

DOUBLE SUPPORT TIE

Double Support Ties provide a vastly improved method of securing conductor in the top groove of interchangeable headstyle insulators in double insulator construction applications. The loop of the Double Support Tie has been engineered so "C" and "F" insulators can be accommodated by a single tie design. A separate design is required for "J" neck insulators. Each Double Support Tie is supplied with elastomer tie tubes designed to minimize abrasion to bare conductor and insulators.

FEATURES AND BENEFITS

- Applicable to interchangeable headstyle insulators - C, F, and J-Neck
- Accommodates conductors from 0.245" - 1.240" diameter
- Pre-contoured Tie ensures tight fit
- Mitigates long-term issues caused by Radio Influence Voltage (RIV)
- Accommodates line angles up to 20-degrees in the vertical orientation
- Reduces or eliminates abrasion caused by vibration
- Ideal for severe weather applications and system hardening activities
- Resiliency of the tie protects the conductor
- Test reports available upon request
- Non-rotational tie

DESIGN CONSIDERATIONS

Description	Details
Interchangeable Headstyle Insulator	Double Support Ties are designed for installation on double insulator construction in the top groove of interchangeable insulators. To ensure proper fit and service life, it is recommended only insulators with uniform dimensions as described by the ANSI insulator standards be used. Contact a PLP representative for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is required.
Conductor Size	Double Support Ties can accommodate conductor diameters as defined in the product tables as long as the insulator can accept the conductor/tie tube diameter. The product tables define minimum groove radii required for the tie and conductor diameter range.
Insulator Mounting	The Double Support Tie is designed to be used when the conductor is located in the top groove of the insulators, regardless of insulator orientation, as long as the conductor will rest in the top groove by itself. If the conductor will not remain in the top groove by itself, it will be necessary to relocate it to the side groove, and will require an appropriate Side or Double Side Tie.
Radio Influence (RIV)	The Radio Influence Voltage (RIV)/Television Interference (TVI) characteristics of Double Support Ties are equivalent to those of a well-made hand tie, as originally installed. The pre-contoured loop and formed legs of the Double Support Tie ensures continued fit, which will provide better RIV/TVI performance than a loosened hand-tie wire.
Line Angles - General Guidelines	<p>On vertically mounted insulators at double crossarms or brackets, the Double Support Tie can normally accommodate line angles up to a total of 20-degrees, with no more than a 10-degrees angle at each insulator. Larger angles may be accommodated when the insulators are mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator.</p> <p>A technical report (TM-197-E) is available which describes these permissible line angles for Double Support Ties as a function of the insulator's cant.</p> <p>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.</p>
Mechanical Strength	The Double Support Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceeded the requirements of the National Electric Safety Code. TM-171-E and TM-882-E cover the mechanical testing of the Double Support Tie and are available upon request.
Vibration Dampers	The Double Support Tie is designed to outperform other tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be required to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP for general guidelines and advice concerning conductor motion and dampers. Also, consult the Motion Control catalog and see the Guidelines in the Overhead Distribution Line Repair Manual .
Tapping	Taps should not be made directly over the legs or loop of the Double Support Tie.
Conductor Compatibility	Double Support Ties should be used only on the size, type, and lay direction of conductor for which they are designed.

Additional Resources

For additional information regarding the use and installation of Double Support Ties, scan or click the QR code below.



