PREFORMED LINE PRODUCTS

Section 11 – Distribution (Overhead): Conductor Dead-ends

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Thimble Clevis for Conductor Dead-ends

GENERAL RECOMMENDATIONS

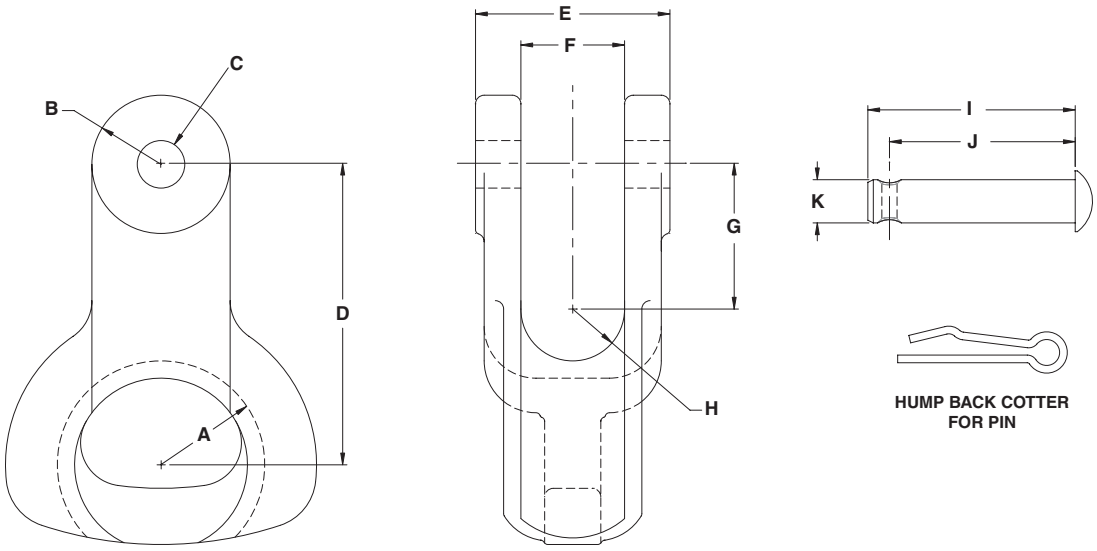
Thimble Clevises are used in conjunction with PREFORMED Dead-ends on suspension-type or Dead-end insulators. The thimble is intended to provide a smooth internal contour to prevent stress concentration within the loop of a PREFORMED Dead-end. The Clevis includes a steel pin which links it through the eye of an insulator and secures it with a humpbacked cotter key.

If removal or replacement of an insulator, or similar maintenance, is required, only the cotter key and steel pin need to be removed to release the clevis.

The TC-17 Thimble Clevis can be used with all but the largest Distribution Grips, all Overhead Dead-ends and Coated Dead-ends for conductors up to 0.783". The balance of the Dead-ends and Dead-ends for optical cable can be covered by the other listed Thimble Clevises. Refer to the tables entitled "Recommended Fitting" in the individual Dead-end sections for the appropriate application recommendations.

Catalog Number	Wt. Per Unit	Units Per Carton	RHS	Material
TC-5A	0.75 lb	25	12,000	Aluminum
ATC-20M	1.8 lb	25	20,000	Aluminum
TC-5F	1.6 lb	25	26,900	Iron
TC-17	1 lb	25	15,000	Iron
TC-6F	2.4 lb	25	42,400	Iron

Thimble Clevis for Conductor Dead-ends

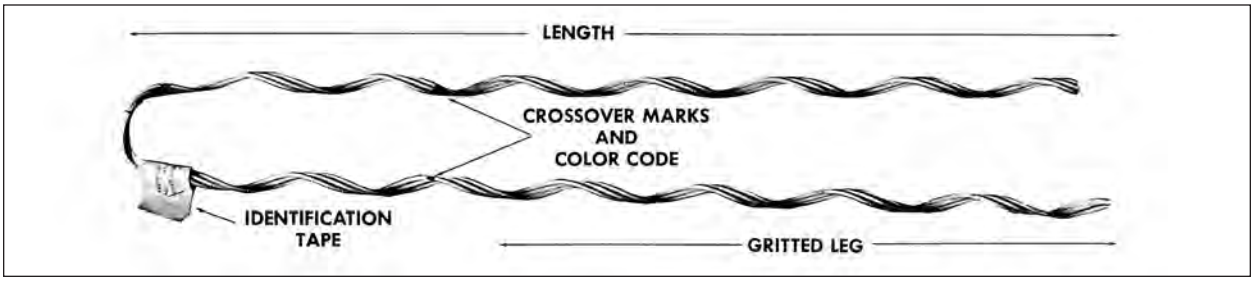


Catalog Number	Dimensions (Inches)										
	A	B	C Dia	D	E	F	G	H	I	J	K
TC-5A	1-1/8	1-1/4	11/16	3	1-3/4	15/16	1-13/32	1/2	2-3/16	2-15/16	5/8
ATC-20M	1-1/2	1	11/16	4-11/32	2-13/16	1-1/2	2-3/32	3/4	3-3/8	3-1/16	5/8
TC-5F	1-1/8	1-1/4	11/16	3	1-5/8	15/16	1-13/32	1/2	2-3/16	2-15/16	5/8
TC-17	13/16	3/4	11/16	2-5/16	1-3/8	3/4	1-1/8	3/8	1-7/8	1-5/8	5/8
TC-6F	1-1/4	1-1/2	13/16	3-1/2	2-1/16	1-1/16	1-23/32	17/32	2-3/4	2-7/16	3/4

Distribution-Grip Dead-end

NOMENCLATURE

RUS Accepted



Crossover Marks: Indicate starting point for application.

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

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Distribution-Grip Dead-end, manufactured of aluminum-covered steel, is designed for single-pole distribution construction. Mechanical strength meets the requirements of primaries, secondaries, and substation feeders.

Distribution-Grip Dead-end is recommended for direct application over plastic jacketed (not fabric covered) conductor. Coated Dead-ends are also recommended for jacketed conductor.

The *Distribution-Grip* Dead-end is designed to grip the conductor uniformly to prevent distortion of the conductor. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

During installation, and at all times, care should be taken to avoid gouging or damaging the coating of the *Distribution-Grip* Dead-end or the conductor itself.

***Distribution-Grip* Dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.**

Tools are not required nor recommended to install *Distribution-Grip* Dead-ends, except for hot stick applications.

Service-Grip Dead-ends are recommended for service drops.

RURAL UTILITIES SERVICE: The Distribution Grip Dead-end is listed for use on RUS accepted conductors used by RUS fund borrowers. The Distribution Grip Dead-end is listed on page **BY-1** of the RUS accepted list of material.

RATED HOLDING STRENGTH. In arriving at "Rated Holding Strengths," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service.

TAPPING. Tapping over the applied legs of *Distribution-Grip Dead-end* is **not** recommended. Taps can be made on the conductor, ahead of the Dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. The use of *Spiral Vibration Dampers,* in Motion control section, should be considered for areas experiencing a history of vibration.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation.

Lay direction of both the Dead-end and the conductor should be the same. Most conductor is right-hand lay.

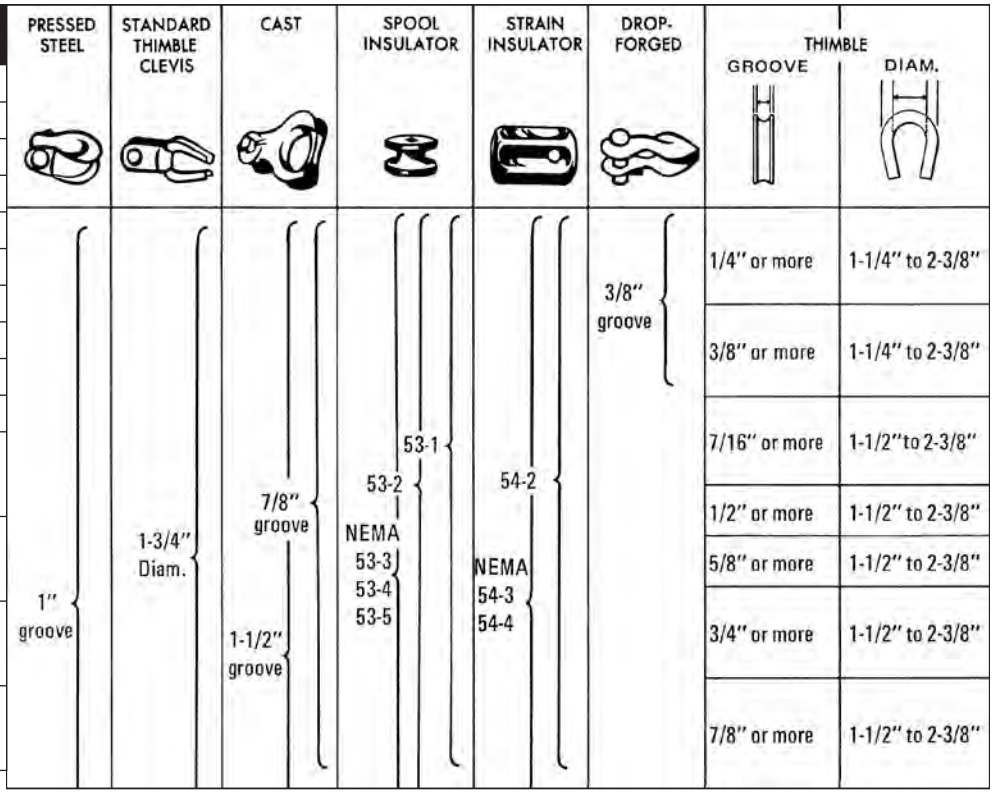
Not recommended for use on overhead shield wires. Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLINE Dead Ends are suggested for these applications. Consult PLP for further information.

Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead Ends are suggested for these applications; consult PLP for further information.

Distribution-Grip Dead-end

GENERAL RECOMMENDATIONS CONTD.

