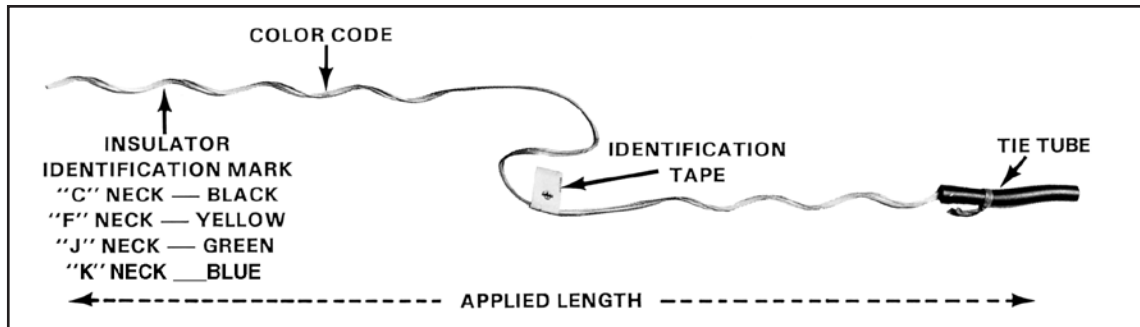


Distribution Tie

NOMENCLATURE



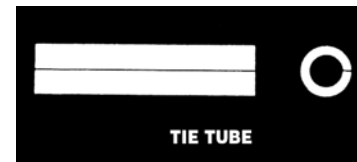
Tie Tube: Each tie is furnished with Tie Tube Component. The Tie Tube is detached and applied over the conductor.

Identification Tape: Shows catalog number, nominal sizes.

Color Code: Identifies conductor diameter ranges.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Applied Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.



GENERAL RECOMMENDATIONS

INTENDED USE: Distribution Ties manufactured of aluminum covered steel secure conductors in the top groove of interchangeable headstyle insulators.

Distribution Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods. Distribution Ties provide superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation, high frequency aeolian vibration, and galloping. The tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator and with the center section of the tie. In the case of Distribution Ties applied over plastic jacketed conductor, the tube can be disposed of because contact with the bare conductor is prevented by the jacketing itself.

PREFORMED™ Plastic Line Ties are also offered as an alternate to metal ties applied over plastic jacketed conductor.

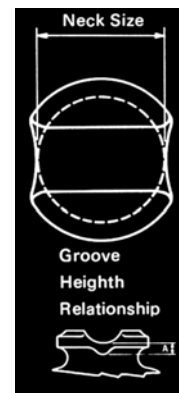
INTERCHANGEABLE HEADSTYLE INSULATOR: To insure proper fit and service life, it is recommended that only insulators corresponding to C-neck, F-neck, J-neck, or K-neck be used. These neck-diameter and groove-height dimensions appear on ANSI standards.

Consult the Factory for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: Distribution Ties can accommodate conductor diameters from .190" to 1.585" for F neck insulators and .190" to 1.240" for other size insulators as long as the insulator top groove is large enough. Consult the tables in this section for minimum groove radii required for a specific tie and conductor diameter range.

RADIO INTERFERENCE: The RIV characteristics of Distribution Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured Tie assures continued fit, which would have better RIV than a loosened tie wire.

DOUBLE SUPPORTS: At double crossarms PREFORMED Double-Support Tie can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.



(Continued)

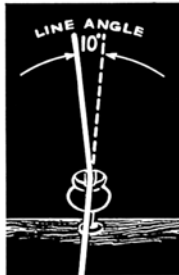


Distribution Tie

GENERAL RECOMMENDATIONS CONTD.

LINE ANGLES -

GENERAL GUIDELINES: On vertically-mounted insulators, Distribution Ties can normally accommodate line angles up to 10°. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. Combining Side Ties with Distribution Ties on a single structure can also affect the acceptable line angles for that structure.



A technical report (**TM-197E**) is available which describes these various permissible line angles of Distribution Ties as a function of the insulator cant.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues not covered in the above test report.

MECHANICAL STRENGTH: The Distribution Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strengths are usually sufficient to contain broken conductors to a single span and minimize damage to the conductor and other structure components.

The Distribution Tie is designed to permit controlled and limited movement of unbroken conductor and, under certain conditions, return the conductor to its original position. The ability of the Tie to give and return under differential loading conditions is called “resiliency” and is designed into each Distribution Tie. **TM-166E** covers the mechanical testing of the Distribution Tie and is available upon request.

