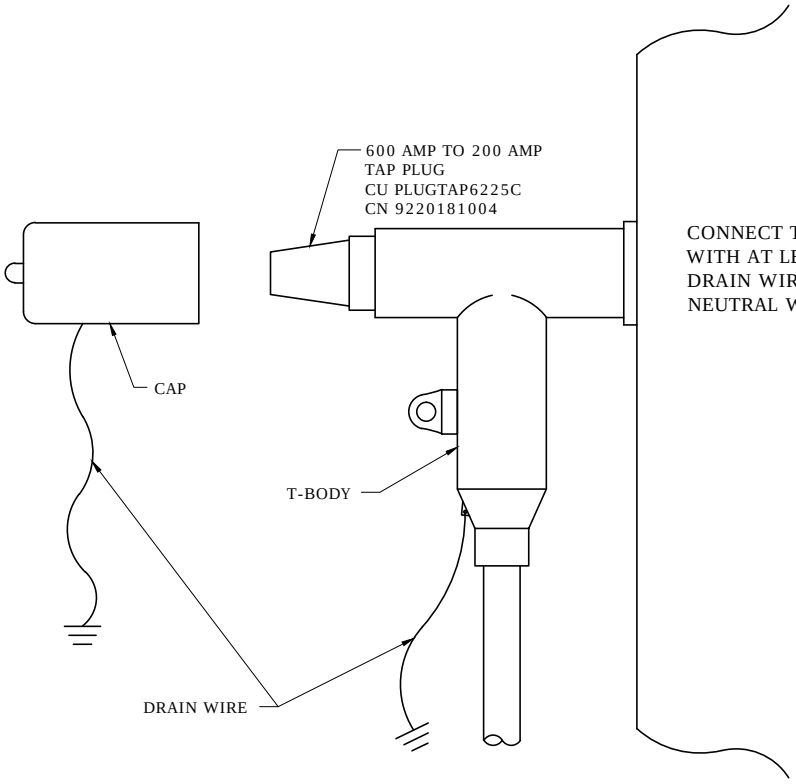
600 AMP BOLTED ELBOW

Duke Energy®

CAR

DWG.
26.03-14A

APPLICATION GUIDE



STEP 3

NOTES:

1. A REDUCING WELL PLUG OR DEADBREAK TAP PLUG REQUIRES AN INSULATED MATING APPARATUS ON THE 200A INTERFACE. TO CAP INTERFACE, FOLLOW INSTRUCTIONS SUPPLIED WITH APPARATUS USED.

2. THE 200A LOADBREAK BUSHING CAN BE USED FOR:

- TEST POINT (FULL VOLTAGE)
- ELBOW ARRESTER
- GROUNDING

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

600 AMP BOLTED ELBOW

Duke Energy®

CAR

DWG. 26.03-14B

NOTES: LEAVE THE ELBOW AND INSERT IN THE PLASTIC BAG AS LONG AS POSSIBLE IN ORDER TO PREVENT CONTAMINATION.

TAKE PRECAUTION TO KEEP THE ARC TIP ON ELBOW PROBES AS CLEAN AS POSSIBLE. THIS INCLUDES ANY CONTACT WITH SKIN.

INSTALLATION INSTRUCTIONS

STEP 1: FOLLOW ALL SAFETY RULES AND PROCEDURES TO INSURE CONDUCTORS ARE SAFE TO HANDLE.

STEP 2: TRAIN CABLE TO THE CENTER OF THE TRANSFORMER BUSHING AS SHOWN IN FIGURE 3. THE CABLE MUST FORM A GRADUAL ARC FROM THE GROUND TO THE BUSHING IN ORDER TO PROVIDE ENOUGH CABLE TO REACH BOTH BUSHINGS AND THE STANDOFF BRACKET. THIS WILL ALLOW FOR FUTURE SWITCHING.

STEP 3: CUT THE CABLE SQUARELY AT THE CENTER OF THE TRANSFORMER BUSHING.

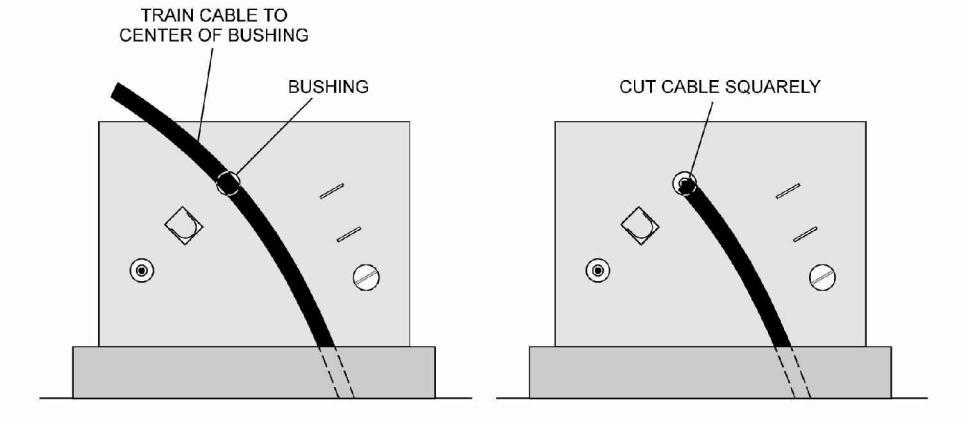


FIGURE 3
CUTTING CABLE TO PROPER LENGTH

STEP 4: REMOVE THE AMOUNT OF CABLE JACKET SHOWN IN FIGURE 4.

STEP 5: REMOVE THE LC SHIELD, EXCEPT FOR THE LENGTH SHOWN IN FIGURE 4 WHICH WILL EXTEND BEYOND THE END OF THE CABLE JACKET.

THE LC SHIELD IS TO BE REMOVED BY PLACING ONE OF THE CONSTANT TENSION SPRINGS PROVIDED IN THE GROUND BRAID KIT ON THE LC SHIELD AT THE POINT WHERE THE SHIELD IS TO END, SEPARATING THE OVERLAP OF THE LC SHIELD, AND THEN TEARING OFF THE LC SHIELD AT THE CONSTANT TENSION SPRING. THE LC SHIELD OVERLAP MAY BE SEPARATED BY ROLLING THE GAP OPEN WITH CHANNEL-LOCK PLIERS, TEARING OFF THE OVERLAP BY TWISTING IT AROUND NEEDLE-NOSE PLIERS, OR BY TEARING OFF THE OVERLAP BY GRABBING THE OVERLAP WITH PLIERS AND PULLING IT STRAIGHT DOWN THE CABLE.

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTRUCTIONS FOR INSTALLING 200 AMP ELBOWS
ON 15KV OR 25KV CABLE
IN NON-SUBMERSIBLE APPLICATIONS

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	X

26.04-00A

STEP 6: USE AN APPROPRIATE TOOL AND SCORE THE SEMI-CONDUCTIVE INSULATION SHIELD SO THE LENGTH OF THE SHIELD SHOWN IN FIGURE 4 CAN BE REMOVED; HOWEVER, DO NOT REMOVE THE SHIELD AT THIS TIME.

NEVER USE A KNIFE TO REMOVE THIS SHIELD.

STEP 7: REMOVE THE AMOUNT OF INSULATION SHOWN IN FIGURE 4.

IT IS NOT REQUIRED TO BEVEL THE EDGE OF THE CABLE INSULATION WHEN INSTALLING AN ELBOW, BUT THIS DOES ALLOW THE ELBOW TO BE MORE EASILY INSTALLED. BEVEL NO MORE THAN THE LAST 1/4" OF THE INSULATION. THIS CAN BE ACCOMPLISHED WITH A BEVELING TOOL OR KNIFE.

STEP 8: REMOVE THE PORTION OF THE SEMI-CONDUCTIVE INSULATION SHIELD SCORED IN STEP 6.

DO NOT SAND THE CABLE INSULATION EXCEPT WHEN IT IS NECESSARY.

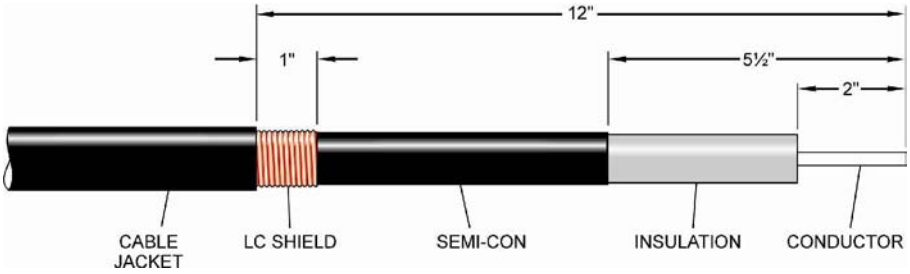


FIGURE 4
PREPARING CABLE END

STEP 9: VERIFY THAT ALL CUTBACKS HAVE BEEN MADE TO THE PROPER DIMENSION. CORRECT THE INSULATION AND SEMI-CONDUCTIVE SHIELD CUTBACKS IF THEY ARE NOT WITHIN 1/8" OF THE DIMENSIONS PROVIDED IN FIGURE 4.

STEP 10: VERIFY THAT THE RING CUT ON THE SEMI-CONDUCTIVE SHIELD IS STRAIGHT AND SMOOTH ALL THE WAY AROUND THE CABLE. NO POINTS OR UNEVENNESS MAY EXIST. CORRECT ANY IRREGULARITIES THAT EXIST. THESE IRREGULARITIES MAY BE REMOVED WITH A KNIFE AS LONG AS EXTREME CAUTION IS USED AND THAT NO NICKS ARE MADE INTO THE CABLE INSULATION.

STEP 11: VERIFY THAT THE INSULATION IS SMOOTH AND FREE OF ANY NICKS OR CUTS BY CAREFULLY RUBBING IT WITH YOUR FINGERS. ANY NICKS, CUTS, OR DENTS MUST BE REMOVED WITH 240 GRIT ALUMINUM OXIDE CLOTH, SEE TABLE 1. DO NOT USE 120 GRIT ALUMINUM OXIDE CLOTH.

TABLE 1 - NON-METALLIC ALUMINUM OXIDE CLOTH	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	30633705
DEF	9220275434

IF CUTS WERE MADE INTO THE INSULATION AS A RESULT OF THE STRIPPING TOOL BEING SET TOO DEEP, THEN THE RING CUT MUST BE RELOCATED TO ALLOW THIS CUT TO BE SANDED OUT OF THE INSULATION. THIS CAN BE ACCOMPLISHED BY CUTTING AT LEAST 3/4" OFF THE CONDUCTOR AND THEN REMAKING ALL CUTBACKS FROM THAT POINT.

STEP 12: WIRE BRUSH THE CONDUCTOR OF THE CABLE AND IMMEDIATELY PUSH IT INTO THE CONNECTOR.

- DO NOT USE OXIDE CLOTH TO BRUSH THE CONDUCTOR.
- DO NOT REMOVE ANY OF THE OXIDE INHIBITOR FROM THE CONNECTOR BEFORE PUSHING IT ONTO THE CONDUCTOR.

POSITION THE CONNECTOR ON THE CONDUCTOR SO THAT THE FLAT SIDE FACES THE TRANSFORMERS BUSHING WHEN THE CABLE IS TRAINED INTO POSITION. BUTT THE CONNECTOR AGAINST THE CONDUCTOR AND CRIMP ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. STARTING AT THE "TOP" OF THE CONNECTOR (THE CRIMP MARK NEAREST THE THREADED HOLE), MAKE FOUR (4) CRIMPS USING A 5/8" OR BG DIE. SUCCESSIVE CRIMPS WILL PROGRESS TOWARD THE CABLE INSULATION AND THE CRIMPING TOOL MUST BE ROTATED 90° BETWEEN EACH CRIMP TO PREVENT THE CONNECTOR FROM BOWING. SEE FIGURE 5. REMOVE ANY SHARP FLASH.

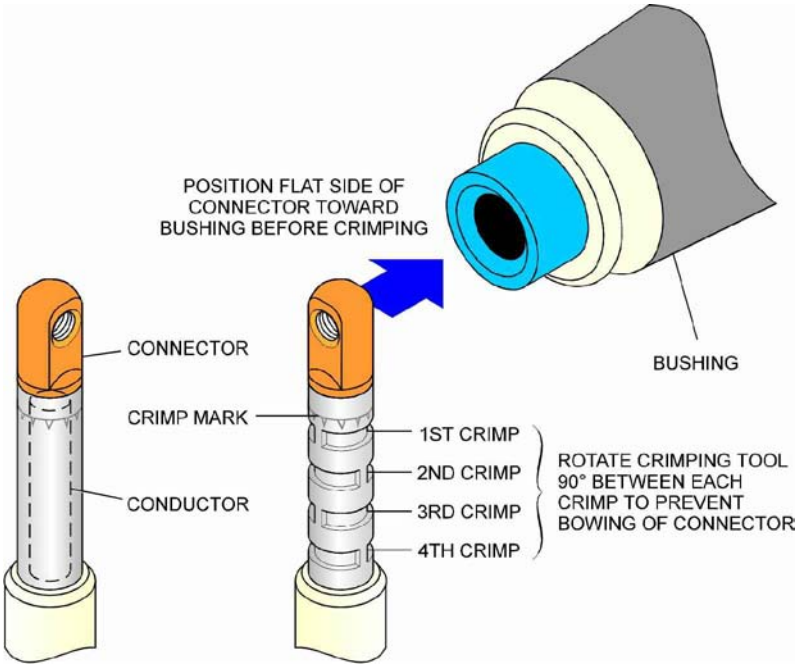


FIGURE 5
POSITIONING AND CRIMPING THE CONNECTOR TO THE CONDUCTOR

STEP 12: (ALTERNATIVE)

THIS PROCEDURE MAY BE FOLLOWED INSTEAD OF THE ONE LISTED IN STEP 12 IF THE TRANSFORMER IS DE-ENERGIZED AND ALL APPLICABLE SAFETY PROCEDURES ARE FOLLOWED.

A. INSERT THE THREADED END OF THE PROBE INTO THE EYE OF THE COMPRESSION CONNECTOR, HAND TIGHTEN, AND INSERT THE PROBE INTO THE BUSHING INSERT OR A STANDOFF INSERT IN ORDER TO POSITION THE CONNECTOR.

TAKE PRECAUTIONS TO PREVENT TOUCHING THE ARC TIP ON THE PROBE WITH YOUR HANDS AND TO PREVENT IT FROM BECOMING CONTAMINATED. HOLD IT IN A TOWEL IF NECESSARY.

B. WIRE BRUSH THE CONDUCTOR OF THE CABLE AND IMMEDIATELY PUSH IT INTO THE CONNECTOR.

DO NOT USE OXIDE CLOTH TO BRUSH THE CONDUCTOR.

DO NOT REMOVE ANY OF THE OXIDE INHIBITOR FROM THE CONNECTOR BEFORE PUSHING IT ONTO THE CONDUCTOR.

C. MAKE ONE CRIMP AT THE "TOP" OF THE CONNECTOR (THE CRIMP MARK NEAREST THE THREADED HOLE) USING A 5/8" OR BG DIE.

D. REMOVE THE PROBE FROM THE BUSHING INSERT AND UNSCREW THE PROBE FROM THE CONNECTOR.

E. MAKE THE REMAINING THREE (3) CRIMPS USING A 5/8" OR BG DIE. SUCCESSIVE CRIMPS WILL PROGRESS TOWARD THE CABLE INSULATION AND THE CRIMPING TOOL SHOULD BE ROTATED 90° BETWEEN EACH CRIMP TO PREVENT THE CONNECTOR FROM BOWING. REMOVE ANY SHARP FLASH.

STEP 13: REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

STEP 14: CLEAN THE CABLE INSULATION WITH A CLEAN TOWEL AND CABLE CLEANING FLUID, SEE TABLE 2 , TO REMOVE ANY CONTAMINATION OR PARTICLES OF THE SEMI-CONDUCTING SHIELD THAT MIGHT BE PRESENT ON THE INSULATION.

TABLE 2 - TOWEL AND CLEANING FLUID

OPERATING AREA	TOWEL ITEM NUMBER OR CAT ID	CLEANING FLUID ITEM NUMBER OR CAT ID
DEP	2054	30525000
DEF	2054	2055

ALWAYS CLEAN FROM THE CONNECTOR TOWARDS THE SEMI-CONDUCTING SHIELD. DO NOT EVER TOUCH THE INSULATION WITH THE AREA ON A TOWEL THAT HAS TOUCHED THE SEMI-CONDUCTING SHIELD.

STEP 15: LUBRICATE THE CABLE INSULATION AND INSULATION SHIELD WITH THE SILICONE GREASE PROVIDED IN THE ELBOW KIT OR WITH GREASE FROM STOCK (SEE TABLE 3). BE CERTAIN TO APPLY A LIBERAL AMOUNT OF SILICONE GREASE AT THE END OF THE SEMI-CONDUCTIVE SHIELD TO ELIMINATE THE POSSIBILITY OF AIR GAPS DEVELOPING IN THIS AREA.

TABLE 3 - SILICONE GREASE

OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	30520803
DEF	403133

APPLY SILICONE GREASE WITH A CLEAN TOWEL, OR A PLASTIC BAG TURNED INSIDE OUT.

DUKE ENERGY.

3				
2				
1				
0	12/16/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

INSTRUCTIONS FOR INSTALLING 200 AMP ELBOWS
ON 15KV OR 25KV CABLE
IN NON-SUBMERSIBLE APPLICATIONS

DEC	DEM	DEP	DEF
		X	X

26.04-00D

STEP 16: SLIDE THE BODY OF THE ELBOW ONTO THE CABLE USING A BACK AND FORTH MOTION UNTIL THE THREADED EYE OF THE CONNECTOR IS CENTERED IN THE ELBOW CAVITY. THE LAST 1/2" OF THE RUBBER IN THE ELBOW IS KEYED TO ACCEPT THE FLAT PORTION OF THE CONNECTOR. NO ROTATION SHOULD OCCUR IN THE LAST 1/2" OF INSERTION IN ORDER TO PREVENT DAMAGE TO THE CONDUCTOR. REMOVE ALL EXCESS SILICONE GREASE.

STEP 17: INSERT THE THREADED END OF THE PROBE INTO THE EYE OF THE COMPRESSION CONNECTOR, HAND TIGHTEN A FEW TURNS TO AVOID CROSS-THREADING, AND THEN TIGHTEN WITH A PROBE INSERTION TORQUE WRENCH, SEE TABLE 4.

TABLE 4 - PROBE INSERTION TORQUE WRENCH	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	414688
DEF	414453

DO NOT APPLY GREASE TO THE PROBE THREADS OR ANY OTHER PART OF THE PROBE.
TAKE PRECAUTIONS TO PREVENT TOUCHING THE ARC TIP ON THE PROBE WITH YOUR HANDS AND TO PREVENT IT FROM BECOMING CONTAMINATED. HOLD IT IN A TOWEL IF NECESSARY.

SKIP TO STEP 21 IF CONCENTRIC NEUTRAL CABLE IS BEING USED.

STEP 18: RUB THE EXPOSED PORTION OF THE LC SHIELD WITH 240 GRIT ALUMINUM OXIDE CLOTH IN ORDER TO REMOVE ANY SURFACE FILM THAT MIGHT BE PRESENT. (WIRE BRUSHING COULD DAMAGE THE LC SHIELD.) POSITION THE PREFORMED GROUND BRAID, (SEE TABLE 5) , WITH THE "U" SECTION OVER THE EXPOSED LC SHIELD WITH THE FOLDS FACING OUTWARD AND THE TWO TAILS EXTENDING ALONG THE CABLE JACKET. SEE FIGURE 6.

TABLE 5 - LC SHIELD GROUND BRAID FOR 200 AMP ELBOW	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	9220271779
DEF	9220271271

STEP 19: SECURE THE BRAID TO THE LC SHIELD BY WRAPPING A CONSTANT TENSION SPRING AROUND THE PORTION OF THE BRAID THAT IS POSITIONED OVER THE LC SHIELD AS SHOWN IN FIGURE 6. BE CERTAIN TO TWIST THE LAST WRAP OF THE SPRING TO INSURE THAT IT IS TIGHT.

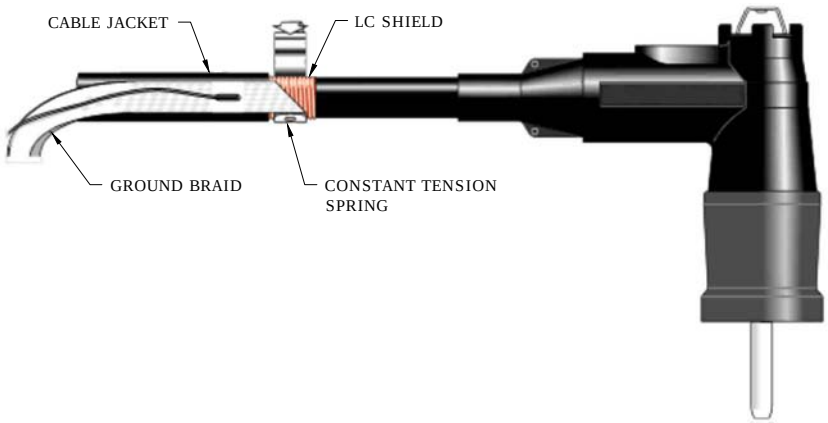


FIGURE 6
INSTALLING PREFORMED BRAID

REVISED	BY	CK'D	APPR.
3			
2			
1			
0 — 12/16/14	EANES	FLETCHER	ADCOCK

INSTRUCTIONS FOR INSTALLING 200 AMP ELBOWS
ON 15KV OR 25KV CABLE
IN NON-SUBMERSIBLE APPLICATIONS

DEC	DEM	DEP	DEF
		X	X

26.04-00E

STEP 20: TIGHTLY WRAP TWO HALF-LAPPED LAYERS OF 3/4" VINYL TAPE, (SEE TABLE 6) IN THE SAME DIRECTION AS THE CONSTANT TENSION SPRING FROM THE EDGE OF THE LC SHIELD, ACROSS THE CONSTANT TENSION SPRING, AND DOWN THE CABLE JACKET TO THE POINT WHERE IT COVERS THE SOLDER CONNECTION OF THE DRAIN WIRE ON THE GROUND BRAID. SEE FIGURE 7.

DO NOT PLACE VINYL TAPE ON THE SEMI-CONDUCTING SHIELD.

TABLE 6 - 3/4" VINYL TAPE	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	21151204
DEF	390124

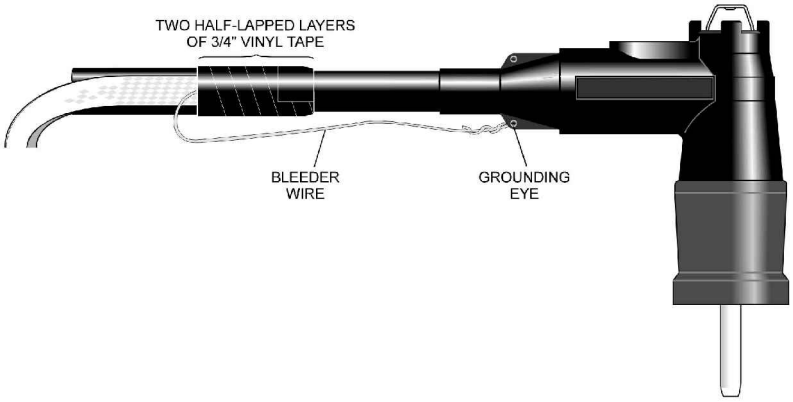


FIGURE 7
APPLYING VINYL TAPE AND ATTACHING BLEEDER WIRE

STEP 21: LOOP THE DRAIN WIRE (SINGLE WIRE ATTACHED TO THE GROUNDING BRAID), OR ONE OF THE CONCENTRIC NEUTRAL STRANDS IF USING CONCENTRIC NEUTRAL CABLE, THROUGH THE GROUNDING EYE ON THE ELBOW AND WRAP LIGHTLY AS SHOWN IN FIGURE 7. BE CAREFUL NOT TO DAMAGE THE GROUNDING EYE. CUT OFF ANY EXCESS LENGTHS OF THE DRAIN WIRE ON THE GROUND BRAID AND USE THIS, OR STOCKED DRAIN WIRE SEE TABLE 7, TO GROUND THE SURFACE OF THE BUSHING INSERT.

TABLE 7 - DRAIN WIRE	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	9220273947
DEF	9220273950

STEP 22: REMOVE THE PROTECTIVE COVER FROM THE BUSHING INSERT AND THOROUGHLY COVER THE ENTIRE SURFACE OF THE BUSHING INSERT INTERFACE WITH A LIGHT COATING OF SILICONE GREASE (SEE TABLE 2). SEE FIGURE 8.

DO NOT APPLY GREASE TO THE ARC QUENCHING MATERIAL ON THE END OF THE PROBE OR ON THE THREADS OF THE PROBE.

TAKE PRECAUTIONS TO PREVENT TOUCHING THE ARC TIP ON THE PROBE WITH YOUR HANDS AND TO PREVENT IT FROM BECOMING CONTAMINATED. HOLD IT IN A TOWEL IF NECESSARY.

STEP 23: USING A HOT-STICK, PLACE THE ELBOW ON THE BUSHING INSERT BY INSERTING THE PROBE APPROXIMATELY 2" INTO THE OPENING OF THE INSERT. YOU WILL FEEL A SLIGHT RESISTANCE AT THIS POINT. MAKE SURE THE ELBOW IS LINED UP WITH THE BUSHING AND THEN PUSH THE ELBOW ONTO THE BUSHING WITH THE HOTSTICK USING A STRAIGHT, QUICK, AND STEADY FORCE. IT IS ALSO A GOOD PRACTICE TO PUSH THE ELBOW A SECOND TIME TO MAKE CERTAIN THE ELBOW WAS FULLY SEATED.

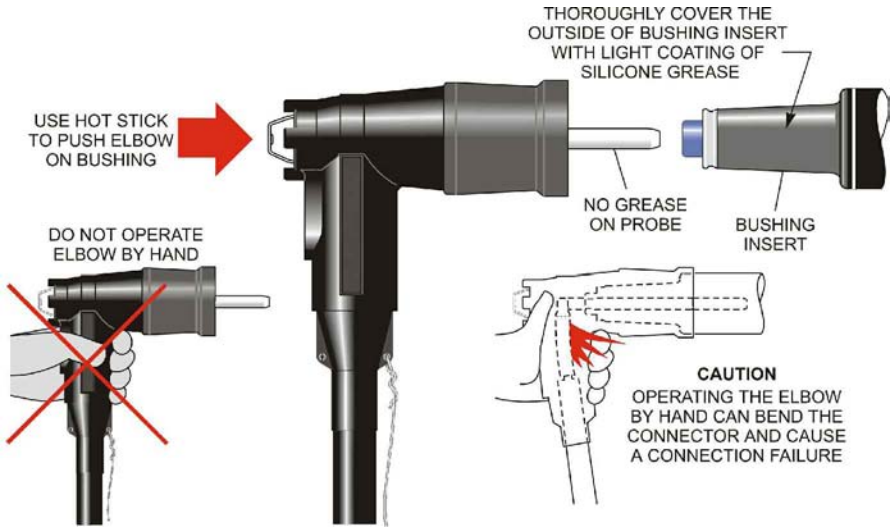


FIGURE 8
PUSHING ELBOW ONTO BUSHING USING HOT STICK

STEP 24: INSTALL A YELLOW INSTALLER ID TAG ON THE BLACK OUTER SURFACE OF THE ELBOW IN BETWEEN THE CUFF OF THE ELBOW (THE BLUE AREA ON 25KV ELBOWS AND A DARK GRAY AREA ON 15KV ELBOWS NEAR THE OPENING THAT FITS OVER THE INSERT) AND THE BEND OF THE ELBOW.

STEP 25: INSTALL DIRECTIONAL LABELS ON THE JACKETED PORTION OF THE CABLE (NOT ON THE SEMICON LAYER).

NOTE: ENSURE ALL CABLES ARE PROPERLY MARKED. CHECK WITH AN OHM METER IF NECESSARY.

STEP 26: REMOVE ANY TEMPORARY MARKING TAPE.

OPERATING INSTRUCTIONS

THE ROD AND BORE TYPE LOADBREAK ELBOW CONNECTOR HAS A WHITE BAND WITH A BLACK STRIPE LOCATED ADJACENT TO TEST POINT ON ELBOW.

ELBOWS MUST BE OPERATED WITH AN APPROVED ELBOW PULLING TOOL (CN 33117904). TO OPERATE, PUT YOURSELF IN THE BEST OPERATING POSITION. THIS POSITION SHOULD ALLOW FIRM FOOTING AND POSITIVE CONTROL OVER MOVEMENT OF LOADBREAK ELBOW CONNECTOR BEFORE, DURING, AND DIRECTLY AFTER OPERATING SEQUENCE.

DO NOT CLOSE AN ENERGIZED LOADBREAK CONNECTOR ON A KNOWN FAULT. IF A FAULT CLOSE IS EXPERIENCED, BOTH THE ELBOW CONNECTOR AND BUSHING INSERT MUST BE REPLACED. RETURN BOTH TO MATERIAL SALVAGE YARD IN RALEIGH WITH DEFECTIVE/FAILED MATERIAL TAG ATTACHED.

LOADMAKE OPERATION

1. AREA MUST BE CLEAR OF OBSTRUCTIONS OR CONTAMINANTS THAT WOULD INTERFERE WITH OPERATION OF ELBOW CONNECTOR.

2. SECURELY FASTEN ELBOW PULLING TOOL TO ELBOW PULLING EYE.

3. AFTER ESTABLISHING FIRM FOOTING AND POSITIVE CONTROL OF ELBOW, PLACE ELBOW OVER BUSHING. INSERT ELBOW MAKE CONTACT (PROBE) INTO BUSHING UNTIL FIRST SLIGHT RESISTANCE IS FELT AND IMMEDIATELY PUSH ELBOW HOME WITH A FAST, FIRM STRAIGHT MOTION. APPLY SUFFICIENT FORCE TO ENGAGE INTERNAL LOCK ON ELBOW AND BUSHING. IF THE INSERT HAS A YELLOW BAND, THIS YELLOW BAND SHOULD NOT BE VISIBLE WHEN THE ELBOW IS PROPERLY SEATED.

LOADBREAK OPERATION

1. AREA MUST BE CLEAR OF OBSTRUCTIONS OR CONTAMINANTS THAT WOULD INTERFERE WITH OPERATION OF ELBOW CONNECTOR.

2. SECURELY FASTEN APPROVED ELBOW PULLING TOOL TO ELBOW PULLING EYE.

3. WITHOUT EXERTING ANY PULLING FORCE, SLIGHTLY ROTATE ELBOW CLOCKWISE IN ORDER TO BREAK SURFACE FRICTION PRIOR TO DISCONNECTION.

4. AFTER ESTABLISHING FIRM FOOTING AND POSITIVE CONTROL OF ELBOW, JACK ELBOW WITH ELBOW PULLING TOOL, JUST BREAKING SEAL (DO NOT TEASE ELBOW CONTACTS APART). REMOVE ELBOW FROM BUSHING WITH A FAST, STRAIGHT, AND FIRM MOTION. DO NOT ALLOW ELBOW NEAR ANY GROUNDED OBJECT.

OBSERVE SAFETY RULE UD1 AND OTHER APPLICABLE SAFETY RULES AND REGULATIONS.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK ELBOW OPERATING INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.04-01

STEP 1 TRAIN CABLE INTO FINAL ASSEMBLED POSITION. CUT CABLE LEAVING ENOUGH "PLAY" SO THAT ELBOW CAN BE OPERATED PROPERLY AND PLACED ON OPERATING ACCESSORIES.

CABLE PREPARATION

(A) REMOVE POLYETHYLENE OUTER JACKET. REMOVE JACKET 7-1/2" FROM END AS SHOWN IN STEP 1 ON DWG. 26.04-02B. UNWRAP EXPOSED CONCENTRIC NEUTRAL WIRES, FOLD BACK, AND COMPLETE STEPS, SEE DWG. 26.01-26.

(B) SEE DWG. 26.00-01 FOR INSTRUCTIONS ON PREPARING CABLE FOR TERMINATION.

STEP 2 REMOVE SEMI-CONDUCTING INSULATION SHIELD 5-7/8" FROM END OF CABLE. CARE MUST BE TAKEN TO AVOID CUTTING INTO CABLE INSULATION.

STEP 3 REMOVE CABLE INSULATION 2-1/4" FROM END OF THE CABLE. WIRE BRUSH BARE CONDUCTOR AND IMMEDIATELY PLACE CONDUCTOR CONTACT ON THE CONDUCTOR. BEFORE MAKING FIRST CRIMP, ALIGN THE CONDUCTOR CONTACT SO THAT THE THREADED HOLE IN THE CONTACT ALIGNS WITH THE WITH THE APPARATUS BUSHING.

MAKE FIRST CRIMP AT SHOULDER OF CONDUCTOR CONTACT. MAKING CERTAIN TO KEEP CABLE BOTTOMED IN CONDUCTOR CONTACT. ROTATE EACH SUCCESSIVE CRIMP 90 DEGREES. WIPE ALL EXCESS INHIBITOR FROM CONDUCTOR CONTACT AND CABLE.

PLACE A 1/8" BEVEL ON THE INSULATION TO EASE ELBOW INSTALLATION. REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NONMETALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION THOROUGHLY WITH CABLE CLEANING FLUID (CN 30525000). DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING. PLACE MARKING TAPE 1" BACK FROM WHERE SEMI-CON ENDS.

STEP 4 LUBRICATE CABLE INSULATION AND INSIDE OF ELBOW HOUSING WITH SILICONE LUBRICANT PROVIDED. SLIDE CABLE INTO BODY OF ELBOW WITH TWISTING MOTION UNTIL THE MARKING TAPE IS FLUSH WITH CABLE ENTRANCE OF ELBOW. ROTATE ELBOW UNTIL ALIGNED WITH BUSHING PLUG. REMOVE MARKING TAPE.