Catalog Number	ACSR Size	PRESSED STEEL	STANDARD THIMBLE CLEVIS	CAST	SPOOL INSULATOR	STRAIN INSULATOR	DROP-FORGED	THIMBLE GROOVE	THIMBLE DIAM.
DG-4554	#6							1/4" or more	1-1/4" to 2-3/8"
DG-4541	#4							3/8" or more	1-1/4" to 2-3/8"
DG-4542	#2							7/16" or more	1-1/2" to 2-3/8"
DG-4543	#1							1/2" or more	1-1/2" to 2-3/8"
DG-4544	1/0							5/8" or more	1-1/2" to 2-3/8"
DG-4545	2/0							3/4" or more	1-1/2" to 2-3/8"
DG-4546	3/0							7/8" or more	1-1/2" to 2-3/8"
DG-4547	4/0								
DG-4548	266.8								
DG-4549	336.4								
DG-4550	397.5, 19W 477, 19W 500, 37W								
DG-4551	556.5, 36/1 636, 37W 650, 61W								
DG-4552	666, 36/1 715.5, 36/1 795, 61W								
DG-4553	874.5, 36/1 954, 61W 1033.5, 61W								



Loops of the **Distribution-Grip Dead-end** are designed for smoothly contoured fittings which have inside groove widths and diameters corresponding to the dimensions appearing in this table.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS 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 Distribution-Grip Dead-end before application.
5. Distribution-Grip Dead-ends are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Distribution-Grip Dead-end

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

Catalog Number	Diameter Range (Inches)		ACSR	Nominal Conductor Sizes			AWAC 6/1	Units Per Carton	Wt./Lbs. Per Carton	Length (Inches)	Color Code
	Min.	Max.		All-Alum.	Alum. Alloy	Comp. ACSR					
DG-4554	.182	.203	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1		100	14	16	Blue
DG-4541	.229	.257	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1	#4	100	20	17	Orange
DG-4542	.290	.325	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1	#2	100	33	24	Red
DG-4543	.326	.364	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1	#1	100	44	26	Green
DG-4544	.365	.409	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1	1/0	50	31	26	Yellow
DG-4545	.410	.460	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1	2/0	50	31	28	Blue
DG-4546	.461	.516	3/0, 6/1	3/0, 7W	3/0, 7W	3/0, 6/1	3/0	25	22	32	Orange
DG-4547	.517	.577	4/0, 6/1	4/0, 7W	4/0, 7W	4/0, 6/1	4/0	25	60	34	Red
DG-4548	.578	.653	266.8, 18/1	266.8, 19W	266.8, 19W	336.4, 18/1	–	25	39	35	Black
DG-4549	.654	.739	336.4, 18/1	336.4, 19W	336.4, 19W	397.5, 18/1	–	25	53	39	Green

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates a few of the various conductors within each range. Consult PLP for sizes or strandings not shown.
(2) AWAC is a registered trademark of the Copperweld Co.

Distribution-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied Dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.						
Catalog Number	**Size**	**ACSR**	**All-alum.**	**Alum. Alloy**	**Compacted**	**AWAC®**
DG-4554	#6	#6, 6/1 971 lbs. (83%)	#6, 7W 555 lbs. (100%)	#6, 7W 1,050 lbs. (100%)	#6, 6/1 1,112 lbs. (95%)	
DG-4541	#4	#4, 6/1 1,710 lbs. (92%) #4, 7/1 1,899	#4, 7W 875 lbs. (100%)	#4, 7W 1,670 lbs. (100%)	#4, 6/1 1,739 lbs. (95%)	#4, 6/1 1,480 lbs. (83%)
DG-4542	#2	#2, 6/1 2,576 lbs. (90%) #2, 7/1 2,926 lbs. (83%)	#2, 7W 1,335 lbs. (100%)	#2, 7W 2,655 lbs. (100%)	#2, 6/1 2,651 lbs. (95%)	#2, 6/1 2,291 lbs. (83%)
	#3					#3, 5/2 3,196 lbs. (90%)
DG-4543	#1	#1, 6/1 3,207 lbs. (90%)	#1, 7W 1,625 lbs. (100%)	#1, 7W 3,420 lbs. (100%)	#1, 6/1 3,306 lbs. (95%)	#1, 6/1 2,864 lbs. (83%)
	#2					#2, 5/2 3,992 lbs. (90%)
DG-4544	1/0	1/0, 6/1 3,974 lbs. (90%)	1/0, 7W 1,970 lbs. (100%)	1/0, 7W 4,230 lbs. (100%)	1/0, 6/1 3,852 lbs. (90%)	1/0, 6/1 3,524 lbs. (83%)
	#1					#1, 5/2 4,708 lbs. (85%)
DG-4545	2/0	2/0, 6/1 4,781 lbs. (90%)	2/0, 7W 2,480 lbs. (100%)	2/0, 7W 5,055 lbs. (100%)	2/0, 6/1 4,009 lbs. (75%)	2/0, 6/1 3,903 lbs. (76%)
	1/0					1/0, 5/2 5,706 lbs. (85%)
DG-4546	3/0	3/0, 6/1 5,963 lbs. (90%)	3/0, 7W 3,005 lbs. (100%)	3/0, 7W 6,365 lbs. (100%)	3/0, 6/1 5,006 lbs. (75%)	3/0, 6/1 4,540 lbs. (72%)
	2/0					2/0, 5/2 6,834 lbs. (85%)
DG-4547	4/0	4/0, 6/1 7,520 lbs. (90%)	4/0, 7W 3,790 lbs. (100%)	4/0, 7W 8,025 lbs. (100%)	4/0, 6/1 6,315 lbs. (75%)	4/0, 6/1 5,072 lbs. (66%)
	3/0					3/0, 5/2 8,249 lbs. (85%)
DG-4548	266.8 mcm	266.8 mcm. 18/1 6,206 lbs. (90%) 266.8 mcm. 26/7 7,313 lbs. (65%)	266.8 mcm. 19W 4,800 lbs. (100%) 266.8 mcm. 37W 5,185 lbs. (100%)	266.8 mcm. 19W 9,549 lbs. (90%)		266.8 mcm. 18/1 5,534 lbs. (80%)
	300 mcm	300 mcm. 18/1 6,152 lbs. (80%)	300 mcm. 19W 5,300 lbs. (100%) 300 mcm. 37W 5,831 lbs. (100%)		300mcm. 18/1 6,392 lbs. (80%)	
	336.4 mcm				336.4 mcm. 18/1 6,900 lbs. (80%)	
DG-4549	300 mcm	300 mcm. 26/7 8,223 lbs. (65%) 300 mcm. 30/7 10,030 lbs. (65%)				
	336.4 mcm	336.4 mcm. 18/1 7,821 lbs. (90%) 336.4 mcm. 36/1 6,104 lbs. (80%) 336.4 mcm. 26/7 9,133 lbs. (65%)	336.4 mcm. 19W 5,940 lbs. (100%) 336.4 mcm. 37W 6,420 lbs. (100%)	336.4 mcm. 19W 11,547 lbs. (90%)		336.4 mcm. 18/1 6,920 lbs. (80%)
	350 mcm		350 mcm. 19W 6,180 lbs. (100%) 350 mcm. 37W 6,680 lbs. (100%)			
	397.5 mcm	397.5 mcm. 36/1 6,992 lbs. (80%)	397.5 mcm. 19W 6,880 lbs. (100%) 397.5 mcm. 37W 7,305 lbs. (100%)		397.5 mcm. 18/1 8,032 lbs. (80%)	
	400 mcm		400 mcm. 19W 6,925 lbs. (100%) 400 mcm. 37W 7,350 lbs. (100%)			

Right-hand lay standard

EXPLANATORY NOTES:
(1) Refer to General Recommendations for explanation of “Rated Holding Strength.”
(2) Consult PLP for sizes or strandings not shown.
(3) AWAC is a registered trademarks of the Copperweld Co.

Distribution-Grip Dead-end

LARGE SIZES for use on:
ACSR, All-Aluminum
Aluminum Alloy, Compacted ACSR
Compacted All-Aluminum

Catalog Number	Diameter Range (Inches)		Nominal Sizes				Units	Wt./ Lbs.	Length (Inches)	Color Code
	Min.	Max.	ACSR	All-Aluminum	Aluminum Alloy	Compacted	Per Carton			
DG-4550	.740	.837	397.5, 18/1 477, 36/1 477, 18/1	450, 19W 477, 19W 500, 37W	397.5, 19W	477, 18/1 556, 19W	10	43	50	Orange
DG-4551	.838	.947	556.5, 36/1 605, 36/1 636, 18/1	556.5, 37W 636, 37W 650, 61W	477, 19W 556.5, 19W	636, 18/1 795, 19W	10	50	55	Blue
DG-4552	.948	1.071	666.6, 36/1 715.5, 36/1 795, 36/1	715.5, 37W 750, 61W 795, 61W	636, 37W	874.5, 37W 954, 37W	10	67	62	Brown
DG-4553	1.072	1.212	874.5, 36/1 954, 36/1 1033.5, 36/1	874.5, 61W 954, 61W 1033.5, 61W	795, 37W	—	5	48	70	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Distribution-Grip Dead-ends, manufactured of aluminum covered steel, are designed to meet the requirements of primaries and sub-station feeders.
(2) Nominal conductor size indicates a few of the various conductors within each range. Consult PLP for sizes or strandings not shown.
(3) For quantities less than 25 pieces, consult PLP.

Distribution-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied Dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.					
Catalog Number	**Size**	**ACSR**	**All-Aluminum**	**Aluminum Alloy**	**Compacted**
DG-4550	336.4	30/7 11,076 lbs. (65%)			
	397.5	18/1 8,024 lbs. (80%) 26/7 10,524 lbs. (65%) 30/7 12,987 lbs. (65%)		19W 13,617 lbs. (90%)	
	450		19W 7,630 lbs. (100%) 37W 8,110 lbs. (100%)		
	477	36/1 8,256 lbs. (80%) 18/1 10,638 lbs. (90%)	19W 8,090 lbs. (100%) 37W 8,600 lbs. (100%)		18/1 9,496 lbs. (80%)
	500		19W 8,480 lbs. (100%) 37W 9,010 lbs. (100%)		
	556.5				18/1 11,080 lbs. (80%) 19W 9,440 lbs. (100%)
	636				19W 10,790 lbs. (100%)
DG-4551	477	26/7 12,630 lbs. (65%) 30/7 15,145 lbs. (65%)		19W 16,371 lbs. (90%)	
	500	30/7 15,893 lbs. (65%)			
	550		37W 9,270 lbs. (100%) 61W 9,450 lbs. (90%)		
	556.5	36/1 9,440 lbs. (80%) 18/1 11,080 lbs. (80%) 26/7 14,560 lbs. (65%)	19W 9,440 lbs. (100%) 37W 9,830 lbs. (100%) 61W 9,558 lbs. (90%)	19W 19,080 lbs. (90%)	
	600		37W 10,600 lbs. (100%) 61W 10,305 lbs. (90%)		
	605	36/1 10,240 lbs. (80%)			
	636	36/1 12,112 lbs. (80%) 18/1 12,672 lbs. (80%)	37W 11,240 lbs. (100%) 61W 10,521 lbs. (90%)		18/1 12,664 lbs. (80%)
	650		37W 11,480 lbs. (100%) 61W 10,755 lbs. (90%)		
	795				36/1 13,232 lbs. (80%) 19W 13,200 lbs. (100%)

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Consult PLP before using Distribution-Grip Dead-ends on conductor sizes and strandings not shown.