VIBRATION DAMPERS: By using Distribution Ties, abrasion can not reduce the fatigue life of the conductor. However, for lines where experience indicates that prolonged periods of vibration might lead to fatigue of the conductor, cause inner wire fretting, or score the insulator’s glaze, SVD’s are recommended.

The following are guideline definitions for vibration activity. Application of these guidelines should be based on a utility’s field experience.

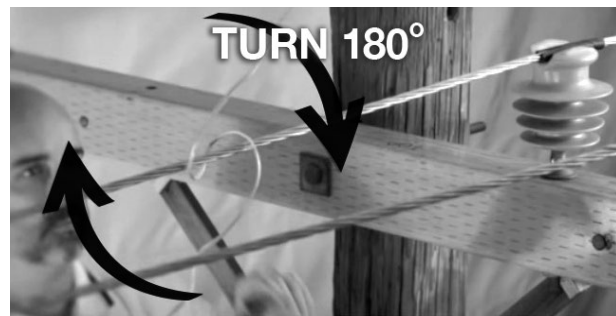
“**Excessive**” Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately one-half or more of the rod diameter has been abraded.

“**Severe**” Vibration: Areas where abrasion has required replacement of hand tie wire, but damage to protective rods has not progressed to the point where replacement is necessary.

“**Moderate**” Vibration: Areas where replacement of hand tie wire has not been required, and damage is minor. Distribution Ties, with tubes, provide protection on areas of “moderate” vibration.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Distribution Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.

APPLICATION-INSPECTION: The Distribution Tie can be installed parallel to the pole when pole or conductor clearance is critical. Application Procedures and videos are available.



SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. **CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.**
2. This product is intended for use by trained craftspeople only. This product **SHOULD NOT BE USED** by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, **EXTRA CARE** should be taken to prevent accidental electrical contact.
4. For **PROPER PERFORMANCE AND PERSONAL SAFETY** be sure to select the proper size **PREFORMED™** Distribution Tie before application.
5. **PREFORMED** Distribution Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Distribution Tie

For use on:
**ACSR, Compacted ACSR,
 Aluminum Alloy,
 All-Aluminum, AWAC®
 Compacted All-Aluminum**

**C-Neck Interchangeable
 Headstyle Insulators**

**ANSI 55-2 Pin 2-1/4" Neck Diameter
 ANSI 55-3 Pin**



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units Per Carton	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.						
9/16" R. GROOVE (See Note 2)								
UTC-1100	.190	.215	#6, 6/1 – #4, 7W Comp.	100	17	24	Black	Blue
UTC-1101	.216	.244	#4, 7W All Alum. – #4, 6/1, 7/1 Comp.	100	18	25	Black	Brown
UTC-1102	.245	.277	#4, 6/1, 7/1 – #4, 7W Alum. Alloy	100	18	26	Black	Orange
UTC-1103	.278	.315	#3, 7W Alum. Alloy – #2, 7W All Alum.	100	18	26	Black	Purple
UTC-1104	.316	.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy #1, 6/1	100	19	28	Black	Red
UTC-1105	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	20	30	Black	Yellow
UTC-1106	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	17	25	Black	Blue
UTC-1107	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	17	25	Black	Orange
UTC-1108	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	18	28	Black	Red
UTC-1109	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	18	30	Black	Purple
9/16" R. GROOVE (See Note 2)								
UTC-1110	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	19	31	Black	Brown
UTC-1111	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	19	32	Black	Red
5/8" R. GROOVE (See Note 2)								
UTC-1112	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	20	34	Black	Blue
3/4" R. GROOVE (See Note 2)								
UTC-1113	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	21	37	Black	Green
UTC-1114	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W All Alum.	50	22	40	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
- (2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.



Distribution Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy,
All-Aluminum, AWAC®
Compacted All-Aluminum

F-Neck Interchangeable
Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Pin 2-7/8" Neck Diameter
ANSI 57-2 Pin
ANSI 57-3 Pin



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
UTF-1200	.190	.215	#6, 6/1 #4, 7W Comp.	100	18	25	Yellow	Blue
UTF-1201	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	19	26	Yellow	Brown
UTF-1202	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	19	27	Yellow	Orange
UTF-1203	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	20	29	Yellow	Purple
UTF-1204	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	20	31	Yellow	Red
UTF-1205	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	32	Yellow	Yellow
UTF-1206	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	18	26	Yellow	Blue
UTF-1207	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	18	27	Yellow	Orange
UTF-1208	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	19	29	Yellow	Red
UTF-1209	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	19	32	Yellow	Purple
9/16" R. GROOVE (See Note 2)								
UTF-1210	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	20	32	Yellow	Brown
UTF-1211	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	20	33	Yellow	Red
5/8" R. GROOVE (See Note 2)								
UTF-1212	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	21	35	Yellow	Blue
3/4" R. GROOVE (See Note 2)								
UTF-1213	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	22	38	Yellow	Green
UTF-1214	1.097	1.240	954, 36/1 1033.5, 37W, 61W All Alum. 954, 54/7	50	23	41	Yellow	Yellow
1" R. GROOVE (See Note 2)								
UTF-1215	1.241	1.402	1033.5, 54/7 1272, 45/7	50	25	43	Yellow	Orange
UTF-1216	1.403	1.585	1351.5, 54/19 1590, 45/7	50	26	45	Yellow	Black

