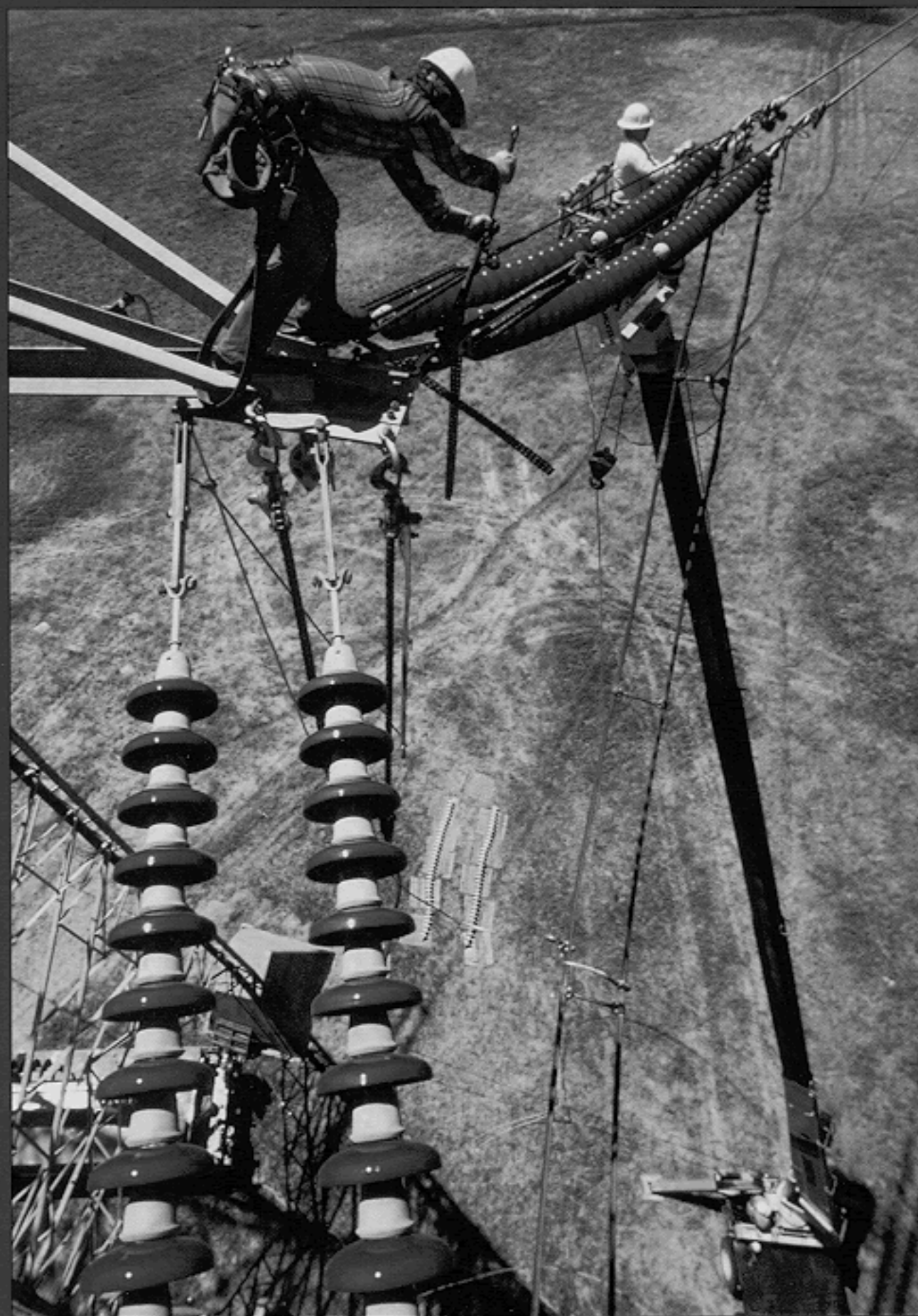


# **LAPP® PORCELAIN SUSPENSION AND STRUT INSULATORS**

**CATALOG 10B**



**LAPP**  
*Insulator Company*



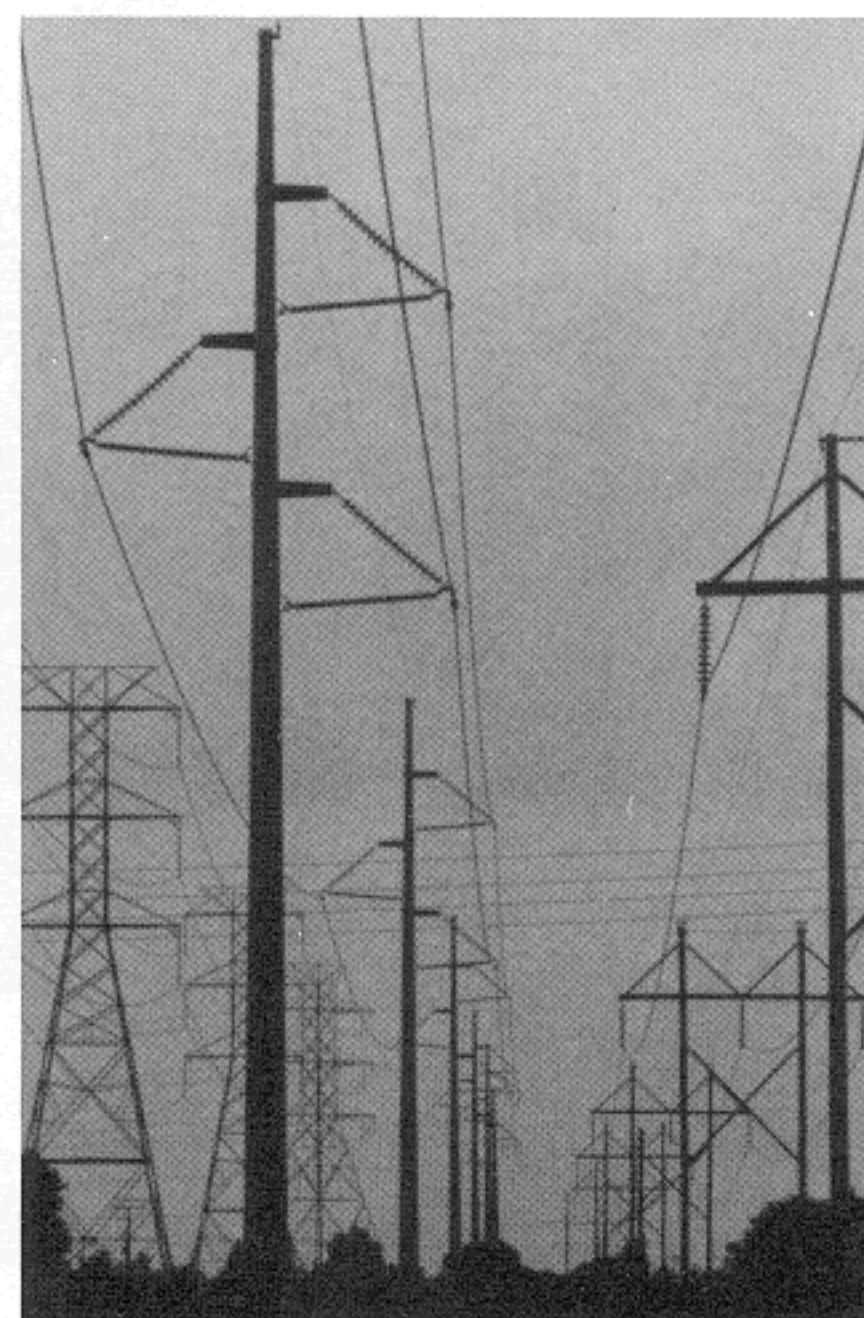
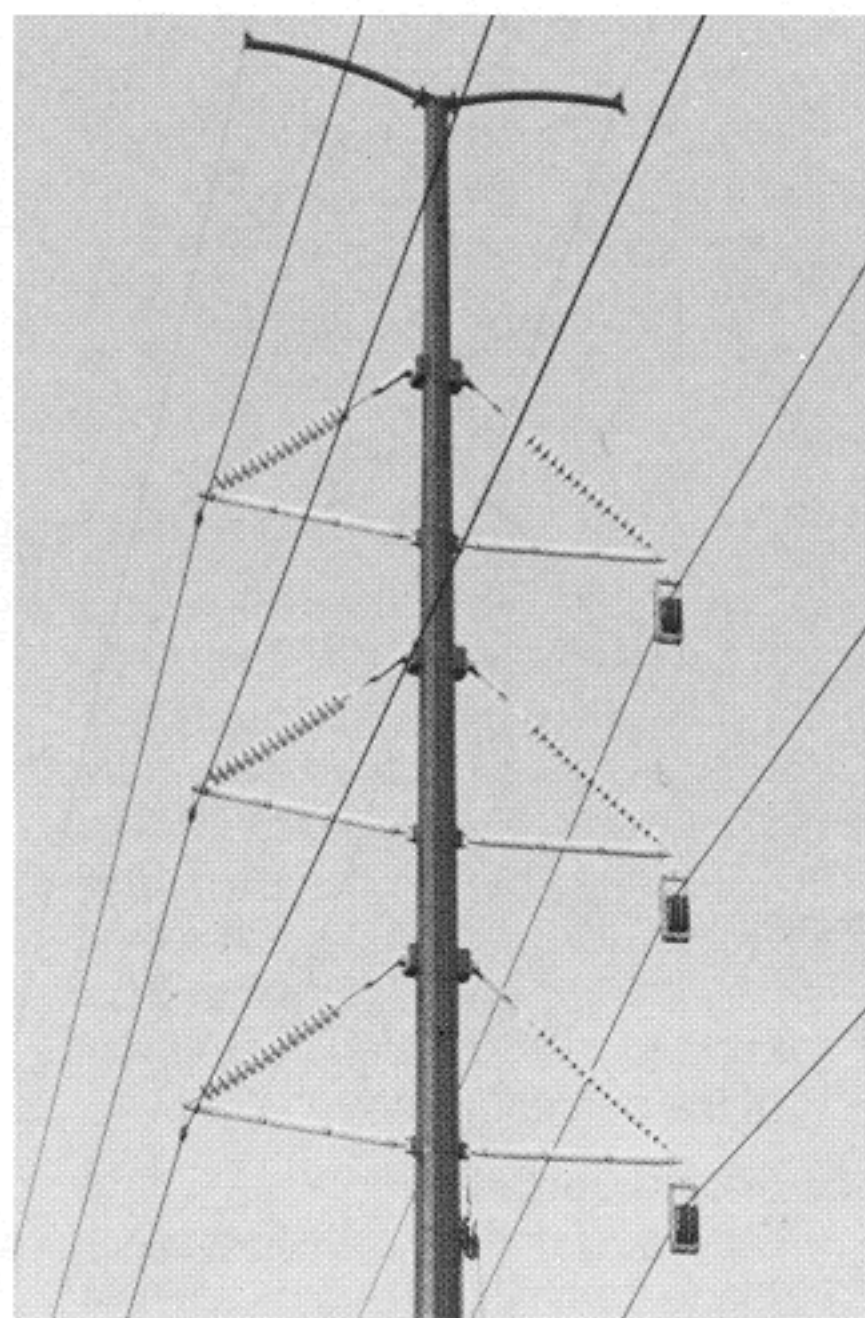
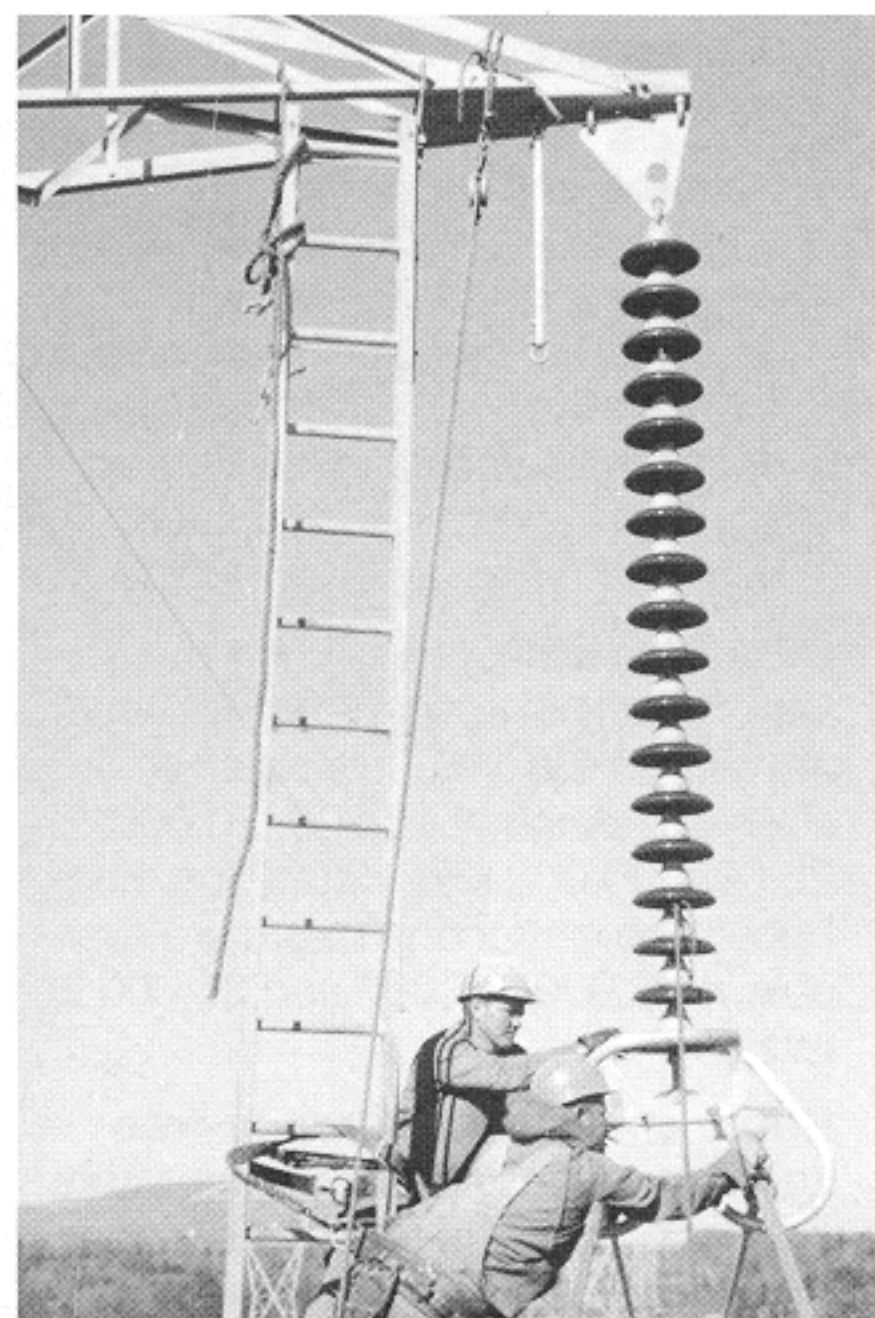
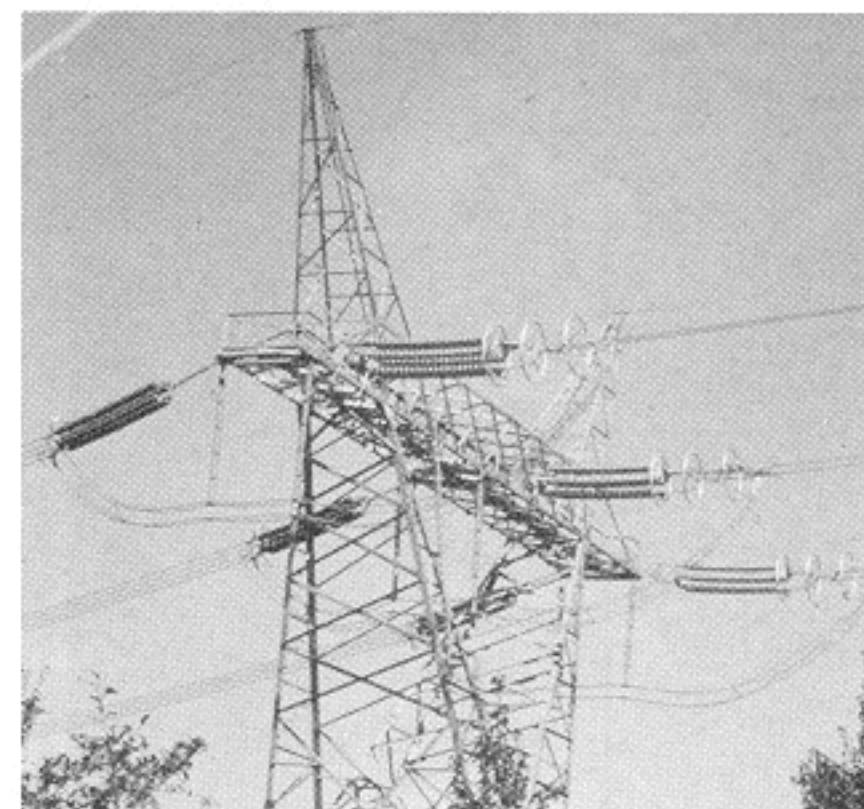
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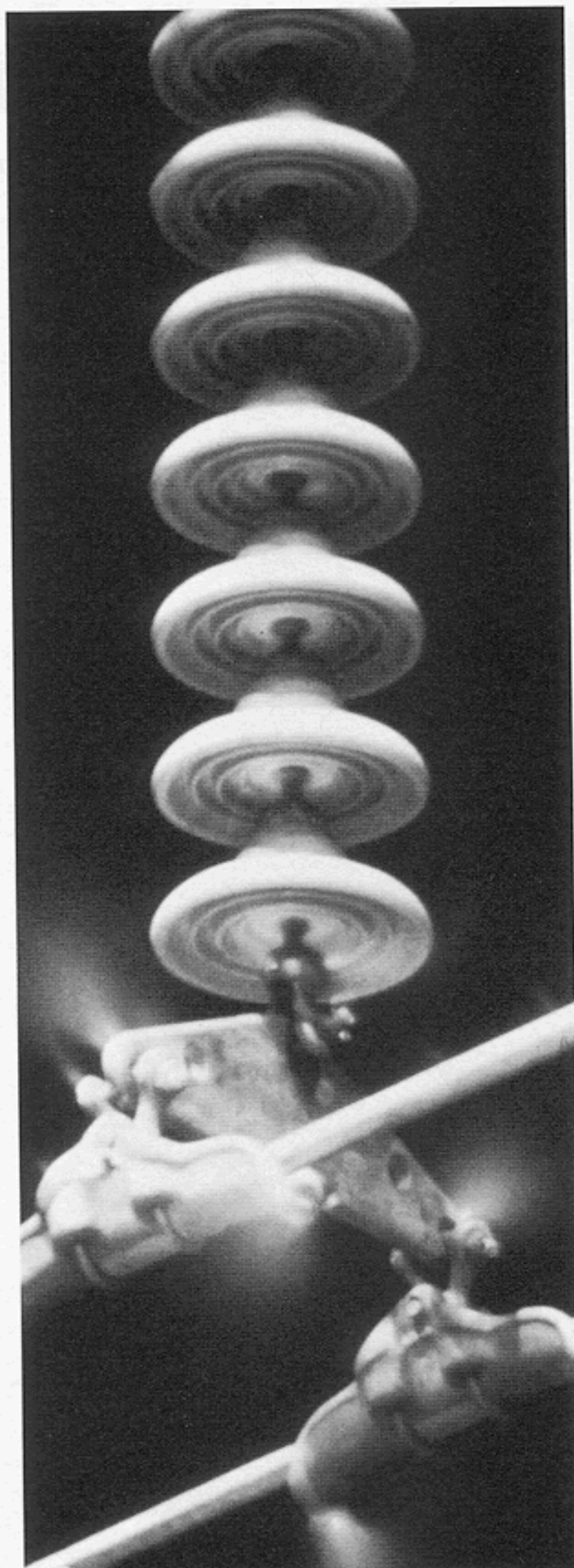