Distribution-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied Dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.					
Catalog Number	**Size**	**ACSR**	**All-Aluminum**	**Aluminum Alloy**	**Compacted**
DG-4552	556.5	30/7 17,680 lbs. (65%)			
	605	54/7 13,500 lbs. (60%) 26/7 15,665 lbs. (60%)			
	636	54/7 14,160 lbs. (60%) 26/7 16,250 lbs. (65%)		37W 21,690 lbs. (90%)	
	666.6	36/1 11,280 lbs. (80%) 54/7 14,700 lbs. (60%)			
	700		37W 12,370 lbs. (100%) 61W 11,574 lbs. (90%)		
	715.5	36/1 11,920 lbs. (80%) 26/7 18,265 lbs. (65%)	37W 12,640 lbs. (100%) 61W 11,835 lbs. (90%)		
	750		37W 12,990 lbs. (100%) 61W 12,168 lbs. (90%)		
	795	36/1 13,232 lbs. (80%) 45/7 13,740 lbs. (60%)	37W 13,770 lbs. (100%) 61W 12,897 lbs. (90%)		
	800		37W 13,850 lbs. (100%) 61W 12,978 lbs. (90%)		
	874.5				36/1 14,320 lbs. (80%) 37W 14,830 lbs. (100%)
	954				36/1 15,616 lbs. (80%) 37W 16,180 lbs. (100%)
DG-4553	795	54/7 17,100 lbs. (60%) 26/7 20,280 lbs. (65%)		37W 27,135 lbs. (90%)	
	874.5	36/1 14,320 lbs. (80%) 54/7 18,840 lbs. (60%)	37W 14,830 lbs. (100%) 61W 14,184 lbs. (90%)		
	900	45/7 15,240 lbs. (80%) 54/7 19,380 lbs. (60%)	37W 15,260 lbs. (100%) 61W 14,310 lbs. (90%)		
	954	36/1 15,608 lbs. (80%) 45/7 16,140 lbs. (60%) 54/7 20,520 lbs. (60%)	37W 16,180 lbs. (100%) 61W 15,174 lbs. (90%)	37W 32,778 lbs. (90%)	
	1000		37W 16,960 lbs. (100%) 61W 15,903 lbs. (90%)		
	1033.5	36/1 16,904 lbs. (80%)	37W 17,530 lbs. (100%) 61W 16,434 lbs. (90%)		

Right-hand lay standard

EXPLANATORY NOTES:

(1) Consult PLP before using Distribution-Grip Dead-ends on conductor sizes and strandings not shown.

Distribution-Grip Dead-end

For use on:
AWAC®, Aluminum/Aluminum-Clad Steel

Catalog Number	Conductor Size		Units	Wt./Lbs.	Length (Inches)	Color Code
	AWAC	Outside Diam. (Inches)	Per Carton			
DG-4560	#4 AWAC 5/2 #4 AWAC 4/3	.261 .281	100	44	25	Green
DG-4561	#3 AWAC 5/2 #4 AWAC 3/4 #3 AWAC 4/3	.293 .307 .316	100	46	26	Brown
DG-4562	#2 AWAC 5/2 #4 AWAC 2/5 #3 AWAC 3/4 #2 AWAC 4/3	.330 .340 .344 .355	50	33	29	Orange
DG-4563	#1 AWAC 5/2 #3 AWAC 2/5 #2 AWAC 3/4	.370 .382 .386	50	44	31	Green
DG-4564	#1 AWAC 4/3 1/0 AWAC 5/2	.398 .416	50	45	32	Brown
DG-4565	#2 AWAC 2/5 #1 AWAC 3/4 1/0 AWAC 4/3	.429 .434 .447	50	58	33	Green
DG-4566	2/0 AWAC 5/2 #1 AWAC 2/5 1/0 AWAC 3/4	.467 .482 .487	50	60	35	Blue
DG-4567	2/0 AWAC 4/3 3/0 AWAC 5/2	.502 .524	50	62	36	Green
DG-4568	1/0 AWAC 2/5 2/0 AWAC 3/4 3/0 AWAC 4/3	.541 .547 .564	25	42	37	Purple
DG-4100	4/0 AWAC 15/4	.575	25	42	38	Orange

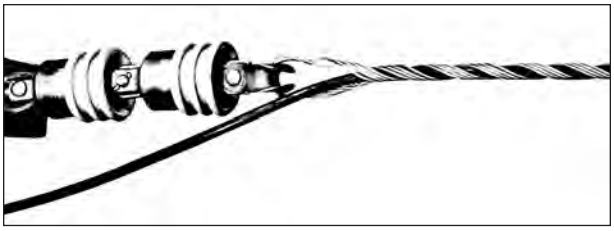
Right-hand lay standard
EXPLANATORY NOTES:
(1) AWAC is a registered trademark of the Copperweld Co.

Rated Holding Strengths								
Catalog Number	AWAC Sizes							
	#4	#3	#2	#1	1/0	2/0	3/0	4/0
DG-4560	#4, 5/2 2,790 lbs. (100%)							
	#4, 4/3 4,190 lbs. (100%)							
DG-4561	#4, 3/4 6,130 lbs. (100%)	#3, 5/2 3,500 lbs. (100%)						
		#3, 4/3 5,260 lbs. (100%)						
DG-4562	#4, 2/5 8,960 lbs. (100%)	#3, 3/4 7,700 lbs. (100%)	#2, 5/2 4,370 lbs. (100%)					
			#2, 4/3 6,600 lbs. (100%)					
DG-4563		#3, 2/5 11,300 lbs. (100%)	#2, 3/4 9,690 lbs. (100%)	#1, 5/2 5,450 lbs. (100%)				
DG-4564				#1, 4/3 8,100 lbs. (100%)	1/0, 5/2 6,580 lbs. (100%)			
DG-4565			#2, 2/5 13,500 lbs. (100%)	#1, 3/4 11,200 lbs. (100%)	1/0, 4/3 9,680 lbs. (100%)			
DG-4566				#1, 2/5 16,500 lbs. (100%)	1/0, 4/3 13,800 lbs. (100%)	2/0, 5/2 8,030 lbs. (100%)		
DG-4567						2/0, 4/3 11,900 lbs. (100%)	3/0, 5/2 9,660 lbs. (100%)	
DG-4568					1/0, 2/5 19,500 lbs. (100%)	2/0, 3/4 16,400 lbs. (100%)	3/0, 4/3 14,200 lbs. (100%)	
DG-4100								4/0, 15/4 7,560 lbs. (70%)

Right-hand lay standard
EXPLANATORY NOTES:
(1) Refer to General Recommendations for explanation of “Rated Holding Strength.”
(2) Consult PLP for sizes or strandings not shown.
(3) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Distribution-Grip Dead-end (GALVANIZED STEEL)

For use on:
Plastic Jacketed Conductors, Polyethylene, Neoprene, Vinyl, Rubber



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Length (Inches)	Color Code
	Min.	Max.		Per Carton			
DG-2510	.229	.257	#6, 7W, 2/64s #6, Solid, 3/64s	100	20	18	Orange
DG-2511	.258	.289	#4, Solid, 2/64s #6, 7W, 3/64s	100	35	21	Yellow
DG-2512	.290	.325	#6, 7W, 4/64s #4, 7W, 2/64s	100	40	26	Red
DG-2513	.326	.364	#4, 7W, 3/64s #4, 7W, 4/64s	100	60	27	Green
DG-2514	.365	.409	#2, 7W, 3/64s #4, 7W, 5/64s	100	60	27	Yellow
DG-2515	.410	.460	#2, 7W, 5/64s #2, 7W, 4/64s	50	45	29	Blue
DG-2516	.461	.516	#1, 19W, 5/64s 1/0, 7W, 4/64s	50	45	31	Orange
DG-2517	.517	.577	1/0, 19W, 5/64s 1/0, 19W, 6/64s	50	65	34	Purple
DG-2100	.578	.653	3/0, 7W, 4/64s 4/0, 7W, 4/64s	25	45	35	Blue
DG-2101	.654	.739	250, 19W, 4/64s 266.8, 19W, 4/64s	25	60	38	Red
DG-2102	.740	.837	300, 19W, 5/64s 336.4, 19W, 8/64s	10	40	40	Brown
DG-2103	.838	.947	336.4, 19W, 8/64s 397.5, 19W, 6/64s	10	45	40	Green
DG-2104	.948	1.071	477, 37W, 5/64s 500, 37W, 8/64s	10	50	40	Black
DG-2105	1.072	1.212	350, 19W, 12/64s 500, 37W, 12/64s	10	70	40	Purple

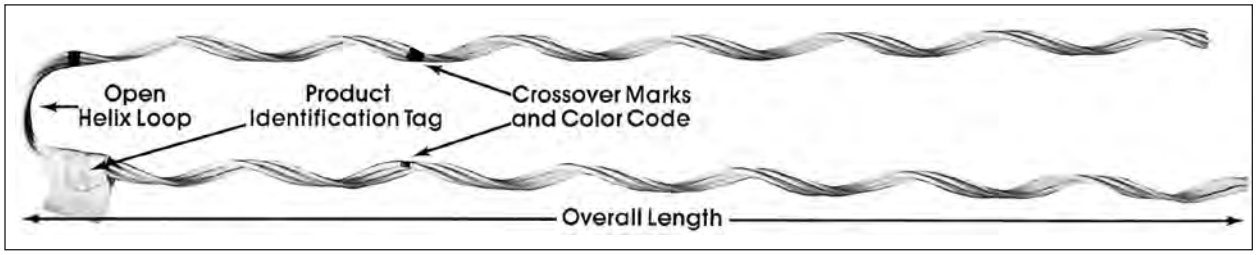
Conductor may be right-hand lay or left-hand lay.

