### Section T

**Wire Management Products**

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<td>Metallic Liquid Tight Fittings</td>
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Dimensions in Inches (mm)  
www.hubbell-wiring.com
Kellems® Pulling Grips
Overhead, Underground, Commercial Construction, Special

Flexible or rotating eyes will mate easily with line stringing swivels and links for attachment to pulling lines. They have great strength for trouble free pulling jobs.

Shoulder protectors contain the cable inside the grip and smooth the passage of the grip over line stringing blocks or conduit bends. They protect the leading edge of the grip from abrasion.

The galvanized steel mesh grip provides strength for secure pulling jobs and a slim profile with little build-up. It has flexibility to follow cable path.

The multiweave styles available add strength for big pulling jobs and provide positive gripping power.

Endless weave allows easy installation onto cable. It has a snag-free low profile. Designed to be a reusable tool.
**DUA-PULL® Grips**

*IMPORTANT!*

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

**DUA-PULL® Pulling Grips**

DUA-PULL Pulling Grips are the highest strength pulling grips manufactured for overhead transmission line stringing applications. They have a dual function, not provided by any other grip, of working with both bare and insulated conductors and synthetic rope.

<table>
<thead>
<tr>
<th>Diameter Range</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Eye B Diameter Inches (cm)</th>
<th>Diameter Over Cable &amp; Grip** Inches (cm)</th>
<th>Color Code</th>
<th>Catalog Numbers</th>
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<tbody>
<tr>
<td>.19&quot;-.37&quot; (.48-.94)</td>
<td>6,500 (28,912)</td>
<td>10&quot; (25.40)</td>
<td>24&quot; (60.96)</td>
<td>.220&quot; (.56)</td>
<td>200&quot; (.51)</td>
<td>Black</td>
<td>033271037</td>
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<tr>
<td>.38&quot;-.62&quot; (.97-1.57)</td>
<td>14,000 (62,272)</td>
<td>12&quot; (30.48)</td>
<td>36&quot; (91.44)</td>
<td>.375&quot; (.95)</td>
<td>.280&quot; (.71)</td>
<td>Dark Green</td>
<td>033271038</td>
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<tr>
<td>.63&quot;-.87&quot; (1.60-2.21)</td>
<td>20,000 (88,960)</td>
<td>13&quot; (33.02)</td>
<td>48&quot; (121.92)</td>
<td>.437&quot; (1.11)</td>
<td>.360&quot; (.91)</td>
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<td>.88&quot;-1.12&quot; (2.24-2.84)</td>
<td>30,600 (136,109)</td>
<td>15&quot; (38.10)</td>
<td>60&quot; (152.40)</td>
<td>.500&quot; (1.27)</td>
<td>.500&quot; (1.27)</td>
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<td>033271040</td>
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<tr>
<td>1.13&quot;-1.37&quot; (2.87-3.48)</td>
<td>46,800 (208,166)</td>
<td>18&quot; (45.72)</td>
<td>76&quot; (193.04)</td>
<td>.625&quot; (1.59)</td>
<td>.625&quot; (1.59)</td>
<td>Yellow</td>
<td>033271041</td>
</tr>
<tr>
<td>1.38&quot;-1.90&quot; (3.51-4.38)</td>
<td>66,500 (295,792)</td>
<td>24&quot; (60.96)</td>
<td>89&quot; (226.06)</td>
<td>.750&quot; (1.90)</td>
<td>.750&quot; (1.90)</td>
<td>Aluminum</td>
<td>033271042</td>
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E - Eye length  
M - Mesh length at nominal diameter  
*For rope, select smallest size grip which meets required work load.  
**Add to cable or rope diameter.

**DUA-PULL Feed Tube**

<table>
<thead>
<tr>
<th>For Use With DUA-PULL Grip</th>
<th>Rope Diameter Inches (cm)</th>
<th>Feed Tube Length Inches (cm)</th>
<th>Catalog Numbers</th>
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<tr>
<td>033271037</td>
<td>.25&quot;-.65&quot; (.63-1.65)</td>
<td>28&quot; (71.12)</td>
<td>091061043</td>
</tr>
<tr>
<td>033271038</td>
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<td>40&quot; (101.60)</td>
<td>091061044</td>
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<td>033271039</td>
<td>.75&quot;-1.10&quot; (1.90-2.79)</td>
<td>52&quot; (132.08)</td>
<td>091061045</td>
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<tr>
<td>033271040</td>
<td>1.00&quot;-1.50&quot; (2.54-3.81)</td>
<td>67&quot; (170.18)</td>
<td>091061046</td>
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<td>83&quot; (210.82)</td>
<td>091061047</td>
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<tr>
<td>033271042</td>
<td>1.50&quot;-2.10&quot; (3.81-5.33)</td>
<td>96&quot; (243.84)</td>
<td>091061048</td>
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</table>

Dimensions in Inches (mm)
Pulling Grips

**Overhead Pulling**
Flexible or Rotating Eye, Triple, Double, Single Weave, Galvanized Steel

**Multiple Strength Grips**

Multiple Strength Pulling Grips are designed for pulling ACSR, aluminum or copper bare conductor, ground wires, messenger strands, wire rope and insulated cables.

**IMPORTANT!** It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

**Multiple Strength Style Grips**

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Rotating Eye Diameter Inches (cm)</th>
<th>Color Code</th>
<th>Catalog Numbers</th>
</tr>
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<tbody>
<tr>
<td>.25&quot;-.49&quot; (6.3-1.24)</td>
<td>6,800 (20,567)</td>
<td>5&quot; (12.70)</td>
<td>26&quot; (66.04)</td>
<td>1/8&quot; (2.22)</td>
<td>Dark Green</td>
<td>03302016</td>
</tr>
<tr>
<td>.50&quot;-.74&quot; (1.27-1.88)</td>
<td>10,000 (44,480)</td>
<td>6&quot; (15.24)</td>
<td>32&quot; (81.28)</td>
<td>1&quot; (2.54)</td>
<td>Brown</td>
<td>03302018</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (1.90-2.51)</td>
<td>14,400 (64,051)</td>
<td>6&quot; (15.24)</td>
<td>41&quot; (104.14)</td>
<td>1&quot; (2.54)</td>
<td>Light Blue</td>
<td>03302020</td>
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<td>1.00&quot;-1.24&quot; (2.54-3.15)</td>
<td>24,600 (109,420)</td>
<td>8&quot; (20.32)</td>
<td>52&quot; (132.08)</td>
<td>1/2&quot; (3.49)</td>
<td>Gold</td>
<td>03302022</td>
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<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>30,600 (136,109)</td>
<td>8&quot; (20.32)</td>
<td>56&quot; (142.24)</td>
<td>1/2&quot; (3.49)</td>
<td>Black</td>
<td>03302024</td>
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<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
<td>30,600 (136,109)</td>
<td>9&quot; (22.86)</td>
<td>60&quot; (152.40)</td>
<td>1/2&quot; (3.49)</td>
<td>Red</td>
<td>03302026</td>
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<tr>
<td>1.75&quot;-2.24&quot; (4.44-5.69)</td>
<td>48,000 (213,504)</td>
<td>10&quot; (25.40)</td>
<td>70&quot; (177.88)</td>
<td>1/2&quot; (3.49)</td>
<td>Dark Blue</td>
<td>03302028</td>
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<td>10&quot; (25.40)</td>
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<td>1/2&quot; (3.49)</td>
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<td>10&quot; (25.40)</td>
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<td>1/2&quot; (3.49)</td>
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<td>58&quot; (142.24)</td>
<td>1/2&quot; (3.49)</td>
<td>Light Green</td>
<td>033021031</td>
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**Multiple Strength Grip-Flexible Eye**

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<thead>
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<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>A-Eye Diameter Inches (cm)</th>
<th>Color Code</th>
<th>Catalog Numbers</th>
</tr>
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<tbody>
<tr>
<td>.25&quot;-.49&quot; (6.3-1.24)</td>
<td>6,800 (20,567)</td>
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<td>26&quot; (66.04)</td>
<td>1/4&quot; (.63)</td>
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<tr>
<td>.50&quot;-.74&quot; (1.27-1.88)</td>
<td>10,000 (44,480)</td>
<td>9&quot; (22.86)</td>
<td>32&quot; (81.28)</td>
<td>1/4&quot; (.63)</td>
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<td>52&quot; (132.08)</td>
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<td>50&quot; (127.00)</td>
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<td>54&quot; (137.16)</td>
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<td>18&quot; (45.72)</td>
<td>58&quot; (142.24)</td>
<td>1/4&quot; (.63)</td>
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Dimensions in Inches (mm)
**Pulling Grips**

**Underground Pulling**

*Rotating Eye, Double Weave, Galvanized Steel*

**K-Type Grips**

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

---

**K-Type Grips**

Kellems® Rotating Eye, K-Type Pulling Grips are made of high strength galvanized steel strand. All Grips feature double weave mesh for greater strength and added mesh contact on the cable, to handle longer or heavier pulling jobs. The forged eye mates easily with a swivel or shackle.

---

**K-Type Grips**

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Rotating Eye Diameter Inches</th>
<th>Catalog Numbers</th>
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<td><strong>Short</strong></td>
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<td>20&quot; (50.80)</td>
<td>1½&quot; (3.81)</td>
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<td>21&quot; (53.34)</td>
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<td>1½&quot; (3.81)</td>
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<td>10&quot; (25.40)</td>
<td>28&quot; (71.12)</td>
<td>1½&quot; (4.76)</td>
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<td>48,000 (213,504)</td>
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<td>32&quot; (81.28)</td>
<td>1½&quot; (4.76)</td>
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<td>33&quot; (83.82)</td>
<td>1½&quot; (4.76)</td>
<td>03301017</td>
</tr>
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</table>

| **Standard**         |                           |               |               |                             |                 |
| .50"-.61" (1.27-1.55)| 5,600 (24,909)            | 5" (12.70)    | 16" (40.64)   | .75" (1.91)                 | 03301011        |
| .62"-.74" (1.57-1.88)| 6,800 (30,246)            | 5" (12.70)    | 16" (40.64)   | .75" (1.91)                 | 03301012        |
| .75"-.99" (1.90-2.51)| 6,800 (30,246)            | 6" (15.24)    | 20" (50.80)   | 1" (2.54)                   | 03301024        |
| 1.00"-1.24" (2.54-3.15)| 16,400 (72,947)          | 7" (17.78)    | 33" (83.82)   | 1½" (3.81)                  | 03301025        |
| 1.25"-1.49" (3.17-3.78)| 16,400 (72,947)          | 7" (17.78)    | 34" (86.36)   | 1½" (3.81)                  | 03301026        |
| 1.50"-1.99" (3.81-5.05)| 16,400 (72,947)          | 7" (17.78)    | 36" (91.44)   | 1½" (4.13)                  | 03301027        |
| 2.00"-2.49" (5.08-6.32)| 27,200 (120,966)         | 9" (22.86)    | 39" (99.06)   | 1½" (4.76)                  | 03301028        |
| 2.50"-2.99" (6.35-7.59)| 33,000 (146,784)         | 10" (25.40)   | 41" (104.14)  | 1½" (4.76)                  | 03301029        |
| 3.00"-3.49" (7.62-8.86)| 41,000 (182,368)         | 10" (25.40)   | 42" (106.68)  | 1½" (4.76)                  | 03301030        |
| 3.50"-3.99" (8.89-10.13)| 48,000 (213,504)         | 10" (25.40)   | 43" (110.76)  | 1½" (4.76)                  | 03301031        |
| 4.00"-4.49" (10.16-11.40)| 48,000 (213,504)        | 10" (25.40)   | 45" (114.31)  | 1½" (4.76)                  | 03301032        |
| 4.50"-4.99" (11.43-12.67)| 48,000 (213,504)        | 10" (25.40)   | 46" (119.38)  | 1½" (4.76)                  | 03301033        |
| 5.00"-5.99" (12.70-15.21)| 48,000 (213,504)        | 10" (25.40)   | 50" (127.0)   | 1½" (4.76)                  | 03301047        |
| 6.00"-6.99" (15.24-17.75)| 48,000 (213,504)        | 10" (25.40)   | 56" (142.24)  | 1½" (4.76)                  | 03301045        |

*E*: Eye length  
*M*: Mesh length at nominal diameter

Note: Refer to page T-26 for multiple cables in a single pulling grip.

Dimensions in Inches (mm)
Pulling Grips

Underground Pulling
Flexible Eye, Double Weave, Galvanized Steel

T-Type Grips

Kellem’s® Flexible T-Type Pulling Grips are made of high strength galvanized steel strand. They feature double weave mesh for positive holding power in medium to heavy pulling jobs. The grip eye will easily attach to a swivel.

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

---

### T-Type Grips

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
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<tr>
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<td>4,500 (20,016)</td>
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</tr>
<tr>
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<td>033041097</td>
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*Note: Refer to page T-26 for multiple cables in a single pulling grip.*
Pulling Grips
Special Purpose

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

Kellems® Non-Conductive Pulling Grips, made of a high strength, non-conductive aramid fiber, are available for pulling single cable or cable bundles. Their braided double weave design adds strength and positive holding power.

Slack Pulling Grips are offered in three styles made of galvanized steel. The closed type is used when the cable end is accessible. When not accessible, there are split lace and split rod closing styles. All grips feature a single offset eye for easy attachment to a pulling line.

---

### Non-Conductive Grips, Single Eye, Double Weave, Non-Metallic

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength</th>
<th>E (inches)</th>
<th>M (inches)</th>
<th>A (inches)</th>
<th>Color Code</th>
<th>Catalog Numbers</th>
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<tr>
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<td>24&quot; (60.96)</td>
<td>.44&quot; (.112)</td>
<td>Green</td>
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<tr>
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<td>Yellow</td>
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<td>31&quot; (78.74)</td>
<td>.63&quot; (.160)</td>
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<td>Pink</td>
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**E** - Eye length  **M** - Mesh length at nominal diameter

---

### Slack Grip-Closed Mesh, Single Eye, Double Weave, Galvanized Steel

<table>
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<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength</th>
<th>E (inches)</th>
<th>M (inches)</th>
<th>Catalog Numbers</th>
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<tr>
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<td>2,600 (11,565)</td>
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<td>12&quot; (30.48)</td>
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</tr>
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<td>15&quot; (38.10)</td>
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</tr>
<tr>
<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>5,400 (24,019)</td>
<td>8&quot; (20.32)</td>
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</tr>
<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
<td>6,600 (29,357)</td>
<td>8&quot; (20.32)</td>
<td>20&quot; (50.80)</td>
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<tr>
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<td>10&quot; (25.40)</td>
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<tr>
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<td>11,000 (48,928)</td>
<td>10&quot; (25.40)</td>
<td>19&quot; (48.26)</td>
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<td>11,000 (48,928)</td>
<td>10&quot; (25.40)</td>
<td>20&quot; (50.80)</td>
<td>03308009</td>
</tr>
<tr>
<td>3.00&quot;-3.49&quot; (7.62-8.86)</td>
<td>14,500 (64,496)</td>
<td>12&quot; (30.48)</td>
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<td>12&quot; (30.48)</td>
<td>22&quot; (55.88)</td>
<td>03308011</td>
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**E** - Eye length  **M** - Mesh length at nominal diameter

Note: Refer to page T-26 for multiple cables in a single pulling grip.
### Slack Pulling Grips

#### Slack Grip—Split Mesh, Rawhide Lace Closing,
Single Eye, Double Weave, Galvanized Steel

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
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<td>Standard</td>
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<td>15&quot; (38.10)</td>
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<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>4,000 (17,792)</td>
<td>8&quot; (20.32)</td>
<td>16&quot; (40.64)</td>
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</tr>
<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
<td>4,000 (17,792)</td>
<td>9&quot; (22.86)</td>
<td>17&quot; (43.18)</td>
<td>03309006</td>
</tr>
<tr>
<td>1.75&quot;-1.99&quot; (4.44-5.05)</td>
<td>4,000 (17,792)</td>
<td>10&quot; (25.40)</td>
<td>18&quot; (45.72)</td>
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<tr>
<td>2.00&quot;-2.49&quot; (5.08-6.32)</td>
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**Slack Pulling Grips** are offered in three styles made of galvanized steel. The closed type is used when the cable end is accessible. When not accessible, there are split lace and split rod closing styles. All grips feature single offset eye for easy attachment to a pulling line.

Note: Refer to page T-26 for multiple cables in a single pulling grip.

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.
### Light Duty Pulling Grips

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches (cm.))</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
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<td>7&quot; (17.78)</td>
<td>20&quot; (50.80)</td>
<td>03303013</td>
</tr>
<tr>
<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>6,800 (30,246)</td>
<td>7&quot; (17.78)</td>
<td>21&quot; (53.34)</td>
<td>03303015</td>
</tr>
<tr>
<td>1.50&quot;-1.99&quot; (3.81-5.05)</td>
<td>6,800 (30,246)</td>
<td>8&quot; (20.32)</td>
<td>23&quot; (58.42)</td>
<td>03303016</td>
</tr>
<tr>
<td>2.00&quot;-2.49&quot; (5.08-6.32)</td>
<td>8,500 (37,808)</td>
<td>9&quot; (22.86)</td>
<td>25&quot; (63.50)</td>
<td>03303017</td>
</tr>
<tr>
<td>2.50&quot;-2.99&quot; (6.35-7.59)</td>
<td>10,600 (47,149)</td>
<td>9&quot; (22.86)</td>
<td>27&quot; (68.58)</td>
<td>03303018</td>
</tr>
<tr>
<td>3.00&quot;-3.49&quot; (7.62-8.86)</td>
<td>14,700 (65,386)</td>
<td>10&quot; (25.40)</td>
<td>30&quot; (76.20)</td>
<td>03303019</td>
</tr>
<tr>
<td>3.50&quot;-3.99&quot; (8.89-10.13)</td>
<td>14,700 (65,386)</td>
<td>10&quot; (25.40)</td>
<td>32&quot; (81.28)</td>
<td>03303020</td>
</tr>
</tbody>
</table>

### Junior Pulling Grips

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches (cm.))</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.19&quot;-.24&quot; (.48-.61)</td>
<td>400 (1,779)</td>
<td>3/16&quot; (8.25)</td>
<td>4/16&quot; (10.79)</td>
<td>J19</td>
</tr>
<tr>
<td>.25&quot;-.36&quot; (.63-.91)</td>
<td>450 (2,022)</td>
<td>3/8&quot; (8.25)</td>
<td>4/16&quot; (10.79)</td>
<td>J25</td>
</tr>
<tr>
<td>.37&quot;-.49&quot; (.94-1.24)</td>
<td>400 (1,779)</td>
<td>3/16&quot; (8.25)</td>
<td>4/16&quot; (10.79)</td>
<td>J37</td>
</tr>
<tr>
<td>.50&quot;-.61&quot; (1.27-1.55)</td>
<td>1,300 (5,782)</td>
<td>4/16&quot; (10.79)</td>
<td>8/16&quot; (21.59)</td>
<td>J50</td>
</tr>
<tr>
<td>.62&quot;-.74&quot; (1.57-1.88)</td>
<td>1,950 (8,674)</td>
<td>5/16&quot; (14.60)</td>
<td>10&quot; (25.40)</td>
<td>J62</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (1.90-2.51)</td>
<td>2,800 (12,454)</td>
<td>5/16&quot; (14.60)</td>
<td>10&quot; (25.40)</td>
<td>J75</td>
</tr>
<tr>
<td>1.00&quot;-1.24&quot; (2.54-3.15)</td>
<td>3,900 (17,347)</td>
<td>6/16&quot; (16.51)</td>
<td>11/16&quot; (29.21)</td>
<td>J100</td>
</tr>
</tbody>
</table>

*E-Eye length  M-Mesh length at nominal diameter.
*Not included in Junior Grip Kit, 033051114.
Pulling Grips

Splicing Grips

**Wire Rope Splicing**

*Triple, Double, Single Weave, Galvanized Steel*

---

**Regular Wire Rope Grips**

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Approx. Length Of Grip Feet (m)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/16&quot; - 3/8&quot; (1.43-1.59)</td>
<td>7,500 (33,360)</td>
<td>5.75 (1.75)</td>
<td>03316001</td>
</tr>
<tr>
<td>3/16&quot; - 1/4&quot; (1.90-2.22)</td>
<td>12,500 (55,600)</td>
<td>6.75 (1.90)</td>
<td>03316002</td>
</tr>
<tr>
<td>1&quot; - 1 1/8&quot; (2.54-2.86)</td>
<td>16,000 (71,168)</td>
<td>7.00 (2.13)</td>
<td>03316003</td>
</tr>
<tr>
<td>1 1/8&quot; - 1 3/4&quot; (3.17-3.49)</td>
<td>20,000 (88,960)</td>
<td>8.00 (2.44)</td>
<td>03316004</td>
</tr>
<tr>
<td>1 3/8&quot; - 1 1/2&quot; (3.49-3.81)</td>
<td>20,000 (88,960)</td>
<td>8.00 (2.44)</td>
<td>03316006</td>
</tr>
</tbody>
</table>

**Rotating Wire Rope Grips**

<table>
<thead>
<tr>
<th>Cable Diameter Range (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Approx. Length Of Grip Feet (m)</th>
<th>Barrel Dimensions Lgth. x O.D. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/16&quot; - 1/4&quot; (1.11-1.27)</td>
<td>5,000 (22,240)</td>
<td>5.33 (1.63)</td>
<td>3.00' (7.62) x 0.87&quot; (2.21)</td>
<td>03317001</td>
</tr>
<tr>
<td>3/16&quot; - 1/8&quot; (1.43-1.59)</td>
<td>7,500 (33,360)</td>
<td>5.83 (1.78)</td>
<td>4.25&quot; (10.79) x 1.00&quot; (2.54)</td>
<td>03317002</td>
</tr>
<tr>
<td>1/8&quot; - 3/32&quot; (1.90-2.22)</td>
<td>12,500 (55,600)</td>
<td>6.50 (1.98)</td>
<td>4.25&quot; (10.79) x 1.00&quot; (2.54)</td>
<td>03317003</td>
</tr>
<tr>
<td>1/4&quot; - 1/2&quot; (2.54-2.86)</td>
<td>16,000 (71,168)</td>
<td>8.67 (2.64)</td>
<td>5.50&quot; (13.97) x 1.37&quot; (3.48)</td>
<td>03317004</td>
</tr>
<tr>
<td>5/32&quot; - 3/32&quot; (3.17-3.49)</td>
<td>20,000 (88,960)</td>
<td>9.00 (2.74)</td>
<td>5.50&quot; (13.97) x 1.37&quot; (3.48)</td>
<td>03317005</td>
</tr>
<tr>
<td>1/32&quot; - 1/8&quot; (3.81-4.44)</td>
<td>20,000 (88,960)</td>
<td>11.00 (3.35)</td>
<td>5.50&quot; (13.97) x 1.37&quot; (3.48)</td>
<td>03317006</td>
</tr>
</tbody>
</table>

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

Kellems® Wire Rope Grips are made of high strength galvanized steel strand in a construction of triple, double and single weave for superior gripping ability. They are available with or without a rotating barrel which will help eliminate twist in the old rope from being transferred to the new rope.
Splicing Grips

Cable Splicing

Double Weave, Galvanized Steel / Single Weave, Galvanized Steel

IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

Splicing Grip
Splicing Grips are made of galvanized steel in double weave mesh construction. They are available in various lengths and sizes to suit most applications.