**Cover Photo** courtesy of  
Pacific Gas & Electric Co.



# LAPP PORCELAIN SUSPENSION INSULATORS

2



## Design Features

### 1. Choice of hardware

Both standard and Fog-Pacer suspensions are available for ball-socket or clevis-eye insulator coupling. Caps are ferrous, hot-dip galvanized.

### 2. Cement assembly

Caps are cemented on the porcelain. This loads the porcelain in a large area, low-intensity compression grip. Lapp uses a Portland cement well-suited for use on porcelain insulator assemblies.

### 3. Hardware painting

Before cementing, all surfaces of the hardware that will come in contact with the cement are coated. The coating protects the hardware from chemical attack by the cement. It also allows for slight movement between parts to relieve mechanical stress due to thermal variations.

### 4. Bonded sand bands

Sand bands bonded to the porcelain by glaze provide a rough surface for permanently attaching the hardware and distributing the load evenly through the porcelain. The high-strength compression sand that is used is manufactured by Lapp to match the characteristics of the porcelain body.

### 5. Sound porcelain

Lapp suspension insulators are made from flint-body porcelain or high-strength alumina-body porcelain, depending on the strength requirements of the unit. Assembled units are subjected to rigorous electrical and mechanical tests before shipment.

### 6. Protected leakage

The porcelain shell or shed is designed to provide optimum leakage distance in relation to the shell diameter. The sturdy shed design also protects the leakage corrugations from mechanical damage.

### 7. Forged steel bolts

All strength ratings of Lapp suspension insulators use a forged-steel ball bolt or eye bolt that has been hot-dip galvanized. Most ball-socket units are available with a choice of straight (regular), Corrosion Intercepting Sleeve (CIS), or zinc sleeve ball bolt.

### 8. Choice of glazes

Lapp porcelain suspension insulators are available in a choice of four glazes: light gray, dark gray, chocolate brown, and royal blue. Consult the tables in this catalog to determine which glazes are available for specific products.

### Choice of strength ratings

Lapp porcelain suspension insulators are available in M&E (ultimate) strength ratings of 15,000, 20,000, 25,000, 30,000 and 40,000 lbs. Fog-Pacer suspension insulators are available in 20,000, 30,000 and 36,000 lb. ratings.

### Radio and TV interference-free

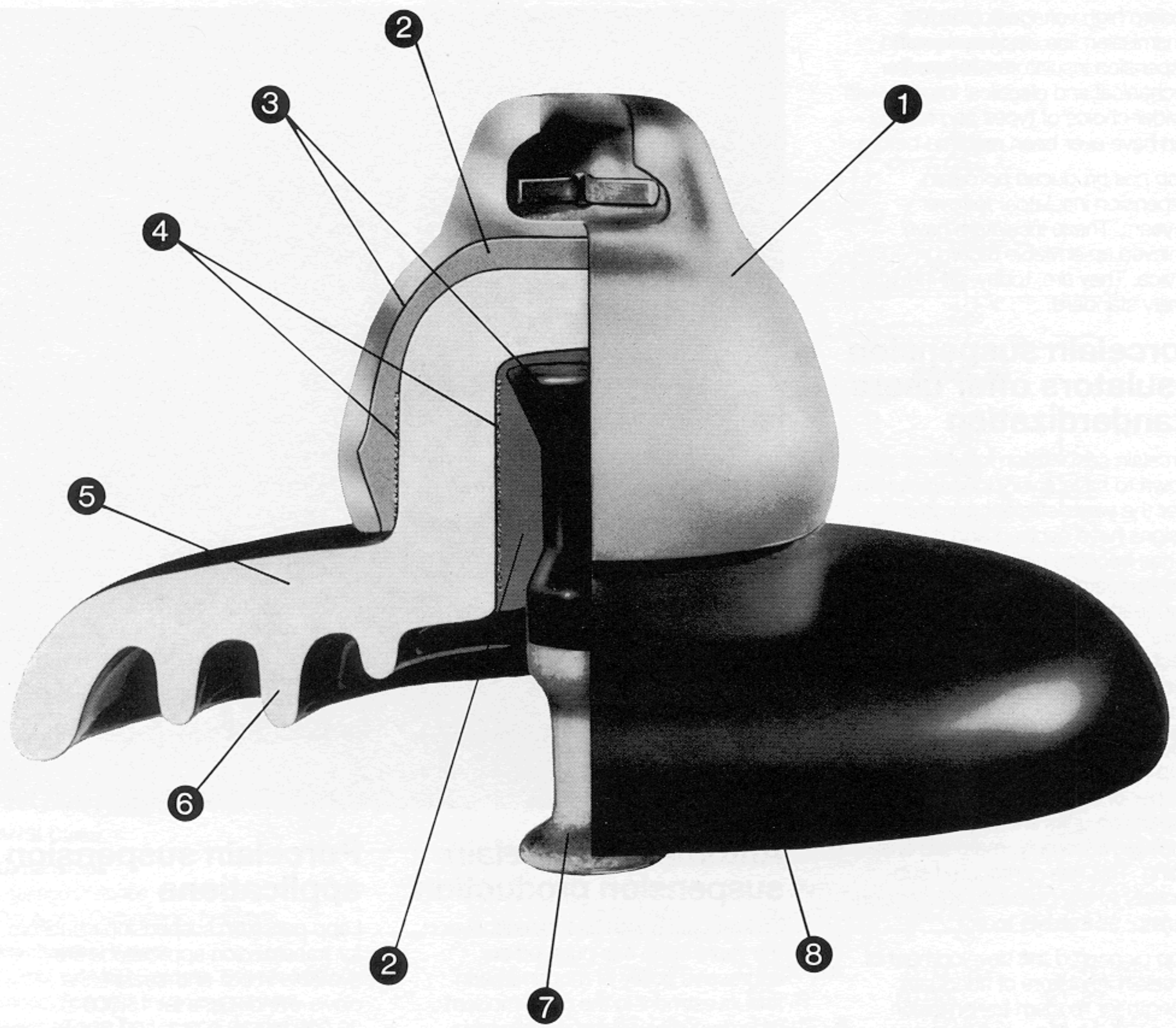
Lapp porcelain suspension insulators are designed to be free of radio and TV interference. In addition, hardware is smoothly contoured with well-rounded edges to reduce RIV.

### Fog-type suspensions

Lapp Fog-Pacer porcelain suspensions provide up to 50% more leakage distance than standard porcelain suspension insulators.



# MEET A WIDE VARIETY OF SUSPENSION INSULATORS OPERATING AT STANDARD AND HI-F°





# LAPP PORCELAIN SUSPENSION INSULATORS MEET A WIDE VARIETY OF DESIGN NEEDS.

4

Modern high voltage and EHV transmission line designs demand suspension insulators with greater mechanical and electrical integrity – in a wider choice of types and ratings – than have ever been required before.

Lapp has produced porcelain suspension insulators for over 70 years. These insulators have achieved an enviable record in service. They are, today, an industry quality standard.

