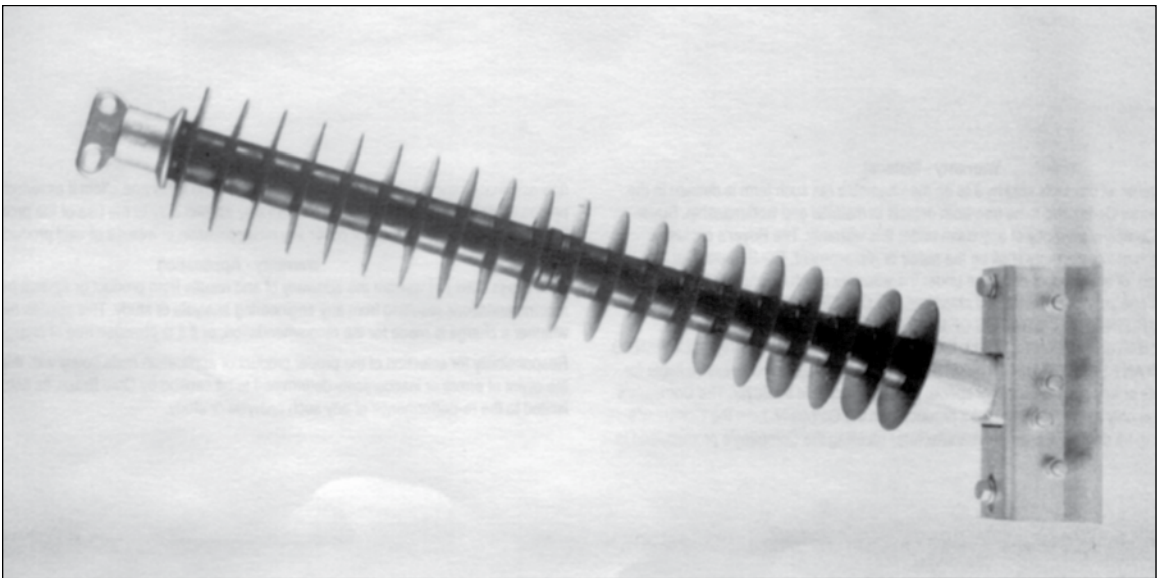
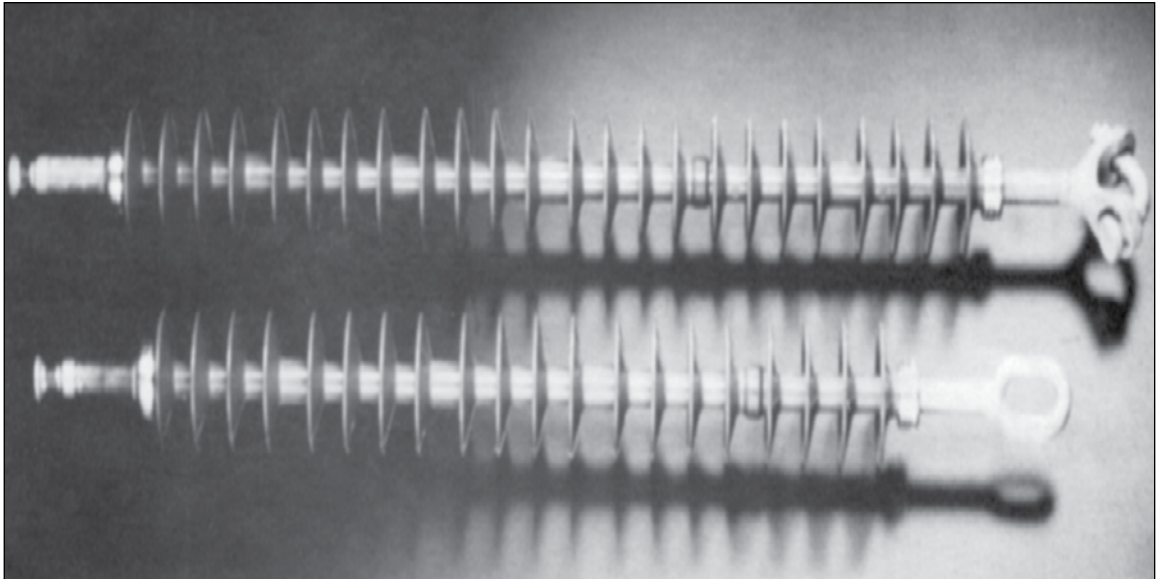


# Hi\*Lite® XL Transmission Insulators



**HUBBELL®**  
Power Systems



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# Hi\*Lite<sup>®</sup> XL Transmission Insulators

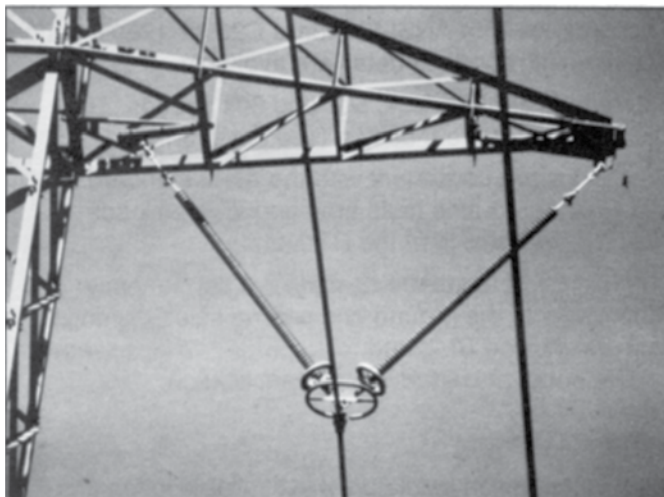
## Section 26

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# Hi\*Lite® XL Suspension Insulators

**A**



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## Hi\*Lite® XL Insulators

Hi\*Lite XL suspension insulators in this publication embody the latest features available in polymer insulator design and manufacture.

From the early prototypes in 1971, through full scale introduction in 1976, and through the succeeding years, Hi\*Lite insulators have featured conservative design and high-quality manufacture.

Today's Hi\*Lite insulators will add to the over 1,000,000 already in service worldwide.

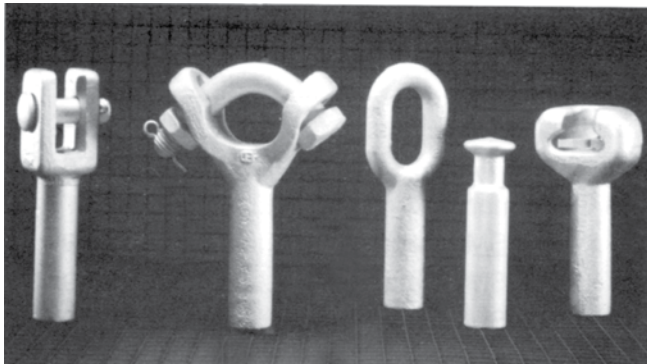
### Design

The structural design of the Hi\*Lite XL consists of these basic parts:

**Rod** - Hi\*Lite insulator fiberglass rod is produced from the highest quality materials. Strands are aligned for maximum tensile strength. The rod is more than 50 percent glass fibers in cross section.

**End Fittings** - End fittings are steel or ductile iron. They are crimped directly to the rod by a special process originated by Ohio Brass, and later adopted by many other producers. The crimp develops a high percentage of the rod's inherent tensile strength. It requires no inter-movement of the parts to achieve high strength, nor does it introduce potting compounds or adhesives.

**Weathersheds** - Weathersheds are high pressure injection molded by Ohio Brass, from the proprietary com-



ound ESP™. Housings manufactured with ESP silicone alloy rubber exhibit hydrophobicity, high mechanical strength, high corona resistance and low permeability to moisture.

**Interface** - Hi\*Lite insulators use Ohio Brass' live silicone interface. This feature prevents intrusion of moisture and contaminating elements. If the exterior seal is damaged, redundant o-ring seals within the live silicone interface prohibit the lengthwise migration of intrusive elements between shed and rod.

### Leakage Distance

Hi\*Lite XL insulators feature high leakage distance for maximum resistance to contamination and leakage currents. Specific leakage distance (leakage divided by dry arcing distance) is higher than porcelain. Contact Ohio Brass if you have extra-high leakage distance needs.

### Washability

Hi\*Lite insulators listed in this catalog are suitable for flood washing up to 200 psi. The design incorporates positive, labyrinth seals to ensure long-term security against water entry. Conventional dry-particle, air-pressure cleaning methods may also be employed. A cleaning guideline is available from Ohio Brass.

If your washing requirements exceed flood washing, contact Ohio Brass.

### Mechanical Ratings

Hi\*Lite XL suspension insulators are rated and tested in accordance with ANSI Standard C29.11. Certified test reports in detail are available.

SML ratings are 25k, 30k and 50k pounds.

RTL ratings are consistent with the ANSI standard. Actual factory routine tests are conducted at loads equal to or greater than the RTL rating.

Markings for XL insulator designs are permanently embossed into the ground end corona shielding rings. Markings include SML and RTL, part number, assembly date code, and Ohio Brass identification.

### Lengths Available

Hi\*Lite suspension insulators are available in lengths appropriate for 69 kV through 765 kV. Longer lengths can be produced for special projects. Length increments are approximately three inches.

### Product Updates

Hi\*Lite XL insulator end fittings are attached with an improved crimping process using the successful principles of earlier Hi\*Lite designs. The corona shield has been refined; a more compact Corona Shielding Ring (CSR) provides both electrical stress relief and a mechanical seal at the housing-to-end fitting interface.

### Packaging

Hi\*Lite suspension insulators are packaged in appropriate quantities in wood crates. As an option, Ohio Brass offers packaging of the insulators in individual sleeves.

### Corona Performance

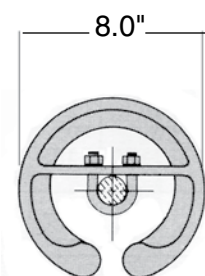
Hi\*Lite XL suspension insulators are RIV and corona free through 161 kV, by the use of integral Corona Shield Rings (CSR). Due to the small diameter of the end fittings, corona shielding is necessary at 230 kV and above. The table below details the rings necessary for voltages equal to or exceeding that listed in the column header.

#### Normal Applications: Top Grounded, Bottom Energized

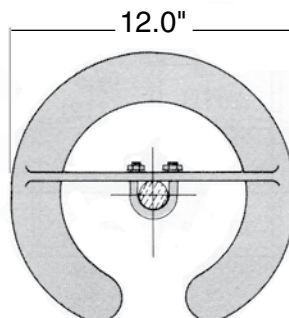
| Insulator                 | Orientation | 230 kV Ring | 345 kV Ring | 500 kV Rings |
|---------------------------|-------------|-------------|-------------|--------------|
| Suspension<br>25/30 K SML | Top         | NONE        | NONE        | 2717613001   |
|                           | Bottom      | 2717613001  | 2717053001  | 2717513001   |
| Suspension<br>50 K SML    | Top         | NONE        | NONE        | 2717613002   |
|                           | Bottom      | 2717613002  | 2717053002  | 2717513002   |

**A**

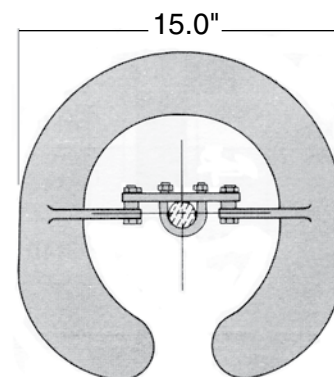
The physical and electrical values for the insulators on pages 26-8 through 26-10 are shown without corona protection above 161 kV. Ohio Brass has therefore provided the table below that yields the physical and electrical changes to the insulator when rings are installed for voltages above 161 kV.



Part Number 271761



Part Number 271705



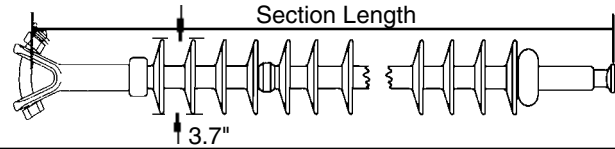
Part Number 271751

#### Physical & Electrical Change Table

| Physical & Electrical Characteristics | 230 kV Ring   | 345 kV Ring | 500 kV Rings |
|---------------------------------------|---------------|-------------|--------------|
| Dry Arc Distance inches (mm)          | -1.2 (-30.48) | -2 (-50.8)  | -5 (-127.0)  |
| Leakage Distance inches (mm)          | 0             | 0           | 0            |
| 60 Hz Flashover Dry - kV              | -10           | -15         | -30          |
| 60 Hz Flashover Wet - kV              | 0             | 0           | 0            |
| Critical Flashover Positive - kV      | -15           | -25         | -65          |
| Critical Flashover Negative - kV      | -20           | -30         | -65          |
| Net Weight pounds (kg)                | 3 (1.8)       | 3 (1.8)     | 5.1 (2.29)   |

## 5/8" (16mm) Rod Diameter Suspension Insulators

**Mechanical Ratings**  
**SML = 25,000 lbs. 111 kN**  
**RTL = 12,500 lbs. 56 kN**



| Selection Guide<br>Typical<br>Line Voltage, kV <sup>(1)</sup> |     |     |     |     |     | Catalog<br>Number<br>with<br>Y-Clevis -<br>52.5 Ball | Section<br>Length<br>Inches<br>(mm) | Number<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(2)</sup> 60<br>Flashover<br>ANSI |        | <sup>(2)</sup> Critical<br>Flashover<br>ANSI |        | Net<br>Weight<br>pounds<br><br>(kg) |
|---|-----|-----|-----|-----|-----|--|-------------------------------------|-----------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|-------------------------------------|
|   |     |     |     |     |     |  |                                     |                       |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                                     |
| 69  | 115 | 138 | 161 | 230 | 345 | 5110041201   | 34.7<br>(881)                       | 16                    | 24.7<br>(627)                         | 61<br>(1549)                          | 245                                    | 240    | 410  | 390    | 4.8<br>(2.2)                        |
|   |     |     |     |     |     | 5110051201   | 40.7<br>(1034)                      | 20                    | 30.7<br>(780)                         | 76<br>(1930)                          | 310                                    | 295    | 505  | 490    | 5.6<br>(2.5)                        |
|   |     |     |     |     |     | 5110061201   | 46.8<br>(1189)                      | 24                    | 36.8<br>(935)                         | 92<br>(2337)                          | 370                                    | 350    | 605  | 595    | 6.4<br>(2.9)                        |
|   |     |     |     |     |     | 5110071201   | 53.0<br>(1346)                      | 28                    | 42.9<br>(1090)                        | 107<br>(2718)                         | 430                                    | 405    | 700  | 695    | 7.1<br>(3.2)                        |
|   |     |     |     |     |     | 5110081201   | 59.1<br>(1501)                      | 32                    | 49.1<br>(1247)                        | 122<br>(3099)                         | 490                                    | 455    | 795  | 795    | 8.0<br>(3.6)                        |
|   |     |     |     |     |     | 5110091201   | 65.1<br>(1654)                      | 36                    | 55.1<br>(1397)                        | 138<br>(3505)                         | 545                                    | 505    | 890  | 890    | 8.8<br>(4.0)                        |
|   |     |     |     |     |     | 5110101201   | 71.3<br>(1811)                      | 40                    | 61.2<br>(1554)                        | 152<br>(3861)                         | 600                                    | 555    | 985  | 990    | 9.5<br>(4.3)                        |
|   |     |     |     |     |     | 5110111201   | 77.4<br>(1966)                      | 44                    | 67.4<br>(1712)                        | 168<br>(4267)                         | 655                                    | 605    | 1080   | 1090   | 10.4<br>(4.7)                       |
|   |     |     |     |     |     | 5110121201   | 83.5<br>(2121)                      | 48                    | 73.5<br>(1867)                        | 184<br>(4674)                         | 710                                    | 655    | 1170   | 1185   | 11.2<br>(5.1)                       |
|   |     |     |     |     |     | 5110131201   | 89.5<br>(2273)                      | 52                    | 79.5<br>(2019)                        | 198<br>(5029)                         | 760                                    | 700    | 1260   | 1280   | 11.9<br>(5.4)                       |
|   |     |     |     |     |     | 5110141201   | 95.7<br>(2431)                      | 56                    | 85.6<br>(2174)                        | 214<br>(5436)                         | 810                                    | 750    | 1350   | 1370   | 12.7<br>(5.8)                       |
|   |     |     |     |     |     | 5110151201   | 101.8<br>(2586)                     | 60                    | 91.7<br>(2329)                        | 229<br>(5817)                         | 855                                    | 790    | 1440   | 1465   | 13.5<br>(6.1)                       |
|   |     |     |     |     |     | 5110161201   | 108.0<br>(2743)                     | 64                    | 97.9<br>(2487)                        | 245<br>(6223)                         | 905                                    | 835    | 1530   | 1560   | 14.4<br>(6.5)                       |
|   |     |     |     |     |     | 5110171201   | 114.0<br>(2896)                     | 68                    | 103.9<br>(2639)                       | 260<br>(6604)                         | 945                                    | 880    | 1615   | 1650   | 15.2<br>(6.9)                       |
|   |     |     |     |     |     | 5110181201   | 120.1<br>(3051)                     | 72                    | 110.0<br>(2794)                       | 275<br>(6985)                         | 990                                    | 920    | 1705   | 1740   | 15.9<br>(7.2)                       |
|   |     |     |     |     |     | 5110191201   | 126.2<br>(3205)                     | 76                    | 116.2<br>(2951)                       | 290<br>(7366)                         | 1030                                   | 960    | 1790   | 1830   | 16.7<br>(7.6)                       |

Notes: (1) For voltages above 345 kV, and other section lengths, contact Ohio Brass.  
 (2) Tests in accordance with ANSI C29.1-1982. Electrical values are without corona ring.  
 For voltages above 161 kV refer to Page 26-7 for Corona Rings, and associated physical/electrical changes to above data.  
 Dimensions are within allowable tolerances as specified in ANSI C29.11.

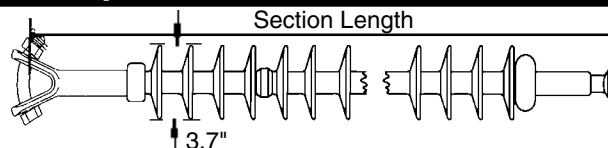
| Ground<br>Fitting | Line<br>Fitting | Suffix<br>Code | Length Change |       | Weight Change |       |
|-------------------|-----------------|----------------|---------------|-------|---------------|-------|
|                   |                 |                | Inches        | mm    | Pounds        | kg    |
| Eye               | Ball            | 1001           | -.06          | -1.5  | -2.5          | -.11  |
| Eye               | Eye             | 1000           | 1.28          | 32.5  | -2.5          | -.11  |
| Socket            | Ball            | 1301           | -.97          | -24.6 | -.05          | -.01  |
| Clevis            | Ball            | 1401           | -1.00         | -25.4 | -.15          | -.07  |
| Y-Clevis          | Eye             | 1200           | 1.34          | 34.0  | 0             | 0     |
| Clevis            | Eye             | 1400           | .34           | 8.6   | -.15          | -.007 |

For configurations not shown contact Ohio Brass.