Double Support Tie
Webpage

SPECIFICATIONS

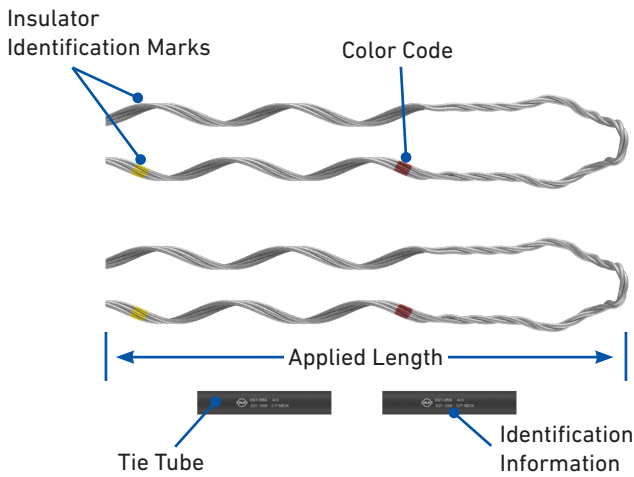


Figure 1: Tabbed Style Tie Assembly

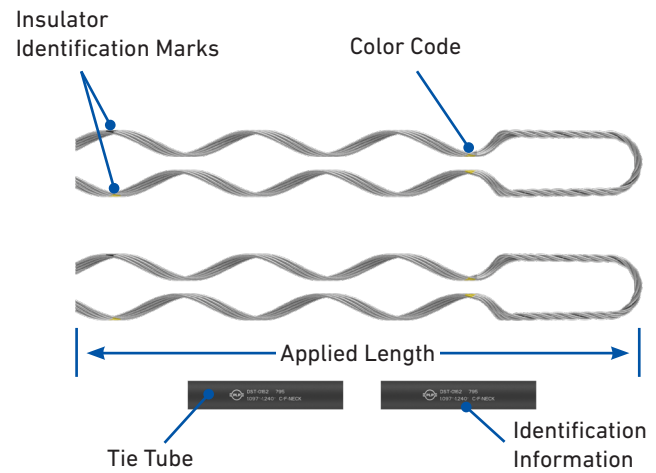
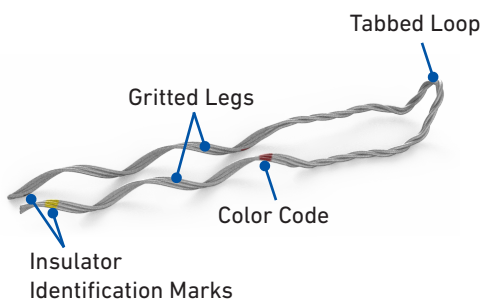


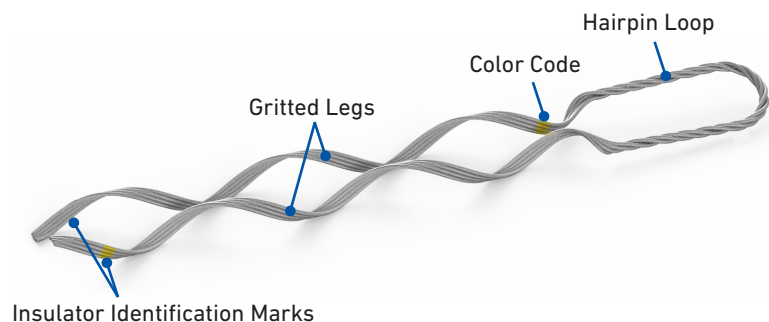
Figure 2: Hairpin Style Tie Assembly

Double Support Tie

Component	Description
Tie Assembly	A Double Support Tie assembly consists of two metal tie components plus two tie tubes.
Tie Tube	Each Double Support Tie assembly is supplied with two elastomer tie tubes, designed for abrasion protection. The Tie Tube is detached and applied over the conductor.
Identification Information	Shows catalog number and pertinent tie information. Printed on a tie flag or printed on the tie tube.
Color Code	Assists in identification of conductor diameter corresponding to tabular information on the catalog pages and designates leg cross-over location.
Insulator Identification Mark	Identifies the correct insulator headstyle for colors corresponding to information on catalog pages.
Gritted Leg	Gritted helical legs retention the conductor in place and prevent the conductor from shifting over the insulator.
Tabbed Loop	Allows the tie to form properly around the neck of the insulator and over the installed tie tube.
Hairpin Loop	Allows the tie to form properly around the neck of the insulator.
Applied Length	Assists in identification of conductor size corresponding to tabular information appearing on catalog pages and is the length of a single tie component.



Tabbed Style Double Support Tie



Hairpin Style Double Support Tie

ORDERING INFORMATION

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TOP TIES

Double Support Tie: C-Neck/F-Neck and J-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	Units per Carton	C- and F-Neck Insulators (Black and Yellow)		J-Neck Insulators (Green)		Conductor Color Code	Tie Type
in				Catalog Number	Applied Length	Catalog Number	Applied Length		
Minimum	Maximum				in		in		
9/16" R. Groove ⁴									
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	50	DST-0150	13	DST-0350	14	Orange	Tabbed
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	50	DST-0151	13	DST-0351	14	Purple	
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	50	DST-0152	14	DST-0352	15	Red	
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	50	DST-0153	14	DST-0353	15	Yellow	
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	DST-0154	15	DST-0354	16	Blue	
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	DST-0155	16	DST-0355	16	Orange	
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	50	DST-0156	17	DST-0356	18	Red	
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	50	DST-0157	17	DST-0357	18	Purple	
9/16" R. Groove ⁴									
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	DST-0158	18	DST-0358	19	Brown	Tabbed
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	DST-0159	20	DST-0359	21	Red	Hairpin
5/8" R. Groove ⁴									
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	25	DST-0160	21	DST-0360	22	Blue	Hairpin
3/4" R. Groove ⁴									
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	25	DST-0161	22	DST-0361	23	Green	Hairpin
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	25	DST-0162	23	DST-0362	24	Yellow	

Right-hand lay standard

NOTES:

¹ Diameter Range indicates the size of conductors that utilize the same tie.² Nominal Conductor Size indicates one or more of various conductors within each range.³ The loop of the Double Support Tie can accommodate either C- or F-Neck insulators as indicated in the table.⁴ For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.