Right-hand lay standard

EXPLANATORY NOTES:

- (1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
- (2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

For use on:
**ACSR, Compacted ACSR,
 Aluminum Alloy,
 All-Aluminum, AWAC®
 Compacted All-Aluminum**

**J-Neck Interchangeable
 Headstyle Insulators**

**ANSI 55-6 Pin
 ANSI 55-7 Pin 3-1/2" Neck Diameter
 ANSI 56-1 Pin**



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
UTJ-1300	.190	.215	#6, 6/1 #4, 7W Comp.	100	24	26	Green	Blue
UTJ-1301	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	24	27	Green	Brown
UTJ-1302	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	25	28	Green	Orange
UTJ-1303	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	27	30	Green	Purple
UTJ-1304	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	29	32	Green	Red
UTJ-1305	.358	.405	1/0, 7W All Alum. 1/0, 6/1, 1/0, 7W Alum. Alloy	100	31	33	Green	Yellow
UTJ-1306	.406	.459	2/0, 7W All Alum. 2/0, 6/1, 2/0, 7W Alum. Alloy	50	20	27	Green	Blue
UTJ-1307	.460	.520	3/0, 7W All Alum. 3/0, 6/1, 3/0, 7W Alum. Alloy	50	21	28	Green	Orange
UTJ-1308	.521	.588	4/0, 7W All Alum. 4/0, 6/1, 4/0, 7W Alum. Alloy	50	22	30	Green	Red
UTJ-1309	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	22	33	Green	Purple
9/16" R. GROOVE (See Note 2)								
UTJ-1310	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	23	33	Green	Brown
UTJ-1311	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	27	34	Green	Red
5/8" R. GROOVE (See Note 2)								
UTJ-1312	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	27	36	Green	Blue
3/4" R. GROOVE (See Note 2)								
UTJ-1313	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	30	39	Green	Green
UTJ-1314	1.097	1.240	954, 36/1 954, 54/7 1033.5, 37W, 61W All Alum.	50	31	42	Green	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
- (2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.



Distribution Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy,
All-Aluminum, AWAC®
Compacted All-Aluminum

K-Neck Interchangeable
Headstyle Insulators

ANSI 56-2 Pin
ANSI 56-3 Pin **4" Neck Diameter**



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
UTK-1602	.245	.277	#4, 6/1 #4, 7W AAC	100	27	32	Blue	Orange
UTK-1604	.316	.357	#2, 6/1, 7/1 #2, 7W AAAC #1, 6/1	100	31	36	Blue	Red
UTK-1605	.358	.405	1/0, 7W AAC 1/0, 6/1, 1/0, 7W AAAC	100	31	38	Blue	Yellow
UTK-1606	.406	.459	2/0, 7W AAC 2/0, 6/1, 2/0, 7W AAAC	50	21	31	Blue	Blue
UTK-1607	.460	.520	3/0, 7W AAC 3/0, 6/1, 3/0, 7W AAAC	50	22	32	Blue	Orange
UTK-1608	.521	.588	4/0, 7W AAC 4/0, 6/1, 4/0, 7W AAAC	50	23	34	Blue	Red
UTK-1609	.589	.665	266.8, 37W AAC 266.8, 18/1	50	25	36	Blue	Purple
UTK-1610	.666	.755	336.4, 19W AAC 336.4, 18/1 397.5, 19W AAC	50	25	37	Blue	Brown
UTK-1611	.756	.858	477, 19W, 37W AAC 477, 18/1, 24/7, 26/7	50	27	38	Blue	Red
5/8", R. GROOVE (See Note 2)								
UTK-1612	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W AAC	50	27	40	Blue	Blue
3/4", R. GROOVE (See Note 2)								
UTK-1613	.969	1.096	795, 37W, 61W AAC 715.5, 24/7 795, 54/7	50	29	43	Blue	Green
UTK-1614	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, AAC	50	30	46	Blue	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
- (2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.