## 5/8" (16mm) Rod Diameter Suspension Insulators

**Mechanical Ratings**  
**SML = 30,000 lbs. 133 kN**  
**RTL = 15,000 lbs. 67 kN**



| Selection Guide<br>Typical<br>Line Voltage, kV <sup>(1)</sup> |     |     |     |     |     | Catalog<br>Number<br>with<br>Y-Clevis -<br>52.5 Ball | Section<br>Length<br>Inches<br>(mm) | Number<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(2)</sup> 60<br>Flashover<br>ANSI |        | <sup>(2)</sup> Critical<br>Flashover<br>ANSI |        | Net<br>Weight<br>pounds<br><br>(kg) |
|---|-----|-----|-----|-----|-----|--|-------------------------------------|-----------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|-------------------------------------|
| 69  | 115 | 138 | 161 | 230 | 345 |  |                                     |                       |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                                     |
|   |     |     |     |     |     | 5150041201   | 34.7<br>(881)                       | 16                    | 24.7<br>(627)                         | 61<br>(1549)                          | 245                                    | 240    | 410  | 390    | 4.8<br>(2.2)                        |
|   |     |     |     |     |     | 5150051201   | 40.7<br>(1034)                      | 20                    | 30.7<br>(780)                         | 76<br>(1930)                          | 310                                    | 295    | 505  | 490    | 5.6<br>(2.5)                        |
|   |     |     |     |     |     | 5150061201   | 46.8<br>(1189)                      | 24                    | 36.8<br>(935)                         | 92<br>(2337)                          | 370                                    | 350    | 605  | 595    | 6.4<br>(2.9)                        |
|   |     |     |     |     |     | 5150071201   | 53<br>(1346)                        | 28                    | 42.9<br>(1090)                        | 107<br>(2718)                         | 430                                    | 405    | 700  | 695    | 7.1<br>(3.2)                        |
|   |     |     |     |     |     | 5150081201   | 59.1<br>(1501)                      | 32                    | 49.1<br>(1247)                        | 122<br>(3099)                         | 490                                    | 455    | 795  | 795    | 8<br>(3.6)                          |
|   |     |     |     |     |     | 5150091201   | 65.1<br>(1654)                      | 36                    | 55.1<br>(1397)                        | 138<br>(3505)                         | 545                                    | 505    | 890  | 890    | 8.8<br>(4.0)                        |
|   |     |     |     |     |     | 5150101201   | 71.3<br>(1811)                      | 40                    | 61.2<br>(1554)                        | 152<br>(3861)                         | 600                                    | 555    | 985  | 990    | 9.5<br>(4.3)                        |
|   |     |     |     |     |     | 5150111201   | 77.4<br>(1966)                      | 44                    | 67.4<br>(1712)                        | 168<br>(4267)                         | 655                                    | 605    | 1080   | 1090   | 10.4<br>(4.7)                       |
|   |     |     |     |     |     | 5150121201   | 83.5<br>(2121)                      | 48                    | 73.5<br>(1867)                        | 184<br>(4674)                         | 710                                    | 655    | 1170   | 1185   | 11.2<br>(5.1)                       |
|   |     |     |     |     |     | 5150131201   | 89.5<br>(2273)                      | 52                    | 79.5<br>(2019)                        | 198<br>(5029)                         | 760                                    | 700    | 1260   | 1280   | 11.9<br>(5.4)                       |
|   |     |     |     |     |     | 5150141201   | 95.7<br>(2431)                      | 56                    | 85.6<br>(2174)                        | 214<br>(5436)                         | 810                                    | 750    | 1350   | 1370   | 12.7<br>(5.8)                       |
|   |     |     |     |     |     | 5150151201   | 101.8<br>(2586)                     | 60                    | 91.7<br>(2329)                        | 229<br>(5817)                         | 855                                    | 790    | 1440   | 1465   | 13.5<br>(6.1)                       |
|   |     |     |     |     |     | 5150161201   | 108<br>(2743)                       | 64                    | 97.9<br>(2487)                        | 245<br>(6223)                         | 905                                    | 835    | 1530   | 1560   | 14.4<br>(6.5)                       |
|   |     |     |     |     |     | 5150171201   | 114<br>(2896)                       | 68                    | 103.9<br>(2639)                       | 260<br>(6604)                         | 945                                    | 880    | 1615   | 1650   | 15.2<br>(6.9)                       |
|   |     |     |     |     |     | 5150181201   | 120.1<br>(3051)                     | 72                    | 110<br>(2794)                         | 275<br>(6985)                         | 990                                    | 920    | 1705   | 1740   | 15.9<br>(7.2)                       |
|   |     |     |     |     |     | 5150191201   | 126.2<br>(3205)                     | 76                    | 116.2<br>(2951)                       | 290<br>(7366)                         | 1030                                   | 960    | 1790   | 1830   | 16.7<br>(7.6)                       |

A

Notes: (1) For voltages above 345 kV, and other section lengths, contact Ohio Brass.  
 (2) Tests in accordance with ANSI C29.1-1982. Electrical values are without corona ring.  
 For voltages above 161 kV refer to Page 26-7 for Corona Rings, and associated physical/electrical changes to above data.  
 Dimensions are within allowable tolerances as specified in ANSI C29.11.

### Y-Clevis Tower Attachment Detail for 25k, 30k, and 50k SML Insulators

1" Dia. Minimum  
1/8" x 45° Chamfer

"D" Max.  
3/4" Max.

| SML    | "D" Max. Inches |
|--------|-----------------|
| 25/30k | .531            |
| 50k    | 1.0             |

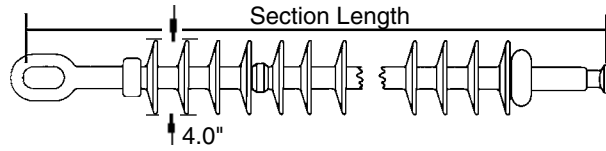
To achieve insulator SML value, proper grade steel should be used

| Ground Fitting | Line Fitting | Suffix Code | Length Change |       | Weight Change |        |
|----------------|--------------|-------------|---------------|-------|---------------|--------|
|                |              |             | Inches        | mm    | Pounds        | kg     |
| Eye            | Ball         | 1001        | -0.06         | -1.5  | -2.50         | -0.110 |
| Eye            | Eye          | 1000        | 1.28          | 32.5  | -2.50         | -0.110 |
| Socket         | Ball         | 1301        | -0.97         | -24.6 | -0.05         | -0.010 |
| Clevis         | Ball         | 1401        | -1.00         | -25.4 | -0.15         | -0.070 |
| Y-Clevis       | Eye          | 1200        | 1.34          | 34.0  | 0.00          | 0.000  |
| Clevis         | Eye          | 1400        | 0.34          | 8.6   | -0.15         | -0.007 |

For configurations not shown contact Ohio Brass.

## 7/8" (22mm) Rod Diameter Suspension Insulators

**Mechanical Ratings**  
**SML = 50,000 lbs. 222 kN**  
**RTL = 25,000 lbs. 111 kN**



| Selection Guide<br>Typical<br>Line Voltage, kV <sup>(1)</sup> |     |     |     |     |     | Catalog<br>Number<br>with<br>Chain Eye -<br>52.11 Ball | Section<br>Length<br>Inches<br>(mm) | Number<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(2)</sup> 60<br>Flashover<br>ANSI |        | <sup>(2)</sup> Critical<br>Flashover<br>ANSI |        | Net<br>Weight<br>pounds<br><br>(kg) |
|---|-----|-----|-----|-----|-----|--|-------------------------------------|-----------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|-------------------------------------|
|   |     |     |     |     |     |  |                                     |                       |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                                     |
| 115   | 138 | 161 | 230 | 345 | 500 | 5130071001   | 55.8<br>(1417)                      | 28                    | 42.9<br>(1090)                        | 106<br>(2692)                         | 430                                    | 400    | 700  | 695    | 12.7<br>(5.8)                       |
|   |     |     |     |     |     | 5130081001   | 62.0<br>(1574)                      | 32                    | 49.0<br>(1245)                        | 121<br>(3073)                         | 490                                    | 455    | 795  | 795    | 13.7<br>(6.2)                       |
|   |     |     |     |     |     | 5130091001   | 68.0<br>(1727)                      | 36                    | 55.0<br>(1397)                        | 136<br>(3454)                         | 545                                    | 505    | 890  | 890    | 14.8<br>(6.7)                       |
|   |     |     |     |     |     | 5130101001   | 74.1<br>(1882)                      | 40                    | 61.2<br>(1554)                        | 151<br>(3835)                         | 600                                    | 555    | 985  | 990    | 15.9<br>(7.2)                       |
|   |     |     |     |     |     | 5130111001   | 80.3<br>(2040)                      | 44                    | 67.3<br>(1709)                        | 167<br>(4242)                         | 655                                    | 605    | 1080   | 1090   | 16.9<br>(7.7)                       |
|   |     |     |     |     |     | 5130131001   | 92.4<br>(2347)                      | 52                    | 79.5<br>(2019)                        | 197<br>(5004)                         | 760                                    | 700    | 1260   | 1280   | 19.1<br>(8.7)                       |
|   |     |     |     |     |     | 5130141001   | 98.5<br>(2502)                      | 56                    | 85.6<br>(2174)                        | 212<br>(5385)                         | 810                                    | 745    | 1350   | 1370   | 20.2<br>(9.2)                       |
|   |     |     |     |     |     | 5130151001   | 104.7<br>(2659)                     | 60                    | 91.7<br>(2329)                        | 228<br>(5791)                         | 855                                    | 790    | 1440   | 1465   | 21.2<br>(9.6)                       |
|   |     |     |     |     |     | 5130171001   | 116.8<br>(2967)                     | 68                    | 103.9<br>(2639)                       | 258<br>(6553)                         | 945                                    | 875    | 1615   | 1650   | 24.4<br>(11.1)                      |
|   |     |     |     |     |     | 5130181001   | 123.0<br>(3124)                     | 72                    | 110.0<br>(2794)                       | 273<br>(6934)                         | 990                                    | 915    | 1705   | 1740   | 24.5<br>(11.1)                      |
|   |     |     |     |     |     | 5130191001   | 129.1<br>(3279)                     | 76                    | 116.2<br>(2951)                       | 288<br>(7315)                         | 1030                                   | 955    | 1790   | 1830   | 25.5<br>(11.6)                      |
|   |     |     |     |     |     | 5130211001   | 141.2<br>(3586)                     | 84                    | 128.3<br>(3259)                       | 319<br>(8103)                         | 1110                                   | 1035   | 1960   | 2005   | 27.6<br>(12.5)                      |
|   |     |     |     |     |     | 5130231001   | 153.5<br>(3899)                     | 92                    | 140.6<br>(3271)                       | 349<br>(8885)                         | 1180                                   | 1105   | 2125   | 2175   | 29.8<br>(13.5)                      |
|   |     |     |     |     |     | 5130251001   | 165.7<br>(4209)                     | 100                   | 152.7<br>(3879)                       | 379<br>(9627)                         | 1245                                   | 1175   | 2285   | 2345   | 31.9<br>(14.5)                      |
|   |     |     |     |     |     | 5130271001   | 177.9<br>(4519)                     | 108                   | 165.0<br>(4191)                       | 410<br>(10414)                        | 1305                                   | 1240   | 2445   | 2510   | 34.0<br>(15.4)                      |
|   |     |     |     |     |     | 5130281001   | 184.1<br>(4676)                     | 112                   | 171.1<br>(4346)                       | 425<br>(10795)                        | 1330                                   | 1270   | 2520   | 2590   | 35.1<br>(15.9)                      |

Notes: (1) For voltages above 500 kV, and other section lengths, contact Ohio Brass.  
 (2) Tests in accordance with ANSI C29.1-1982. Electrical values are without corona ring.  
 For voltages above 161 kV refer to Page 26-7 for Corona Rings, and associated physical/electrical changes to above data.  
 Dimensions are within allowable tolerances as specified in ANSI C29.11.

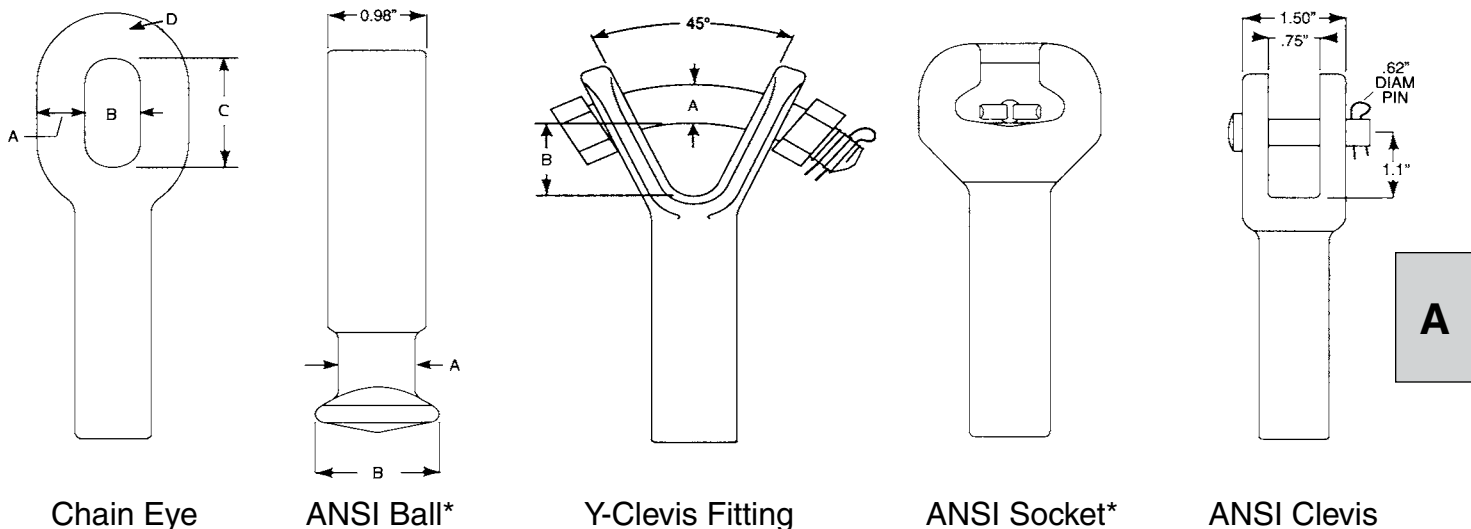
### End Fitting Example

You need the electrical and mechanical characteristics of Catalog #5130101001. But, a Y-clevis is needed at the ground end instead of an eye. From the table at the right, find the code for the Y-clevis/ball configuration 1201. You should order Catalog #5130101201. The same process is used for 5/8" (25k) and 7/8" (30k) insulators.

| Ground Fitting | Line Fitting | Suffix Code | Length Change |       | Weight Change |      |
|----------------|--------------|-------------|---------------|-------|---------------|------|
|                |              |             | Inches        | mm    | Pounds        | kg   |
| Y-Clevis       | Ball         | 1201        | -.58          | -14.7 | .4            | .18  |
| Eye            | Eye          | 1000        | 1.26          | 32.0  | -.4           | -.18 |
| Socket         | Ball         | 1301        | -.72          | -18.3 | .4            | .18  |
| Y-Clevis       | Eye          | 1200        | -.58          | -14.7 | 0             | 0    |

For configurations not shown contact Ohio Brass.

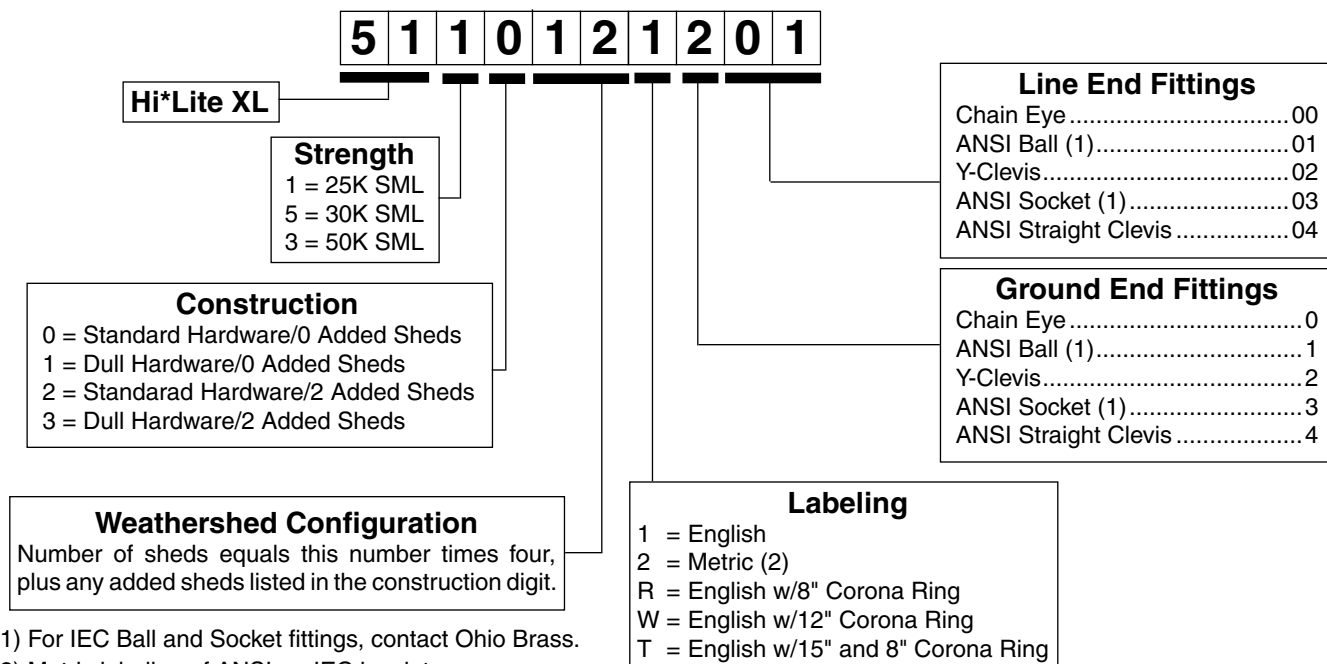
## Most Common End Fittings



| FITTING TYPE  | SML k-LB (kN)       | ANSI CLASS | DIMENSIONS IN. (mm) |      |      |      |
|---------------|---------------------|------------|---------------------|------|------|------|
|               |                     |            | A                   | B    | C    | D    |
| CHAIN EYE     | 25 (111) - 30 (133) | -          | 0.62                | 1.00 | 2.00 | 0.62 |
|               | 50 (222)            | -          | 0.75                | 1.00 | 2.00 | 0.85 |
| BALL & SOCKET | 25 (111) - 30 (133) | 52-5       | 0.73                | 1.29 | -    | -    |
|               | 50 (222)            | 52-11      | 0.92                | 1.63 | -    | -    |
| Y-CLEVIS      | 25 (111) - 30 (133) | -          | 0.75                | 1.53 | -    | -    |
|               | 50 (222)            | -          | 0.88                | 1.59 | -    | -    |
| CLEVIS        | 25 (111) - 30 (133) | 52-6       | 0.62                | 0.75 | 1.50 | 1.10 |

\* For IEC 16mm and 20mm Ball and Socket fittings, contact Ohio Brass.