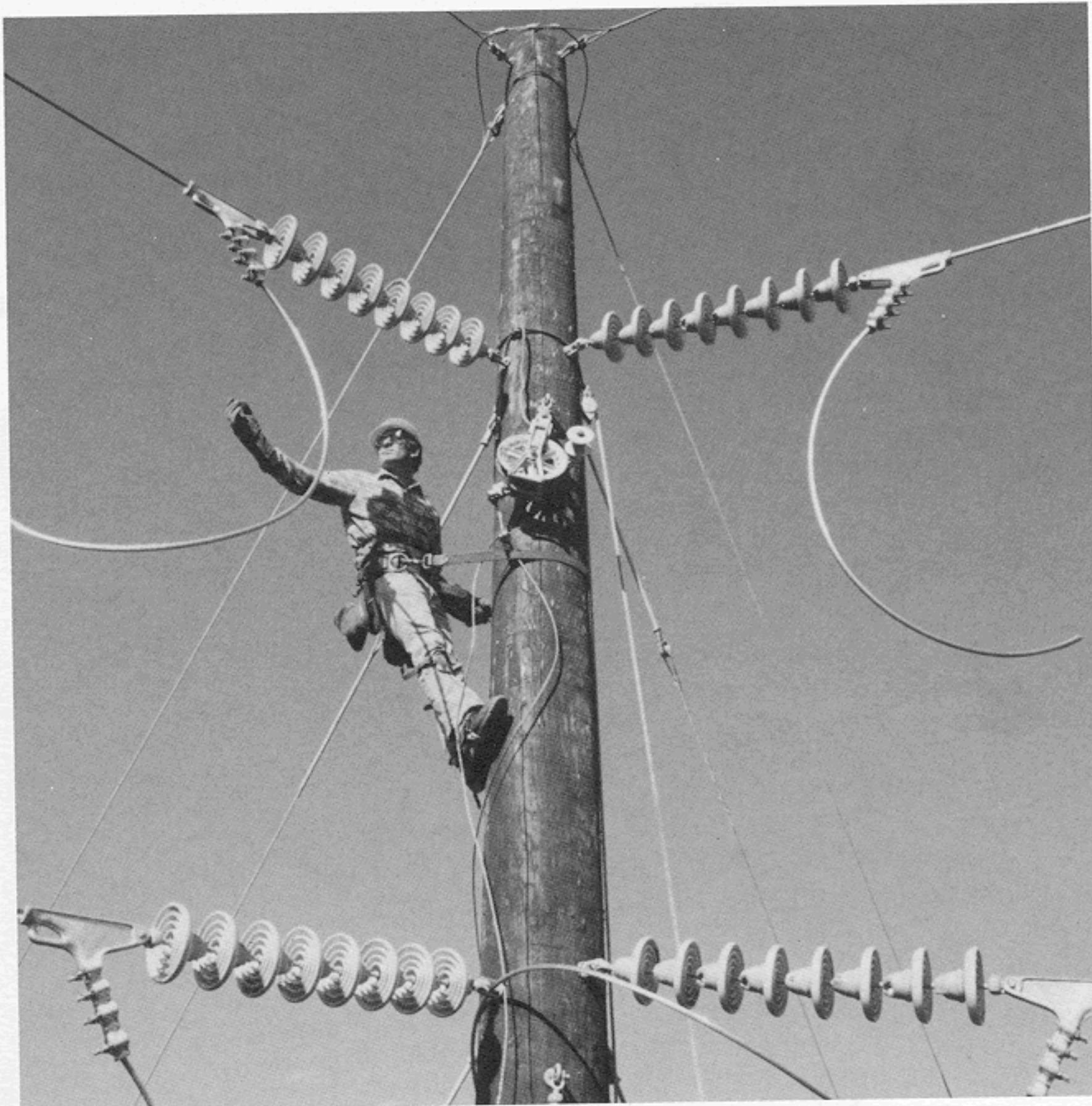
## Porcelain suspension insulators offer users standardization

Porcelain suspension insulators are known to have a very long useful life. Over the years efficient porcelain designs have evolved and the industry has become highly standardized. This standardization ensures interchangeability among various manufacturers' designs. It also permits an exact definition of ratings as well as precisely defined design and quality control testing.

In addition to maintaining high quality, Lapp has also been responsible for a number of developments in porcelain suspension units and improvements in design, assembly, materials and testing. This has contributed substantially to the porcelain suspension insulator as it exists today.

Lapp pioneered the development of porcelain insulators of adequate strength for modern transmission. Lapp was the first manufacturer to move beyond the 10,000 to 12,000 lb. strength range, and later, the first to move into the 25,000 lb. strength class.

Lapp was the first manufacturer to raise strength classifications to 20,000 and 30,000 lbs. In addition, Lapp developed compression sand. When combined with the long-used compression glaze, this sand adds greatly to the strength of porcelain-metal assemblies.



## Automated porcelain suspension production

To keep pace with user needs, over the years Lapp has pursued an aggressive policy of modernization and investment in the most modern manufacturing equipment available.

Besides expanding and updating its facilities in LeRoy, New York, Lapp in 1968 built an additional plant in Sandersville, Georgia. Lapp/Sandersville is specifically designed for the large-volume manufacture of suspension insulators. This 143,000-square foot, mine-mouth facility is one of the most completely automated, conveyORIZED, and mechanized suspension manufacturing operations in the industry.

## Porcelain suspension applications

Lapp porcelain suspension insulators for transmission applications are available in ball-and-socket and clevis-eye designs for 15,000 lb., 20,000 lb., 25,000 lb., 30,000 lb., and 40,000 lb. ratings for conventional disc type suspensions. They're also available in Lapp Fog-Pacer® 20,000 lb., 30,000 lb., and 36,000 lb. ratings.

This complete product line allows transmission design engineers to specify exactly what they want in strength ratings while they pay only for what they need.

All Lapp porcelain suspension insulators are marked with the year of manufacture, the M&E rating, and the proof test rating of the insulator.



# HI-F® AND STANDARD STRENGTH UNITS

5

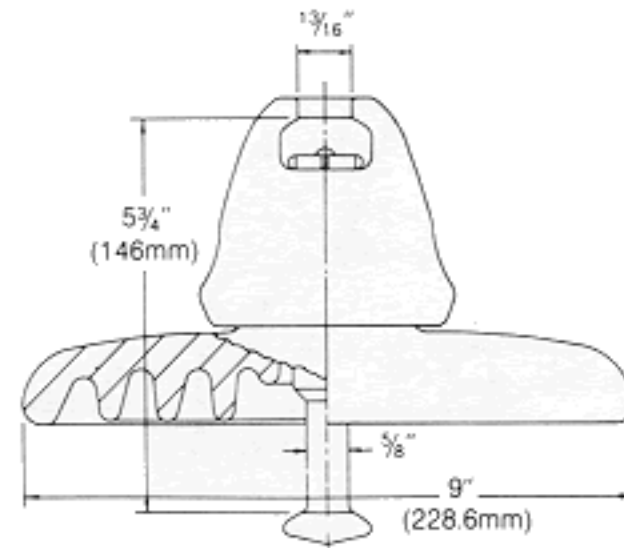
These standard strength suspension insulators have M&E strength ratings of 15,000 and 20,000 lbs. and are widely used for normal duty transmission construction.

Hi-F suspension insulators, catalog numbers 9000 and 9100, are rated at 15,000 lbs. These compact, 9-inch units meet all requirements for ANSI Class 52-3 and Class 52-4 suspensions. Because of their smaller size they offer important savings in size, weight, and cost.

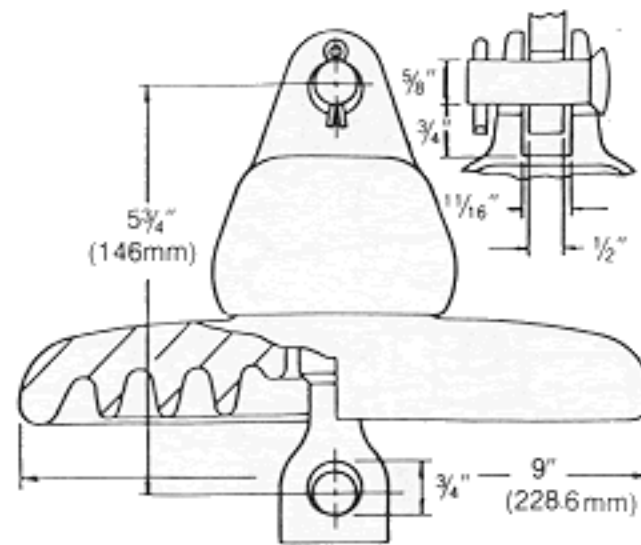
The standard 10-inch suspension insulators, catalog numbers 8200 and 8100, conform to every specification for ANSI Class 52-3 and Class 52-4 suspensions. However, they carry a strength rating of 20,000 lbs., one-third greater than that required by the standard.

Light gray glaze is standard. Chocolate glaze is available when specified by deleting -70 from the catalog number.

## 15,000 lb. Suspension Insulators

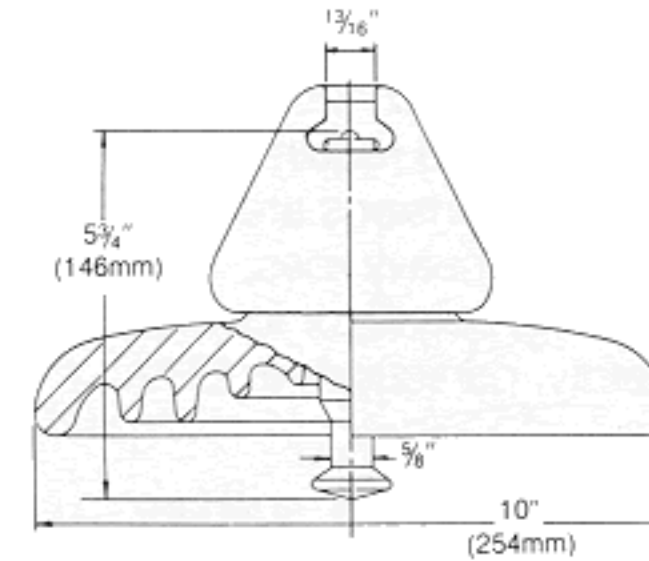


9000-70

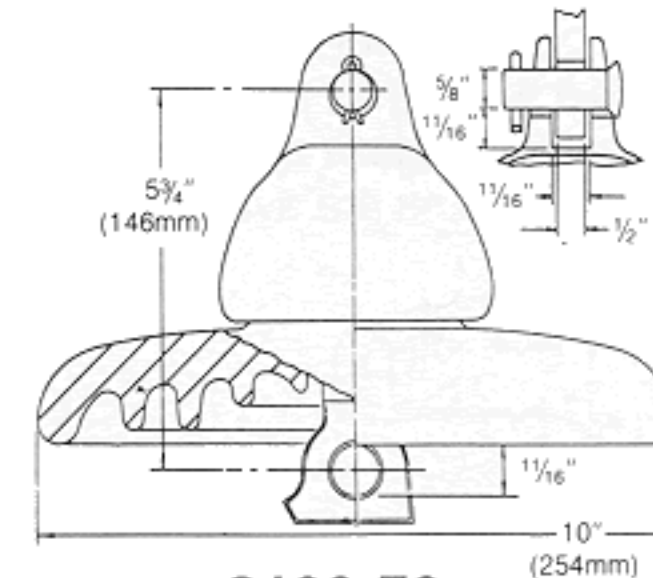


9100-70

## 20,000 lb. Suspension Insulators



8200-70



8100-70

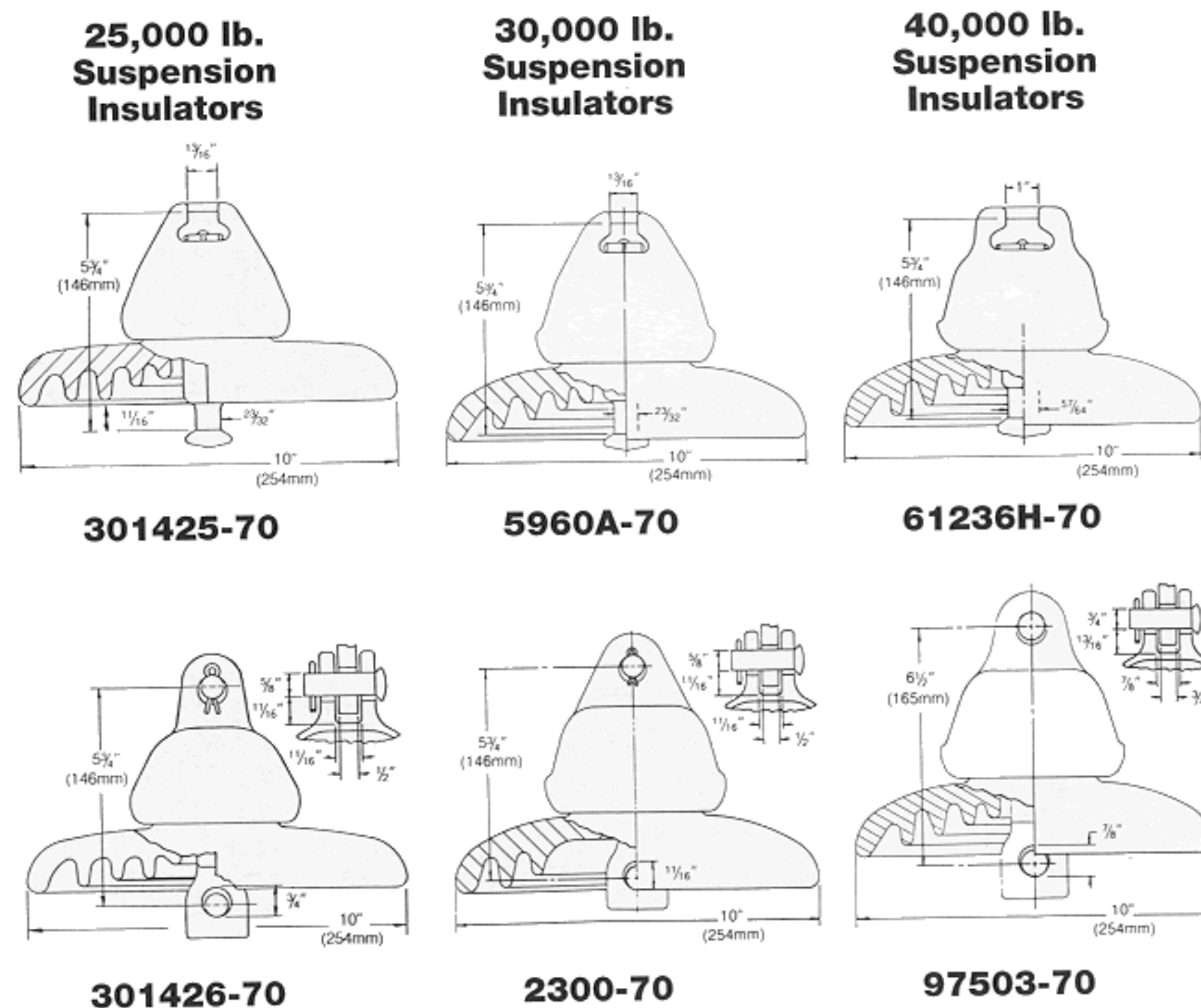
Catalog Number	9000-70	9100-70	8200-70	8100-70
Color – No. 70 Light Gray	9000	9100	8200	8100
Chocolate				
ANSI Class	52-3	52-4	52-3	52-4
Dimensions				
Leakage Distance, Inches (mm)	11.5 (292)	11.5 (292)	11.5 (292)	11.5 (292)
Dry Arcing Distance, Inches (mm)	7.75 (197)	7.75 (197)	7.75 (197)	7.75 (197)
Mechanical Values				
Combined M&E Strength, Pounds (kN)	15,000 (67)	15,000 (67)	20,000 (89)	20,000 (89)
Impact Strength, Inch-Pounds (Nm)	55 (6.2)	55 (6.2)	90 (10)	90 (10)
Routine Proof Test Load, Pounds (kN)	7,500 (33.3)	7,500 (33.3)	10,000 (44.5)	10,000 (44.5)
Time Load Test Value, Pounds (kN)	10,000 (44.5)	10,000 (44.5)	12,000 (53.4)	12,000 (53.4)
Maximum Working Load, Pounds (kN)	7,500 (33.3)	7,500 (33.3)	10,000 (44.5)	10,000 (44.5)
Electrical Values				
Low Frequency Dry Flashover, kV	80	80	80	80
Low Frequency Wet Flashover, kV	50	50	50	50
Impulse Flashover, Positive, kV	125	125	125	125
Impulse Flashover, Negative, kV	130	130	130	130
Low Frequency Puncture Voltage, kV	110	110	110	110
Radio Influence Voltage Data				
Test Voltage-rms to Ground, kV	10	10	10	10
Maximum RIV-Microvolts at 1000 kHz	50	50	50	50
Packing and Shipping Data				
Net Weight, Each, Pounds (kg), Approximate	7.8 (3.5)	7.8 (3.5)	11.8 (5.4)	11.8 (5.4)
Packed Weight, Each, Pounds (kg), Approximate	8.5 (3.9)	8.5 (3.9)	12.5 (5.6)	12.5 (5.6)
Number in Standard Package	6	6	6	6
Pallet Weight, Pounds (kg), Approximate	1,060 (480.8)	1,060 (480.8)	1,540 (698.5)	1,540 (698.5)
Pallet Quantity	120	120	120	120

# HIGH STRENGTH UNITS

Lapp high strength porcelain suspension insulators are available in 25,000, 30,000, and 40,000 lb. strength ratings to give transmission design engineers the closest possible insulator match for any maximum design load requirement. High strength suspensions are widely used for unusually heavy lines, dead-ending long spans, or for extra factors of safety, particularly in EHV construction.