Double Weave Tube

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>.37&quot;-.49&quot; (.94-1.24)</th>
<th>.50&quot;-.61&quot; (1.27-1.55)</th>
<th>.62&quot;-.74&quot; (1.57-1.88)</th>
<th>.75&quot;-.99&quot; (1.90-2.51)</th>
<th>1.00&quot;-1.49&quot; (2.54-3.78)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Breaking Strength Lbs. (N)</td>
<td>3,500 (15,568)</td>
<td>3,500 (15,568)</td>
<td>4,400 (19,571)</td>
<td>7,500 (33,360)</td>
<td>10,000 (44,480)</td>
</tr>
<tr>
<td>Mesh Length Inches (cm)</td>
<td>18&quot; (45.72)</td>
<td>24&quot; (60.96)</td>
<td>36&quot; (91.44)</td>
<td>48&quot; (121.92)</td>
<td>72&quot; (182.88)</td>
</tr>
<tr>
<td>Catalog Numbers</td>
<td>013041330</td>
<td>01304064</td>
<td>01304009</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>01304011</td>
<td>01304013</td>
<td>01304010</td>
<td>01304015</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>013041234</td>
<td>01304054</td>
<td>01304055</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>•</td>
<td>01304017</td>
<td>01304029</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>01304037</td>
<td>013041333</td>
</tr>
</tbody>
</table>

Junior Splicing Grips, Single Weave
Junior Splicing Grips are made of galvanized steel and are designed for use in very light duty and small splicing jobs.

Junior Tube

<table>
<thead>
<tr>
<th>Cable Diameter Range (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Length @ Nom Diameter Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.18&quot;-.24&quot; (.46-.61)</td>
<td>400 (1,779)</td>
<td>7&quot; (17.78)</td>
<td>01301008</td>
</tr>
<tr>
<td>.25&quot;-.36&quot; (.63-.91)</td>
<td>400 (1,779)</td>
<td>8&quot; (20.32)</td>
<td>01301013</td>
</tr>
</tbody>
</table>
Punch-Lok® Bands

Punch-Lok Bands are applied over the tail of a grip to prevent the mesh from being tripped or pulled loose. Also, they assure full gripping action by locking the mesh of the tail in tight contact with the cable or rope.

<table>
<thead>
<tr>
<th>Grip Banding Range (inches)</th>
<th>Band Width (inches)</th>
<th>Band Inside Diameter (inches)</th>
<th>Model</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot;-1/4&quot; (.63-2.86)</td>
<td>3/32&quot; (.95)</td>
<td>1/8&quot; (.32)</td>
<td>0-311</td>
<td>20320050</td>
</tr>
<tr>
<td>1/4&quot;-5/32&quot; (1.86-2.64)</td>
<td>3/32&quot; (.95)</td>
<td>3/32&quot; (.95)</td>
<td>0-316</td>
<td>20320051</td>
</tr>
<tr>
<td>1/4&quot;-1/2&quot; (1.13-1.36)</td>
<td>3/32&quot; (.95)</td>
<td>5/32&quot; (.16)</td>
<td>0-10</td>
<td>20320052</td>
</tr>
<tr>
<td>1/2&quot;-7/32&quot; (1.89-2.19)</td>
<td>1/16&quot; (.16)</td>
<td>7/32&quot; (.22)</td>
<td>0-16</td>
<td>20320053</td>
</tr>
<tr>
<td>3/4&quot;-9/32&quot; (2.48-2.86)</td>
<td>1/16&quot; (.16)</td>
<td>9/32&quot; (.29)</td>
<td>0-24</td>
<td>20320054</td>
</tr>
</tbody>
</table>

Accessories

Punch-Lok Tools

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1 Heavy Duty</td>
<td>20320048</td>
</tr>
<tr>
<td>P-38 Light Duty</td>
<td>20320047</td>
</tr>
</tbody>
</table>

Punch-Lok Bands are applied over the tail of a grip to prevent the mesh from being tripped or pulled loose. Also, they assure full gripping action by locking the mesh of the tail in tight contact with the cable or rope.

When the tail of a grip is the leading end, the bands are particularly important to prevent accidental release caused by tripping on obstructions. A conductor-to-conductor (double-socking) pulling operation is a good example: where two grips connect two conductors to form a temporary splice. Bands should be applied to the ends of the grips as illustrated herein. It is also common practice to tape over the banded tail area to assure smooth passage through the sheaves.

The conductor should be installed in the grip up to the elbows of the aluminum shoulders in order to assure full and complete gripping action.

Note: In all cases two Punch-Lok Bands should be double wrapped approximately one inch to two inches (2.54cm to 5.08cm) from the grip’s tail. Banding is required to ensure maximum reliability and guard against accidental release.

Punch-Lok® is a registered trademark of Punch-Lok Inc.
IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-17 through T-27.

Swivels
Swivels are essential to the efficiency and safety of any high tension application. They are particularly important where continuous pulls develop higher and higher torque levels. Torque is intensified by the pull-resistance of the cable itself and the resistance of the high tension controlling equipment regulating line sag.

Ball bearing swivels release torque and prevent it from reaching dangerous levels that can damage the cable and obstruct the lines.

<table>
<thead>
<tr>
<th>Maximum Safe Working Load</th>
<th>Dimensions in Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lbs. (N)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2250 (10,000)</td>
<td>7/8&quot; (2.22)</td>
<td>2 1/2&quot; (6.35)</td>
</tr>
<tr>
<td>5,000 (22,240)</td>
<td>11/16&quot; (1.75)</td>
<td>5/16&quot; (1.11)</td>
</tr>
<tr>
<td>9,000 (40,030)</td>
<td>1 1/2&quot; (3.81)</td>
<td>4 1/4&quot; (10.79)</td>
</tr>
<tr>
<td>10,000 (44,480)</td>
<td>1 5/8&quot; (4.13)</td>
<td>4 1/4&quot; (10.79)</td>
</tr>
<tr>
<td>30,000 (133,440)</td>
<td>2 3/8&quot; (6.03)</td>
<td>7 5/8&quot; (19.37)</td>
</tr>
</tbody>
</table>

Links
The bullet nose Link, with clevises at 90°, provides a fast, economical method of connecting pulling lines.

The result is a reliable pulling line connector with adequate load ratings for the tensions employed in line stringing.

Because of its shorter length, the Link contoured bullet nose connector is able to pass through stringing sheaves smoothly and easily without damage.

<table>
<thead>
<tr>
<th>Approx. Breaking Strength</th>
<th>Dimensions in Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lbs. (N)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>5,400 (24,019)</td>
<td>7/8&quot; (2.22)</td>
<td>1 5/16&quot; (3.33)</td>
</tr>
<tr>
<td>12,000 (53,376)</td>
<td>1 1/4&quot; (3.17)</td>
<td>1 9/16&quot; (3.44)</td>
</tr>
</tbody>
</table>
Kellems® Pulling Grips
Technical Section

Kellems Pulling Grips are reusable tools for pulling electrical cable, bare conductor or rope. They are easy and fast to install, providing the user with a smooth, slim profile that allows for easy passage through ducts, conduit, blocks and sheaves. Kellems Pulling Grips are made of the highest quality galvanized steel strand which assures the user of a long lasting grip. There is a Kellems Pulling Grip for every pulling job.

Caution: It is very important to comply with all of the following precautions. Failure to do so may result in property damage, personal injury or death.

1. Pulling grips are to be installed by a qualified individual in accordance with all applicable national and local safety, electrical and rigging codes.
2. Ensure that the correct grip is selected for your specific needs.
3. Do not use a pulling grip for any application other than pulling cable.
4. Thoroughly examine the grip for damage. Do not use a damaged grip.
5. Ensure that the recommended work load of the grip is suitable for the application. Never use grips at their approximated rated breaking strength. A safety factor of 5 is recommended for pulling grips.
6. Do not alter grips in any way. For example, do not modify pulling eyes, shoulders, fittings or lugs.
7. Do not attach any type of pulling hardware to any point on the grip other than the pulling eye. The pulling eye is the only acceptable means of attachment to external hardware.
8. Always apply 2 bands at 1” and 2” respectively, from the tail end of the mesh to guard against accidental release of the grip. Accidental release can occur if an object contracts and pushes against the tail end of the mesh, thereby expanding and releasing it’s hold.

Select The Correct Pulling Grip

Each Kellems Grip is designed to work on a specific range of cable diameters.

Step 1 Refer to the chart below to determine the style of grip best suited for your application.
Step 2 Determine your cable outside diameter.
Step 3 Find the grip size that encompasses your cable diameter.
Step 4 Estimate the tension to be put on the grip, establish the working load you require and compare this to the listed approximate breaking strength of the grip to insure that the grip will be strong enough. Refer to page T-18 for safety and working load factors.

Pulling Grip Selection Chart

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Application</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUA-PULL®, flexible eye</td>
<td>Extra high strength overhead transmission line stringing for bare or insulated conductor and synthetic rope.</td>
<td>T-6</td>
</tr>
<tr>
<td>Multiple strength, flexible eye</td>
<td>Normal overhead transmission and distribution line stringing, for bare or insulated conductor.</td>
<td>T-7</td>
</tr>
<tr>
<td>Multiple strength, forged eye</td>
<td>Normal overhead transmission and distribution line stringing, for bare or insulated conductor.</td>
<td>T-7</td>
</tr>
<tr>
<td>K-type grip, forged eye</td>
<td>Underground power cables and communication lines. Service lines into factories.</td>
<td>T-8</td>
</tr>
<tr>
<td>T-type grip, flexible eye</td>
<td>Underground power cables and communication lines. Service lines into factories.</td>
<td>T-9</td>
</tr>
<tr>
<td>Non-conductive flexible eye</td>
<td>Pull insulated distribution cable into place.</td>
<td>T-10</td>
</tr>
<tr>
<td>Universal slack, closed mesh</td>
<td>Remove underground cable. For pulling slack in final placement of new cable when end of cable is available.</td>
<td>T-10</td>
</tr>
<tr>
<td>Universal slack split mesh, rawhide lace closing</td>
<td>Remove underground cable. For pulling slack in final placement of new cable when end of cable is not available.</td>
<td>T-11</td>
</tr>
<tr>
<td>Universal slack split mesh, rod closing</td>
<td>Remove underground cable. For pulling slack in final placement of new cable when end of cable is not available, with rod closing for quick installation.</td>
<td>T-11</td>
</tr>
<tr>
<td>Light duty, flexible eye</td>
<td>Light pulling, underground electrical construction. Industrial plant wiring and rewiring jobs.</td>
<td>T-12</td>
</tr>
<tr>
<td>Junior, flexible eye</td>
<td>Connect bundled insulated building wire to a pulling tape. Pull wire through conduit.</td>
<td>T-12</td>
</tr>
<tr>
<td>Regular and rotating wire rope</td>
<td>Restring wire rope in cranes and oil rigs.</td>
<td>T-13</td>
</tr>
<tr>
<td>Splicing</td>
<td>Temporary splice for cable or wire rope.</td>
<td>T-14</td>
</tr>
<tr>
<td>Accessories</td>
<td>Tools, bands, swivels, links.</td>
<td>T-15, T-16</td>
</tr>
<tr>
<td>Fiber Optic Cable Pulling Grips</td>
<td>Pull fiber optic cable into place overhead, underground or through duct and conduit.</td>
<td>T-50, T-51, T-52</td>
</tr>
</tbody>
</table>
Safety And Working Load Factors For Wire Mesh Grips

The broad application of Kellems grips on a wide variety of objects requires that adequate safety factors be used to establish working loads. The approximate breaking strength of a Kellems grip represents an average calculation based on data established from actual direct tension testing done in our engineering laboratories.

It is impossible to catalog or guarantee a safety factor suitable for all applications as operating conditions are never the same. The tension, diameter, movement, number of objects gripped, gripping surface, and the attachments used are just some of the factors which vary with each application. These factors, together with the effects of abrasion, corrosion, prior use or abuse and any other variables of a specific application, must be considered by the user and the grip replaced as appropriate. Where the conditions of the application are not well defined or known, or where risk of injury to persons or property is involved, a greater safety factor should be utilized.

Under normal conditions, Kellems’ recommended factor of safety is five for catalog listed pulling grips, and ten for catalog listed support grips. The factory should be consulted for specific application recommendations where strength and holding power are important factors.

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published breaking strengths apply only to new, unused grips, and that such products are properly stored, handled, used, maintained and inspected by the user at a frequency appropriate for the use and condition of the grip.

Examples

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Safety Factor</th>
<th>Max. Rec. Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulling Grips</td>
<td>27,200 (120,986)</td>
<td>5</td>
<td>5,440 (24,197)</td>
<td>03301027</td>
</tr>
<tr>
<td>Support Grips</td>
<td>1,610 (7,161)</td>
<td>10</td>
<td>161 (716)</td>
<td>02201018</td>
</tr>
</tbody>
</table>

The maximum recommended working load then is the tension to be exerted on the grip in application with a margin of safety to take care of unforeseen and unusual circumstances.

It is the end-user’s decision to determine how much of a safety factor is acceptable for the application.

The metric unit of measure (force) for breaking strength and load is newtons (N). To convert from newtons to the metric unit of weight (kilograms) the conversion factor is 9.808 newtons/kilogram.

Pulling Grip Materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Features</th>
<th>Product Group</th>
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<tr>
<td>Galvanized steel wire</td>
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<td>Pulling grip</td>
</tr>
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<td></td>
<td>Not subject to continuous outside environment</td>
<td>Wire rope grips</td>
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<tr>
<td></td>
<td></td>
<td>Splicing grips</td>
</tr>
<tr>
<td>Non-metallic strand</td>
<td>Superior flex life</td>
<td>Non-conductive pulling grips</td>
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<tr>
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<td>Non-conductive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosion resistant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate strength</td>
<td></td>
</tr>
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</table>

Approvals

UL and CSA Certification is indicated on appropriate product catalog pages.
Kellems® Pulling Grips
Technical Section

Overhead Pulling DUA-PULL® Grips

DUA-PULL Pulling Grips are the highest strength pulling grips manufactured for overhead transmission line stringing applications. They have a dual function of working with both bare and insulated conductors and synthetic rope, not provided by any other grip. Kellems’ patented two-over, two-under weave design gives exceptional strength and gripping ability by putting more steel mesh in contact with the cable or rope surfaces.

THIS IS THE ONLY PULLING GRIP RECOMMENDED FOR USE ON SYNTHETIC ROPE.

Application

The DUA-PULL Grips are primarily used in overhead transmission line construction where loads and safety considerations require an extra high strength grip. They are most commonly used for attaching pulling lines to conductors, conductors to running boards and “double socking” for conductor-to-conductor connections. The DUA-PULL line accommodates ACSR, ACAR, all aluminum and copper conductors. Also, the grips accommodate ground wires, messenger strands, wire ropes and synthetic ropes.

Benefits

• Made of high strength galvanized steel strand.
• Recommended for pulling bare or insulated conductor, wire rope and synthetic rope.
• DUA-PULL mesh design offers the greatest holding power for all pulling applications.
• Each grip size is color coded for fast and accurate identification and selection.
• Will mate with swivels and link-type connectors. See page T-16.

Feed Tubes

The Kellems Feed Tube is used when assembling synthetic rope into the DUA-PULL Grip. It is required on the largest two sizes of DUA-PULL Grips. Feed Tubes are available for use on all size DUA-PULL Grips.

Benefits

• Saves time, allowing fast, easy assembly.
• No special skills required.
• Completely reusable.

Notes: 1. Do not run grips or swivels over bullwheels while under tension.
2. Two Punch-Lok® bands should be firmly attached approximately one inch and two inches (2.54cm and 5.08cm) from the grip’s tail. Banding is required to ensure maximum reliability and guard against accidental release. See page T-15.
3. Double braided rope, as 2-in-1 type, should be back spliced for approximately 2/3 of the mesh length for best gripping results. Grip size should be selected by diameter of back splice.
Kellems® Pulling Grips
Technical Section

Overhead Pulling Multiple Strength Grips

Multiple Strength Pulling Grips are designed for pulling ACSR, aluminum or copper bare conductor, ground wires, messenger strands, wire rope and insulated cables. They are made of high strength galvanized steel strand and feature a multi-weave mesh construction of single, double and triple weave for firm holding power.

Application

Kellems Multiple Strength Grips are ideal for overhead transmission and distribution line stringing where moderate loading is anticipated. They are economical tools for attaching conductors to pulling lines and double socking for conductor-to-conductor connections.

Rotating Eye Feature

Multiple Strength Grips are available with a forged steel rotating eye which can be attached to a swivel. The forged eye is durable, compact and streamlined and will thread through blocks and sheaves without binding. The rotating eye is not a swivel and will not turn while under tension; it can turn to relieve pulling torque when tension is relaxed. If constant swivel action is required, a swivel should be used. For rotating eye dimensions, see page T-21. For swivels see page T-16.

Flexible Eye Feature

Multiple Strength Grips are also available with a flexible, patented wire rope eye. This compact eye will mate with a swivel, and pass through blocks and sheaves without binding.

Benefits

• Economical, high strength pulling tool.
• Multi-weave construction provides greater strength and holding power.
• Endless Weave Grip end lies flat on the cable and will not snag.

Notes: 1. Do not run grips or swivels over bullwheels while under tension.
2. Two Punch-Lok® bands should be firmly attached approximately one inch and two inches (2.54cm and 5.08cm) from the grip’s tail. Banding is required to ensure maximum reliability and guard against accidental release. See page T-15.
Kellems® Pulling Grips
Technical Section

Underground Pulling- K-Type and T-Type Grips

K-Type Application
Rotating Eye, K-Type Pulling Grips are specially designed for use in the installation of underground power cables, communication lines and service lines into factories, shopping centers, construction projects and general underground electrical construction.

Rotating Eye Feature
K-Type Grips come equipped with a forged steel rotating eye which can be attached to a swivel. The forged eye is durable, compact and streamlined, and will thread through blocks and sheaves without binding. The rotating eye is not a swivel and will not turn while under tension; it can turn to relieve pulling torque when the tension is relaxed. If constant swivel action is required, a swivel should be used. For swivels, see page T-16.

Benefits
• An economical tool for pulling cable.
• Safe, rugged and dependable.
• Equipped with a rotating eye for spin out of pulling torque after load release.
• Easily installed and removed.

Rotating Eye Dimensions

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<tr>
<th>Dimensions in Inches (mm)</th>
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<th>B</th>
<th>C</th>
<th>D</th>
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<td>1-1/4&quot; (3.18)</td>
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</tr>
<tr>
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<td>1-7/8&quot; (4.76)</td>
<td>11/16&quot; (1.75)</td>
<td>21/32&quot; (1.67)</td>
<td>1&quot; (2.54)</td>
<td>6&quot; (15.24)</td>
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</table>

T-Type
Kellems Flexible T-Type Pulling Grips are made of high strength galvanized steel strand. They feature double weave mesh for positive holding power in medium to heavy pulling jobs. The grip eye will easily attach to a swivel.

Application
T-Type Pulling Grips are used for the installation of underground power cables, communication lines and service lines into factories, construction projects and for general underground electrical construction. Available in two mesh lengths, short for medium pulls, and standard for general purpose pulling.