## Hi\*Lite XL Suspension Insulators: Key to the Catalog Numbers

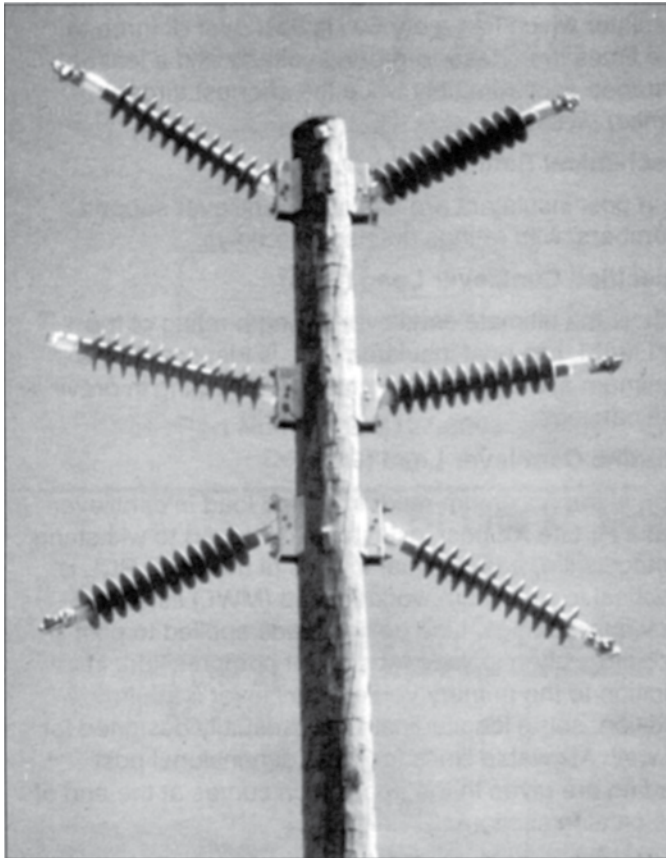


(1) For IEC Ball and Socket fittings, contact Ohio Brass.  
(2) Metric labeling of ANSI, or IEC insulators.



# Hi\*Lite<sup>®</sup> XL Line Post Insulators

**B**



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## Hi\*Lite\*® XL Insulators

Hi\*Lite XL line post insulators in this publication embody the latest features available in polymer insulator design and manufacture.

From the early prototypes in 1971, through full scale introduction in 1976, and through the succeeding years, Hi\*Lite insulators have featured conservative design and high-quality manufacture.

Today's Hi\*Lite insulators will add to the over 1,000,000 already in service worldwide.

### Design

The structural design of the Hi\*Lite XL consists of these basic parts:

**Rod** - Hi\*Lite insulator fiberglass rod is produced from the highest quality materials. Strands are aligned for maximum tensile strength. The rod is more than 50 percent glass fibers in cross section.

**End Fittings** - End fittings are aluminum or ductile iron. They are crimped directly to the rod by a special process originated by Ohio Brass, and later adopted by many other producers. The crimp requires no inter-movement of the parts to achieve high strength, nor does it introduce potting compounds or adhesives.

**Weathersheds** - Weathersheds are high pressure injection molded by Ohio Brass, from the proprietary compound ESP™. Housings manufactured with ESP silicone alloy rubber exhibit hydrophobicity, high mechanical strength, high corona resistance and low permeability to moisture.

**Interface** - Hi\*Lite insulators use Ohio Brass' live silicone interface. This feature prevents intrusion of moisture and contaminating elements. If the exterior seal is damaged, redundant o-ring seals within the live silicone interface prohibit the lengthwise migration of intrusive elements between shed and rod.

### Leakage Distance

Hi\*Lite XL insulators feature high leakage distance for maximum resistance to contamination and leakage currents.

### Washability

Hi\*Lite Line Post insulators listed in this catalog are suitable for flood washing up to 200 psi. The design incorporates positive, labyrinth seals to ensure long-term security against water entry. Conventional dry-particle, air-pressure cleaning methods may also be employed. A cleaning guideline is available from Ohio Brass.

If your washing requirements exceed flood washing, contact Ohio Brass.

### Mechanical Ratings

Line post insulators are basically cantilever support members, with ratings defined as follows:

#### Specified Cantilever Load (SCL)

SCL is the ultimate cantilever strength rating of the Hi\*Lite XL line post insulator. SCL is identical to the minimum average breaking load (ABL) rating in previous catalogs.

#### Reference Cantilever Load (RCL)

RCL is the maximum recommended load in cantilever that a Hi\*Lite XL post insulator is designed to withstand during its life, and is equal to 50% of the SCL. RCL is identical to maximum working load (MWL) listed in previous catalogs. Line design loads applied to post insulators often include tension, or compression, in addition to the primary vertical cantilever load. In addition, some longitudinal load is usually designed for as well.

#### Combined Load

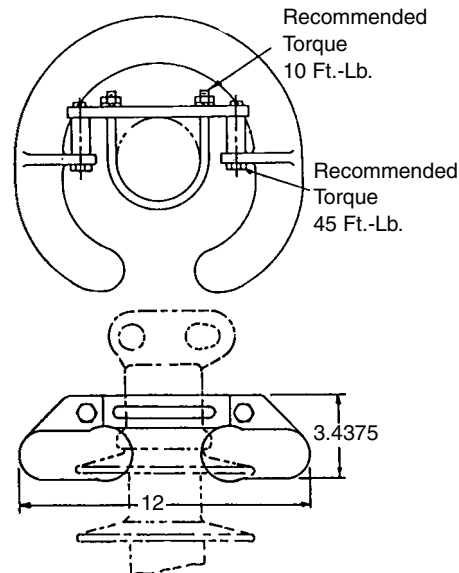
Contact your Hubbell Power Systems representative for combined load applications.

## 2.5" (63.5mm) Rod Diameter Horizontal Line Posts

### Corona Rings

Hi\*Lite XL line post insulators are corona free through 161 kV.

| Application          | 161 kV & below            | 230 kV                          | 345 kV                          |
|----------------------|---------------------------|---------------------------------|---------------------------------|
| Line End Energized   | Top - NONE<br>Bott - NONE | Top - 2721273001<br>Bott - NONE | Top - 2721273001<br>Bott - NONE |
| Bottom End Energized | Top - NONE<br>Bott - NONE | Top - NONE<br>Bott - 2721273001 | Top - NONE<br>Bott - 2721273001 |



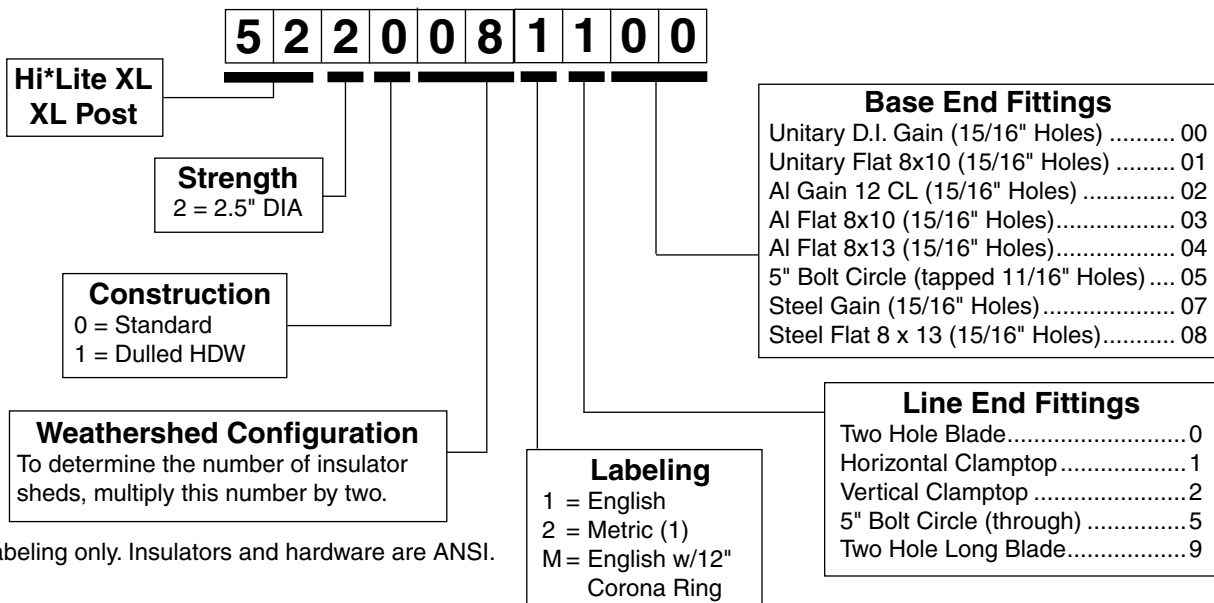
**Part Number 2721273001  
Control Ring**

B

### Packaging

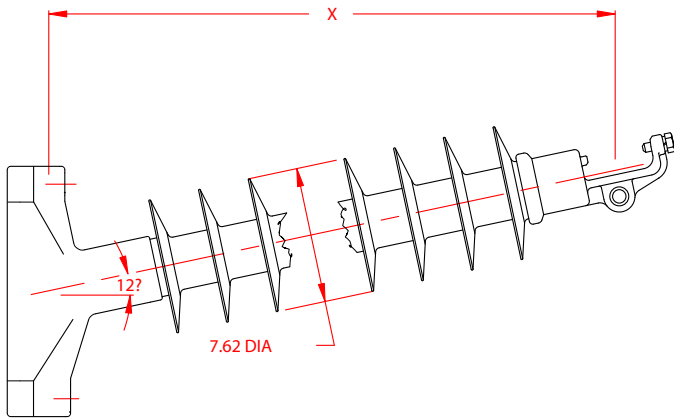
Hi\*Lite XL line post insulators are packaged in appropriate quantities in open wood crates. As an option, Ohio Brass offers packaging of the insulators in individual sleeves.

### Hi\*Lite XL Line Post Insulators: Key to the Catalog Numbers

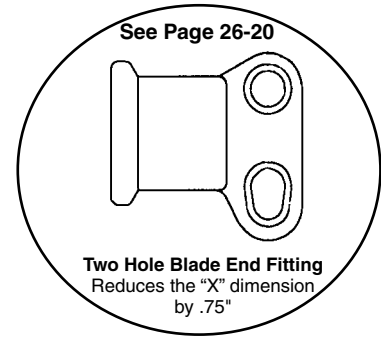


(1) Metric labeling only. Insulators and hardware are ANSI.

## 2.5" (63.5mm) Rod Diameter Horizontal Line Posts



Line & Base Detail see pages 26-19 & 26-20



**Clamptop:**

Maximum Design Tension = 2,500 lb (11.1 kN)

**Two-Hole Blade:**

Maximum Design Tension = 7,500 lb. (33.4 kN)

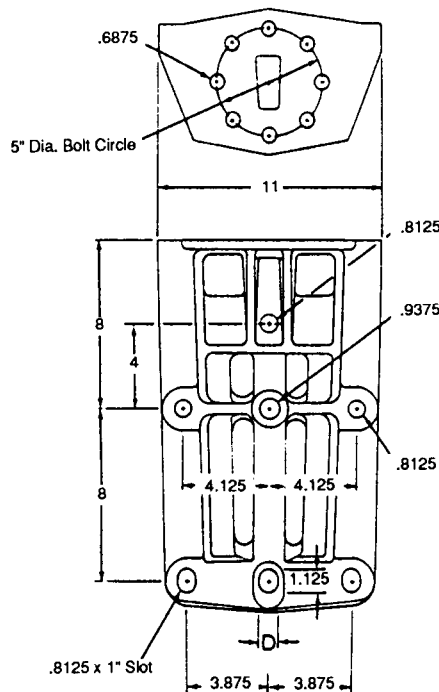
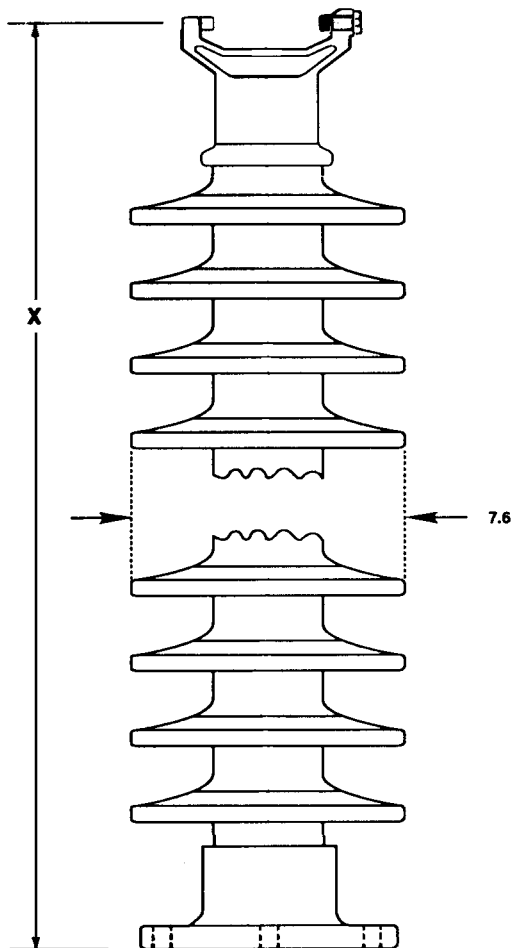
| Selection Guide<br>Typical<br>Line Voltage, kV |     |     |     |     |     | Catalog #<br>with<br>Gain Base<br>& Clamptop<br>End Fittings | "X"<br>Length<br>Inches<br>(mm) | No.<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(1)</sup> 60<br>Flashover<br>ANSI |        | <sup>(1)</sup> Critical<br>Flashover<br>ANSI |        | RCL<br>pounds<br>(kN) | Net<br>Weight<br>pounds<br>(kg) |
|--|-----|-----|-----|-----|-----|--|---------------------------------|--------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|-----------------------|---------------------------------|
|  |     |     |     |     |     |  |                                 |                    |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                       |                                 |
| 69   | 115 | 138 | 161 | 230 | 345 | 5220041100   | 33.5<br>(851)                   | 8                  | 23<br>(584)                           | 54<br>(1372)                          | 215                                    | 195    | 340  | 455    | 2500<br>(11.1)        | 47<br>(21.3)                    |
|  |     |     |     |     |     | 5220051100   | 38.6<br>(980)                   | 10                 | 28<br>(711)                           | 68<br>(1727)                          | 270                                    | 245    | 420  | 535    | 2500<br>(11.1)        | 50<br>(22.7)                    |
|  |     |     |     |     |     | 5220061100   | 43.9<br>(1115)                  | 12                 | 33<br>(838)                           | 82<br>(2083)                          | 325                                    | 295    | 505  | 620    | 2135<br>(9.5)         | 54<br>(24.5)                    |
|  |     |     |     |     |     | 5220071100   | 49.2<br>(1250)                  | 14                 | 39<br>(991)                           | 96<br>(2438)                          | 385                                    | 340    | 590  | 705    | 1865<br>(8.3)         | 57<br>(25.9)                    |
|  |     |     |     |     |     | 5220081100   | 54.5<br>(1384)                  | 16                 | 44<br>(1118)                          | 110<br>(2794)                         | 440                                    | 385    | 675  | 785    | 1650<br>(7.3)         | 61<br>(27.7)                    |
|  |     |     |     |     |     | 5220091100   | 59.6<br>(1514)                  | 18                 | 49<br>(1245)                          | 124<br>(3150)                         | 490                                    | 430    | 760  | 865    | 1490<br>(6.6)         | 65<br>(29.5)                    |
|  |     |     |     |     |     | 5220101100   | 64.8<br>(1646)                  | 20                 | 55<br>(1397)                          | 138<br>(3505)                         | 545                                    | 475    | 845  | 950    | 1350<br>(6.0)         | 68<br>(30.9)                    |
|  |     |     |     |     |     | 5220111100   | 70.1<br>(1781)                  | 22                 | 60<br>(1524)                          | 152<br>(3861)                         | 600                                    | 520    | 930  | 1035   | 1235<br>(5.5)         | 72<br>(32.7)                    |
|  |     |     |     |     |     | 5220121100   | 75.4<br>(1915)                  | 24                 | 65<br>(1651)                          | 166<br>(4216)                         | 650                                    | 560    | 1015   | 1115   | 1140<br>(5.0)         | 75<br>(34.1)                    |
|  |     |     |     |     |     | 5220131100   | 80.5<br>(2045)                  | 26                 | 71<br>(1803)                          | 180<br>(4572)                         | 700                                    | 600    | 1095   | 1195   | 1060<br>(4.7)         | 79<br>(35.9)                    |
|  |     |     |     |     |     | 5220141100   | 85.8<br>(2180)                  | 28                 | 76<br>(1930)                          | 194<br>(4928)                         | 755                                    | 635    | 1180   | 1280   | 990<br>(4.4)          | 82<br>(37.2)                    |
|  |     |     |     |     |     | 5220151100   | 91.1<br>(2314)                  | 30                 | 81<br>(2057)                          | 208<br>(5283)                         | 805                                    | 675    | 1265   | 1365   | 925<br>(4.1)          | 86<br>(39.0)                    |
|  |     |     |     |     |     | 5220161100   | 96.3<br>(2446)                  | 32                 | 87<br>(2210)                          | 222<br>(5639)                         | 855                                    | 710    | 1350   | 1445   | 870<br>(3.6)          | 89<br>(40.4)                    |
|  |     |     |     |     |     | 5220171100   | 101.4<br>(2575)                 | 34                 | 92<br>(2337)                          | 236<br>(5994)                         | 905                                    | 745    | 1435   | 1525   | 820<br>(3.6)          | 93<br>(42.2)                    |
|  |     |     |     |     |     | 5220181100   | 106.7<br>(2710)                 | 36                 | 97<br>(2464)                          | 250<br>(6350)                         | 955                                    | 780    | 1520   | 1610   | 780<br>(3.5)          | 97<br>(44.0)                    |
|  |     |     |     |     |     | 5220191100   | 112.0<br>(2845)                 | 38                 | 103<br>(2616)                         | 264<br>(6706)                         | 1005                                   | 810    | 1605   | 1695   | 740<br>(3.3)          | 100<br>(45.4)                   |

Notes: (1) Tests in accordance with ANSI C29.1-1982. Electrical values are without corona ring.  
 (2) RCL is the maximum continuous load at which the post should be applied.  
 For voltages above 161 kV refer to Page 26-15 for Corona Rings.  
 Dimensions are within allowable tolerances as specified in ANSI C29.11.