The 25,000 and 30,000 lb. suspension insulators meet ANSI Standards for Class 52-5 and Class 52-6 suspension insulators.

Insulator numbers 61236H and 97503B have a 40,000 lb. strength rating and have gray glaze as standard. Other glazes are available on specification.



## Catalog Number

Color – No. 70 Gray

Chocolate

Charcoal Gray

Royal Blue

## ANSI Class

## Dimensions

Leakage Distance, Inches (mm)

Dry Arcing Distance, Inches (mm)

## Mechanical Values

Combined M&E Strength, Lbs. (kN)

Impact Strength, Inch-Lbs. (Nm)

Routine Proof Test, Lbs. (kN)

Time Load Test Value, Lbs. (kN)

Maximum Working Load, Lbs. (kN)

## Electrical Values

Low Frequency Dry Flashover, kV

Low Frequency Wet Flashover, kV

Impulse Flashover, Positive, kV

Impulse Flashover, Negative, kV

Low Frequency Puncture Voltage, kV

## Radio Influence Voltage Data

Test Voltage-rms to Ground, kV

Maximum RIV-Microvolts at 1000 kHz

## Packing and Shipping Data

Net Weight, Each, Lbs. (kg), Approx.

Packed Weight, Each, Lbs. (kg), Approx.

Number in Standard Package

Pallet Weight, Pounds (kg), Approx.

Pallet Quantity

301425-70

301425

301425G

52-5

12 (305)

7.75 (197)

25,000 (111)

90 (10)

12,500 (55.5)

15,000 (67)

12,500 (55.5)

80

50

125

130

110

10

50

12.5 (5.7)

13.2 (6.0)

6

1,620 (734.8)

120

301426-70

301426

301426G

52-6

12 (305)

7.75 (197)

25,000 (111)

90 (10)

12,500 (55.5)

15,000 (67)

12,500 (55.5)

80

50

125

130

110

10

50

12.5 (5.7)

13.2 (6.0)

6

1,620 (734.8)

120

5960A-70

5960A

5960G

52-5

11 (279)

7.75 (197)

30,000 (133)

90 (10)

15,000 (67)

18,000 (80)

15,000 (67)

80

50

125

130

110

10

50

14.2 (6.4)

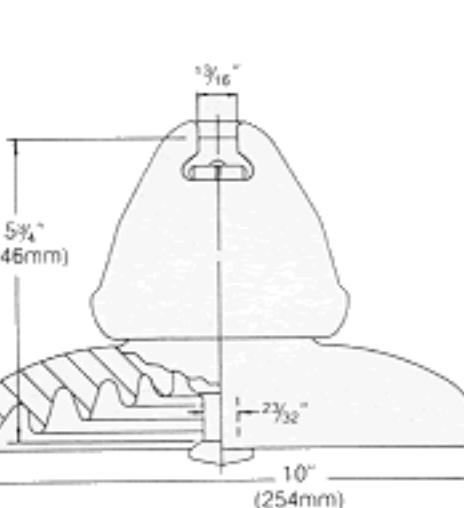
14.8 (6.7)

6

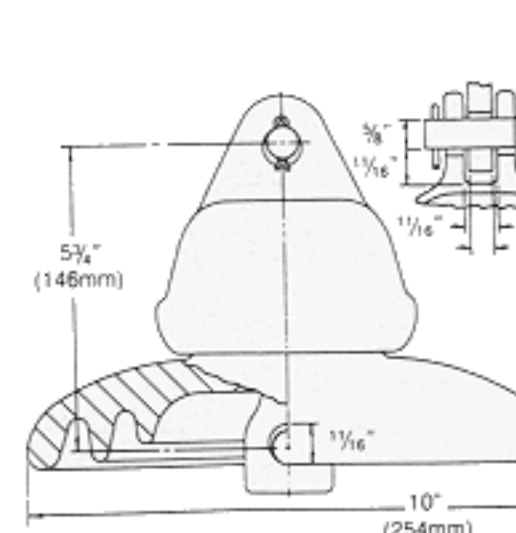
1,840 (834.6)

120

30,000 lb.  
Suspension  
Insulators

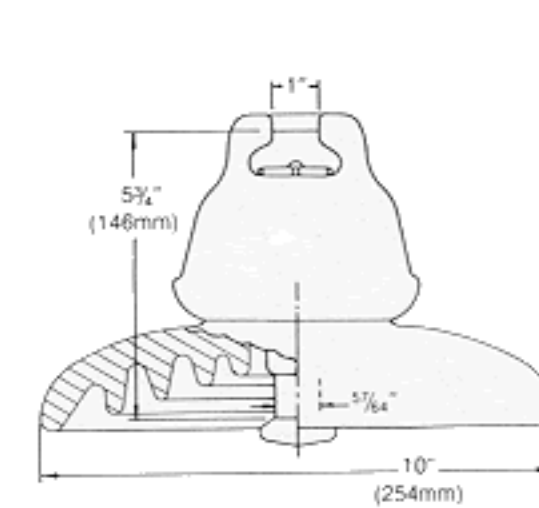


5960A-70

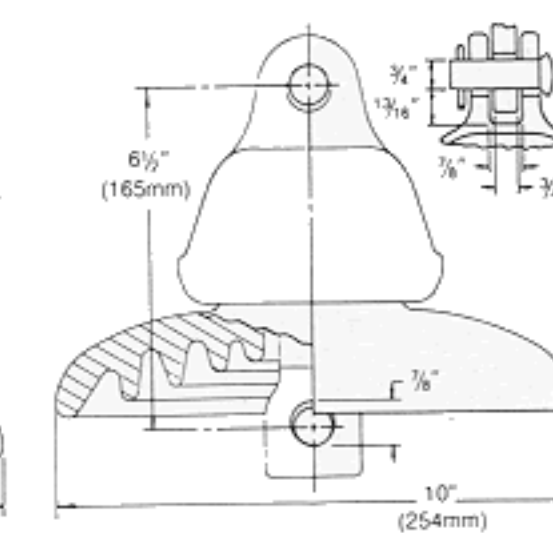


2300-70

40,000 lb.  
Suspension  
Insulators



61236H-70



97503-70

2300-70

2300

2300D

52-6

11 (279)

7.75 (197)

30,000 (133)

90 (10)

15,000 (67)

18,000 (80)

15,000 (67)

80

50

125

130

110

10

50

14.0 (6.3)

14.7 (6.7)

6

1,820 (825.6)

120

61236H-70

61236H

61236

61236E

52-8

11 (279)

7.75 (197)

40,000 (178)

100 (11.3)

20,000 (89)

24,000 (107)

20,000 (89)

80

50

125

130

110

10

50

16.8 (7.6)

17.5 (7.9)

6

2,160 (979.8)

120

97503-70

97503B

52-10

11 (279)

7.75 (197)

40,000 (178)

100 (11.3)

20,000 (89)

24,000 (107)

20,000 (89)

80

50

125

130

110

10

50

17.0 (7.7)

17.7 (8.0)

6

2,180 (988.8)

120



# FOG-PACER®

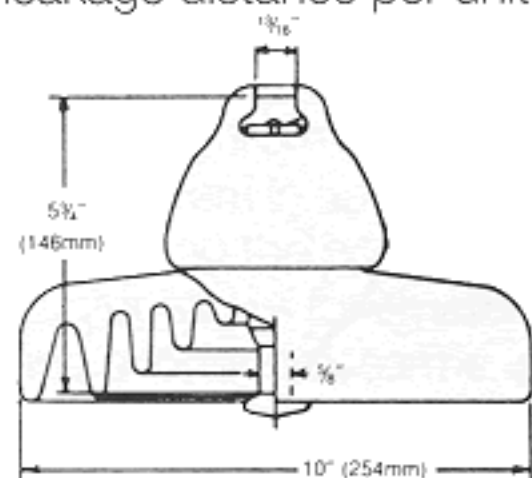
## FOG-TYPE SUSPENSION INSULATORS

Many applications in contaminated areas or where a line is being upgraded or compacted require a suspension insulator with increased leakage distance. The Lapp Fog-Pacer is designed to meet this need.

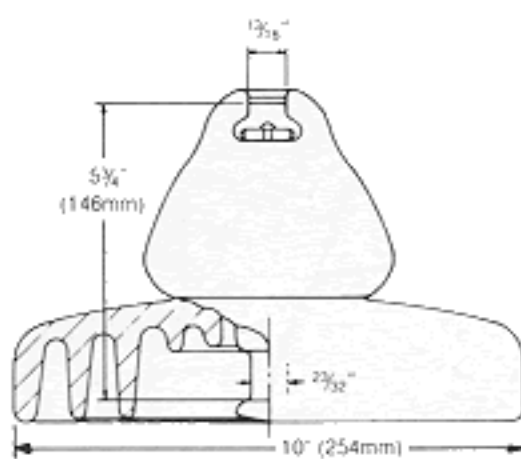
The Fog-Pacer is a true fog-type insulator and provides 17 inches of leakage distance per unit.

This is 48% more leakage than the 11.5 inches on the comparable ANSI standard suspensions. Fog-Pacer suspension insulators are available in M&E ratings of 20,000 lbs., 30,000 lbs., and 36,000 lbs., in either ball-and-socket or clevis-eye designs.

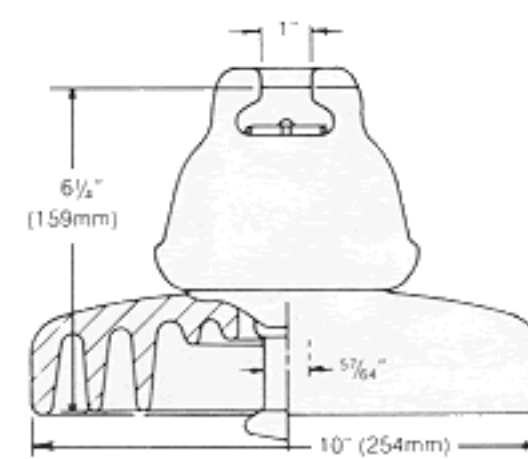
Design tests show that the Fog-Pacer units meet or exceed all of the rating requirements of the equivalent ANSI standard suspensions. A series of contamination tests proved the Fog-Pacer can withstand voltages 27% higher than the equivalent standard unit at the highest contamination level tests.



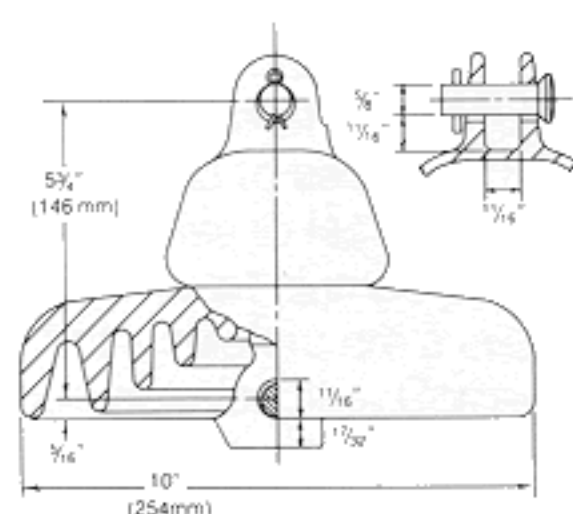
**302268**



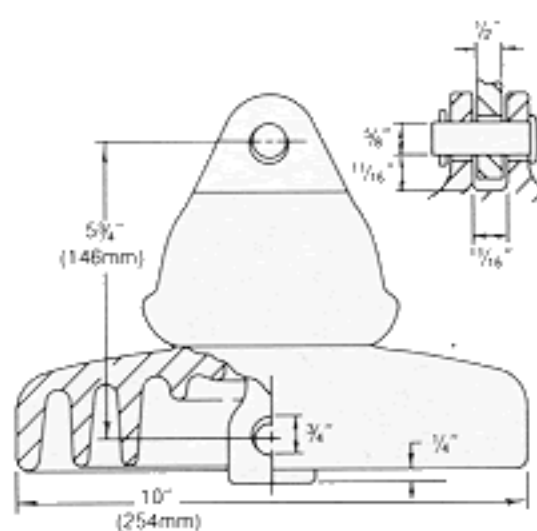
**302718**



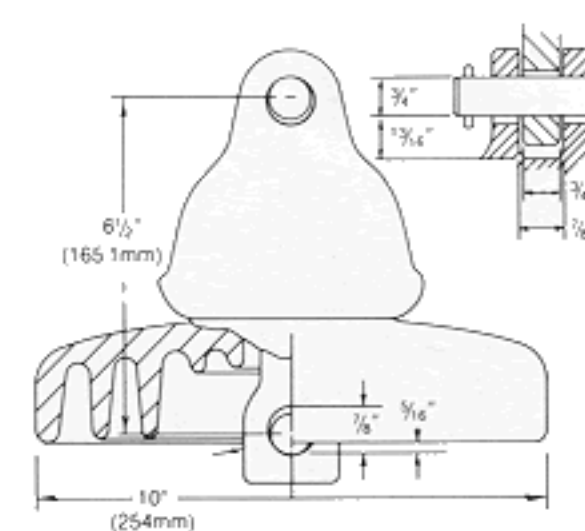
**303026**



**302500**



**303025**



**303027**

### Catalog Number

Color – #No. 70 Gray  
Chocolate  
Charcoal Gray  
Royal Blue

**302268-70**  
**302268**

**302500-70**  
**302500**

**302718-70**  
**NA**  
**302718**

**303025-70**  
**303025A**  
**303025**

**303026-70**  
**303026B**  
**303026**  
**303026A**

**303027-70**  
**NA**  
**303027**  
**303027A**

### Dimensions

Leakage Distance, In. (mm)	17 (432)	17 (432)	17 (432)	17 (432)	17 (432)	17 (432)
Dry Arcing Distance, In. (mm)	9 (229)	8 (203)	8.5 (216)	8 (203)	8.5 (216)	8 (203)