Benefits
• Will pull a single cable or cable bundles.
• Patented flexible eye design provides flexibility to follow line of pull.
• A dependable, reusable pulling tool.
• Easily installed and removed.
• Mates easily with a swivel. See page T-16.
Kellems® Pulling Grips
Technical Section

Special Purpose Grips

Non-Conductive Pulling Grips

Kellems Non-Conductive Pulling Grips, made of a high strength, non-conductive aramid fiber, are available for pulling single cable or cable bundles. Their braided double weave design adds strength and positive holding power.

Application

Kellems Non-Conductive Pulling Grips were developed for use by utilities for pulling overhead distribution lines in close proximity to energized lines and hardware.

Benefits

• Color coded for fast on-site selection.
• Extra flexibility for easy installation.
• Non-metallic mesh provides for safe pulls over “hot” areas.
• Pellethane jacketed aramid fiber mesh resists abrasion.
• Grips are corrosion resistant.

Notes: Taping is required to guard against accidental release and to insure maximum reliability.
Apply vinyl plastic electrical tape starting 2” to 3” (5.08cm to 7.62cm) from the tail of the grip onto 2” to 3” (5.08cm to 7.62cm) of cable.

Slack Pulling Grips

Slack Pulling Grips are offered in three styles made of galvanized steel. The closed type is used when the cable end is accessible. When not, there are split lace and split rod closing styles. All grips feature single offset eye for easy attachment to a pulling line.

Application

Slack Grips are widely used in pulling slack for final placement of underground cable after it has been pulled in. They are also used for removing cable. Standard mesh lengths are generally used in restricted space for short pulls. Longer lengths are used for higher pulling loads where space is not restricted.

Benefits

• Easy attachment to pulling lines.
• Reusable rawhide lace for lace closure.
• Galvanized steel for strength.

Notes: 1. Replacement rawhide lace. Catalog number 20920002.
2. See page T-47 for lace and rod closing instructions.
Commercial Construction/Light Duty Grips

Light Duty Pulling Grips

Light Duty Pulling Grips are made of galvanized steel in a single weave construction. They feature a flexible eye for easy attachment to a pulling line.

Application

Light Duty Grips are used in general underground electrical construction where pulling tensions are low. They are easy tools to use in wiring industrial plants and commercial buildings.

Benefits

• Perfect tools for light pulling jobs.
• Installs easily on cable.
• Strong, galvanized steel construction.

Junior Duty Pulling Grips

Junior Pulling Grips feature a strong galvanized steel, single weave mesh. A flexible eye easily attaches to a pulling line, snake or fish tape.

Application

Designed to pull building wire, Junior grips are safe tools to use in pulling wire at low tension through conduit during electrical construction.

Benefits

• Installs easily over building wire.
• Strong secure grip.
• Reusable.
• Pulls single cable or cable bundles.

Junior Grip Kit

Junior Grip Kit contains 6 grips, one of each size. Catalog number 033051114.

Note: Refer to page T-27 for building wire selection chart.
Kellems® Pulling Grips
Technical Section

Splicing Grips
Wire Rope Splicing

Kellems Wire Rope Grips are made of high strength galvanized steel strand in a construction of triple, double and single weave for superior gripping ability. They are available with or without a rotating barrel which will help eliminate twist in the old rope from being transferred to the new rope.

Application

Wire Rope Grips are used for changing wire rope on oil derricks, large cranes, overhead cranes and drag lines. It provides a quick, safe, inexpensive temporary splice. By installing the used wire rope in one end and the new rope in the other, the new wire rope can be pulled in as the old one is pulled out.

Benefits

• High strength for secure pulling.
• Easy installation.
• Flexible to pass through sheaves and blocks.

Notes: 1. During installation each end of the grip should be banded over the rope to insure smooth passage through sheaves and to guard against accidental release. See page T-15 for end bands.
2. The rotating barrel is not a swivel and will not turn while under tension. It can turn to relieve pulling torque when tension is relaxed.

Cable Splicing

Splicing Grips are made of galvanized steel in double or single weave mesh construction. They are available in various lengths and sizes to suit most applications.

Application

Splicing Grips are used as a temporary splice for rope, cable or wire rope. They can also be used as cable reinforcement, and can act as a shield to protect cables and hoses from abrasion.

Benefits

• Easily installed or removed.
• Galvanized steel construction for strength.
• Flexible to follow cable path.

Notes 1. During installation, each end of the splicing grip should be taped down securely to the cable to insure smooth passage with the cable and guard against accidental release.
2. See page T-15 for end bands.
Kellems® Pulling Grips
Technical Section

Accessories

Punch-Lok® Bands

Punch-Lok Bands are applied over the tail of a grip to prevent the mesh from being tripped or pulled loose. Also, they assure full gripping action by locking the mesh of the tail in tight contact with the cable or rope.

When the tail of a grip is the leading end, the bands are particularly important to prevent accidental release caused by tripping on obstructions. A conductor-to-conductor (double-socking) pulling operation is a good example: where two grips connect two conductors to form a temporary splice. Bands should be applied to the ends of the grips as illustrated herein. It is also common practice to tape over the banded tail area to assure smooth passage through the sheaves.

The conductor should be installed in the grip up to the elbows of the aluminum shoulders in order to assure full and complete gripping action. The banding procedure is then followed as illustrated on page T-15.

Note: In all cases two Punch-Lok Bands should be double wrapped approximately one inch to two inches (2.54cm to 5.08cm) from the grip’s tail. Banding is required to ensure maximum reliability and guard against accidental release.

Swivels

Swivels are essential to the efficiency and safety of any high tension application. They are particularly important where continuous pulls develop higher and higher torque levels. Torque is intensified by the pull-resistance of the cable itself and the resistance of the high tension controlling equipment regulating line sag.

Ball bearing swivels release torque and prevent it from reaching dangerous levels that can damage the cable and obstruct the lines as it passes through sheaves, wheels or blocks.
Kellems® Pulling Grips  
Technical Section

Multiple Cable Selection Charts for Cables of Equal Diameters

For Pulling Grips*

Caution: When a grip is used on multiple cables, the tail end of the grip should be banded or tightly taped after positioning on the cables.

For Cables of Equal Diameters

Under “Number of Cables in One Grip”, find the diameter of your single cable in vertical column. Read the grip diameter range to the right.

If your diameter is the maximum of the range shown, go to the next larger size for Split Grips, stay with the same size for Closed Grips.

Example: 3 cables, each with .89” (2.26cm) diameter, for a Closed Grip select the 1.50”-1.74” (3.81cm-4.42cm) range, for a Split Grip select the 1.75”-1.99” (4.44cm-5.05cm) range.

**Multiple Cable Selection Charts for Cables of Unequal Diameters**

How to choose the correct grip size:

1. Find the Grip Circumference Range by measuring the circumference of the bundle of different diameter cables to be gripped (see illustration).
2. Divide the bundle circumference by 3.14 to determine the diameter.
3. Choose a grip offering a range of cable diameters the same as the cable diameter.

**Number of Cables in One Grip**

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<th>Number of Cables in One Grip</th>
<th>2</th>
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<th>4</th>
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*This chart is not to be used for Conduit Riser Grips. Refer to the chart for Conduit Riser multiple cable section.

Note: It is always recommended that, when multiple cables are installed in a pulling grip, the tail end be banded and tightly taped after installation on the cable bundle.
### Junior Pulling Grip Selection Chart

These charts are a general guide to assist in the selection of the correct Junior Pulling Grip for pulling various groupings of building wire. It is not intended to be restrictive inasmuch as the use of "dummy" wires (short pieces of wire used to fill out the Grip) or the tight taping of the wires into a compact bundle may increase or decrease the number of wires per Grip.


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<th>Cable Dia. Range In. (cm)</th>
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<td>J 62 (.62-.74)</td>
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<td>J 75 (.75-.99)</td>
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<td>37-66</td>
<td>03305005</td>
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<tr>
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<td>66-104</td>
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#### T.H.W. Building Wire

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Kellems® Grips for Cable Support
Kellems® Grips for Cable Support

Heavy Duty, Standard Duty, Light Duty

Tin-Coated Bronze/Stainless Steel

Solid eye assemblies provide eye reinforcement at support hardware.

Four eye styles available: single (shown), double, universal, and offset.

Identification tag shows: catalog number, diameter range, agency approval, and bar code.

The strand equalizer positions wires for equal loading throughout the entire grip length.

The positive action mesh grip is designed for light duty up to heavy duty. Closed grips fit over the cable end, split grips wrap around the cable mid-span. The standard material is nonmagnetic, tin-coated bronze. Selected items are available in stainless steel. Contact the factory.

The endless weave provides easy installation onto cable and can be easily repositioned.
Support Grips

**Standard Duty Support**

Double Eye, Single Weave, Tin-Coated Bronze

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**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

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**Double Eye, Closed Mesh**

For permanent support when cable end is available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches)</th>
<th>Approx. Breaking Strength (Lbs. (N))</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
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<td>10” (25.40)</td>
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<td>5” (12.70)</td>
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<td>27” (68.58)</td>
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**Double Eye, Split Mesh, Lace Closing**

For permanent support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches)</th>
<th>Approx. Breaking Strength (Lbs. (N))</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
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**Double Eye, Split Mesh, Rod Closing**

For support when cable end is not available.

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<tr>
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<th>Approx. Breaking Strength (Lbs. (N))</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
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</tbody>
</table>

**E-Eye length**

*M-Mesh length at nominal diameter

* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

---

Support Grips (Wire Management Products)

T-30
### Single Eye, Closed Mesh*

For permanent support when cable end is available to be installed through grip.

<table>
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<th>Cable Diameter Range (Inches)</th>
<th>Approx. Breaking Strength (Lbs.)</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
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* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

### Single Eye, Split Mesh, Lace Closing*

For permanent support when cable end is not available.

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<th>Approx. Breaking Strength (Lbs.)</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
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### Single Eye, Split Mesh, Rod Closing*

For support when cable end is not available.

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<td>2.50&quot;-2.99&quot; (6.35-7.59)</td>
<td>3,260 (14,500)</td>
<td>18&quot; (45.72)</td>
<td>21 1/2&quot; (54.61)</td>
<td>02203022</td>
</tr>
<tr>
<td>3.00&quot;-3.49&quot; (7.62-8.86)</td>
<td>5,750 (25,576)</td>
<td>21&quot; (53.34)</td>
<td>23 1/2&quot; (59.69)</td>
<td>02203023</td>
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<tr>
<td>3.50&quot;-3.99&quot; (8.89-10.13)</td>
<td>5,750 (25,576)</td>
<td>24&quot; (60.96)</td>
<td>25 1/2&quot; (64.77)</td>
<td>02203024</td>
</tr>
</tbody>
</table>

* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.
**Support Grips**

**Standard Duty Support**
*Offset Eye, Single Weave, Tin-Coated Bronze*

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

---

### Offset Eye, Closed Mesh*

For permanent support when cable end is available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (.127-.157)</td>
<td>500 (2,224)</td>
<td>4&quot; (10.16)</td>
<td>10&quot; (25.40)</td>
<td>02201037</td>
</tr>
<tr>
<td>.63&quot;-.74&quot; (.160-.188)</td>
<td>750 (3,336)</td>
<td>4&quot; (10.16)</td>
<td>10&quot; (25.40)</td>
<td>02201038</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (.190-.251)</td>
<td>950 (4,226)</td>
<td>4&quot; (10.16)</td>
<td>13&quot; (33.02)</td>
<td>02202039</td>
</tr>
<tr>
<td>1.00&quot;-.1.24&quot; (.254-.315)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>14&quot; (35.56)</td>
<td>02201041</td>
</tr>
<tr>
<td>1.25&quot;-.1.49&quot; (.317-.378)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>15&quot; (38.10)</td>
<td>02201042</td>
</tr>
<tr>
<td>1.50&quot;-.1.74&quot; (.381-.442)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>17&quot; (43.18)</td>
<td>02202043</td>
</tr>
<tr>
<td>1.75&quot;-.1.99&quot; (.444-.505)</td>
<td>2,000 (8,896)</td>
<td>6&quot; (15.24)</td>
<td>19&quot; (48.26)</td>
<td>02202044</td>
</tr>
<tr>
<td>2.00&quot;-.2.49&quot; (.508-.632)</td>
<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>21&quot; (53.34)</td>
<td>02202045</td>
</tr>
<tr>
<td>2.50&quot;-.2.99&quot; (.635-.759)</td>
<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>23&quot; (58.42)</td>
<td>02202046</td>
</tr>
<tr>
<td>3.00&quot;-.3.49&quot; (.762-.886)</td>
<td>3,800 (16,902)</td>
<td>11&quot; (27.94)</td>
<td>25&quot; (63.50)</td>
<td>02202047</td>
</tr>
<tr>
<td>3.50&quot;-.3.99&quot; (.889-.10.13)</td>
<td>3,800 (16,902)</td>
<td>11&quot; (27.94)</td>
<td>27&quot; (68.58)</td>
<td>02202048</td>
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</tbody>
</table>

---

### Offset Eye, Split Mesh, Lace Closing*

For permanent support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (.127-.157)</td>
<td>500 (2,224)</td>
<td>4&quot; (10.16)</td>
<td>10&quot; (25.40)</td>
<td>02202037</td>
</tr>
<tr>
<td>.63&quot;-.74&quot; (.160-.188)</td>
<td>750 (3,336)</td>
<td>4&quot; (10.16)</td>
<td>10&quot; (25.40)</td>
<td>02202038</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (.190-.251)</td>
<td>950 (4,226)</td>
<td>4&quot; (10.16)</td>
<td>13&quot; (33.02)</td>
<td>02202039</td>
</tr>
<tr>
<td>1.00&quot;-.1.24&quot; (.254-.315)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>15&quot; (38.10)</td>
<td>02202041</td>
</tr>
<tr>
<td>1.25&quot;-.1.49&quot; (.317-.378)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>17&quot; (43.18)</td>
<td>02202042</td>
</tr>
<tr>
<td>1.50&quot;-.1.74&quot; (.381-.442)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>19&quot; (48.26)</td>
<td>02202043</td>
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<tr>
<td>1.75&quot;-.1.99&quot; (.444-.505)</td>
<td>2,000 (8,896)</td>
<td>6&quot; (15.24)</td>
<td>21&quot; (53.34)</td>
<td>02202044</td>
</tr>
<tr>
<td>2.00&quot;-.2.49&quot; (.508-.632)</td>
<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>23&quot; (58.42)</td>
<td>02202045</td>
</tr>
<tr>
<td>2.50&quot;-.2.99&quot; (.635-.759)</td>
<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>25&quot; (63.50)</td>
<td>02202046</td>
</tr>
<tr>
<td>3.00&quot;-.3.49&quot; (.762-.886)</td>
<td>3,800 (16,902)</td>
<td>11&quot; (27.94)</td>
<td>27&quot; (68.58)</td>
<td>02202047</td>
</tr>
<tr>
<td>3.50&quot;-.3.99&quot; (.889-.10.13)</td>
<td>3,800 (16,902)</td>
<td>11&quot; (27.94)</td>
<td>29&quot; (73.66)</td>
<td>02202048</td>
</tr>
</tbody>
</table>

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### Offset Eye, Split Mesh, Rod Closing*

For support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (.127-.157)</td>
<td>500 (2,224)</td>
<td>4&quot; (10.16)</td>
<td>7&quot; (17.78)</td>
<td>02203037</td>
</tr>
<tr>
<td>.63&quot;-.74&quot; (.160-.188)</td>
<td>750 (3,336)</td>
<td>4&quot; (10.16)</td>
<td>9&quot; (22.86)</td>
<td>02203038</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (.190-.251)</td>
<td>950 (4,226)</td>
<td>4&quot; (10.16)</td>
<td>10&quot; (25.40)</td>
<td>02203039</td>
</tr>
<tr>
<td>1.00&quot;-.1.24&quot; (.254-.315)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>12&quot; (30.48)</td>
<td>02203041</td>
</tr>
<tr>
<td>1.25&quot;-.1.49&quot; (.317-.378)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>14&quot; (35.56)</td>
<td>02203042</td>
</tr>
<tr>
<td>1.50&quot;-.1.74&quot; (.381-.442)</td>
<td>1,500 (6,672)</td>
<td>5&quot; (12.70)</td>
<td>15&quot; (38.10)</td>
<td>02203043</td>
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<tr>
<td>1.75&quot;-.1.99&quot; (.444-.505)</td>
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<td>16&quot; (40.64)</td>
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<tr>
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<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>19&quot; (48.26)</td>
<td>02203045</td>
</tr>
<tr>
<td>2.50&quot;-.2.99&quot; (.635-.759)</td>
<td>3,100 (13,789)</td>
<td>9&quot; (22.86)</td>
<td>20&quot; (50.80)</td>
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</tr>
<tr>
<td>3.00&quot;-.3.49&quot; (.762-.886)</td>
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<td>11&quot; (27.94)</td>
<td>21&quot; (53.34)</td>
<td>02203047</td>
</tr>
<tr>
<td>3.50&quot;-.3.99&quot; (.889-.10.13)</td>
<td>4,900 (21,795)</td>
<td>11&quot; (27.94)</td>
<td>21&quot; (53.34)</td>
<td>02203048</td>
</tr>
</tbody>
</table>

* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

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**E-Eye length**

**M-Mesh length at nominal diameter**
Support Grips
Standard Duty Support
Universal Eye, Single Weave, Tin-Coated Bronze

IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

Universal Eye, Closed Mesh*
For permanent support when cable end is available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (1.27-1.57)</td>
<td>530 (2,357)</td>
<td>18&quot; (45.72)</td>
<td>10&quot; (25.40)</td>
<td>02201051</td>
</tr>
<tr>
<td>.63&quot;-.74&quot; (1.60-1.88)</td>
<td>790 (3,514)</td>
<td>18&quot; (45.72)</td>
<td>10&quot; (25.40)</td>
<td>02201052</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (1.90-2.51)</td>
<td>1,020 (4,537)</td>
<td>18&quot; (45.72)</td>
<td>13&quot; (33.02)</td>
<td>02201053</td>
</tr>
<tr>
<td>1.00&quot;-1.24&quot; (2.54-3.15)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>14&quot; (35.56)</td>
<td>02201050</td>
</tr>
<tr>
<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>15&quot; (38.10)</td>
<td>02201054</td>
</tr>
<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>17&quot; (43.18)</td>
<td>02201055</td>
</tr>
<tr>
<td>1.75&quot;-1.99&quot; (4.44-5.05)</td>
<td>2,150 (9,563)</td>
<td>18&quot; (45.72)</td>
<td>19&quot; (48.26)</td>
<td>02201056</td>
</tr>
<tr>
<td>2.00&quot;-2.49&quot; (5.08-6.32)</td>
<td>3,260 (14,500)</td>
<td>18&quot; (45.72)</td>
<td>21&quot; (53.34)</td>
<td>02201057</td>
</tr>
<tr>
<td>2.50&quot;-2.99&quot; (6.35-7.59)</td>
<td>3,260 (14,500)</td>
<td>18&quot; (45.72)</td>
<td>23&quot; (58.42)</td>
<td>02201058</td>
</tr>
</tbody>
</table>

Universal Eye, Split Mesh, Lace Closing*
For permanent support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (1.27-1.57)</td>
<td>530 (2,357)</td>
<td>18&quot; (45.72)</td>
<td>10&quot; (25.40)</td>
<td>02202050</td>
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<tr>
<td>.63&quot;-.74&quot; (1.60-1.88)</td>
<td>790 (3,514)</td>
<td>18&quot; (45.72)</td>
<td>10&quot; (25.40)</td>
<td>02202051</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (1.90-2.51)</td>
<td>1,020 (4,537)</td>
<td>18&quot; (45.72)</td>
<td>13&quot; (33.02)</td>
<td>02202052</td>
</tr>
<tr>
<td>1.00&quot;-1.24&quot; (2.54-3.15)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>14&quot; (35.56)</td>
<td>02202054</td>
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<tr>
<td>1.25&quot;-1.49&quot; (3.17-3.78)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>15&quot; (38.10)</td>
<td>02202055</td>
</tr>
<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
<td>1,610 (7,161)</td>
<td>18&quot; (45.72)</td>
<td>17&quot; (43.18)</td>
<td>02202056</td>
</tr>
<tr>
<td>1.75&quot;-1.99&quot; (4.44-5.05)</td>
<td>2,150 (9,563)</td>
<td>18&quot; (45.72)</td>
<td>19&quot; (48.26)</td>
<td>02202057</td>
</tr>
<tr>
<td>2.00&quot;-2.49&quot; (5.08-6.32)</td>
<td>3,260 (14,500)</td>
<td>18&quot; (45.72)</td>
<td>21&quot; (53.34)</td>
<td>02202058</td>
</tr>
<tr>
<td>2.50&quot;-2.99&quot; (6.35-7.59)</td>
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<td>18&quot; (45.72)</td>
<td>23&quot; (58.42)</td>
<td>02202059</td>
</tr>
<tr>
<td>3.00&quot;-3.49&quot; (7.62-8.86)</td>
<td>4,900 (21,795)</td>
<td>18&quot; (45.72)</td>
<td>25&quot; (63.50)</td>
<td>02202060</td>
</tr>
<tr>
<td>3.50&quot;-3.99&quot; (8.89-10.13)</td>
<td>4,900 (21,795)</td>
<td>18&quot; (45.72)</td>
<td>27&quot; (68.58)</td>
<td>02202061</td>
</tr>
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</table>