## 2.5" (63.5mm) Rod Diameter Vertical Line Posts

**Maximum Design Tension**  
2,500 lb (11.1 kN)



Aluminum Alloy  
A356-T6

Catalog No. 75115  
134,400 In.-Lb. Rating

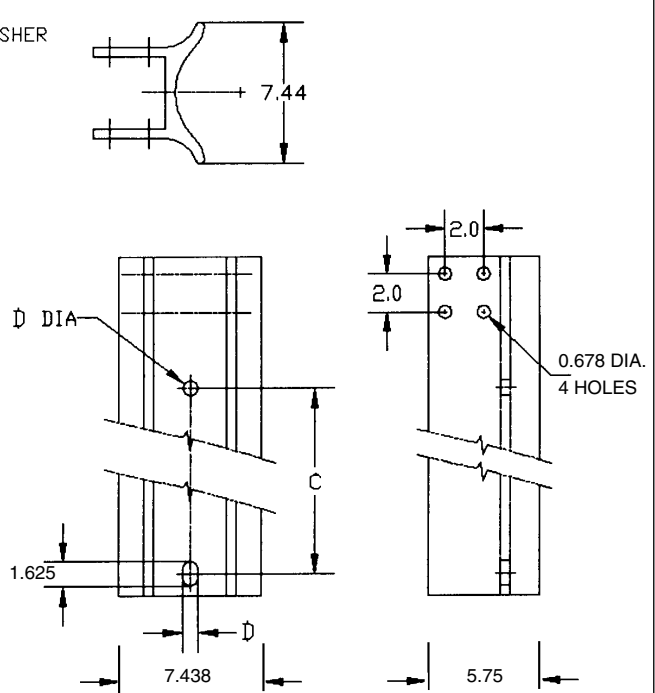
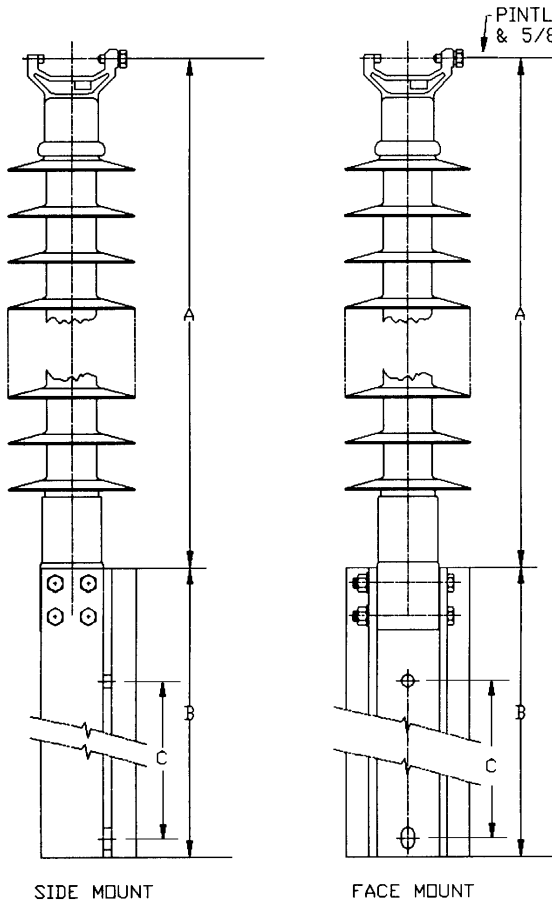
Line & Base Fitting Detail see pages 26-19 & 26-20

**B**

| Selection Guide<br>Typical<br>Line Voltage, kV |     |     |     | Catalog #<br>with 5" Bolt<br>Circle & Vert.<br>Clamtop <sup>(3)</sup> | "X"<br>Length<br>Inches<br>(mm) | No.<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(1)</sup> 60<br>Flashover<br>ANSI |        | <sup>(1)</sup> Critical<br>Flashover<br>ANSI |        | RCL<br>pounds<br>(kN) | Net<br>Weight<br>pounds<br>(kg) |
|--|-----|-----|-----|---|---------------------------------|--------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|-----------------------|---------------------------------|
| 69   | 115 | 138 | 161 |   |                                 |                    |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                       |                                 |
|  |     |     |     | 5220041205  | 30.7<br>(780)                   | 8                  | 23<br>(584)                           | 54<br>(1371)                          | 215                                    | 195    | 340  | 455    | 2500<br>(11.1)        | 27<br>(12.3)                    |
|  |     |     |     | 5220051205  | 35.9<br>(912)                   | 10                 | 28<br>(711)                           | 68<br>(1727)                          | 270                                    | 245    | 420  | 535    | 2475<br>(11.0)        | 30<br>(13.6)                    |
|  |     |     |     | 5220061205  | 41.3<br>(1049)                  | 12                 | 33<br>(838)                           | 82<br>(2083)                          | 325                                    | 295    | 505  | 620    | 2115<br>(9.4)         | 34<br>(15.4)                    |
|  |     |     |     | 5220071205  | 46.7<br>(1186)                  | 14                 | 39<br>(991)                           | 96<br>(2438)                          | 385                                    | 340    | 590  | 705    | 1850<br>(8.2)         | 37<br>(16.8)                    |
|  |     |     |     | 5220081205  | 52.1<br>(1323)                  | 16                 | 44<br>(1118)                          | 110<br>(2734)                         | 440                                    | 385    | 675  | 785    | 1640<br>(7.3)         | 41<br>(18.6)                    |
|  |     |     |     | 5220091205  | 57.4<br>(1458)                  | 18                 | 49<br>(1245)                          | 124<br>(3150)                         | 490                                    | 430    | 760  | 865    | 1480<br>(6.6)         | 45<br>(20.4)                    |

Notes: (1) Tests in accordance with ANSI C29.1-1982.  
 (2) RCL is the maximum cantilever continuous load at which the post should be applied.  
 (3) Mounting Base Catalog No. 75115 may be ordered with these Catalog numbers for a vertical assembly.

## 2.5" (63.5mm) Rod Diameter Vertical Line Post Assembly



Aluminum Alloy  
6063-T5  
**Base Detail**

**To Order an Assembly** - Pick an insulator from Table A based on your Electrical and Mechanical needs — next, select a Base configuration from Table B, for your mounting position needs.

Line End Fitting Detail see pages 26-19 & 26-20

| Selection Guide<br>Typical<br>Line Voltage, kV |     |     |     | (1)Catalog #<br>with Vertical<br>Clamptop &<br>Base Code | "A"<br>Length<br>Inches<br>(mm) |
|--|-----|-----|-----|--|---------------------------------|
| 69   | 115 | 138 | 161 |  |                                 |
|  |     |     |     | 52200412XX   | 30.4<br>(772)                   |
|  |     |     |     | 52200512XX   | 35.6<br>(904)                   |
|  |     |     |     | 52200612XX   | 41.0<br>(1041)                  |
|  |     |     |     | 52200712XX   | 46.4<br>(1179)                  |
|  |     |     |     | 52200812XX   | 51.8<br>(1316)                  |
|  |     |     |     | 52200912XX   | 57.0<br>(1448)                  |

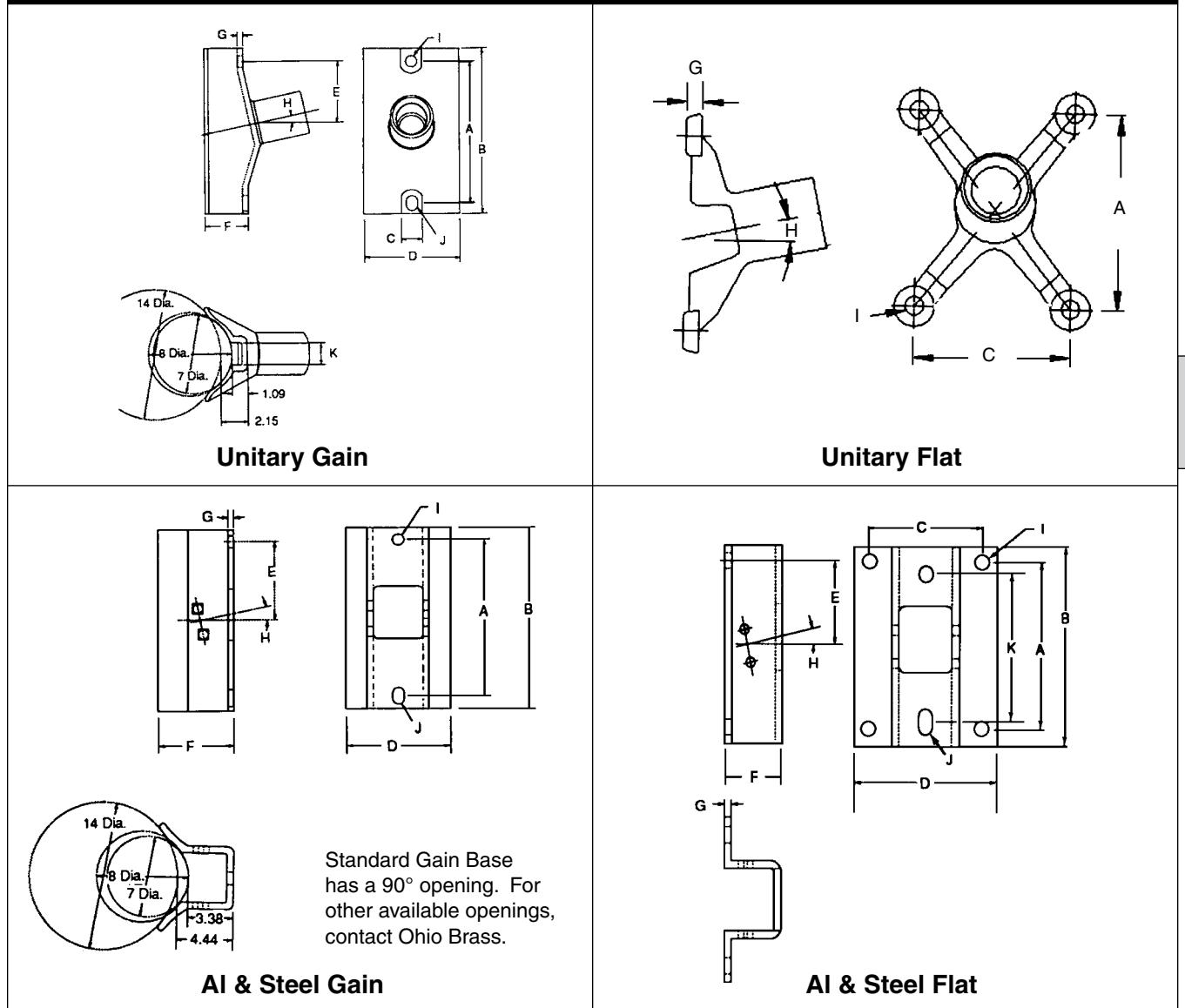
(1) Insulators in Table A have the same electrical and mechanical characteristics as those on Page 26-17 with Code 1205.

**Table A**

| "XX"<br>Code | Style | "B"<br>Length<br>Inches<br>(mm) | "C"<br>Length<br>Inches<br>(mm) | "D"<br>Diameter<br>Inches<br>(mm) |
|--------------|-------|---------------------------------|---------------------------------|-----------------------------------|
| 20           | Face  | 20<br>(508)                     | 12<br>(305)                     | .8125<br>(21)                     |
| 21           | Side  | 20<br>(508)                     | 12<br>(305)                     | .8125<br>(21)                     |
| 22           | Face  | 20<br>(508)                     | 12<br>(305)                     | .9375<br>(24)                     |
| 23           | Side  | 20<br>(508)                     | 12<br>(305)                     | .9375<br>(24)                     |
| 24           | Face  | 31.75<br>(806)                  | 16<br>(406)                     | .8125<br>(21)                     |
| 25           | Side  | 31.75<br>(806)                  | 16<br>(406)                     | .8125<br>(21)                     |
| 26           | Face  | 31.75<br>(806)                  | 16<br>(406)                     | .9375<br>(24)                     |
| 27           | Side  | 31.75<br>(806)                  | 16<br>(406)                     | .9375<br>(24)                     |

**Table B**

## 2.5" (63.5 mm) Rod Diameter Base Fittings

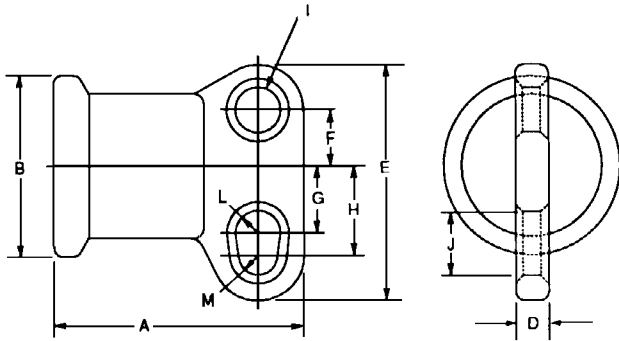

**B**

### Horizontal & Vertical Bases Dimensions (in inches)

| Type (Code)*           | A    | B    | C    | D    | E    | F    | G    | H   | I            | J           | K    | Material         |
|------------------------|------|------|------|------|------|------|------|-----|--------------|-------------|------|------------------|
| Unitary D.I. Gain (00) | 12.0 | 14.0 | 1.75 | 8.06 | -    | 3.54 | 0.5  | 12° | 0.94         | 0.94 x 1.31 | 1.90 | 60-45-12 D.I.    |
| Unitary D.I. Flat (01) | 10.0 | 12.2 | 8.0  | 10.0 | 5.0  | -    | 0.8  | 12° | 0.94         | -           | -    | 60-45-12 D.I.    |
| 5" B.C. (15)           | 4.75 | 6.25 | 3.63 | 0.90 | 5.0  | -    | -    | -   | 0.69         | -           | -    | 60-45-12 D.I.    |
| 5" B.C. (05)           | 4.75 | 6.25 | 3.63 | 0.90 | 5.0  | -    | -    | -   | 5/8 - 11 UFS | -           | -    | 60-45-12 D.I.    |
| Al Gain (02)           | 12.0 | 14.0 | -    | 8.06 | 6.13 | 5.56 | 0.5  | 12° | 0.94         | 0.94 x 1.31 | -    | 6063 T5 Al       |
| Al Gain (12)           | 12.0 | 14.0 | -    | 8.06 | 6.13 | 5.56 | 0.5  | 12° | 0.81         | 0.94 x 1.31 | -    | 6063 T5 Al       |
| Steel Gain (07)        | 12.0 | 15.0 | -    | 8.33 | 6.5  | 6.04 | 0.38 | 12° | 0.94         | 0.94 x 2.0  | -    | Low Carbon Steel |
| Al Flat (03)           | 10.0 | 12.0 | 8.0  | 10.0 | 5.0  | 4.0  | 0.5  | 12° | 0.94         | -           | -    | 6063 T5 Al       |
| Al Flat (13)           | 10.0 | 12.0 | 8.0  | 10.0 | 5.0  | 4.0  | 0.5  | 12° | 0.81         | -           | -    | 6063 T5 Al       |
| Steel Flat (08)        | 13.0 | 15.0 | 8.0  | 10.0 | 6.5  | 4.0  | 0.5  | 12° | 1.125 x 0.94 | 0.94 x 2    | 12.0 | Low Carbon Steel |
| Al Flat (04)           | 13.0 | 15.0 | 8.0  | 10.0 | 6.5  | 4.0  | 0.5  | 12° | 0.94         | 0.94 x 1.31 | 12.0 | 6063 T5 Al       |
| Al Flat (14)           | 13.0 | 15.0 | 8.0  | 10.0 | 6.5  | 4.0  | 0.5  | 12° | 0.81         | 0.81 x 1.31 | 12.0 | 6063 T5 Al       |

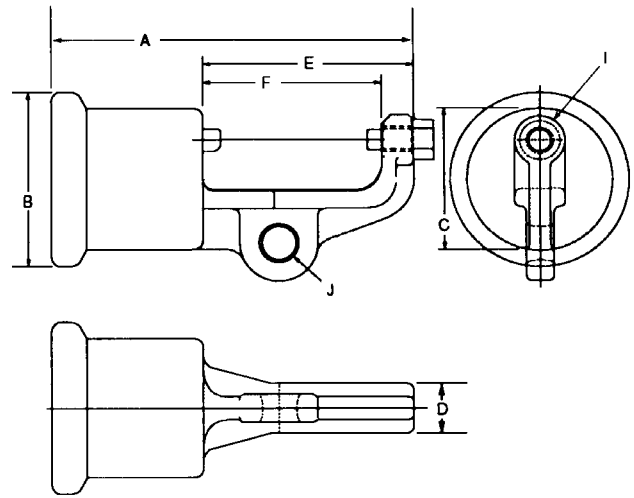
\*Code is the third and fourth numbers in the Suffix Code of the Catalog Number.