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Rated holding strengths for all sizes are not practical to publish, due to the multiple combinations of conductor, jacket thickness and type. As a general guide, Distribution Grip Dead-ends are expected to approximate the typical test results for coated Dead-ends.

Overhead Dead-end

NOMENCLATURE



Overhead Dead-end Material: Aluminum covered steel.

Crossover Marks: Indicate starting point for application on conductor.

Color Code and Length: Assist in identification of conductor diameter range.

Identification Tape: Identifies catalog number, conductor type, and diameter range.

GENERAL RECOMMENDATIONS

The Overhead Dead-end, intended for use on aluminum-based conductor, with a diameter range of .229" to .577", is designed to terminate primary, secondary and neutral wire conductors.

The Overhead Dead-end is designed to grip the conductor uniformly to prevent distortion of the conductor. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

During installation, and at all times, care should be taken to avoid gouging or damaging the aluminum coating of the Overhead Dead-end or the conductor itself.

Overhead Dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

Tools are not required nor recommended to install Overhead Dead-ends, except for hot stick applications.

Overhead Dead-ends should be installed on smoothly contoured fittings that have acceptable groove dimensions and diameters to minimize abrasion and fatigue of the loop area. Refer to Tables 1 and 2 in this section, for acceptable dimensions and examples of acceptable fittings. Fittings other than those shown may be used if they have acceptable dimensions.

Overhead Dead-ends should not be used on overhead shield wires.

RATED HOLDING STRENGTH. Each of the Overhead Dead-ends will hold 90% of the appropriate ACSR 6/1 conductor's Rated Breaking Strength listed within each conductor diameter range.

When used on aluminum based conductors other than ACSR 6/1, they will develop in excess of 90% of the conductors' Rated Breaking Strength. Holding strengths ratings were established in conjunction with RUS testing requirements for ACSR 6/1 conductor.

When requirements call for Dead-ending conductors larger than .577", holding strengths less than 90% of ACSR (6/1) conductors, use the Distribution Grip Dead-end listed in the previous section. Also refer to the Dead-end: Coated for applications on jacketed conductors.

When requirements call for Dead-ending conductors associated with bare neutral messengers of self-supported cable used in making service drops, use the Service-Grip Dead-end.

MATERIAL SELECTION. The Overhead Dead-end is made from aluminum covered steel wire for compatibility with aluminum based conductors. They also have the same right hand lay direction as most conductors.

VIBRATION DAMPERS. On some lines, excessive vibration may require the use of vibration dampers. Utilities that have experienced vibration, or expect to, should consider adding dampers. Consult Preformed Line Products for general guidelines and advice concerning vibration and dampers. Also consult the Motion Control Section.

(Continued)

Overhead Dead-end

GENERAL RECOMMENDATIONS CONTD.

CONDUCTOR COMPATIBILITY. Overhead Dead-ends should be used only on the size and type of conductor for which they are designed. They must have the same lay as the conductor to which they are being applied. When ordering Overhead Dead-ends, make sure to specify the conductor size and type they are to be used on. When using types and/or sizes of conductors not mentioned in these catalog pages, consult Preformed Line Products Company.

TAPPING. Tapping over the legs of the Overhead Dead-end is **not** recommended. Taps can be made beyond the Dead-end on the conductor or on the tail of the conductor that extends through the Dead-end.

When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS 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™ product before application.
5. PREFORMED™ products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

ACCEPTABLE FITTINGS

The Overhead Dead-end is designed to be installed on smoothly contoured fittings. Minimum groove widths, minimum and maximum seat diameters for each size are listed in Table 1.

PREFORMED™ Thimble Clevis (TC-17) is suggested for use with all sizes of the Overhead Dead-end. The dimensions of the TC-17 are consistent with the minimum groove widths and seat diameters acceptable for use with the Overhead Dead-end.

A working load of 8500 lbs. has been established for rigging purposes.

PREFORMED™ Aluminum Thimble Clevis. The ATC 20M, listed in this section, is suggested for use with the Overhead Dead-end sizes from .326" to .577". The dimensions of the ATC 20M are consistent with the minimum groove widths and seat dimensions acceptable for use with those sizes of the Overhead Dead-end.

A working load of 3500 lbs. has been established for rigging purposes.

Overhead Dead-end

Table 1. Acceptable Fitting Dimensions

Catalog Number	Conductor Range (Inches)	Acceptable Fitting Dimensions (Inches)		
		Groove Width	Seat Diameter	
		Minimum	Min.	Max.
OHDE-9534	.229-.257	1/4	1-1/4	2-3/8
OHDE-9536	.290-.325	3/8	1-1/4	2-3/8
OHDE-9537	.326-.364	3/8	1-1/2	3
OHDE-9538	.365-.409	7/16	1-1/2	3
OHDE-9539	.410-.460	7/16	1-1/2	3
OHDE-9540	.461-.516	1/2	1-1/2	3
OHDE-4577	.517-.577	5/8	1-1/2	3

NOTE: The Overhead Dead-end is designed to be installed on smoothly contoured fittings. Minimum groove widths and minimum and maximum seat diameters are shown above.

Figure 1. Groove Width

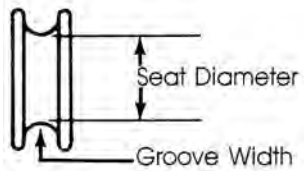


Figure 2. Seat Diameter

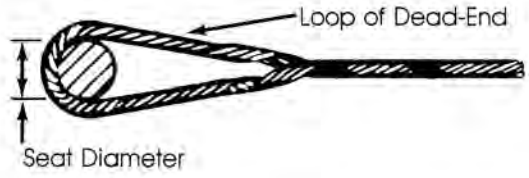


Table 2. Examples of Acceptable Fittings

1. Cast Iron Thimble Clevis TC-17
   For all sizes listed

2. Cast Aluminum ATC-20M
   For sizes .326" to .577"

3. Spool Insulators
   ANSI
   53-1, 53-2, 53-3 } For all sizes
   53-4, 53-4 } For sizes .326"-.577"

NOTE: Fittings other than those shown may be used provided they have dimensions shown on Table 1.

Overhead Dead-end

For use on:
ACSR, Aluminum Alloy
All Aluminum, AWAC (6/1)
Compacted ACSR

Catalog Number	Conductor (Inches)		Units	Wt./Lbs.	Length (Inches)	Color Code
	Range	Nominal Size	Per Carton			
OHDE-9534	.229-.257	#4	100	31	24	Orange
OHDE-9536	.290-.325	#2	100	59	30	Red
OHDE-9537	.326-.364	#1	75	60	34	Green
OHDE-9538	.365-.409	1/0	50	47	38	Yellow
OHDE-9539	.410-.460	2/0	50	60	38	Blue
OHDE-9540	.461-.516	3/0	50	71	45	Orange
OHDE-4577	.517-.577	4/0	25	57	52	Red

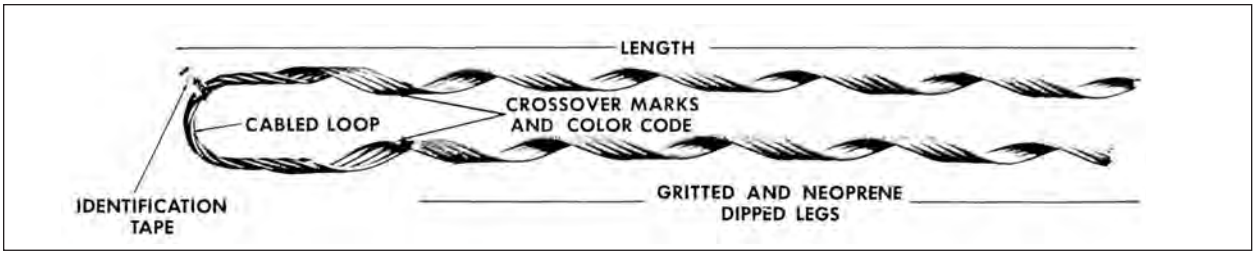
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Coated Dead-end

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Gritted and Neoprene Dipped Legs: Grit is permanently embedded in a coating of neoprene.

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

Identification Tape: Shows catalog number and range of outside diameters.

GENERAL RECOMMENDATIONS

Dead-end: Coated, manufactured of aluminum alloy wire, is designed for direct application over conductors jacketed with neoprene, polyethylene, vinyl, or rubber. The sub-setted rods in each leg, bonded together with neoprene, exert a low radial pressure without damaging the jacket. Becasue it is not necessary to skin the plastic covering, the same Dead-end can be used for either aluminum-base or copper-base conductors.

Coated Dead-ends should not be used over fabric braided conductor. In this case, the fabric should be skinned and a *Distribution-Grip Dead-end* applied.

RATED HOLDING STRENGTH. Holding values of coated Dead-ends are dependent on a combination of several factors:

- Conductor size, type, stranding
- Thickness of jacket
- Type of jacket
- Specific density of various polyethylenes

The multiplicity of combinations makes it impractical to publish a table of "Rated Holding Strengths." As a general guide, the following considerations may be adapted for a certain conductor and construction practice.

When tested under static tension (ram speed of two inches per minute), Coated Dead-ends will hold the full rated breaking strength of all-aluminum and copper conductors, jacketed with neoprene or medium density polyethylene. Static tension results on ACSR approximates the full strength of the aluminum strands plus 10% of the steel core strength.

When Coated Dead-ends are tested under sustained (24 hours) loading, generally lower holding strengths are recorded. This is attributed to the cold-flow characteristics and frictional coefficient of various plastics. The tables appearing on the back of each catalog page are based on long-term sustained load tests and may be considered representative of the cables described.

This data indicates that the highest percentage of rated breaking strength (RBS) is held on medium density polyethylene and vinyl. High density (linear) polyethylene has the lowest percent of RBS.

In addition to the specific densities, the data indicates the percent of RBS will also be reduced by increased jacket thickness.

The test results, expressed in actual pounds of sustained load capacity, make it apparent that values between 500 and 1,000 lbs. should be sufficient to meet field requirements on industrial or commercial service drops and messengered aerial spacer cables. Values exceeding 1,000 lbs. are sufficient for primaries and secondaries in urban distribution.