Universal Eye, Split Mesh, Rod Closing*
For support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot;-.62&quot; (1.27-1.57)</td>
<td>530 (2,357)</td>
<td>18&quot; (45.72)</td>
<td>8½&quot; (21.59)</td>
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</tr>
<tr>
<td>.63&quot;-.74&quot; (1.60-1.88)</td>
<td>790 (3,514)</td>
<td>18&quot; (45.72)</td>
<td>8½&quot; (21.59)</td>
<td>02203065</td>
</tr>
<tr>
<td>.75&quot;-.99&quot; (1.90-2.51)</td>
<td>1,020 (4,537)</td>
<td>18&quot; (45.72)</td>
<td>10½&quot; (26.67)</td>
<td>02203066</td>
</tr>
<tr>
<td>1.00&quot;-1.24&quot; (2.54-3.15)</td>
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<td>18&quot; (45.72)</td>
<td>12½&quot; (31.75)</td>
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</tr>
<tr>
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<td>18&quot; (45.72)</td>
<td>14½&quot; (36.83)</td>
<td>02203069</td>
</tr>
<tr>
<td>1.50&quot;-1.74&quot; (3.81-4.42)</td>
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<td>18&quot; (45.72)</td>
<td>15½&quot; (39.37)</td>
<td>02203070</td>
</tr>
<tr>
<td>3.00&quot;-3.49&quot; (7.62-8.86)</td>
<td>5,750 (25,576)</td>
<td>18&quot; (45.72)</td>
<td>23½&quot; (59.69)</td>
<td>02203074</td>
</tr>
</tbody>
</table>

E-Eye length  M-Mesh length at nominal diameter
* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

Dimensions in Inches (mm)  www.hubbell-wiring.com
Support Grips

Heavy Duty Support
Single Eye, Double Weave, Tin-Coated Bronze

IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

Heavy Duty, Single Eye, Closed Mesh*
For heavy duty permanent support when cable end is available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75”-.99” (1.90-2.51)</td>
<td>2,820 (12,543)</td>
<td>10” (25.40)</td>
<td>25” (63.50)</td>
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</tr>
<tr>
<td>1.00”-1.24” (2.54-3.15)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>28” (71.12)</td>
<td>02206011</td>
</tr>
<tr>
<td>1.25”-1.49” (3.17-3.78)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>30” (76.20)</td>
<td>02206012</td>
</tr>
<tr>
<td>1.50”-1.99” (3.81-5.05)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>34” (86.36)</td>
<td>02206013</td>
</tr>
</tbody>
</table>

Single Eye, Split Mesh, Lace Closing*
For permanent support when cable end is not available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75”-.99” (1.90-2.51)</td>
<td>2,820 (12,543)</td>
<td>10” (25.40)</td>
<td>25” (63.50)</td>
<td>02207010</td>
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<tr>
<td>1.00”-1.24” (2.54-3.15)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>28” (71.12)</td>
<td>02207011</td>
</tr>
<tr>
<td>1.25”-1.49” (3.17-3.78)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>30” (76.20)</td>
<td>02207012</td>
</tr>
<tr>
<td>1.50”-1.99” (3.81-5.05)</td>
<td>4,280 (19,037)</td>
<td>12” (30.48)</td>
<td>34” (86.36)</td>
<td>02207013</td>
</tr>
</tbody>
</table>

* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.
Support Grips

Heavy Duty Support

Double Eye, Double Weave, Tin-Coated Bronze

Important!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

### Double Eye, Closed Mesh*
For permanent support when cable end is not available to be installed through grip.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75”-.99&quot; (.190-2.51)</td>
<td>2,820 (12,543)</td>
<td>10” (25.40)</td>
<td>25” (63.50)</td>
<td>02206001</td>
</tr>
<tr>
<td>1.00”-1.24” (2.54-3.15)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>28” (71.12)</td>
<td>02206002</td>
</tr>
<tr>
<td>1.25”-1.49” (3.17-3.78)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>30” (76.20)</td>
<td>02206003</td>
</tr>
<tr>
<td>1.50”-1.99” (3.81-5.05)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>34” (86.36)</td>
<td>02206004</td>
</tr>
<tr>
<td>2.00”-2.49” (5.08-6.32)</td>
<td>8,050 (35,806)</td>
<td>12” (30.48)</td>
<td>36” (91.44)</td>
<td>02206005</td>
</tr>
<tr>
<td>2.50”-2.99” (6.35-7.59)</td>
<td>8,050 (35,806)</td>
<td>12” (30.48)</td>
<td>38” (96.52)</td>
<td>02206006</td>
</tr>
<tr>
<td>3.00”-3.49” (7.62-8.86)</td>
<td>10,060 (44,747)</td>
<td>12” (30.48)</td>
<td>40” (101.60)</td>
<td>02206007</td>
</tr>
<tr>
<td>3.50”-3.99” (8.89-10.13)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>44” (111.76)</td>
<td>02206008</td>
</tr>
<tr>
<td>4.00”-4.49” (10.16-11.40)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>46” (116.84)</td>
<td>02206009</td>
</tr>
<tr>
<td>4.50”-4.99” (11.43-12.67)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>68” (172.72)</td>
<td>02208009</td>
</tr>
</tbody>
</table>

### Double Eye, Split Mesh, Lace Closing*
For support when cable end is not available.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>E-Eye length</th>
<th>M-Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75”-.99&quot; (.190-2.51)</td>
<td>2,820 (12,543)</td>
<td>10” (25.40)</td>
<td>25” (63.50)</td>
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<td></td>
</tr>
<tr>
<td>1.00”-1.24” (2.54-3.15)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>28” (71.12)</td>
<td>02207002</td>
<td></td>
</tr>
<tr>
<td>1.25”-1.49” (3.17-3.78)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>30” (76.20)</td>
<td>02207003</td>
<td></td>
</tr>
<tr>
<td>1.50”-1.99” (3.81-5.05)</td>
<td>4,280 (19,037)</td>
<td>10” (25.40)</td>
<td>34” (86.36)</td>
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<tr>
<td>2.00”-2.49” (5.08-6.32)</td>
<td>8,050 (35,806)</td>
<td>12” (30.48)</td>
<td>36” (91.44)</td>
<td>02207005</td>
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</tr>
<tr>
<td>2.50”-2.99” (6.35-7.59)</td>
<td>8,050 (35,806)</td>
<td>12” (30.48)</td>
<td>38” (96.52)</td>
<td>02207006</td>
<td></td>
</tr>
<tr>
<td>3.00”-3.49” (7.62-8.86)</td>
<td>10,060 (44,747)</td>
<td>12” (30.48)</td>
<td>40” (101.60)</td>
<td>02207007</td>
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<tr>
<td>3.50”-3.99” (8.89-10.13)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>44” (111.76)</td>
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<tr>
<td>4.00”-4.49” (10.16-11.40)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>46” (116.84)</td>
<td>02207009</td>
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</tr>
<tr>
<td>4.50”-4.99” (11.43-12.67)</td>
<td>12,070 (53,687)</td>
<td>12” (30.48)</td>
<td>68” (172.72)</td>
<td>02209009</td>
<td></td>
</tr>
</tbody>
</table>

E-Eye length M-Mesh length at nominal diameter

* Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

Dimensions in Inches (mm) www.hubbell-wiring.com
Support Grips
Service Drop
Single Eye, Tin-Coated Bronze

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

---

### Light Duty, Single Eye, Closed Mesh
Single Weave

For permanent support when cable end is available to be installed.

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
</tr>
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<tbody>
<tr>
<td>.23&quot;-.31&quot; (.58-.79)</td>
<td>290 (1,290)</td>
<td>3&quot; (7.62)</td>
<td>3 3/4&quot; (9.52)</td>
<td>02216001</td>
</tr>
<tr>
<td>.29&quot;-.37&quot; (.74-.94)</td>
<td>290 (1,290)</td>
<td>4 1/4&quot; (10.79)</td>
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<td></td>
</tr>
<tr>
<td>.35&quot;-.44&quot; (.89-1.12)</td>
<td>500 (2,224)</td>
<td>5 1/2&quot; (13.97)</td>
<td>4 3/4&quot; (12.06)</td>
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</tr>
<tr>
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<td>5&quot; (12.70)</td>
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</tr>
<tr>
<td>.46&quot;-.56&quot; (1.17-1.42)</td>
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<td>6&quot; (15.24)</td>
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</tr>
<tr>
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<td>790 (3,514)</td>
<td>7&quot; (17.78)</td>
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<td>02216006</td>
</tr>
<tr>
<td>.58&quot;-.68&quot; (1.47-1.73)</td>
<td>790 (3,514)</td>
<td>7&quot; (17.78)</td>
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<td>02216007</td>
</tr>
<tr>
<td>.64&quot;-.75&quot; (1.63-1.90)</td>
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<td>7 1/4&quot; (18.41)</td>
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<td>02216008</td>
</tr>
<tr>
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<td>8&quot; (20.32)</td>
<td></td>
<td>02216009</td>
</tr>
<tr>
<td>.81&quot;-.94&quot; (2.06-2.50)</td>
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<td>8&quot; (20.32)</td>
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</tr>
<tr>
<td>.87&quot;-.100&quot; (2.21-2.54)</td>
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<td>8 1/4&quot; (22.22)</td>
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</tr>
<tr>
<td>.94&quot;-.106&quot; (2.39-2.69)</td>
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<td>9&quot; (22.86)</td>
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</tr>
<tr>
<td>1.00&quot;-.118&quot; (2.54-3.00)</td>
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<td>9&quot; (22.86)</td>
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**Heavy Duty, Single Eye, Closed Mesh**
Multi-Weave

For permanent support when cable end is available to be installed.

<table>
<thead>
<tr>
<th>Cable Diameter Range (Inches)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E (Inches)</th>
<th>M (Inches)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.23&quot;-.31&quot; (.58-.79)</td>
<td>500 (2,224)</td>
<td>5&quot; (12.70)</td>
<td>4 3/16&quot; (11.14)</td>
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</tr>
<tr>
<td>.29&quot;-.37&quot; (.74-.94)</td>
<td>500 (2,224)</td>
<td>5 1/2&quot; (13.97)</td>
<td>4 3/16&quot; (11.14)</td>
<td>02217002</td>
</tr>
<tr>
<td>.35&quot;-.44&quot; (.89-1.12)</td>
<td>870 (3,870)</td>
<td>6&quot; (15.24)</td>
<td>6 3/16&quot; (16.15)</td>
<td>02217003</td>
</tr>
<tr>
<td>.41&quot;-.50&quot; (1.04-1.27)</td>
<td>870 (3,870)</td>
<td>6 1/2&quot; (16.51)</td>
<td>7 1/16&quot; (19.05)</td>
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</tr>
<tr>
<td>.46&quot;-.56&quot; (1.17-1.42)</td>
<td>1,050 (4,670)</td>
<td>6&quot; (15.24)</td>
<td>8&quot; (20.32)</td>
<td>02217005</td>
</tr>
<tr>
<td>.52&quot;-.62&quot; (1.32-1.57)</td>
<td>1,050 (4,670)</td>
<td>7&quot; (17.78)</td>
<td>8 1/4&quot; (21.59)</td>
<td>02217006</td>
</tr>
<tr>
<td>.58&quot;-.68&quot; (1.47-1.73)</td>
<td>1,050 (4,670)</td>
<td>7&quot; (17.78)</td>
<td>9 1/4&quot; (24.13)</td>
<td>02217007</td>
</tr>
<tr>
<td>.64&quot;-.75&quot; (1.63-1.90)</td>
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<td>7&quot; (17.78)</td>
<td>9&quot; (22.86)</td>
<td>02217008</td>
</tr>
<tr>
<td>.70&quot;-.81&quot; (1.78-2.02)</td>
<td>1,390 (6,183)</td>
<td>8&quot; (20.32)</td>
<td>10&quot; (25.40)</td>
<td>02217009</td>
</tr>
<tr>
<td>.75&quot;-.87&quot; (1.90-2.21)</td>
<td>1,390 (6,183)</td>
<td>8&quot; (20.32)</td>
<td>10 1/2&quot; (26.67)</td>
<td>02217010</td>
</tr>
<tr>
<td>.81&quot;-.94&quot; (2.06-2.50)</td>
<td>1,390 (6,183)</td>
<td>8&quot; (20.32)</td>
<td>10 1/2&quot; (26.67)</td>
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<tr>
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<td>11&quot; (28.57)</td>
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<tr>
<td>.94&quot;-.106&quot; (2.39-2.69)</td>
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<td>9&quot; (22.86)</td>
<td>12&quot; (30.48)</td>
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<tr>
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<td>13&quot; (33.02)</td>
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<tr>
<td>1.06&quot;-.125&quot; (2.69-3.17)</td>
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<td>9&quot; (22.86)</td>
<td>14 1/2&quot; (36.83)</td>
<td>02217015</td>
</tr>
</tbody>
</table>

**E - Eye length**
**M - Mesh length at nominal diameter**

---

![Diagram of Support Grips](image-url)

Dimensions in Inches (mm)

Eaton Wiring Device-Kellyns
www.hubbell-wiring.com
**Support Grips**  
**Service Drop**  
*Universal Eye, Tin-Coated Bronze*

**Light Duty, Universal Eye, Closed Mesh, Single Weave**  
For permanent support when cable end is available to be installed.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.23&quot;-.31&quot; (.58-.79)</td>
<td>290 (1,290)</td>
<td>9&quot; (22.86)</td>
<td>3½&quot; (9.52)</td>
<td>02216016</td>
</tr>
<tr>
<td>.29&quot;-.37&quot; (.74-.94)</td>
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<td>10&quot; (25.40)</td>
<td>4⅛&quot; (10.79)</td>
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<tr>
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<td>500 (2,224)</td>
<td>10&quot; (25.40)</td>
<td>4⅛&quot; (12.06)</td>
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<tr>
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<td>500 (2,224)</td>
<td>11&quot; (27.94)</td>
<td>5&quot; (12.70)</td>
<td>02216019</td>
</tr>
<tr>
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<td>5½&quot; (13.33)</td>
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<tr>
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<td>13&quot; (33.02)</td>
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<tr>
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<td>13&quot; (33.02)</td>
<td>6⅞&quot; (16.51)</td>
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<td>02216027</td>
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<td>02216028</td>
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<tr>
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</tr>
<tr>
<td>1.06&quot;-1.25&quot; (2.69-3.17)</td>
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<td>15&quot; (38.10)</td>
<td>9½&quot; (24.13)</td>
<td>02216030</td>
</tr>
</tbody>
</table>

**Heavy Duty, Universal Eye, Closed Mesh, Multi-Weave**  
For permanent support when cable end is available to be installed.

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.23&quot;-.31&quot; (.58-.79)</td>
<td>500 (2,224)</td>
<td>11&quot; (27.94)</td>
<td>5⅛&quot; (13.97)</td>
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<tr>
<td>.28&quot;-.37&quot; (.74-.94)</td>
<td>500 (2,224)</td>
<td>11&quot; (27.94)</td>
<td>5⅛&quot; (13.97)</td>
<td>02217017</td>
</tr>
<tr>
<td>.35&quot;-.44&quot; (.89-1.12)</td>
<td>870 (3,870)</td>
<td>12&quot; (30.48)</td>
<td>6⅛&quot; (16.51)</td>
<td>02217018</td>
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<tr>
<td>.41&quot;-.50&quot; (1.04-1.27)</td>
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<td>12&quot; (30.48)</td>
<td>7½&quot; (18.41)</td>
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<tr>
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<td>12½&quot; (31.75)</td>
<td>02217028</td>
</tr>
<tr>
<td>1.00&quot;-1.18&quot; (2.54-3.00)</td>
<td>1,790 (7,962)</td>
<td>15&quot; (38.10)</td>
<td>13½&quot; (34.29)</td>
<td>02217029</td>
</tr>
<tr>
<td>1.06&quot;-1.25&quot; (2.69-3.17)</td>
<td>1,790 (7,962)</td>
<td>15&quot; (38.10)</td>
<td>14½&quot; (36.83)</td>
<td>02217030</td>
</tr>
</tbody>
</table>

*E-Eye length  M-Mesh length at nominal diameter.*

**IMPORTANT!**  
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

---

Dimensions in Inches (mm)  
www.hubbell-wiring.com  
HUBBELL  
Wiring Device-Kellems  
T-37  
Support Grips
**Support Grips**

**Bus Drop**

*Single Eye, Universal Eye, Galvanized Steel*

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

---

**Safety Spring**

<table>
<thead>
<tr>
<th>Maximum Deflection</th>
<th>Approx. Breaking Strength</th>
<th>Length*</th>
<th>Diameter</th>
<th>Model</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches/Lbs (cm/N)</td>
<td>Lbs. (N)</td>
<td>Inches (cm)</td>
<td>Inches (cm)</td>
<td>Lbs. (N)</td>
<td></td>
</tr>
<tr>
<td>2 3/4” at 40 lbs.</td>
<td>500 (2,224)</td>
<td>8 1/4” (20.95)</td>
<td>3/4” (1.90)</td>
<td>40 lb. spring</td>
<td>20302001</td>
</tr>
<tr>
<td>6.98 cm at 178 N</td>
<td></td>
<td>20302002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 1/8” at 80 lbs.</td>
<td>850 (3,781)</td>
<td>8 1/4” (20.95)</td>
<td>1” (2.54)</td>
<td>80 lb. spring</td>
<td></td>
</tr>
<tr>
<td>7.94 cm at 356 N</td>
<td></td>
<td>(20302002)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Springs can be used with single eye grips by disassembling drawbar from coil, placing through eye and replacing drawbar.

*No load.

---

**Single Eye Wide Range**

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.24”-.32” (.61-.81)</td>
<td>350 (1,557)</td>
<td>3” (7.62)</td>
<td>3 1/8” (8.89)</td>
<td>073041276*</td>
</tr>
<tr>
<td>.32”-.43” (.81-1.09)</td>
<td>450 (2,002)</td>
<td>4” (10.16)</td>
<td>4” (10.16)</td>
<td>073041277</td>
</tr>
<tr>
<td>.43”-.56” (1.09-1.42)</td>
<td>550 (2,446)</td>
<td>6” (15.24)</td>
<td>4 1/2” (12.06)</td>
<td>073041278</td>
</tr>
<tr>
<td>.56”-.73” (1.42-1.85)</td>
<td>1,000 (4,448)</td>
<td>7” (17.78)</td>
<td>6” (15.24)</td>
<td>073041279</td>
</tr>
<tr>
<td>.73”-.85” (1.85-2.16)</td>
<td>1,400 (6,227)</td>
<td>7” (17.78)</td>
<td>6 1/2” (17.14)</td>
<td>073041280</td>
</tr>
<tr>
<td>.85”-1.00” (2.16-2.54)</td>
<td>1,400 (6,227)</td>
<td>8” (20.32)</td>
<td>8” (20.32)</td>
<td>073041281</td>
</tr>
<tr>
<td>1.00”-1.25” (2.54-3.17)</td>
<td>1,500 (6,672)</td>
<td>9” (22.86)</td>
<td>9 1/2” (24.13)</td>
<td>073041282</td>
</tr>
</tbody>
</table>

*E-Eye length  M-Mesh length at nominal diameter

---

**Universal Eye Wide Range**

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.32”-.43” (.81-1.09)</td>
<td>450 (2,002)</td>
<td>10” (25.40)</td>
<td>4” (10.16)</td>
<td>073041284</td>
</tr>
<tr>
<td>.43”-.56” (1.09-1.42)</td>
<td>550 (2,446)</td>
<td>12” (30.48)</td>
<td>4 1/2” (12.06)</td>
<td>073041285</td>
</tr>
<tr>
<td>.56”-.73” (1.42-1.85)</td>
<td>1,000 (4,448)</td>
<td>13” (33.02)</td>
<td>6” (15.24)</td>
<td>073041286</td>
</tr>
<tr>
<td>.73”-.85” (1.85-2.16)</td>
<td>1,400 (6,227)</td>
<td>13” (33.02)</td>
<td>6 1/2” (17.14)</td>
<td>073041287</td>
</tr>
<tr>
<td>.85”-1.00” (2.16-2.54)</td>
<td>1,400 (6,227)</td>
<td>14” (35.56)</td>
<td>8” (20.32)</td>
<td>073041288</td>
</tr>
<tr>
<td>1.00”-1.25” (2.54-3.17)</td>
<td>1,500 (6,672)</td>
<td>15” (38.10)</td>
<td>9 1/2” (24.13)</td>
<td>073041289</td>
</tr>
</tbody>
</table>

---

**Bus Drop Grips and Safety Springs**

Kellems Bus Drop Grips are offered with either a single eye or universal bale attachment. The mesh is single weave galvanized steel with the patented wide range construction. They are suitable for indoor use only.

---

**Application**

Bus Drop Grips provide a safe, easy and economical method to support flexible cord or bus drop cable at bus duct and other industrial areas.

---

**Benefits**

- Easily installed.
- Absorb tension, vibration and pull with no cable damage.
- Patented mesh construction.

---

**Safety Spring**

Springs can be used with single eye grips by disassembling drawbar from coil, placing through eye and replacing drawbar.