### Mechanical Values

Combined M&E Strength, Lbs. (kN)	20,000 (89)	20,000 (89)	30,000 (133)	30,000 (133)	36,000 (160)	36,000 (160)
Impact Strength, Inch-Lbs. (Nm)	90 (10)	90 (10)	90 (10)	90 (10)	100 (11.3)	100 (11.3)
Routine Proof Test Load, Lbs. (kN)	10,000 (44.5)	10,000 (44.5)	15,000 (67)	15,000 (67)	18,000 (80)	18,000 (80)
Time Load Test Value, Lbs. (kN)	12,000 (53.4)	12,000 (53.4)	18,000 (80)	18,000 (80)	24,000 (107)	24,000 (107)
Max. Working Load, Lbs. (Nm)	10,000 (44.5)	10,000 (44.5)	15,000 (67)	15,000 (67)	18,000 (80)	18,000 (80)

### Electrical Values

Low Freq. Dry Flashover, kV	80	80	80	80	80	80
Low Freq. Wet Flashover, kV	50	50	50	50	50	50
Impulse Flashover, Pos., kV	125	125	125	125	125	125
Impulse Flashover, Neg., kV	130	130	130	130	130	130
Low Freq. Puncture Voltage, kV	110	110	110	110	110	110

### Radio Influence Voltage Data

Test Voltage-rms to Grd., kV	10	10	10	10	10	10
Max. RIV-Microvolts at 1000 kHz	50	50	50	50	50	50

### Packing and Shipping Data

Net Wt., Ea., Lbs. (kg), Approximate	13.7 (6.2)	14.0 (6.4)	16.2 (7.3)	15.3 (6.9)	19.0 (8.6)	19.0 (8.6)
Packed Wt., Ea., Lbs. (kg), Approximate	14.3 (6.5)	14.7 (6.7)	16.8 (7.6)	16 (7.3)	19.7 (8.9)	19.7 (8.9)
Number in Standard Package	6	6	6	6	6	6
Pallet Weight, Lbs. (kg), Approximate	1,780 (807.4)	1,820 (825.6)	2,080 (943.5)	2,020 (916.3)	2,420 (1097.7)	2,420 (1097.7)
Pallet Quantity	120	120	120	120	120	120



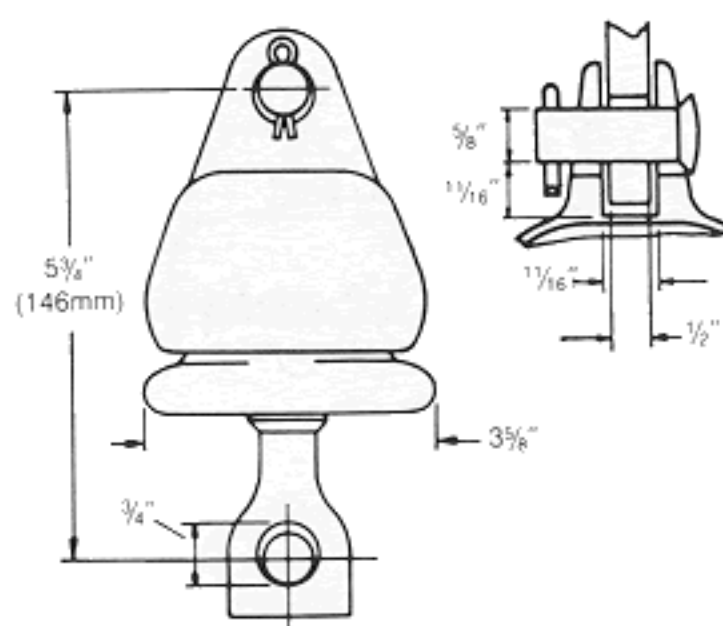
# GROUND WIRE INSULATORS

8

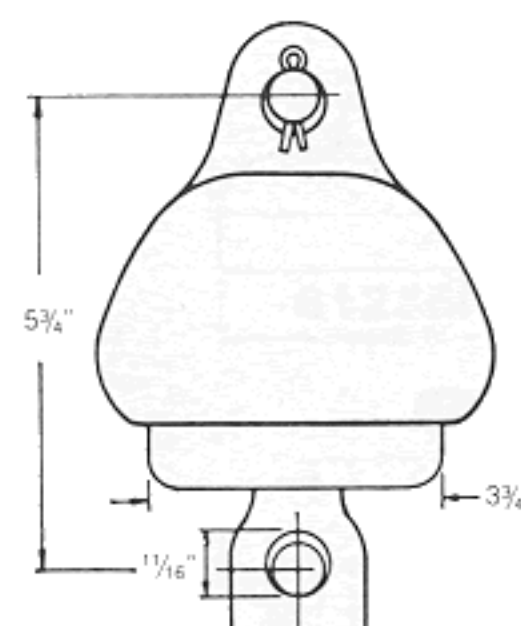
## Ground Wire Insulators

For supporting and insulating an overhead ground or shield wire, Lapp provides ground wire insulators in two strength ratings. The abbreviated porcelain shed of these insulators is sufficient to insulate the ground wire for communications relaying or to avoid energy losses through induction. It also has an impulse flashover value that's low enough to protect the line from lightning.

Chocolate glaze is standard for insulator No. 79120, with Lapp No. 70 light gray glaze available on specification. Insulator number 93823 has dark gray glaze as standard. To specify light gray glaze, add -70 to the catalog number.



**79120**



**93823**

Catalog Number	79120	93823
<b>Dimensions</b>		
Leakage Distance, Inches (mm)	1.5 (38.1)	1.5 (38.1)
Dry Arcing Distance, Inches (mm)	1.5 (38.1)	1.5 (38.1)
<b>Mechanical Values</b>		
Combined M&E Strength, Pounds (kN)	15,000 (67)	30,000 (133)
Routine Proof Test Load, Pounds (kN)	7,500 (33.3)	15,000 (67)
Time Load Test Value, Pounds (kN)	10,000 (44.5)	18,000 (80)
Maximum Working Load, Pounds (kN)	7,500 (33.3)	15,000 (67)
<b>Electrical Values</b>		
Low Frequency Dry Flashover, kV, 1 Unit	25	25
Low Frequency Dry Flashover, kV, 2 Units	—	—
Low Frequency Wet Flashover, kV, 1 Unit	10	10
Low Frequency Wet Flashover, kV, 2 Units	—	—
Impulse Flashover, Positive, kV	45	45
Impulse Flashover, Negative, kV	40	40
Low Frequency Puncture, kV	110	110
<b>Radio Influence Voltage Data</b>		
Test Voltage-rms to Ground, kV	10	10
Maximum RIV-Microvolts at 1000 kHz	50	50
<b>Packing and Shipping Data</b>		
Net Weight, Each, Pounds (kg), Approximate	8.0 (3.6)	8.5 (3.9)
Packed Weight, Each, Pounds (kg), Approximate	8.3 (3.8)	8.8 (4.0)
Number in Standard Package	6	6
Pallet Weight, Pounds (kg), Approximate	1,860 (843.7)	1,968 (892.7)
Pallet Quantity	216	216



# LAPP STRUT INSULATORS AND HARDWARE FOR CONTROLLED-POSITION CONSTRUCTION

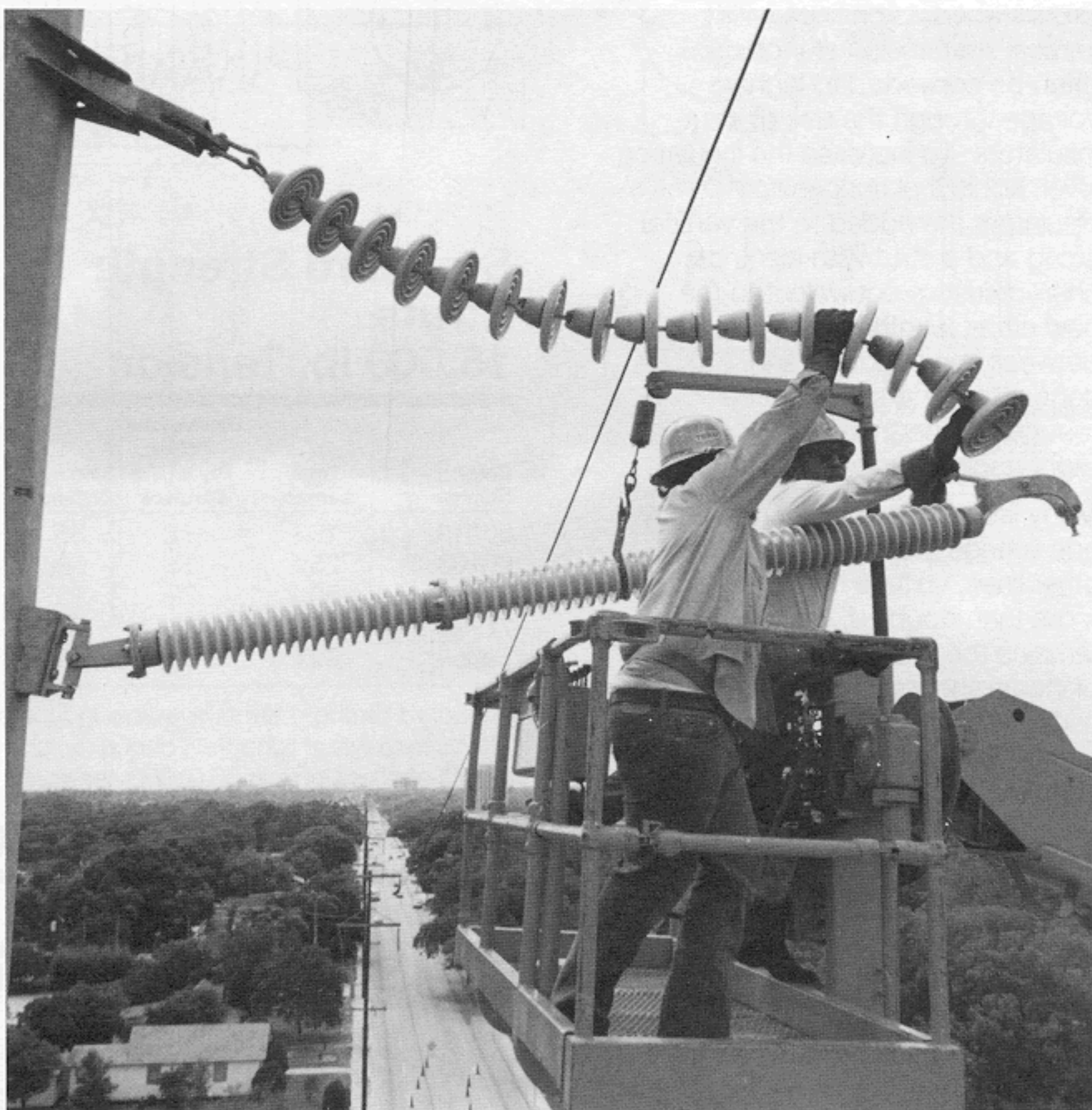
Strut insulators offer today's transmission engineers an important design tool for use in building compact overhead lines or upgrading existing lines to higher voltages.

Unlike suspension insulators, which are designed for tension only, struts are rigid assemblies which can take both tension and compression loads. Struts can be used to hold conductors away from supporting transmission towers in unique ways. In turn, controlling the position of the conductor allows for smaller structures and shorter crossarms, so lines can be built on narrower rights-of-way.

## A variety of lengths and fittings

Strut component insulators are long rods with fog-type corrugations. Caps cemented to each end have five-inch bolt circles to fasten units together or to mount clamps or adapters. Strut insulators are available in five porcelain lengths. Combinations of these are bolted together to provide assemblies with electrical ratings equivalent to strings of standard 5 1/4 inch x 10 inch suspension insulators. Struts meet or exceed each of the electrical flashover characteristics of the "equivalent" string, providing a bonus in leakage distance.

While struts have high tension and compression ratings, they do not develop appreciable strength in bending. Therefore, installations must provide flexible attachments at each end. Clevis or eye adapters are avail-



able for attaching struts to structures. These fittings are galvanized ferrous castings.