STEP 5 THREAD MALE CONTACT INTO CONDUCTOR CONTACT MAKING CERTAIN THAT THREADS ARE ALIGNED PROPERLY. (CAUTION: IF GREAT RESISTANCE IS ENCOUNTERED IN FIRST 1/2 TO 1-1/2 TURNS, DO NOT FORCE. REMOVE MALE CONTACT AND CHECK THREADS FOR POSSIBLE CROSS THREADING. IF THREADS ARE GOOD RETRY THREADING PROCEDURE. IF THREADS ARE DAMAGED, CONDUCTOR CONTACT AND MALE CONTACT MUST BE REPLACED). ONCE MALE CONTACT IS FINGER TIGHT, PLACE ELBOW PROBE TORQUE TOOL ON MALE CONTACT AND TIGHTEN TO PRESET TORQUE (100-120 IN-LBS.) IN MALE CONTACT AND TIGHTEN UNTIL WRENCH BENDS. GROUND ELBOW HOUSING BY ATTACHING ONE OF THE CONCENTRIC NEUTRAL STRANDS TO GROUNDING EYE ON HOUSING. MAKE CERTAIN THAT BUSHING INSERT IS PROPERLY GROUNDED AS WELL.

GENEROUSLY LUBRICATE RECEPTACLE PORTION OF ELBOW HOUSING WITH SILICONE GREASE SUPPLIED. IF THE TRANSFORMER IS KNOWN TO BE DE-ENERGIZED, LUBRICATE MATING BUSHING, PUSH THE ELBOW ON, AND PULL THE ELBOW OFF ONCE OR TWICE TO INSURE EVEN DISTRIBUTION AND PENETRATION OF GREASE TO ALL SURFACES.

PLACE THE ELBOW CONNECTOR ON THE BUSHING PLUG WITH AN APPROVED ELBOW PULLING TOOL IN ACCORDANCE WITH THE RECOMMENDED OPERATING INSTRUCTIONS.

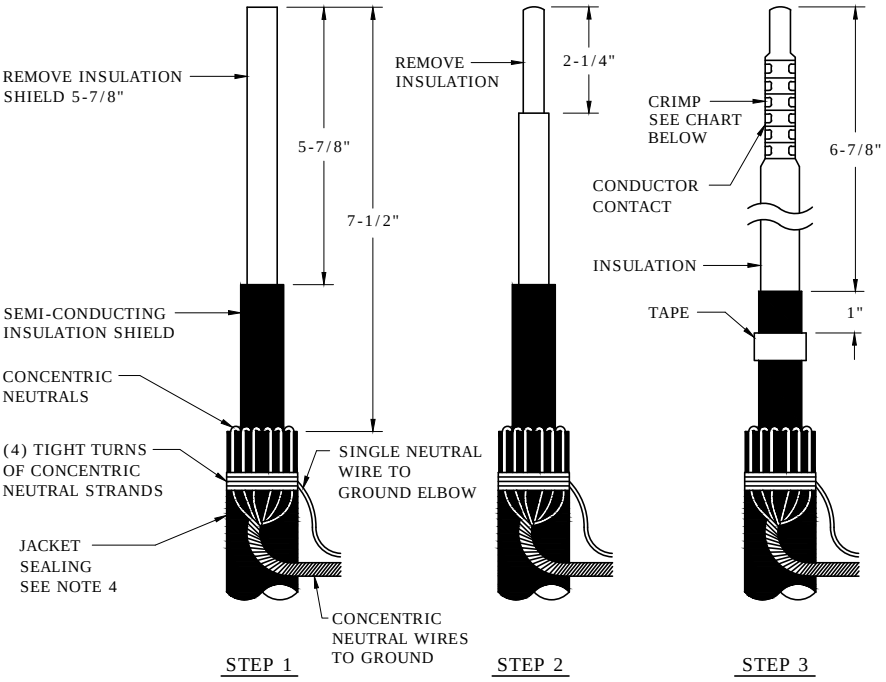
REVISED		BY	CK'D	APPR.
3				
2				
1	4/11/11	ROBESON	BURLISON	ELKINS
0	6/8/10	ROBESON	GUINN	ELKINS

LOADBREAK ELBOW AND BUSHING
INSERT CONNECTORS
INSTALLATION INSTRUCTIONS

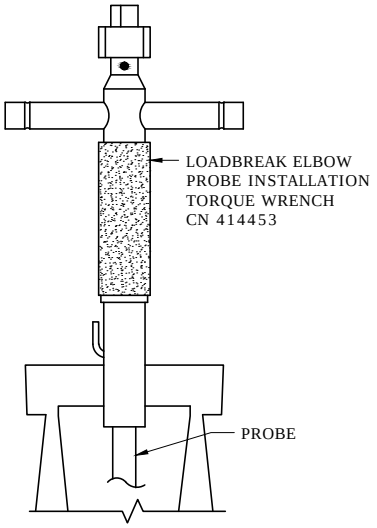
Duke Energy®

CAR

DWG. 26.04-02A

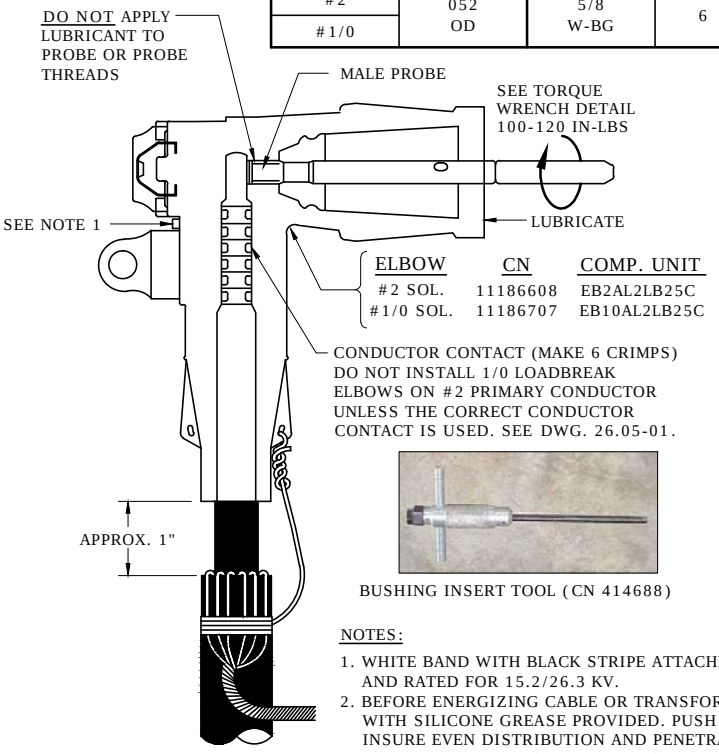


STEP 1 STEP 2 STEP 3



TORQUE WRENCH DETAIL

CRIMP CHART			
CONDUCTOR	TOOL & DIE		NO. OF CRIMPS
	TOOL	DIE	
#2 #1/0	052 OD	5/8 W-BG	6

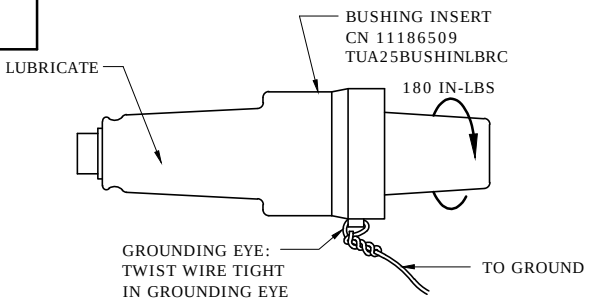


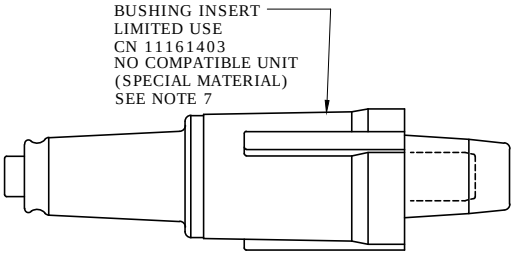
ELBOW	CN	COMP. UNIT
#2 SOL.	11186608	EB2AL2LB25C
#1/0 SOL.	11186707	EB10AL2LB25C

CONDUCTOR CONTACT (MAKE 6 CRIMPS)
DO NOT INSTALL 1/0 LOADBREAK ELBOWS ON #2 PRIMARY CONDUCTOR UNLESS THE CORRECT CONDUCTOR CONTACT IS USED. SEE DWG. 26.05-01.

BUSHING INSERT TOOL (CN 414688)

STEP 4





STEP 5

NOTES:

1. WHITE BAND WITH BLACK STRIPE ATTACHED TO ELBOW INDICATES THAT ELBOW IS LOADBREAK AND RATED FOR 15.2/26.3 KV.
2. BEFORE ENERGIZING CABLE OR TRANSFORMER, GENEROUSLY LUBRICATE THE MATING SURFACES WITH SILICONE GREASE PROVIDED. PUSH ELBOW ON AND PULL ELBOW OFF ONCE OR TWICE TO INSURE EVEN DISTRIBUTION AND PENETRATION OF GREASE TO ALL SURFACES. ADDITIONAL GREASE SHOULD BE ADDED (CN 30520803) AS NECESSARY.
3. SEE DWG. 26.04-02A FOR INSTALLATION INSTRUCTIONS.
4. IN TRANSFORMERS AND SWITCHGEAR, JACKET SEALING IS NOT REQUIRED. FOR OTHER LOCATIONS THAT SEALING IS REQUIRED, SEE DWG. 26.01-26.
5. ELBOW INSTALLATION IS COMPLETE UPON VERIFICATION THAT THE ELBOW CAN BE OPERATED AND PARKED SAFELY AND EASILY ON A STAND OF PLUG MOUNTED ON THE TRANSFORMER PARKING STAND.
6. THE LONGER INSERT IS TO BE USED ONLY WHERE EXTRA LENGTH IS NEEDED TO CLEAR SECONDARY CONDUCTORS THAT INTERFERE WITH THE PROPER OPERATION OF THE ELBOW.
7. IF THE ELBOW IS CLOSED INTO A FAULT, REPLACE THE ELBOW AND THE BUSHING INSERT.
8. THE TOOLS SHOWN MUST BE USED TO INSTALL THE ELBOW PROBE AND INSERT TO ENSURE THEY ARE PROPERLY TORQUED.

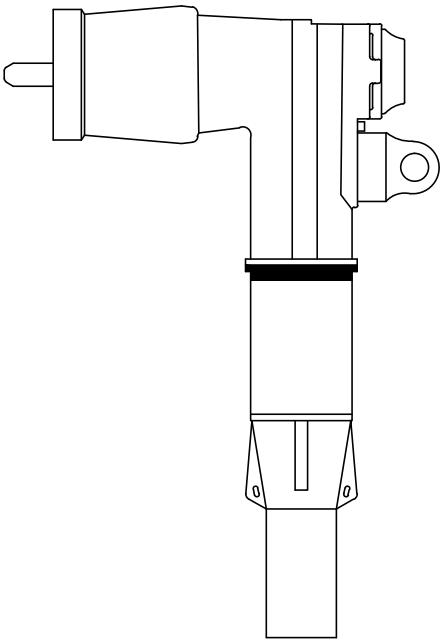
DUKE ENERGY.

REVISED		BY	CK'D	APPR.
3				
2				
1	9/414	ROBESON	GUINN	ADCOCK
0	6/8/10	ROBESON	GUINN	ELKINS

LOADBREAK ELBOW AND BUSHING INSERT CONNECTORS FOR CN CABLE

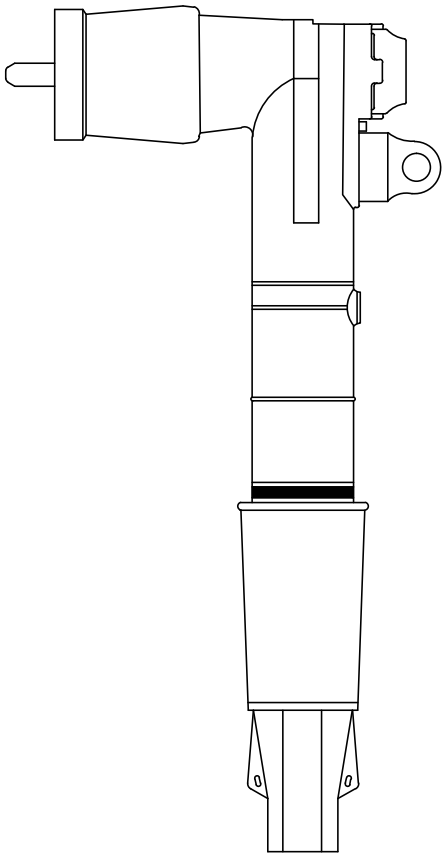
DEC	DEM	DEP	DEF
		X	

26.04-02B



REPAIR ELBOW

ADDS APPROXIMATELY 3-1/4" MORE THAN THE STANDARD ELBOW.



REPLACEMENT ELBOW

ADDS APPROXIMATELY 9" MORE THAN THE STANDARD ELBOW.

BILL OF MATERIALS - REPAIR ELBOWS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	EB10AL2LB25RPLC	1	11186715	1	CONNECTOR, REPAIR ELBOW, LBK, #1/0 SLD AL
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.
	2	EB2AL2LB25RPLC	1	11186624	1	CONNECTOR, REPAIR ELBOW, LBK, #2 SLD AL
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.

BILL OF MATERIALS - REPLACEMENT ELBOWS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	EB10AL2LB25RPRC	1	006789	1	REPLACEMENT ELBOW, 1/0, 25KV, 9-7/8" LONGER THAN STANDARD
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.
	2	EB2AL2LB25RPRC	1	050966	1	REPLACEMENT ELBOW, #2, 25KV, 9-7/8" LONGER THAN STANDARD
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.

NOTES:

1. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

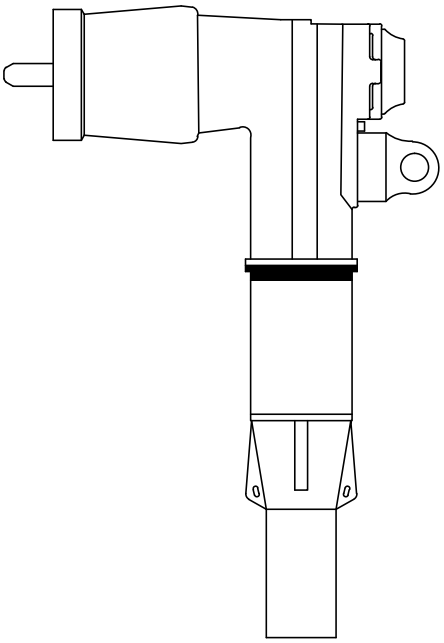
REVISED		BY	CK'D	APPR.
3				
2	2/28/12	ROBESON	BURLISON	ELKINS
1	9/21/11	ROBESON	BURLISON	ELKINS
0	6/8/10	ROBESON	GUINN	ELKINS

REPAIR AND REPLACEMENT LOADBREAK ELBOWS

Progress Energy

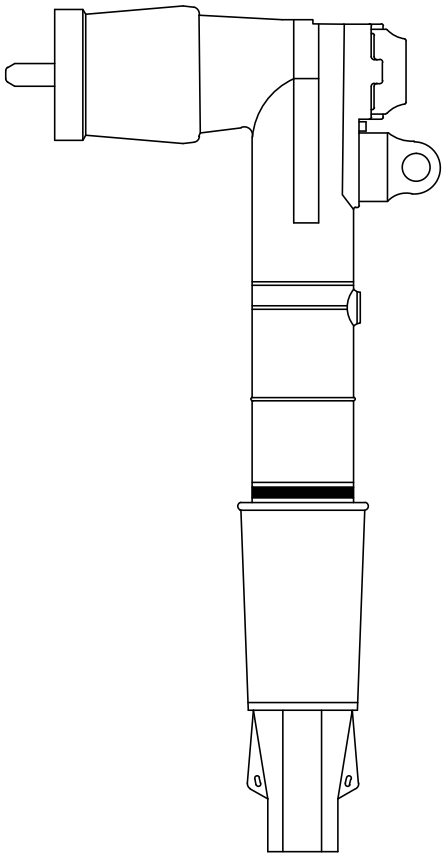
CAR

DWG. 26.04-02C



REPAIR ELBOW

ADDS APPROXIMATELY 3-1/4" MORE THAN THE STANDARD ELBOW.



REPLACEMENT ELBOW

ADDS APPROXIMATELY 9" MORE THAN THE STANDARD ELBOW.

BILL OF MATERIALS - REPAIR ELBOWS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	EB10AL2LB25RPLC	1	11186715	1	CONNECTOR, REPAIR ELBOW, LBK, #1/0 SLD AL
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.
	2	EB2AL2LB25RPLC	1	11186624	1	CONNECTOR, REPAIR ELBOW, LBK, #2 SLD AL
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.

BILL OF MATERIALS - REPLACEMENT ELBOWS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	EB10AL2LB25RPRC	1	006789	1	REPLACEMENT ELBOW, 1/0, 25KV, 9-7/8" LONGER THAN STANDARD
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.
	2	EB2AL2LB25RPRC	1	050966	1	REPLACEMENT ELBOW, #2, 25KV, 9-7/8" LONGER THAN STANDARD
				11195203	1	CONNECTOR, PA, COMP, #6 SLD - #2 STR.

NOTES:

1. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

DUKE ENERGY.

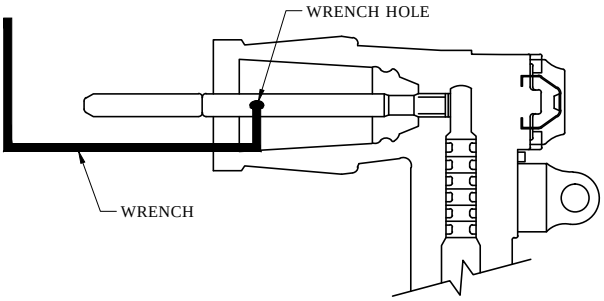
REVISED		BY	CK'D	APPR.
3				
2				
1				
0	9/4/14	ROBESON	GUINN	ADCOCK

REPAIR AND REPLACEMENT LOADBREAK ELBOWS

DEC	DEM	DEP	DEF
		X	

26.04-02D

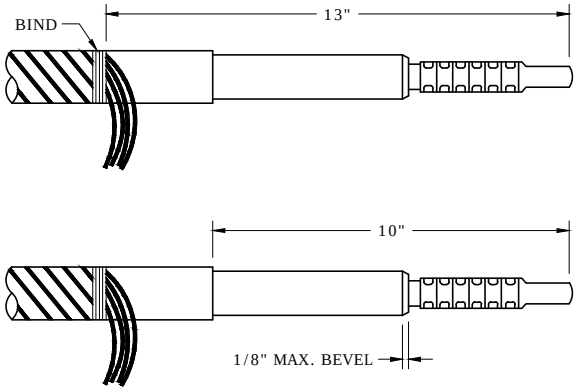
FOR ELBOW HOUSING REPLACEMENT WITHOUT CHANGING COMPRESSION LUG



STEP 1A REMOVE ELBOW

A. USING PIN WRENCH REMOVE PROBE FROM ELBOW AND DISCARD PROBE.

B. WITH A TWISTING MOTION, PULL THE ELBOW OFF THE CABLE.



STEP 2A CABLE PREPARATION

A. UNWRAP AND BIND CONCENTRIC NEUTRAL WIRES 13" BACK FROM END OF CONDUCTOR.

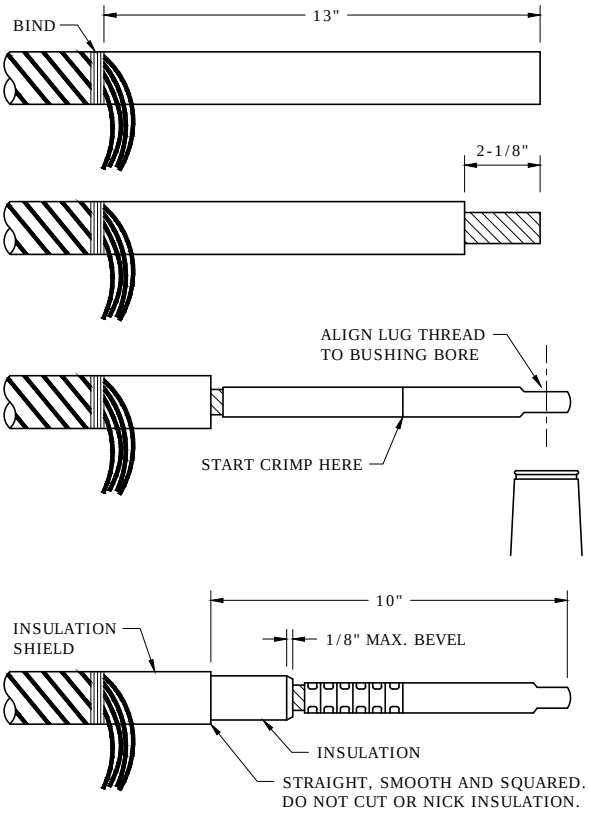
B. REMOVE INSULATION SHIELD AS SHOWN.

C. BEVEL THE INSULATION END 1/8" MAX.

D. THOROUGHLY CLEAN INSULATION TO REMOVE ALL TRACES OF CONDUCTIVE RESIDUE.

GO TO STEP 3 ON DWG. 26.04-02F

NEW INSTALLATION AND TOTAL REPLACEMENT OF ELBOW HOUSING AND COMPRESSION LUG



CABLE PREPARATION

A. UNWRAP AND BIND CONCENTRIC NEUTRAL WIRES 13" BACK FROM END OF CABLE.

B. REMOVE SHIELD AND INSULATION FOR THE CABLE END. CUT SQUARELY TAKING CARE NOT TO NICK CONDUCTOR.

C. WIRE BRUSH BARE ALUMINUM CONDUCTORS AND IMMEDIATELY INSTALL COMPRESSION LUG. ROTATE TO SPREAD INHIBITOR. POSITION COMPRESSION LUG SO THE CONTACT THREADED HOLE ALIGNS WITH THE BUSHING BORE. (REFER TO CRIMP CHART PACKAGED WITH COMPRESSION LUG FOR RECOMMENDED CRIMP TOOL INFORMATION). START CRIMP AT THE CRIMP LINE MARK. ROTATE 180° EACH SUCCESSIVE CRIMP. CAREFULLY WIRE EXCESSIVE INHIBITOR FROM THE OUTSIDE OF THE LUG AND CABLE.

D. REMOVE INSULATION SHIELD AS SHOWN. BEVEL INSULATION END 1/8" MAX.

E. THOROUGHLY CLEAN INSULATION TO REMOVE ALL TRACES OF CONDUCTIVE RESIDUE.

GO TO STEP 3 ON DWG. 26.04-02F

DUKE ENERGY.

3				
2				
1				
0	9/4/14	ROBESON	GUINN	ADCOCK
REVISED		BY	CK'D	APPR.

REPAIR ELBOW INSTALLATION
ADD 3-1/4" TO LENGTH

DEC	DEM	DEP	DEF
		X	

26.04-02E

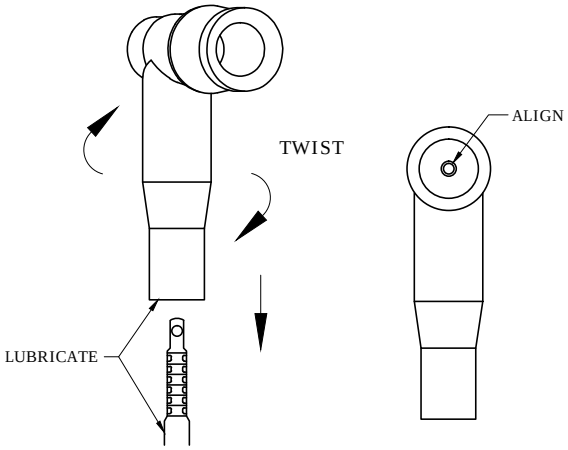
STEP 3 ELBOW ASSEMBLY

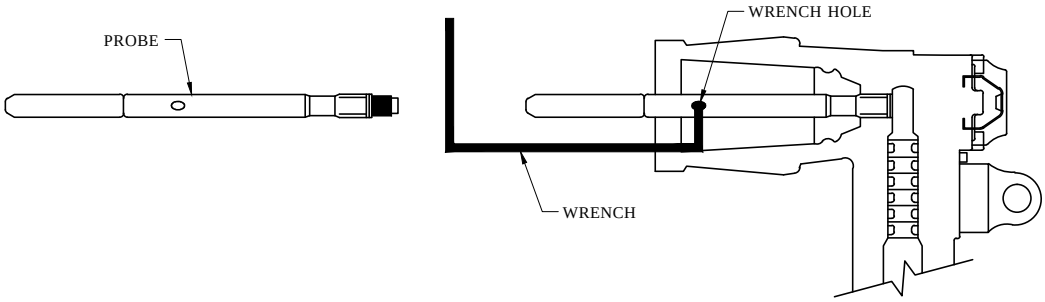
A. LUBRICATE THE CABLE INSULATION AND INSIDE THE ELBOW HOUSING WITH THE LUBRICANT SUPPLIED. DO NOT SUBSTITUTE. OTHER LUBRICANTS MAY BE HARMFUL TO THIS PRODUCT OR ITS MATING PRODUCT(S). KEEP INSULATION CLEAN OF DIRT AND GRIME.

B. SLIDE THE ELBOW CONNECTOR ONTO THE CABLE WITH A BACK AND FORTH TWISTING MOTION. WIPE OFF ALL EXCESS GREASE.

C. ALIGN ELBOW WITH COMPRESSION LUG'S THREADED HOLE.

D. THREAD PROBE INTO LUG BY HAND, TAKING CARE NOT TO CROSS-THREAD. THE PROBE MUST TURN FREELY FOR APPROXIMATELY FOUR TURNS BEFORE BECOMING SNUG. TIGHTEN WITH WRENCH UNTIL WRENCH BENDS.

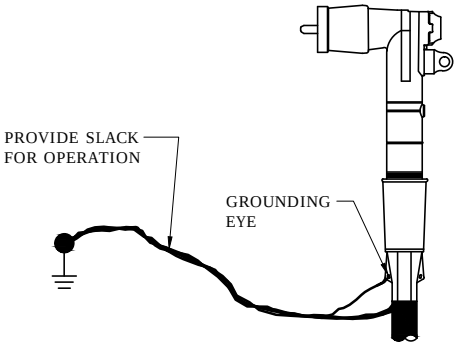




STEP 4 CONCENTRIC NEUTRAL CONNECTION

A. USING A SEPARATE COPPER WIRE (NO. 14 AWG) OR EQUIVALENT, INSERT ONE END THROUGH THE GROUNDING EYE ON THE ELBOW. TWIST TIGHT TAKING CARE NOT TO DAMAGE THE EYE.

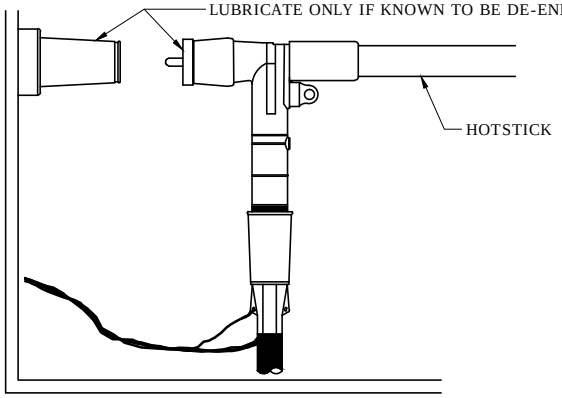
B. TWIST ALL NEUTRAL WIRES AND WIRE FROM GROUNDING EYE AND CONNECT TO GROUND USING APPROPRIATE CONNECTOR. PROVIDE ADEQUATE SLACK IN WIRES FOR ELBOW OPERATION.

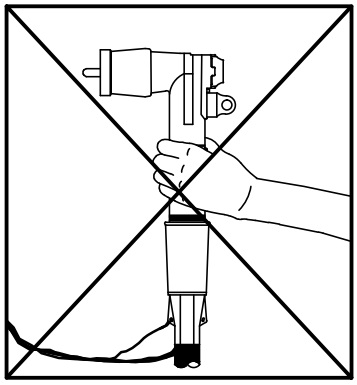


STEP 5 CONNECT ELBOW AND BUSHING PLUG

A. LUBRICATE THE RECEPTACLE PORTION OF THE ELBOW CONNECTOR AND THE MATING BUSHING WITH THE LUBRICANT SUPPLIED. LUBRICATE ONLY IF THE TRANSFORMER AND ELBOW ARE KNOWN TO BE DE-ENERGIZED .

B. OPERATE PER FOLLOWING INSTRUCTIONS. DO NOT OPERATE BY HAND .





3				
2				
1				
0	9/4/14	ROBESON	GUINN	ADCOCK
REVISED		BY	CK'D	APPR.

REPAIR ELBOW INSTALLATION

ADD 3-1/4" TO LENGTH

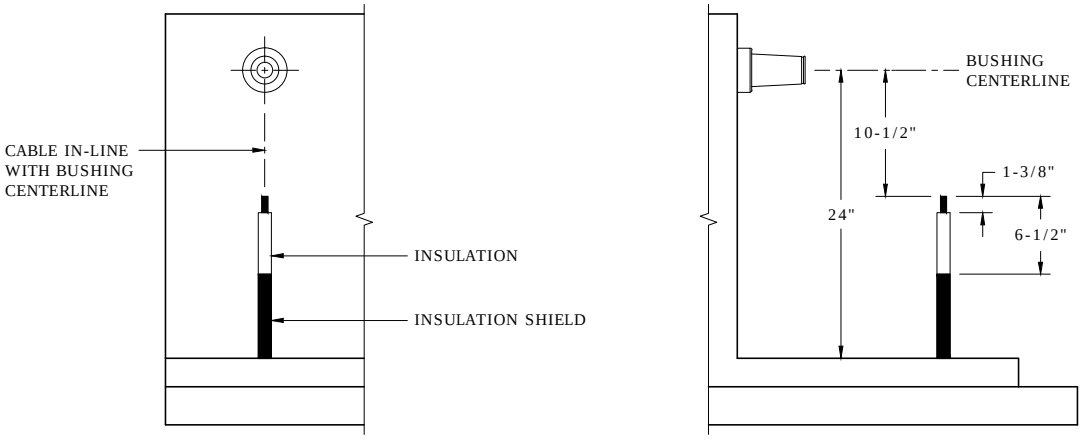
DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	

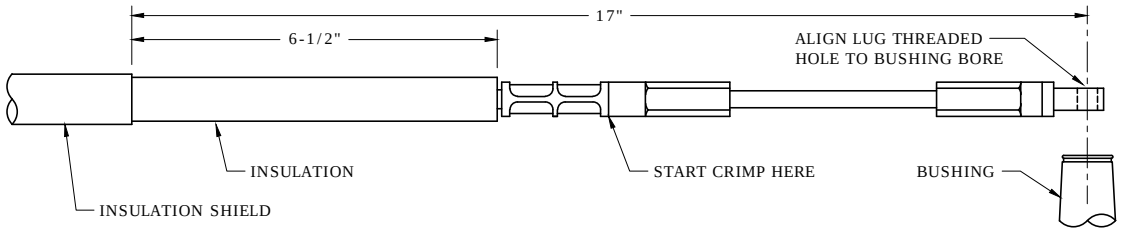
26.04-02F

STEP 1

A. TRAIN CABLES TO BE STRAIGHT AND IN-LINE WITH BUSHING CENTERLINE.
B. THE END OF THE CABLE MUST MEASURE 10-1/2" FROM THE CENTERLINE BUSHING. CUT THE CABLE TO 10-1/2". REMOVE THE INSULATION SHIELD 6-1/2" FROM THE END OF THE CABLE.
C. REMOVE CABLE INSULATION 1-3/8" FROM THE END OF CABLE. CUT SQUARELY. DO NOT NICK THE CONDUCTOR.

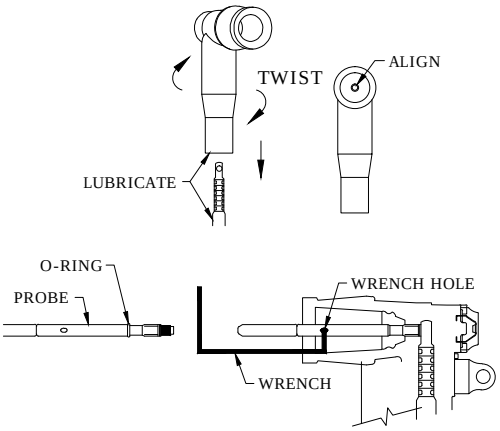


WIRE BRUSH BARE ALUMINUM CONDUCTOR AND IMMEDIATELY INSTALL COMPRESSION LUG. ROTATE TO SPREAD INHIBITOR. POSITION COMPRESSION LUG SO THE CONTACT THREADED HOLE ALIGNS WITH THE BUSHING BORE (REFER TO CRIMP CHART PACKAGED WITH COMPRESSION LUG FOR RECOMMENDED CRIMP INFORMATION). START CRIMP AT THE CRIMP LINE MARK. ROTATE 180° EACH SUCCESSIVE CRIMP. CAREFULLY WIPE EXCESSIVE INHIBITOR FROM THE OUTSIDE OF THE LUG AND CABLE.



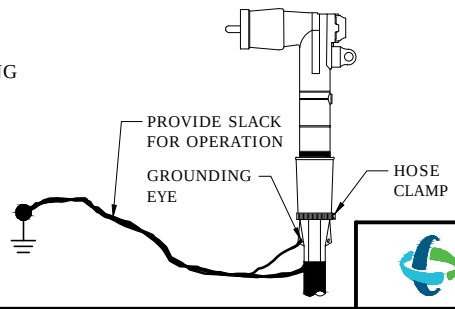
STEP 2

A. LUBRICATE THE CABLE INSULATION AND INSIDE THE ELBOW HOUSING WITH THE LUBRICANT SUPPLIED. DO NOT SUBSTITUTE. OTHER LUBRICANTS MAY BE HARMFUL TO THIS PRODUCT OR ITS MATING PRODUCT(S). KEEP INSULATION CLEAN OF DIRT AND GRIME. DO NOT USE EXCESS GREASE AND DO NOT INTRODUCE ANY GREASE INTO THE GAP BETWEEN THE LUG AND THE INSULATION.
B. SLIDE THE ELBOW CONNECTOR ONTO THE CABLE WITH A BACK AND FORTH TWISTING MOTION. WIPE OFF ALL EXCESS GREASE.
C. ALIGN ELBOW WITH COMPRESSION LUG'S THREADED HOLE.
D. THREAD PROBE INTO LUG BY HAND, TAKING CARE NOT TO CROSS-THREAD. THE PROBE MUST TURN FREELY FOR APPROXIMATELY FOUR TURNS BEFORE BECOMING SNUG. TIGHTEN WITH WRENCH UNTIL WRENCH BENDS.