*Note: Item indicated with a * is not UL listed.*
Support Grips
Conduit Riser
Ring Type, Single Weave, Tin-Coated Bronze

IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

Single Weave, Closed Mesh
Kellem’s® Conduit Riser Support Grips are available in closed mesh and in split mesh with lace or rod closures, to cover all applications including single cable or cable bundle support. Refer to technical section, T-43 for grip selection assistance for cable bundles. The standard material is tin-coated bronze strand. The grip is permanently fastened to a support ring, resulting in a one piece unit which will allow air ventilation within the conduit. This ring supported grip is ideal for supporting electrical cable at standard rigid conduit. The rings will fit schedule 40, standard rigid conduit. The rings will fit schedule 40, standard rigid conduit. See page T-42 for ring dimensions. For permanent support when cable end is available to be installed through the grip.

Suitable For Schedule 40 Conduit Only

<table>
<thead>
<tr>
<th>Cable Sizes (Inches)</th>
<th>Catalog Numbers</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50&quot; -.62&quot;</td>
<td>0221106</td>
<td>530 (2,357)</td>
</tr>
<tr>
<td>.63&quot;-.74&quot;</td>
<td>02211100</td>
<td>490 (2,179)</td>
</tr>
<tr>
<td>.75&quot;-.99&quot;</td>
<td>02211101</td>
<td>790 (3,514)</td>
</tr>
<tr>
<td>1&quot;</td>
<td>02211002</td>
<td>740 (3,292)</td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>02211003</td>
<td>1,030 (4,581)</td>
</tr>
<tr>
<td>1.75&quot;</td>
<td>02211004</td>
<td>600 (3,069)</td>
</tr>
<tr>
<td>2&quot;</td>
<td>02211005</td>
<td>970 (4,315)</td>
</tr>
<tr>
<td>2.5&quot;</td>
<td>02211006</td>
<td>1,610 (7,161)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>02211007</td>
<td>1,520 (6,761)</td>
</tr>
<tr>
<td>3.5&quot;</td>
<td>02211008</td>
<td>1,610 (7,161)</td>
</tr>
<tr>
<td>4&quot;</td>
<td>02211009</td>
<td>1,520 (6,761)</td>
</tr>
<tr>
<td>4.5&quot;</td>
<td>02211010</td>
<td>1,610 (7,161)</td>
</tr>
<tr>
<td>5&quot;</td>
<td>02211011</td>
<td>1,520 (6,761)</td>
</tr>
<tr>
<td>6&quot;</td>
<td>02211012</td>
<td>1,610 (7,161)</td>
</tr>
</tbody>
</table>

Note: Refer to page T-43 for multiple cables in a single conduit riser grip.
Conduit Riser Grip
Ring Type, Double Weave, Tin-Coated Bronze

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-41 through T-46.

**Double Weave, Split Mesh, Lace Closing**
Kellems® Conduit Riser Support Grips will support cable runs in vertical or sloping standard rigid conduit. The grip is fastened to a support ring which seats on the rim of the conduit. The entire grip is supported by the conduit itself and no other hardware is required. See page T-40 for ring dimensions. The rings will fit schedule 40, standard rigid conduit. For permanent support when cable end is not available.

**Suitable For Schedule 40 Conduit Only**

<table>
<thead>
<tr>
<th>Cable Sizes Inches (cm)</th>
<th>.75&quot;-.99&quot;</th>
<th>1.00&quot;-1.24&quot;</th>
<th>1.25&quot;-1.49&quot;</th>
<th>1.50&quot;-1.74&quot;</th>
<th>1.75&quot;-1.99&quot;</th>
<th>2.00&quot;-2.49&quot;</th>
<th>2.50&quot;-2.99&quot;</th>
<th>3.00&quot;-3.49&quot;</th>
<th>3.50&quot;-3.99&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>RS075</td>
<td>RS100</td>
<td>RS125</td>
<td>RS150</td>
<td>RS175</td>
<td>RS200</td>
<td>RS250</td>
<td>RS300</td>
<td>RS350</td>
</tr>
<tr>
<td>Length Inches (cm)</td>
<td>11&quot; (27.94)</td>
<td>12&quot; (30.48)</td>
<td>12&quot; (30.48)</td>
<td>14&quot; (35.56)</td>
<td>15&quot; (38.10)</td>
<td>17&quot; (43.18)</td>
<td>18&quot; (45.72)</td>
<td>20&quot; (50.80)</td>
<td>21&quot; (53.34)</td>
</tr>
</tbody>
</table>

**Conduit Sizes**

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>1 1/4&quot;</th>
<th>1 1/2&quot;</th>
<th>2&quot;</th>
<th>2 1/2&quot;</th>
<th>3&quot;</th>
<th>3 1/2&quot;</th>
<th>4&quot;</th>
<th>5&quot;</th>
<th>6&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>1.500 (7.62)</td>
<td>1.500 (7.62)</td>
<td>1.930 (7.60)</td>
<td>1.930 (7.60)</td>
<td>2.040 (7.36)</td>
<td>2.040 (7.36)</td>
<td>2.400 (9.45)</td>
<td>2.700 (10.6)</td>
<td>2.700 (10.6)</td>
</tr>
<tr>
<td>Approx. Breaking Strength Lbs. (N)</td>
<td>• • • • •</td>
<td>• • • •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>1 1/4&quot;</th>
<th>1 1/2&quot;</th>
<th>2&quot;</th>
<th>2 1/2&quot;</th>
<th>3&quot;</th>
<th>3 1/2&quot;</th>
<th>4&quot;</th>
<th>5&quot;</th>
<th>6&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>1.780 (7.01)</td>
<td>1.890 (7.46)</td>
<td>2.530 (10.0)</td>
<td>2.530 (10.0)</td>
<td>4.300 (16.99)</td>
<td>4.300 (16.99)</td>
<td>5.380 (21.21)</td>
<td>5.380 (21.21)</td>
<td>5.380 (21.21)</td>
</tr>
<tr>
<td>Approx. Breaking Strength Lbs. (N)</td>
<td>• • • • •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
<td>• •</td>
</tr>
</tbody>
</table>

**Note:** Refer to page T-43 for multiple cables in a single conduit riser grip.

**Dimensions in Inches (mm)**

![Conduit Riser Grip Diagram]
Support Grips
Conduit Riser
Ring Type, Single Weave, Tin-Coated Bronze

IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.

Single Weave, Split Mesh, Rod Closing Benefits
• Easy and fast to install.
• Will not damage electrical cable.
• Allows cable to expand or contract.
• Ideal way to hold cable in vertical conduit.
• Prevents cable creep in conduit.
• Helps prevent cable pullouts.
• The rings will fit schedule 40, standard rigid conduit.
• For support when cable end is not available.

| Cable Sizes | .75" - .99" | 1.00" - 1.24" | 1.25" - 1.49" | 1.50" - 1.74" | 1.75" - 1.99" | 2.00" - 2.24" | 2.50" - 2.99" | 3.00" - 3.49" | 3.50" - 3.99"
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------
| Inches (cm) | (1.90-2.51) | (2.54-3.15) | (3.17-3.78) | (3.51-4.42) | (4.44-5.05) | (5.08-6.33) | (6.35-7.69) | (7.62-8.86) | (8.89-10.13)
| Model       | RR075       | RR100       | RR125       | RR150       | RR175       | RR200       | RR250       | RR300       | RR350       |
| Length      | 11" (27.94) | 12" (30.48) | 13" (33.02) | 14" (35.56) | 15" (38.10) | 16" (40.64) | 18" (45.72) | 19" (48.26) | 21" (53.34) |

Conduit Sizes
Catalog Numbers
Inches Approx. Breaking Strength Lbs. (N)
1 1/4"
02213003 1.020 (4.537)

1 1/2"
02213007 02213009
970 (4.315) 1.610 (7.161)

2"
02213012 02213013
1.520 (6.761) 1.610 (7.161)

2 1/2"
02213017 02213018
1.510 (6.716) 1.610 (7.161)

3"
02213023 02213024 02213025
1.400 (6.027) 1.490 (6.427) 1.990 (8.851)
02213026
3.260 (14.500)

3 1/2"
02213033 02213034
2.970 (13.211) 3.260 (14.500)

4"
02213041 02213042
2.670 (11.876) 2.890 (12.855)

Note: Refer to page T-43 for multiple cables in a single conduit riser grip.
### Conduit Ring Dimensions

Ring dimensions are found in the chart below. The ring material is corrosion resistant. These rings will fit schedule 40, standard rigid conduit sizes only.

<table>
<thead>
<tr>
<th>Conduit Size Inches</th>
<th>Ring Number</th>
<th>O.D. Inches (cm)</th>
<th>I.D. Inches (cm)</th>
<th>S Inches (cm)</th>
<th>T Inches (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>C-3/4</td>
<td>.94&quot; (2.39)</td>
<td>.62&quot; (1.57)</td>
<td>•</td>
<td>.19&quot; (4.8)</td>
</tr>
<tr>
<td>1&quot;</td>
<td>C-1</td>
<td>1.17&quot; (2.97)</td>
<td>.80&quot; (2.03)</td>
<td>•</td>
<td>.19&quot; (4.8)</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>C-1 1/4</td>
<td>1.50&quot; (3.81)</td>
<td>1.03&quot; (2.62)</td>
<td>1.31&quot; (3.33)</td>
<td>.16&quot; (4.1)</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>C-1 1/2</td>
<td>1.76&quot; (4.47)</td>
<td>1.23&quot; (3.12)</td>
<td>1.52&quot; (3.86)</td>
<td>.16&quot; (4.1)</td>
</tr>
<tr>
<td>2&quot;</td>
<td>C-2</td>
<td>2.23&quot; (5.66)</td>
<td>1.55&quot; (3.94)</td>
<td>1.97&quot; (5.00)</td>
<td>.16&quot; (4.1)</td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>C-2 1/2</td>
<td>2.67&quot; (6.78)</td>
<td>2.05&quot; (5.21)</td>
<td>2.40&quot; (6.1)</td>
<td>.16&quot; (4.1)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>C-3</td>
<td>3.20&quot; (8.13)</td>
<td>2.55&quot; (6.48)</td>
<td>2.97&quot; (7.54)</td>
<td>.22&quot; (5.6)</td>
</tr>
<tr>
<td>3 1/2&quot;</td>
<td>C-3 1/2</td>
<td>3.80&quot; (9.65)</td>
<td>3.05&quot; (7.75)</td>
<td>3.47&quot; (8.81)</td>
<td>.22&quot; (5.6)</td>
</tr>
<tr>
<td>4&quot;</td>
<td>C-4</td>
<td>4.30&quot; (10.92)</td>
<td>3.55&quot; (9.02)</td>
<td>3.94&quot; (10.01)</td>
<td>.22&quot; (5.6)</td>
</tr>
<tr>
<td>4 1/2&quot;</td>
<td>C-4 1/2</td>
<td>4.80&quot; (12.19)</td>
<td>4.03&quot; (10.24)</td>
<td>4.45&quot; (11.3)</td>
<td>.22&quot; (5.6)</td>
</tr>
<tr>
<td>5&quot;</td>
<td>C-5</td>
<td>5.30&quot; (13.46)</td>
<td>4.46&quot; (11.33)</td>
<td>4.96&quot; (12.60)</td>
<td>.22&quot; (5.6)</td>
</tr>
<tr>
<td>6&quot;</td>
<td>C-6</td>
<td>6.30&quot; (16.00)</td>
<td>5.36&quot; (13.61)</td>
<td>5.96&quot; (15.14)</td>
<td>.25&quot; (6.3)</td>
</tr>
</tbody>
</table>

### IMPORTANT!

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-43 through T-48.
Multiple Cable Selection Charts for Cables of Unequal Diameters

How to choose the correct grip size:

1. Find the Grip Circumference Range by measuring the circumference of the bundle of different diameter cables to be gripped (see illustration).
2. Divide the bundle circumference by 3.14 to determine the diameter.
3. Choose a grip offering a range of cable diameters the same as the cable diameter.

For Conduit Riser Grips Only†

For Cables of Equal Diameters

Under “Number of Cables in One Grip”, find diameter of your single cable in vertical column. Read the grip diameter range to the right.

If your diameter is the maximum of the range shown, go to the next larger size for Split Grips, stay with the same size for Closed Grips.

Example: 3 cables, each with .85” (2.16cm) diameter, for a Closed Grip select the 1.50”-1.74” (3.81cm-4.42cm) range, for a Split Grip select the 1.75”-1.99” (4.44cm-5.05cm) range.

Number of Equal Diameter Cables in One Grip

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 and 7</th>
<th>8</th>
<th>9</th>
<th>Grip Dia. Range Inches (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.29-.36</td>
<td>.24-.30</td>
<td>.21-.25</td>
<td>.18-.22</td>
<td>.16-.20</td>
<td>.15-.18</td>
<td>.14-.17</td>
<td>.50-.62</td>
<td></td>
</tr>
<tr>
<td>(.74-.91)</td>
<td>(.61-.76)</td>
<td>(.53-.63)</td>
<td>(.46-.56)</td>
<td>(.41-.51)</td>
<td>(.38-.46)</td>
<td>(.36-.43)</td>
<td>(1.27-1.57)</td>
<td></td>
</tr>
<tr>
<td>.37-.43</td>
<td>.31-.36</td>
<td>.26-.30</td>
<td>.23-.27</td>
<td>.21-.24</td>
<td>.19-.22</td>
<td>.18-.20</td>
<td>.63-.74</td>
<td></td>
</tr>
<tr>
<td>(.94-1.09)</td>
<td>(.79-.91)</td>
<td>(.66-.76)</td>
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</table>

†This chart is to be used for determining grip size when multiple cables are held in a single conduit riser grip.

Note: It is always recommended that, when multiple cables are installed in a support grip, the tail end of the grip be banded or tightly taped after installation on the cable bundle.
Kellems® Grips For Cable Support

Technical Section

Bus Drop Grips

Bus Drop Grips and Safety Springs
Kellems Bus Drop Grips are offered with either a single eye or universal bale attachment. The mesh is single weave galvanized steel with the patented wide range construction. They are suitable for indoor use only.

Application
Bus Drop Grips provide a safe, easy and economical method to support flexible cord or bus drop cable at bus duct and other industrial areas.

Benefits
• Easily installed.
• Absorb tension, vibration and pull with no cable damage.
• Patented mesh construction.

Safety Spring
Springs can be used with single eye grips by disassembling drawbar from coil, placing through eye and replacing drawbar.
Kellems® Grips For Cable Support
Technical Section

Kellems Support Grips
Kellems Support Grips are used to hold the weight of electrical cable as it hangs in a vertical, sloping or horizontal position. Electrical cable must be supported, or its dead weight can cause excessive strain or pullout at the connections resulting in power failure. Support grips also absorb additional strain from flexure, vibration, expansion and contraction. Kellems Support Grips listed in this catalog are made of high grade, non-magnetic tin-coated bronze strand. Stainless steel grips, made of alloy 302–304 SST for severe service or unusual environmental conditions, are available on request.

Select the Correct Support Grip
Each Kellems grip is designed to work on a specific range of cable diameters.

Step 1
Refer to the Kellems chart below to determine the grip style best suited for your application.

Step 2
Determine your cable outside diameter.

Step 3
Find the grip size that encompasses your cable diameter.

Step 4
Whenever possible, use a closed mesh that assembles over the cable end. If the cable end is not available, use a split mesh.

Step 5
Where available, select an eye style that suits your needs.

Step 6
Select the proper material—tinned bronze or stainless steel*.

Step 7
Estimate the tension to be put on the grip, establish the working load you require and compare this to the listed approximate breaking strength of the grip to insure that the grip will be strong enough. Refer to page L-84 for safety and working load considerations.

Caution: It is very important to comply with all of the following precautions.
1. Support grips are to be installed by a qualified individual in accordance with all applicable national and local safety, electrical and rigging codes.
2. Ensure that the correct grip is selected for your specific needs.
3. Do not use a support grip for any application other than supporting cable.
4. Thoroughly examine the grip for damage. Do not use a damaged grip.
5. Ensure that the recommended work load of the grip is suitable for the application. Never use grips at their approximated rated breaking strength. A safety factor of 10 is recommended for support grips.
6. Do not alter grips in any way. For example, do not flatten, straighten, bend or otherwise modify eye tubes, hooks, links or strand equalizers.
7. Do not attach any type of hook, clamp or other hardware directly to the stranded bale of a “U” eye support grip. The formed eye tube is the only acceptable means of attachment to external hardware.
8. Always apply 2 bands at 1” and 2” respectively, from the tail end of the mesh to guard against accidental release of the grip. Accidental release can occur if an object contracts and pushes against the tail end of the mesh, thereby expanding and releasing it’s hold.

Support Grip Selection Chart

<table>
<thead>
<tr>
<th>Grip Styles</th>
<th>Application</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed mesh</td>
<td>Standard, permanent support, cable end available.</td>
<td>T-30 to T-33</td>
</tr>
<tr>
<td>Split lace closing</td>
<td>Standard, permanent support, cable end unavailable.</td>
<td>T-30 to T-33</td>
</tr>
<tr>
<td>Split rod closing</td>
<td>Standard, temporary support, cable end unavailable. Tape or band tail end of wire mesh grip after positioning for permanent support.</td>
<td>T-30 to T-33</td>
</tr>
<tr>
<td>Material*</td>
<td>Tin-coated bronze standard or stainless steel by special request.</td>
<td>T-30 to T-42</td>
</tr>
<tr>
<td>Standard support grips</td>
<td>Support vertical runs to 99 ft. loads to 600 lbs.</td>
<td>T-30 to T-33</td>
</tr>
<tr>
<td>Heavy duty grips</td>
<td>Support vertical runs over 100 ft loads over 600 lbs.</td>
<td>T-34, T-35</td>
</tr>
<tr>
<td>Service drop</td>
<td>Light duty to support service entrance cable.</td>
<td>T-36, T-37</td>
</tr>
<tr>
<td>Bus drop</td>
<td>Light duty support, indoors only, on Bus drop cable.</td>
<td>T-38</td>
</tr>
<tr>
<td>Conduit riser</td>
<td>Support cable runs in rigid (Schedule 40) conduit.</td>
<td>T-39 to T-42</td>
</tr>
<tr>
<td>Fiber optic cable support grips</td>
<td>Support fiber optic cable.</td>
<td>T-53</td>
</tr>
</tbody>
</table>

*Most catalog listed support grips are made of tin-coated bronze strand. To order stainless steel support grips, change the first three catalog number digits from 022-XX-XXX to 024-XX-XXX. Consult factory for details.

Eye Styles

Dimensions in Inches (mm)

Caution: It is very important to comply with all of the following precautions.
1. Support grips are to be installed by a qualified individual in accordance with all applicable national and local safety, electrical and rigging codes.
2. Ensure that the correct grip is selected for your specific needs.
3. Do not use a support grip for any application other than supporting cable.
4. Thoroughly examine the grip for damage. Do not use a damaged grip.
5. Ensure that the recommended work load of the grip is suitable for the application. Never use grips at their approximated rated breaking strength. A safety factor of 10 is recommended for support grips.
6. Do not alter grips in any way. For example, do not flatten, straighten, bend or otherwise modify eye tubes, hooks, links or strand equalizers.
7. Do not attach any type of hook, clamp or other hardware directly to the stranded bale of a “U” eye support grip. The formed eye tube is the only acceptable means of attachment to external hardware.
8. Always apply 2 bands at 1” and 2” respectively, from the tail end of the mesh to guard against accidental release of the grip. Accidental release can occur if an object contracts and pushes against the tail end of the mesh, thereby expanding and releasing it’s hold.
Kellems® Grips For Cable Support
Technical Section

Safety And Working Load Factors For Wire Mesh Grips

The broad application of Kellems grips on a wide variety of objects requires that adequate safety factors be used to establish working loads. The approximate breaking strength of a Kellems grip represents an average calculation based on data established from actual direct tension testing done in our engineering laboratories. It is impossible to catalog or guarantee a safety factor suitable for all applications as operating conditions are never the same. The tension, diameter, movement, number of objects gripped, gripping surface, and the attachments used are just some of the factors which vary with each application. These factors, together with the effects of abrasion, corrosion, prior use or abuse and any other variables of a specific application, must be considered by the user and the grip replaced as appropriate. Where the conditions of the application are not well defined or known, or where risk of injury to persons or property is involved, a greater safety factor should be utilized.

Under normal conditions, Kellems’ recommended factor of safety is five for catalog listed pulling grips, and ten for catalog listed support grips. The factory should be consulted for specific application recommendations where strength and holding power are important factors.

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published breaking strengths apply only to new, unused grips, and that such products are properly stored, handled, used, maintained, and inspected by the user at a frequency appropriate for the use and condition of the grip.

Examples

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Safety Factor</th>
<th>Max. Rec. Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
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<td>Pulling Grips</td>
<td>27,200 (120,986)</td>
<td>5</td>
<td>5,440 (24,197)</td>
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<tr>
<td>Support</td>
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<td>10</td>
<td>161 (716)</td>
<td>02202019</td>
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</table>

The maximum recommended working load is the tension to be exerted on the grip in application with a margin of safety to take care of unforeseen and unusual circumstances.

It is the end-user’s decision to determine how much of a safety factor is acceptable for the application.

The metric unit of measure (force) for breaking strength and load is newtons (N). To convert from newtons to the metric unit of weight (kilograms) the conversion factor is 9.808 newtons/kilogram.