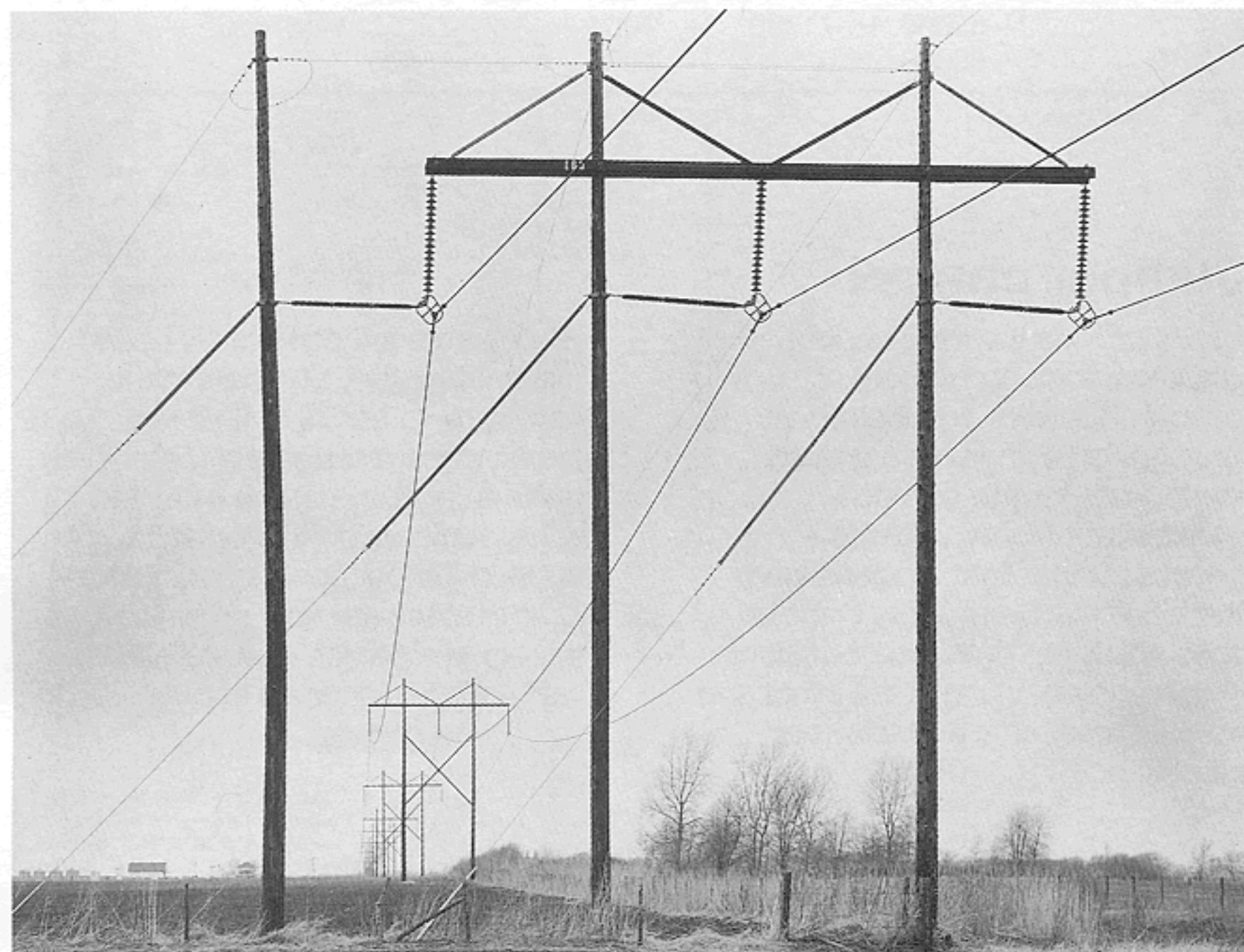
A special wide clevis adapter, Cat. No. 78869, is designed to couple a horizontal strut to a socket-eye fitting at the lower end of a vertical suspension string. Aluminum clamps are

used to bolt flexible jumpers to strut assemblies. Where desired, struts can be provided with cemented-on end caps for special applications.

## New construction: streamlined appearance

Transmission lines with voltage ratings up to and including 500 kV have been built using strut insulators to position conductors. These designs offer several advantages over conventional construction. With conductors positioned by means of horizontal struts, wind loads are taken through the strut instead of through the crossarm. This reduces the overturning moment, and permits smaller, slimmer structures.

In addition, crossarms are shorter and lighter. The smaller structures provide a less obtrusive appearance and help gain acceptance for overhead construction in areas of sensitive public opinion. Finally, the narrow, lighter structures will fit on a smaller right-of-way than is required for a conventional line of equivalent voltage rating.





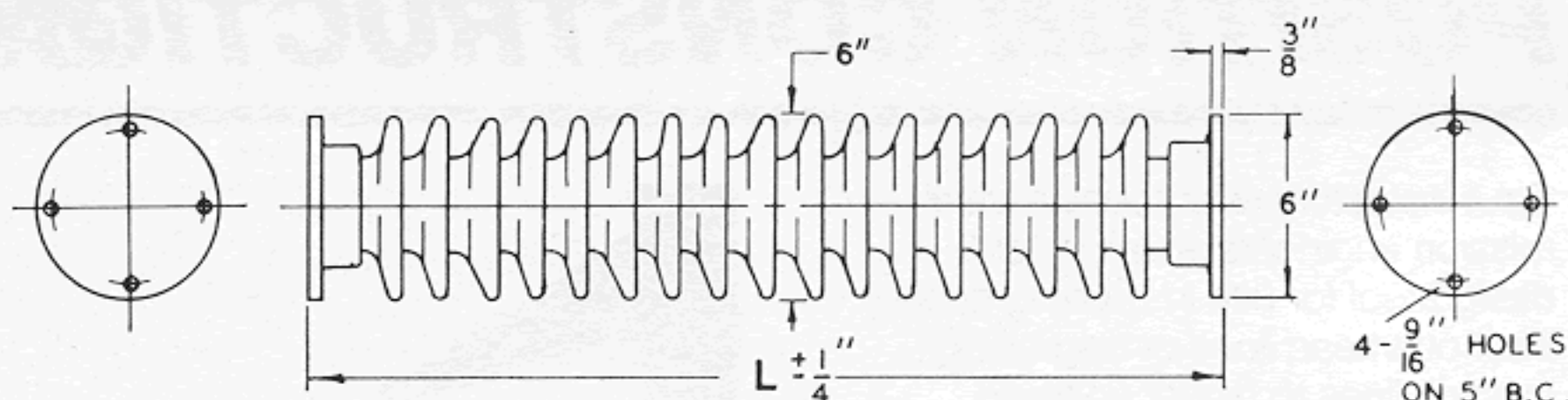
# LAPP STRUT INSULATORS

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## Voltage uprating in existing lines

Older transmission lines with vertical suspension strings can often be converted to higher voltage through the use of strut insulators. To increase the insulation level, additional suspension insulators are added to the vertical string and a strut with electrical characteristics equivalent to the new string length is positioned between the structure and conductor. The strut may be mounted either horizontally or at a slight angle.

Many lines have been increased by one voltage step in this manner. In other lines, voltage ratings have more than doubled. Upgrading remains the most economical way of increasing transmission capability, since it makes use of the same structures, the same right-of-way, and frequently, the same conductor.



## Standard Strength Struts 15,000 lb. Tension

Catalog Number	Total Length	Dimensions, Inches	
		Dry arcing Distance	Leakage Distance
56013	19½	17	35
60103	25½	23	50
56443	30½	28	60
71790	33½	31	75
59068	36½	34	80

## High Strength Struts 25,000 lb. Tension

Catalog Number	Total Length	Dimensions, Inches	
		Dry arcing Distance	Leakage Distance
80248	20½	17	35
80249	26½	23	50
57760	31½	28	60
57538	34½	31	75
75055	37½	34	80

†Standard Strength Struts available in light gray and chocolate. High Strength Struts available in light gray, dark gray, and chocolate. Specify color when ordering. Struts also available in 30,000 lb. tension.

## Electrical Equivalent Strut Insulator Selector

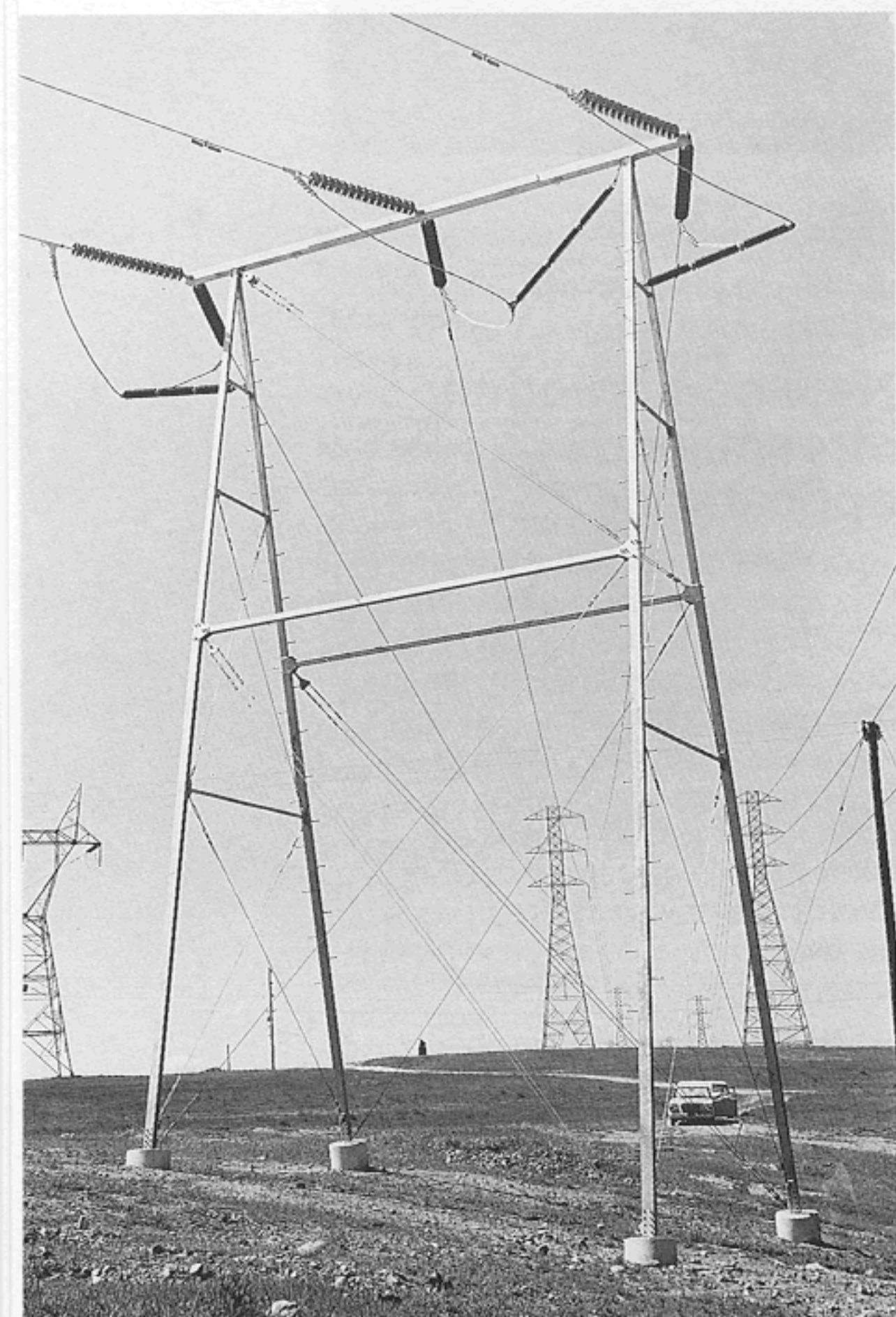
No. of 5½" x 10" Suspensions	Standard Strength		High Strength	
	Strut Combination	Total Length, Inches	Strut Combination	Total Length, Inches
2	1—56013	19½	1—80248	20½
3	1—60103	25½	1—80249	26½
4	1—56443	30½	1—57760	31½
5	1—59068	36½	1—75055	37½
6	1—56013, 1—60103	45	1—80248, 1—80249	46½
7	2—60103	51	2—80249	52½
8	1—60103, 1—56443	56	1—80249, 1—57760	57½
9	2—56443	61	2—57760	62½
10	2—71790	67	2—57538	68½
11	2—59068	73	2—75055	74½
12	2—60103, 1—56443	81½	2—80249, 1—57760	83½
13	1—60103, 2—56443	86½	1—80249, 2—57760	88½
14	3—56443	91½	3—57760	93½
15	*2—56443, 1—71790	94½	2—57760, 1—57538	96½
16	*3—71790	100½	3—57538	102½
17	*2—59068, 1—71790	106½	2—75055, 1—57538	108½
18	*3—59068	109½	3—75055	111½

\*Use in Vertical Position Only.