STEP 3 CONCENTRIC NEUTRAL CONNECTION

A. USING A SEPARATE COPPER WIRE (NO. 14 AWG) OR EQUIVALENT, INSERT ONE END THROUGH THE GROUNDING EYE ON THE ELBOW. TWIST TIGHT TAKING CARE NOT TO DAMAGE THE EYE.
B. TWIST ALL NEUTRAL WIRES AND CONNECT TO GROUND USING APPROPRIATE CONNECTOR. PROVIDE ADEQUATE SLACK IN WIRES FOR ELBOW OPERATION.
C. ADD HOSE CLAMP AS SHOWN. TIGHTEN SNUGLY. DO NOT OVERTIGHTEN.



DUKE ENERGY.

3				
2				
1				
0	9/8/14	ROBESON	GUINN	ADCOCK
REVISED		BY	CK'D	APPR.

REPAIR ELBOW INSTALLATION

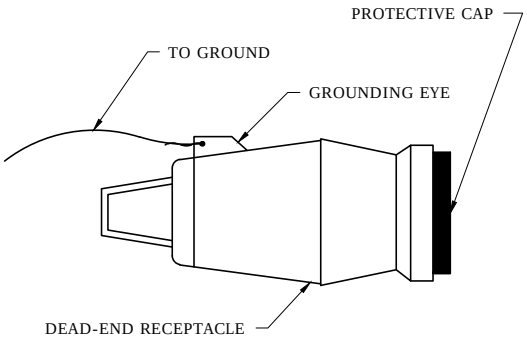
ADD 9" TO LENGTH

DEC	DEM	DEP	DEF
		X	

26.04-02G

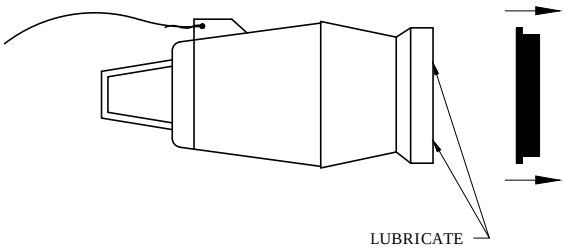
STEP 1

WITH THE GROUND LEAD PROVIDED, CONNECT TO GROUND USING A SPLIT BOLT CONNECTOR. IF A GROUND LEAD IS NOT PROVIDED WITH THE RECEPTACLE, USE A PIECE OF CONCENTRIC NEUTRAL WIRE. LEAVE ENOUGH SLACK TO OPERATE WITH AN APPROVED ELBOW PULLING TOOL.



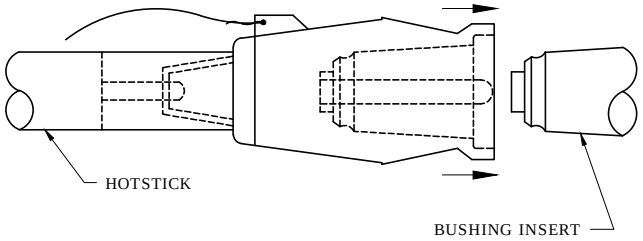
STEP 2

REMOVE PROTECTIVE CAP FROM DEAD-END RECEPTACLE LUBRICATE INTERNAL MATING SURFACE OF DEAD-END RECEPTACLE WITH SILICONE GREASE PROVIDED. DO NOT SUBSTITUTE. KEEP MATING SURFACES CLEAN. ALWAYS REPLACE PROTECTIVE CAP WHEN DEAD-END RECEPTACLE IS NOT IN USE.



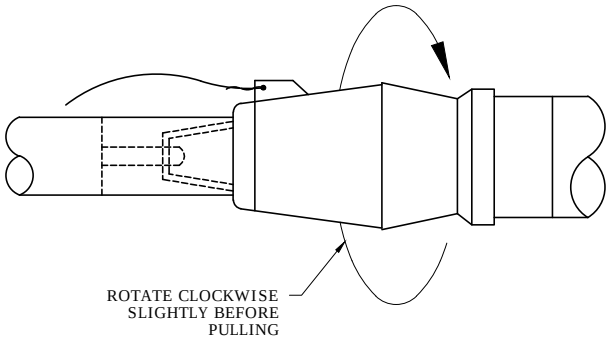
STEP 3

ATTACH HOTSTICK TO DEAD-END RECEPTACLE PULLING EYE. USING HOTSTICK INSERT MALE CONTACT OF DEAD-END RECEPTACLE INTO LOADBREAK BUSHING AND PUSH DEAD-END RECEPTACLE HOME WITH A FAST, FIRM, STRAIGHT MOTION. MAKE CERTAIN IT IS FIRMLY IN PLACE AND LOCKING RING IS SEATED.



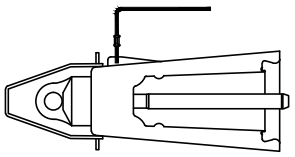
STEP 4

TO REMOVE DEAD-END RECEPTACLE, REVERSE THE OPERATIONAL SEQUENCE.



TUA25RECDELB2RC
CN 11186806

A LOADBREAK DEAD-END RECEPTACLE WITH TEST POINT IS AVAILABLE FOR USE AS A PHASING TOOL.



CN 6510

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK DEAD-END RECEPTACLE

Duke Energy®

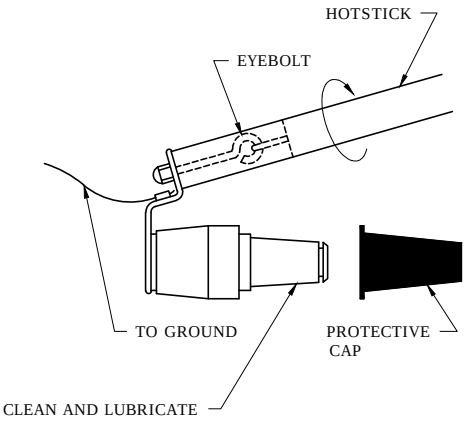
CAR

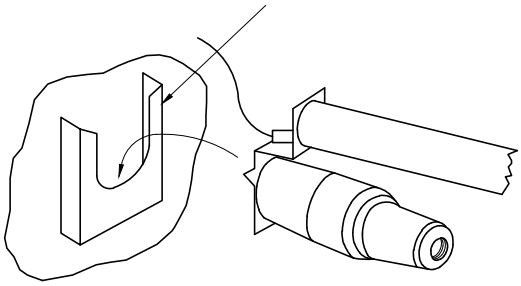
DWG. 26.04-03

STEP 1

A. GROUND STAND-OFF PLUG BY CONNECTING A SINGLE PIECE OF CONCENTRIC NEUTRAL WIRE TO GROUNDING LUG ON STAND-OFF PLUG. CONNECT OPPOSITE END TO GROUND USING SPLIT BOLT CONNECTOR, LEAVING ENOUGH SLACK TO OPERATE WITH A HOT-STICK. REMOVE PROTECTIVE CAP, CLEAN, AND LUBRICATE STAND-OFF PLUG INTERFACE WITH SILICONE GREASE PROVIDED. DO NOT SUBSTITUTE. ALWAYS REPLACE PROTECTIVE CAP WHEN STAND-OFF PLUG IS NOT IN USE.

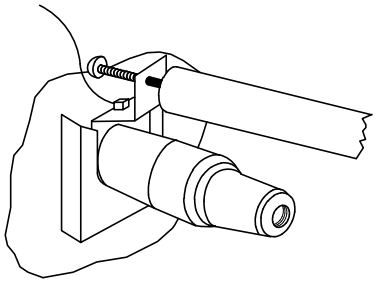
B. ATTACH HOTSTICK TO STAND-OFF PLUG EYEBOLT.





STEP 3

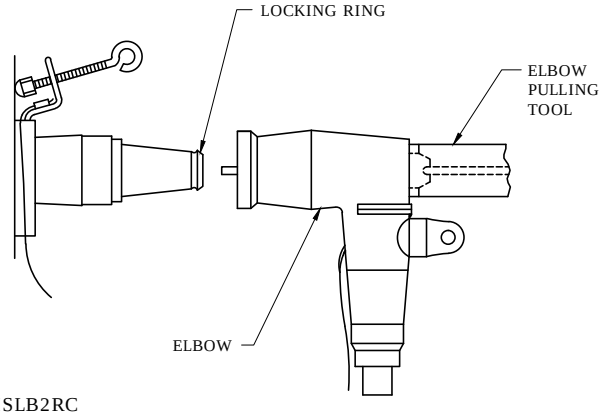
UNLOCK HOTSTICK AND BACK OFF TO ALLOW SPACE FOR EYEBOLT TO BE TIGHTENED. TIGHTEN EYEBOLT BY ROTATING HOTSTICK CLOCKWISE UNTIL SNUG. DO NOT OVER-TIGHTEN.



STEP 4

A. REMOVE LOADBREAK ELBOW FROM APPARATUS BUSHING FOLLOWING APPLICABLE LOADBREAK OPERATING PROCEDURE. INSERT MALE CONTACT OF LOADBREAK ELBOW INTO STAND-OFF PLUG AND PUSH IT HOME WITH A FAST, FIRM, STRAIGHT MOTION. MAKE CERTAIN IT IS FIRMLY IN PLACE AND LOCKING RING IS SEATED.

TO RETURN LOADBREAK ELBOW TO APPARATUS BUSHING, REVERSE THE OPERATIONAL SEQUENCE. COVER THE STAND-OFF PLUG WITH DEAD END RECEPTACLE (CN 11186806).



TUA25PLGISLB2RC
CN 11186905

3				
2				
1				
O	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK STAND-OFF PLUG

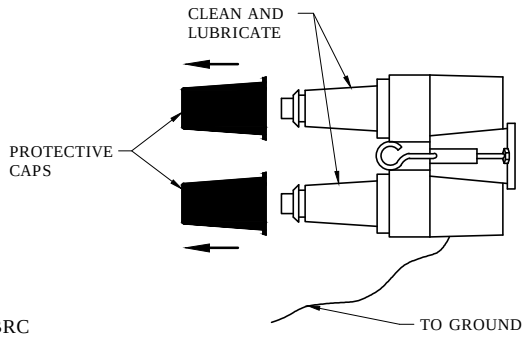
Duke Energy®

CAR

DWG. 26.04-04

STEP 1

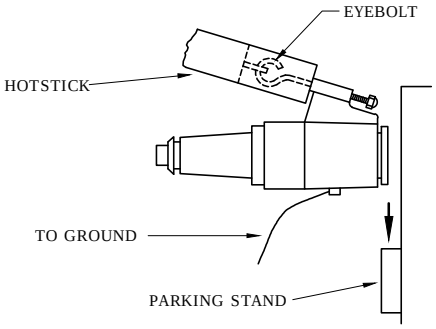
GROUND FEED-THRU BY CONNECTING A SINGLE PIECE OF CONCENTRIC NEUTRAL WIRE TO GROUNDING LUG ON BOTTOM OF FEED-THRU. CONNECT OPPOSITE END TO GROUND, USING A SPLIT BOLT CONNECTOR, LEAVING LEAVING ENOUGH SLACK TO OPERATE WITH A HOTSTICK. REMOVE PROTECTIVE CAPS, CLEAN, AND LUBRICATE FEED-THRU BUSHING INTERFACE WITH SILICONE GREASE PROVIDED. DO NOT SUBSTITUTE. ALWAYS REPLACE PROTECTIVE CAPS WHEN FEED-THRU IS NOT IN USE.



TUA25PLGFDTLBRC
CN 11186400

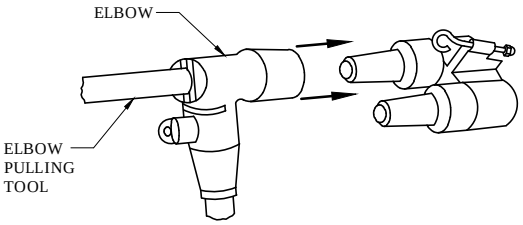
STEP 2

ATTACH HOTSTICK TO FEED-THRU EYEBOLT. USING HOTSTICK, SLIDE FEED-THRU INTO PARKING STAND. UNLOCK HOTSTICK AND BACK OFF TO ALLOW SPACE FOR EYEBOLT TO BE TIGHTENED. TIGHTEN EYEBOLT BY ROTATING HOTSTICK CLOCKWISE UNTIL SNUG. DO NOT OVERTIGHTEN.



STEP 3

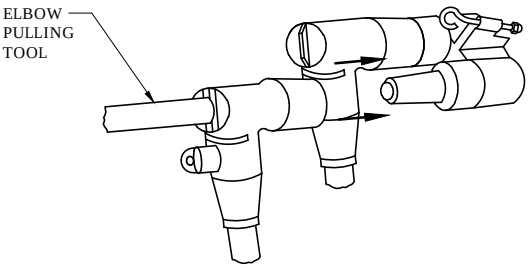
REMOVE ONE LOADBREAK ELBOW FROM ITS APPARATUS BUSHING FOLLOWING APPLICABLE LOADBREAK OPERATING PROCEDURE. INSERT MALE CONTACT OF LOADBREAK ELBOW INTO ONE OF FEED-THRU BUSHINGS AND PUSH IT HOME WITH A FAST, FIRM, STRAIGHT MOTION. MAKE CERTAIN IT IS FIRMLY IN PLACE AND LOCKING RING IS SEATED.



STEP 4

REMOVE SECOND LOADBREAK ELBOW, FOLLOWING APPLICABLE LOADBREAK OPERATING PROCEDURE. INSERT MALE CONTACT OF LOADBREAK ELBOW INTO REMAINING FEED-THRU BUSHING AND PUSH IT HOME WITH A FAST, FIRM, STRAIGHT MOTION. MAKE CERTAIN IT IS FIRMLY IN PLACE AND LOCKING RING IS SEATED.

TO RETURN LOADBREAK ELBOW TO APPARATUS BUSHING, REVERSE THE OPERATIONAL SEQUENCE. COVER THE FEED-THRU WITH DEAD-END RECEPTACLE (CN 11186806).



IF ELBOW IS CLOSED INTO A FAULT, REPLACE ELBOW AND FEED-THRU.

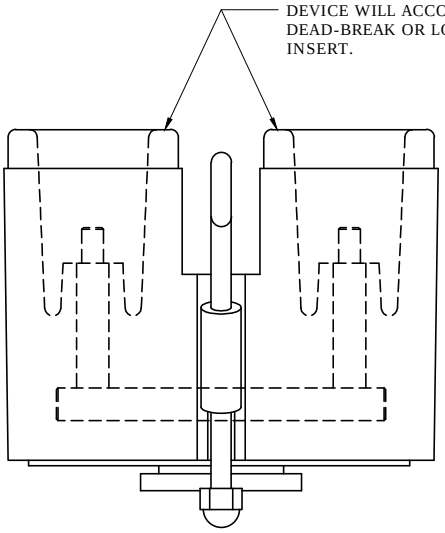
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK FEED-THRU
(ROD AND BORE TYPE)

Duke Energy®

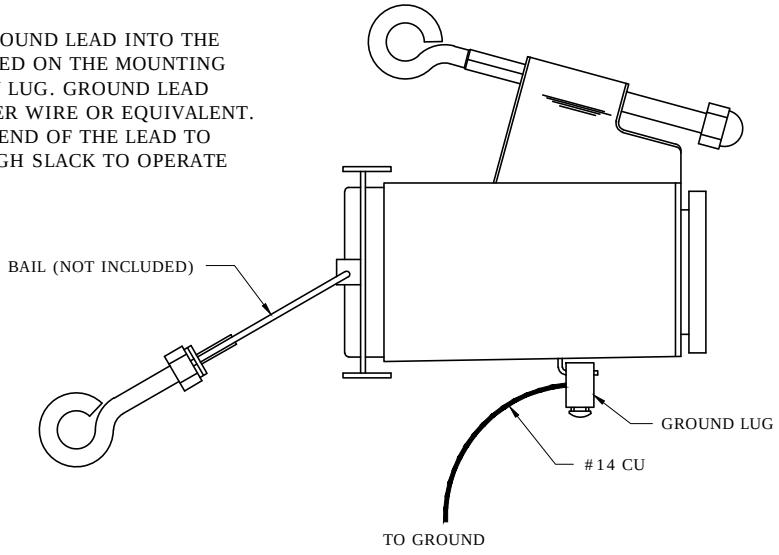
CAR

DWG. 26.04-06



DEAD-BREAK/LOAD-BREAK FEED THRU WELL CONNECTOR
CN 9220164204

GROUNDING - INSERT GROUND LEAD INTO THE GROUNDING LUG PROVIDED ON THE MOUNTING HARDWARE AND TIGHTEN LUG. GROUND LEAD SHOULD BE NO. 14 COPPER WIRE OR EQUIVALENT. CONNECT THE OPPOSITE END OF THE LEAD TO GROUND, LEAVING ENOUGH SLACK TO OPERATE WITH A HOTSTICK.



NOTES:

1. THIS FEED THRU WILL ACCOMMODATE A DEAD-BREAK OR LOAD-BREAK BUSHING INSERT.

2. GROUNDING A DEAD-BREAK ELBOW CIRCUIT - THE FEED THRU IS TO BE USED TO GROUND CIRCUITS WHERE DEAD-BREAK ACCESSORIES EXIST. A DEAD-BREAK INSERT IS PLACED IN ONE SIDE TO ACCOMMODATE THE DEAD-BREAK ELBOW AND A LOAD-BREAK INSERT IS INSERTED INTO THE OTHER SIDE TO ACCOMMODATE THE GROUNDING ELBOW.

3. USE AS A FEED-THRU - THIS DEVICE CAN BE USED TO BYPASS A TRANSFORMER, IF NECESSARY, WHERE DEAD-BREAK ELBOWS EXIST BY INSTALLING A DEAD-BREAK INSERT IN BOTH SIDES OF THE DEVICE.

4. A HOLD DOWN BAIL (CN 9220170480) MUST BE USED WITH A DEAD BREAK ELBOW.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

DEAD-BREAK/LOAD-BREAK
FEED THRU WELL CONNECTOR

Duke Energy

CAR

DWG.
26.04-07

STEP 1

INSPECT THE APPARATUS BUSHING WELL TO INSURE IT IS DRY AND FREE FROM ALL CONTAMINANTS. LUBRICATE THE BUSHING WELL INTERFACE AND CUFF AREA OF THE FEED-THRU INSERT.

STEP 2

COOPER/RTE
PLACE BASE OF ROTATABLE FEEDTHRU INSERT INTO BUSHING WELL. TURN ROTATABLE FEED-THRU INSERT CLOCKWISE ONTO BUSHING WELL STUD. AN AUDIBLE CLICK SIGNALS THAT THREADS AND INTERFACE ARE FULLY SEATED. CONTINUE CLOCKWISE ROTATION TO POSITION FEEDTHRU.

T&B/ELASTIMOLD
PLACE THE LUBRICATED PORTION OF THE FEED-THRU INSERT IN THE APPARATUS BUSHING WELL AND ROTATE FEED-THRU INSERT CLOCKWISE UNTIL FULLY SEATED. DO NOT FORCE. OVER-TIGHTENING MAY DAMAGE THREADS OF BUSHING WELL. THE FEED-THRU INSERT HAS BEEN DESIGNED WITH A SPECIAL 180° ADJUSTMENT FEATURE. FEED-THRU INSERT MAY NOW BE ROTATED COUNTERCLOCKWISE UP TO A HALF TURN TO OBTAIN DESIRED ALIGNMENT. A DEFINITE STOP WILL BE FELT AT THE END OF THE 180° ADJUSTMENT RANGE.

STEP 3

ASSEMBLE "A" HOOK BOLT IN AVAILABLE UPPER BUSHING WELL TAB. ASSEMBLE PLATE OVER THREADED END OF BOLT. USE HOLE IN PLATE WHICH ALLOWS THE MOST VERTICAL POSITION OF HOOK BOLT. ASSEMBLE WING NUT. ASSEMBLE "B" HOOK BOLT AND WING NUT. ENGAGE HOOK OF HOOK BOLT INTO LOWER BUSHING WELL TAB. SWING HOOK BOLT UP INTO SLOT OF PLATE, USING SLOT WHICH ALLOWS THE MOST VERTICAL POSITION OF HOOK BOLT. TIGHTEN WING NUTS SECURELY BY HAND.

STEP 4

PUSH A LENGTH OF CONCENTRIC NEUTRAL WIRE THROUGH ONE OF THE GROUNDING HOLES ON THE FEED-THRU INSERT. MAKE A SMALL LOOP AND TWIST TIGHTLY, TAKING CARE NOT TO DAMAGE THE CONDUCTIVE SHIELD. CONNECT FREE END OF THE WIRE TO THE SYSTEM GROUND.

CAUTION: THE ELECTROSTATIC GROUNDING WIRE SHOULD BE INSTALLED IN SUCH A MANNER SO AS NOT TO CONTACT THE BUSHING INTERFACE OR ADJACENT BUSHING INTERFACES OR INTERFERE WITH THE PLACEMENT OF ACCESSORIES ON NEARBY PARKING STANDS.

STEP 5

REMOVE PROTECTIVE SHIPPING CAPS FROM FEED-THRU INSERT. BEFORE ENERGIZING CABLE OR TRANSFORMER, CLEAN AND GENEROUSLY LUBRICATE THE MATING SURFACES WITH SILICONE GREASE PROVIDED. PUSH ELBOW ON AND PULL ELBOW OFF ONCE OR TWICE, TO INSURE EVEN DISTRIBUTION AND PENETRATION OF GREASE TO ALL SURFACES. ADDITIONAL GREASE (CN 30520803) SHOULD BE ADDED AS NEEDED. INSTALL THE MATING PRODUCTS TO THE FEED-THRU INSERT FOLLOWING THE INSTRUCTIONS IN THE UNDERGROUND SPECIFICATION BOOK.

NOTES:

1. IF FEED-THRU INSERT IS NOT TO BE IMMEDIATELY MATED WITH ELBOW CONNECTOR(S) AND/OR DEAD-END RECEPTACLE(S) AND/OR GROUNDING ELBOW(S), DO NOT REMOVE SHIPPING CAPS. DO NOT ENERGIZE OR SUBMERGE APPARATUS WITH SHIPPING CAPS ON THE FEED-THRU INSERT. (THIS IS A PROTECTIVE CAP ONLY WHICH IS NOT INSULATED OR WATER TIGHT AND ONLY INTENDED TO KEEP THE BUSHING PLUG SURFACES CLEAN DURING HANDLING AND INSTALLATION.)

2. H_{1A} BUSHING IS THE PREFERRED SOURCE SIDE BUSHING. H_{1B} BUSHING IS THE PREFERRED LOAD SIDE BUSHING WHEN USING LOADBREAK FEED-THRU BUSHING INSERT AS SHOWN ON DWG. 26.04-08B, PLACE ONE FAULT INDICATOR ON SOURCE CABLE AND ONE FAULT INDICATOR ON ONE OF TWO LOAD SIDE CABLES.

CAUTION: IF THE OPENING POINT IS MOVED AFTER THE INITIAL INSTALLATION, THE H_{1A} BUSHING MAY NOT BE THE SOURCE SIDE BUSHING.

3. IF ELBOW IS CLOSED INTO A FAULT, REPLACE ELBOW AND FEED-THRU BUSHING INSERT.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK FEED-THRU BUSHING

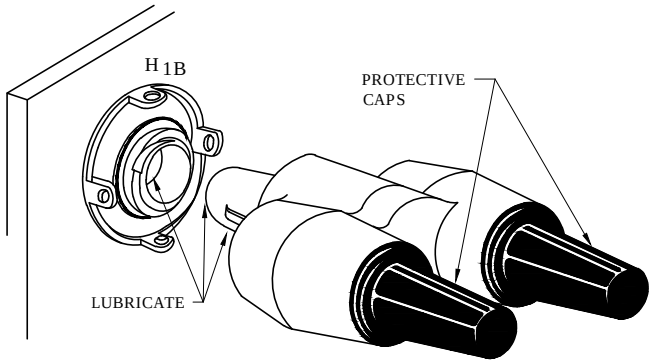
INSERT INSTALLATION INSTRUCTIONS

Duke Energy

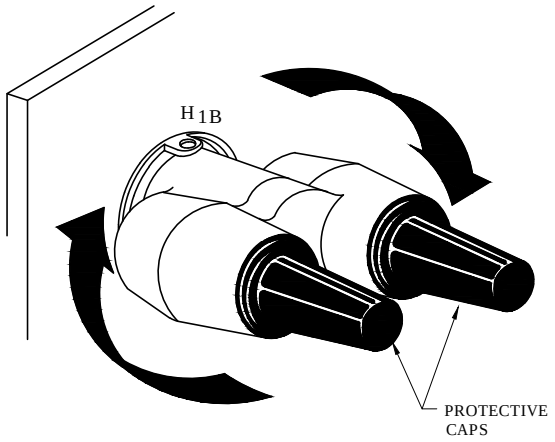
CAR

DWG. 26.04-08A

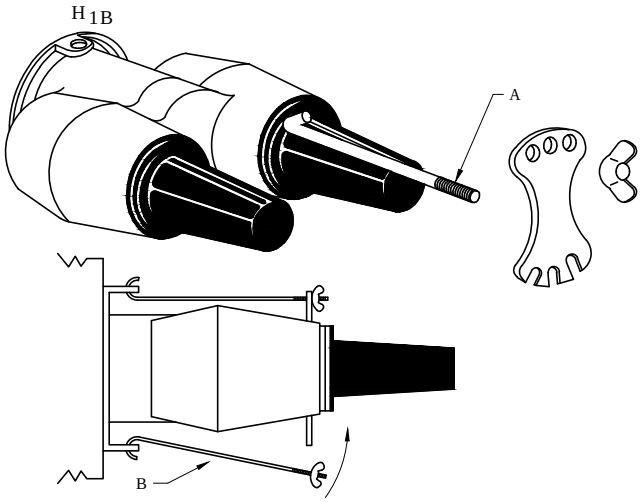
STEP 1



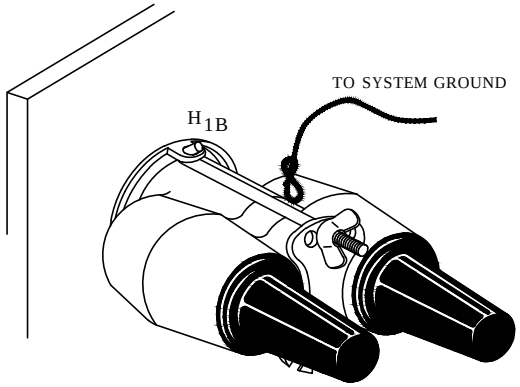
STEP 2



STEP 3

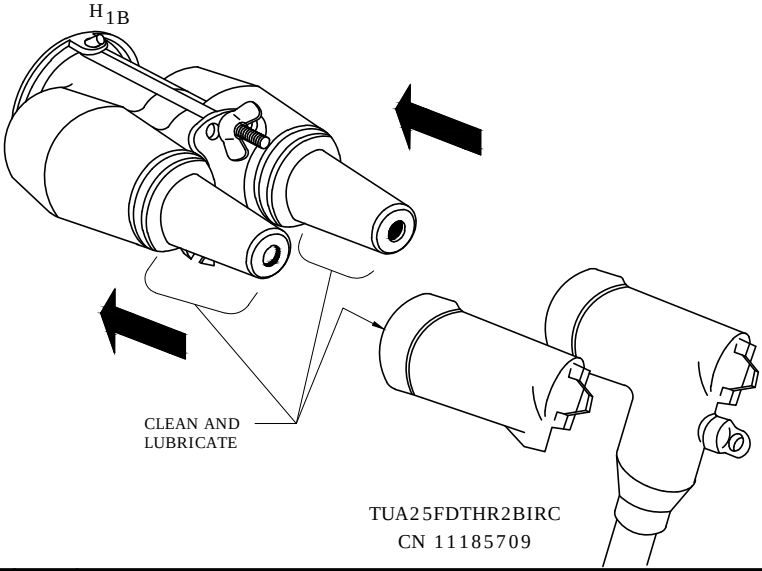


STEP 4



STEP 5

SEE NOTE 2



TUA25FDTHR2BIRC
CN 11185709

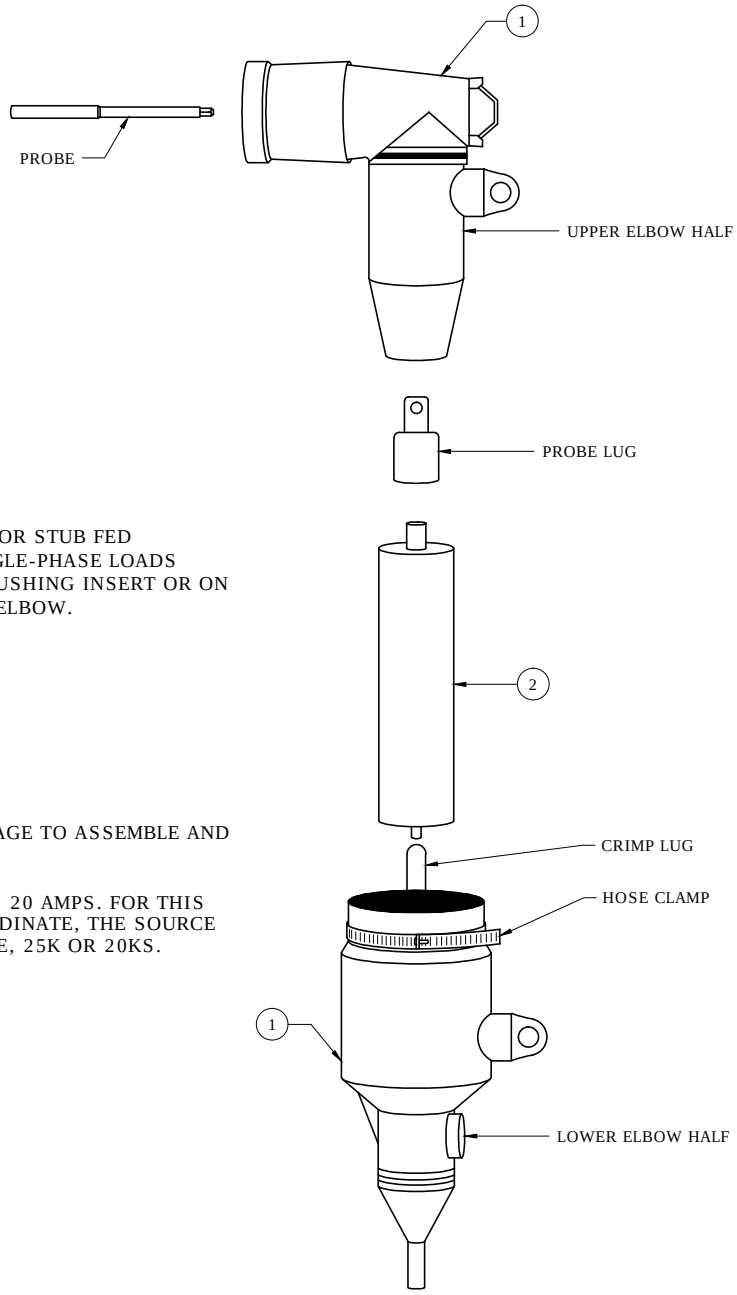
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

LOADBREAK FEED-THRU BUSHING INSERT
INSERT INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.04-08B



APPLICATION:

THE FUSED ELBOW IS APPLICABLE FOR STUB FED SINGLE-PHASE TRANSFORMER, SINGLE-PHASE LOADS ONLY. IT INSTALLS ON A 200 AMP BUSHING INSERT OR ON A 200 AMP ADAPTER ON A 600 AMP ELBOW.

NOTES:

1. FOLLOW INSTRUCTIONS IN PACKAGE TO ASSEMBLE AND INSTALL THE FUSED ELBOW.
2. THE ONLY FUSE SIZE STOCKED IS 20 AMPS. FOR THIS 20 AMP FUSE TO PROPERLY COORDINATE, THE SOURCE SIDE FUSE MUST BE AS LEAST 30E, 25K OR 20KS.

BILL OF MATERIALS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	ELBOW25FUSEDC	1	9220162922	1	ELBOW HOUSING, 25 KV, 10"WX24"H
	2	FELBOW6CL25KC	1	9220282640	1	FUSE, 6 AMPS
	2	FELBOW20CL25KC	1	9220162919	1	FUSE, 20 AMPS

REVISED		BY	CK'D	APPR.
3				
2				
1	5/20/15	ROBESON	BURLISON	ADCOCK
0	6/8/10	ROBESON	GUINN	ELKINS

FUSED ELBOW

DEC	DEM	DEP	DEF
		X	

26.04-09

STANDARD PROCEDURES BULLETIN

SUBJECT: REPLACEMENT CONTACTS AND GREASE FOR LOADBREAK AND DEADBREAK ELBOW CONNECTORS.

THIS DOES NOT APPLY TO LOADBREAK ELBOWS THAT HAVE BEEN OPERATED UNDER FAULT CONDITIONS.

THE PURPOSE OF THIS BULLETIN IS TO POINT OUT THE AVAILABILITY OF CONDUCTOR CONTACTS, MALE CONTACTS, AND GREASE FOR BOTH LOADBREAK AND DEADBREAK ELBOW CONNECTORS.

EVERY TIME AN ELBOW IS OPERATED, A VISUAL INSPECTION OF THE MALE CONTACT (PROBE) SHOULD BE MADE. IF THERE IS CONTACT BURNING, THE CONTACT SHOULD BE REPLACED. THE CONDUCTOR CONTACT SHOULD BE REPLACED IF IT BECOMES DAMAGED EITHER DURING INITIAL INSPECTION OR LATER DUE TO DAMAGED THREADS OR IMPROPER CRIMPING. REPLACEMENTS ARE AVAILABLE FROM THE GENERAL WAREHOUSE UNDER CATALOG NUMBERS LISTED BELOW.