## 2.5" (63.5 mm) Rod Diameter Line Fittings

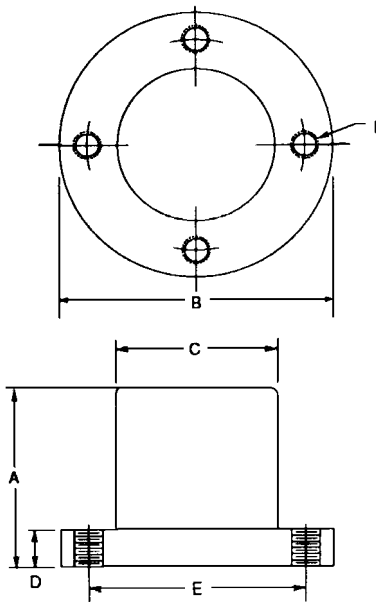


| Transverse Compressing Swing Angle<br>for Conductor Suspension Clamp |                   |
|--|-------------------|
| 2 Hole Blade (Std.)  | 2 Hole Long Blade |
| 40 deg. max.   | 64 deg. max.      |

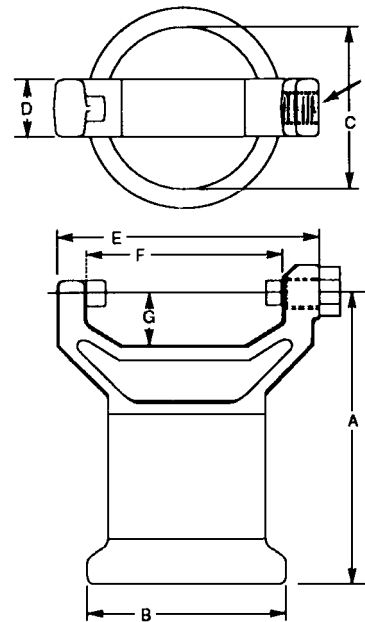
**Two Hole Blade**  
\*12° upsweep post angles



**Horizontal Clamptop**



**5" Bolt Circle**  
Line or Base Fitting



**Vertical Clamptop**  
Part per ANSI C29.7

### Horizontal & Vertical End Fittings Dimensions (in inches)

| Type (Code)*          | A    | B    | C    | D    | E    | F    | G    | H    | I            | J    | L    | M      | Material      |
|-----------------------|------|------|------|------|------|------|------|------|--------------|------|------|--------|---------------|
| 2 Hole Blade (0)      | 5.73 | 4.0  | -    | 0.75 | 5.25 | 1.25 | 1.50 | 2.00 | 1.0          | 1.44 | 0.5R | 0.44 R | 60-40-18 D.I. |
| 2 Hole Long Blade (9) | 5.73 | 4.0  | -    | 0.75 | 7.75 | 1.25 | 4.0  | 4.5  | 1.0          | 1.44 | 0.5R | 0.44R  | 60-40-18 D.I. |
| H. Clamptop (1)       | 8.24 | 4.0  | 3.30 | 1.12 | 4.72 | 4.0  | -    | -    | 5/8 - 11 UFS | 0.75 | -    | -      | 60-40-18 D.I. |
| 5" B.C. (3)           | 4.75 | 6.25 | 3.63 | 0.90 | 5.0  | -    | -    | -    | 5/8 - 11 UFS | -    | -    | -      | 60-45-12 D.I. |
| 5" B.C. (5)           | 4.75 | 6.25 | 3.63 | 0.90 | 5.0  | -    | -    | -    | 0.69 x Holes | -    | -    | -      | 60-45-12 D.I. |
| V. Clamptop (2)       | 5.88 | 4.0  | 3.30 | 1.12 | 5.37 | 4.0  | 1.06 | -    | 5/8 - 11 UFS | -    | -    | -      | 60-40-18 D.I. |

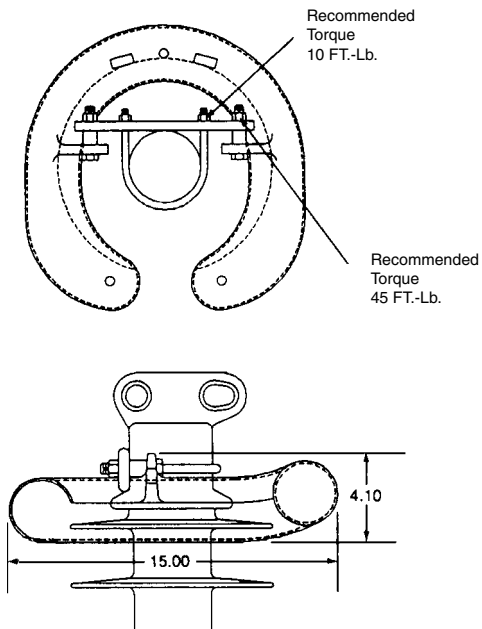
\*Code is the 2nd number in the Suffix Code of the Catalog Number.

## 3.0" (76.2 mm) Rod Diameter Line Posts

### Corona Rings

Hi\*Lite XL line post insulators are corona-free through 230 kV line-to-ground.

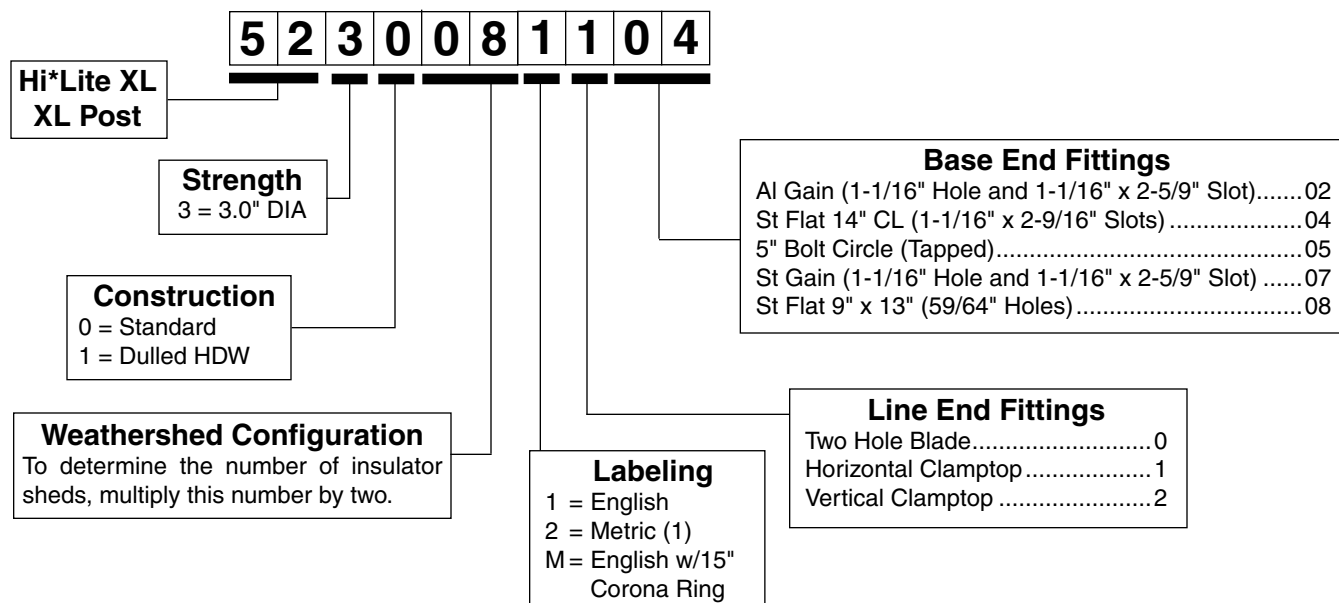
| Application        | 138/161 kV                 | 230 kV                     | 345 kV                           |
|--------------------|----------------------------|----------------------------|----------------------------------|
| Line End Energized | Top - NONE<br>Bott. - NONE | Top - NONE<br>Bott. - NONE | Top - 2737743001<br>Bott. - NONE |



**Part Number 2737743001**  
**Control Ring**

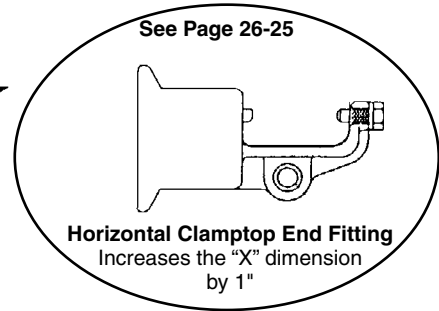
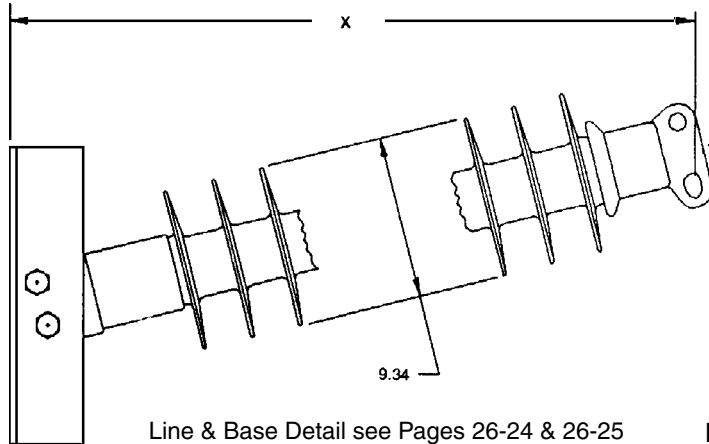
B

### Hi\*Lite XL Line Post Insulators: Key to the Catalog Numbers



(1) Metric labeling only. Insulators and hardware are ANSI.

### 3.0" (76.2mm) Rod Diameter Horizontal Line Posts



**Clamptop:**

Maximum Design Tension = 2,500 lb (11.1 kN)

**Two-Hole Blade:**

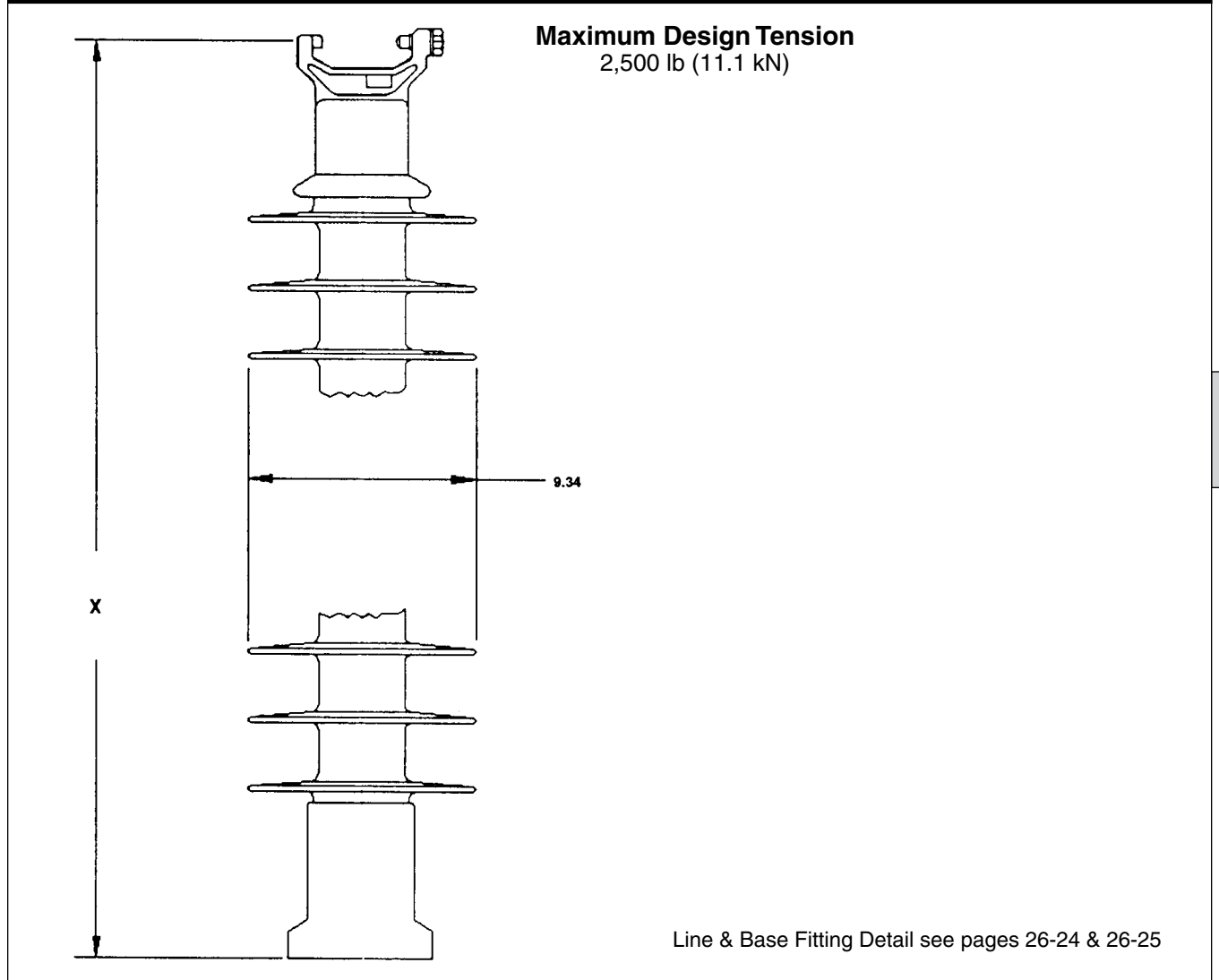
Maximum Design Tension = 12,500 lb. (55.6 kN)

Line & Base Detail see Pages 26-24 & 26-25

| Selection Guide<br>Typical<br>Line Voltage, kV |     |     |     |     |     | Catalog #<br>with<br>Flat Base<br>& Two Hole<br>Blade | "X"<br>Length<br>Inches<br>(mm) | No.<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(1)</sup> 60<br>Flashover<br>ANSI |        | <sup>(1)</sup> Critical<br>Flashover<br>ANSI |        | <sup>(2)</sup> RCL<br>pounds<br>(kN) | Net<br>Weight<br>pounds<br>(kg) |
|--|-----|-----|-----|-----|-----|---|---------------------------------|--------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|--------------------------------------|---------------------------------|
| 69   | 115 | 138 | 161 | 230 | 345 |   |                                 |                    |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                                      |                                 |
|  |     |     |     |     |     | 5230051004  | 38.8<br>(986)                   | 10                 | 29<br>(737)                           | 77<br>(1956)                          | 295                                    | 250    | 445  | 540    | 4405<br>(19.6)                       | 90<br>(40.8)                    |
|  |     |     |     |     |     | 5230061004  | 43.8<br>(1113)                  | 12                 | 34<br>(864)                           | 93<br>(2362)                          | 345                                    | 295    | 530  | 620    | 3780<br>(16.8)                       | 95<br>(43.1)                    |
|  |     |     |     |     |     | 5230071004  | 49.0<br>(1245)                  | 14                 | 39<br>(991)                           | 108<br>(2743)                         | 395                                    | 335    | 615  | 705    | 3295<br>(14.7)                       | 100<br>(40.9)                   |
|  |     |     |     |     |     | 5230081004  | 54.8<br>(1392)                  | 16                 | 45<br>(1143)                          | 124<br>(3150)                         | 445                                    | 380    | 695  | 790    | 2920<br>(13.0)                       | 106<br>(48.1)                   |
|  |     |     |     |     |     | 5230091004  | 59.3<br>(1506)                  | 18                 | 50<br>(1270)                          | 140<br>(3556)                         | 495                                    | 420    | 780  | 870    | 2620<br>(11.7)                       | 110<br>(49.9)                   |
|  |     |     |     |     |     | 5230101004  | 64.5<br>(1638)                  | 20                 | 55<br>(1397)                          | 156<br>(3962)                         | 545                                    | 465    | 865  | 955    | 2380<br>(10.6)                       | 115<br>(52.2)                   |
|  |     |     |     |     |     | 5230111004  | 69.5<br>(1765)                  | 22                 | 60<br>(1524)                          | 171<br>(4343)                         | 590                                    | 505    | 950  | 1035   | 2185<br>(9.7)                        | 120<br>(54.4)                   |
|  |     |     |     |     |     | 5230121004  | 74.7<br>(1897)                  | 24                 | 66<br>(1676)                          | 187<br>(4750)                         | 640                                    | 550    | 1035   | 1120   | 2015<br>(9.0)                        | 125<br>(56.7)                   |
|  |     |     |     |     |     | 5230131004  | 79.9<br>(2029)                  | 26                 | 71<br>(1803)                          | 203<br>(5156)                         | 685                                    | 590    | 1120   | 1200   | 1865<br>(8.3)                        | 130<br>(58.9)                   |
|  |     |     |     |     |     | 5230141004  | 85.0<br>(2159)                  | 28                 | 76<br>(1930)                          | 218<br>(5537)                         | 735                                    | 640    | 1205   | 1285   | 1740<br>(7.7)                        | 135<br>(61.2)                   |
|  |     |     |     |     |     | 5230151004  | 90.2<br>(2291)                  | 30                 | 82<br>(2083)                          | 234<br>(5944)                         | 780                                    | 670    | 1290   | 1365   | 1630<br>(7.2)                        | 141<br>(63.9)                   |
|  |     |     |     |     |     | 5230161004  | 95.2<br>(2418)                  | 32                 | 87<br>(2210)                          | 250<br>(6350)                         | 825                                    | 710    | 1370   | 1445   | 1535<br>(6.8)                        | 146<br>(66.2)                   |
|  |     |     |     |     |     | 5230171004  | 100.4<br>(2550)                 | 34                 | 92<br>(2337)                          | 265<br>(6731)                         | 870                                    | 755    | 1455   | 1530   | 1450<br>(6.5)                        | 151<br>(68.5)                   |
|  |     |     |     |     |     | 5230181004  | 105.5<br>(2680)                 | 36                 | 98<br>(2489)                          | 281<br>(7137)                         | 915                                    | 795    | 1540   | 1615   | 1370<br>(6.1)                        | 156<br>(70.8)                   |
|  |     |     |     |     |     | 5230191004  | 110.7<br>(2812)                 | 38                 | 103<br>(2616)                         | 297<br>(7544)                         | 960                                    | 835    | 1625   | 1695   | 1300<br>(5.8)                        | 161<br>(73.1)                   |
|  |     |     |     |     |     | 5230201004  | 115.9<br>(2944)                 | 40                 | 108<br>(2743)                         | 313<br>(7950)                         | 1000                                   | 875    | 1710   | 1780   | 1240<br>(5.5)                        | 166<br>(75.3)                   |

Notes: (1) Tests in accordance with ANSI C29.1-1982. Electrical values are without corona ring.  
 (2) RCL is the maximum continuous load at which the post should be applied.  
 For voltages above 230 kV refer to Page 26-21 for Corona Rings. Electrical values are shown for insulators without rings. For electricals with rings, contact Ohio Brass.