TAPPING. Coated Dead-ends allow the plastic jacket to remain intact and the conductor continues through the crossover point of the grip. Connectors are applied to the continued tail, with minimum stripping and exposure to corrosion.

RADIO INTERFERENCE. R.I.V. readings and flashover tests indicate Coated Dead-ends, applied over plastic jacketed conductors, have the same satisfactory electrical performance as Dead-ends applied over bare conductors. This statement does not apply to fabric covered conductor. Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead-ends are suggested for these applications. Consult PLP for further information.

Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead Ends are suggested for these applications; consult PLP for further information.

Coated Dead-end

GENERAL RECOMMENDATIONS CONTD.

ACCEPTABLE FITTINGS					SIZE
CAST 	SPOOL INSULATOR 	DROP-FORGED 	THIMBLES  DIAMETERS	GROOVE WIDTH	CONDUCTOR OUTSIDE DIAMETERS
¾" Groove Width	NEMA 53-1 NEMA 53-2 NEMA 53-3 Diameters 1 ½" to 2¾"	¾" Groove Width	Diameters 1 ¼" to 2⅜"	Groove Width 5/16" Min.	Sizes up to .310" O.D.
			Diameters 1 ¼" to 2⅜"	Groove Width ⅜" Min.	Sizes up to .374" O.D.
			Diameters 1 ¼" to 2⅜"	Groove Width 7/16" Min.	Sizes up to .428" O.D.
			Diameters 1 ¼" to 2⅜"	Groove Width ½" Min.	Sizes up to .507" O.D.
			Diameters 1 ¼" to 2⅜"	Groove Width ⅝" Min.	Sizes up to .608" O.D.
			Diameters 1 ¼" to 2⅜"	Groove Width ¾" Min.	Sizes up to .783" O.D.
⅞" Groove Width			Diameters 1 ½" to 2⅜"	Groove Width ⅞" Min.	Sizes up to .888" O.D.
1 ½" Groove Width			Diameters 1 ½" to 2⅜"	Groove Width 1" Min.	Sizes up to 1.005" O.D.
			Diameters 1 ½" to 2⅜"	Groove Width 1 ⅛" Min.	Sizes up to 1.138" O.D.
			Diameters 1 ½" to 2⅜"	Groove Width 1 ½" Min.	Sizes up to 1.550" O.D.

Loops are designed for use with a variety of thimble-clevises, insulators, and thimbles. The fittings appearing in this table have smoothly contoured diameters and adequate groove widths. See page 10-1 for a list of available Thimble Clevises.

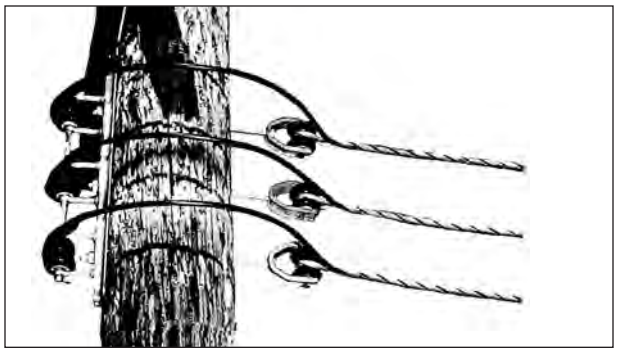
(1) Consult Factory for spool insulators ANSI Class 53-4 and 53-5.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for re-tensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS 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 PLP® product before application.
5. PLP® Products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size AWG or MCM	Units	Wt./Lbs.	Length (Inches)	Color Code
	Min.	Max.		Per Carton			
ND-0500	.243	.253	#6, 7W, 2/64s	100	13	16	Green
ND-0501	.254	.264	#6, Solid, 3/64s #6, 6/1, 2/64s	100	14	17	Red
ND-0502	.265	.272	#4, Solid, 2/64s	100	14	17	Blue
ND-0503	.273	.284	#6, 7W, 3/64s	100	14	18	Orange
ND-0100	.285	.297	#6, 6/1, 3/64s #4, 7W, 2/64s	100	15	19	Black
ND-0101	.298	.310	#4, Solid, 3/64s #6, 7W, 4/64s	100	17	19	Yellow
ND-0102	.311	.323	#4, 7W, 2/64s Al. Alloy #4, 6/1, 2/64s	100	18	20	Blue
ND-0103	.324	.338	#6, 7W, 4/64s, Al. Alloy #4, 7W, 3/64s	100	18	20	Orange
ND-0104	.339	.354	#4, 7W, 3/64s, Al. Alloy #4, 6/1, 3/64s	100	20	21	Black
ND-0105	.355	.374	#4, 7W, 4/64s	100	20	22	Yellow
ND-0106	.375	.397	#4, 7W, 4/64s #4, 7W, 5/64s	100	25	23	Red
ND-0107	.398	.420	#2, 6/1, 3/64s #2, 7/1, 3/64s	100	26	24	Green
ND-0108	.421	.445	#2, 7W, 4/64s, Al. Alloy #1, 7W, 3/64s	50	20	27	Black
ND-0109	.446	.475	#1, 7W, 4/64s #4, 7W, 8/64s	50	22	28	Orange

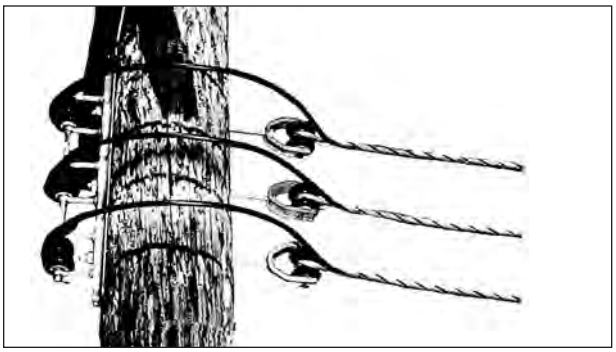
Conductor may be right-hand lay or left-hand lay.

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Holding strength values for representative sizes appear on the reverse side of this page.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



Catalog Number	Size	Jacketing	Outside Diameter (Inches)	Sustained Load Test Results (Lbs.)	Percent of Breaking Strength
ND-0500	#6, 7W, 2/64s	Poly*	.246	450	89%
ND-0100	#4, 7W, 2/64s	Poly*	.294	750	95%
ND-0102	#4, 6/1, 2/64s	Poly*	.313	800	46%
	#4, 7/1, 2/64s	Poly (.929)	.320	850	39%
ND-0103	#4, 7W, 3/64s	Neoprene	.326	800	108%
ND-0104	#4, 6/1, 3/64s	Neoprene	.344	750	43%
ND-0106	#2, 7W, 3/64s	Neoprene	.386	600	52%
	#2, 6/1, 3/64s	Poly*	.386	750	62%
ND-0107	#2, 6/1, 3/64s	Poly*	.410	900	34%
	#2, 6/1, 3/64s	Neoprene	.410	900	34%
	#2, 7/1, 3/64s	Poly*	.419	1,200	35%
	#2, 7/1, 3/64s	Neoprene	.419	1,000	30%

**Low density or medium density polyethylene per ASTM D-1243-58T.*

This table is based on actual results of long term sustained load tests and may be considered representative of the cables described. Refer earlier in this section for an explanation of the multiple factors affecting holding strength of Dead-ends Coated.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber

Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Length (Inches)	Color Code
	Min.	Max.	AWG or MCM	Per Carton			
ND-0110	.476	.507	#1, 19W, 5/64s 1/0, 7W, 4/64s	50	30	30	Blue
ND-0111	.508	.536	1/0, 19W, 6/64s /0, 19W, 5/64s	50	29	30	Red
ND-0112	.537	.571	2/0, 7W, 4/64s 2/0, 19W, 6/64s, Comp.	50	34	31	Black
ND-0113	.572	.608	3/0, 19W, 4/64s 2/0, 19W, 5/64s	50	36	33	Yellow
ND-0114	.609	.648	1/0, 7W, 8/64s 4/0, 7W, 4/64s	25	24	33	Red
ND-0115	.649	.690	1/0, 7W, 10/64s 4/0, 19W, 4/64s	25	26	34	Green
ND-0116	.691	.735	250, 19W, 4/64s 266.8, 18/1, 4/64s	25	30	35	Black
ND-0117	.736	.783	3/0, 7W, 10/64s	25	32	36	Orange
ND-0118	.784	.834	300, 19W, 5/64s 336.4, 19W, 5/64s	25	34	38	Blue
ND-0119	.835	.888	350, 19W, 5/64s 300, 19W, 10/64s Comp.	25	40	40	Black
ND-0120	.889	.945	250, 19W, 10/64s 300, 19W, 10/64s	25	44	42	Yellow
ND-0121	.946	1.005	450, 37W, 6/64s 500, 37W, 6/64s	25	52	44	Green
ND-0122	1.006	1.070	450, 37W, 8/64s 336.4, 19W, 12/64s	10	24	45	Red
ND-0123	1.071	1.138	350, 19W, 12/64s 500, 37W, 10/64s	10	24	47	Blue
ND-0124	1.139	1.212	636, 37W, 10/64s Comp. 500, 37W, 12/64s	10	30	48	Orange
ND-0125	1.213	1.288	795, 61W, 6/64s 795, 37W, 10/64s Comp.	10	30	49	Black
ND-0126	1.289	1.372	1033.5, 61W, 6/64s	10	32	51	Yellow
ND-0127	1.373	1.458	715, 37W, 14/64s	10	38	53	Green
ND-0128	1.459	1.550	795, 37W, 14/64s	10	40	56	Red

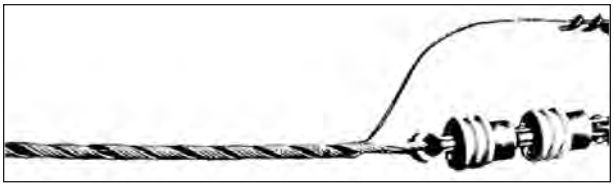
Right-hand or left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Cabled loop design furnished for all sizes on this page. See reference chart in this section for acceptable fittings.
(3) Holding strength values for representative sizes appear on the reverse side of this page.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