	DEADBREAK ELBOW FOR #2 AL.	DEADBREAK ELBOW FOR #1/0 AL.	LOADBREAK (ROD AND BORE TYPE) ELBOW FOR #2 AL.	LOADBREAK (ROD AND BORE TYPE) ELBOW FOR #1/0 AL.
CONDUCTOR CONTACT	11186004	11186202	11186004	11186202
MALE PROBE	11186103	11186103	11187200	11187200
REPLACEMENT GREASE	30520803	30520803	30520803	30520803

NOTES:

1. DO NOT USE THE GREASE SUPPLIED WITH UNDERGROUND PRIMARY STRAIGHT SPLICES ON LOADBREAK ELBOWS, LOADBREAK BUSHING INSERTS, OR 600 AMP. SEPARABLE CONNECTOR INTERFACES. THE GREASE SUPPLIED WITH UNDERGROUND PRIMARY STRAIGHT SPLICES IS DIFFERENT THAN THE GREASE SUPPLIED ELBOWS AND BUSHINGS. THE GREASE SUPPLIED WITH SPLICES WILL SET OR STICK OVER A PERIOD OF TIME. THE GREASE SUPPLIED WITH ELBOWS OR BUSHINGS IS DESIGNED AS A LUBRICANT FOR OPERATION AND SEPARATION. THE REPLACEMENT GREASE (CN 30520803) LISTED IN THE TABLE ABOVE CAN BE USED WITH SPLICES AND SEPARABLE CONNECTORS. ALSO SEE DWG. 26.04-02B.

REVISED		BY	CK'D	APPR.
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS

REPLACEMENT CONTACTS FOR ELBOW CONNECTORS

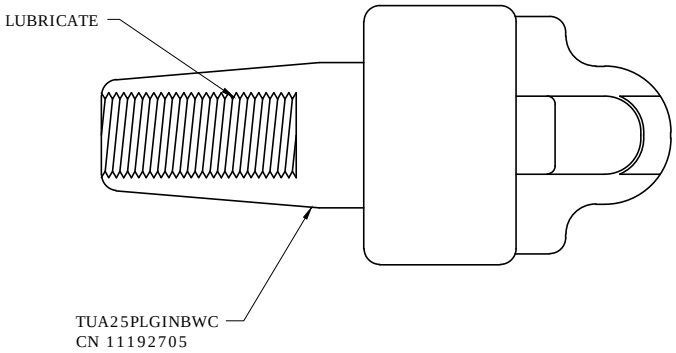
Duke Energy®

CAR

DWG. 26.05-01

STEP 1:

1. INSPECT THE APPARATUS BUSHING WELL TO MAKE SURE IT IS DRY AND CLEAR OF ALL CONTAMINANTS.

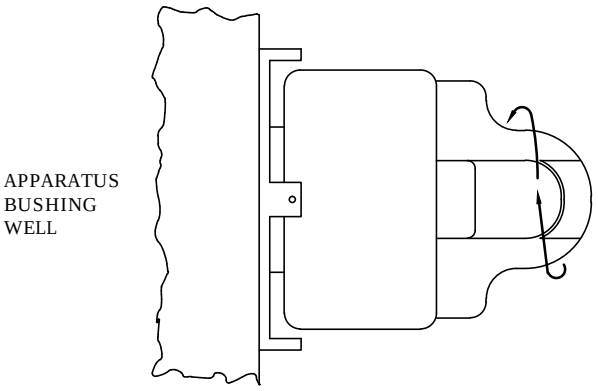


KIT INCLUDES:

1. BUSHING WELL INSULATED PLUG
2. SILICONE LUBRICANT
3. INSTALLATION INSTRUCTION SHEET

STEP 2:

1. PLACE THE LUBRICATED PORTION OF THE BUSHING WELL INSULATED PLUG IN THE APPARATUS BUSHING WELL. ROTATE THE INSULATED PLUG IN A CLOCKWISE DIRECTION UNTIL THE UNIT SEATS. DO NOT OVERTIGHTEN.



APPLICATION:

1. THE PRIMARY USE OF THE BUSHING WELL INSULATED PLUG IS ON STUB FED SINGLE-PHASE PAD-MOUNTED TRANSFORMERS WITH AN INTERNAL LIGHTNING ARRESTER. THE BUSHING WELL IS A LESS EXPENSIVE ALTERNATE TO THE COMBINATION OF A LOADBREAK BUSHING INSERT AND INSULATING CAP.

TUA25PLGINBWC
CN 11192705

NOTES:

1. ALL ASSOCIATED APPARATUS MUST BE DE-ENERGIZED DURING INSTALLATION AND REMOVAL OF THIS ASSEMBLY.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

200 AMP BUSHING WELL,

DEADBREAK INSULATED PLUG

Duke Energy®

CAR

DWG. 26.05-10

INSTALLATION INSTRUCTIONS:

THESE INSTALLATION INSTRUCTIONS APPLY TO 3M QTIII TERMINATION KITS SUPPLIED UNDER THE ITEM NUMBERS LISTED IN TABLE 1 WHEN INSTALLED ON LC SHIELDED CABLES.

TABLE 1

CONDUCTOR SIZE	COMPATIBLE UNIT	TERMINATION ITEM NUMBER	CONNECTOR ITEM NUMBER	GROUND STRAP ITEM NUMBER
DUKE ENERGY PROGRESS (DEP)				
1/0 AWG	TRM10AL225KITC	11171907	PROVIDED IN KIT	9220272265
350 MCM	TRM350AL625KITC	11173101	9220126011	PROVIDED IN KIT
750 MCM	TRM750AL625KITC	11173101	11178902	PROVIDED IN KIT
DUKE ENERGY FLORIDA (DEF)				
1/0 AWG	TRM10AL215KITF	310510	311185	9220271443
500 MCM	TRM500AL615KITF	310645	155326	PROVIDED IN KIT
750 MCM	TRM750AL615KITF	310645	155336	PROVIDED IN KIT
1000 MCM	TRM1KLAL615KITF	310645	155334	PROVIDED IN KIT

STEP 1: FOLLOW ALL SAFETY RULES AND PROCEDURES TO ENSURE CONDUCTORS ARE SAFE TO HANDLE .

STEP 2: REMOVE THE AMOUNT OF CABLE JACKET SHOWN IN FIGURE 1 AND TABLE 2.

STEP 3: REMOVE THE LC SHIELD, EXCEPT FOR THE LENGTH SHOWN IN FIGURE 1 AND TABLE 2 WHICH WILL EXTEND BEYOND THE END OF THE CABLE JACKET.

THE LC SHIELD IS TO BE REMOVED BY PLACING ONE OF THE CONSTANT TENSION SPRINGS PROVIDED IN THE GROUND BRAID KIT ON THE LC SHIELD AT THE POINT WHERE THE SHIELD IS TO END, SEPARATING THE OVERLAP OF THE LC SHIELD, AND THEN TEARING OFF THE LC SHIELD AT THE CONSTANT TENSION SPRING. THE LC SHIELD OVERLAP MAY BE SEPARATED BY ROLLING THE GAP OPEN WITH CHANNEL-LOCK PLIERS, TEARING OFF THE OVERLAP BY TWISTING IT AROUND NEEDLE-NOSE PLIERS, OR BY TEARING OFF THE OVERLAP BY GRABBING THE OVERLAP WITH PLIERS AND PULLING IT STRAIGHT DOWN THE CABLE.

STEP 4: USE AN APPROPRIATE TOOL AND SCORE THE SEMI-CONDUCTIVE INSULATION SHIELD SO THE LENGTH OF SHIELD SHOWN IN FIGURE 1 AND TABLE 2 CAN BE REMOVED; HOWEVER, DO NOT REMOVE THE SHIELD AT THIS TIME.

NEVER USE A KNIFE TO REMOVE THIS SHIELD.

STEP 5: REMOVE THE AMOUNT OF INSULATION SHOWN IN FIGURE 1 AND TABLE 2.

STEP 6: REMOVE THE PORTION OF THE SEMI-CONDUCTIVE INSULATION SHIELD SCORED IN STEP 4.

DO NOT SAND THE CABLE INSULATION EXCEPT WHEN IT IS NECESSARY.

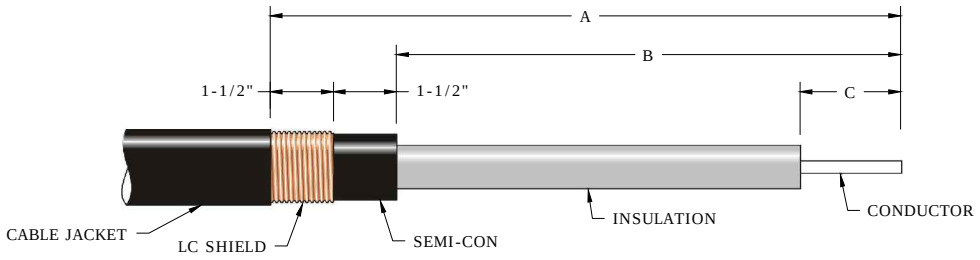


FIGURE 1
CABLE PREPARATION

REVISED	BY	CK'D	APPR.
3			
2			
1			
0 — 12/17/14	EANES	FLETCHER	ADCOCK

3M QTIII TERMINATIONS ON

15KV & 25KV LC SHIELDED CABLES

DEC	DEM	DEP	DEF
		X	X

26.05-11A

TABLE 2			
CABLE SIZE	DIMENSION		
	A	B	C
DUKE ENERGY FLORIDA (DEF)			
1/0 AWG (15KV)	9-1/4"	6-1/4"	2-1/4"
DUKE ENERGY PROGRESS (DEP)			
1/0 AWG (25KV)	11-1/4"	8-1/4"	2-1/4"
DUKE ENERGY PROGRESS & FLORIDA (DEP & DEF) *			
350 MCM	11-1/2"	8-1/2"	2-1/2"
500 MCM	12-3/8"	9-3/8"	3-3/8"
750 MCM	12-7/8"	9-7/8"	3-7/8"
1000 MCM	13-1/8"	10-1/8"	4-1/8"

* THESE ARE 25KV TERMINATORS USED FOR BOTH 25KV CABLE IN DEP AND 15KV CABLE IN DEF.

STEP 7: VERIFY THAT ALL CUTBACKS HAVE BEEN MADE TO THE PROPER DIMENSION. CORRECT THE INSULATION AND SEMI-CONDUCTIVE SHIELD CUTBACKS IF THEY ARE NOT WITHIN 1/8" OF THE DIMENSIONS PROVIDED IN TABLE 2.

STEP 8: VERIFY THAT THE RING CUT ON THE SEMI-CONDUCTIVE SHIELD IS STRAIGHT AND SMOOTH ALL THE WAY AROUND THE CABLE. NO POINTS OR UNEVENNESS MAY EXIST. CORRECT ANY IRREGULARITIES THAT EXIST. THESE IRREGULARITIES MAY BE REMOVED WITH A KNIFE AS LONG AS EXTREME CAUTION IS USED AND THAT NO NICKS ARE MADE INTO THE CABLE INSULATION.

STEP 9: VERIFY THAT THE INSULATION IS SMOOTH AND FREE OF ANY NICKS OR CUTS BY CAREFULLY RUBBING IT WITH YOUR FINGERS. ANY NICKS, CUTS, OR DENTS MUST BE REMOVED WITH 240 GRIT ALUMINUM OXIDE CLOTH, SEE TABLE 3. DO NOT USE 120 GRIT ALUMINUM OXIDE CLOTH.

TABLE 3 - NON-METALLIC ALUMINUM OXIDE CLOTH	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	30633705
DEF	9220275434

IF CUTS WERE MADE INTO THE INSULATION AS A RESULT OF THE STRIPPING TOOL BEING SET TOO DEEP, THEN THE RING CUT MUST BE RELOCATED TO ALLOW THIS CUT TO BE SANDED OUT OF THE INSULATION. THIS CAN BE ACCOMPLISHED BY CUTTING AT LEAST 3/4" OFF THE CONDUCTOR AND THEN REMAKING ALL CUTBACKS FROM THAT POINT.

STEP 10: CLEAN THE LAST 6 INCHES OF THE JACKET WITH CABLE CLEANING FLUID AND A CLEAN TOWEL. THEN SAND THIS AREA WITH 240 GRIT ALUMINUM OXIDE CLOTH.

STEP 11: RUB THE EXPOSED PORTION OF THE LC SHIELD WITH 240 GRIT ALUMINUM OXIDE CLOTH IN ORDER TO REMOVE ANY SURFACE FILM THAT MIGHT BE PRESENT. (WIRE BRUSHING COULD DAMAGE THE LC SHIELD.) POSITION THE GROUND BRAID WITH THE "U" SECTION OVER THE LC SHIELD DIRECTLY ADJACENT TO THE CABLE JACKET WITH THE FOLDS FACING OUTWARD. SEE TABLE 1 FOR THE GROUND BRAID FOR #1/0 CABLES; IT IS INCLUDED IN THE TERMINATION KIT FOR ALL OTHER CABLE SIZES.

STEP 12: SECURE THE GROUND BRAID TO THE CABLE BY WRAPPING A CONSTANT TENSION SPRING AROUND THE PORTION OF THE BRAID THAT IS POSITIONED OVER THE LC SHIELD AS SHOWN IN FIGURE 2. BE SURE TO PULL THE LAST WRAP OF THE SPRING TO INSURE THAT IT IS TIGHT. TIGHTLY WRAP TWO HALF-LAPPED LAYERS OF 3/4" VINYL TAPE, SEE TABLE 4, AROUND THE CONSTANT TENSION SPRING IN ORDER TO KEEP IT TIGHT.

TABLE 4 - 3/4" VINYL TAPE	
OPERATING AREA	ITEM NUMBER OR CAT ID
DEP	21151204
DEF	390124

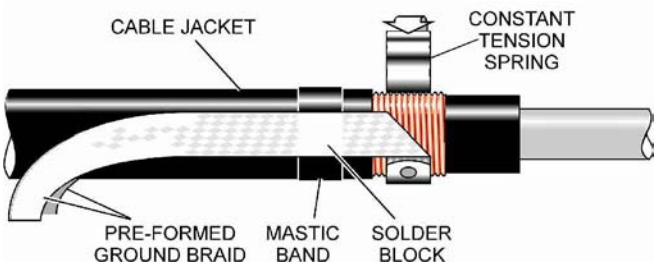


FIGURE 2
INSTALLING TWIN PRE-FORMED GROUND BRAID

STEP 13: POSITION THE TAILS OF THE PRE-FORMED GROUND BRAID ALONG THE CABLE. SELECT ONE OF THE MASTIC STRIPS (BLACK WITH WHITE RELEASE LINERS) FROM THE KIT. REMOVE THE LINER AND WRAP THE MASTIC WITH LIGHT TENSION AROUND THE CABLE DIRECTLY UNDER THE SOLDER BLOCK ON THE BRAIDS. SEE FIGURE 2. INSTALL ONLY ONE (1) LAYER OF THIS MASTIC. DISCARD ANY ACCESS.

STEP 14: WRAP A PIECE OF COLOR CODING TAPE AROUND THE CABLE AND OVER THE TWO TAILS OF THE GROUND BRAID EXACTLY 4-1/2″ FROM THE END OF THE SEMI-CONDUCTIVE SHIELD. THIS WOULD ALSO MEAN THE TAPE IS 2″ FROM THE END OF THE JACKET ON 1/0 CABLES AND 1-1/2″ FROM THE END OF THE JACKET FOR ALL OTHER CABLE SIZES. SEE FIGURE 3.

CAUTION: THE LOCATION OF THE COLOR CODING TAPE IS VERY CRITICAL BECAUSE IT ALSO SERVES AS THE MARKER TO POSITION THE TERMINATION BODY.

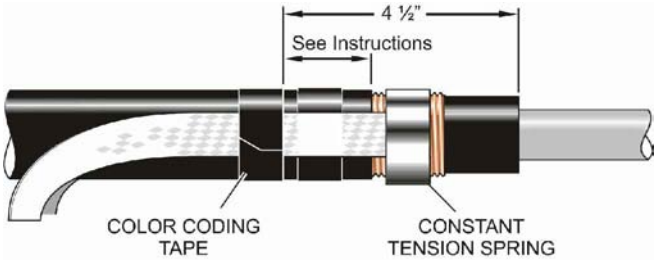


FIGURE 3
APPLYING COLOR CODING TAPE FOR MARKER

3				
2				
1				
0	12/17/14	EANES	FLETCHER	ADCOCK
REVISED		BY	CK'D	APPR.

3M QTIII TERMINATIONS ON

15KV & 25KV LC SHIELDED CABLES

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	X

26.05-11C

STEP 15: WRAP A SECOND MASTIC STRIP, ON TOP OF THE FIRST ONE AND OVER THE SOLDER BLOCKS ON THE TAILS. INSTALL ONLY ONE (1) LAYER OF THIS MASTIC. DISCARD ANY EXCESS. MASH THIS MASTIC TIGHTLY ONTO THE FIRST MASTIC LAYER AND THE SOLDER BLOCK ON THE GROUND BRAID. SEE FIGURE 4.

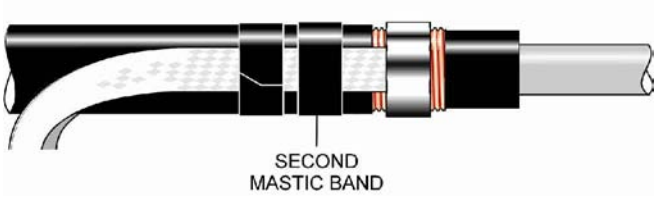


FIGURE 4
WRAPPING SECOND MASTIC BAND

STEP 16: TIGHTLY WRAP TWO HALF-LAPPED LAYERS OF 3/4" VINYL TAPE, SEE TABLE 4 , AROUND THE CONSTANT TENSION SPRING, THE EXPOSED LC SHIELD, AND THE MASTIC, TO THE EDGE OF THE COLOR CODING TAPE. SEE FIGURE 5.

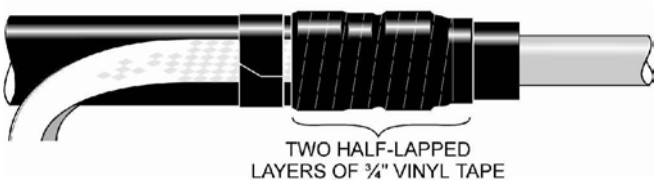


FIGURE 5
WRAPPING TWO HALF-LAPPED LAYERS OF 3/4" VINYL TAPE

STEP 17: REMOVE THE SHIPPING CORE BY PULLING THE RED LOOSE CORE STRAND AND UNWINDING IT IN A COUNTER-CLOCKWISE DIRECTION. THIS IS THE LOOSE CORE STRAND THAT EXTENDS OUT OF THE BOTTOM OF THE TERMINATION HOUSING. THIS CORE MUST BE REMOVED BEFORE THE TERMINATION HOUSING IS SLID ONTO THE CABLE.

STEP 18: CHECK TO INSURE THE TERMINATION ASSEMBLY WILL FIT OVER THE SELECTED LUG. IF THE LUG WILL NOT FIT THROUGH THE TERMINATION CORE, SLIDE THE TERMINATION ONTO THE CABLE BEFORE INSTALLING THE LUG. DO NOT REMOVE THE CORE AT THIS TIME .

STEP 19: WIRE BRUSH THE CONDUCTOR OF THE CABLE AND IMMEDIATELY PUSH THE CONNECTOR ONTO IT. THE CONNECTORS TO BE USED ARE LISTED IN TABLE 3.

DO NOT USE OXIDE CLOTH TO BRUSH THE CONDUCTOR.

DO NOT REMOVE ANY OF THE OXIDE INHIBITOR FROM THE CONNECTOR BEFORE PUSHING IT ONTO THE CONDUCTOR.

TABLE 5

CABLE SIZE	CRIMP TOOL DIE	NUMBER OF CRIMPS
1/0 AWG	5/8, BG	4
350 MCM	1-1/8", 13A	3
500 MCM	1-5/16", U327	3
750 MCM	1-1/2", U39ART	3
1000 MCM	1-1/2", U39ART	3

STEP 20: HOLD THE CONNECTOR FIRMLY AGAINST THE END OF THE CABLE AND CRIMP IT ONTO THE CONDUCTOR USING THE APPROPRIATE DIE. BEGIN CRIMPING JUST BELOW THE CRIMP LINE AND WORK TOWARD THE CABLE INSULATION. MAKE THE APPROPRIATE NUMBER OF CRIMPS, BUT DO NOT CRIMP THE BOTTOM 1/2" OF THESE CONNECTORS. ROTATE CRIMPS TO PREVENT THE CONNECTOR FROM BOWING. SEE FIGURE 6. REMOVE ANY EXCESS INHIBITOR OR SHARP FLASH. CRIMPING INFORMATION IS PROVIDED IN TABLE 3.

BE CERTAIN CRIMP TOOLS ARE PROPERLY ADJUSTED BEFORE USING.

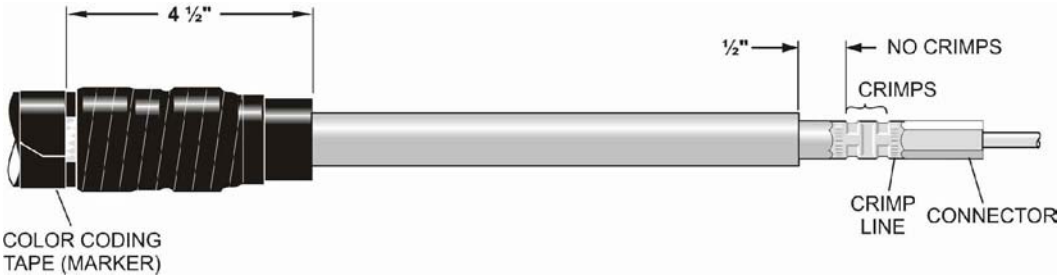


FIGURE 6
PREPARATION FOR TERMINATION BODY

STEP 21: REMOVE EXCESS OXIDE INHIBITOR WITH A TOWEL. TAKE SPECIAL CARE TO PREVENT THIS EXCESS INHIBITOR FROM GETTING ONTO THE CABLE INSULATION. THIS OXIDE INHIBITOR MUST BE REMOVED BEFORE ATTEMPTING TO CLEAN THE CABLE INSULATION.

STEP 22: CLEAN THE CABLE INSULATION WITH A CLEAN TOWEL AND CABLE CLEANING FLUID, SEE TABLE 6, T0 REMOVE ANY CONTAMINATION OR PARTICLES OF THE SEMI-CONDUCTING SHIELD THAT MIGHT BE PRESENT ON THE INSULATION.

TABLE 6 - TOWEL AND CLEANING FLUID

OPERATING AREA	TOWEL ITEM NUMBER OR CAT ID	CLEANING FLUID ITEM NUMBER OR CAT ID
DEP	2054	30525000
DEF	2054	2055

ALWAYS CLEAN FROM THE CONNECTOR TOWARDS THE SEMI-CONDUCTING SHIELD. DO NOT EVER TOUCH THE INSULATION WITH THE AREA ON A TOWEL THAT HAS TOUCHED THE SEMI-CONDUCTING SHIELD.

STEP 23: IF NECESSARY, APPLY A SMALL AMOUNT OF SILICONE GREASE OVER THE VINYL TAPE. THIS WILL MAKE IT EASIER TO PROPERLY POSITION THE TERMINATION HOUSING AND TO REMOVE THE CORE.

STEP 24: SLIDE THE TERMINATION BODY ONTO THE CABLE TO THE EDGE OF THE TAPE MARKER AND REMOVE THE CORE BY PULLING AND UNWINDING THE LOOSE CORE STRAND EXTENDING OUT THE TOP OF THE TERMINATION HOUSING IN A COUNTER-CLOCKWISE MOTION. SEE FIGURE 7. AN OCCASIONAL TUG OF THE STRAND WHILE UNWINDING WILL AID IN REMOVING THE CORE.

CAUTION: MAKE SURE THE TERMINATION BODY REMAINS AT THE EDGE OF THE MARKER TAPE. SEE FIGURE 7. THE TERMINATION CAN PREMATURELY FAIL IF ITS BODY IS NOT PROPERLY POSITIONED.

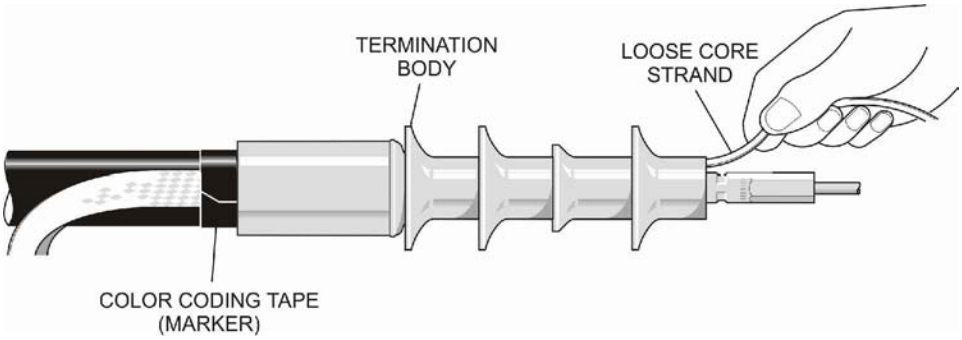


FIGURE 7
INSTALLING TERMINATION BODY

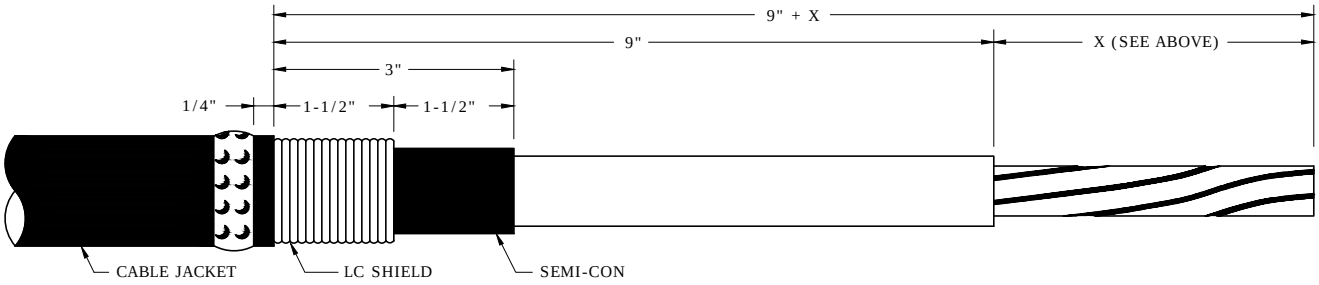
STEP 25: REMOVE THE COLOR CODE MARKING TAPE.

STEP 1: PREPARE CABLE

TERMINAL LUG INFORMATION			
CABLE SIZE	X	CATALOG NUMBER	DIE
350	1/4" + DEPTH OF TERMINAL LUG	9220126011	U-31ART
750	3/4" + DEPTH OF TERMINAL LUG	11178902	P-39ART

LC SHIELD IS SHARP, WEAR WORK GLOVES

FOR "LUG DEPTH", MEASURE THE OUTSIDE OF THE LUG FROM THE TOP (CRIMP) INDICATOR TO THE BOTTOM OF THE LUG. DO NOT REMOVE INHIBITOR!



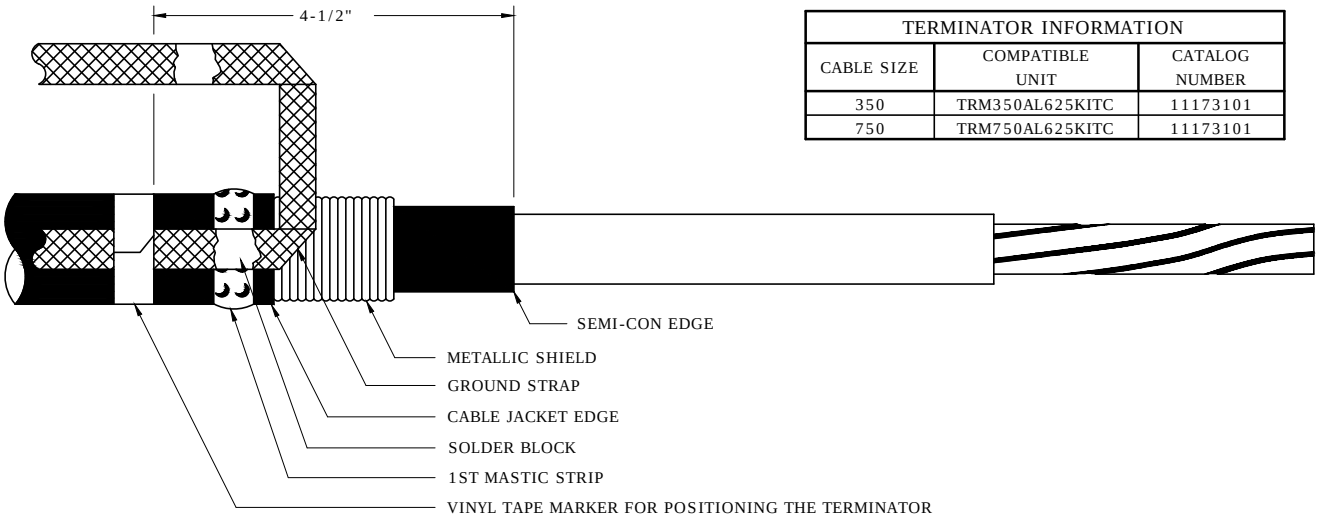
A. REMOVE JACKET, LC SHIELD, INSULATION SHIELD (SEMI-CON) AND INSULATION PER DIMENSIONS SHOWN.
   1. TO REMOVE LC SHIELD, PLACE A HOSE CLAMP OR THE CONSTANT FORCE SPRING AT THE CUTBACK POINT. USING NEEDLE NOSE PLIERS, PULL THE LC SHIELD DOWN ALONG THE GLUED EDGE. THIS WILL SEPARATE THE LC SHIELD. USING PLIERS, GRAB THE LC SHIELD NEAR CUTBACK POINT (TENSION SPRING) AND TEAR OFF SHIELD AROUND THE CABLE. THE SHIELD WILL "TEAR" AWAY AT THE EDGE OF THE CLAMP.

   IMPORTANT: DO NOT EXTEND SCORING BLADE THOUGH INSULATION SHIELD (SEMI-CON) INTO INSULATION.

   NOTE: USE APPROVED PRE-SETABLE DEPTH TOOLS FOR REMOVING OUTER JACKET, INSULATION SHIELD (SEMI-CON) AND INSULATION.

B. SELECT ONE OF TWO MASTIC STRIPS FROM KIT AND REMOVE RELEASE LINER. USING LIGHT TENSION APPLY A SINGLE WRAP OF MASTIC AROUND THE CABLE JACKET 1/4" FROM CUT EDGE OF JACKET. CUT OFF EXCESS MASTIC.

STEP 2: INSTALL GROUND CLAMP



TERMINATOR INFORMATION		
CABLE SIZE	COMPATIBLE UNIT	CATALOG NUMBER
350	TRM350AL625KITC	11173101
750	TRM750AL625KITC	11173101

A. POSITION THE GROUND STRAP WITH THE "U" SECTION OVER THE METALLIC SHIELD DIRECTLY ADJACENT TO CABLE JACKET CUT EDGE. POSITION ONE TAIL OF THE GROUND STRAP, EXTENDING OVER CABLE JACKET WITH SOLDER BLOCK OVER MASTIC STRIP.
B. SECURE THE GROUND STRAP TO THE CABLE JACKET 4-1/2" FROM CABLE SEMI-CON EDGE USING VINYL TAPE.

   NOTE: PLACE THIS TAPE WITH CARE, IT ALSO SERVES AS A MARKER FOR POSITIONING THE TERMINATOR.

REVISED	BY	CK'D	APPR.
3				
2				
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0 — 11/10/10	ROBESON	GUINN	ELKINS

350 & 750 KCMIL, 25KV (LC SHIELD)

3M TERMINATOR INSTALLATION INSTRUCTIONS

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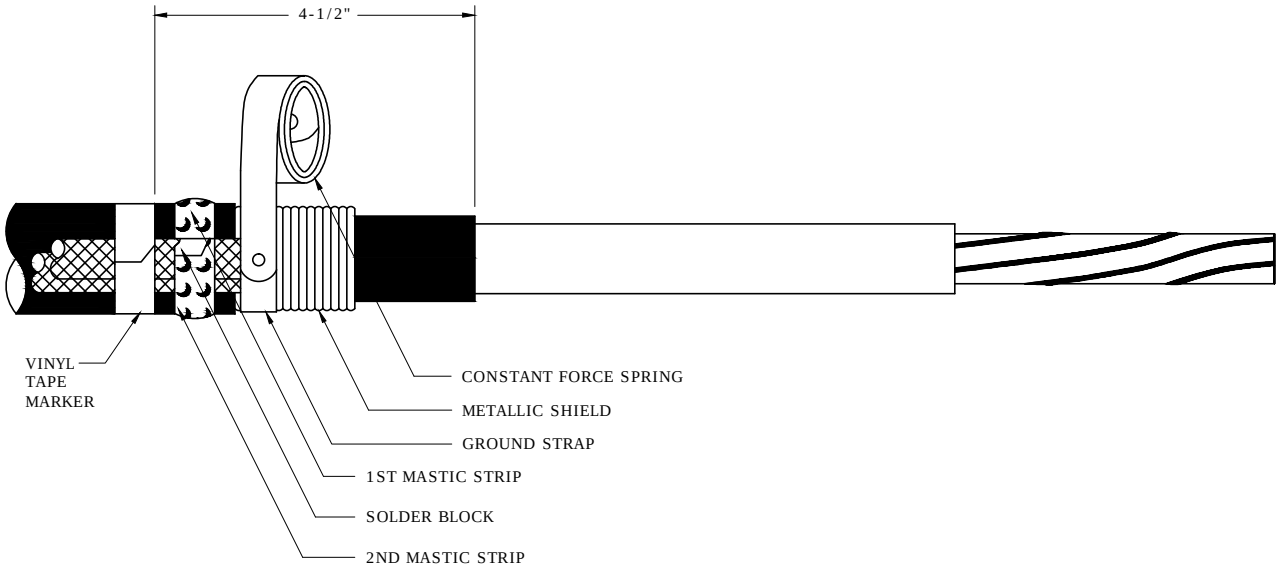
CAR

DWG. 26.06-00A



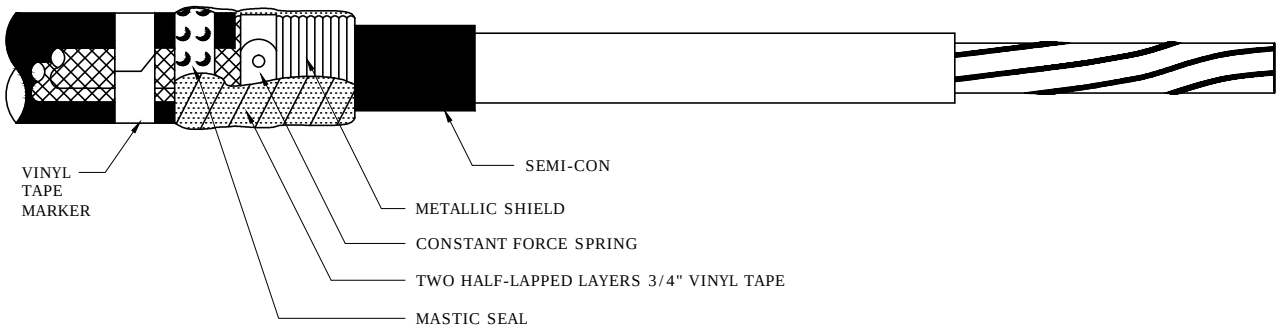
C. WRAP THE GROUND STRAP AROUND THE METALLIC CABLE SHIELD AND SECURE IN PLACE WITH THE CONSTANT FORCE SPRING. CINCH (TIGHTEN) THE SPRING AFTER WRAPPING THE FINAL TURN.