Support Grip Materials

<table>
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<tr>
<th>Material</th>
<th>Feature</th>
<th>Grip Type</th>
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<tbody>
<tr>
<td>Tin-coated bronze wire</td>
<td>Corrosion resistant for normal outside areas</td>
<td>Support grips</td>
</tr>
<tr>
<td></td>
<td>Non-magnetic</td>
<td>Service drop grips</td>
</tr>
<tr>
<td></td>
<td>Moderate strength</td>
<td>Conduit riser grips</td>
</tr>
<tr>
<td>Stainless steel wire (302-304)</td>
<td>High strength</td>
<td>Support grips</td>
</tr>
<tr>
<td></td>
<td>Corrosion resistant</td>
<td>Service drop grips</td>
</tr>
<tr>
<td>Galvanized steel wire</td>
<td>Slightly magnetic</td>
<td>Bus drop grips</td>
</tr>
<tr>
<td></td>
<td>Not subject to continuous outside environment</td>
<td>Bus drop grips</td>
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</table>

Approvals

CSA Certifications are indicated on appropriate product catalog pages.

Note: It is always recommended that the tail end of the grip be banded after the installation on the cable to prevent accidental release of the mesh.
Kellems® Grips For Cable Support
Technical Section

Split Support Grip Lace Closing Instructions
Single Weave Grips should be laced with single strand lacing; double weave with double strand. Lacing strands should be the same material as the grip. Kellems supplies the appropriate lacing with each grip.

1. Start the lacing at the lead or anchoring end of the grip. Thread the lacing through the first two loops of the split and pull through until the lacing are centered at this point. Lace as you would your shoe, crossing the lacing before lacing the next two loops.

2. Don’t pull lacing too tight. Leave a space between adjoining loops approximately equal to the width of one diamond of the mesh.

3. Twist the lacing strands tightly together at the tail end of the grip.

4. Wrap the ends of the lacing once or twice tightly around the tail of the grip, twisting the ends together securely. Excess lace can be cut off.

Split Support Grip Rod Closing Instructions
The stainless steel rod is a precise build-in feature which makes threading easy and fast. The strands of the mesh pass around the rod and match up with the strands from the opposite direction. The rod does not touch the cable at any point and therefore cannot cut the cable. Rod Closing Grips are reusable. They may be removed and reused as many times as desired.

1. **Fast to install**
   Wrap the grip around the cable and thread the rod through the pre-formed loops with a corkscrew motion, using the curved end of the rod to engage the loops.

2. **The action required is a steady push and twist simultaneously.** The fingers of the left hand are used to bring the loops together just ahead of the hook on the end of the rod.

3. **To remove, simply pull the rod out.**
Multiple Cable Selection Charts for Cables of Unequal Diameters

How to choose the correct grip size:

1. Find the Grip Circumference Range by measuring the circumference of the bundle of different diameter cables to be gripped (see illustration).
2. Divide the bundle circumference by 3.14 to determine the diameter.
3. Choose a grip offering a range of cable diameters the same as the cable diameter.

For Conduit Riser Grips Only†
For Cables of Equal Diameters

Under “Number of Cables in One Grip,” find diameter of your single cable in vertical column. Read the grip diameter range to the right.

If your diameter is the maximum of the range shown, go to the next larger size for Split Grips, stay with the same size for Closed Grips.

Example: 3 cables, each with .85” (2.16cm) diameter, for a Closed Grip select the 1.50”-1.74” (3.81cm-4.42cm) range, for a Split Grip select the 1.75”-1.99” (4.44cm-5.05cm) range.

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<th>4</th>
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<th>9</th>
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<td>1.10-1.32</td>
<td>.96-1.16</td>
<td>.86-1.03</td>
<td>.77-93</td>
<td>.71-85</td>
<td>.60-.64</td>
<td>2.50-2.99</td>
</tr>
<tr>
<td>(3.89-4.65)</td>
<td>(3.25-3.89)</td>
<td>(2.79-3.35)</td>
<td>(2.44-2.95)</td>
<td>(2.18-2.62)</td>
<td>(1.96-2.36)</td>
<td>(1.80-2.16)</td>
<td>(6.35-7.59)</td>
<td>(8.64-10.13)</td>
</tr>
<tr>
<td>1.83-2.14</td>
<td>1.53-1.79</td>
<td>1.32-1.54</td>
<td>1.16-1.35</td>
<td>1.03-1.20</td>
<td>.93-1.08</td>
<td>.85-99</td>
<td>.77-.81</td>
<td>3.00-3.49</td>
</tr>
<tr>
<td>(4.65-5.44)</td>
<td>(3.89-4.55)</td>
<td>(3.35-3.91)</td>
<td>(2.95-3.43)</td>
<td>(2.62-3.05)</td>
<td>(2.36-2.74)</td>
<td>(2.16-2.51)</td>
<td>(.76-8.84)</td>
<td>(10.16-12.67)</td>
</tr>
<tr>
<td>2.14-2.44</td>
<td>1.79-2.05</td>
<td>1.54-1.76</td>
<td>1.35-1.54</td>
<td>1.20-1.37</td>
<td>1.08-1.24</td>
<td>.99-1.33</td>
<td>.80-.86</td>
<td>3.50-3.99</td>
</tr>
<tr>
<td>(5.44-6.20)</td>
<td>(4.55-5.21)</td>
<td>(3.91-4.47)</td>
<td>(3.43-3.91)</td>
<td>(3.05-3.48)</td>
<td>(2.74-3.15)</td>
<td>(2.51-2.87)</td>
<td>(.88-.19)</td>
<td>(8.89-10.13)</td>
</tr>
<tr>
<td>2.44-2.75</td>
<td>2.05-2.30</td>
<td>1.76-1.98</td>
<td>1.54-1.74</td>
<td>1.37-1.55</td>
<td>1.24-1.39</td>
<td>1.13-1.27</td>
<td>.99-.99</td>
<td>4.00-4.49</td>
</tr>
<tr>
<td>(6.20-6.98)</td>
<td>(5.21-5.84)</td>
<td>(4.47-5.03)</td>
<td>(3.91-4.42)</td>
<td>(3.48-3.94)</td>
<td>(3.15-3.53)</td>
<td>(2.87-3.23)</td>
<td>(.10-11.40)</td>
<td>(10.16-11.40)</td>
</tr>
<tr>
<td>2.75-3.06</td>
<td>2.30-2.56</td>
<td>1.98-2.20</td>
<td>1.74-1.93</td>
<td>1.55-1.72</td>
<td>1.39-1.55</td>
<td>1.27-1.41</td>
<td>.99-.99</td>
<td>4.50-4.99</td>
</tr>
<tr>
<td>(6.98-7.77)</td>
<td>(5.84-6.50)</td>
<td>(5.03-5.59)</td>
<td>(4.42-4.90)</td>
<td>(3.94-4.37)</td>
<td>(3.53-3.94)</td>
<td>(3.23-3.58)</td>
<td>(.11-12.67)</td>
<td>(11.43-12.67)</td>
</tr>
</tbody>
</table>

*This chart is not to be used for Conduit Riser Grips. Refer to the chart for Conduit Riser multiple cable section.

Note: It is always recommended that, when multiple cables are installed in a support grip, the tail end of the grip be banded or tightly taped after installation on the cable bundle.
Kellems® Products for
**Fiber Optic Cable**
*Pulling Tools, Support Devices*

OPTISOK™ grip is a revolutionary tool to pull preterminated fiber optic cables. They will protect the connectors and guide the bundle through the pulling environment.

Pulling Grips are used for outside plant cable. They are easy to install and remove, reusable, and have a slim profile for small build up.

Grips for cable support are easy to install or position. They come in a closed style when the cable end is available, and a split rod style for mid-span installation. Will support the cable’s weight as it hangs in vertical, sloping or horizontal position.
IMPORTANT!
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-54 through T-57.

OPTISOK™ Non-metallic Fiber Optic Pulling Tool For Preterminated, Inside Plant Fiber Optic Cables and Bundles of Twisted Pair

<table>
<thead>
<tr>
<th>Bundle/Size Range (Inches)</th>
<th>Approx. O/A Length (Inches)</th>
<th>Ring O.D. (Inches)</th>
<th>Ring Thickness (Inches)</th>
<th>Maximum Work Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.125”-.562” (.318-1.427)</td>
<td>28” (71.12)</td>
<td>.71” (1.803)</td>
<td>.10” (.254)</td>
<td>30 (133)</td>
<td>CCPS1</td>
</tr>
<tr>
<td>.250”-.750” (.635-1.905)</td>
<td>31” (78.74)</td>
<td>.71” (1.803)</td>
<td>.10” (.254)</td>
<td>40 (178)</td>
<td>CCPS2</td>
</tr>
<tr>
<td>.750”-1.750” (1.905-4.445)</td>
<td>33” (83.82)</td>
<td>1.57” (3.988)</td>
<td>.16” (.406)</td>
<td>50 (222)</td>
<td>CCPS3</td>
</tr>
</tbody>
</table>

Pulling Grip For Loose Tube Fiber Optic Cable, Galvanized Steel

<table>
<thead>
<tr>
<th>Diameter Range (Inches)</th>
<th>Mesh Length (Inches)</th>
<th>Eye Length (Inches)</th>
<th>Eye Diameter (Inches)</th>
<th>Lug Diameter (Inches)</th>
<th>Maximum Breaking Strength Lbs. (N)</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>.312”-.625” (.79-1.59)</td>
<td>22.5” (57.15)</td>
<td>6.3” (16.00)</td>
<td>.20” (.51)</td>
<td>.51” (.130)</td>
<td>3,000 (13,344)</td>
<td>PFOLT312</td>
</tr>
</tbody>
</table>

Patented
**Fiber Optic Cable Grips**

*Double/Single Weave Mesh, Galvanized Steel, for Outside Plant Cable*

---

**F-O Pulling Grip, Flexible Eye**

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength</th>
<th>E Approx Inches</th>
<th>M Approx Inches</th>
<th>D Approx Inches</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10”-.22” (.25-.56)</td>
<td>1,000 (4,448)</td>
<td>5.5” (14)</td>
<td>9” (23)</td>
<td>0.8” (2)</td>
<td>033291000</td>
</tr>
<tr>
<td>.21”-.35” (.53-.89)</td>
<td>1,500 (6,672)</td>
<td>5.5” (14)</td>
<td>14” (36)</td>
<td>0.8” (2)</td>
<td>033291001</td>
</tr>
<tr>
<td>.32”-.48” (.81-.122)</td>
<td>2,200 (9,786)</td>
<td>6.0” (15)</td>
<td>18” (46)</td>
<td>0.9” (2.29)</td>
<td>033291002</td>
</tr>
<tr>
<td>.42”-.61” (1.07-1.55)</td>
<td>2,800 (12,454)</td>
<td>6.0” (15)</td>
<td>21” (53)</td>
<td>0.9” (2.29)</td>
<td>033291003</td>
</tr>
<tr>
<td>.53”-.74” (1.35-1.88)</td>
<td>3,300 (14,678)</td>
<td>6.5” (17)</td>
<td>24” (61)</td>
<td>1.3” (3.30)</td>
<td>033291004</td>
</tr>
<tr>
<td>.64”-.87” (1.63-2.21)</td>
<td>4,700 (20,906)</td>
<td>6.5” (17)</td>
<td>27” (69)</td>
<td>1.3” (3.30)</td>
<td>033291005</td>
</tr>
</tbody>
</table>

**F-O Pulling Grip, Swivel Eye**

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength</th>
<th>E Approx Inches</th>
<th>M Approx Inches</th>
<th>D Approx Inches</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10”-.22” (.25-.56)</td>
<td>1,000 (4,448)</td>
<td>4.0” (10.16)</td>
<td>9” (22.86)</td>
<td>0.9” (2.29)</td>
<td>033291007</td>
</tr>
<tr>
<td>.21”-.35” (.53-.89)</td>
<td>1,500 (6,672)</td>
<td>4.0” (10.16)</td>
<td>14” (35.56)</td>
<td>0.9” (2.29)</td>
<td>033291008</td>
</tr>
<tr>
<td>.32”-.48” (.81-.122)</td>
<td>2,200 (9,786)</td>
<td>4.0” (10.16)</td>
<td>18” (45.72)</td>
<td>0.9” (2.29)</td>
<td>033291009</td>
</tr>
<tr>
<td>.42”-.61” (1.07-1.55)</td>
<td>2,800 (12,454)</td>
<td>4.0” (10.16)</td>
<td>21” (53.34)</td>
<td>0.9” (2.29)</td>
<td>033291010</td>
</tr>
<tr>
<td>.53”-.74” (1.35-1.88)</td>
<td>3,300 (14,678)</td>
<td>4.5” (11.43)</td>
<td>24” (60.96)</td>
<td>1.3” (3.30)</td>
<td>033291011</td>
</tr>
<tr>
<td>.64”-.87” (1.63-2.21)</td>
<td>4,700 (20,906)</td>
<td>4.5” (11.43)</td>
<td>27” (68.58)</td>
<td>1.3” (3.30)</td>
<td>033291012</td>
</tr>
</tbody>
</table>

---

**Dimensions in Inches (mm)**

Dimensions in Inches (mm)

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-54 through T-57.
Fiber Optic Grips Wire Management Products

**Fiber Optic Cable Grips**
Galvanized Steel for Outside Plant Cable

**IMPORTANT!**
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-54 through T-57.

### F-O Pulling Grip, Flexible Eye, Low Profile,
Double/Single Weave Mesh

![Diagram of F-O Pulling Grip, Flexible Eye, Low Profile](image)

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Approx. Inches (cm)</th>
<th>M Approx. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10&quot;-.22 (.25-.56)</td>
<td>900 (4,003)</td>
<td>7.5&quot; (19)</td>
<td>10&quot; (25)</td>
<td>033291193</td>
</tr>
<tr>
<td>.21&quot;-.35 (.53-89)</td>
<td>1,400 (6,227)</td>
<td>7.5&quot; (19)</td>
<td>14&quot; (36)</td>
<td>033291194</td>
</tr>
<tr>
<td>.32&quot;-.48 (.81-1.22)</td>
<td>2,000 (8,896)</td>
<td>8.5&quot; (22)</td>
<td>19&quot; (48)</td>
<td>033291195</td>
</tr>
<tr>
<td>.42&quot;-.61 (1.07-1.55)</td>
<td>2,500 (11,120)</td>
<td>8.5&quot; (22)</td>
<td>21&quot; (53)</td>
<td>033291196</td>
</tr>
<tr>
<td>.53&quot;-.74 (1.35-1.88)</td>
<td>3,000 (13,344)</td>
<td>8.5&quot; (22)</td>
<td>23&quot; (58)</td>
<td>033291197</td>
</tr>
<tr>
<td>.64&quot;-.87 (1.63-2.21)</td>
<td>4,200 (18,682)</td>
<td>8.5&quot; (22)</td>
<td>25&quot; (64)</td>
<td>033291198</td>
</tr>
<tr>
<td>.75&quot;-1.00 (1.90-2.54)</td>
<td>4,200 (18,682)</td>
<td>8.5&quot; (22)</td>
<td>28&quot; (71)</td>
<td>033291199</td>
</tr>
</tbody>
</table>

*E-Eye length M-Mesh length at nominal diameter*

### F-O Pulling Grip, Single Weave Mesh

![Diagram of F-O Pulling Grip, Single Weave Mesh](image)

### F-O Slack Pulling Grip, Split Mesh Rod Closing, Single Weave

![Diagram of F-O Slack Pulling Grip](image)

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Approx. Inches (cm)</th>
<th>M Approx. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.25&quot;-.37 (.63-.94)</td>
<td>300 (1,334)</td>
<td>3&quot; (7.6)</td>
<td>4.7&quot; (12)</td>
<td>033291015</td>
</tr>
<tr>
<td>.38&quot;-.49 (.97-1.24)</td>
<td>800 (3,558)</td>
<td>3&quot; (7.6)</td>
<td>5&quot; (13)</td>
<td>033291016</td>
</tr>
<tr>
<td>.50&quot;-.61 (1.27-1.55)</td>
<td>800 (3,558)</td>
<td>3&quot; (7.6)</td>
<td>7.5&quot; (19)</td>
<td>033291017</td>
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<tr>
<td>.62&quot;-.74 (1.57-1.88)</td>
<td>1,200 (5,338)</td>
<td>3&quot; (7.6)</td>
<td>8&quot; (20)</td>
<td>033291018</td>
</tr>
</tbody>
</table>

*E-Eye length M-Mesh length at nominal diameter*

**Dimensions in Inches (mm)**
**Support Grips**

**Fiber Optic Cable Grips**

*Single Weave, Tin-Coated Bronze*

---

### Single Eye, Closed Mesh Single Weave

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Approx. Inches (cm)</th>
<th>M Approx. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.18&quot;-.25&quot; (.46-.63)</td>
<td>300 (1,334)</td>
<td>3&quot; (7.6)</td>
<td>1.7&quot; (4.3)</td>
<td>022291000</td>
</tr>
<tr>
<td>.23&quot;-.32&quot; (.58-.81)</td>
<td>300 (1,334)</td>
<td>3&quot; (7.6)</td>
<td>2.5&quot; (6.4)</td>
<td>022291001</td>
</tr>
<tr>
<td>.30&quot;-.39&quot; (.76-.99)</td>
<td>300 (1,334)</td>
<td>4&quot; (10)</td>
<td>2.5&quot; (6.4)</td>
<td>022291002</td>
</tr>
<tr>
<td>.37&quot;-.48&quot; (.94-.122)</td>
<td>300 (1,334)</td>
<td>5&quot; (13)</td>
<td>4&quot; (10)</td>
<td>022291003</td>
</tr>
<tr>
<td>.46&quot;-.58&quot; (1.17-.147)</td>
<td>400 (1,779)</td>
<td>6&quot; (15)</td>
<td>4&quot; (10)</td>
<td>022291004</td>
</tr>
<tr>
<td>.56&quot;-.71&quot; (1.42-.180)</td>
<td>600 (2,669)</td>
<td>7&quot; (18)</td>
<td>5.5&quot; (14)</td>
<td>022291005</td>
</tr>
<tr>
<td>.69&quot;-.88&quot; (1.75-.224)</td>
<td>800 (3,558)</td>
<td>8&quot; (20)</td>
<td>6&quot; (15)</td>
<td>022291006</td>
</tr>
</tbody>
</table>

**Dimensions in Inches (mm)**

---

### Single Eye, Split Mesh, Rod Closing Single Weave

<table>
<thead>
<tr>
<th>Cable Diameter Range</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>E Approx. Inches (cm)</th>
<th>M Approx. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.18&quot;-.25&quot; (.46-.63)</td>
<td>300 (1,334)</td>
<td>3&quot; (7.6)</td>
<td>2.5&quot; (6.4)</td>
<td>022291016</td>
</tr>
<tr>
<td>.23&quot;-.32&quot; (.58-.81)</td>
<td>300 (1,334)</td>
<td>3&quot; (7.6)</td>
<td>2.5&quot; (6.4)</td>
<td>022291017</td>
</tr>
<tr>
<td>.30&quot;-.39&quot; (.76-.99)</td>
<td>300 (1,334)</td>
<td>4&quot; (10)</td>
<td>2.5&quot; (6.4)</td>
<td>022291018</td>
</tr>
<tr>
<td>.37&quot;-.48&quot; (.94-.122)</td>
<td>300 (1,334)</td>
<td>5&quot; (13)</td>
<td>4&quot; (10)</td>
<td>022291019</td>
</tr>
<tr>
<td>.46&quot;-.58&quot; (1.17-.147)</td>
<td>400 (1,779)</td>
<td>6&quot; (15)</td>
<td>5&quot; (13)</td>
<td>022291020</td>
</tr>
<tr>
<td>.56&quot;-.71&quot; (1.42-.180)</td>
<td>600 (2,669)</td>
<td>7&quot; (18)</td>
<td>5&quot; (13)</td>
<td>022291021</td>
</tr>
<tr>
<td>.69&quot;-.88&quot; (1.75-.224)</td>
<td>800 (3,558)</td>
<td>8&quot; (20)</td>
<td>6&quot; (15)</td>
<td>022291022</td>
</tr>
</tbody>
</table>

---

**IMPORTANT!**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-54 through T-57.

For permanent support when cable end is available to be installed through grip.

---

**Single Eye, Closed Mesh, Single Weave**

**Single Eye, Split Mesh, Rod Closing, Single Weave**
Kellems® Fiber Optic Cable Products
Technical Section

Kellems has wide experience with grips for the new technology of fiber optic cable. As the industry leader in producing wire mesh grips for the stringent requirements of fiber optic applications, Kellems has developed several series of grips for use with fiber optic communications cable.

These grips include pulling grips with built in swivels, grips with steel ends to protect fragile cable ends, grips with low profiles to pull cables in tight places and the OPTISOK™ an effective tool to place preterminated cables. Also available are grips to support fiber optic cable.

Select the Correct Fiber Optic Grip
Each Kellems grip is designed to work on a specific range of cable diameters.

**Step 1** Determine your cable outside diameter.

**Step 2** Find the grip size that encompasses your cable diameter.

**Step 3** Whenever possible, use a closed mesh that assembles over the cable end. If the cable end is not available, use a split mesh.

**Step 4** Where available, select an eye style that suits your needs.

**Step 5** Estimate the tension to be put on the grip, establish the working load you require and compare this to the listed approximate breaking strength of the grip to insure that the grip will be strong enough.