Size	Jacketing (Specific Gravity)	Outside Diameter (Inches)	Sustained Load Test Results (Lbs.)	Percent of Breaking Strength
2/0, 7W, 4/64s	Poly. (.928)	.539	1,800	104%
1/0, 7W, 4/64s	Poly. (.931)	.493	2,200	101%
1/0, 7W, 4/64s	Neoprene	.493	1,650	98%
2/0, 7W, 4/64s	Neoprene	.539	2,100	99%
366.4, 19W, 4/64s	Poly. (.933)	.791	4,500	79%
400, 19W, 6/64s	Neoprene	.913	5,000	80%
250, 19W, 5/64s	Neoprene	.732	3,200	79%
397.5, 19W, 6/64s	Poly. (.928)	.912	4,700	72%
3/0, 7W, 8/64s	Poly. (.927)	.706	1,900	70%
336.4, 19W, 5/64s	Neoprene	.824	3,600	67%
500, 37W, 6/64s	Poly. (.926)	1.001	5,600	65%
336.4, 19W, 4/64s	Poly. (.920)	.791	3,600	63%
1/0, 7W, 4/64s	Poly. (.918)	.493	1,100	62%
#4, 6/1, 8/64s	Poly. (.929)	.502	950	54%
4/0, 7W, 10/64s	Poly. (.920)	.830	3,000	49%
4/0, 7W, .078	Vinyl	.695	1,600	47%
336.4, 19W, .150" Compacted	Poly. (.943)	.910	2,600	46%
266.8, 19W, 10/64s	Poly. (.966)	.885	1,800	40%
4/0, 6/1, 4/64s	Neoprene	.688	2,900	36%
1/0, 7W, 10/64s	Poly. (.982)	.678	600	33%
1/0, 7W, 10/64s	Poly. (.949)	.692	500	28%

This table is based on actual results of long term sustained load tests and may be considered representative of the cables described.

Refer to reference charts in this section for additional information on Holding Strengths.

Specific gravity of various polyethylenes:
ASTM Designation D-1248-58T

Low Density (g/cu. cm.) 0.910-0.925
Medium Density (g/cu. cm.) 0.926-0.940
High Density (g/cu. cm.) 0.941-0.965

Slack Span Dead-end

NOMENCLATURE

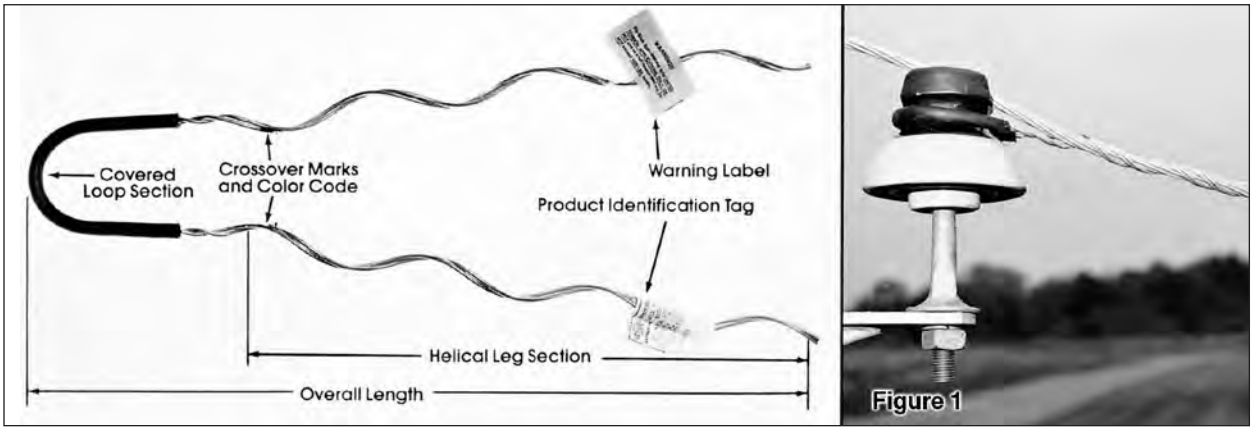


Figure 1

Dead-end Material Helical Leg Section: Aluminum covered steel. An aluminum alloy version is available for corrosive environment. Contact PLP.

Crossover Marks: Indicates starting point for application on conductor.

Color Code & Length: Assists in identification of conductor diameter range, corresponding to tabular information listed on catalog pages.

Covered Loop Section: Elastomeric compound specifically formulated for resistance to ozone attack, weathering and abrasion.

Product Identification Tag/Warning Label: Identifies catalog number, appropriate conductor types and sizes and product usage limitations.

GENERAL RECOMMENDATIONS

Slack Span Dead-end is intended for use on aluminum based conductors with diameter ranges from .229" to 1.216". It is specifically designed to terminate primary, secondary and neutral conductors.

Each Slack Span Dead-end covers a range of conductor diameters as outlined on catalog pages.

Conductor Tension Limitations: The Slack Span Dead-end is specifically designed for LIMITED TENSION APPLICATIONS. IT SHOULD NOT BE USED AS A FULL TENSION DEAD-END.

The Slack Span Dead-end is intended for use where guying (or other) restrictions prevent full tension spans. While individual utility construction and safety practices should dictate actual installations, each Slack Span Dead-end has a warning label attached suggesting a maximum allowable loaded tension of 1000 lbs. This value does not indicate a holding strength rating for Slack Span Dead-ends; rather, it suggests a practical limit for tensions in this type of construction.

The Slack Span Dead-end replaces conventional Dead-ending equipment used in slack span construction.

Dead-end insulators, clamps, and associated hardware when used in this way normally do not offer tight, solid electrical connections between each other. This “looseness” can allow intermittent contact and ultimately produce troublesome RFI (RIV) and TVI. Construction practices utilizing the Slack Span Dead-end can minimize this problem.

The Slack Span Dead-end is specifically designed to be installed on pin, line post or spool insulators when used in limited tension construction. Refer to Figure 1 for a typical installation. Refer to Illustrations 1 and 2 and Acceptable Fitting Section for acceptable types and sizes of insulators and fittings.

Covered Loop Section: The loop of the Dead-end is covered with an elastomer to provide protection against abrasion and damage to the glaze of the insulator. It also helps minimize RFI, TVI, etc.

The Slack Span Dead-end is designed to grip the conductor uniformly to prevent distortion. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

Where requirements call for increased tension applications, use either the Distribution Grip Dead-end or the Overhead Dead-end. On jacketed conductors, use either coated Dead-ends or Distribution Grip Dead-ends.

Where requirements call for Dead-ending conductors associated with bare neutral messengers or self-supporting cable used in making service drops, use Service Grip Dead-ends. Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLINE Dead Ends are suggested for these applications. Consult PLP for further information.

Distribution Grip (Slack Span/Overhead) Dead Ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead Ends are suggested for these applications; consult PLP for further information.

Slack Span Dead-end

INSTALLATION GUIDELINES

Conductor Compatibility: Slack Span Dead-ends should be used only on the size and type of conductor for which they are designed. They must have the same lay as the conductor to which they are being applied. When ordering Slack Span Dead-ends, make sure to specify the conductor size and type they are to be used on. When using types and/or sizes of conductors **not** mentioned in these catalog pages, consult Preformed Line Products Company.

During installation, and at all times, care should be taken to avoid gouging or damaging the protective coating of the Slack Span Dead-end or the conductor itself.

Slack Span Dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

Tools are not required to install Slack Span Dead-ends, except for hot stick applications.

Tapping: Tapping over the legs of the Slack Span Dead-end is NOT recommended. Taps can be made beyond the ends of the Dead-end on the conductor or on the conductor tail that extends through the loop.

Slack Span Dead-ends should not be used on overhead shield wires.

FOR ADDITIONAL INFORMATION REGARDING INSTALLATION, REFER TO THE Slack Span Dead-end APPLICATION PROCEDURE.

When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ Sales Representative or Preformed Line Products Company.

ACCEPTABLE FITTINGS

Slack Span Dead-ends are specifically designed to be applied around the necks of certain pin, line post and spool insulators.

Slack Span Dead-ends can be applied to either:
a. ANSI “C” and “F” neck insulators and ANSI class 53-1 to 53-5 spool insulators, or
b. ANSI “J” neck insulators.

Refer to Illustration 1. for nominal insulator neck sizes and appropriate size Slack Span Dead-end.

Application of Slack Span Dead-ends to non-insulator fittings is acceptable as long as the fitting:
a. has smoothly contoured dimensions,
b. has a seat diameter (Illustration 2, Figure 1) consistent with the insulator neck diameters shown in Illustration 1.,
c. has a minimum groove width (Illustration 2, Figure 2) of 9/16".

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS 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™ product before application.
5. PREFORMED™ products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Slack Span Dead-end