D. POSITION THE REMAINING END OF THE GROUND STRAP TAIL (WITH THE SOLDER BLOCK OVER THE MASTIC STRIP) OVER THE CABLE JACKET AND PARALLEL TO THE FIRST GROUND STRAP TAIL.

E. SELECT THE SECOND MASTIC STRIP FROM THE KIT AND REMOVE THE WHITE RELEASE LINERS. APPLY SECOND MASTIC STRIP OVER SOLDER BLOCK ON THE GROUND STRAP AND THE PREVIOUSLY APPLIED MASTIC (THIS SEALS THE GROUND STRAP AFTER THE TERMINATOR IS INSTALLED).

NOTE: IF TAIL OF GROUND STRAP OVERLAPS AT MASTIC, BE SURE TO APPLY STRIP OF MASTIC BETWEEN THE SOLDER BLOCK OF GROUND STRAPS.

F. SECURE THE GROUND STRAP TO CABLE JACKET 4-1/2" FROM THE CABLE SEMI-CON EDGE USING VINYL TAPE. APPLY TAPE OVER PREVIOUSLY APPLIED MARKER TAPE.



G. WRAP TWO HALF-LAPPED LAYERS OF 3/4" VINYL TAPE AROUND MASTIC SEAL, CONSTANT FORCE SPRING AND EXPOSED LC SHIELD.

NOTE: WRAP VINYL TAPE IN THE SAME DIRECTION OF THE CONSTANT FORCE SPRING.

IMPORTANT: DO NOT COVER SEMI-CON INSULATION MORE THAN 1/4", 1-1/4" OF SEMI-CON MUST BE LEFT LEFT EXPOSED TO MATE WITH STRESS RELIEF MATERIAL.

3				
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0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350 & 750 KCMIL, 25KV (LC SHIELD)
500, 750, 1000 KCMIL, 15KV (LC SHIELD)
3M TERMINATOR INSTALLATION INSTRUCTIONS

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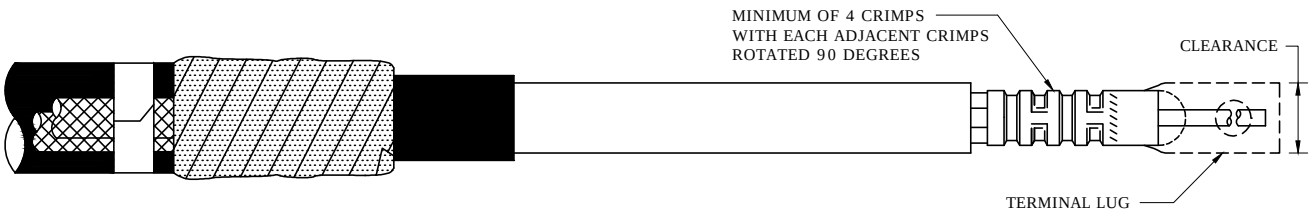
PGN | DWG. 26.06-00B

STEP 3: INSTALL TERMINAL LUG



A. CHECK THE TERMINAL LUG TO ENSURE THE TERMINATOR WILL SLIDE OVER THE TERMINAL LUG. IF TERMINAL LUG IS TOO LARGE, CLEAN THE CABLE INSULATION (PER STEP 4) AND SLIDE THE TERMINATOR ONTO THE CABLE. (DO NOT REMOVE THE CORE AT THIS TIME). IF THE TERMINAL LUG WILL FIT THROUGH THE TERMINATOR, THE LUG MAY BE INSTALLED FIRST.

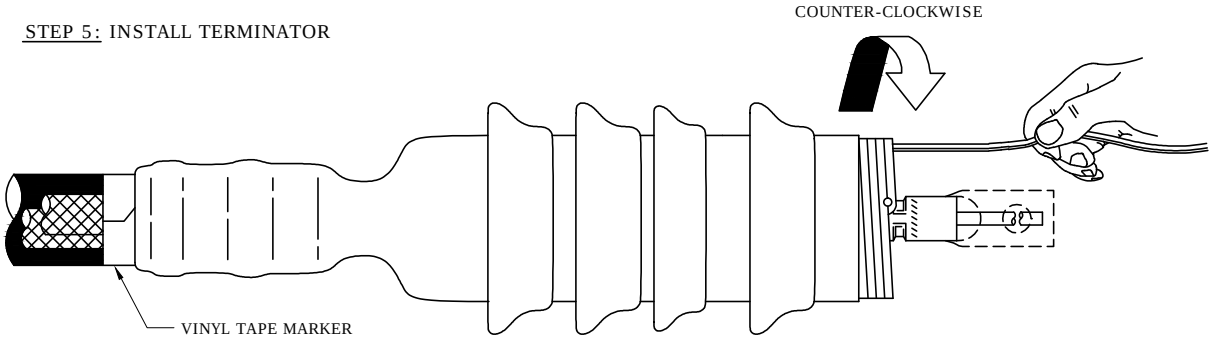
B. POSITION THE TERMINAL LUG AND CRIMP ACCORDING TO MANUFACTURER'S DIRECTIONS.
   1. REMOVE EXCESS OXIDE INHIBITOR.
   2. WITH A FILE, REMOVE SHARP EDGES FROM CRIMPED TERMINAL LUG.

DO NOT REMOVE INHIBITOR

STEP 4: CLEAN CABLE

A. CLEAN THE CABLE INSULATION WITH PROGRESS ENERGY APPROVED CABLE CLEANER. DO NOT SUBSTITUTE. SOME CLEANERS AND DEGREASERS WILL DAMAGE THE CABLE. DO NOT WIPE FROM INSULATION SHIELD (SEMI-CON) TOWARDS INSULATION. IF AN ABRASIVE MUST BE USED, USE ONLY PROGRESS ENERGY APPROVED, NON-METALLIC, ALUMINUM OXIDE SANDING CLOTH. DO NOT USE SANDING CLOTH ON INSULATION SHIELD (SEMI-CON).

STEP 5: INSTALL TERMINATOR



NOTE: THE MATERIAL BEING REMOVED AT THIS STEP IS POLYPROPYLENE AND CAN BE RECYCLED WITH OTHER 5 PP WASTE.

A. SLIDE THE TERMINATOR BODY ONTO THE CABLE AND REMOVE THE CORE. PULL WHILE UNWINDING, COUNTER-CLOCKWISE, STARTING WITH THE LOOSE END. MAKE SURE THE TERMINATOR BODY (NOT THE CORE) IS BUTTED UP TO THE EDGE OF THE VINYL TAPE MARKER PREVIOUSLY APPLIED. AFTER ONE CORD IS REMOVED, (JUST STARTS TO COLLAPSE) IT MAY BE POSSIBLE TO SLIDE THE TERMINATOR TO MATCH UP EXACTLY WITH THE MARKER TAPE.

   NOTE: ONCE THE TERMINATOR HAS COLLAPSED OVER THE MASTIC AREA, THERE IS NO NEED TO CONTINUE SUPPORTING THE ASSEMBLY. DO NOT ATTEMPT TO PUSH OR PULL THE TERMINATOR ASSEMBLY WHILE UNWINDING THE CORE.

B. CONNECT THE GROUND STRAP TO THE SYSTEM NEUTRAL USING A SPLIT BOLT OR OTHER APPROPRIATE CONNECTOR.

C. IF A FAULT INDICATOR SENSOR IS INSTALLED OVER THE LC SHIELD, THE GROUND STRAP MUST ALSO BE UNDER THE SENSOR. THE RECOMMENDED LOCATION FOR THE SENSOR IS JUST ABOVE THE VINYL TAPE MARKER SHOWN ABOVE.

REVISED		BY	CK'D	APPR.
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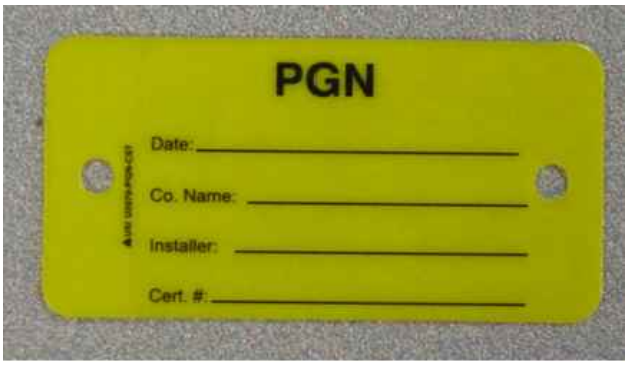
0	6/9/10	ROBESON	GUINN	ELKINS

350 & 750 KCMIL, 25KV (LC SHIELD)
500, 750, 1000 KCMIL, 15KV (LC SHIELD)
3M TERMINATOR INSTALLATION INSTRUCTIONS

Duke Energy®

PGN

DWG. 26.06-00C



INSTALLER IDENTIFICATION TAG
CN 9220208940

NOTES:

1. THE INSTALLER IDENTIFICATION TAG WILL BE COMPLETED BY THE CERTIFIED INSTALLER USING THE PAINT PEN (CN 9220208980) AND THE TAG ATTACHED TO THE CABLE AS SHOWN ABOVE.

2. SEE DWG 26.00-02 FOR INFORMATION ON INSTALLER CERTIFICATION REQUIREMENTS.

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INSTALLER INDENTIFICATION TAG

FOR 600 AMP TERMINATOR

Duke Energy®

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DWG. 26.06-00D

STEP 1: TRAIN CABLE INTO POSITION FOR MOUNTING LOCATION OF TERMINATOR AND CUT TO APPROPRIATE LENGTH FOR TERMINATION.

CABLE PREPARATION:

A. REMOVE JACKET AND LC SHIELD PER DIMENSIONS SHOWN. MARK JACKET WITH TAPE 5/8" FROM END AS SHOWN.

B. TAPER EDGE OF CABLE FROM 1/2" TO 1-1/2". CLEAN, THEN LUBRICATE INSTALLATION SHIELD AND SHORT SECTION OF JACKET.

C. INSTALL GROUNDING DEVICE:

1. PLACE THE TWO CLAMPS OVER THE HOUSING AND PUSH PROTECTIVE PLUG FROM INSIDE THE HOUSING (WITH SCREWDRIVER). LUBRICATE INSIDE BOTH ENDS OF THE HOUSING.

2. SLIDE THE GROUNDING DEVICE ONTO THE CABLE WITH A BACK AND FORTH TWISTING MOTION UNTIL IT IS FLUSH WITH THE TAPE MARKER.

3. TIGHTEN THE CLAMPS IN STAGES SO THAT THE CORRUGATED CONTACT IS TIGHT AGAINST THE LC SHIELD BUT NOT UNDER EXCESSIVE PRESSURE. BETWEEN STAGES, TEST THE TIGHTNESS BY ROTATING THE HOUSING BACK AND FORTH APPROXIMATELY 1/8 TURN. WHEN A DEFINITE DRAG IS FELT, THE CLAMP IS TIGHT ENOUGH.

D. SEE DWG. 26.00-01 FOR INSTRUCTIONS ON PREPARING CABLE FOR TERMINATION.

E. RING CUT AND REMOVE SEMI-CONDUCTING INSULATION SHIELD 17-1/8" FROM END OF CABLE. CARE MUST BE USED TO AVOID CUTTING THE CABLE INSULATION.

F. RING CUT AND REMOVE INSULATION 5-1/4" FROM END OF CABLE.

G. BEVEL THE EDGE OF CABLE INSULATION NOT MORE THAN 1/4".

STEP 2: REMOVE NICKS AND ALL TRACES OF BLACK SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH CN 30633705). WIRE BRUSH BARE CONDUCTOR WITH THE LAY OF THE STRANDS TOWARD END OF CABLE CLEANING ALL "STRAND SEAL" FROM THE OUTER INTERSTICES. ONCE CLEAN, WIPE INSULATION AND CONDUCTORS THOROUGHLY WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 35025000). DO NOT POUR FLUID DIRECTLY ON CABLE. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING. COMPLETELY BEFORE PROCEEDING.

STEP 3: WRAP A PIECE OF TAPE AROUND THE LEADING EDGE OF CONDUCTOR TO PREVENT THE CONDUCTOR FROM DAMAGING THE INSIDE OF THE STRESS CONE AND SKIRTS DURING INSTALLATION.

STEP 4: LUBRICATE CABLE INSULATION AND INSIDE OF STRESS CONE WITH SILICONE GREASE PROVIDED. DO NOT SUBSTITUTE.

SLIDE STRESS CONE DOWN ON CABLE USING A SPIRAL MOTION. BASE OF STRESS CONE SHOULD STOP WITHIN APPROXIMATELY 3/8" OF THE TOP OF THE GROUND CONNECTOR.

STEP 5: LUBRICATE INSIDE OF EACH SKIRT AND SLIDE EACH SKIRT, ONE AT A TIME, DOWN ON CABLE USING A SPIRAL MOTION. BASE OF SKIRT MUST OVERLAP SEALING DIAMETER OF STRESS CONE AND OTHER SKIRTS.

STEP 6: PLACE GROUNDING CLAMP AROUND STRESS CONE. CONNECT A PIECE OF CONCENTRIC NEUTRAL WIRE TO GROUNDING EYE, TWIST AND MAKE CONNECTION TO GROUNDING CLAMP USING SAME NEUTRAL WIRE. RUN CONCENTRIC NEUTRAL WIRE TO GROUND CONNECTOR.

REMOVE WRAP OF TAPE FROM LEADING EDGE OF CONDUCTOR.

STEP 7: WIRE BRUSH BARE CONDUCTOR. IMMEDIATELY AFTER WIRE BRUSHING, SLIDE SEALING CAP ON TERMINAL, AND THEN SLIDE TERMINAL LUG ONTO CONDUCTOR. WIPE OFF EXCESS INHIBITOR. CRIMP TERMINAL LUG, ROTATING EACH SUCCESSIVE CRIMP 90°. THOROUGHLY WIPE ALL REMAINING INHIBITOR FROM TERMINAL LUG AND TERMINATOR SKIRTS.

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0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

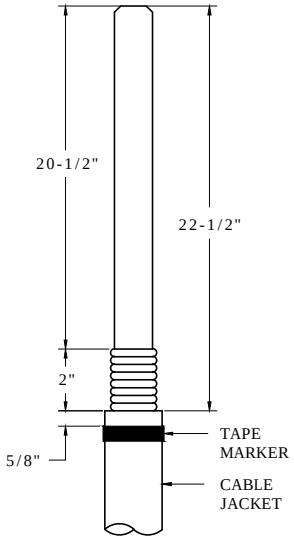
ELASTIMOLD, 600 AMP MODULAR CABLE
TERMINATOR INSTALLATION INSTRUCTIONS
25KV, 1000 KCMIL

Duke Energy®

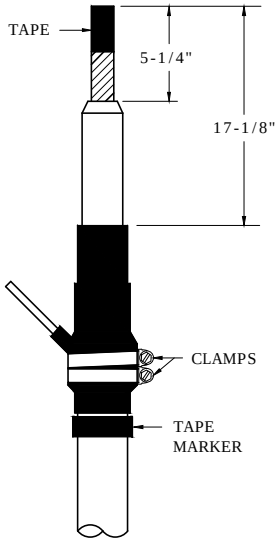
CAR

DWG. 26.06-01A

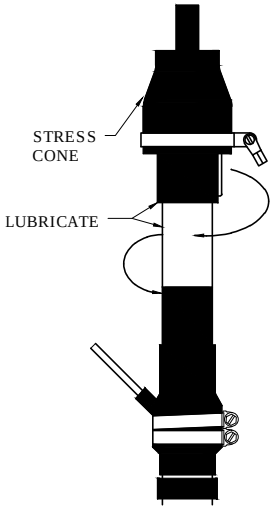
STEP 1



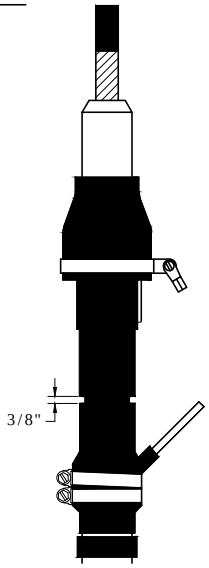
STEP 2



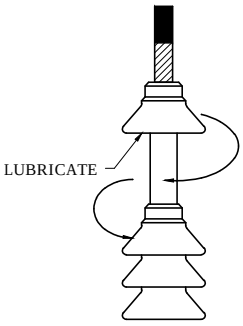
STEP 3



STEP 4



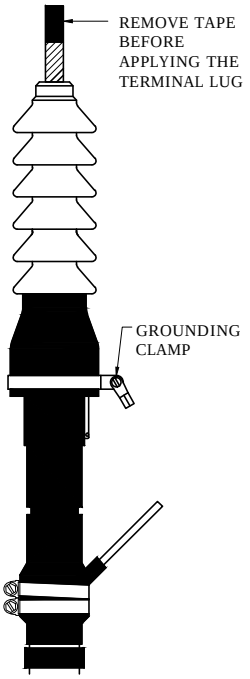
STEP 5



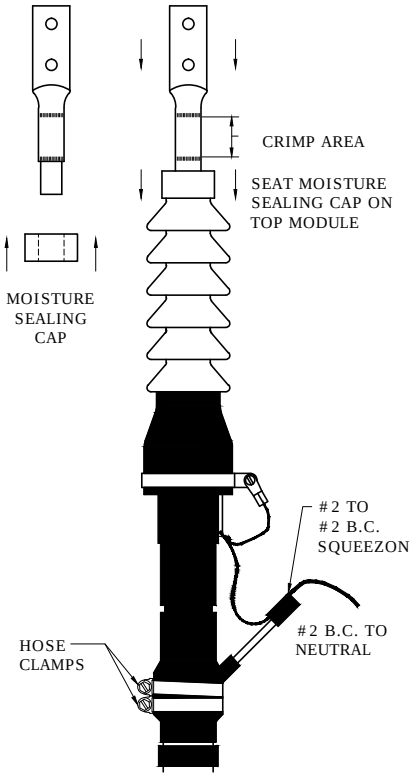
CRIMP CHART	
TOOL	DIE
ALCOA 60A HUSKIE	6030AH HA-60-23
BURNDY Y46 HUSKIE	P44ART HT61FD

COMPATIBLE UNIT	CN
TRM1KAL625KITC	11153210
SPLCP1K25KC	11153319

STEP 6



STEP 7



NOTES:

1. FOR DETAILS ON LC TERMINATION SEE DWG 23.01-01.
2. FOR INSTALLATION INSTRUCTIONS SEE DWG. 26.06-01A.

3				
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0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

ELASTIMOLD, 600 AMP MODULAR CABLE TERMINATOR INSTALLATION 25KV, 1000 KCMIL

Duke Energy®

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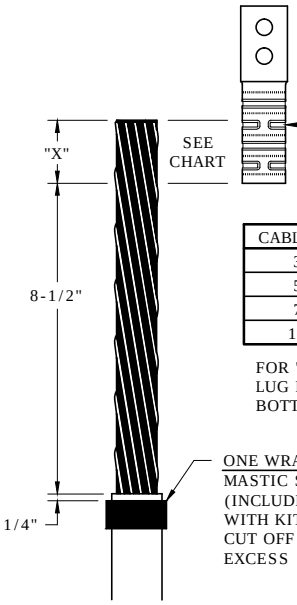
DWG. 26.06-01B

STEP 1: PREPARE CABLE



NOTE: DISCARD GROUND STRAP AND CONSTANT FORCE SPRING SUPPLIED WITH KIT FOR (JCN & CN) CABLE.

MINIMUM OF 4 CRIMPS WITH EACH ADJACENT CRIMPS ROTATED 90 DEGREES

CABLE SIZE	X
350	1/4" + DEPTH OF TERMINAL LUG
500	1/2" + DEPTH OF TERMINAL LUG
750	3/4" + DEPTH OF TERMINAL LUG
1000	3/4" + DEPTH OF TERMINAL LUG

FOR "LUG DEPTH", MEASURE THE OUTSIDE OF THE LUG FROM THE TOP (CRIMP) INDICATOR TO THE BOTTOM OF THE LUG. DO NOT REMOVE INHIBITOR!

A) REMOVE OUTER JACKET 8-1/2" + X (SEE CHART) FROM END OF CABLE.

B) WRAP ONE LAYER OF MASTIC STRIP AROUND CABLE JACKET 1/4" BELOW OUTER JACKET CUTBACK LOCATION. CUT OFF EXCESS MASTIC.

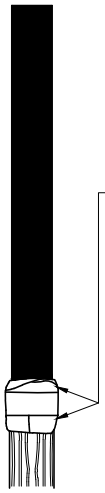
STEP 2: PREPARE MOISTURE SEAL

A) FOLD CONCENTRIC NEUTRAL WIRES BACK. NOTE: KEEP NEUTRALS SEPARATED AS THEY ARE FOLDED BACK TO ASSURE A GOOD MOISTURE SEAL. PRESS NEUTRALS INTO MASTIC.

B) SECURE NEUTRAL WIRES TO CABLE JACKET WITH VINYL ELECTRICAL TAPE 2" BELOW OUTER JACKET CUT BACK.

NOTE: SECURING TAPE ALSO SERVES AS MARKING TAPE.

STEP 3: PREPARE MOISTURE SEAL (CONT.)



COMPLETELY COVER MASTIC WITH 2 WRAPS OF VINYL PLASTIC TAPE.

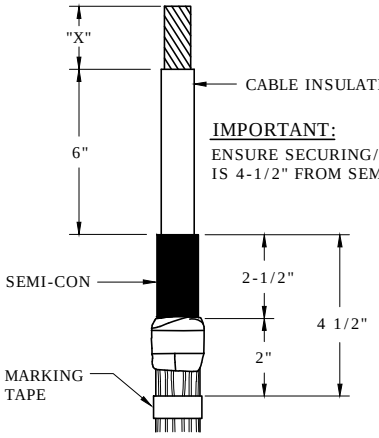
NOTE: DO NOT EXTEND VINYL ELECTRICAL TAPE WRAPPING MORE THAN 1/4" BEYOND MASTIC.

A) WRAP SECOND LAYER OF MASTIC STRIP OVER NEUTRAL WIRES AND PREVIOUSLY APPLIED MASTIC (ONE LAYER, CUT OFF EXCESS).

B) WRAP TWO STRETCHED LAYERS OF 3/4" VINYL ELECTRICAL TAPE TIGHTLY OVER MASTIC. KEEP SEAL DIAMETER SMALL SO THAT CORE WILL BE EASY TO REMOVE.

NOTE: BE SURE TO COVER ALL EXPOSED MASTIC ONLY.

STEP 4: PREPARE CABLE



A) REMOVE SEMI-CON 6" + X FROM END OF CABLE.
IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH SEMI-CON INTO INSULATION.

B) REMOVE INSULATION "X" DIMENSION (SEE CHART IN STEP 1 ABOVE) FROM END OF CABLE.

NOTE: SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR (IF REQUIRED). REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH. WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID. DO NOT ALLOW SOLVENT TO TOUCH SEMI-CON!

3				
2				
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0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350 & 750 KCMIL, 25KV (JCN)
500, 750, 1000 KCMIL, 15KV (JCN)
3M QT-III TERMINATOR INSTALLATION INSTRUCTIONS

Duke Energy®

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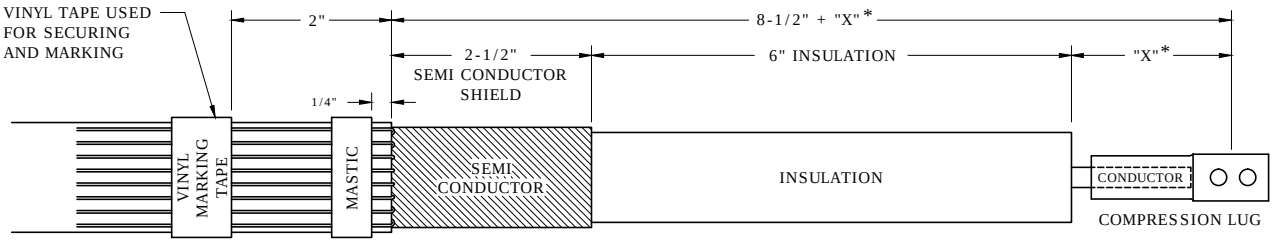
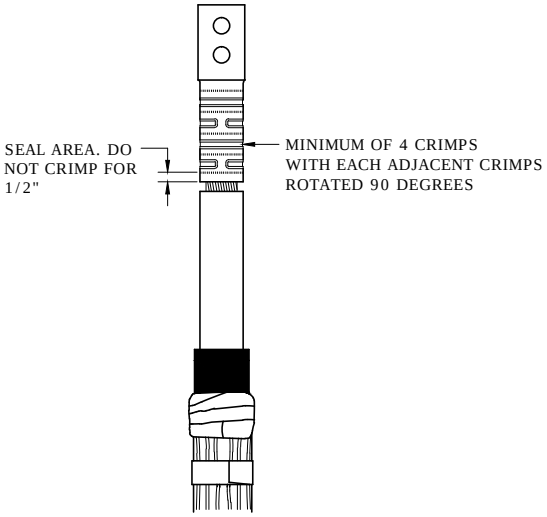
DWG. 26.06-03A



*SEE CHART IN STEP 1 ON DWG 26.06-03A

MANUFACTURER'S "RECOMMENDED CUT BACKS"

STEP 5: INSTALL LUG



IMPORTANT:

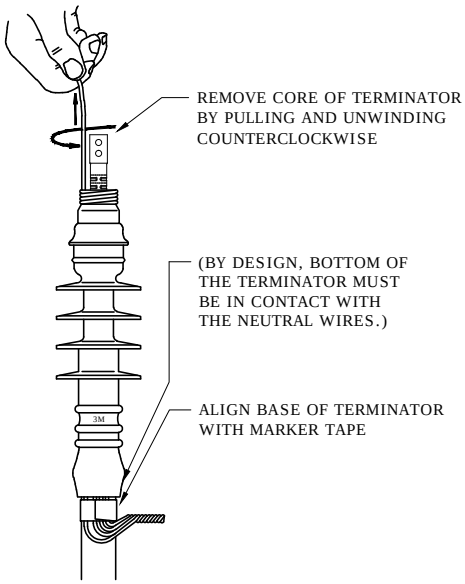
CHECK TO ENSURE TERMINATOR WILL FIT OVER THE LUG. IF THE LUG WILL NOT FIT, SLIDE TERMINATOR ONTO THE CABLE.

A) INSERT CONDUCTOR IN COMPRESSION LUG.

B) CRIMP BETWEEN KNURL MARKS STARTING AT TOP OF BARREL.
NOTE: ROTATE CRIMPS 90°. DO NOT CRIMP LAST 1/2" OF LUG.

C) CLEAN EXCESS INHIBITOR FROM CABLE AND LUG.

STEP 6: INSTALL TERMINATOR



A) NOTE: DISCARD GROUND STRAP AND CONSTANT FORCE SPRING SUPPLIED WITH KIT FOR (JCN & CN) CABLE.

B) SLIDE TERMINATOR OVER CABLE. GENTLY REMOVE EXCESS CORE ALIGNING BASE WITH MARKER TAPE.

C) HOLD TERMINATOR (AT THE BASE) WITH ONE HAND WHILE REMOVING CORE WITH OTHER HAND. REMOVE CORE BY UNWINDING COUNTER-CLOCKWISE.

NOTE: ONCE TERMINATION INSULATOR HAS SEALED OVER PREVIOUSLY APPLIED MASTIC, HOLDING TERMINATOR IS NO LONGER NEEDED.

BILL OF MATERIALS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	TRM350AL625KITC	1	11173101	1	TERM, CABLE, 15 & 25 KV, 150KV BIL.
				9220126011	1	LUG, TERM, COMP, 350, 2-HOLE, AL
				11195401	1	CONN, PA, COMP, 2STR-1/0STR, CU
				11195609	1	CONN, PA, COMP, 2STR-1/0STR, TA
				10017606	2	BOLT, HEX, 1/2-13 X 2", SS BOLT
				30051007	2	WASHER, ROUND, BELLEVILLE SPR, 1/2"
				10542504	4	WASHER, RD, 1/2", SS, 1.375" OD
	2	TRM750AL625KITC	1	11173101	1	TERM, CABLE, 15 & 25 KV, 150KV BIL.
				11178902	1	LUG, TERM, AL, 750 KCMIL, AL
				11195401	1	CONN, PA, COMP, 2STR-1/0STR, CU
				11195609	1	CONN, PA, COMP, 2STR-1/0STR, TA
				10017606	2	BOLT, HEX, 1/2-13 X 2", SS BOLT
				30051007	2	WASHER, ROUND, BELLEVILLE SPR, 1/2"
				10542504	4	WASHER, RD, 1/2", SS, 1.375" OD

REVISED	BY	CK'D	APPR.
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0 6/8/10	ROBESON	GUINN	ELKINS

350 & 750 KCMIL, 25KV (JCN)
500, 750, 1000 KCMIL, 15KV (JCN)
3M QT-III TERMINATOR INSTALLATION INSTRUCTIONS

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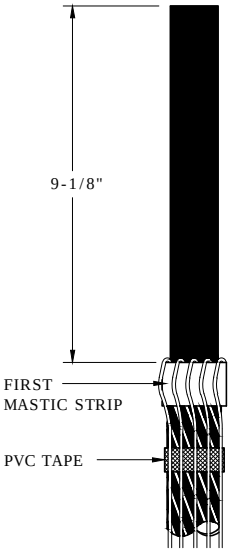
DWG. 26.06-03B

STEP 1

REMOVE OUTER JACKET 9-1/8" FROM END OF CABLE. BEFORE FOLDING CONCENTRIC NEUTRAL WIRES BACK, WRAP ONE LAYER OF MASTIC AROUND CABLE JUST BELOW JACKET CUTBACK LOCATION.

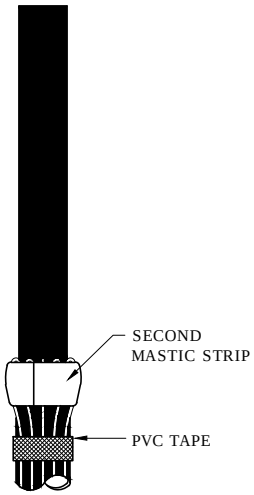


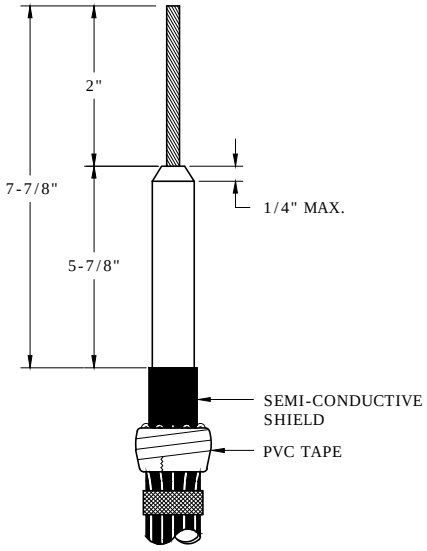
STEP 2

BEND ALL OF THE NEUTRAL WIRES STRAIGHT BACK OVER THE MASTIC AND ALONG THE CABLE. KEEP THE NEUTRALS SEPARATED AS THEY ARE FOLDED BACK TO ASSURE A GOOD MOISTURE SEAL. PRESS NEUTRALS INTO MASTIC.

STEP 3

WRAP THE SECOND STRIP OF MASTIC OVER THE PREVIOUS STRIP AND NEUTRAL WIRES, SQUEEZE TIGHTLY FORCING NEUTRALS INTO MASTIC. APPLY 2 HALF-LAPPED LAYERS OF VINYL TAPE (CN 211512O4 OR CN 21151303) OVER THE MASTIC FOR 1" ONTO THE NEUTRAL WIRES.



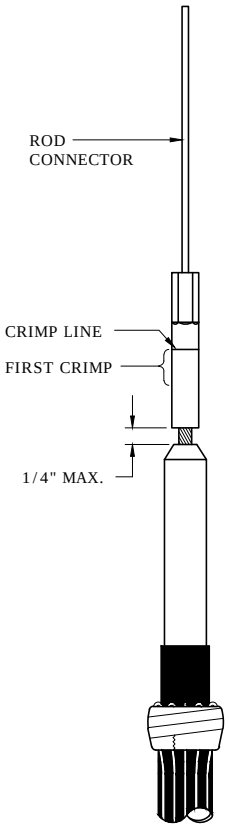


STEP 4

PREPARE CABLE. REMOVE SEMI-CON 7-7/8" FROM END OF CABLE AND REMOVE INSULATION 2" FROM END OF CABLE. BEVEL THE CORNER OF CABLE INSULATION A DISTANCE OF 1/4" MAXIMUM. SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT ALLOW SOLVENT TO TOUCH SEMI-CON!

STEP 5

WIRE BRUSH ALUMINUM CONDUCTOR AND IMMEDIATELY INSERT INTO THE CONNECTOR. CHECK TO ENSURE THE MAXIMUM GAP BETWEEN THE INSULATION AND THE CONNECTOR IS APPROXIMATELY 1/4" TO VERIFY THE CONDUCTOR IS FULLY SEATED IN THE CONNECTOR AND THE INSULATION STRIP BACK IS CORRECT. CRIMP PER RECOMMENDATIONS PROVIDED ON BACK OF INSTRUCTION SHEET ROTATING EACH SUCCESSIVE CRIMP 180° TO PREVENT DISTORTION. ENSURE THAT THE FIRST CRIMP IS STARTED AT THE CRIMP LINE AND CONTINUE CRIMPING TOWARDS THE CABLE INSULATION. REMOVE EXCESSIVE OR SHARP EARS CREATED DURING CRIMPING WITH A FILE TO PREVENT DAMAGE OR FAILURE OF THE TERMINATOR HOUSING.