Safety And Working Load Factors For Wire Mesh Grips
The broad application of Kellems grips on a wide variety of objects requires that adequate safety factors be used to establish working loads. The approximate breaking strength of a Kellems grip represents an average calculation based on data established from actual direct tension testing done in our engineering laboratories.

It is impossible to catalog or guarantee a safety factor suitable for all applications as operating conditions are never the same. The tension, diameter, movement, number of objects gripped, gripping surface, and the attachments used are just some of the factors which vary with each application. These factors, together with the effects of abrasion, corrosion, prior use or abuse and any other variables of a specific application, must be considered by the user and the grip replaced as appropriate. Where the conditions of the application are not well defined or known or where risk of injury to persons or property is involved, a greater safety factor should be utilized.

**Under normal conditions, Kellems’ recommended factor of safety is five for catalog listed pulling grips, and ten for catalog listed support grips. The factory should be consulted for specific application recommendations where strength and holding power are important factors.**

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published breaking strengths apply only to new, unused grips, and that such products are properly stored, handled, used, maintained and inspected by the user at a frequency appropriate for the use and condition of the grip.

For grip applications on materials other than those that the grips have been specifically designed for, consult the factory.

**Examples**

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Safety Factor</th>
<th>Max. Rec. Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulling</td>
<td>2,500 (11,120)</td>
<td>5</td>
<td>500 (2,224)</td>
<td>033291196</td>
</tr>
<tr>
<td>Support</td>
<td>400 (1,779)</td>
<td>10</td>
<td>40 (178)</td>
<td>022291004</td>
</tr>
</tbody>
</table>

The maximum recommended working load is the tension to be exerted on the grip in application with a margin of safety to take care of unforeseen and unusual circumstances.

It is the end-user’s decision to determine how much of a safety factor is acceptable to for the application.

Fiber Optic Grip Materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Features</th>
<th>Product Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized steel wire</td>
<td>High strength</td>
<td>Pulling Grip</td>
</tr>
<tr>
<td></td>
<td>Not subject to continuous outside environment</td>
<td></td>
</tr>
<tr>
<td>Tin-coated bronze wire</td>
<td>Corrosion resistant for normal outside areas</td>
<td>Support grips</td>
</tr>
<tr>
<td></td>
<td>Non-magnetic</td>
<td></td>
</tr>
<tr>
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<tr>
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<td>Superior flex life</td>
<td>OPTISOK™</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Corrosion resistant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate strength</td>
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</tr>
</tbody>
</table>

Approvals

CSA Certification is indicated on appropriate product catalog pages.
Kellems offers a unique and simple to use tool for the installation of preconnectorized fiber optic cables, jumpers and bundles of twisted pair communication cables - the OPTISOK.

The OPTISOK is a highly flexible and expandable nonmetallic sleeve open on one end and with a pulling ring on the other. It will expand to enclose the larger group of fiber optic connectors and grab the cable below the connector bundle by wrapping and taping to provide a gripping tool that will grab the cable(s) below the connectors. The pulling ring can be attached to a pulling line or fish tape and the OPTISOK will act as the pulling tool.

OPTISOK will contain and protect the connector bundle and save time and labor by making the pulling job easier, protecting the connectors from possible damage during the pull and facilitating the passage of the connector bundle through cramped and tight spaces. The OPTISOK can be used to pull cables through plenums, underfloor duct, office partitions, raised access floors and conduits. Three sizes are available for all applications.

How to Select OPTISOK
- Identify connector bundle diameter to be inserted into the OPTISOK.
- Choose appropriate catalog number based on size range.

Installation Information
Step 1. Expand open end of OPTISOK and gently work in fiber optic connector bundle.
Step 2. Still gently, work connector bundle up to the forward section of the Optisok.
Step 3. Starting at approximately 6" (15.2) from tail end of OPTISOK, tightly fold over the Optisok around cables and tape wrapped section 3" (7.62) past tail end onto the bundle.
Step 4. Securely attach pulling line or tape to pulling ring.

Note: To remove OPTISOK carefully unwrap tape and slide out cables and connectors or cut OPTISOK away without damaging connectors or cables.
Pulling Grip for Loose Tube Fiber Optic Cable
Kellems offers a wire mesh specifically designed to pull loose tube fiber optic cable and meet the special pulling requirements recommended by fiber optic cable manufacturers.

Many fiber optic cable manufacturers require special cable preparation prior to pulling where a short section of the outer jacket is stripped off exposing the aramid strength member. This creates two cable diameters, one including the jacket and a second smaller diameter at the strength member. Kellems fiber grip with its special weave will accommodate and securely grab both diameters, at the outside jacket and the internal aramid strength member.

Additionally, this galvanized steel mesh grip has longer leads at the pulling eye to facilitate pulling the cable up through the top, a very low profile lug and eye to slip through tight areas, and short shoulders to protect the cable while maintaining the slim profile.

The grip can be used to pull cable overhead as well as underground through conduit and duct. It easily mates with a swivel and has the necessary strength to securely make pulls.

Application Information
- Prior to pulling cable, follow cable manufacturers’ cable preparation recommendations.
- Never exceed cable manufacturers’ pulling tension recommendations.
- Never use grips to approximate breaking strength safety factor of 5 recommended.

Pulling Grips for Other Outside Plant Cables, Swivel Eye, Flexible Eye, Split Style, Low Profile
Kellems Pulling Grips for fiber optic cable are made of high strength galvanized steel strand. They feature a multiweave mesh, with one-half the mesh length double weave, and the second half single weave. This special weave provides positive holding power while allowing the grip to remain flexible with no damage to the cable jacket. Added features include a steel nose cone which protects the cable end and allows the grip to pass easily through conduit and enclosures. The eye connects easily to a swivel or a pulling line. Several grip sizes are available to accommodate all diameters of fiber optic cable.

Application
Kellems Flexible Eye Pulling Grips for fiber optic cable are used for the installation of fiber optic communication lines either underground, overhead, through conduit or through enclosures. They will fit single cables or cable bundles, are easily installed on the cable, and are reusable.

Benefits
- High strength multiweave mesh for positive holding power.
- Highly flexible mesh to follow the pulling path of the cable.
- Steel nose cone reduces snags and hang-ups and protects cable end.
- Easily installed and removed.
- A dependable, reusable pulling tool.
Support Grips for Fiber Optic Cable
Kellems Support Grips for fiber optic cable are specially designed to hold the cable weight as it hangs in a vertical or horizontal position. Fiber optic cable must be supported and Kellems Grips provide the support easily and economically.
These grips are made of high grade, non-magnetic tin-coated bronze strand. They are offered in universal bale or single eye configurations and are available in either closed mesh (for use where the cable end is available) or in split mesh, rod closing (for installation on existing cable runs or at specific locations).

Split Support Grip Rod Closing Instructions
The stainless steel rod is a precise built-in feature which makes threading easy and fast. The strands of the mesh pass around the rod and match up with the strands from the opposite direction. The rod does not touch the cable at any point and therefore cannot cut the cable. Rod Closing Grips are reusable. They may be removed and reused as many times as desired.

Fast to Install

**Step 1.** Wrap the grip around the cable and thread the rod through the preformed loops with a corkscrew motion, using the curved end of the rod to engage the loops.

**Step 2.** The action required is a steady push and twist simultaneously. The fingers of the left hand are used to bring the loops together just ahead of the hook on the end of the rod.

**Step 3.** To remove, simply pull the rod out.
Kellems® Grips for Strain Relief

Liquidtight, Dust-tight

For Insulated Cables and Flexible, Liquidtight Conduits

Endless weave provides easy cable/flexible conduit installation.

Stainless steel mesh is corrosion resistant. Can be used inside or outside. It eliminates cable or flexible conduit pull out and reduces costly downtime.

Multiweave grip gives cable arc-of-bend control minimizing cable damage and extending cable life. It is the strongest strain relief device available. Meets and exceeds all code requirements. Prevents cable/conduit pull-out.

A liquidtight fitting is available with both cable and conduit fittings. Prevents liquids from running through the fitting into the enclosure.

An NPT and PG threaded body allows easy attachment to either threaded hub or knock-out in box.
Read This Data
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.

Deluxe Cord Grips
Aluminum Fittings, Stainless Steel Mesh, Liquidtight, for Insulated Cables

Straight Male Thread

<table>
<thead>
<tr>
<th>Grip Diameter Range</th>
<th>Thread Size N.P.T. (Inches)</th>
<th>Form Size</th>
<th>Catalog Numbers</th>
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* Cable jacket may have to be stripped to pass through connector body.

Kellems® Deluxe Cord Grips are suitable for use in hazardous locations per Class I Div. 1, Class II Div. 1 & 2, Class III Div. 1 & 2 of the National Electric Code Sections 501-4(b), 502-4(a), 502-4(b), 503-3(a) and 503 3(b).
### 90° Male Thread

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<th>Thread Size N.P.T. (Inches)</th>
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### Female Thread

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### 45° Male Thread

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* Cable jacket may have to be stripped to pass through connector body.
**Read This Data**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.

---

### Straight Male Thread

<table>
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### 90° Male Thread

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*Cable jacket may have to be stripped to pass through connector body.
### Nylon Fittings Non-metallic Mesh, Liquidtight for Insulated Cables

#### Straight Male Thread

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<td>.250&quot;-.312&quot; (.63-79)</td>
<td></td>
<td></td>
<td>CG305NM</td>
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<td>.312&quot;-.375&quot; (.79-95)</td>
<td></td>
<td></td>
<td>CG306NM</td>
</tr>
<tr>
<td>.187&quot;-.250&quot; (.47-63)</td>
<td>1/2&quot;</td>
<td>F2</td>
<td>CG404NM</td>
</tr>
<tr>
<td>.250&quot;-.375&quot; (.63-95)</td>
<td></td>
<td></td>
<td>CG405NM</td>
</tr>
<tr>
<td>.375&quot;-.500&quot; (.95-1.27)</td>
<td></td>
<td></td>
<td>CG408NM</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td>3/4&quot;</td>
<td>F3</td>
<td>CG608NM</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td></td>
<td></td>
<td>CG610NM</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td>1&quot;</td>
<td>F4</td>
<td>CG810NM</td>
</tr>
<tr>
<td>.875&quot;-1.000&quot; (2.22-2.54)</td>
<td></td>
<td></td>
<td>CG814NM</td>
</tr>
</tbody>
</table>

#### 90° Male Thread

<table>
<thead>
<tr>
<th>Grip Diameter Range</th>
<th>Thread Size N.P.T. (Inches)</th>
<th>Form Size</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.250&quot;-.375&quot; (.63-95)</td>
<td>1/2&quot;</td>
<td>F2</td>
<td>CG40690NM</td>
</tr>
<tr>
<td>.375&quot;-.500&quot; (.95-1.27)</td>
<td></td>
<td></td>
<td>CG40890NM</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td></td>
<td></td>
<td>CG60890NM</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td></td>
<td></td>
<td>CG61290NM*</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td>1&quot;</td>
<td>F4</td>
<td>CG81290NM</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td></td>
<td></td>
<td>CG81490NM</td>
</tr>
</tbody>
</table>

*Note: Non-metallic locknuts are available upon request. Refer to page T-83. *Cable jacket may have to be stripped to pass through connector body.

### Stainless Steel Fittings, Stainless Steel Mesh, Liquidtight, for Insulated Cables

#### Straight Male Thread

<table>
<thead>
<tr>
<th>Grip Diameter Range</th>
<th>Thread Size N.P.T. (Inches)</th>
<th>Form Size</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.187&quot;-.250&quot; (.47-63)</td>
<td>3/4&quot;</td>
<td>F2</td>
<td>CG404SST</td>
</tr>
<tr>
<td>.250&quot;-.375&quot; (.63-95)</td>
<td></td>
<td></td>
<td>CG406SST</td>
</tr>
<tr>
<td>.375&quot;-.500&quot; (.95-1.27)</td>
<td></td>
<td></td>
<td>CG408SST</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td></td>
<td></td>
<td>CG410SST</td>
</tr>
<tr>
<td>.375&quot;-.500&quot; (.95-1.27)</td>
<td>1/2&quot;</td>
<td>F3</td>
<td>CG608SST</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td></td>
<td></td>
<td>CG612SST</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td></td>
<td></td>
<td>CG614SST</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td></td>
<td></td>
<td>CG810SST</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td></td>
<td></td>
<td>CG812SST</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td></td>
<td></td>
<td>CG814SST</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td></td>
<td></td>
<td>CG816SST</td>
</tr>
</tbody>
</table>

Read This Data

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.
Strain Relief
PG Threaded Deluxe Cord Grip
Aluminum Fittings, Stainless Steel Mesh, Liquidtight, for Insulated Cables

Read This Data
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.

Straight Male Thread

<table>
<thead>
<tr>
<th>Cord Diameter Range</th>
<th>Hub Size</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td>PG16</td>
<td>074PG16010</td>
</tr>
<tr>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td>PG21</td>
<td>074PG21010</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td>PG21</td>
<td>074PG211247</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td>PG21</td>
<td>074PG211248</td>
</tr>
<tr>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td>PG29</td>
<td>074PG29021</td>
</tr>
<tr>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td>PG29</td>
<td>074PG29023</td>
</tr>
<tr>
<td>.875&quot;-1.000&quot; (2.22-2.54)</td>
<td>PG29</td>
<td>074PG29025</td>
</tr>
<tr>
<td>1.125&quot;-1.250&quot; (2.86-3.17)</td>
<td>PG29</td>
<td>074PG291028*</td>
</tr>
<tr>
<td>1.125&quot;-1.250&quot; (2.86-3.17)</td>
<td>PG36</td>
<td>074PG36028*</td>
</tr>
</tbody>
</table>

*Cable jacket may have to be stripped to pass through connector body.

Specifications

Material
Body Aluminum
Mesh Stainless Steel
Bushing Neoprene

Operating Temperature
–30° F to +225° F
(–34° C to +107° C).

Hazardous Locations
Suitable for use in hazardous locations per Class 1, Div. 2, Class II, Div. 1 & 2, Class III, Div. 1 & 2.

Flammability
Mesh grip Rated UL 94HB.
Fitting Rated UL 94V-2.

Agency Approvals
Underwriters Laboratories Inc. 898D, 899D.

Wet Locations
The products are suitable for use in wet locations when a listed sealing ring is used between box and fitting.
Adapters for Multi-Pin Connectors

Kellems Adapters are devices formatting AN-MS connectors and other multi-pin connectors to Kellems grips with NPT threaded fittings. They are made of aluminum with internal threads and replace the connector cord clamp. These adapters permit the installation of Kellems Grips, to prevent cable or conduit pull-out and control arc-of-bend.

Applications

Adapters allow the installation of Kellems® Grips on multi-pin connectors at electrical consoles, mobile equipment, control switches, assembly equipment and testing machines.

Benefits

- Easy installation.
- Allows the use of Kellems grips.
- Extends connector and cable life.

Liquidtight Adapters

<table>
<thead>
<tr>
<th>AN-MS Connector Size**</th>
<th>Adapter Thread Size A in.</th>
<th>N.P.T. Thread Size B in.</th>
<th>Catalog Numbers</th>
<th>Cable Diameter Range Inches (cm)</th>
<th>Catalog Numbers</th>
<th>Cable Diameter Range Inches (cm)</th>
<th>Catalog Numbers</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8S, 10S 3057-3</td>
<td>1/2&quot; x 28</td>
<td>.250&quot;-.312&quot; (.63-.79)</td>
<td>091041000</td>
<td>250-.312 (63-79)</td>
<td>07401000</td>
<td>24-.32 (61-81)</td>
<td>073031200</td>
<td>-</td>
</tr>
<tr>
<td>10S, 12, 12S 3057-4</td>
<td>3/4&quot; x 24</td>
<td>.312&quot;-.375&quot; (.79-95)</td>
<td>091041001</td>
<td>312-.375 (79-95)</td>
<td>07401002</td>
<td>32-.43 (81-109)</td>
<td>073031201</td>
<td>074093512</td>
</tr>
<tr>
<td>14, 14S 3057-6</td>
<td>3/4&quot; x 20</td>
<td>.375&quot;-.437&quot; (95-1.11)</td>
<td>091041002</td>
<td>.375-.437 (95-1.11)</td>
<td>07401003</td>
<td>.43-.54 (1.09-1.37)</td>
<td>073031202</td>
<td>-</td>
</tr>
<tr>
<td>16, 16S 3057-8</td>
<td>1&quot; x 20</td>
<td>.500&quot;-.625&quot; (1.27-1.59)</td>
<td>091041003</td>
<td>.500-.625 (1.27-1.59)</td>
<td>07401004</td>
<td>.54-.74 (1.37-1.85)</td>
<td>073031203</td>
<td>074093513</td>
</tr>
<tr>
<td>18 3057-10</td>
<td>11/16&quot; x 18</td>
<td>.625&quot;-.750&quot; (1.59-1.90)</td>
<td>091041004</td>
<td>.625-.750 (1.59-1.90)</td>
<td>07401005</td>
<td>.750-.875 (1.90-2.22)</td>
<td>073031204</td>
<td>074093514</td>
</tr>
<tr>
<td>16, 16S 3057-12</td>
<td>1&quot; x 20</td>
<td>.750&quot;-.875&quot; (1.90-2.22)</td>
<td>091041005</td>
<td>.750-.875 (1.90-2.22)</td>
<td>07401006</td>
<td>.875-.1000 (2.22-2.54)</td>
<td>073031205</td>
<td>074093515</td>
</tr>
<tr>
<td>20, 22 3057-16</td>
<td>11/16&quot; x 18</td>
<td>.875-.1000 (2.22-2.54)</td>
<td>091041006</td>
<td>.875-.1000 (2.22-2.54)</td>
<td>07401007</td>
<td>.97-.125 (2.46-3.17)</td>
<td>073031206</td>
<td>074093516</td>
</tr>
<tr>
<td>24, 28 3057-17</td>
<td>11/16&quot; x 18</td>
<td>1.125-.157 (2.86-3.17)</td>
<td>091041007</td>
<td>1.125-.157 (2.86-3.17)</td>
<td>07401008</td>
<td>1.250-.175 (3.17-3.49)</td>
<td>073031207</td>
<td>074093517</td>
</tr>
<tr>
<td>32 3057-20</td>
<td>11/16&quot; x 18</td>
<td>1.250-.175 (3.17-3.49)</td>
<td>091041008</td>
<td>1.250-.175 (3.17-3.49)</td>
<td>07401009</td>
<td>1.375-.200 (3.49-5.08)</td>
<td>073031208</td>
<td>-</td>
</tr>
<tr>
<td>36 3057-24</td>
<td>2&quot; x 18</td>
<td>1.375-.200 (3.49-5.08)</td>
<td>091041011</td>
<td>1.375-.200 (3.49-5.08)</td>
<td>07401010</td>
<td>1.500-.225 (3.81-5.72)</td>
<td>073031209</td>
<td>074093518</td>
</tr>
<tr>
<td>36 3057-28</td>
<td>21/4&quot; x 16</td>
<td>1.500-.225 (3.81-5.72)</td>
<td>091041012</td>
<td>1.500-.225 (3.81-5.72)</td>
<td>07401011</td>
<td>1.625-.250 (4.12-6.35)</td>
<td>073031210</td>
<td>-</td>
</tr>
<tr>
<td>40 3057-30</td>
<td>21/4&quot; x 16</td>
<td>1.625-.250 (4.12-6.35)</td>
<td>091041013</td>
<td>1.625-.250 (4.12-6.35)</td>
<td>07401012</td>
<td>1.750-.300 (4.45-7.62)</td>
<td>073031211</td>
<td>074093519</td>
</tr>
</tbody>
</table>

* Cable jacket may have to be stripped to pass through connector body.
** No. stamped on connector shell.
*** No. stamped on clamp shell.
Read This Data
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.

Application
Kellem's® I-Grips will fit 2 wire, 3 wire, 4 wire and 5 wire Hubbell Insulgrip® plugs and connector bodies. The eye tabs fit under the nylon cord clamp and the screws slide through the eyelets, securing the grip in place.

These grips are for indoor use only.

Benefits
- Easily attached to Insulgrip plugs and connector bodies.
- Controls cable arc-of-bend.
- Provides heavy-duty strain relief.
- Fits all sizes.