Illustration 1. Applicable Pin, Line post and Spool Insulators

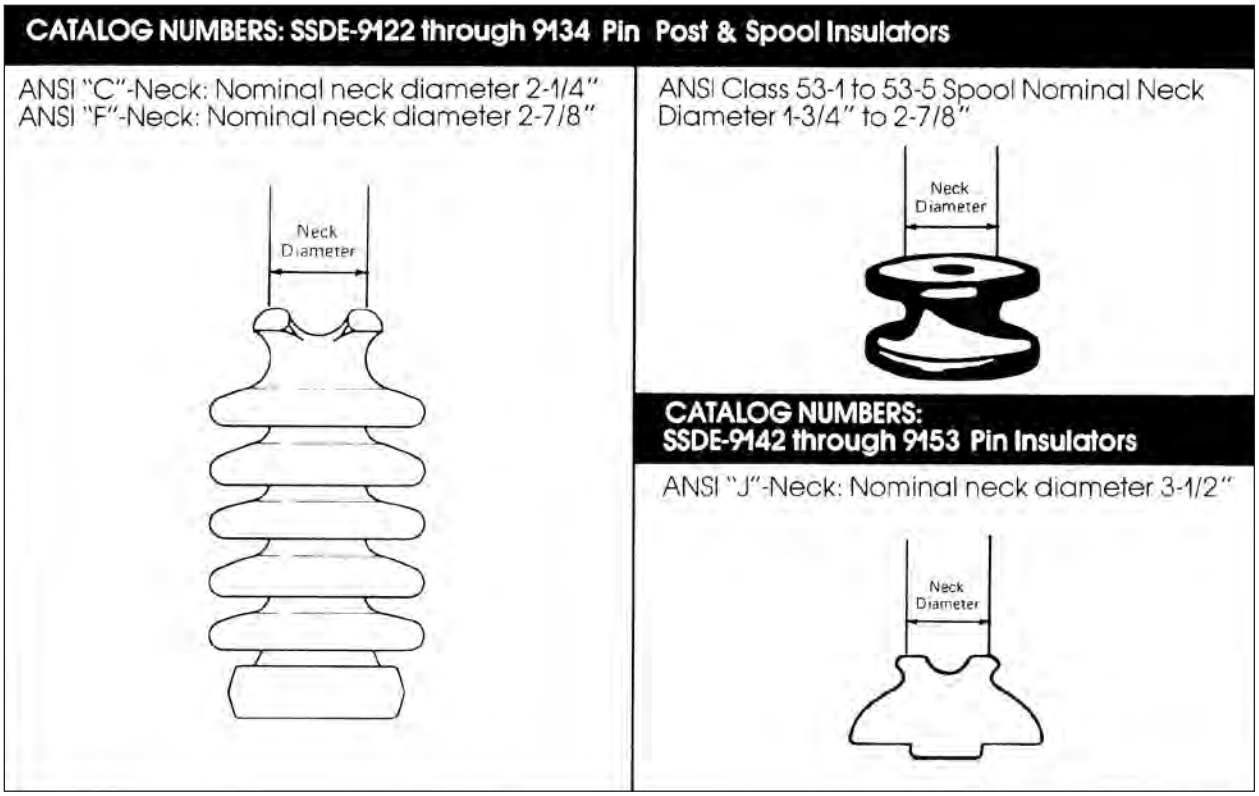
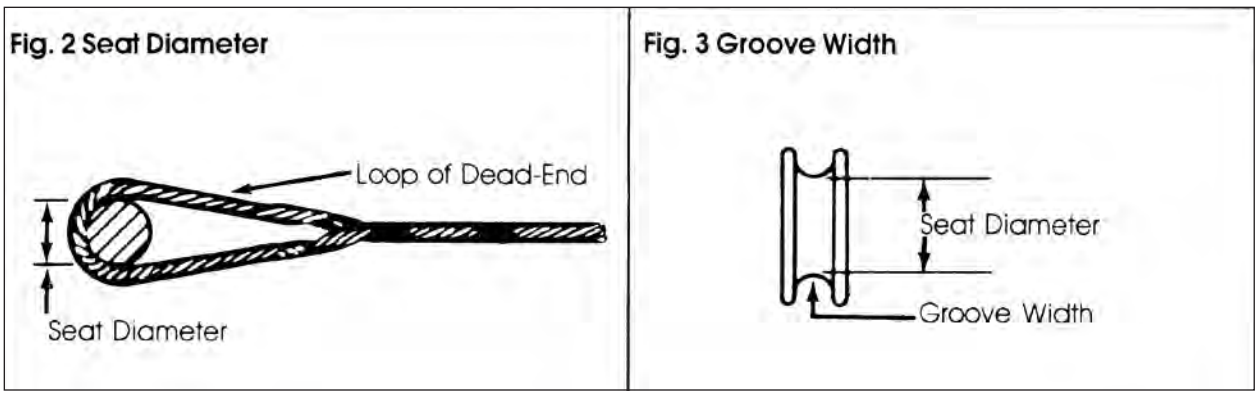


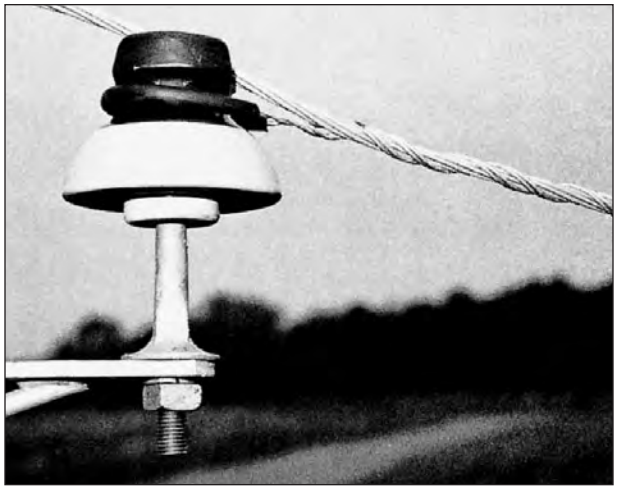
Illustration 2. Acceptable Dimensions for Non-Insulator Fittings



Slack Span Dead-end

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

C-Neck and F-Neck Interchangeable Headstyle Insulators:
2-1/4" Neck Diameter
2-7/8" Neck Diameter
ANSI Class Spool Insulators:
ANSI 53-1, 53-2, 53-3
1-3/4" Neck Diameter
ANSI 53-4, 53-5
2-7/8" Neck Diameter



Catalog Number	Conductor		Per Carton Units	Length (Inches)	Color Code
	Range (Inches)	Nominal Size			
SSDE-9122	.229-.257	#4 AWG	25	16	Orange
SSDE-9124	.290-.325	#2 AWG	25	18	Red
SSDE-9125	.326-.364	#1 AWG	25	19	Green
SSDE-9126	.365-.409	1/0 AWG	25	20	Yellow
SSDE-9127	.410-.460	2/0 AWG	25	18	Blue
SSDE-9128	.461-.516	3/0 AWG	25	18	Orange
SSDE-9129	.517-.577	4/0 AWG	25	19	Red
SSDE-9130	.578-.665	266.8 kcmil	25	21	Black
SSDE-9131	.666-.783	336.4 kcmil	25	21	Green
SSDE-9132	.784-.883	477 kcmil	25	22	Orange
SSDE-9133	.884-1.025	636 kcmil	25	25	Brown
SSDE-9134	1.026-1.216	795 kcmil	25	26	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) AWAC is a registered trademark of the Copperweld Co.
(2) Where Dead-ending requirements call for other than **limited** tension requirements, refer to Distribution-Grip Dead-ends, Dead-end-Coated, or Overhead Dead-end.
(3) Where Dead-ending requirements call for Service Grip Dead-ends, refer to that section.
(4) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.
(5) “Conductor Range” indicates the range of conductors that utilize the same Dead-end.
(6) Refer to Illustrations 1 and 2 and Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.
(7) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Slack Span Dead-end

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

J-Neck Interchangeable Headstyle Insulators:
3-1/2" Neck Diameter
ANSI 55-6 Single Skirt Pin
ANSI 55-7 Single Skirt Pin
ANSI 55-8 Double Skirt Pin

Catalog Number	Conductor		Per Carton Units	Length (Inches)	Color Code
	Range (Inches)	Nominal Size			
SSDE-9142	.229-.357	#4 AWG	25	18	Orange
SSDE-9144	.290-.325	#2 AWG	25	19	Red
SSDE-9145	.326-.364	#1 AWG	25	20	Green
SSDE-9146	.365-.409	1/0 AWG	25	21	Yellow
SSDE-9147	.410-.460	2/0 AWG	25	19	Blue
SSDE-9148	.461-.516	3/0 AWG	25	20	Orange
SSDE-9149	.517-.577	4/0 AWG	25	21	Red
SSDE-9150	.578-.665	266.8 kcmil	25	22	Black
SSDE-9151	.666-.783	336.4 kcmil	25	23	Green
SSDE-9152	.784-.883	477 kcmil	25	24	Orange
SSDE-9153	.884-1.025	636 kcmil	25	27	Brown
SSDE-9154	1.026-1.216	795 kcmil	25	28	Orange

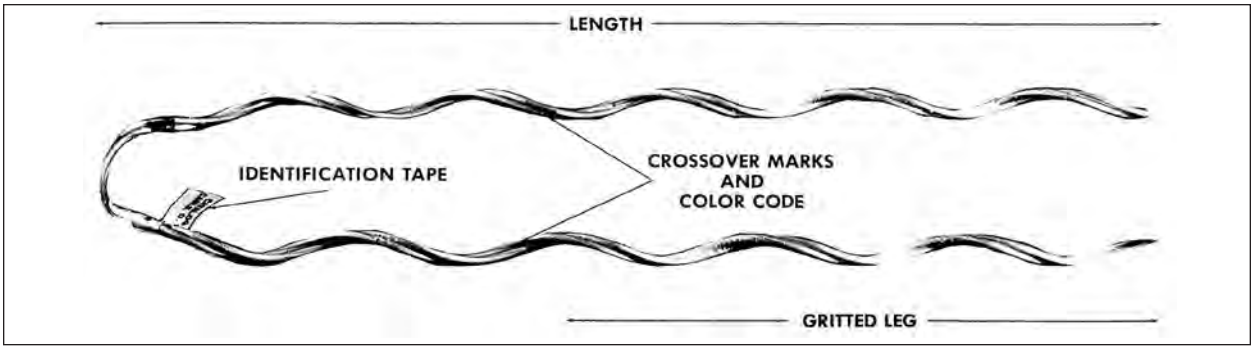
Right-hand lay standard

EXPLANATORY NOTES:

(1) AWAC is a registered trademark of the Copperweld Co.
(2) Where Dead-ending requirements call for other than **limited** tension requirements, refer to Distribution Grip Dead-ends, Dead-end-Coated, or Overhead Dead-end.
(3) Where Dead-ending requirements call for Service Grip Dead-ends, refer to that section.
(4) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.
(5) “Conductor Range” indicates the range of conductors that utilize the same Dead-end.
(6) Refer to Illustrations 1 and 2 and Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.
(7) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Service-Grip Dead-end

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

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

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Service-Grip Dead-end, manufactured of aluminum-covered steel, is designed for bare neutral messengers of self-supporting cable used in making service drops. The Dead-end is recommended for service drops by reason of minimum length, economy, and neatness of appearance. Mechanical strength meets the requirements for NESC Grade "N", Rule 263-E, Supply Services, Spans not exceeding 150 feet.

For service drops exceeding 150 feet, Grade "C" Construction, the *Distribution Grip Dead-end* is recommended.

Dead-end: Coated is recommended for direct application over plastic jacketed open-wire service drops.

RATED HOLDING STRENGTH. Published for individual sizes on the page following the initial specification page. In arriving at "Rated Holding Strengths", actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service.