## Jumper control

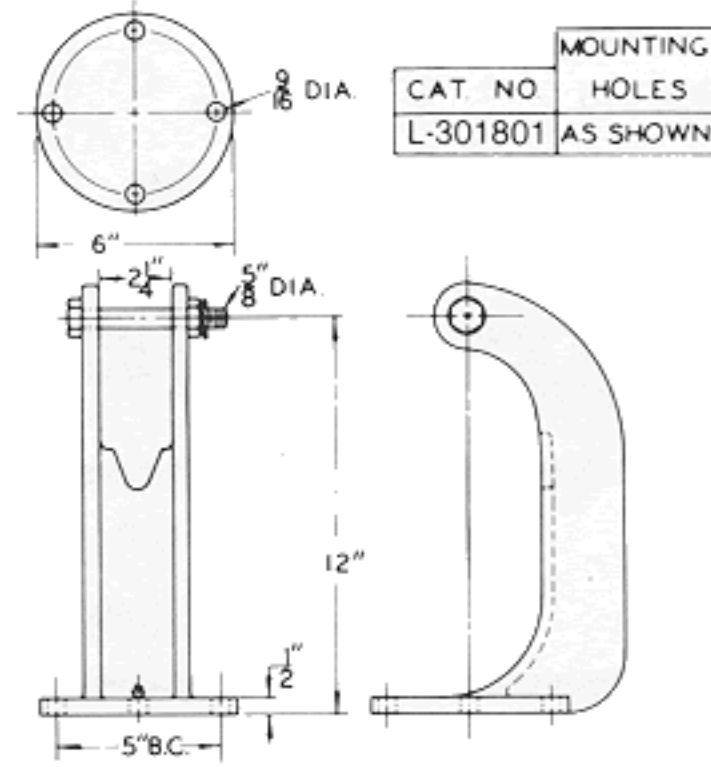
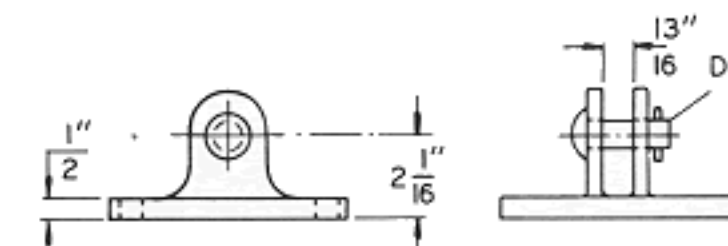
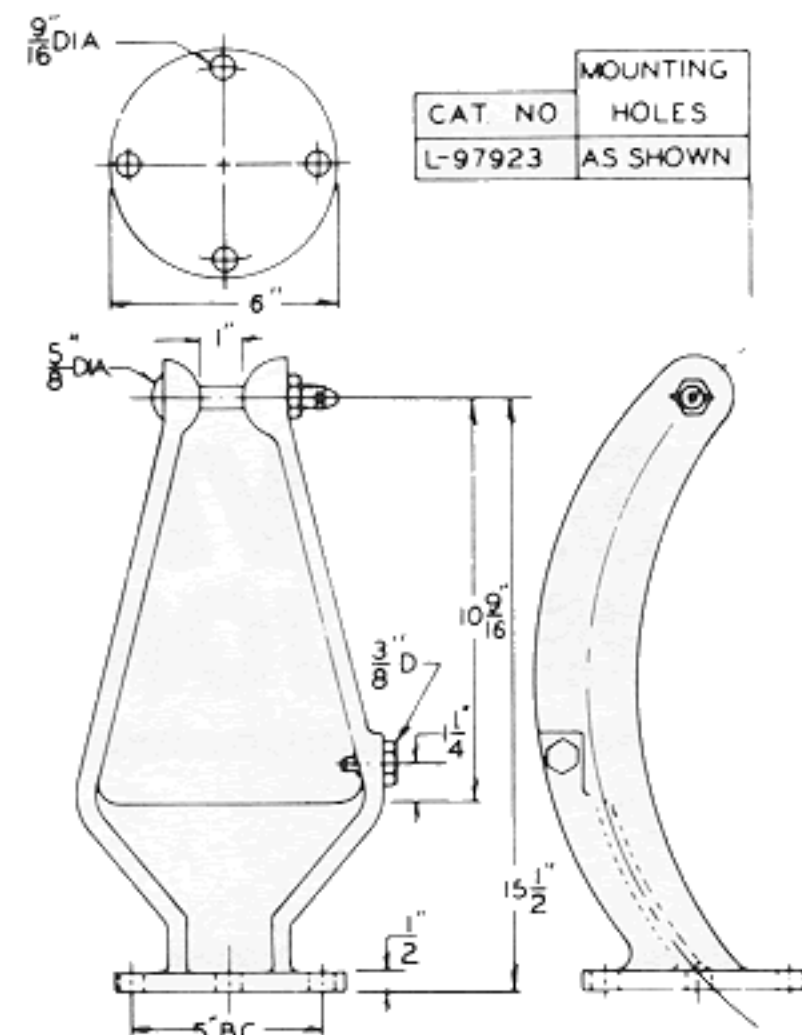
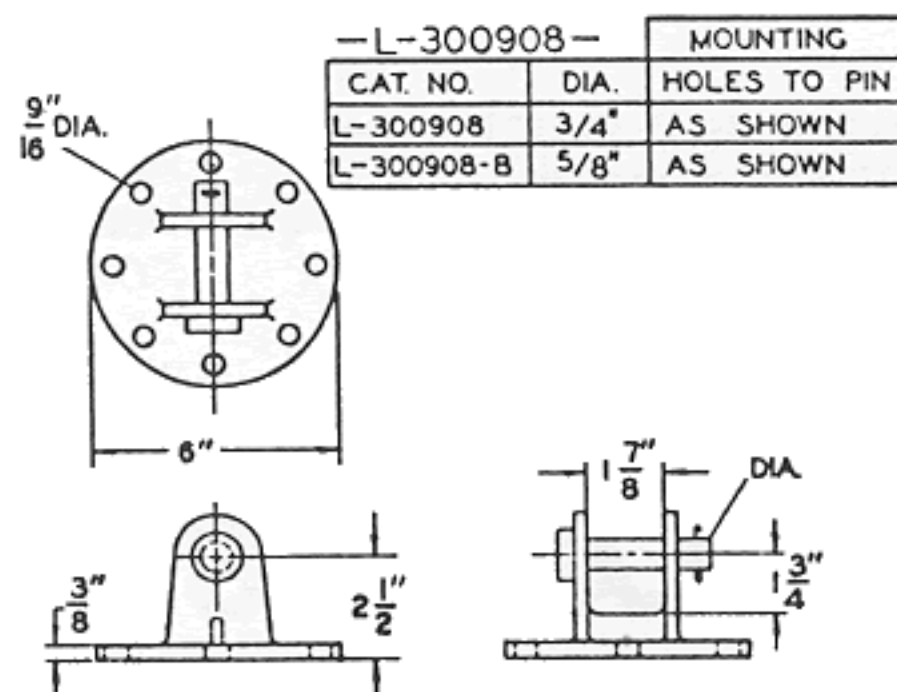
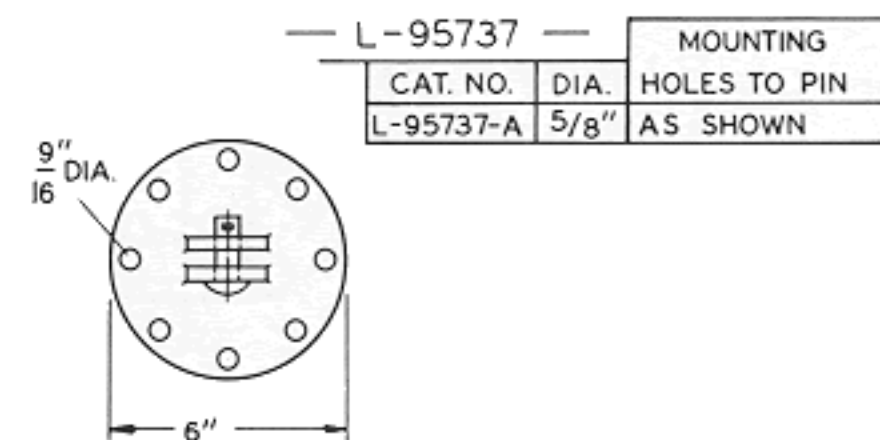
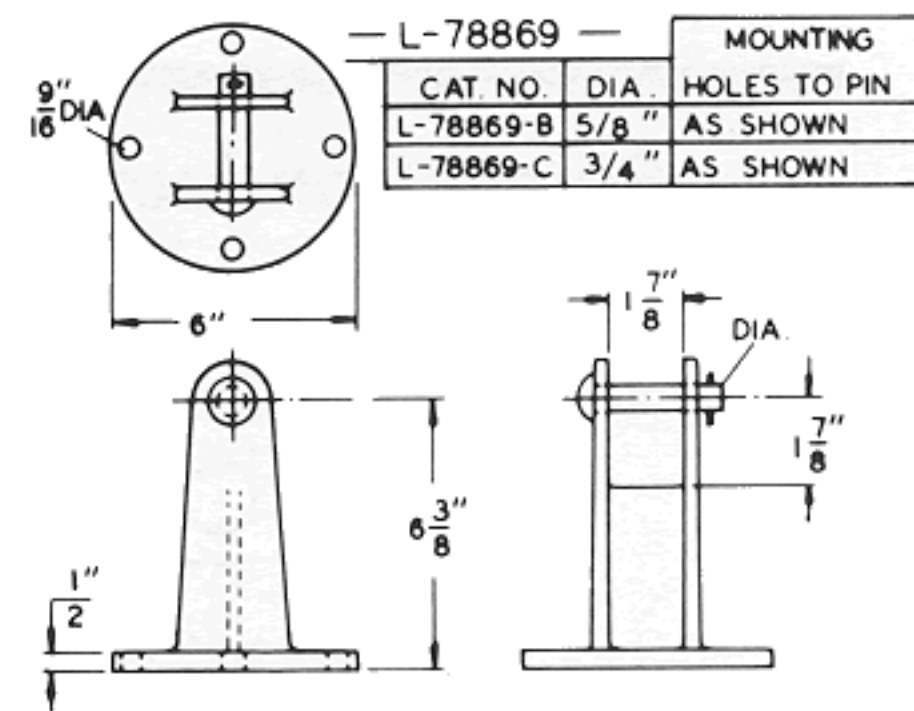
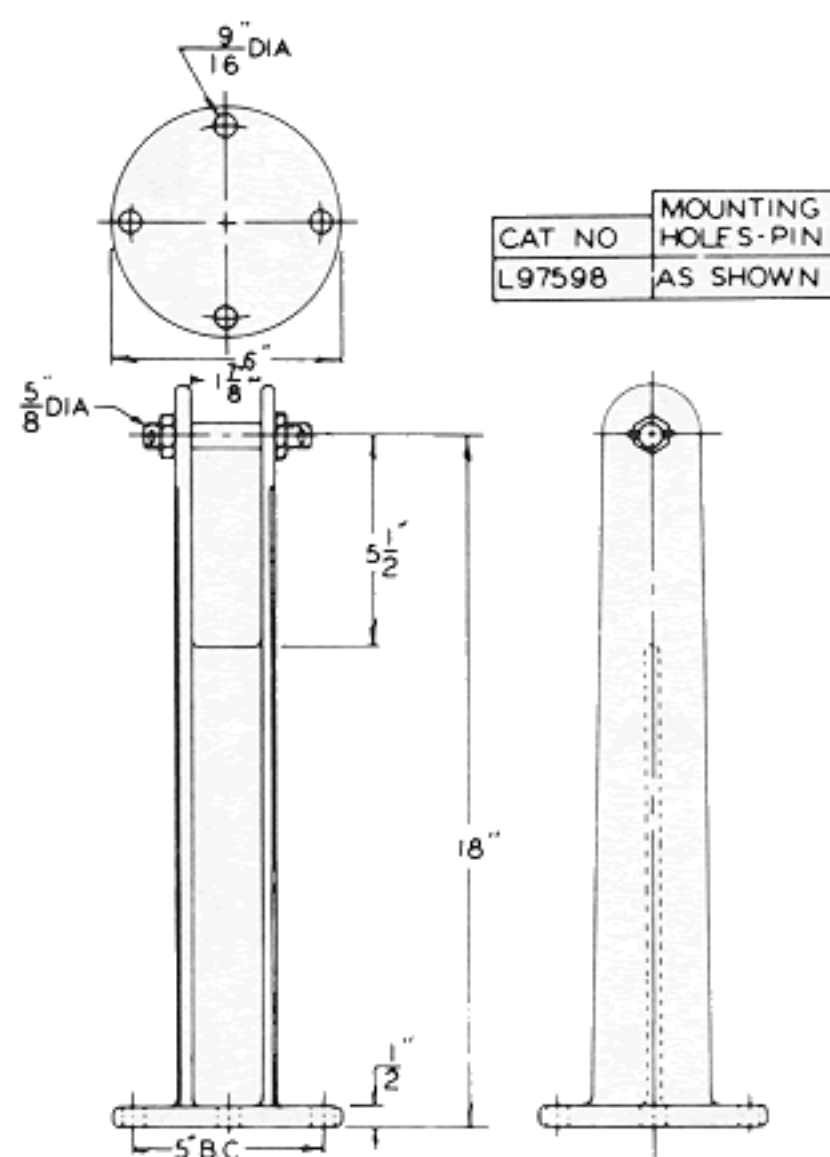
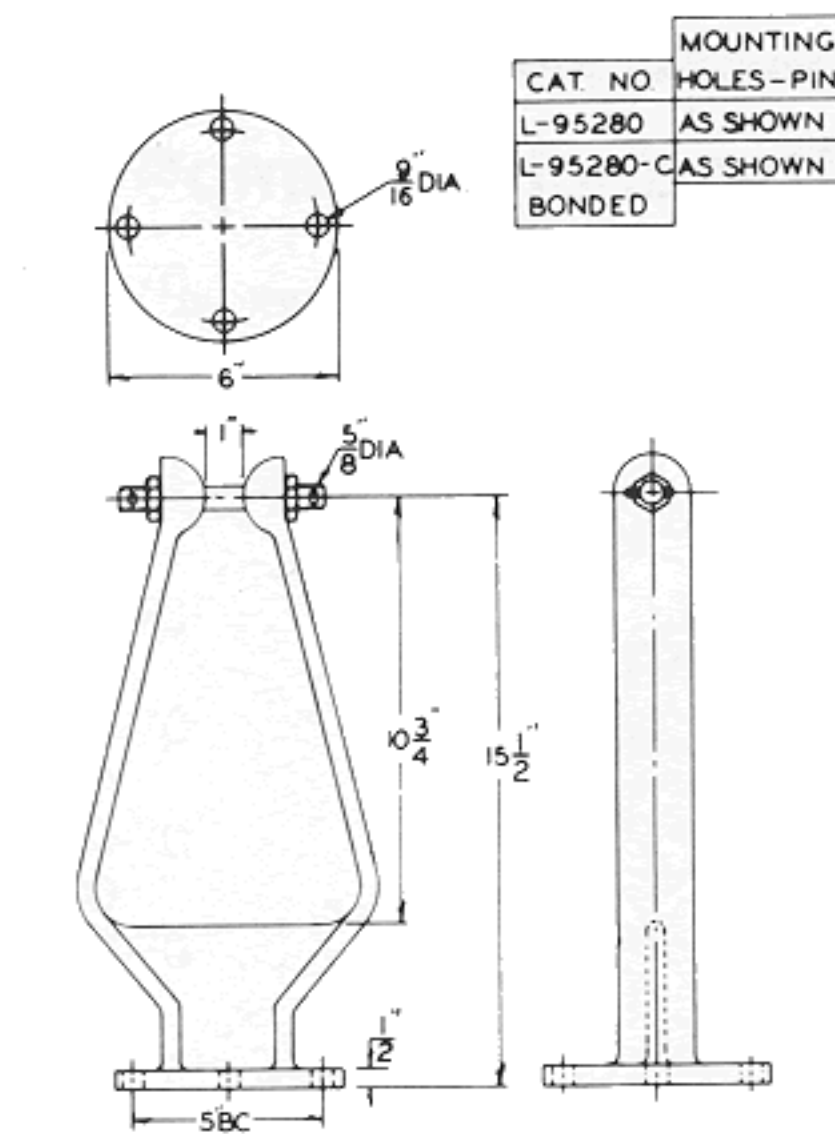
Struts provide the ideal control insulators for long jumpers at dead-end towers or substations. Suspension strings have proved inadequate for this service — especially at higher voltages — because under light tensions loads the loose hardware joints in these assemblies are prone to corrosion. This results in arcing in the joints and troublesome radio and television interference.

Since struts are completely bolted assemblies, they eliminate loose hardware. In addition, their low capacitance makes them completely noise-free. They can be mounted either vertically or horizontally to support jumper conductors. Lapp jumper struts are now providing trouble-free service on installations with voltage ratings up through 500 kv.