## 3.0" (76.2 mm) Rod Diameter Vertical Line Posts

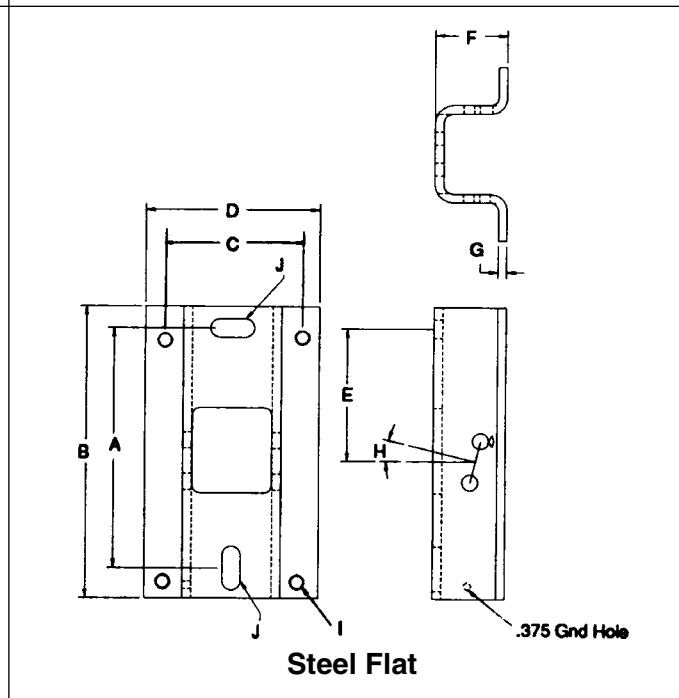
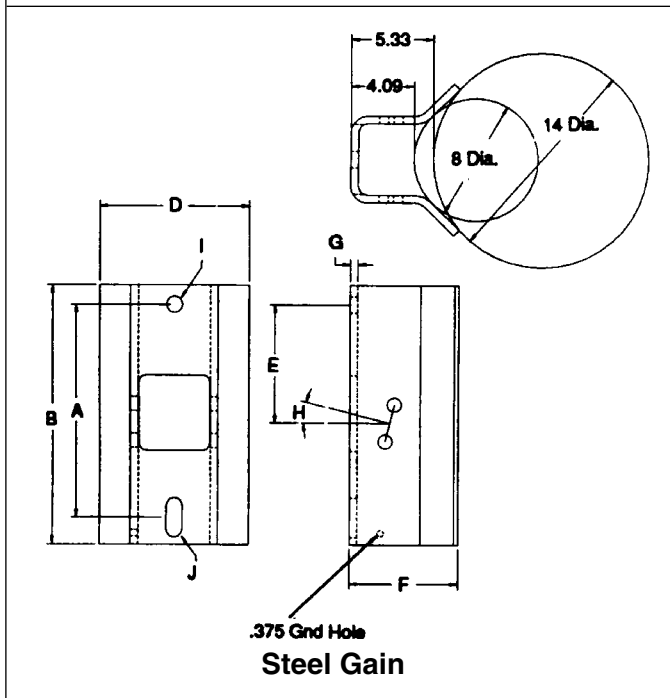
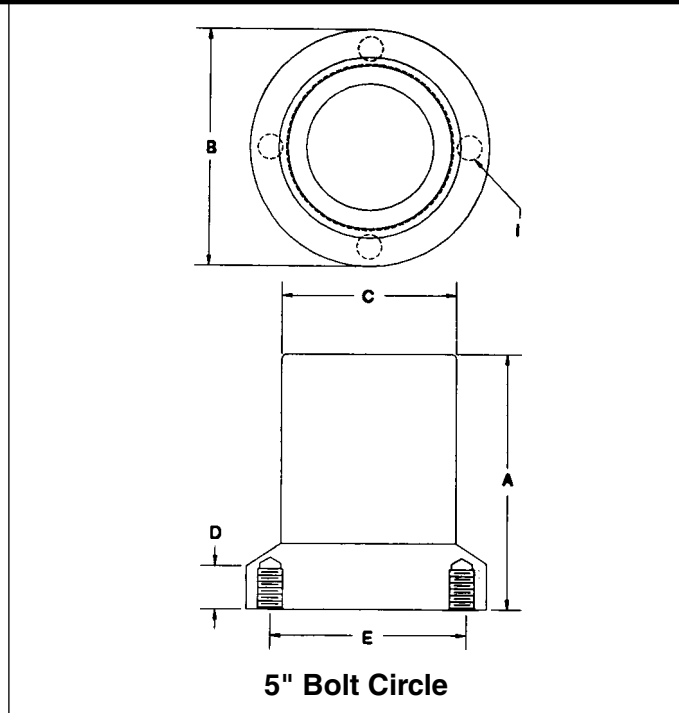
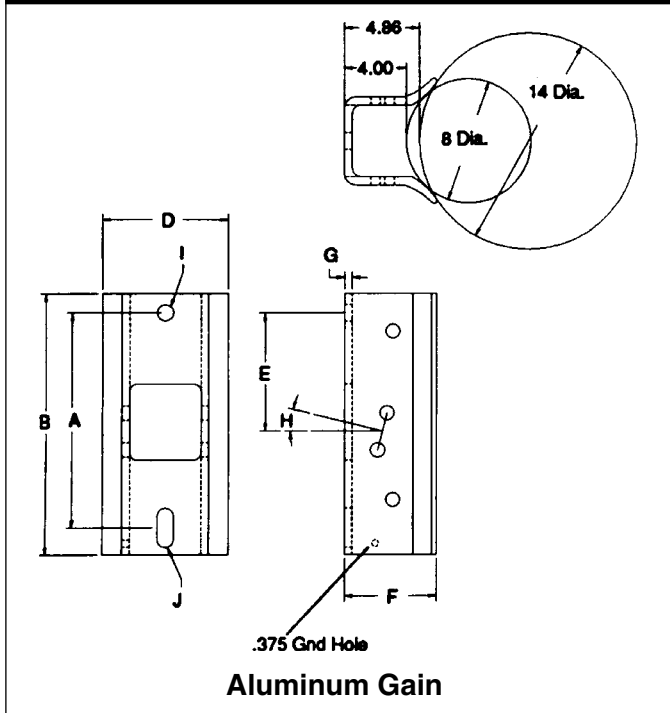


B

| Selection Guide<br>Typical<br>Line Voltage, kV |     |     |     | Catalog #<br>with 5" Bolt<br>Circle & Vert.<br>Clamptop | "X"<br>Length<br>Inches<br>(mm) | No.<br>of<br>Sheds | Dry Arc<br>Distance<br>inches<br>(mm) | Leakage<br>Distance<br>inches<br>(mm) | <sup>(1)</sup> 60<br>Flashover<br>ANSI |        | <sup>(1)</sup> Critical<br>Flashover<br>ANSI |        | <sup>(2)</sup> RCL<br>pounds<br>(kN) | Net<br>Weight<br>pounds<br>(kg) |
|--|-----|-----|-----|---|---------------------------------|--------------------|---------------------------------------|---------------------------------------|--|--------|--|--------|--------------------------------------|---------------------------------|
| 69   | 115 | 138 | 161 |   |                                 |                    |                                       |                                       | Dry-kV                                 | Wet-kV | Pos-kV                                       | Neg-kV |                                      |                                 |
|  |     |     |     | 5230051205  | 38.0<br>(965)                   | 10                 | 29<br>(737)                           | 77<br>(1956)                          | 295                                    | 250    | 445  | 540    | 2500<br>(11.1)                       | 54<br>(24.5)                    |
|  |     |     |     | 5230061205  | 43.2<br>(1097)                  | 12                 | 34<br>(864)                           | 93<br>(2362)                          | 345                                    | 295    | 530  | 620    | 2500<br>(11.1)                       | 59<br>(26.8)                    |
|  |     |     |     | 5230071205  | 48.5<br>(1219)                  | 14                 | 39<br>(991)                           | 108<br>(2743)                         | 395                                    | 335    | 615  | 705    | 2500<br>(11.1)                       | 64<br>(29.1)                    |
|  |     |     |     | 5230081205  | 53.8<br>(1367)                  | 16                 | 45<br>(1143)                          | 124<br>(3150)                         | 445                                    | 380    | 695  | 785    | 2500<br>(11.1)                       | 69<br>(31.4)                    |
|  |     |     |     | 5230091205  | 59.2<br>(1504)                  | 18                 | 50<br>(1270)                          | 140<br>(3556)                         | 495                                    | 420    | 780  | 870    | 2500<br>(11.1)                       | 74<br>(33.6)                    |
|  |     |     |     | 5230101205  | 64.5<br>(1638)                  | 20                 | 55<br>(1397)                          | 156<br>(3962)                         | 545                                    | 465    | 865  | 950    | 2335<br>(10.4)                       | 79<br>(35.9)                    |

Notes: (1) Tests in accordance with ANSI C29.1-1982.  
 (2) RCL is the maximum cantilever continuous load at which the post should be applied.

### Hi\*Lite XL 3.0" Rod Dia. Base Fittings



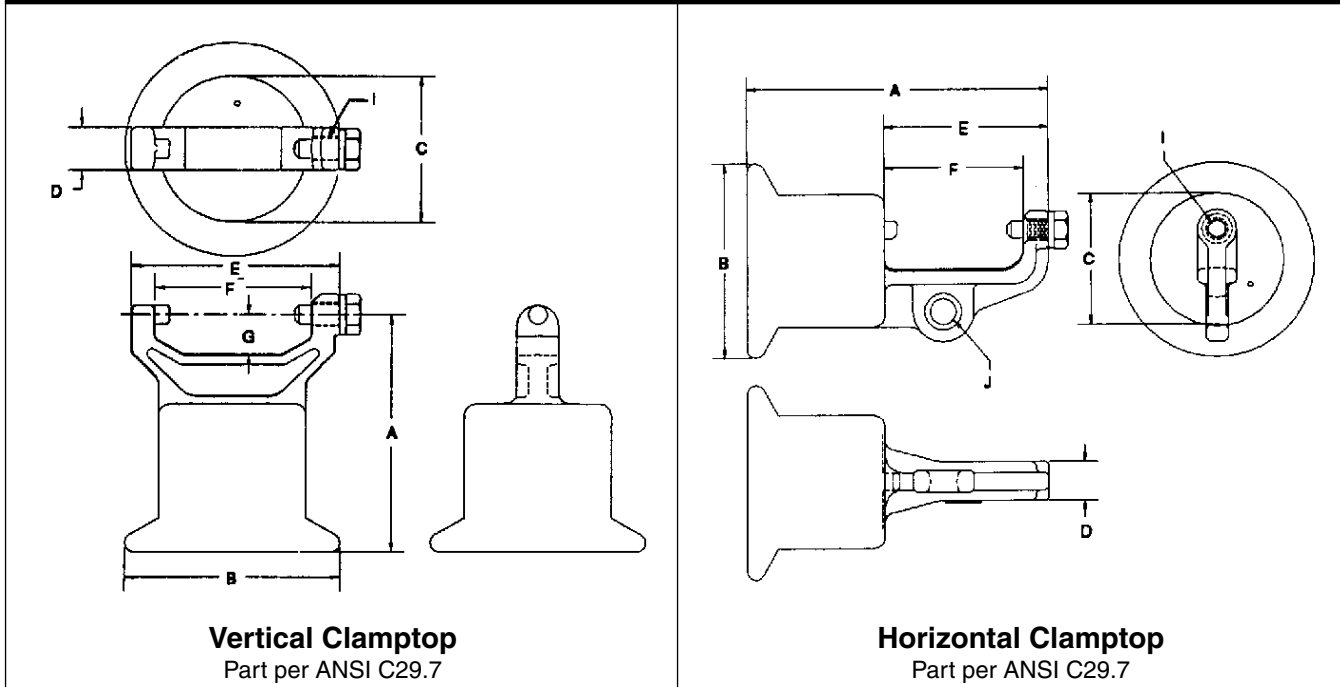
#### Horizontal & Vertical Bases Dimensions (in inches)

| Type (Code)*    | A    | B    | C    | D     | E    | F     | G    | H   | I            | J           | Material         |
|-----------------|------|------|------|-------|------|-------|------|-----|--------------|-------------|------------------|
| 5" B.C. (05)    | 6.36 | 5.9  | 4.37 | 1.2   | 5.0  | -     | -    | -   | 5/8 - 11 UFS | -           | 60-40-18 D.I.    |
| Al Gain (02)    | 14.0 | 17.0 | -    | 8.079 | 7.75 | 5.949 | 0.53 | 14° | 1.06         | 1.06 x 2.56 | 6063 T5 Al       |
| Steel Gain (07) | 14.0 | 17.0 | -    | 9.65  | 7.75 | 7.03  | 0.5  | 14° | 1.06         | 1.06 x 2.56 | Low Carbon Steel |
| Steel Flat (08) | 13.0 | 15.0 | 9.0  | 11.0  | 6.5  | 4.12  | 0.5  | 14° | 0.938        | -           | Low Carbon Steel |
| Steel Flat (04) | 14.0 | 17.0 | -    | 10.0  | 7.75 | 4.12  | 0.5  | 14° | -            | 1.06 x 2.56 | Low Carbon Steel |

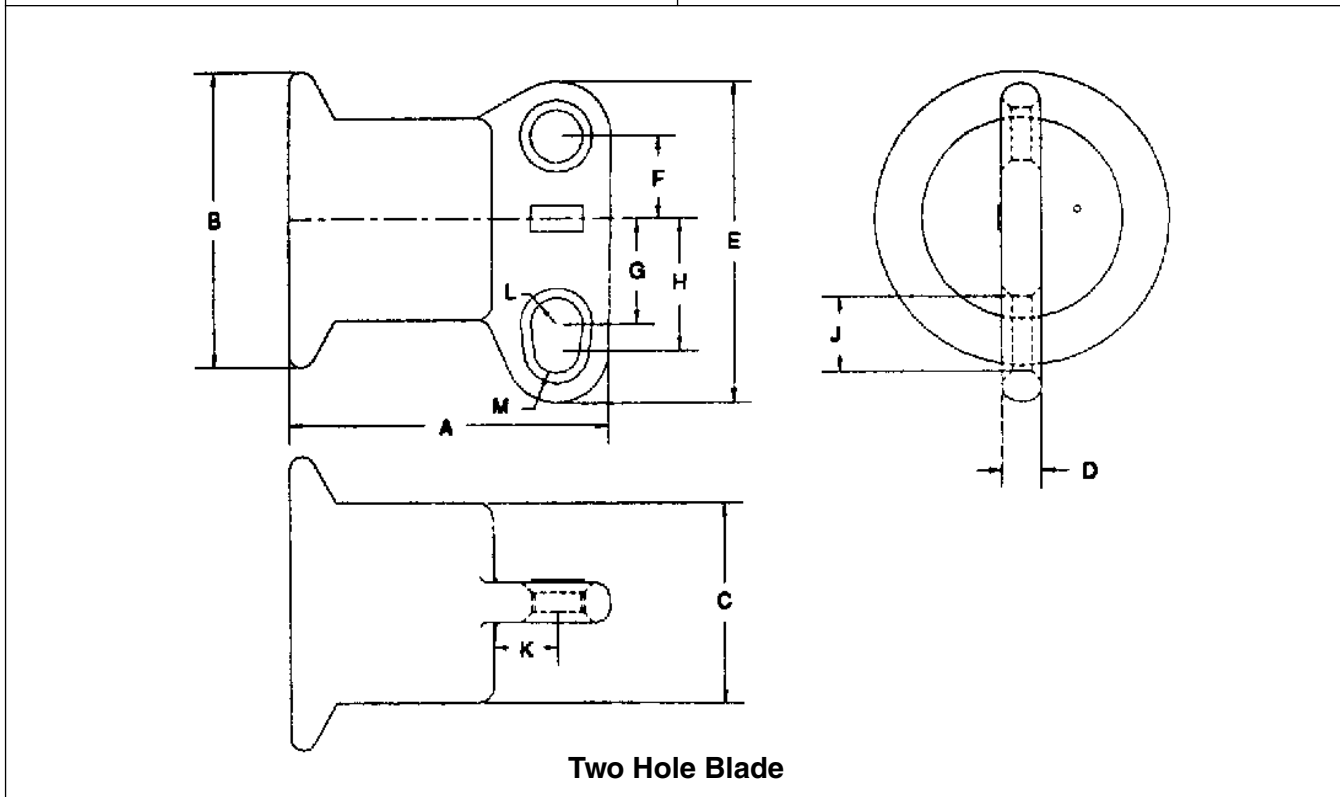
\*Code is the 2nd number in the Suffix Code of the Catalog Number.



## Hi\*Lite XL 3.0" Rod Dia. Line Fittings



B



**Horizontal & Vertical End Fittings** Dimensions (in inches)

| Type (Code)*    | A    | B    | C    | D    | E    | F    | G    | H   | I            | J    | K    | L    | M      | Material      |
|-----------------|------|------|------|------|------|------|------|-----|--------------|------|------|------|--------|---------------|
| 2 Hole End (0)  | 6.16 | 5.63 | 3.84 | 0.75 | 6.12 | 1.57 | 2.0  | 2.5 | -            | 1.44 | 1.24 | 0.5R | 0.44 R | 60-40-18 D.I. |
| H. Clamptop (1) | 8.64 | 5.63 | 3.84 | 1.12 | 4.72 | 4.0  | -    | -   | 5/8 - 11 UFS | 0.75 | -    | -    | -      | 60-40-18 D.I. |
| V. Clamptop (2) | 6.31 | 5.63 | 3.84 | 1.12 | 5.37 | 4.0  | 1.06 | -   | 5/8 - 11 UFS | -    | -    | -    | -      | 60-40-18 D.I. |

\*Code is the 2nd digit in the Suffix Code of the Catalog Number.

**Clamptop Clamp**

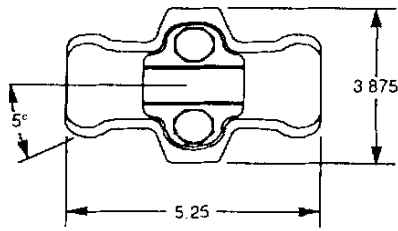


Figure 1

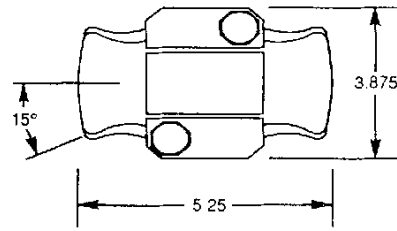
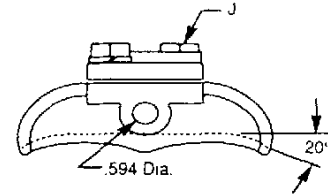
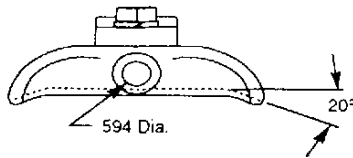


Figure 2



Clamptop clamps can be mounted directly on Hi\*Lite XL 250 posts if the posts are ordered with the horizontal or vertical clamptop option.

| Catalog Number | Fig. No. | Body & Keeper Material | Clamping Range Inches (mm) | Ultimate Body Strength Lbs. (kN) |
|----------------|----------|------------------------|----------------------------|----------------------------------|
| TSC57          | 1        | 356-T6 Al              | 0.25-057 (6.3-14.4)        | 2800 (1.273)                     |
| TSC106         | 1        | 356-T6 Al              | 0.50-1.06 (12.7-26.9)      | 2800 (1.273)                     |
| TSC150         | 1        | 356-T6 Al              | 1.00-1.50 (25.4-38.1)      | 2800 (1.273)                     |
| TSC200         | 2        | 356-T6 Al              | 1.50-2.00 (38.1-50.8)      | 2800 (1.273)                     |

**Jumper Clamps and Assemblies**

A practical application of Hi\*Lite line posts is for support of jumper loops on transmission lines.

Horizontal motion of the jumper is restricted, and the factor of wind sway is eliminated. Additionally the crossarm length may be reduced. The Difference in cost of insulation is not significant but, the savings in tower cost can be attractive. Regardless of cost, the use of a jumper support improves construction.

If using a single clamp, clamp position relative to the insulator may be changed by bolting the clamp through the upper hole in the insulator end fitting.