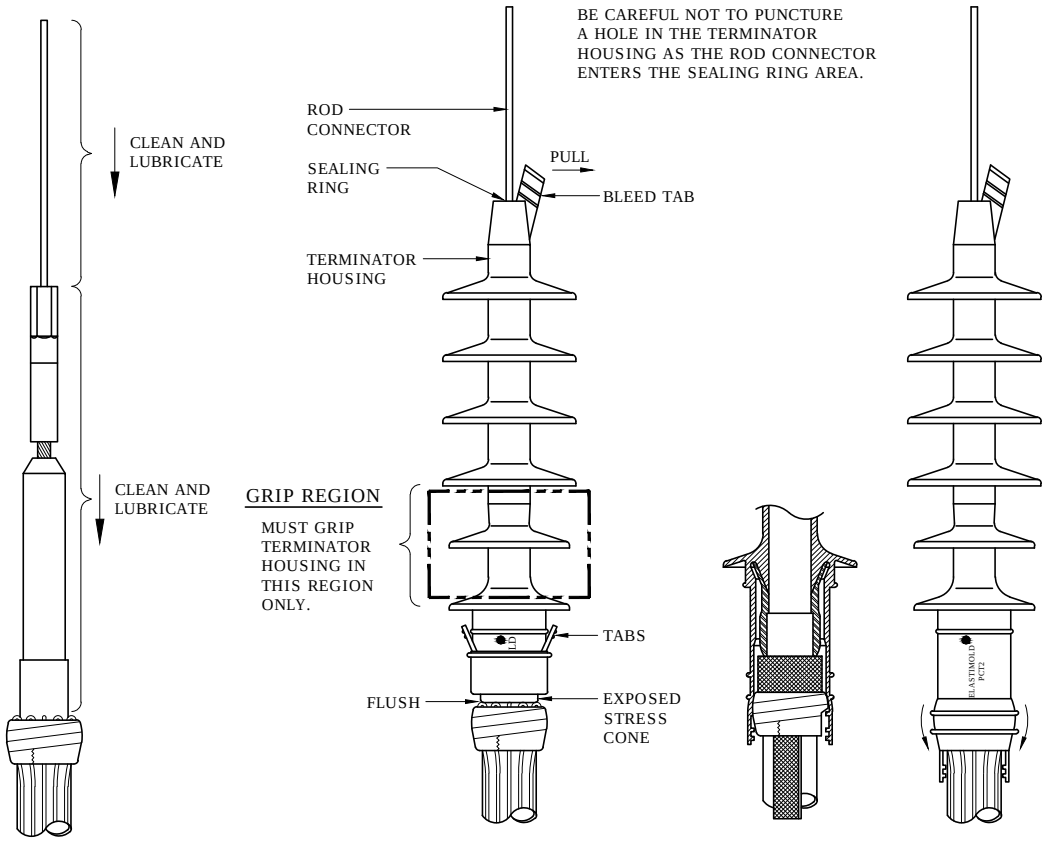
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

ELASTIMOLD, #2, 1/0 - 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.06-05A



IMPORTANT:

BE CAREFUL NOT TO PUNCTURE A HOLE IN THE TERMINATOR HOUSING AS THE ROD CONNECTOR ENTERS THE SEALING RING AREA.

STEP 6

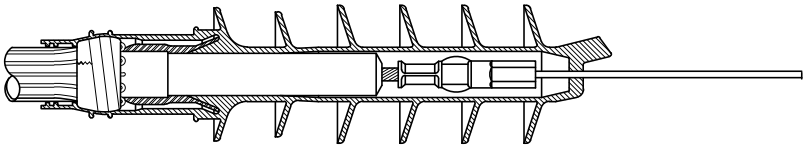
CLEAN AND LUBRICATE CABLE AND ROD CONNECTOR IN DIRECTION OF ARROW. ENSURE THAT TOP OF ROD CONNECTOR IS ALSO LUBRICATED. LUBRICATE CABLE ENTRANCE OF TERMINATOR HOUSING.

STEP 7

GRIP THE TERMINATOR HOUSING AS INDICATED ABOVE AND SLOWLY SLIDE ONTO THE CABLE UNTIL THE EXPOSED CONDUCTIVE STRESS CONE IS FLUSH WITH THE NEUTRAL WIRES. HOLD THE ROD CONNECTOR AND PULL THE BLEED TAB IN DIRECTION SHOWN TO RELEASE INTERNAL AIR PRESSURE.

STEP 8

HOLD EACH TAB AT THE BASE OF THE TERMINATOR, PULL THE HOOD OVER THE SEALED AREA OF THE CABLE. BUNDLE NEUTRAL WIRES AND ATTACH TO SYSTEM GROUND.



COMPLETED TERMINATOR (SECTION)

COMP. UNIT	CN
TRM2AL225KITC	11171808
TRM10AL225KITC	11171907

NOTES:

1. TO REMOVE TERMINATOR ALREADY INSTALLED ON CABLE, CAREFULLY CUT DOWN THE LENGTH OF THE TERMINATOR BEING CAREFUL NOT TO CUT OR NICK THE CABLE SEMI-CON OR THE CABLE INSULATION.

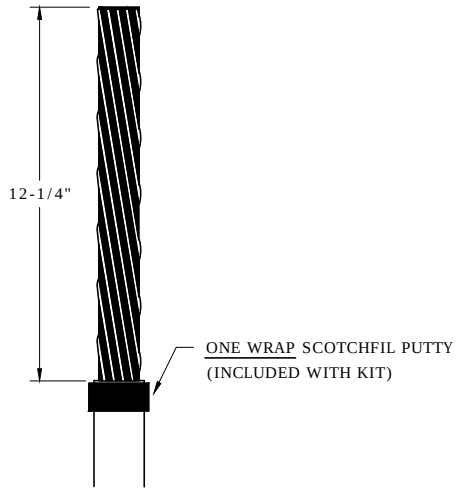
3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

ELASTIMOLD, #2, 1/0 - 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.06-05B



STEP 1

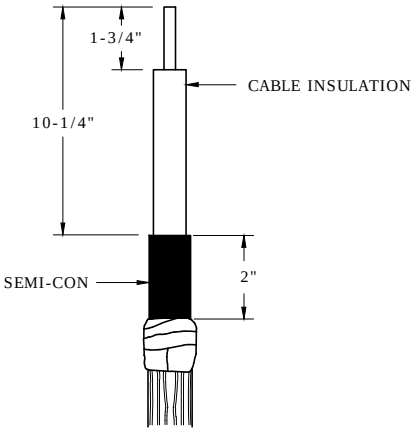
REMOVE OUTER JACKET 12-1/4" FROM END OF CABLE. BEFORE FOLDING CONCENTRIC NEUTRAL WIRES BACK, WRAP ONE LAYER OF SCOTCHFIL PUTTY AROUND CABLE JUST BELOW JACKET CUTBACK LOCATION.

STEP 2

FOLD CONCENTRIC NEUTRAL WIRES BACK. KEEP NEUTRALS SEPARATED AS THEY ARE FOLDED BACK TO ASSURE A GOOD MOISTURE SEAL. PRESS NEUTRALS INTO PUTTY.

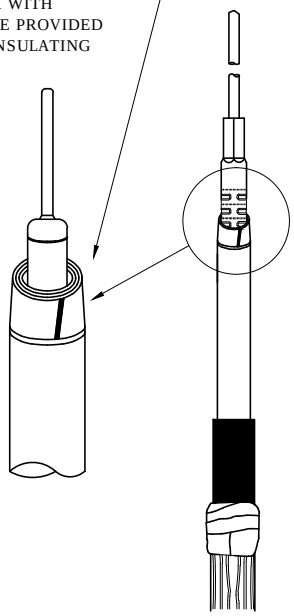
STEP 3

WRAP VINYL TAPE (CN 21151204 OR CN 21151303) TIGHTLY OVER NEUTRALS TO FORCE THEM INTO THE PUTTY. COVER THE MASTIC WITH TWO HALF-LAPPED LAYERS OF VINYL TAPE, OVER WRAPPING THE WIRES FOR ABOUT 1".



NOTE:

BUILD UP THE BOTTOM OF THE CONNECTOR WITH INSULATING TAPE PROVIDED TO EQUAL THE INSULATING DIAMETER.



STEP 4

PREPARE CABLE. REMOVE SEMI-CON 10-1/4" FROM END OF CABLE AND REMOVE INSULATION 1-3/4" FROM END OF CABLE. SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICK AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT ALLOW SOLVENT TO TOUCH SEMI-CON!

STEP 5

INSERT CONDUCTOR IN COMPRESSION LUG. CRIMP BETWEEN KNURL MARKS ON LUG BARREL. ROTATE CRIMPS 90°. CLEAN EXCESS INHIBITOR FROM CABLE AND LUG.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

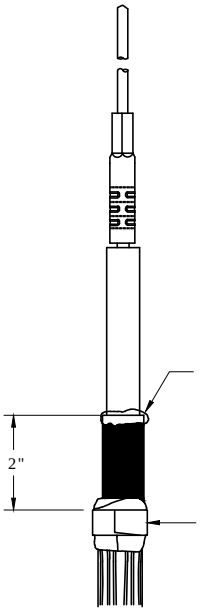
JOSLYN, 200 AMP CABLE TERMINATOR

INSTALLATION INSTRUCTIONS

Duke Energy®

CAR

DWG. 26.06-06A

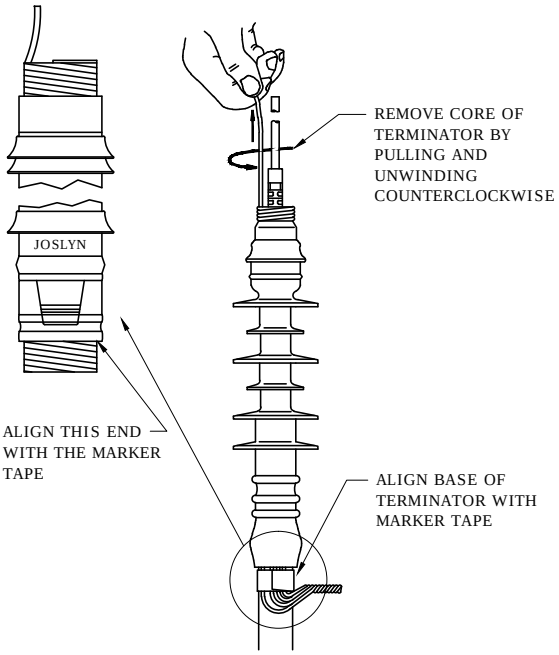


IMPORTANT

APPLY SILICONE GREASE AT SEMI-CON/INSULATION STEP. FAILURE TO APPLY GREASE WILL RESULT IN PREMATURE FAILURE OF TERMINATION.

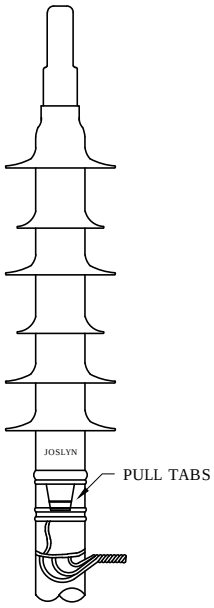
STEP 6

APPLY A HEAVY COAT OF SILICONE GREASE TO THE SEMI-CON EDGE. THE GREASE FILLS THE STEP BETWEEN THE SEMI-CON AND THE INSULATION.



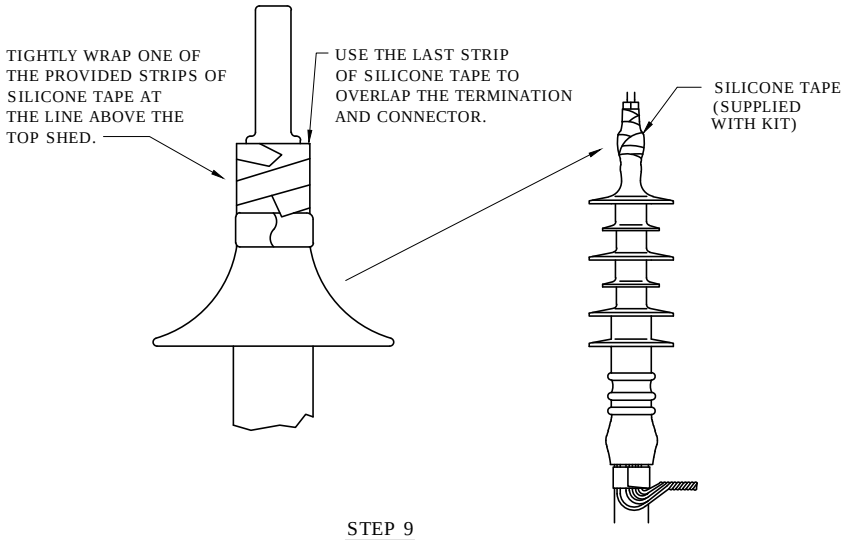
STEP 6

CAREFULLY REMOVE THE CORE TO 1/8" FROM THE TERMINATION BASE. DO NOT COLLAPSE THE CORE AT THIS TIME. POSITION THE TERMINATION ON THE CABLE WITH THE BOTTOM END LINED UP WITH THE TAPE MARK. IF THE CORE WILL NOT FIT OVER THE JACKET SEAL, BUTT THE BASE OF THE TERMINATION UP AGAINST THE SEAL.



STEP 8

AFTER THE CORE HAS BEEN COMPLETELY REMOVED, PULL DOWN THE TWO TABS AT THE TERMINATION BASE. THIS WILL COMPLETE THE JACKET SEAL.



STEP 9

SEAL TOP OF TERMINATOR WITH SILICONE TAPE. DO NOT USE VINYL TAPE OR AQUA-SEAL!

CN	COMPATIBLE UNIT
11171907	TRM10AL225KITC

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

JOSLYN, 200 AMP CABLE TERMINATOR

INSTALLATION INSTRUCTIONS

Duke Energy®

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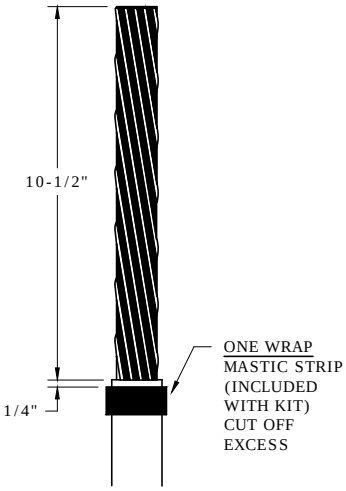
DWG. 26.06-06B



A) REMOVE OUTER JACKET 10-1/2" FROM END OF CABLE.

B) WRAP ONE LAYER OF MASTIC STRIP AROUND CABLE JACKET 1/4" BELOW OUTER JACKET CUTBACK LOCATION. CUT OFF EXCESS MASTIC.

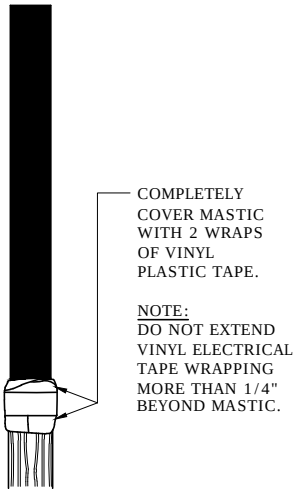
STEP 1

A) FOLD CONCENTRIC NEUTRAL WIRES BACK. NOTE: KEEP NEUTRALS SEPARATED AS THEY ARE FOLDED BACK TO ASSURE A GOOD MOISTURE SEAL. PRESS NEUTRALS INTO MASTIC.

B) SECURE NEUTRAL WIRES TO CABLE JACKET WITH VINYL ELECTRICAL TAPE 2" BELOW OUTER JACKET CUT BACK.

NOTE: SECURING TAPE ALSO SERVES AS MARKING TAPE.

STEP 2

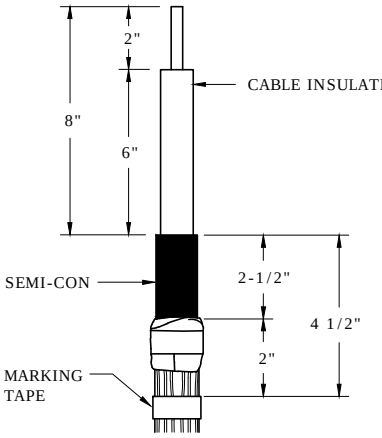


A) WRAP SECOND LAYER OF MASTIC STRIP OVER NEUTRAL WIRES AND PREVIOUSLY APPLIED MASTIC (ONE LAYER, CUT OFF EXCESS).

B) WRAP TWO STRETCHED LAYERS OF 3/4" VINYL ELECTRICAL TAPE (CN 21151204) TIGHTLY OVER MASTIC. KEEP SEAL DIAMETER SMALL SO THAT CORE WILL BE EASY TO REMOVE.

NOTE: BE SURE TO COVER ALL EXPOSED MASTIC ONLY.

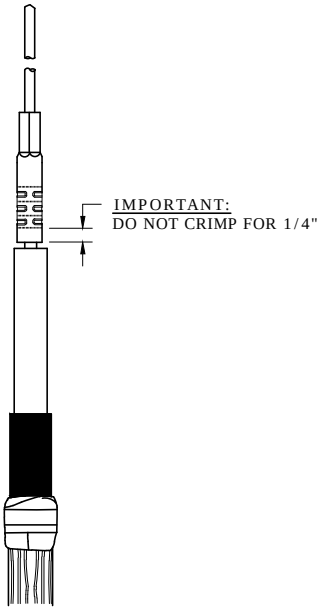
STEP 3



A) REMOVE SEMI-CON 8" FROM END OF CABLE.
IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH SEMI-CON INTO INSULATION.

B) REMOVE INSULATION 2" FROM END OF CABLE.
NOTE: SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT ALLOW SOLVENT TO TOUCH SEMI-CON!

STEP 4 (PREPARE CABLE)



A) INSERT CONDUCTOR IN COMPRESSION LUG.

B) CRIMP BETWEEN KNURL MARKS STARTING AT TOP OF BARREL. NOTE: ROTATE CRIMPS 90°. DO NOT CRIMP LAST 1/4" OF LUG.

C) CLEAN EXCESS INHIBITOR FROM CABLE AND LUG.

STEP 5

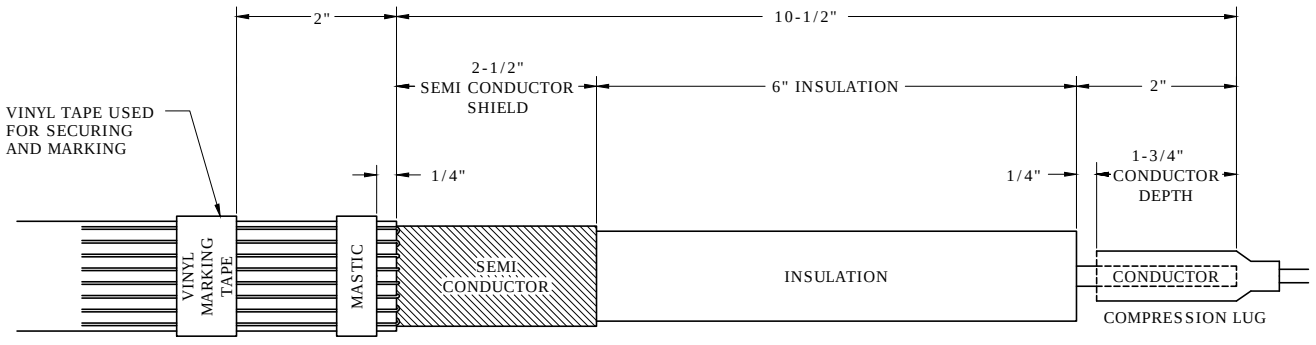
3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, QTIII 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS JACKETED CONCENTRIC NEUTRAL (JCN)

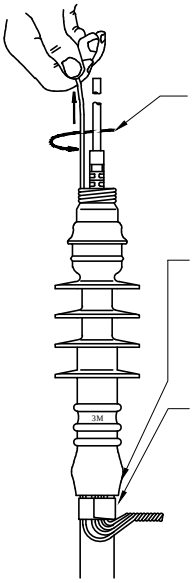
Duke Energy®

CAR

DWG. 26.06-07A



MANUFACTURER'S "RECOMMENDED CUT BACKS"



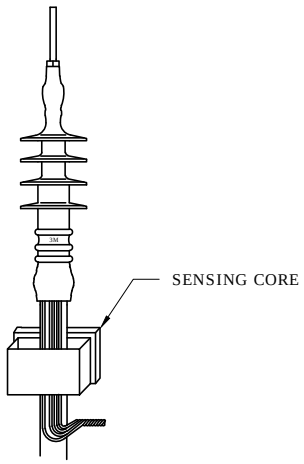
A) REMOVE RED SHIPPING CORE BEFORE SLIDING TERMINATOR OVER CABLE.

B) SLIDE TERMINATOR OVER CABLE. GENTLY REMOVE EXCESS CORE ALIGNING BASE WITH MARKER TAPE. AS THE TERMINATOR JUST STARTS TO COLLAPSE, IT CAN BE RE-POSITIONED TO LINE UP WITH THE MARKER TAPE BEFORE ADDITIONAL CORD IS REMOVED.

C) HOLD TERMINATOR (AT THE BASE) WITH ONE HAND WHILE REMOVING CORE WITH OTHER HAND. REMOVE CORE BY UNWINDING COUNTER-CLOCKWISE.

NOTE: ONCE TERMINATION INSULATOR HAS SEALED OVER PREVIOUSLY APPLIED MASTIC, HOLDING TERMINATOR IS NO LONGER NEEDED.

STEP 6



IF FAULT INDICATOR IS INSTALLED, CONCENTRIC NEUTRAL WIRES SHOULD BE RUN THROUGH SENSING CORE.

STEP 7 (OPTIONAL)

NOTES:

1. TO REMOVE TERMINATOR ALREADY INSTALLED ON CABLE, CAREFULLY CUT DOWN THE LENGTH OF THE TERMINATOR, BEING CAREFUL NOT TO CUT OR NICK THE CABLE SEMI-CON OR INSULATION.

BILL OF MATERIALS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	TRM10AL225KITC	1	11171907	1	#1/0 MODULAR TERMINAL

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, QTIII 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS JACKETED CONCENTRIC NEUTRAL (JCN)

Duke Energy®

CAR

DWG. 26.06-07B

STEP 1

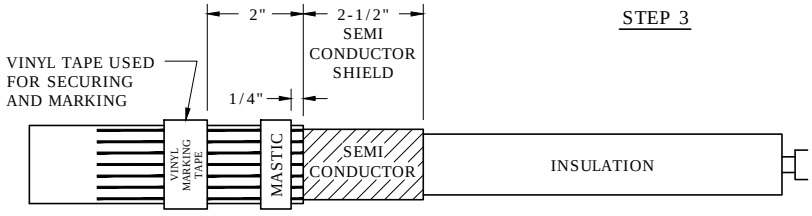
- REPLACE THE OLD TERMINATOR

THE TERMINATOR SHOWN IS AN OLD ELASTIMOLD DESIGN CONTAINING A STRESS CONE AND INDIVIDUAL SKIRTS. THIS PROCEDURE IS ALSO APPLICABLE TO OTHER OLD TERMINATIONS SUCH AS THE INDOOR STRESS CONE AND SILICONE TAPE TERMINATION.

STEP 2

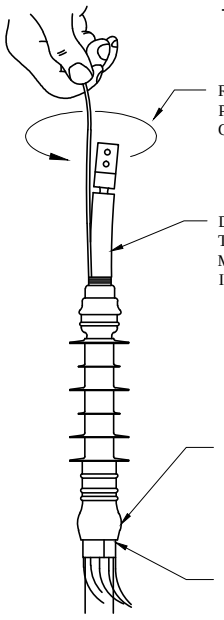
- REMOVE ALL PARTS OF THE OLD TERMINATOR
- PREPARE CUTBACK AREA AS SHOWN IN STEP 3

STEP 3



- IT IS IMPORTANT TO PREPARE THE CUTBACK AREA AS SHOWN TO ENSURE THE EXPOSED SEMI-CON IS IN GOOD CONTACT WITH STRESS RELIEF MATERIAL INSIDE TERMINATOR.
- IT MAY BE NECESSARY TO MOVE THE CONCENTRIC NEUTRAL UP TO MEET THE 2-1/2" DIMENSION AS SHOWN. THIS WILL ENSURE THE BOTTOM OF THE TERMINATOR IS IN CONTACT WITH THE CONCENTRIC WIRES AS REQUIRED IN STEP 4.
- FOLLOW APPROPRIATE INSTALLATION DRAWING TO INSTALL TERMINATOR.

STEP 4



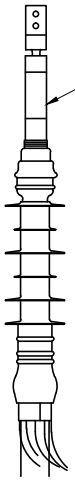
REMOVE CORE OF TERMINATOR BY PULLING AND UNWINDING COUNTERCLOCKWISE

DUE TO THE LENGTH OF THE OLD TERMINATOR, THE NEW TERMINATOR MAY NOT COVER THIS AREA OF INSULATION. SEE STEP 5.

(BY DESIGN, BOTTOM OF THE TERMINATOR MUST BE IN CONTACT WITH THE NEUTRAL WIRES.)

ALIGN BASE OF TERMINATOR WITH MARKER TAPE

STEP 5



EXPOSED AREA OF INSULATION

- COVER THE EXPOSED INSULATION AND SEAL THE AREA BETWEEN THE CABLE AND THE TERMINAL LUG WITH A HALF LAPPED LAYER OF GRAY SILICONE TAPE. COVER THE SILICONE TAPE WITH ONE LAYER OF VINYL PLASTIC TAPE TO HOLD THE SILICONE TAPE IN PLACE.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

REPAIR OF PREVIOUS DESIGN TERMINATORS

Duke Energy®

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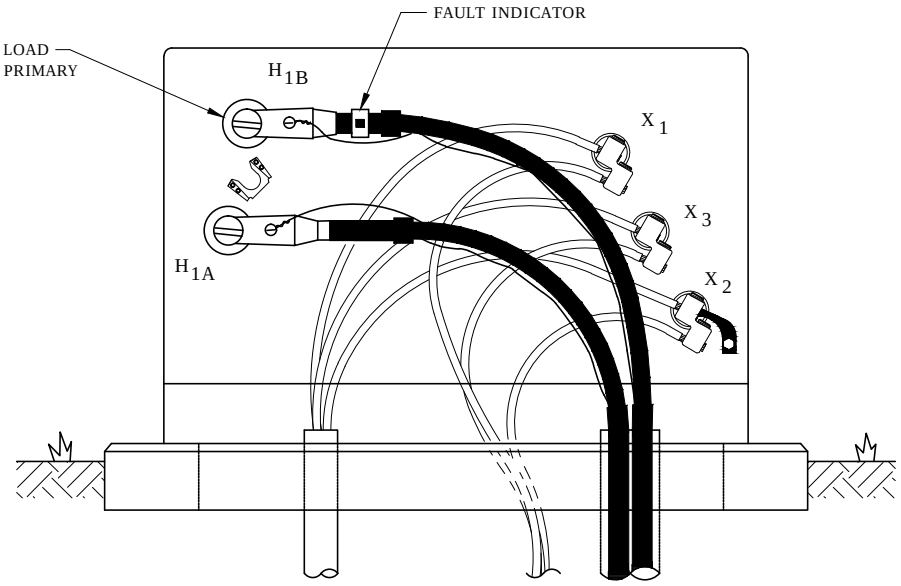
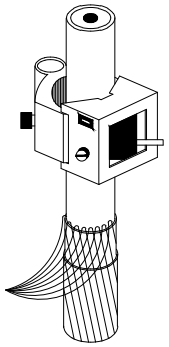
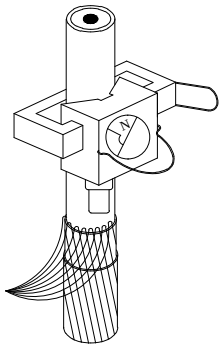
DWG. 26.06-09





TOGGLE RESET



PUSH BUTTON RESET

CATALOG NUMBER	RATING
22001002	300A

DESCRIPTION AND OPERATION

1. FAULT INDICATOR - THE INDICATOR ROTOR MUST BE SET TO INDICATE BLACK FOR TOGGLE UNITS OR WHITE FOR PUSH BUTTON UNITS. WHEN A FAULT OCCURS, ALL ROTORS BETWEEN THE DIP POLE AND THE FAULT WILL ROTATE TO THE RED POSITION.

2. RESET - AFTER CLEARING A FAULT, ALL INDICATORS FROM THE FAULT LOCATION BACK TO THE DIP POLE MUST MANUALLY RESET.

3. MOUNTING - FAULT INDICATORS CAN BE DISASSEMBLED AND REASSEMBLED ON THE PRIMARY CABLE AFTER CABLE TERMINATIONS HAVE BEEN INSTALLED.

INSTALLATION OF SENSOR

1. INSTALL FAULT INDICATOR ON THE LOAD SIDE PRIMARY CABLE OF EACH TRANSFORMER, SWITCH, OR OTHER DISCONNECTABLE DEVICE LOCATED ON A SINGLE PHASE PRIMARY LOOP.

2. PLACE SENSOR AROUND CONDUCTOR JUST BEHIND TERMINATION. IF THE FAULT INDICATOR IS PLACED ABOVE THE NEUTRAL TERMINATION AS SHOWN ABOVE, THE CONCENTRIC WIRES CONNECTING TO THE GROUND GROUND CONDUCTOR MUST REMAIN OUTSIDE THE INDICATOR AS SHOWN.

APPLICATION

1. FAULT INDICATORS WILL BE INSTALLED IN SPECIFIED RDO'S PER DWG. 26.07-03B.

2. MANUAL RESET FAULT INDICATORS SHOULD BE INITIALLY INSTALLED TO FACILITATE SECTIONALIZING CABLE ON SINGLE-PHASE CIRCUITS.