TAPPING. Tapping over the applied legs of *Service-Grip Dead-end* is **not** recommended. Taps can be made on the conductor, ahead of the Dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. No consideration of dampening devices with *Service-Grip Dead-ends* is made since *Distribution-Grip Dead-ends* are recommended when vibration is suspected.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation.

Lay direction of both the Dead-end and the conductor should be the same. Lay direction of most neutral-messengers is right hand lay.

The loops of *Service-Grip Dead-ends* should not be crisscrossed, when two or more are applied to the same spool.

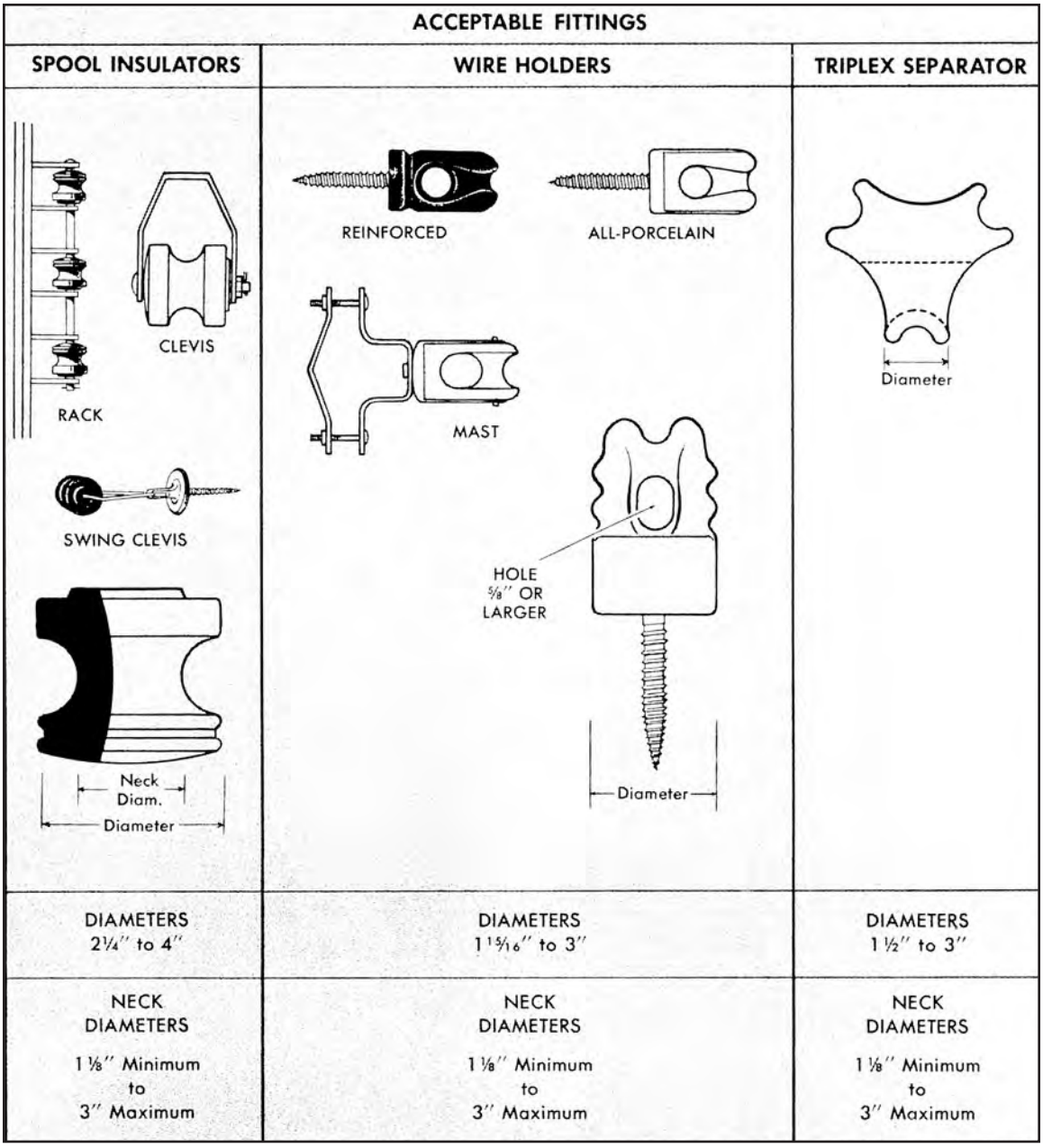
(Continued on next page)

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS 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 Service-Grip Dead-end before application.
5. Service-Grip Dead-ends are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Service-Grip Dead-end

GENERAL RECOMMENDATIONS CONTD.



Loops of the **Service-Grip Dead-end** are designed for use with a variety of porcelain fittings. These fittings are recommended because they have smoothly contoured diameters between 1-1/8" minimum and 3" maximum. Refer to catalog pages for maximum neck diameters for specific Service-Grip Dead-ends.

Consult PLP for fittings not appearing in this table.

Service-Grip Dead-end

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

Catalog Number	Diameter Range (In.)		Nominal Conductor Sizes				Units	Wt./Lbs.	Length (In.)	Color Code	Max. Neck Dia. (In.)
	Min.	Max.	ACSR	All-Alum.	Alum. Alloy	Comp.	Per Carton				
SG-4500	.169	.198	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1 #6, 7W	300	24	11	Blue	2-3/8
SG-4501	.199	.224	#5, 6/1	#4, Solid	#5, 7W	#4, 7W	300	27	12	White	2-3/8
SG-4502	.225	.257	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1 #4, 7/1	300	29	13	Orange	2-3/8
SG-4503	.258	.289	#3, 6/1	#3, 7W #2, Solid	#3, 7W	#3, 6/1 #2, 7W	200	27	14	Black	2-5/8
SG-4504	.290	.325	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1 #1, 7W	200	28	15	Red	2-5/8
SG-4505	.326	.360	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1 1/0, 7W	200	31	17	Green	2-5/8
SG-4506	.361	.400	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1 2/0, 7W	100	28	19	Yellow	2-7/8
SG-4507	.401	.450	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1 3/0, 7W	100	31	21	Blue	2-7/8
SG-4508	.451	.510	3/0, 6/1	3/0, 7W	3/0, 7W	4/0, 7W	100	33	23	Orange	2-7/8
SG-4509	.511	.580	4/0, 6/1 4/0, 18/1	4/0, 7W	4/0, 7W	4/0, 6/1	100	37	26	Red	3

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates a few of the various conductors within each range. Refer to the following page for additional conductor sizes interchangeable with the same Dead-end. Consult PLP for sizes or strandings not shown.
(2) Refer earlier in this section for acceptable fittings.
(3) Rated Holding Strengths are listed on the following page.

Service-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied Dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.						
					Compacted	
Catalog Number	Size	ACSR	All-Alum.	Alum. Alloy	ACSR	All-Alum.
SG-4500	#6	#6, 6/1 585 lbs. (50%)	#6, 7W 488 lbs. (88%)	#6, 7W 840 lbs. (80%)	#6, 6/1 585 lbs. (50%)	#6, 7W 500 lbs. (90%)
	#5		#5 Solid 549 lbs. (88%)			
SG-4501	#5	#5, 6/1 730 lbs. (50%)		#5, 7W 1,080 lbs. (80%)		
	#4		#4 Solid 772 lbs. (88%)			#4, 7W 788 lbs. (90%)
SG-4502	#4	#4, 6/1 915 lbs. (50%)	#4, 7W 770 lbs. (88%)	#4, 7W 1,336 lbs. (80%)	#4, 6/1 915 lbs. (50%)	
		#4, 7/1 1,144 lbs. (50%)			#4, 7/1 1,145 lbs. (50%)	
	#3		#3, Solid 854 lbs. (88%)			
SG-4503	#3	#3, 6/1 1,125 lbs. (50%)	#3, 7W 900 lbs. (88%)	#3, 7W 1,720 lbs. (80%)	#3, 6/1 1,125 lbs. (50%)	
	#2		#2 Solid 1,078 lbs. (88%)			
	#1		#1 Solid 1,331 lbs. (88%)			#2, 7W 1,202 lbs. (90%)
SG-4504	#2	#2, 6/1 1,395 lbs. (50%)	#2, 7W 1,175 lbs. (88%)	#2, 7W 2,124 lbs. (80%)	#2, 6/1 1,395 lbs. (50%)	
					#2, 7/1 1,763 lbs. (50%)	
	#1					#1, 7W 1,383 lbs. (90%)
SG-4505	#1	#1, 6/1 1,740 lbs. (50%)	#1, 7W 1,430 lbs. (88%)	#1, 7W 2,736 lbs. (80%)	#1, 6/1 1,740 lbs. (50%)	
	1/0					1/0, 7W 1,773 lbs. (90%)
						1/0, 19W 1,881 lbs. (90%)
SG-4506	1/0	1/0, 6/1 2,140 lbs. (50%)	1/0, 7W 1,734 lbs. (88%)	1/0, 7W 3,384 lbs. (80%)	1/0, 6/1 2,140 lbs. (50%)	
		5/1 1,688 lbs. (50%)				
	2/0					2/0, 7W 2,232 lbs. (90%)
						2/0, 19W 2,327 lbs. (90%)
SG-4507	2/0	2/0, 6/1 2,673 lbs. (50%)	2/0, 7W 2,182 lbs. (88%)	2/0, 7W 4,044 lbs. (80%)	2/0, 6/1 2,673 lbs. (50%)	
	3/0					3/0, 7W 2,705 lbs. (90%)
						3/0, 19W 2,880 lbs. (90%)
SG-4508	3/0	3/0, 6/1 3,338 lbs. (50%)	3/0, 7W 2,644 lbs. (88%)	3/0, 7W 5,092 lbs. (80%)	3/0, 6/1 3,338 lbs. (50%)	
	4/0					4/0, 7W 3,411 lbs. (90%)
						4/0, 19W 3,501 lbs. (90%)
SG-4509	4/0	4/0, 6/1 4,210 lbs. (50%)	4/0, 7W 3,335 lbs. (88%)	4/0, 7W 6,420 lbs. (80%)	4/0, 6/1 4,210 lbs. (50%)	
		4/0, 5/1 3,300 lbs. (50%)				
		4/0, 18/1 2,923 lbs. (50%)				
EXPLANATORY NOTES: (1) Refer to General Recommendations for explanation of “Related Holding Strength” (2) Consult PLP for sizes or strandings not shown.						