**Jumper clamps are not intended for tangent span applications.**

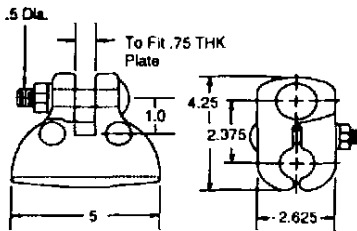


Figure 1

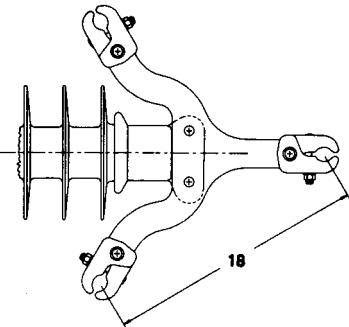


Figure 3

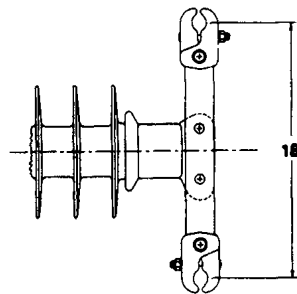


Figure 2

| Figure | Catalog Number | Yoke Type | Clamping Range (Inches) | Post Type |
|--------|----------------|-----------|-------------------------|-----------|
| 1      | 976423002      | None      | 1.00 - 1.40             | Any       |
| 1      | 976423003      | None      | 1.40 - 1.60             | Any       |
| 1      | 600643001      | None      | 1.60 - 2.00             | Any       |
| 2      | 2717243001     | Dual      | 1.00 - 1.40             | 250       |
| 2      | 2717253001     | Dual      | 1.40 - 1.60             | 250       |
| 2      | 2717263001     | Dual      | 1.60 - 2.00             | 250       |
| 2      | 2738383001     | Dual      | 1.00 - 1.40             | 300       |
| 2      | 2738393001     | Dual      | 1.40 - 1.60             | 300       |
| 2      | 2738403001     | Dual      | 1.60 - 2.00             | 300       |
| 3      | 2721763001     | Triple    | 1.00 - 1.40             | 250       |
| 3      | 2721773001     | Triple    | 1.40 - 1.60             | 250       |
| 3      | 2721783001     | Triple    | 1.60 - 2.00             | 250       |
| 3      | 2738413001     | Triple    | 1.00 - 1.40             | 300       |
| 3      | 2738423001     | Triple    | 1.40 - 1.60             | 300       |
| 3      | 2738433001     | Triple    | 1.60 - 2.00             | 300       |
| 4      | 2721793001     | Quad      | 1.00 - 1.40             | 250       |
| 4      | 2721803001     | Quad      | 1.40 - 1.60             | 250       |
| 4      | 2721813001     | Quad      | 1.60 - 2.00             | 250       |
| 4      | 2738443001     | Quad      | 1.00 - 1.40             | 300       |
| 4      | 2738453001     | Quad      | 1.40 - 1.60             | 300       |
| 4      | 2738463001     | Quad      | 1.60 - 2.00             | 300       |

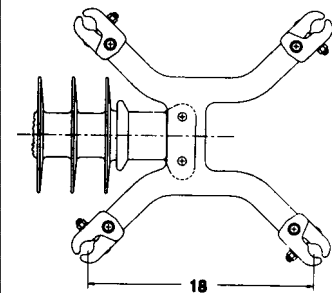
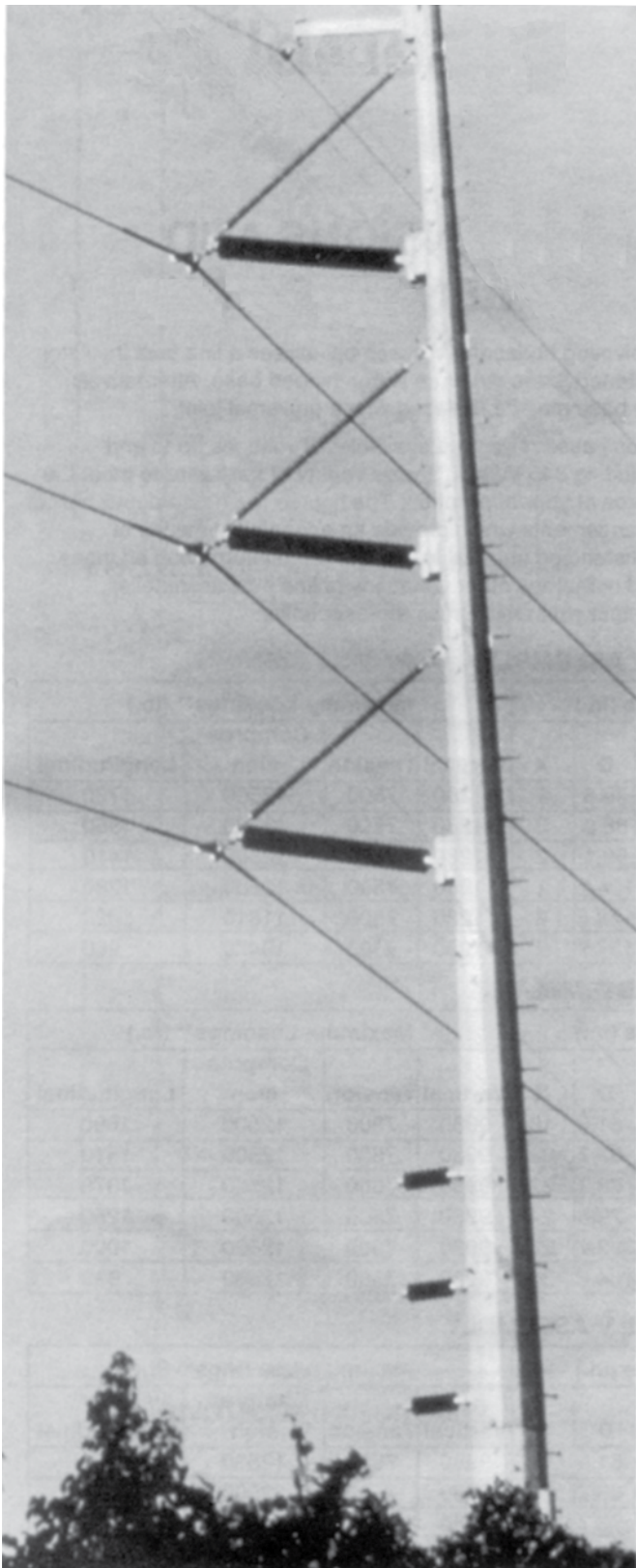


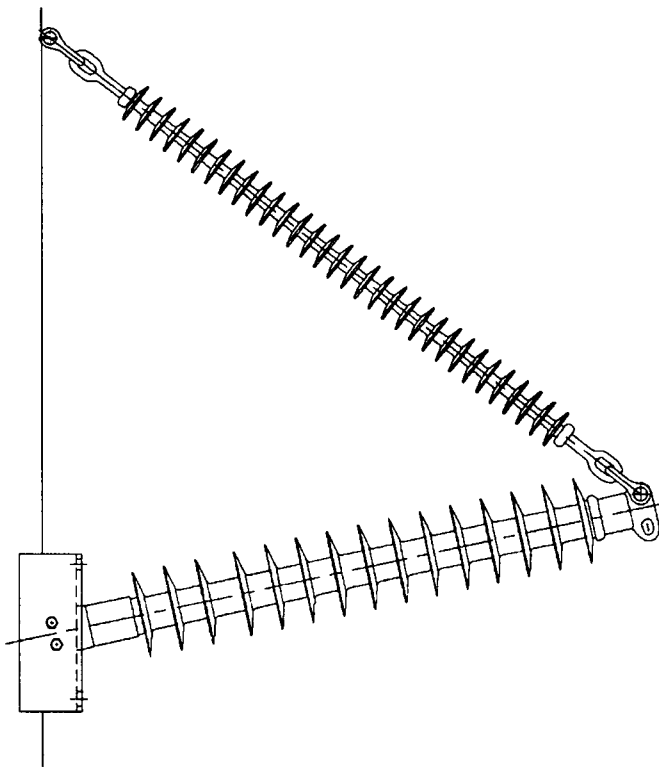
Figure 4



# Hi\*Lite<sup>®</sup> XL Braced Posts

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| Dimension and Strength Ratings..... | 26-28 |
| Assembly Drawings .....             | 26-29 |

**C**



# Hi\*Lite® XL Assemblies

Catalog number covers complete assembly including insulator and hardware as illustrated.

The need to minimize the tower size and visual impact of transmission lines has prompted increased interest in braced line posts, horizontal-V, and pivoting V assemblies. These insulating structures offer vastly improved vertical load capabilities over conventional lines posts while retaining the advantages of a fixed conductor position.

A braced line post uses a conventional line post with a suspension string tied to the tower face with a link. A horizontal-V replaces the link with a fixed offset extending from the tower face adding a stabilizing force to the assembly. Both these assemblies are available with flat or gain bases.

A pivoting horizontal-V assembly utilizes a line post insulator fastened to the structure with a hinged base. Alternatively, the base may be replaced with a universal joint.

These assemblies are available for voltages up to and including 345 kV with a wide variety of hardware to meet the needs of your application. The figures illustrated depict typical arrangements which provide an economical means of withstanding unusual loads. For more information on these and numerous other variations of line post assemblies, contact your Ohio Brass representative.

## BRACED LINE POST ASSEMBLY

| Typical System kV | Cat # Gain Base | Cat # Flat Base | Component Insulators |            | Dimensions (in.) |       |       |       |   | Maximum Loadings** (lb.) |         |             |              |
|-------------------|-----------------|-----------------|----------------------|------------|------------------|-------|-------|-------|---|--------------------------|---------|-------------|--------------|
|                   |                 |                 | Post                 | Suspension | A                | B     | C     | D     | X | Vertical                 | Tension | Compression | Longitudinal |
|                   |                 |                 |                      |            |                  |       |       |       |   |                          |         |             |              |
| 115/138           | 234220          | 234221          | 522008               | 511010     | 53.7             | 72.8  | 74.0  | 79.8  | 2 | 11280                    | 7500    | 12500       | 1730         |
| 115/138           | 234222          | 234223          | 522009               | 511211     | 58.8             | 81.9  | 83.0  | 88.9  | 2 | 11280                    | 7500    | 12500       | 1550         |
| 161               | 234224          | 234225          | 522010               | 511013     | 64.1             | 91.1  | 91.0  | 98.1  | 2 | 11280                    | 7500    | 12500       | 1410         |
| 161               | 234226          | 234227          | 522011               | 511014     | 69.4             | 97.2  | 96.0  | 104.2 | 2 | 11280                    | 7500    | 12500       | 1280         |
| 230 *             | 234228          | 234229          | 522014               | 511018     | 85.0             | 121.6 | 118.0 | 128.6 | 2 | 11280                    | 7500    | 11810       | 1020         |
| 230 *             | 234230          | 234231          | 522015               | 511219     | 90.3             | 130.7 | 127.0 | 137.7 | 2 | 11280                    | 7500    | 10470       | 960          |

## HORIZONTAL V ASSEMBLY

| Typical System kV | Cat # Gain Base | Cat # Flat Base | Component Insulators |            | Dimensions (in.) |      |      |       |    | Maximum Loadings** (lb.) |         |             |              |
|-------------------|-----------------|-----------------|----------------------|------------|------------------|------|------|-------|----|--------------------------|---------|-------------|--------------|
|                   |                 |                 | Post                 | Suspension | A                | B    | C    | D     | X  | Vertical                 | Tension | Compression | Longitudinal |
|                   |                 |                 |                      |            |                  |      |      |       |    |                          |         |             |              |
| 115/138           | 234232          | 234233          | 522008               | 511007     | 54.9             | 54.6 | 51.0 | 61.6  | 18 | 9980                     | 7500    | 12500       | 1680         |
| 115/138           | 234234          | 234235          | 522009               | 511008     | 60.1             | 60.7 | 56.0 | 67.7  | 20 | 9980                     | 7500    | 12500       | 1510         |
| 161               | 234236          | 234237          | 522010               | 511009     | 65.5             | 66.7 | 61.0 | 73.7  | 22 | 9980                     | 7500    | 12500       | 1370         |
| 161               | 234238          | 234239          | 522011               | 511010     | 70.9             | 72.8 | 66.0 | 79.8  | 24 | 9980                     | 7500    | 12500       | 1250         |
| 230 *             | 234240          | 234241          | 522014               | 511013     | 86.9             | 91.1 | 80.0 | 98.1  | 28 | 9980                     | 7500    | 12500       | 1000         |
| 230 *             | 234242          | 234243          | 522015               | 511014     | 92.3             | 97.2 | 85.0 | 104.2 | 30 | 9980                     | 7500    | 12500       | 930          |

## PIVOTING HORIZONTAL V ASSEMBLY

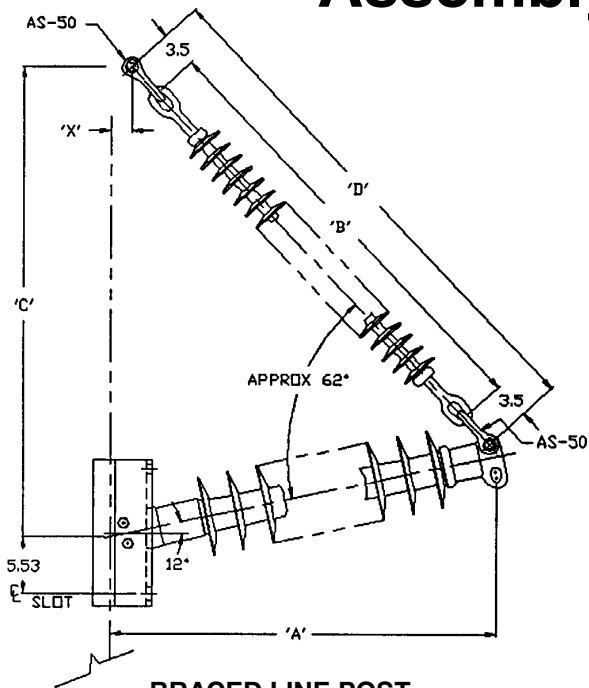
| Typical System kV | Cat # Gain Base | Cat # Flat Base | Component Insulators |            | Dimensions (in.) |      |      |       |    | Maximum Loadings** (lb.) |         |             |              |
|-------------------|-----------------|-----------------|----------------------|------------|------------------|------|------|-------|----|--------------------------|---------|-------------|--------------|
|                   |                 |                 | Post                 | Suspension | A                | B    | C    | D     | X  | Vertical                 | Tension | Compression | Longitudinal |
|                   |                 |                 |                      |            |                  |      |      |       |    |                          |         |             |              |
| 115/138           | —               | 234244          | 522008               | 511007     | 55.2             | 54.6 | 51.0 | 61.6  | 18 | 9980                     | 7500    | 12500       | —            |
| 115/138           | —               | 234245          | 522009               | 511008     | 60.4             | 60.7 | 56.0 | 67.7  | 20 | 9980                     | 7500    | 12500       | —            |
| 161               | —               | 234246          | 522010               | 511009     | 65.8             | 66.7 | 61.0 | 73.7  | 22 | 9980                     | 7500    | 12500       | —            |
| 161               | —               | 234247          | 522011               | 511010     | 71.2             | 72.8 | 66.0 | 79.8  | 24 | 9980                     | 7500    | 12500       | —            |
| 230 *             | —               | 234248          | 522014               | 511013     | 87.2             | 91.1 | 80.0 | 98.1  | 28 | 9980                     | 7500    | 12500       | —            |
| 230 *             | —               | 234249          | 522015               | 511014     | 92.6             | 97.2 | 85.0 | 104.2 | 30 | 9980                     | 7500    | 12500       | —            |

Contact your Ohio Brass representative for designs utilizing the optional pivoting strut member.

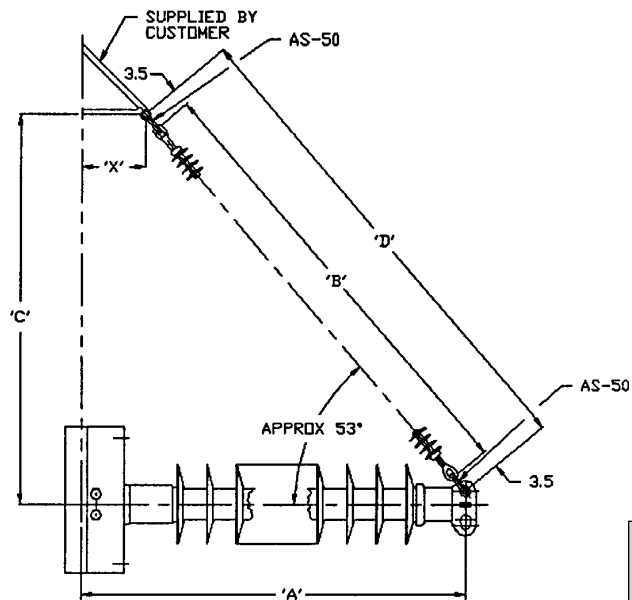
\* Corona rings are required for 230 kV and above.

\*\* Maximum loads are for single loads in the specified direction.