3. INSTALL FAULT INDICATOR IN EXISTING TRANSFORMER WHEN EXTENDING PRIMARY.

4. THE STATUS OF EACH INDICATOR SHOULD BE CHECKED DURING NORMAL TRANSFORMER INSPECTION CYCLES AND RESET IF FOUND TRIPPED. INDICATOR SHOULD BE KEPT CLEAN AND FREE OF DIRT.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

SINGLE-PHASE, MANUAL RESET FAULT INDICATOR

Duke Energy®

CAR

DWG. 26.07-03A

RDO'S - MANUAL FAULT INDICATORS

(INCLUDED OR NOT INCLUDED WITH SINGLE OR THREE-PHASE PADMOUNT TRANSFORMERS

COLUMN A RDO'S WHERE MANUAL FAULT INDICATORS WILL BE INCLUDED FOR THREE-PHASE PAD-MOUNT TRANSFORMERS WITHIN A LOOP FED SYSTEM OR ON A RADIAL SYSTEM CONTAINING MORE THAN ONE TRANSFORMER (ALL RDO'S ARE INCLUDED)	COLUMN B RDO'S WHERE MANUAL FAULT INDICATORS WILL BE ALLOWED FOR SINGLE-PHASE PAD-MOUNT TRANSFORMERS (LOCAL DISCRETION)	COLUMN C RDO'S WHERE MANUAL FAULT INDICATORS WILL NOT BE INSTALLED FOR SINGLE-PHASE PAD-MOUNT TRANSFORMERS
ASHEBORO	BISHOPVILLE	ASHEBORO
ASHEVILLE	CHERAW	ASHEVILLE
BISHOPVILLE	CLINTON	BLACK MOUNTAIN
BLACK MOUNTAIN	DARLINGTON	CARY
CARY	DILLON	DUNN
CHERAW	E. TOWN	EASTWOOD
CLINTON	FAIRMONT	FAYETTEVILLE
DARLINGTON	HARTSVILLE	FLORENCE
DILLON	HENDERSON	FUQUAY
DUNN	KINGSTREE	GARNER
E.TOWN	KINSTON	GOLDSBORO
EASTWOOD	LAKE CITY	HAYWOOD COUNTY
FAIRMONT	LOUISBURG	JACKSONVILLE
FAYETTEVILLE	MARION	MOREHEAD CITY
FLORENCE	MAXTON	NASHVILLE
FUQUAY	MT. OLIVE	NEW BERN
GARNER	OXFORD	NORTH RALEIGH
GOLDSBORO	ROCKINGHAM	PITTSBORO
HARTSVILLE	SPRUCE PINE	ROXBORO
HAYWOOD COUNTY	TROY	SANFORD
HENDERSON	WADESBORO	SELMA
JACKSONVILLE	WALLACE	SILER CITY
KINGSTEE	WARRENTON	SOUTHERN PINES
KINSTON	WHITEVILLE	SUMTER
LAKE CITY		WEST RALEIGH
LOUISBURG		WILMINGTON SOUTH
MARION		ZEBULON
MAXTON		
MOREHEAD CITY		
MT. OLIVEN		
ASHVILLE		
NEW BERN		
NORTH RALEIGH		
OXFORD		
PITTSBORO		
ROCKINGHAM		
ROXBORO		
SANFORD		
SELMA		
SILER CITY		
SOUTHERN PINES		
SPRUCE PINE		
SUMTER		
TROY		
WADESBORO		
WALLACE		
WARRENTON		
WEST RALEIGH		
WHITEVILLE		
WILMINGTON SOUTH		
ZEBULON		

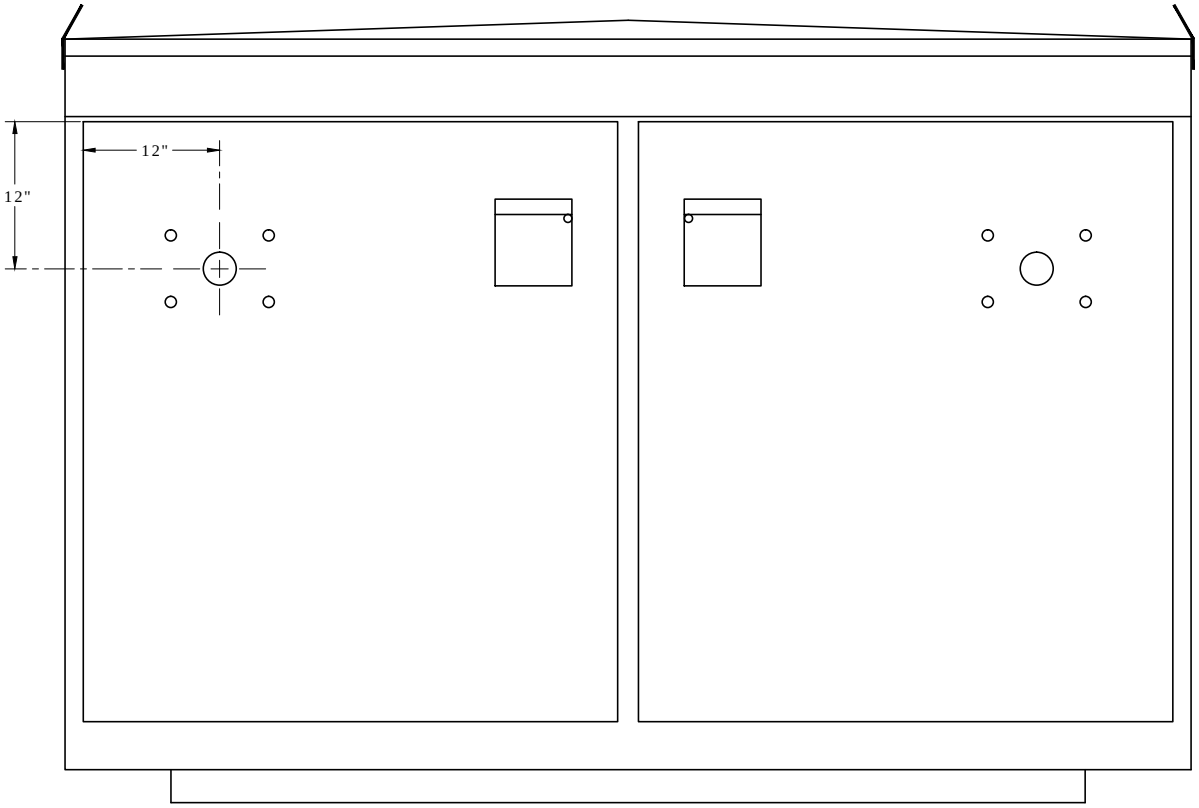
3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

RDO MANUAL RESET FAULT INDICATOR REQUIREMENTS

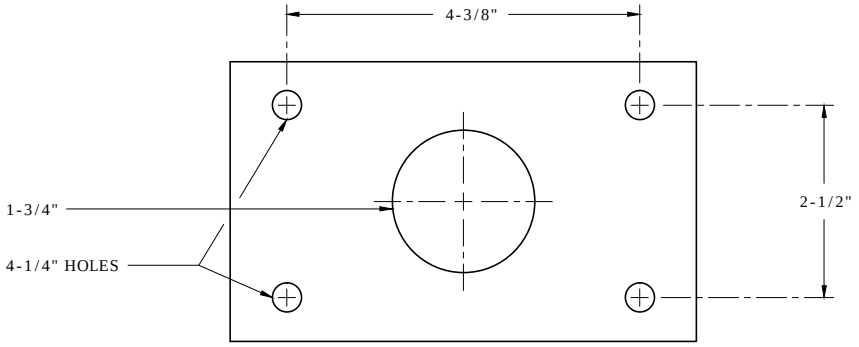
Duke Energy®

CAR

DWG. 26.07-03B



THREE-PHASE SWITCHGEAR (DOORS CLOSED)



THREE-PHASE FAULT INDICATOR TEMPLATE
(TEMPLATE FURNISHED WITH EACH FAULT INDICATOR)

NOTES:

1. LOCATE INDICATOR ON SOURCE SIDE COMPARTMENTS TO MAKE UNIT VISIBLE FROM STREET SIDE.
2. USE STICK ON TEMPLATE SHIPPED WITH THE INDICATOR TO MARK HOLE LOCATIONS ON SWITCHGEAR DOOR.
3. PUNCH 1-3/4" HOLE IN DOOR OF SWITCHGEAR. DO NOT CUT OR BURN HOLE. SWITCHGEAR PURCHASED AFTER SEPTEMBER, 1986 WILL HAVE 1-3/4" HOLES PRE-DRILLED.
4. MAKE SURE INDICATOR IS CENTERED OVER 1-3/4" HOLE. DRILL BOLT HOLES FOR 1/4" STAINLESS STEEL CARRIAGE BOLTS SHIPPED WITH UNIT.
5. FILE ALL HOLES SMOOTH FOR FLAT CONTACT BETWEEN SURFACES AND SPRAY PAINT BARE METAL WITH CN 30246300.
6. CAUTION: DO NOT LEAVE ANY CRACK OR OPENING INTO SWITCHGEAR COMPARTMENTS EXPOSED. CARRIAGE TYPE BOLTS THAT HAVE SMOOTH HEADS MUST BE USED.
7. SEE DWG. 26.07-06 FOR DESCRIPTION AND OPERATION OF INDICATOR, AND INSTALLATION OF FERRITE CORE SENSOR.
8. VIEW WINDOW KIT AND TEMPLATE ARE AVAILABLE, IF NEEDED, WHEN NOT ORDERING A FAULT INDICATOR UNDER CN 22004105.

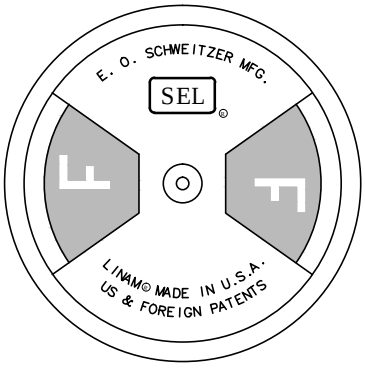
3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

THREE-PHASE, AUTOMATIC RESET FAULT INDICATOR FOR THREE-PHASE PAD-MOUNTED SWITCHGEAR RETROFIT INSTALLATIONS

Duke Energy®

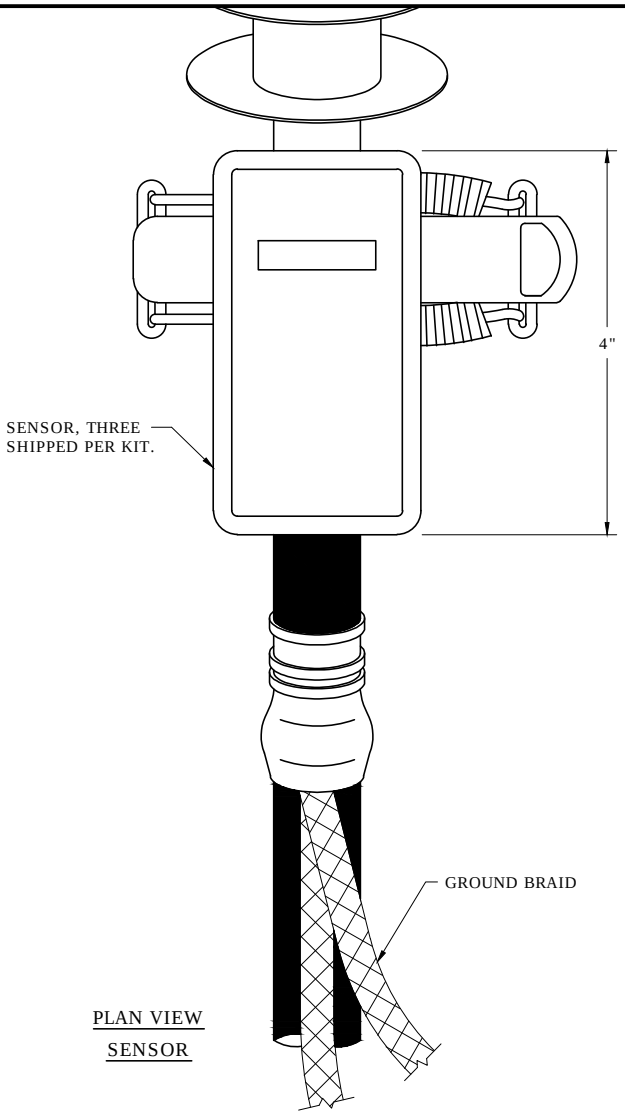
CAR

DWG. 26.07-05



600 AMP TRIP
3 AMP RESET
CN 22001309

FAULT INDICATOR KIT



PLAN VIEW
SENSOR

DESCRIPTION AND OPERATION

1. FAULT INDICATION - A FAULT IS INDICATED BY A RED "F" FLAG IN THE INDICATOR WINDOWS. A BLACK "N" FLAG WILL BE SHOWN DURING NORMAL OPERATION.
2. RESET - THE INDICATOR WILL RESET WHEN THE CONDUCTOR AROUND WHICH THE SENSOR HAS BEEN INSTALLED EXCEEDS 3 AMPS AND ONLY WHEN ALL THREE PHASES RETURN TO NORMAL.
3. MOUNTING - THE INDICATOR AND SENSOR ARE WATERPROOF AND MAY BE MOUNTED OR PLACED IN ANY POSITION. THE INDICATOR MAY BE WALL MOUNTED IN VAULTS OR MANHOLES USING 1/4" BOLTS OR SCREWS.
4. LINE POWER - IF LINE POWER IS REMOVED, THE INDICATOR WILL CONTINUE TO INDICATE THE LAST STATE OF LINE CURRENT BEFORE LINE POWER WAS REMOVED.
5. CONTROL CABLES - CONTROL CABLES ARE 20' LONG.

INSTALLATION OF SENSOR

1. INSTALL SENSORS ON THE PRIMARY CABLE JUST BELOW THE TERMINATOR.
2. PLACE SENSOR AROUND CONDUCTOR ABOVE THE GROUND BRAID.

APPLICATION

1. INSTALL ON THE CABLE AT A 600 AMP RISER POLE AND ON THE 600 AMP SIDE OF PAD-MOUNTED SWITCH GEAR.

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

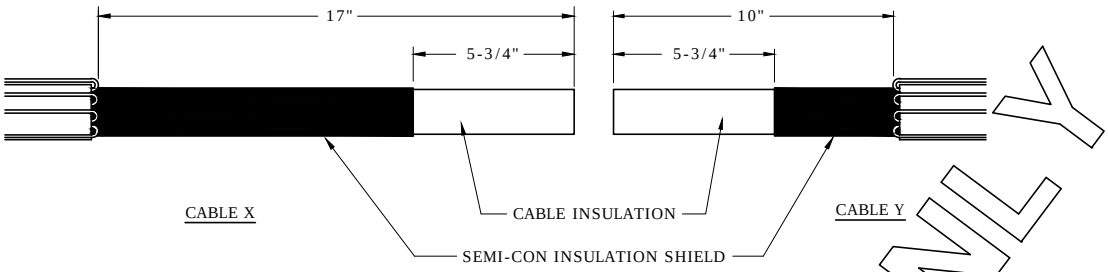
THREE-PHASE, AUTOMATIC RESET FAULT INDICATOR

Duke Energy®

CAR

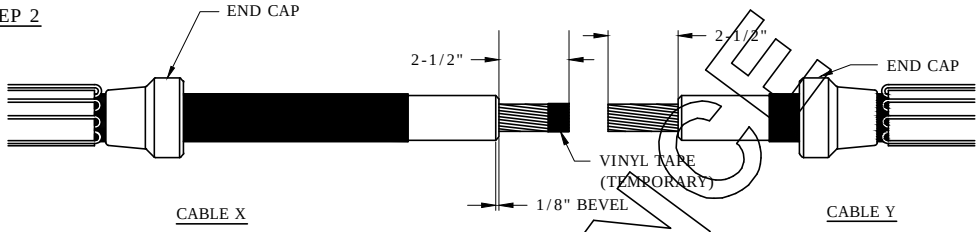
DWG. 26.07-06

STEP 1



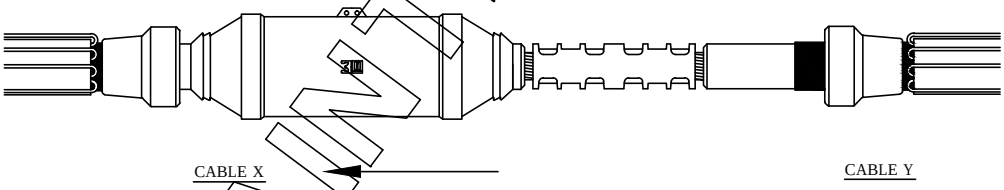
REMOVE OUTER JACKET 17" FROM END OF CABLE X AND 10" FROM END OF CABLE Y. FOLD CONCENTRIC NEUTRAL WIRES BACK. CAREFULLY REMOVE INSULATION SHIELD 5-3/4" FROM END OF EACH CABLE.

STEP 2



REMOVE INSULATION 2-1/2" FROM END OF EACH CABLE. BEVEL INSULATION NO MORE THAN 1/8". APPLY SEVERAL WRAPS OF VINYL TAPE OVER CABLE X CONDUCTOR END TO PROTECT SPLICE BORE WHILE INSTALLING SPLICE BODY. SLIDE END CAPS ONTO THEIR RESPECTIVE CABLES. SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000).

STEP 3



GENEROUSLY LUBRICATE CABLE X WITH SILICONE GREASE PROVIDED AND SLIDE SPLICE BODY ONTO IT. REMOVE VINYL TAPE FROM CONDUCTOR, WIRE BRUSH CONDUCTOR AND INSTALL CONNECTOR. SEE TABLE BELOW FOR CRIMPING TOOL AND DIE INFORMATION. FILE OFF ANY SHARP CRIMP FLASH AND REMOVE EXCESS CONTACT AID. RECLEAN AND LUBRICATE EXPOSED INSULATION.

CRIMP CHART		
WIRE SIZE	TOOL	DIE
350	BURNDY Y46	P31ART
750	ALCOA 60A HUSKIE	6024AH HA-60-21
	BURNDY Y46 HUSKIE	P39ART HT61FC

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

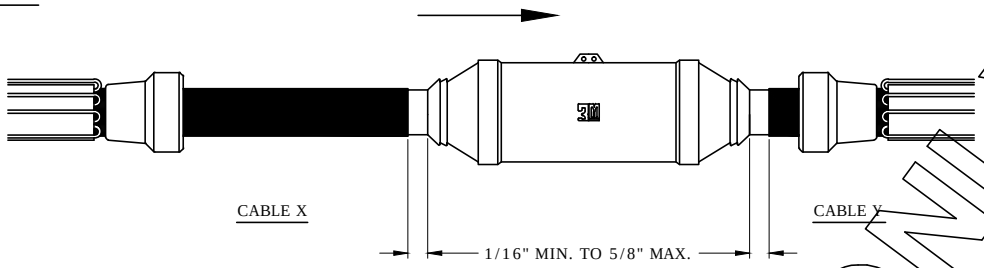
3M, 600 AMP STRAIGHT SPLICE
INSTALLATION INSTRUCTIONS (FMO)

Duke Energy®

CAR

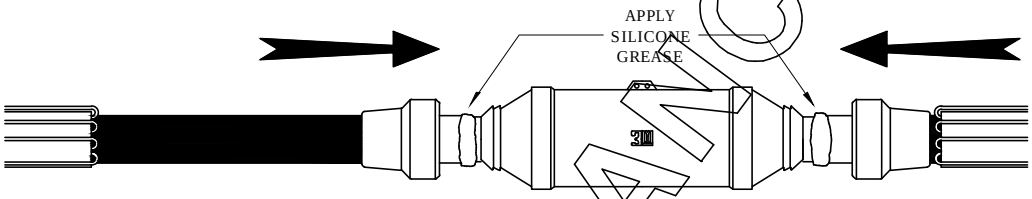
DWG. 26.01-01A

STEP 4



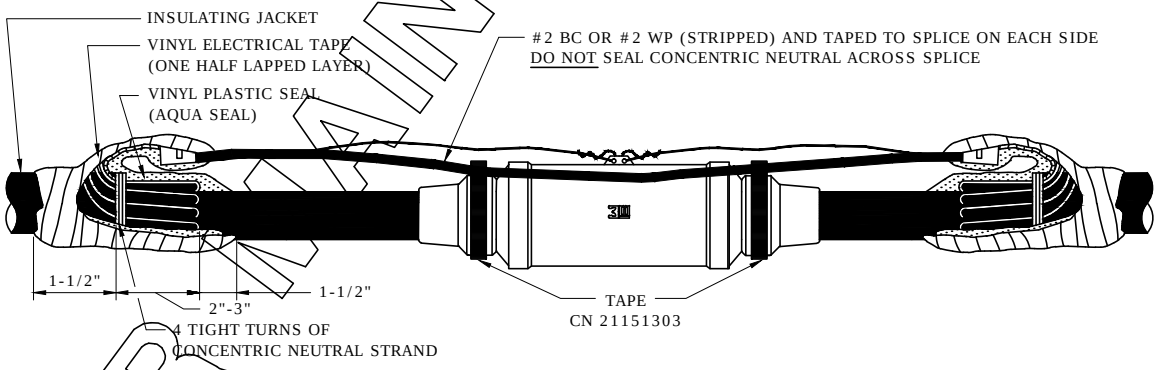
CENTER SPLICE HOUSING OVER CONNECTOR

STEP 5



APPLY SILICONE GREASE OVER EXPOSED INSULATION. FIRMLY SEAT ONE END CAP AGAINST SPLICE BODY BY TWISTING ONTO SPLICE BODY. WORKMAN SHOULD FEEL TWO SNAPS. CHECK FOR PROPER SPACING BETWEEN SPLICE BODY AND INSULATION SHIELD OF OTHER CABLE. FIRMLY SEAT REMAINING SPLICE CAP ONTO SPLICE BODY.

STEP 6



* SEAL CONCENTRIC NEUTRALS AT OUTER JACKET CUT BACK LOCATION AS SHOWN IN STEP 6.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

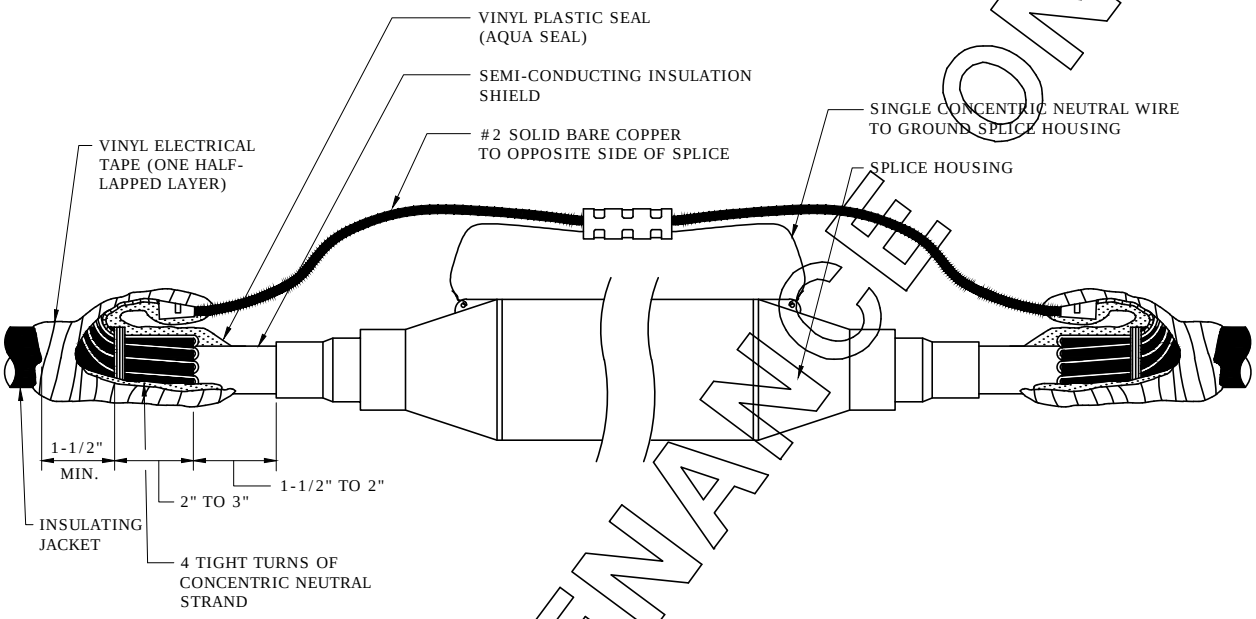
3M, 600 AMP STRAIGHT SPLICE

INSTALLATION INSTRUCTIONS (FMO)

Duke Energy®

CAR

DWG. 26.01-01B



NOTES:

1. USE CARE TO PREVENT BREAKING OF ANY CONCENTRIC NEUTRAL STRAND WIRES.
2. GROUND SPLICE HOUSING BY ATTACHING A PIECE OF CONCENTRIC NEUTRAL WIRE TO EACH GROUNDING EYE. RECONNECT THE NEUTRALS WITH A PIECE OF #2 SOLID COPPER.
3. SEE DWG. 26.01-20A, FOR APPROPRIATE SPLICE INSTALLATION INSTRUCTIONS.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

SEALING JACKETED CONCENTRIC NEUTRAL CABLE
DIRECT BURIED SPLICES (600 AMP SHOWN) (FMO)

Duke Energy®

CAR

DWG. 26.01-04

STEP 1: TRAIN CABLE INTO POSITION FOR MOUNTING LOCATION OF ELBOW AND CUT TO APPROPRIATE LENGTH FOR TERMINATION.

STEP 2: CABLE PREPARATION

(A) REMOVE POLYETHYLENE JACKET 12-3/4" FROM END OF CABLE. UNWRAP EXPOSED CONCENTRIC NEUTRAL WIRES, FOLD BACK, AND COMPLETE STEPS ONE THROUGH FIVE ON DWG. 26.03-02.

(B) SEE DWG. 26.00-01 FOR INSTRUCTIONS ON PREPARING CABLE FOR TERMINATION.

(C) RING CUT AND REMOVE SEMI-CONDUCTING INSULATION SHIELD A DISTANCE OF 9-3/4" FROM END OF CABLE. CARE MUST BE USED TO AVOID CUTTING CABLE INSULATION.

(D) BEVEL EDGE OF CABLE INSULATION NOT MORE THAN 1/4".

STEP 3: REMOVE NICKS AND ALL TRACES OF BLACK, SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION THOROUGHLY WITH CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). WIPE IN DIRECTION SHOWN. DO NOT POUR CLEANING FLUID DIRECTLY ON CABLE. ALLOW CABLE TO AIR DRY COMPLETELY BEFORE PROCEEDING.

STEP 4: MARK THE SEMI-CONDUCTING INSULATION SHIELD BY WRAPPING A PIECE OF TAPE EXACTLY 1" FROM THE CUT END OF THE SHIELD.

LUBRICATE CABLE INSULATION AND INSIDE SURFACE OF CABLE ADAPTER WITH SILICONE GREASE PROVIDED. SLIDE CABLE ADAPTER OVER CABLE UNTIL BLACK END OF ADAPTER IS FLUSH WITH MARKING TAPE ON SEMI-CONDUCTING INSULATION SHIELD.

STEP 5: WITH CABLE ADAPTER IN POSITION, REMOVE INSULATION FROM PROTRUDING CABLE BY CUTTING EVEN WITH END OF ADAPTER. CUT SQUARELY; DO NOT PENCIL CABLE OR ADAPTER.

VERIFY BY MEASURING THAT EXPOSED CONDUCTOR LENGTH IS 4-7/16".

STEP 6: WIRE BRUSH BARE CONDUCTOR WITH LAY OF STRANDS TOWARD END OF CABLE CLEANING CLEANING ALL "STRAND SEAL" FROM THE OUTER INTERSTICES. ONCE CLEAN, WIPE CONDUCTORS THOROUGHLY WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT POUR CLEANING FLUID DIRECTLY ON CONDUCTORS. ALLOW CABLES TO AIR DRY COMPLETELY BEFORE PROCEEDING.

STEP 7: ONCE CONDUCTOR HAS DRIED, IMMEDIATELY PLACE TERMINAL LUG ON CONDUCTOR. BEFORE MAKING FIRST CRIMP, ALIGN THE TERMINAL LUG SO THAT THE HOLE IN THE LUG WILL ALIGN WITH THE THREADED STUD ON THE CONNECTOR PLUG OR APPARATUS BUSHING.

STEP 8: MAKE FIRST CRIMP AT SHOULDER ON TERMINAL LUG. BE SURE TO KEEP CABLE BOTTOMED IN TERMINAL LUG WHEN MAKING FIRST CRIMP. ROTATE SECOND CRIMP 90°.

STEP 9: WIPE ALL EXCESS INHIBITOR FROM TERMINAL LUG AND ADAPTER SURFACE.

REMOVE PROTECTIVE CAP FROM ELBOW HOUSING CABLE ENTRANCE. LUBRICATE CABLE ADAPTER AND INSIDE OF ELBOW HOUSING WITH SILICON LUBRICANT PROVIDED. SLIDE THE CABLE INTO BODY OF ELBOW HOUSING UNTIL THE CABLE CANNOT ADVANCE FURTHER. REMOVE MARKING TAPE FROM CABLE.

STEP 10: VERIFY PROPER INSTALLATION OF ELBOW HOUSING IN ACCORDANCE WITH DETAIL "A". COMPLETE THE INSTALLATION OF THE JACKET SEAL PER DWG. 26.03-02 AND GROUND ELBOX HOUSING BY ATTACHING ONE OF THE CONCENTRIC NEUTRAL STRANDS TO GROUNDING EYE ON HOUSING.

EB350AL6DB25C
CN 11188307

EB750AL6DB25C
CN 11187309

REVISED		BY	CK'D	APPR.
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS

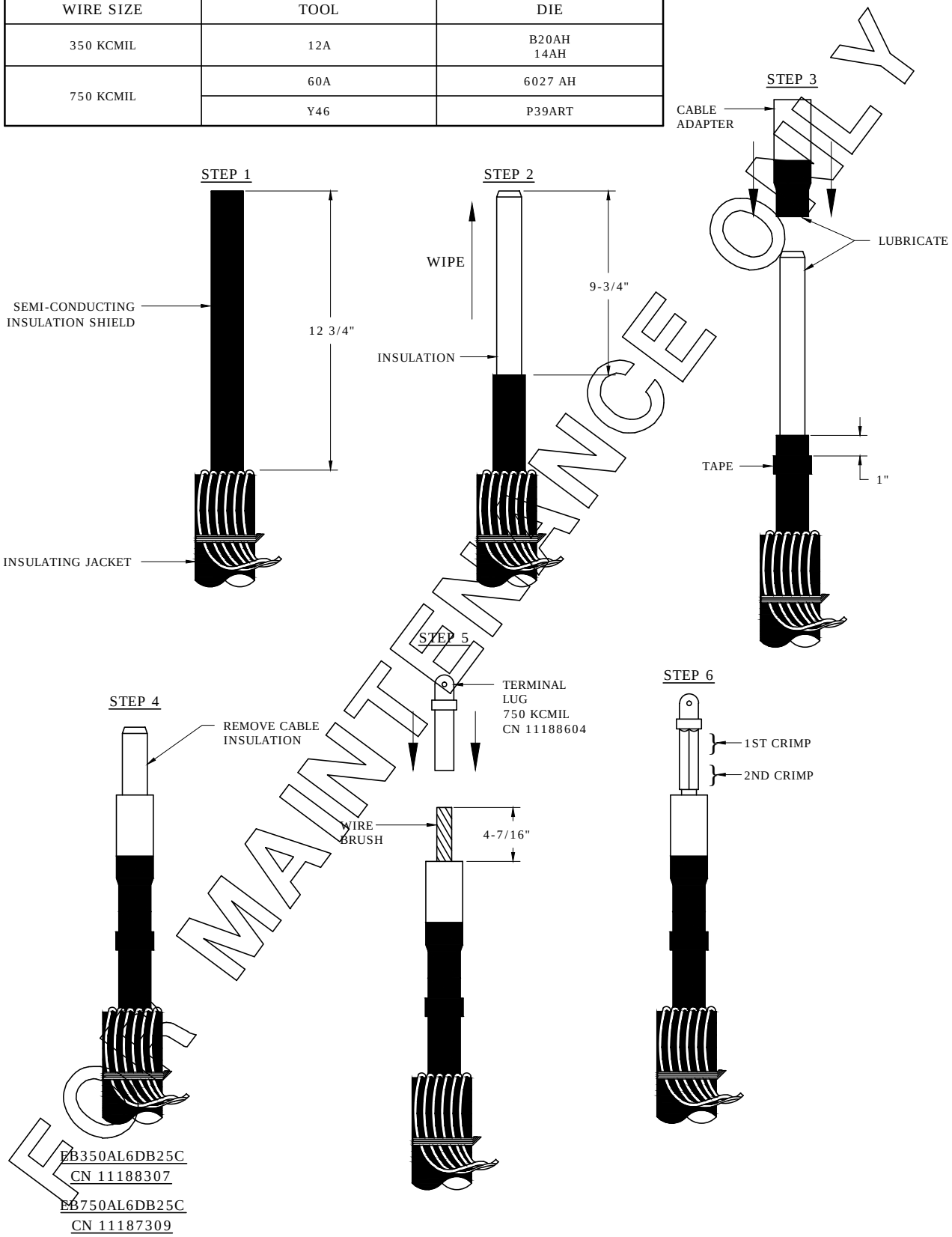
CN AND JCN 350/750 KCMIL
DEADBREAK ELBOW CONNECTOR
INSTALLATION INSTRUCTIONS (FMO)

Duke Energy®

CAR

DWG. 26.03-04A

TOOL AND DIE FOR COMPRESSING TERMINAL LUG		
WIRE SIZE	TOOL	DIE
350 KCMIL	12A	B20AH 14AH
750 KCMIL	60A	6027 AH
	Y46	P39ART



3				
2				
1				
0	6/8/10	ROBESON	GUINN	ROBESON
REVISED		BY	CK'D	APPR.

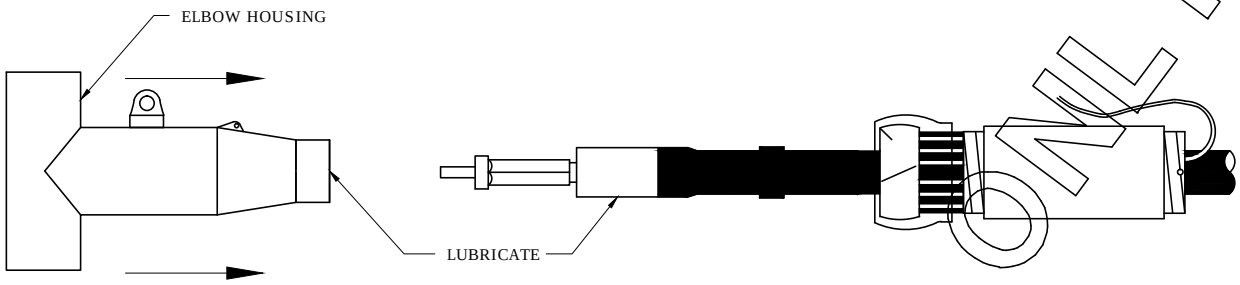
350/750 KCMIL CN AND JCN DEADBREAK ELBOW CONNECTOR INSTALLATION (FMO)

Duke Energy®

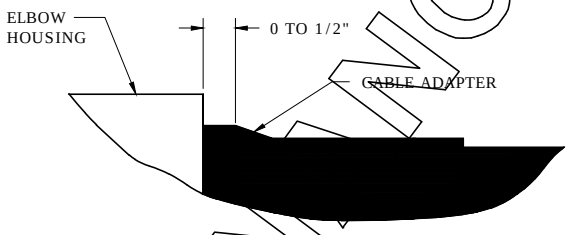
CAR

DWG. 26.03-04B

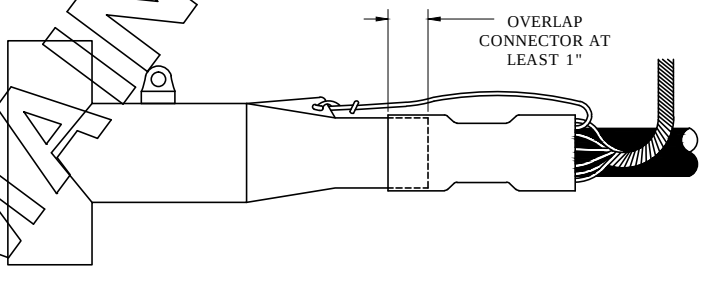
STEP 7



DETAIL "A"



STEP 8 & 9



NOTES:

1. FOR DETAILS ON CONCENTRIC NEUTRAL TERMINATION SEE DWG. 26.03-02.
2. FOR INSTALLATION INSTRUCTIONS SEE DWG. 26.03-04A.

EB350AL6DB25C
CN 11188307
EB750AL6DB25C
CN 11187309

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

350/750 KCMIL CN AND JCN DEADBREAK ELBOW CONNECTOR INSTALLATION (FMO)

Duke Energy®

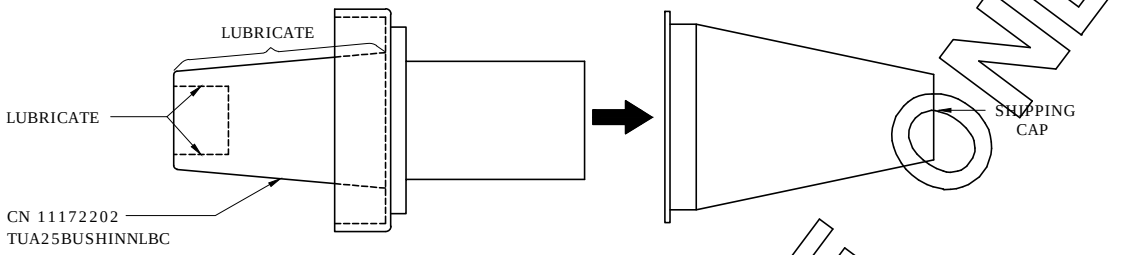
CAR

DWG. 26.03-04C

CAUTION: ALL ASSOCIATED APPARATUS MUST BE DE-ENERGIZED DURING INSTALLATION AND REMOVAL OF THIS ASSEMBLY.