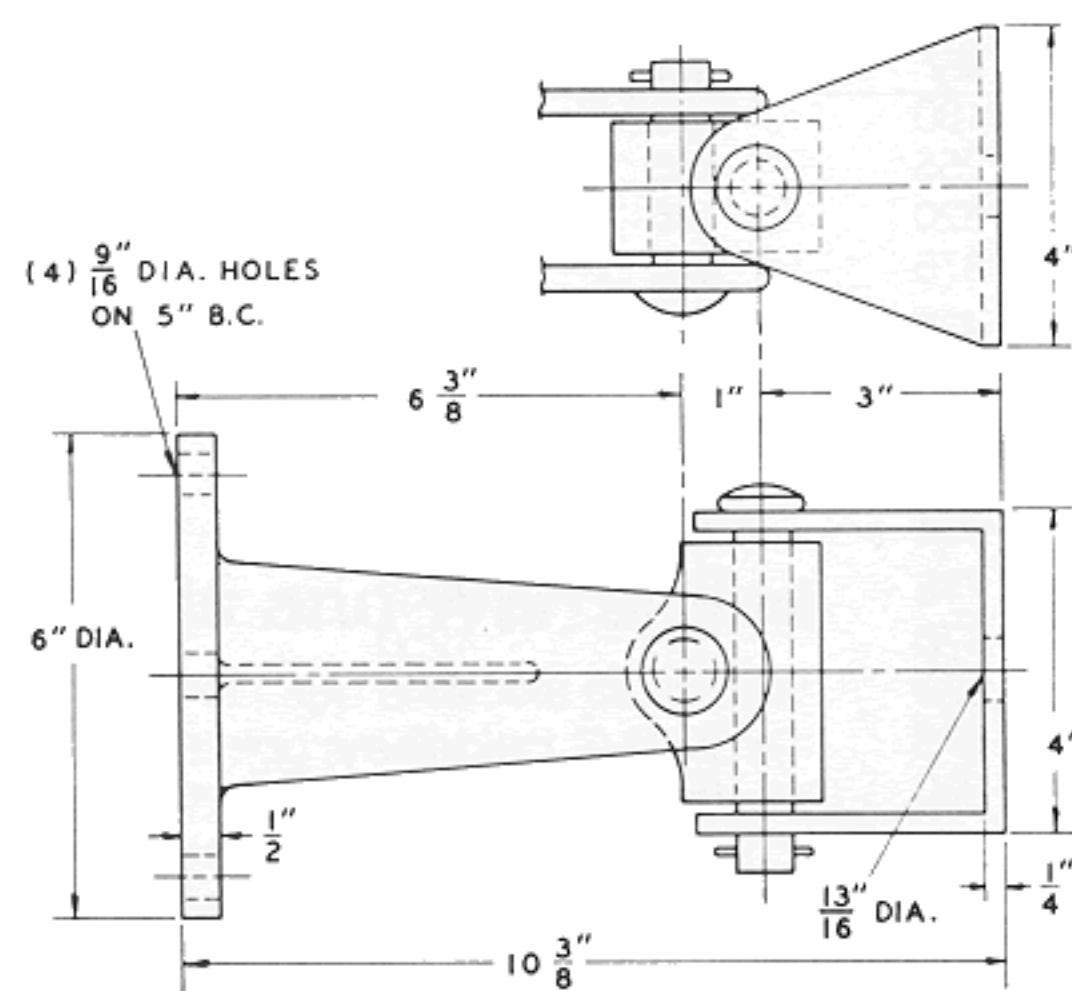




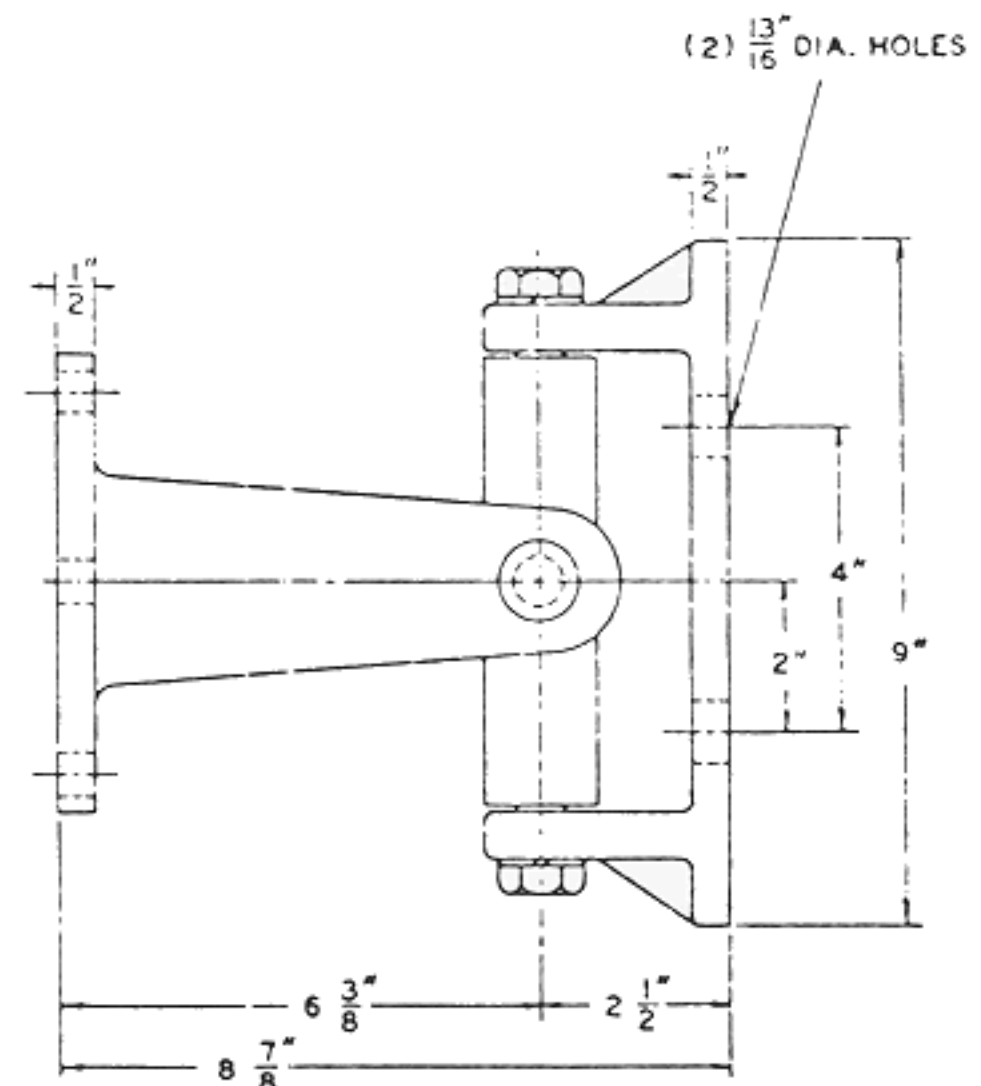
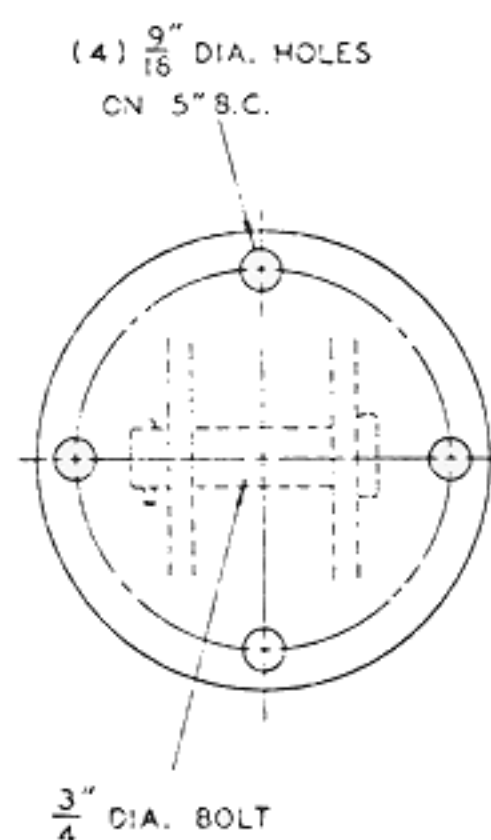
## Strut Clevis Adapter\*



## Hinge Assembly\*



303905



301644

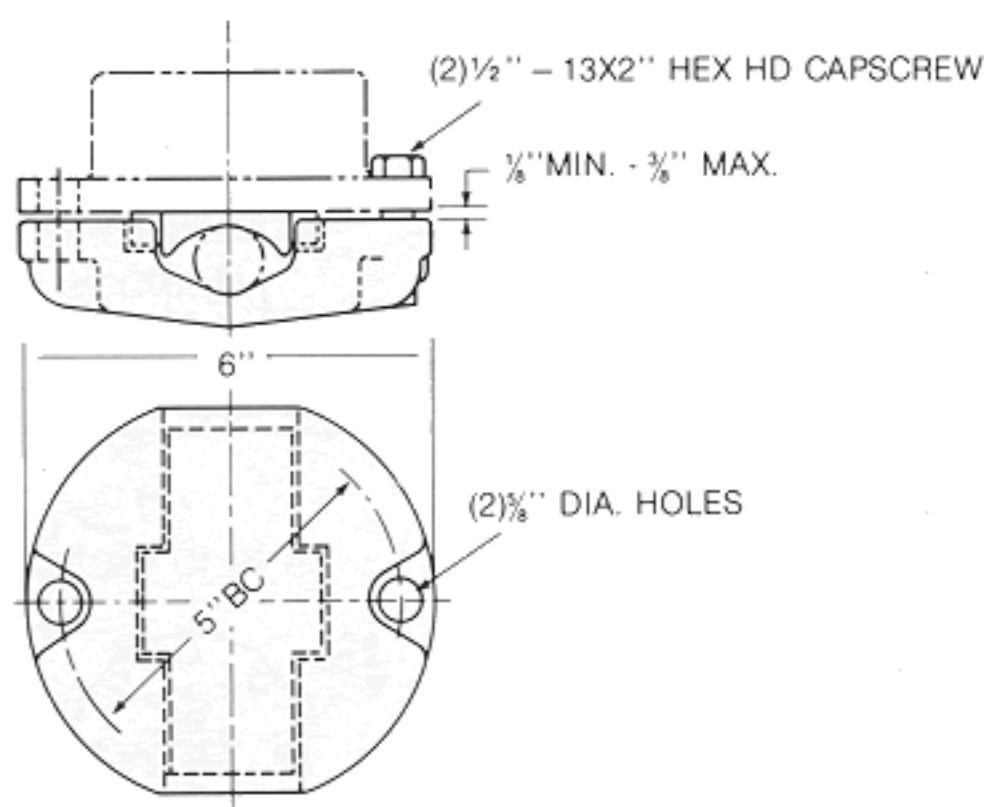
\* EACH ADAPTOR SUPPLIED WITH 4-1/2-13X1 3/4 HEX HEAD CAPSCREWS WITH HEX NUTS & LOCKWASHERS STEEL - GALV



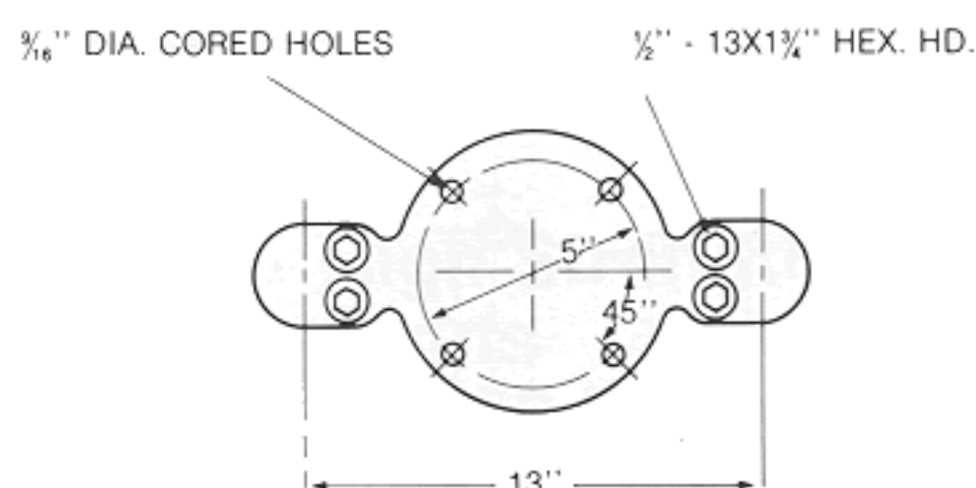
# LAPP STRUT INSULATORS

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## Single Conductor Clamp



## Double Conductor Clamp\*



CATALOG NUMBER	COND. RANGE
P98641G	.72" - 1.00"
P98641A	1.00" - 1.25"
P98641B	1.25" - 1.50"
P98641C	1.50" - 1.75"
P98641D	1.75" - 2.00"
P98641E	2.00" - 2.25"
P98641F	2.25" - 2.55"
P98641J	2.25" - 2.64"

CATALOG NUMBER	COND. RANGE
N-97154-A	1.00" - 1.25"
N-97154-B	1.25" - 1.50"
N-97154-C	1.50" - 1.75"
N-97154-D	1.75" - 2.00"

\*Each adaptor supplied with 4 - 1/2"-13x1 1/4" hex head cap screws with hex nuts & lockwashers steel - galv

NOTE: 18-inch clamp, catalog number 97247 also available.

# STRING FLASHOVER DATA FOR LAPP SUSPENSION INSULATORS

## 5 3/4" x 9" and 5 3/4" x 10" Suspension Discs

## 6 1/2" x 10" Suspension Discs

Lapp Catalog Numbers 9000, 9100, 8100, 8200, 5960-G, 2300-D, 301425, 301426, 61236, 302268, 302500, 302718, 303025

Lapp Catalog Numbers 97503B, 303027

Units in String	60 Hz Flashover - kV		Impulse Flashover - kV		Units in String	60 Hz Flashover - kV		Impulse Flashover - kV	
	Dry	Wet	Positive	Negative		Dry	Wet	Positive	Negative
2	155	90	250	250	2	180	105	290	280
3	215	130	355	340	3	255	145	380	380
4	270	170	440	415	4	320	195	500	470
5	325	215	525	495	5	375	240	585	565
6	380	255	610	585	6	435	285	690	665
7	435	295	695	670	7	490	330	780	760
8	485	335	780	760	8	550	380	880	860
9	540	375	860	845	9	600	420	970	955
10	590	415	945	930	10	665	465	1070	1065
11	640	455	1025	1015	11	715	510	1155	1170
12	690	490	1105	1105	12	770	550	1250	1270
13	735	525	1185	1190	13	820	590	1340	1360
14	785	565	1265	1275	14	875	630	1430	1460
15	830	600	1345	1360	15	930	665	1515	1560
16	875	630	1425	1445	16	975	705	1600	1660
17	920	660	1505	1530	17	1020	735	1690	1745
18	965	690	1585	1615	18	1060	770	1785	1835
19	1010	720	1665	1700	19	1110	795	1860	1920
20	1055	750	1745	1785	20	1160	825	1955	2020

Based on laboratory tests in accordance with ANSI Standard C29.1



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