# Assembly Drawings

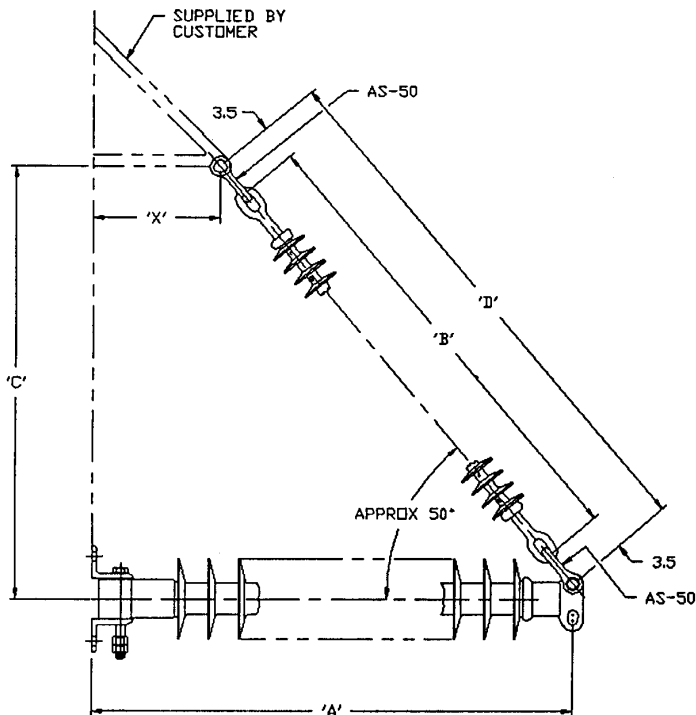


**BRACED LINE POST**

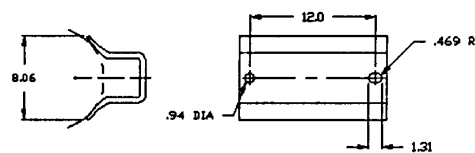


**HORIZONTAL-V**

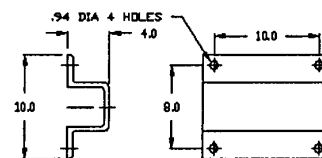
**C**



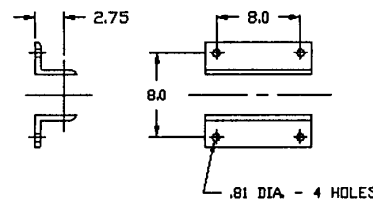
**PIVOTING HORIZONTAL-V**



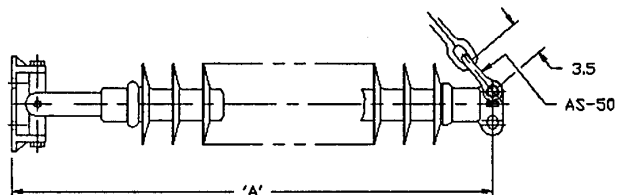
**GAIN BASE MOUNTING**



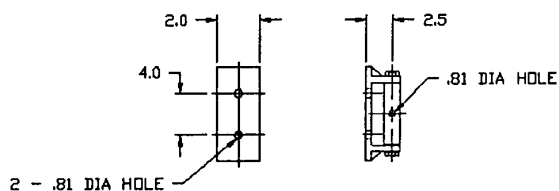
**FLAT BASE MOUNTING**



**PIVOTING BASE MOUNTING**

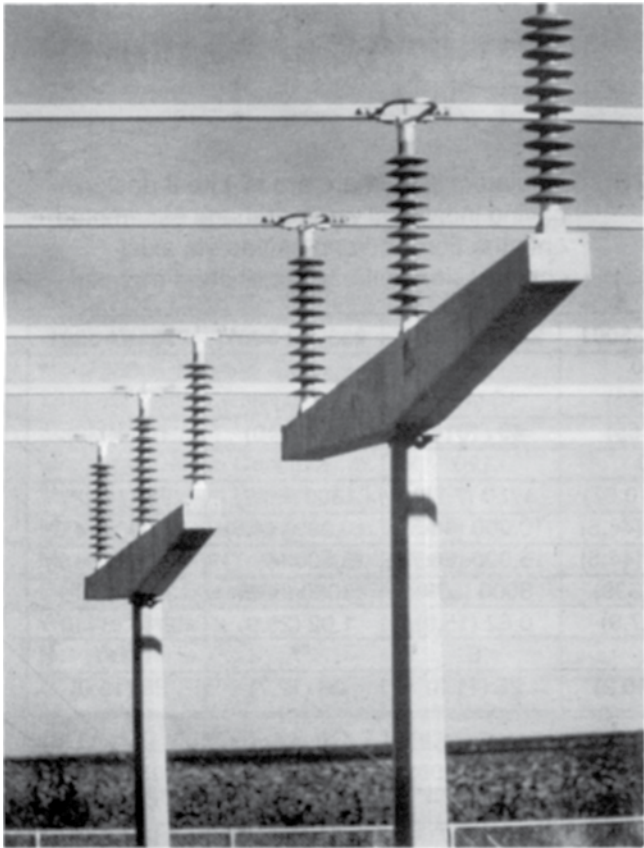


**OPTIONAL PIVOTING STRUT MEMBER**





# HI\*LITE II STATION POST INSULATORS



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| Station Post Insulator Ratings .....    | 26-31 |
| Series 175: 3" Bolt Circles .....       | 26-32 |
| Series 250: 3" and 5" Bolt Circles..... | 26-33 |

**NOTE:** Insulators listed here are Hi-Lite II design having individual weathersheds assembled to the core rod and sealed via axial compression in the polymer rubber material.

**D**

## HI-LITE II POST INSULATORS

### Maximum Design Cantilever Rating (MDC)

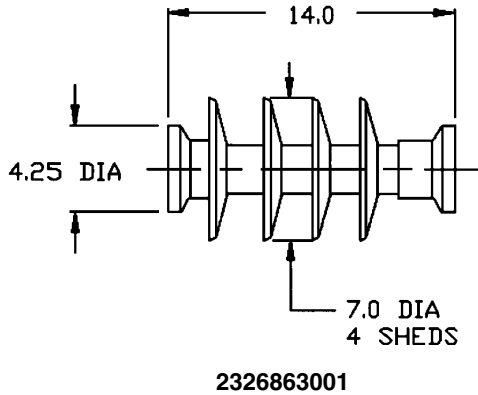
MDC is the maximum recommended load in cantilever that a Hi\*Lite post insulator is designed to withstand during its service life.

### Average Failing Load (AFL)

AFL is the average failing load of a Hi\*Lite line or station post insulator. This value can be determined by multiplying the MDC by a factor of 2.5.

### Selection

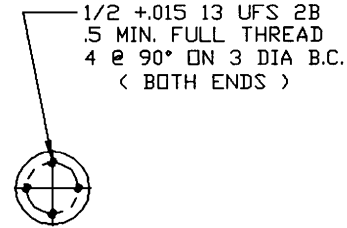
If you need a Hi\*Lite post that is different from those shown in this catalog, please contact your OB representative. Hi\*Lite station posts meet electrical and dimensional specifications of their porcelain equivalents. Mechanically, the Hi\*Lite are less rigid with more deflection under both cantilever and torsional loading.



# HI\*LITE II STATION POST INSULATORS

## Series 175

3" (76mm) Bolt Circles

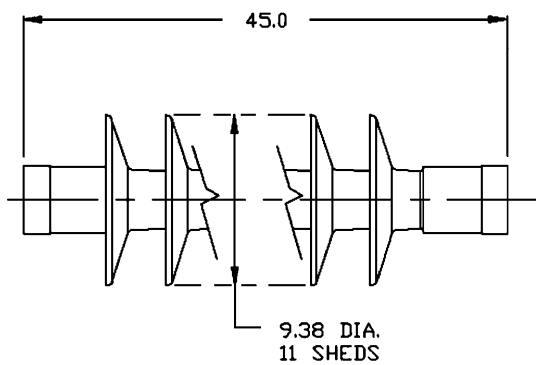
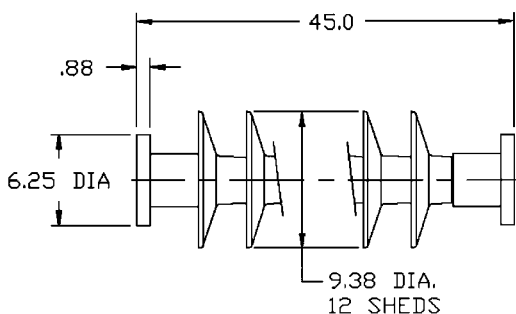


**NOTE:** Insulators listed here are Hi-Lite II design having individual weathersheds assembled onto the core rod and sealed via axial compression in the polymer shed material.

| CATALOG NUMBER (3" BOLT CIRCLES)         | 2326863001    | 2326853001    | 2331923001    | 2331873001    |
|--|---------------|---------------|---------------|---------------|
| BIL (kV)                                 | 150           | 200           | 250           | 350           |
| Height — X in. (mm)                      | 14 (356)      | 18 (457)      | 22 (559)      | 30 (762)      |
| Leakage Distance in. (mm)                | 27 (685)      | 40 (1015)     | 49 (1240)     | 76 (1930)     |
| 60-Hz Withstand — 10 sec/wet (kV)        | 80            | 120           | 150           | 230           |
| Maximum Design Cantilever lb. (kN)       | 2390 (10.67)  | 1750 (7.78)   | 1390 (6.23)   | 980 (4.39)    |
| Maximum Design Tension lb. (kN)          | 10,000 (44.5) | 10,000 (44.5) | 10,000 (44.5) | 10,000 (44.5) |
| Maximum Design Compression lb. (kN)      | 10,000 (44.5) | 15,000 (66.7) | 15,000 (66.7) | 15,000 (66.7) |
| Maximum Design Torsion in.-lb. (N-meter) | 3000 (339)    | 3000 (339)    | 3000 (339)    | 3000 (339)    |
| Deflection at Stated Cantilever in. (mm) | 0.31 (7.9)    | 0.62 (15.9)   | 1.02 (25.9)   | 2.16 (54.9)   |
| Weathersheds                             | 4             | 6             | 7             | 11            |
| Net Weights lb. (kg.)                    | 22.5 (10.2)   | 25 (11.3)     | 28 (12.7)     | 33 (15.0)     |

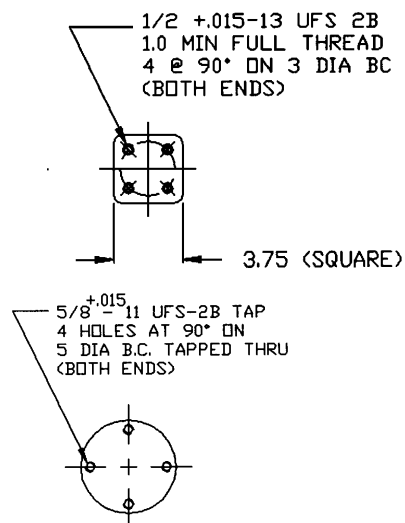
Note: Station Posts are also available in non-standard section lengths.  
Contact your Ohio Brass representative.




**2321993001**

**2323373001**

## HI\*LITE II STATION POST INSULATORS Series 250

5" (127mm) Bolt Circles



| CATALOG NUMBER (3" BOLT CIRCLES)         | 2323013001   | 2321993001   | 2323003001   | 2323093001   |
|--|--------------|--------------|--------------|--------------|
| BIL (kV)                                 | 350          | 550          | 650          | 750          |
| Height — X in. (mm)                      | 30 (762)     | 45 (1143)    | 54 (1372)    | 62 (1575)    |
| Leakage Distance in. (mm)                | 63 (1570)    | 102 (2590)   | 128 (3250)   | 148 (3760)   |
| 60-Hz Withstand — 10 sec/wet (kV)        | 190          | 300          | 380          | 430          |
| Maximum Design Cantilever lb. (kN)       | 1400 (6.23)  | 930 (4.14)   | 770 (3.42)   | 670 (2.98)   |
| Maximum Design Tension lb. (kN)          | 30,000 (133) | 30,000 (133) | 30,000 (133) | 30,000 (133) |
| Maximum Design Compression lb. (kN)      | 50,000 (222) | 50,000 (222) | 50,000 (222) | 50,000 (222) |
| Maximum Design Torsion in.-lb. (N-meter) | 9,000 (1000) | 9,000 (1000) | 9,000 (1000) | 9,000 (1000) |
| Deflection at Stated Cantilever in. (mm) | 1.0 (25)     | 2.3 (58)     | 3.4 (86)     | 4.5 (114)    |
| Weathersheds                             | 7            | 11           | 14           | 16           |
| Net Weights lb. (kg.)                    | 30 (13.6)    | 42 (19)      | 51 (23)      | 54 (24.5)    |

| CATALOG NUMBER (5" BOLT CIRCLES)         | 2323363001   | 2323373001   | 2323383001   | 2323393001   | 2323753001   |
|--|--------------|--------------|--------------|--------------|--------------|
| BIL (kV)                                 | 350          | 550          | 650          | 750          | 900          |
| Height — X in. (mm)                      | 30 (762)     | 45 (1143)    | 54 (1372)    | 62 (1575)    | 80 (2032)    |
| Leakage Distance in. (mm)                | 64 (1626)    | 109 (2770)   | 130 (3300)   | 156 (3960)   | 204 (5180)   |
| 60-Hz Withstand — 10 sec/wet (kV)        | 190          | 320          | 380          | 450          | 560          |
| Maximum Design Cantilever lb. (kN)       | 2900 (12.90) | 1850 (8.23)  | 1520 (6.76)  | 1310 (5.83)  | 990 (4.45)   |
| Maximum Design Tension lb. (kN)          | 30,000 (133) | 30,000 (133) | 30,000 (133) | 30,000 (133) | 30,000 (133) |
| Maximum Design Compression lb. (kN)      | 50,000 (222) | 50,000 (222) | 50,000 (222) | 50,000 (222) | 35,000 (156) |
| Maximum Design Torsion in.-lb. (N-meter) | 9000 (1000)  | 9000 (1000)  | 9000 (1000)  | 9000 (1000)  | 9,000 (66.7) |
| Deflection at Stated Cantilever in. (mm) | 1.77 (45)    | 4.13 (105)   | 6.00 (152)   | 8.00 (203)   | 13.50 (343)  |
| Weathersheds                             | 8            | 12           | 14           | 17           | 22           |
| Net Weights lb. (kg.)                    | 30 (13.6)    | 42 (19)      | 51 (23)      | 54 (24.5)    | 72 (32.7)    |

- Notes: 1. Station Posts are also available in non-standard section lengths. Contact Ohio Brass.  
 2. At 230 kV, corona ring 2721273001 may be required.  
 3. For through holes, specify code 3002.



## Sample Polymer Specification

Purpose: To ensure a suitable service life of polymer insulating materials.

### I. Material Design Tests

- The following must be performed to certify a material for use in production.

**1. Tracking test:** Performed on a sample of material inclined at 30° and electrodes positioned 35mm apart. Samples are sprayed with a conductive solution (400Ωcm) and energized at 10kV. The cycle is repeated every 90 seconds. The sample passes if there is:

1. No carbonization or tracking.
2. No erosion through sample.
3. No leakage current flow at the end of 90 seconds.

The sample must withstand 15,000 test cycles.

**2. Ultraviolet Test:** Samples of the rubber must be tested in a QUV tester or equivalent cyclic weatherometer. The samples are exposed to high ultraviolet radiation and high humidity without cracking, checking or becoming hydrophilic.

The sample is judged to have passed this test if it exceeds 8,000 hours of exposure without damage.

**3. Corona Cutting:** Samples 5 cm by 7 cm are subjected to mechanical stress of 300,000 μstrain by bending samples around a grounded electrode. A needle-like electrode is placed 1 mm from the surface of the sample and energized at 12 kV in a controlled humidity chamber.

The sample is judged to have passed this test if there is no splitting or cutting. Samples must pass 1,000 hours of exposure to this test.

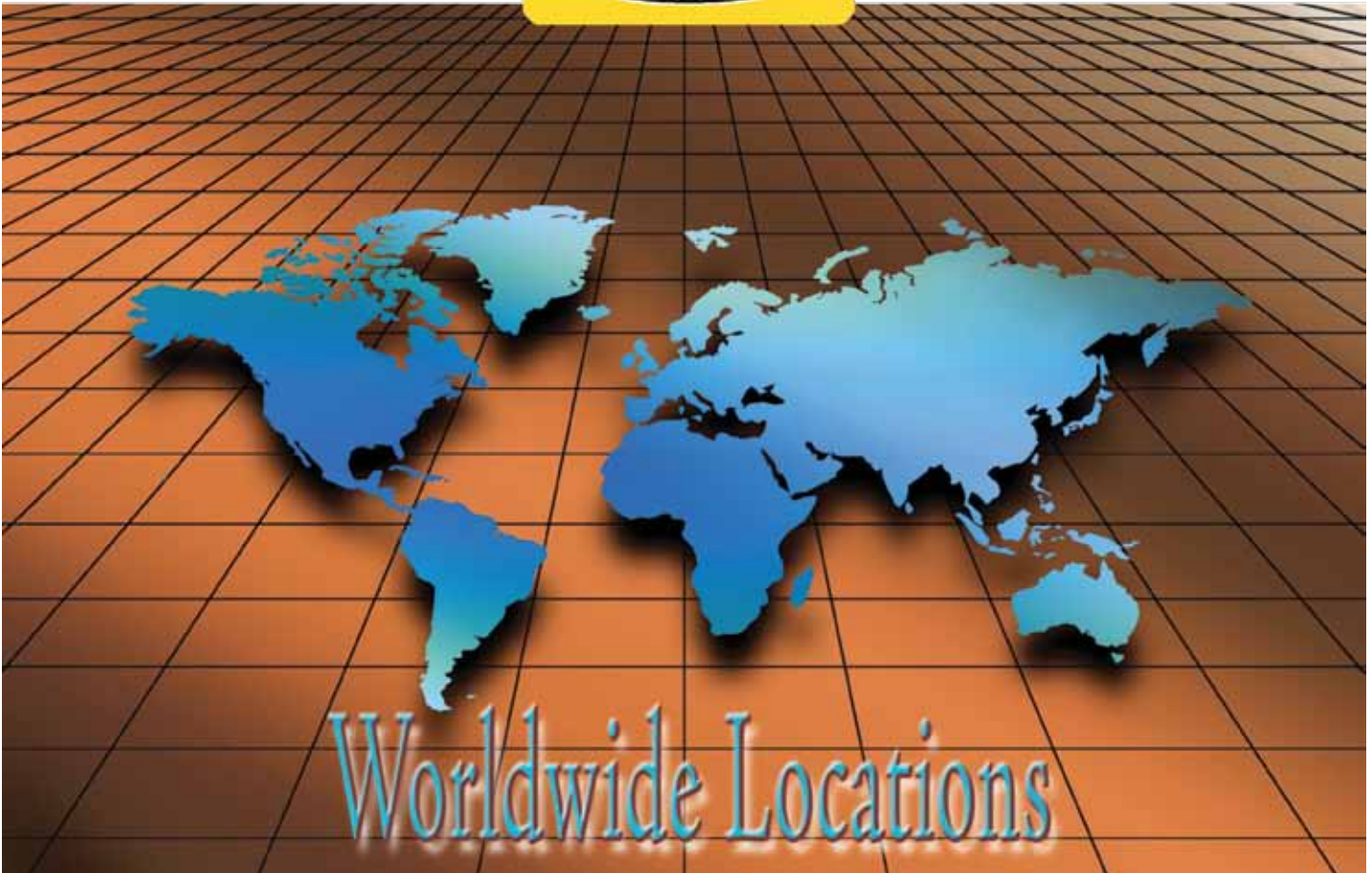
**4. Oxidative Stability:** Samples of the polymer compound are tested using differential scanning calorimetry. Samples are heated rapidly in a nitrogen atmosphere to the test temperature of 200°C. The atmosphere is then changed to air and the temperature is maintained until the antioxidant is consumed, as measured by an exothermic chemical reaction. The time to this reaction must exceed 300 minutes.

**5. Tear Strength:** Rubber test slabs are prepared in accordance with ASTM Standards and are tested to determine tear strength of the material. The minimum acceptable tear strength is 150 lb./in.

### II. Other Requirements

- The manufacturer must supply upon request a listing of routine tests performed to ensure production compliance with design tests.

**E**



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Fax: 52-55-9151-9988  
Website: [hubbell.com.mx](http://hubbell.com.mx)

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