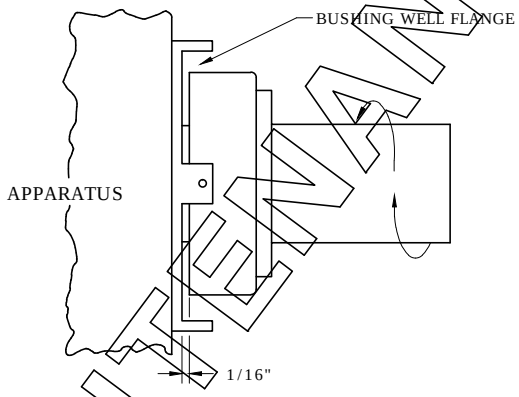
STEP 1

INSPECT THE APPARATUS BUSHING WELL TO MAKE SURE IT IS DRY AND CLEAR OF ALL CONTAMINANTS. REMOVE CONTAMINANTS. REMOVE THE PROTECTIVE SHIPPING CAP OF THE BUSHING PLUG INSERT AND LUBRICANT THE THE BUSHING WELL INTERFACE AREA WITH THE LUBRICANT SUPPLIED. DO NOT SUBSTITUTE.



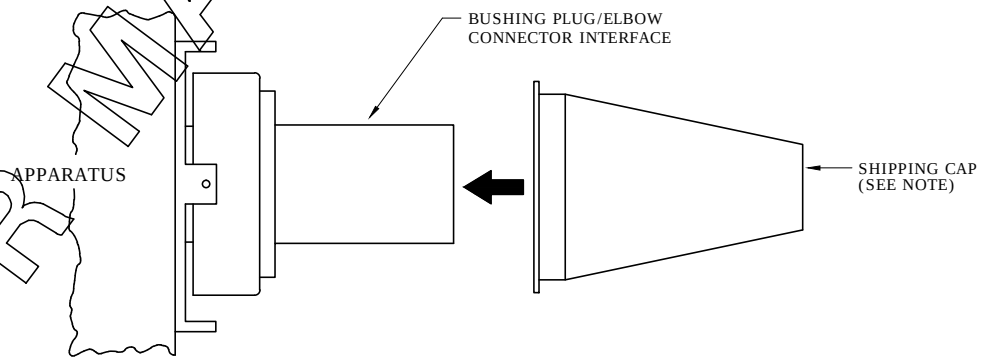
STEP 2

PLACE THE LUBRICATED PORTION OF THE BUSHING PLUG INSERT IN THE APPARATUS BUSHING WELL. ROTATE THE BUSHING PLUG INSERT IN A CLOCKWISE DIRECTION UNTIL THE CONDUCTIVE FLANGE OF THE BUSHING PLUG INSERT IS WITHIN 1/16" OF THE METAL FLANGE OF THE BUSHING WELL.



STEP 3

THOROUGHLY WIPE THE BUSHING PLUG/ELBOW CONNECTOR INTERFACE CLEAN OF ANY CONTAMINANTS. MATE THE DEADBREAK ELBOW CONNECTOR OR OTHER APPROPRIATE DEVICE TO THE BUSHING PLUG FOLLOWING THE INSTRUCTIONS PACKED WITH THE MATING DEVICE.



NOTES:

1. IF THE BUSHING PLUG IS NOT TO BE IMMEDIATELY MATED WITH AN ELBOW CONNECTOR OR OTHER MATING DEVICE, REPLACE THE PROTECTIVE SHIPPING CAP. (THIS IS A PROTECTIVE CAP ONLY, NOT AN INSULATING RECEPTACLE). DO NOT ENERGIZE THE APPARATUS WITH THE SHIPPING CAP ON THE BUSHING PLUG INSERT.

3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

DEADBREAK BUSHING PLUG INSERT

200 AMP (FMO)

Duke Energy®

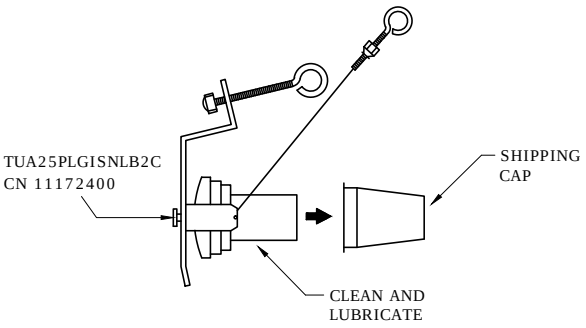
CAR

DWG. 26.05-04

CAUTION: ALL ASSOCIATED APPARATUS MUST BE DE-ENERGIZED DURING INSTALLATION AND REMOVAL OF THIS ASSEMBLY.

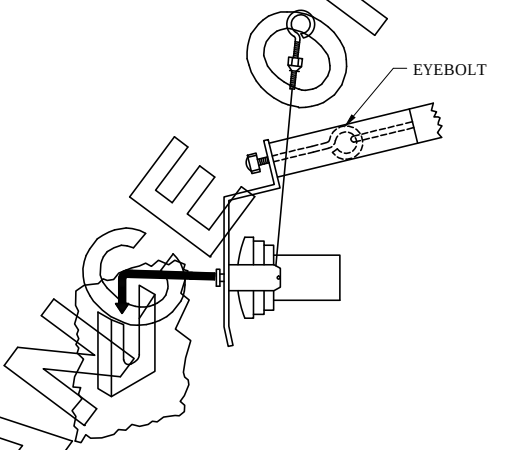
STEP 1

REMOVE PROTECTIVE SHIPPING CAP AND CLEAN THE MATING INTERFACE OF THE INSULATING BUSHING. LUBRICATE THIS SURFACE WITH THE SILICONE GREASE SUPPLIED. DO NOT SUBSTITUTE. ALWAYS REPLACE THE PROTECTIVE CAP WHEN INSULATING BUSHING IS NOT IN USE.



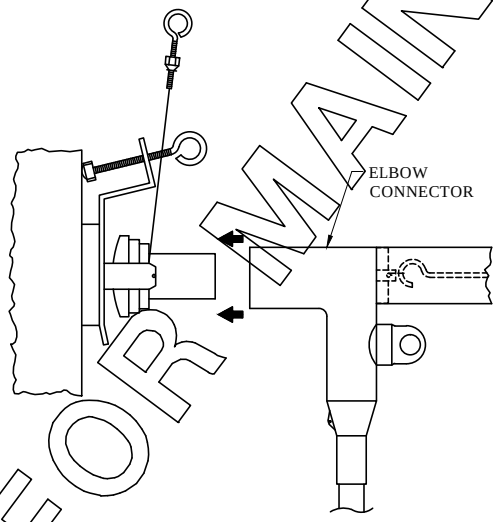
STEP 2

ATTACH HOTSTICK TO EYEBOLT OF INSULATING BUSHING CARRIAGE ASSEMBLY. SLIDE CARRIAGE ASSEMBLY INTO PARKING STAND. ROTATE EYEBOLT IN A CLOCKWISE DIRECTION UNTIL SNUG AGAINST THE APPARATUS SURFACE. PUSH BAIL OUT OF WAY SO IT WILL NOT INTERFERE WITH PLACEMENT OF ELBOW CONNECTOR.



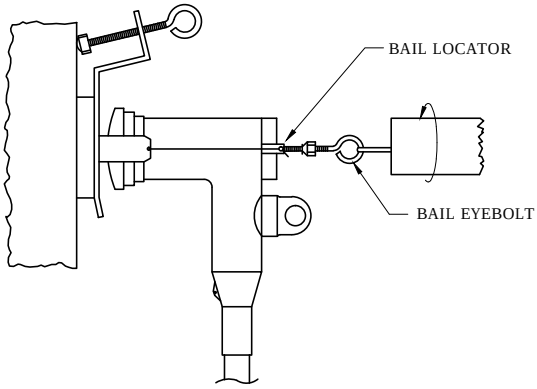
STEP 3

IF ELBOW CONNECTOR TO BE ISOLATED HAS A CAPACITANCE TEST POINT, FOLLOW THE APPLICABLE INSTRUCTIONS TO MAKE A VOLTAGE TEST BEFORE REMOVING IT FROM THE APPARATUS BUSHING. REMOVE ELBOW CONNECTOR FROM APPARATUS BUSHING AND PLACE ON INSULATING BUSHING. DO NOT REMOVE IF VOLTAGE TEST INDICATES CONNECTOR IS ENERGIZED.



STEP 4

POSITION THE BAIL EYEBOLT DIRECTLY OVER THE BAIL LOCATOR ON THE ELBOW. TIGHTEN DOWN ON BAIL LOCATOR BY TURNING EYEBOLT WITH THE HOTSTICK IN A CLOCKWISE DIRECTION. IF ENTIRE ASSEMBLY (INSULATING BUSHING AND ELBOW) IS TO BE REMOVED FROM PARKING STAND, ATTACH HOTSTICK TO EYE OF CARRIAGE ASSEMBLY, REMOVE FROM PARKING STAND AND PLACE WHERE DESIRED. TO RETURN ELBOW CONNECTOR TO APPARATUS BUSHING, SIMPLY REVERSE THE OPERATIONAL SEQUENCE.



NOTE: THIS DEADBREAK INSULATING BUSHING CAN BE CONVERTED FOR USE IN LOADBREAK PARKING STANDS OR DEADBREAK PARKING STANDS.

3				
2				
1				
O	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

DEADBREAK INSULATING BUSHING

200 AMP (FMO)

Duke Energy®

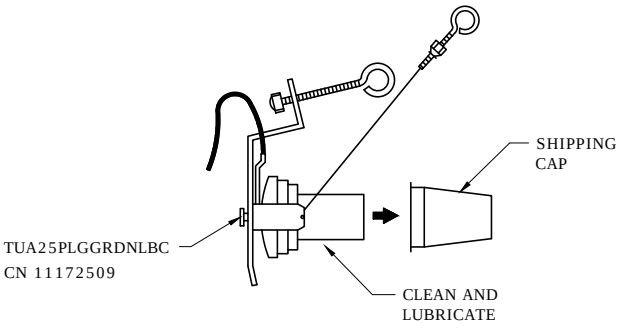
CAR

DWG. 26.05-06

CAUTION: ALL ASSOCIATED APPARATUS MUST BE DE-ENERGIZED DURING INSTALLATION AND REMOVAL OF THIS ASSEMBLY.

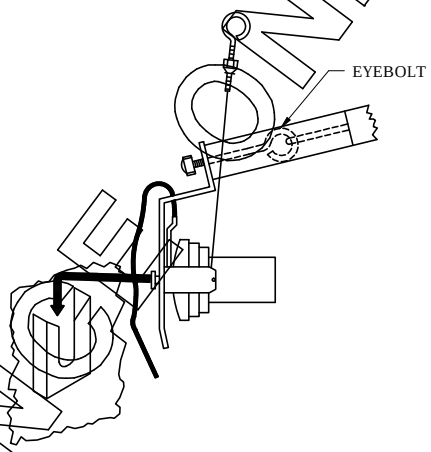
STEP 1

CONNECT FLEXIBLE LEAD OF THE GROUNDING BUSHING TO THE SYSTEM GROUND LEAVING ENOUGH SLACK TO OPERATE WITH A HOTSTICK. REMOVE THE PROTECTIVE SHIPPING CAP AND CLEAN THE MATING INTERFACE OF THE GROUNDING BUSHING. LUBRICATE THIS SURFACE WITH THE SILICONE GREASE SUPPLIED. DO NOT SUBSTITUTE. ALWAYS REPLACE PROTECTIVE CAP WHEN GROUNDING BUSHING IS NOT IN USE.



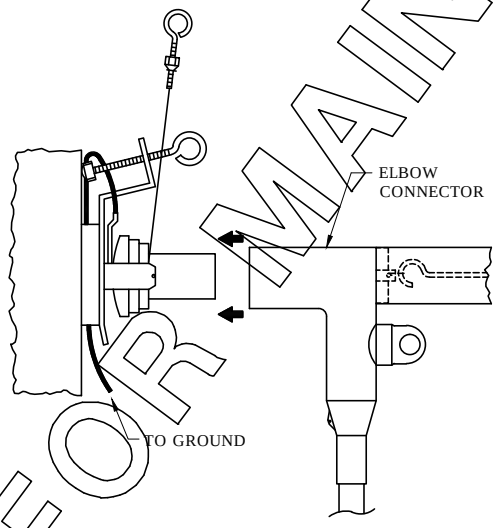
STEP 2

ATTACH HOTSTICK TO EYEBOLT OF GROUNDING BUSHING CARRIAGE ASSEMBLY. SLIDE CARRIAGE ASSEMBLY INTO PARKING STAND. PUSH BAIL OUT OF WAY SO IT WILL NOT INTERFERE WITH PLACEMENT OF ELBOW CONNECTOR.



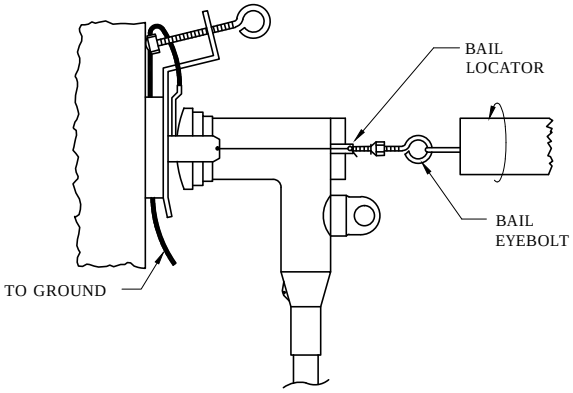
STEP 3

IF ELBOW CONNECTOR TO BE GROUNDED HAS A CAPACITANCE TEST POINT, FOLLOW THE APPLICABLE INSTRUCTIONS TO MAKE A VOLTAGE TEST BEFORE REMOVING IT FROM THE APPARATUS BUSHING. REMOVE ELBOW CONNECTOR FROM APPARATUS BUSHING AND PLACE ON GROUNDING BUSHING. DO NOT REMOVE IF VOLTAGE TEST INDICATES CONNECTOR IS ENERGIZED.



STEP 4

MOVE THE BAIL SO THE EYEBOLT IS DIRECTLY OVER THE BAIL LOCATOR ON THE ELBOW. TIGHTEN DOWN ON BAIL LOCATOR BY TURNING EYEBOLT WITH THE HOTSTICK IN A CLOCKWISE DIRECTION. IF ENTIRE ASSEMBLY (GROUNDING BUSHING AND ELBOW) IS TO BE REMOVED FROM PARKING STAND, ATTACH HOTSTICK TO EYE OF CARRIAGE ASSEMBLY, REMOVE FROM PARKING STAND AND PLACE WHERE DESIRED. TO RETURN ELBOW CONNECTOR TO APPARATUS BUSHING, SIMPLY REVERSE THE OPERATIONAL SEQUENCE.



NOTES:

1. THIS DEADBREAK GROUNDING BUSHING CAN BE CONVERTED FOR USE IN LOADBREAK PARKING STANDS OR DEADBREAK PARKING STANDS.

3				
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1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

DEADBREAK GROUNDING BUSHING

200 AMP (FMO)

Duke Energy®

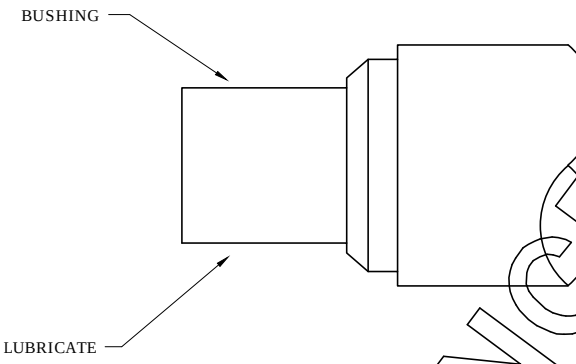
CAR

DWG. 26.05-08

CAUTION: ALL ASSOCIATED APPARATUS MUST BE DE-ENERGIZED DURING INSTALLATION AND REMOVAL OF THIS ASSEMBLY.

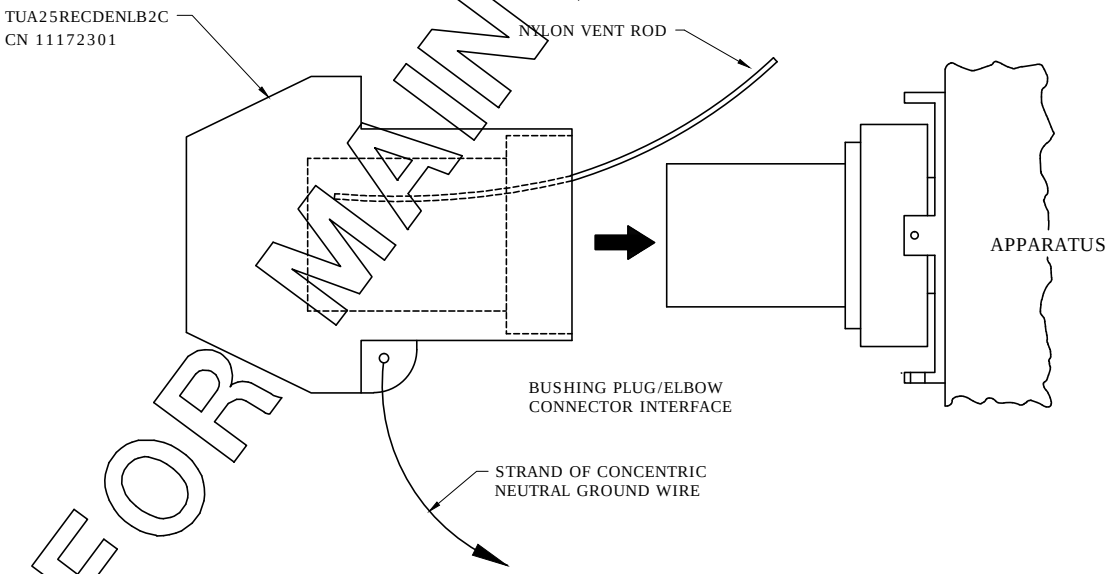
STEP 1

LUBRICATE THE BUSHING PORTION OF THE MATING PRODUCT DESIRED TO BE DEAD-ENDED WITH SILICONE GREASE SUPPLIED. DO NOT SUBSTITUTE.



STEP 2

INSERT THE NYLON VENTING ROD INTO THE DEAD-END RECEPTACLE TO EXHAUST THE AIR DURING ASSEMBLY. PUSH THE DEAD-END RECEPTACLE ONTO THE BUSHING AS FAR AS POSSIBLE. REMOVE THE NYLON VENTING ROD TO COMPLETE THE INSTALLATION.



REVISED	BY	CK'D	APPR.
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS

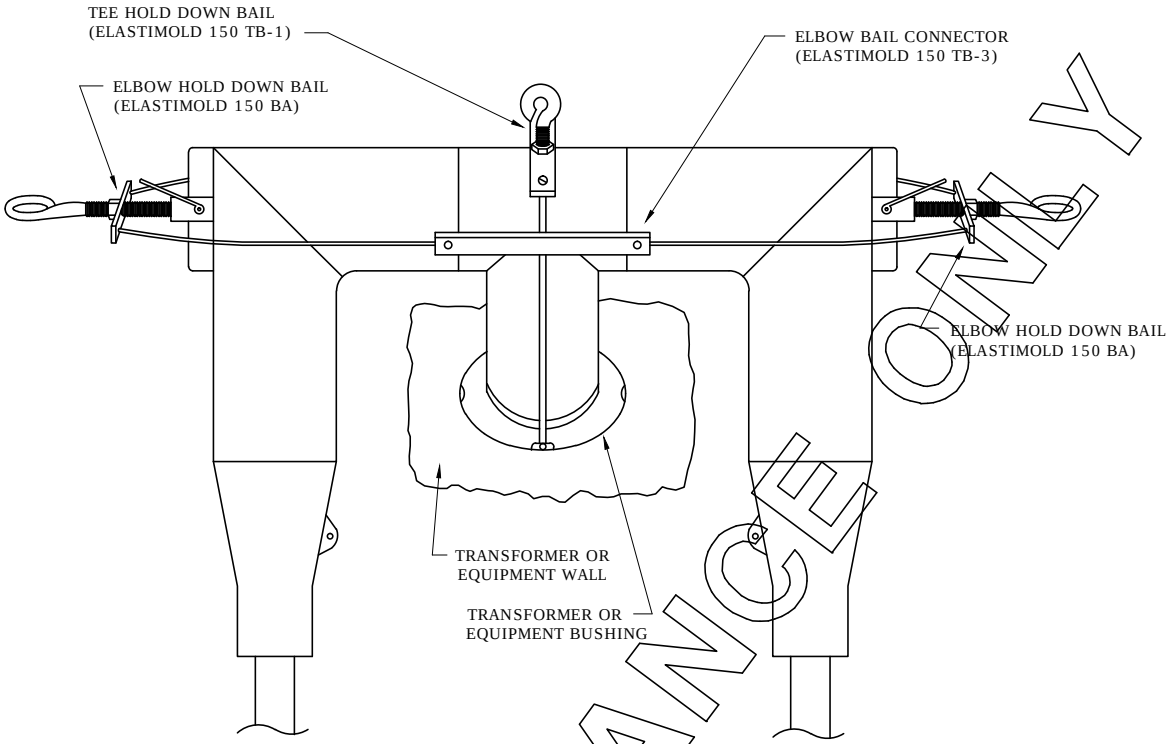
DEADBREAK DEAD-END RECEPTACLE

200 AMP (FMO)

Duke Energy®

CAR

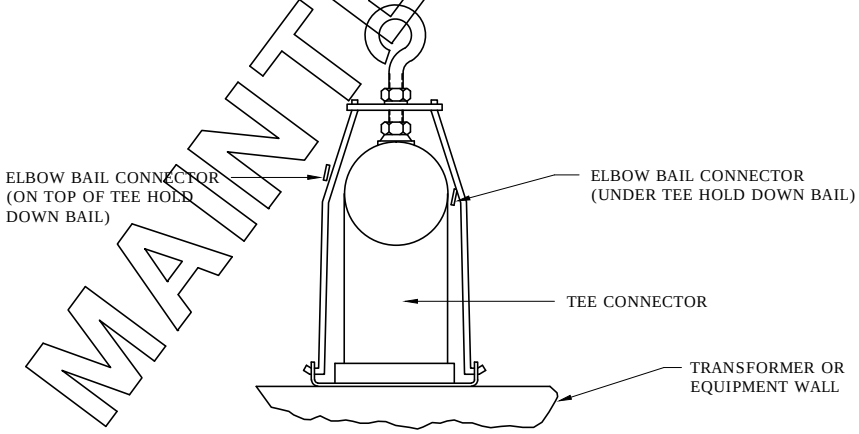
DWG. 26.05-09



NOTES:

1. HOLD DOWN BAILS (150 BA) ARE SHIPPED IN SAME PACKAGE WITH ELBOW.

2. HOLD DOWN BAILS (150 TB 1) AND ELBOW BAIL CONNECTORS (150 TB-3) ARE SHIPPED IN A SEPARATE PACKAGE STAPLED TO THE PACKAGE CONTAINING A TEE CONNECTOR.



NOTES:

1. THE 150 TB-1 AND 150 BA HOLD DOWN BAILS ARE NOT INTERCHANGEABLE.

2. FOR CORRECT INSTALLATION:

   STEP 1: INSTALL TEE CONNECTOR AND HOLD DOWN BAIL ON BUSHING INSERT.
   STEP 2: INSTALL ELBOWS ON TEE CONNECTOR USING THE HOLD DOWN BAILS AND BAIL CONNECTORS AS SHOWN ABOVE.

CAUTION: DO NOT ATTEMPT TO CONNECT OR DISCONNECT THE TEE CONNECTOR OR ELBOWS WHEN ENERGIZED. INSULATE WITH AN INSULATING PLUG OR RECEPTACLE BEFORE ENERGIZING A DISCONNECTED ELBOW OR TEE CONNECTOR.

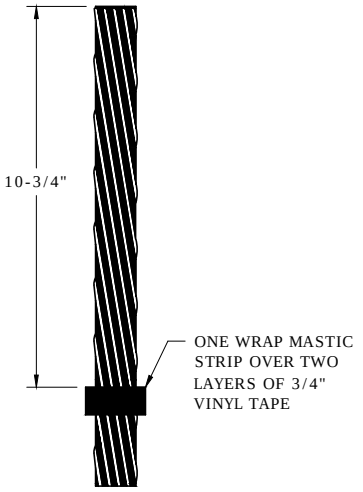
3				
2				
1				
0	6/8/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

INSTALLATION INSTRUCTIONS FOR 200 AMP ELASTIMOLD DEADBREAK TEE CONNECTOR (FMO)

Duke Energy®

CAR

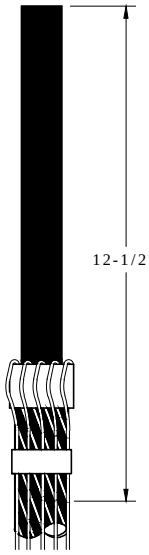
DWG. 26.05-11



A) WRAP TWO HIGHLY STRETCHED LAYERS OF 3/4" VINYL TAPE (CN 21151204) AROUND THE CONCENTRIC NEUTRAL 10-3/4" FROM THE END OF CABLE.

B) WRAP ONE LAYER OF MASTIC STRIP (INCLUDED WITH KIT) DIRECTLY OVER THE VINYL TAPE. CUT OFF EXCESS MASTIC.

STEP 1

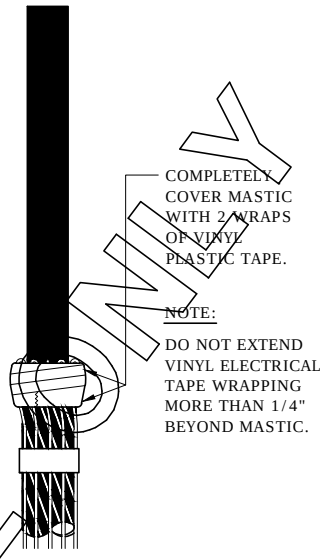


A) FOLD CONCENTRIC NEUTRAL WIRES BACK. NOTE: KEEP NEUTRALS SEPARATED AS THEY ARE FOLDED BACK TO ASSURE A GOOD MOISTURE SEAL. PRESS NEUTRALS INTO MASTIC.

B) SECURE NEUTRAL WIRES TO CABLE JACKET WITH VINYL ELECTRICAL TAPE 12-1/2" BELOW END OF CABLE.

NOTE: SECURING TAPE ALSO SERVES AS MARKING TAPE.

STEP 2

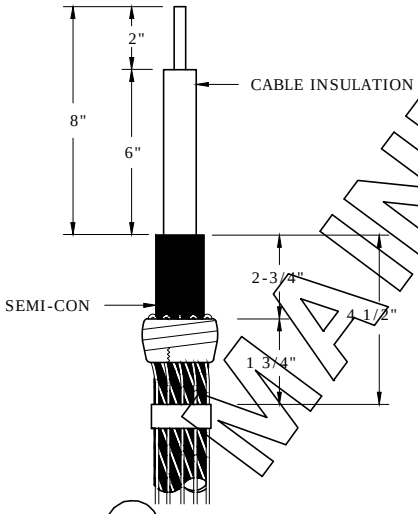


A) WRAP SECOND LAYER OF MASTIC STRIP OVER NEUTRAL WIRES AND PREVIOUSLY APPLIED MASTIC (ONE LAYER, CUT OFF EXCESS).

B) WRAP TWO STRETCHED LAYERS OF 3/4" VINYL ELECTRICAL TAPE (CN 21151204) TIGHTLY OVER MASTIC. KEEP SEAL DIAMETER SMALL SO THAT CORE WILL BE EASY TO REMOVE.

NOTE: BE SURE TO COVER ALL EXPOSED MASTIC ONLY.

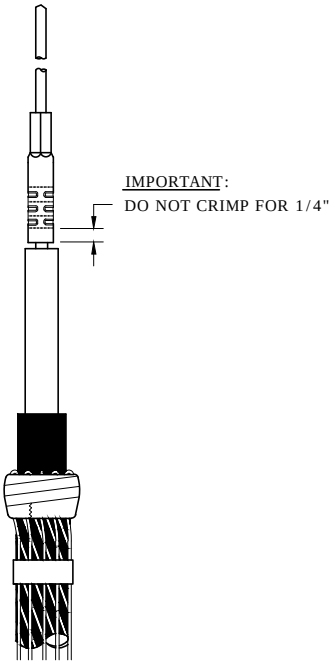
STEP 3



A) REMOVE SEMI-CON 8" FROM END OF CABLE.
IMPORTANT: DO NOT EXTEND SCORING BLADE THROUGH SEMI-CON INTO INSULATION.

B) REMOVE INSULATION 2" FROM END OF CABLE.
NOTE: SPECIAL CARE SHOULD BE TAKEN NOT TO CUT OR NICK THE INSULATION OR CONDUCTOR. REMOVE NICKS AND ALL TRACES OF SEMI-CONDUCTING PARTICLE RESIDUE FROM EXPOSED INSULATION BY SANDING WITH NON-METALLIC SANDING CLOTH (CN 30633705). ONCE CLEAN, WIPE EXPOSED INSULATION WITH A CLEAN CLOTH MOISTENED WITH CABLE CLEANING FLUID (CN 30525000). DO NOT ALLOW SOLVENT TO TOUCH SEMI-CON!

STEP 4 (PREPARE CABLE)



A) INSERT CONDUCTOR IN COMPRESSION LUG.

B) CRIMP BETWEEN KNURL MARKS STARTING AT TOP OF BARREL. NOTE: ROTATE CRIMPS 90°. DO NOT CRIMP LAST 1/4" OF LUG.

C) CLEAN EXCESS INHIBITOR FROM CABLE AND LUG.

STEP 5

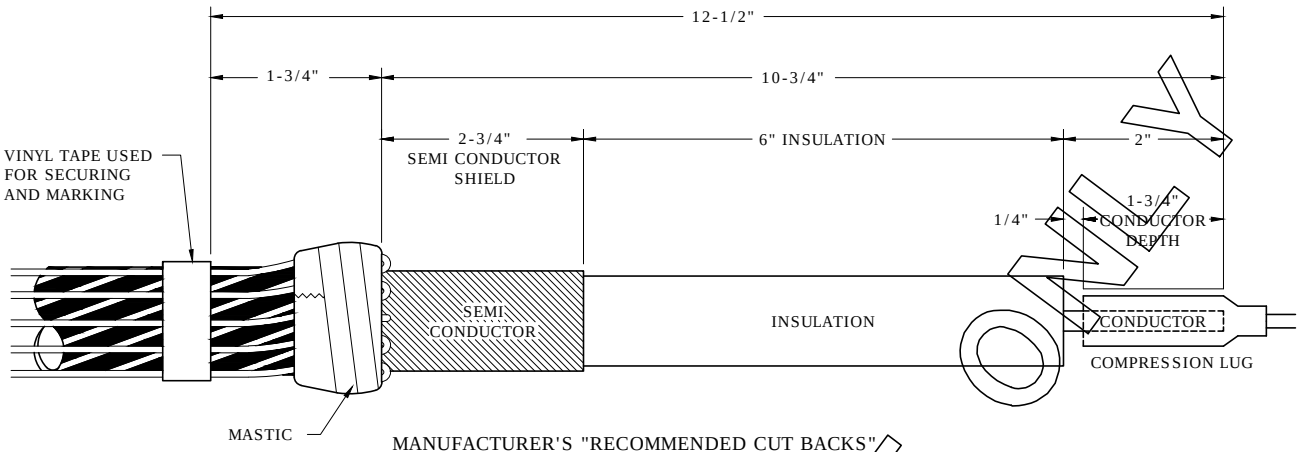
3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, QTIII, 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS CONCENTRIC NEUTRAL (CN) (FMO)

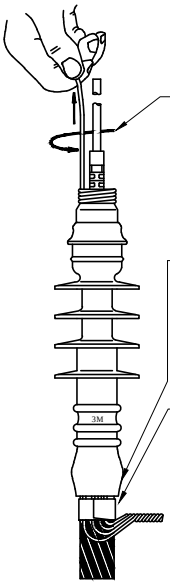
Duke Energy®

CAR

DWG. 26.06-07C



MANUFACTURER'S "RECOMMENDED CUT BACKS"



REMOVE CORE OF TERMINATOR BY PULLING AND UNWINDING COUNTERCLOCKWISE

NOTE: BY DESIGN, BOTTOM OF THE TERMINATOR MUST BE IN CONTACT WITH THE NEUTRAL WIRES.

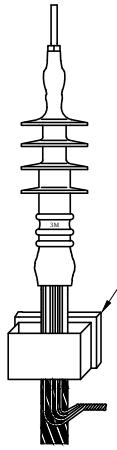
ALIGN BASE OF TERMINATOR WITH MARKER TAPE

A) SLIDE TERMINATOR OVER CABLE. GENTLY REMOVE EXCESS CORE ALIGNING BASE WITH MARKER TAPE.

B) HOLD TERMINATOR (AT THE BASE) WITH ONE HAND WHILE REMOVING CORE WITH OTHER HAND. REMOVE CORE BY UNWINDING COUNTER-CLOCKWISE.

NOTE: ONCE TERMINATION INSULATOR HAS SEALED OVER PREVIOUSLY APPLIED MASTIC, HOLDING TERMINATOR IS NO LONGER NEEDED.

STEP 6



SENSING CORE

IF FAULT INDICATOR IS INSTALLED, CONCENTRIC NEUTRAL WIRES SHOULD BE RUN THROUGH SENSING CORE.

STEP 7 (OPTIONAL)

NOTES:

1. TO REMOVE TERMINATOR ALREADY INSTALLED ON CABLE, CAREFULLY CUT DOWN THE LENGTH OF THE TERMINATOR, BEING CAREFUL NOT TO CUT OR NICK THE CABLE SEMI-CON OR INSULATION.

CAROLINAS BILL OF MATERIALS

MACRO UNIT	CU ITEM NO.	COMPATIBLE UNIT	QTY REQ'D	CATALOG NUMBER	QTY PER CU	DESCRIPTION
-	1	TRM10AL225KITC	1	11171907	1	#1/0 MODULAR TERMINAL

3				
2				
1				
0	6/9/10	ROBESON	GUINN	ELKINS
REVISED		BY	CK'D	APPR.

3M, QTIII, 200 AMP CABLE TERMINATOR INSTALLATION INSTRUCTIONS CONCENTRIC NEUTRAL (CN) (FMO)

Duke Energy®

CAR

DWG. 26.06-07D