I-Grips

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm)</th>
<th>E Inches (cm)</th>
<th>M Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.32&quot;-.43&quot; (.81-1.09)</td>
<td>1.25&quot; (3.17)</td>
<td>4&quot; (10.16)</td>
<td>07310001</td>
</tr>
<tr>
<td>.43&quot;-.56&quot; (1.09-1.42)</td>
<td>1.25&quot; (3.17)</td>
<td>4.75&quot; (12.06)</td>
<td>07310002</td>
</tr>
<tr>
<td>.56&quot;-.73&quot; (1.42-1.85)</td>
<td>1.50&quot; (3.81)</td>
<td>6&quot; (15.24)</td>
<td>07310003</td>
</tr>
<tr>
<td>.73&quot;-.85&quot; (1.85-2.16)</td>
<td>1.50&quot; (3.81)</td>
<td>6.5&quot; (16.51)</td>
<td>07310004</td>
</tr>
<tr>
<td>.85&quot;-1.00&quot; (2.16-2.54)</td>
<td>1.50&quot; (3.81)</td>
<td>8&quot; (20.32)</td>
<td>07310005</td>
</tr>
<tr>
<td>1.00&quot;-1.25&quot; (2.54-3.17)</td>
<td>1.50&quot; (3.81)</td>
<td>10&quot; (25.40)</td>
<td>07310006</td>
</tr>
</tbody>
</table>

E: Eye length  M: Mesh length at nominal diameter  Eyelet hole diameter .203 (.52)

Note: I-Grips should not be used on Insulgrip devices when "Seal-Tite®" weatherproof covers are to be installed.
Strain Relief
Dusttight Strain Relief Grips
Aluminum Fittings, Galvanized Steel Mesh, for Insulated Cables

Non-Insulated Wide Range Strain Relief

<table>
<thead>
<tr>
<th>Cable Diameter Range Inches (cm.)</th>
<th>Thread Size N.P.T. (Inches)</th>
<th>Mesh Length @ Nom. Dia. Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.24”-.32” (.61-.81)</td>
<td>1/8”</td>
<td>3 1/4” (8.25)</td>
<td>073031200</td>
</tr>
<tr>
<td>.32”-.34” (.81-1.09)</td>
<td>5/32”</td>
<td>5 1/4” (12.95)</td>
<td>073031201</td>
</tr>
<tr>
<td>.34”-.54” (1.09-1.37)</td>
<td>3/16”</td>
<td>4 1/4” (10.86)</td>
<td>073031202</td>
</tr>
<tr>
<td>.54”-.73” (1.37-1.85)</td>
<td>3/32”</td>
<td>5 3/4” (14.73)</td>
<td>073031203</td>
</tr>
<tr>
<td>.73”-.97” (1.85-2.46)</td>
<td>3/16”</td>
<td>7” (17.78)</td>
<td>073031204</td>
</tr>
<tr>
<td>.97”-1.25” (2.46-3.17)</td>
<td>7/32”</td>
<td>9” (22.86)</td>
<td>073031205</td>
</tr>
<tr>
<td>.73”-.97” (1.85-2.46)</td>
<td>PG29</td>
<td>7” (17.78)</td>
<td>073PG291204</td>
</tr>
</tbody>
</table>

Insulated Wide Range Strain Relief with Insulating Bushing

<table>
<thead>
<tr>
<th>Cable Diameter Range In. (cm.)</th>
<th>Thread Size Inches</th>
<th>Mesh Length @ Nom. Dia. Inches (cm)</th>
<th>Dim. A In.(cm)</th>
<th>Min. Space Between Grips B In.(cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.24”-.32” (.61-.81)</td>
<td>1/8” N.P.S.</td>
<td>3 1/4” (8.25)</td>
<td>1” (2.54)</td>
<td>1 1/4” (3.17)</td>
<td>073031206</td>
</tr>
<tr>
<td>.32”-.34” (.81-1.09)</td>
<td>5/32” N.P.S.</td>
<td>5 1/4” (12.95)</td>
<td>1” (2.54)</td>
<td>1 1/4” (3.17)</td>
<td>073031207</td>
</tr>
<tr>
<td>.34”-.54” (1.09-1.37)</td>
<td>3/16” N.P.S.</td>
<td>4 1/4” (10.86)</td>
<td>1” (2.54)</td>
<td>1 1/4” (3.17)</td>
<td>073031208</td>
</tr>
<tr>
<td>.54”-.73” (1.37-1.85)</td>
<td>3/32” N.P.S.</td>
<td>5 3/4” (14.73)</td>
<td>1” (2.54)</td>
<td>1 1/2” (3.81)</td>
<td>073031209</td>
</tr>
<tr>
<td>.73”-.97” (1.85-2.46)</td>
<td>3/16” N.P.S.</td>
<td>7” (17.78)</td>
<td>1 3/16” (3.02)</td>
<td>2 1/4” (5.71)</td>
<td>073031210</td>
</tr>
<tr>
<td>.97”-1.25” (2.46-3.17)</td>
<td>3/32” N.P.S.</td>
<td>9” (22.86)</td>
<td>2 1/4” (5.71)</td>
<td>2 1/2” (6.35)</td>
<td>073031211</td>
</tr>
<tr>
<td>1.25”-1.50” (3.17-3.81)</td>
<td>1/8” N.P.T.</td>
<td>11 3/4” (29.84)</td>
<td>3/16” (3.02)</td>
<td>6 1/2” (16.51)</td>
<td>073031212</td>
</tr>
<tr>
<td>1.50”-1.70” (3.81-4.32)</td>
<td>3/16” N.P.T.</td>
<td>13 3/4” (34.92)</td>
<td>3/16” (3.02)</td>
<td>8 1/4” (21.08)</td>
<td>073031213</td>
</tr>
<tr>
<td>1.70”-2.00” (4.32-5.08)</td>
<td>1/8” N.P.T.</td>
<td>13 1/8” (34.29)</td>
<td>3/16” (3.02)</td>
<td>9 1/2” (24.13)</td>
<td>073031214</td>
</tr>
<tr>
<td>2.00”-2.45” (5.08-6.22)</td>
<td>1/16” N.P.T.</td>
<td>13 1/2” (34.92)</td>
<td>3/16” (3.02)</td>
<td>9 1/2” (24.13)</td>
<td>073031215</td>
</tr>
</tbody>
</table>

Dimensions in Inches (mm)

Read This Data
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-74.
Kelles Strain Relief Grips are designed to prevent tension from being transmitted to joints and terminals on electrical cord, cable and conduit. In most applications, a Kellem grip for strain relief is stronger than the cable itself and gives much greater security than the use of a fitting alone. Kellem Grips for strain relief help make electrical systems safer, and save money by minimizing downtime from costly electrical failure due to cable pull-out. Kellem Grips also aid in compliance with the National Electric Code's terminal tension protection requirements.

### Strain Relief System Selection Chart

<table>
<thead>
<tr>
<th>Grip Type</th>
<th>Application</th>
<th>Features</th>
<th>Cord or Conduit Range Inches (cm)</th>
<th>Type Fitting or Attachment</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deluxe Cord Aluminum</td>
<td>Outdoors or indoors where subjected to moisture or splash. Examples are crane and hoist pendant drop stations, hand tools, pumps and processing equipment.</td>
<td>Aluminum fittings, stainless steel mesh, neoprene oil-and-watertight bushing. Double-single weave.</td>
<td>.187&quot;-3.250&quot; (.47-8.25)</td>
<td>PG, N.P.T. aluminum, male straight, 45° male, 90° male, female straight. Thread sizes 1/8&quot;-3&quot;.</td>
<td>T-60, T-61, T-64</td>
</tr>
<tr>
<td>Deluxe Cord SteelGrip</td>
<td>Outdoors or indoors where subjected to moisture or splash. Examples are marine and food processing equipment.</td>
<td>Nylon fitting, stainless steel mesh, double-single weave, neoprene oil-and-watertight bushing.</td>
<td>.187&quot;-1.125&quot; (.47-2.86)</td>
<td>N.P.T. nylon, male straight, 90° male. Thread sizes 1/2&quot;-1&quot;.</td>
<td>T-62</td>
</tr>
<tr>
<td>Deluxe Cord Non-metallic</td>
<td>Indoor or outdoors. Provides liquidtight seal, where exposed to moisture. Excellent for oil refining and chemical processing.</td>
<td>Non-metallic grip is corrosion resistant, nonconductive and provides superior gripping and flexing benefits. Neoprene liquidtight bushing. Nylon fitting.</td>
<td>.187&quot;-1.000&quot; (.47-2.54)</td>
<td>N.P.T. nylon, straight male, thread sizes 3/8&quot;-1&quot; 90° male, thread sizes 1/2&quot;-1&quot;.</td>
<td>T-63</td>
</tr>
<tr>
<td>Deluxe Cord Stainless</td>
<td>Indoor or outdoor use where exposed to moisture. Very strong for heavy abuse areas such as drilling platforms, steel mills and mines.</td>
<td>Stainless steel fitting and grip for strength. Neoprene liquidtight bushing. Double/single weave grip.</td>
<td>.187&quot;-1.000&quot; (.47-2.54)</td>
<td>Straight male Only with N.P.T. Thread sizes 1/2&quot;-1&quot;.</td>
<td>T-63</td>
</tr>
<tr>
<td>Wide Range Strain Relief</td>
<td>Indoor use only for wiring of electrical enclosures, machine tools, portable power tools, bus drop cable systems.</td>
<td>Neoprene gasket–seals out cips, dirt, dust. One piece design with galvanized steel mesh. Insulating bushing available. Zinc-plated steel locknut.</td>
<td>.240&quot;-2.450&quot; (.61-6.22)</td>
<td>Straight male N.P.S. or N.P.T.</td>
<td>T-67</td>
</tr>
<tr>
<td>Non-metallic Flexible</td>
<td>Wiring or machine tools, electrical enclosures, motors and systems where conduit is subject to vibration and strain.</td>
<td>Stainless steel mesh, liquidtight fittings with “O” ring and locknut.</td>
<td>.375&quot;-2.008&quot; trade size male</td>
<td>N.P.T. steel, Hubbell fittings, straight male, 90°. Thread sizes 1/2&quot;-2&quot;.</td>
<td>T-100</td>
</tr>
<tr>
<td>Liquidtight, Flexible, Metal</td>
<td>Wiring of machine tools, electrical enclosures, motors and systems where metallic liquidtight flexible conduit is subjected to vibration, flexure, motion or strain.</td>
<td>Stainless steel mesh, liquidtight fittings. Sealing “O” rings (optional). Choice of fittings.</td>
<td>.375&quot;-4.000&quot; trade sizes</td>
<td>N.P.T. 1/2&quot;-4&quot;, Hubbell fittings, Male straight, 45° male, 90° male. female straight.</td>
<td>T-101</td>
</tr>
</tbody>
</table>

### Select the Correct Grip for Strain Relief

Kelles Grips for strain relief are designed to fit on electrical cord, cable or flexible conduit.

**Step 1** Refer to the chart below to determine the grip style best suited for your application.

**Step 2** Determine your cable outside diameter or conduit size.

**Step 3** Locate environment—indoors or outdoors.

**Step 4** Decide if a liquidtight seal is required.

**Step 5** Select N.P.T. size and fitting style.
Safety And Working Load Factors For Wire Mesh Grips

The broad application of Kellems grips on a wide variety of objects requires that adequate safety factors be used to establish working loads. The approximate breaking strength of a Kellems grip represents an average calculation based on data established from actual direct tension testing done in our engineering laboratories.

It is impossible to catalog or guarantee a safety factor suitable for all applications as operating conditions are never the same. The tension, diameter, movement, number of objects gripped, gripping surface, and the attachments used are just some of the factors which vary with each application. These factors, together with the effects of abrasion, corrosion, prior use or abuse and any other variables of a specific application, must be considered by the user and the grip replaced as appropriate. Where the conditions of the application are not well defined or known or where risk of injury to persons or property is involved, a greater safety factor should be utilized. Should our opinion be needed, call Technical Services.

Under normal conditions, Kellems’ recommended factor of safety is five for catalog listed pulling grips, and ten for catalog listed support grips. Technical Services should be consulted for specific application recommendations where strength and holding power are important factors.

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published breaking strengths apply only to new, unused grips, and that such products are properly stored, handled, used, maintained and inspected by the user at a frequency appropriate for the use and condition of the grip.

For grip applications on materials other than those that the grips have been specifically designed for, consult Technical Services.

Examples

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Safety Factor</th>
<th>Max. Rec. Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Drop</td>
<td>1,000 (4,448)</td>
<td>10</td>
<td>100 (445)</td>
<td>073041279</td>
</tr>
</tbody>
</table>

The maximum recommended working load then is the tension to be exerted on the grip in application with a margin of safety to take care of unforeseen and unusual circumstances.

It is the end-user’s decision to determine how much of a safety factor is acceptable to him.

Wire Mesh Grip Materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Features</th>
<th>Product Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized steel wire</td>
<td>High strength</td>
<td>Strain relief grips</td>
</tr>
<tr>
<td>Stainless steel wire (302-304)</td>
<td>Not subject to continuous outside environment</td>
<td>I-Grips</td>
</tr>
<tr>
<td>Non-metallic strand</td>
<td>Superior flex life</td>
<td>Non-metallic deluxe cord grips</td>
</tr>
<tr>
<td></td>
<td>Non-conductive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosion resistant</td>
<td>Liquidtight, flexible, metal conduit grips</td>
</tr>
<tr>
<td></td>
<td>Slightly magnetic</td>
<td>UL type A conduit grips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hose containment grips</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Kellems® Grips for Strain Relief
Technical Section

Operating Temperatures

<table>
<thead>
<tr>
<th>Material</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>–40°F to +300°F (–40°C to +149°C).</td>
</tr>
<tr>
<td>Nylon</td>
<td>–40°F to +225°F (–40°C to +107°C).</td>
</tr>
<tr>
<td>Stainless Steel*</td>
<td>–60°F to +1000°F (–51°C to +537°C).</td>
</tr>
<tr>
<td>Neoprene (bushings)</td>
<td>–30°F to +240°F (–34°C to +115°C).</td>
</tr>
</tbody>
</table>

*Due to the limiting factors of nylon and neoprene, any complete Deluxe Cord Grip, Form 1-5 will continuously perform in the range of –30°F to +225°F (–34°C to +107°C).

Hazardous Locations

The product categories listed to the right are suitable for use in hazardous locations per Class I, Div. 2, Class II, Div. 1 & 2, Class III, Div. 1 & 2.

<table>
<thead>
<tr>
<th>Product Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deluxe cord grip, aluminum fitting; Deluxe cord grip, nylon fitting; Deluxe cord grip, non-metallic; Sealite conduit grips; Dustight strain relief grips.</td>
</tr>
</tbody>
</table>

Flammability

Non-metallic deluxe cord grips will not support combustion. Listed below are the ratings.

<table>
<thead>
<tr>
<th>Component</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesh grip</td>
<td>UL 94HB.</td>
</tr>
<tr>
<td>Fitting</td>
<td>UL 94V-2.</td>
</tr>
</tbody>
</table>

Approvals

UL Listing and CSA Certification are indicated on appropriate product catalog pages.

<table>
<thead>
<tr>
<th>Agency</th>
<th>UL Control Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underwriters Laboratories Inc.</td>
<td>898D, 899D</td>
</tr>
</tbody>
</table>

Wet Locations

The products noted to the right are suitable for use in wet locations when a listed sealing ring is used between box and fitting.

<table>
<thead>
<tr>
<th>Product Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deluxe cord grip, aluminum fitting; Deluxe sealing ring cord grip; Deluxe cord grip, non-metallic; Sealite conduit grips; Hubbell non-metallic conduit grips; Cord connectors; Hubbell Juniors; PolyTuff® connectors; Hubbell sealite conduit connectors.</td>
</tr>
</tbody>
</table>
Kellems® Grips for Strain Relief
Technical Section

Form Size Definition
The term “Form Size” refers to the physical mass or overall dimensions of a cord connector. Form 1 is the smallest size, Form 8 is the largest size.

Knockout Holes

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Knockout Hole Recommended Min. to Max. Inches (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>.540&quot; to .570&quot; (1.37-1.45)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>.671&quot; to .701&quot; (1.70-1.78)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>.859&quot; to .906&quot; (2.18-2.30)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>1.094&quot; to 1.141&quot; (2.78-2.90)</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1.359&quot; to 1.406&quot; (3.45-3.57)</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>1.719&quot; to 1.766&quot; (4.37-4.49)</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>1.969&quot; to 2.016&quot; (5.00-5.12)</td>
</tr>
<tr>
<td>2&quot;</td>
<td>2.453&quot; to 2.500&quot; (6.23-6.35)</td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>2.953&quot; to 3.000&quot; (7.50-7.62)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3.578&quot; to 3.625&quot; (9.09-9.21)</td>
</tr>
</tbody>
</table>

Product Data
Deluxe Cord Grips, Liquidtight for Insulated Cables
Deluxe Cord Grips helps to alleviate pull tension on terminals, control cable arc-of-bend, prevent cord pull-out, and provide a liquidtight seal. They are offered with either aluminum, stainless steel or nylon fittings in a variety of configurations and N.P.T. thread sizes. Additionally, a completely non-metallic product is offered on page T-63.

Application
Deluxe Cord Grips are used indoors or outdoors to help prevent cord pull-out, and where cables are subjected to moisture, splash or submersion. Specific uses are: wiring enclosures, pendant stations, hand tools, construction, processing and material handling equipment, pumps, motors and machine tools.

Benefits
- Helps to prevent cable pull-out.
- Controls cable arc-of-bend.
- Provides a liquidtight seal.
- Corrosion resistant stainless steel mesh with aluminum collar.
### Deluxe Cord Grips Fitting Dimensions

#### Straight Hubbell Connectors

<table>
<thead>
<tr>
<th>F N.P.T.</th>
<th>A C D E F</th>
<th>A B C D E</th>
<th>A B C D E</th>
<th>A B C D E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>Form</td>
<td>Diameter</td>
<td>Across Corners</td>
<td>Across Flats</td>
</tr>
<tr>
<td>1/4&quot;-18</td>
<td>1</td>
<td>88°</td>
<td>90° (2.24)</td>
<td>46° (1.17)</td>
</tr>
<tr>
<td>1/2&quot;-14</td>
<td>1</td>
<td>88°</td>
<td>90° (2.24)</td>
<td>46° (1.17)</td>
</tr>
<tr>
<td>1/2&quot;-14</td>
<td>2</td>
<td>113°</td>
<td>110° (2.79)</td>
<td>55° (1.40)</td>
</tr>
<tr>
<td>1/2&quot;-14</td>
<td>3</td>
<td>138°</td>
<td>150° (3.81)</td>
<td>55° (1.40)</td>
</tr>
<tr>
<td>3/4&quot;-14</td>
<td>2</td>
<td>113°</td>
<td>110° (2.79)</td>
<td>55° (1.40)</td>
</tr>
<tr>
<td>3/4&quot;-14</td>
<td>3</td>
<td>138°</td>
<td>150° (3.81)</td>
<td>55° (1.40)</td>
</tr>
<tr>
<td>1&quot;-111/2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&quot;-111/2</td>
<td>4</td>
<td>1.75&quot;</td>
<td>1.60&quot; (4.06)</td>
<td>.71&quot; (1.80)</td>
</tr>
<tr>
<td>1&quot;-111/2</td>
<td>5</td>
<td>2.31&quot;</td>
<td>2.10&quot; (5.33)</td>
<td>.66&quot; (1.72)</td>
</tr>
<tr>
<td>1-1/4&quot;-111/2</td>
<td>5</td>
<td>2.31&quot;</td>
<td>2.10&quot; (5.33)</td>
<td>.66&quot; (1.72)</td>
</tr>
<tr>
<td>1-1/4&quot;-111/2</td>
<td>5</td>
<td>2.31&quot;</td>
<td>2.10&quot; (5.33)</td>
<td>.66&quot; (1.72)</td>
</tr>
<tr>
<td>1-1/2&quot;-111/2</td>
<td>6</td>
<td>3.00&quot;</td>
<td>2.20&quot; (5.59)</td>
<td>.75&quot; (1.90)</td>
</tr>
<tr>
<td>1-1/2&quot;-111/2</td>
<td>6</td>
<td>3.00&quot;</td>
<td>2.20&quot; (5.59)</td>
<td>.75&quot; (1.90)</td>
</tr>
<tr>
<td>2&quot;-111/2</td>
<td>6</td>
<td>3.85&quot;</td>
<td>2.70&quot; (6.86)</td>
<td>.88&quot; (2.24)</td>
</tr>
<tr>
<td>2&quot;-111/2</td>
<td>7</td>
<td>3.85&quot;</td>
<td>2.70&quot; (6.86)</td>
<td>.88&quot; (2.24)</td>
</tr>
<tr>
<td>2-1/2&quot;-8</td>
<td>7</td>
<td>3.85&quot;</td>
<td>2.70&quot; (6.86)</td>
<td>1.30&quot; (3.30)</td>
</tr>
<tr>
<td>3&quot;-8</td>
<td>7</td>
<td>3.85&quot;</td>
<td>2.70&quot; (6.86)</td>
<td>1.30&quot; (3.30)</td>
</tr>
<tr>
<td>3&quot;-8</td>
<td>8</td>
<td>4.50&quot;</td>
<td>2.70&quot; (6.86)</td>
<td>1.38&quot; (3.51)</td>
</tr>
</tbody>
</table>
### Deluxe Cord Grips Fitting Dimensions

#### 45° Hubbell Connectors

<table>
<thead>
<tr>
<th>N.P.T.</th>
<th>Form</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E Across Corners</th>
<th>Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;-14</td>
<td>2</td>
<td>2.00&quot;</td>
<td>1.90&quot;</td>
<td>.550&quot;</td>
<td>.560&quot;</td>
<td>1.270&quot;</td>
<td>1.110&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5.08)</td>
<td>(4.83)</td>
<td>(1.40)</td>
<td>(1.42)</td>
<td>(3.23)</td>
<td>(2.79)</td>
</tr>
<tr>
<td>3/8&quot;-14</td>
<td>3</td>
<td>2.30&quot;</td>
<td>2.50&quot;</td>
<td>.650&quot;</td>
<td>.750&quot;</td>
<td>1.480&quot;</td>
<td>1.281&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5.84)</td>
<td>(6.35)</td>
<td>(1.42)</td>
<td>(1.90)</td>
<td>(3.76)</td>
<td>(3.25)</td>
</tr>
<tr>
<td>1&quot;-11/2</td>
<td>4</td>
<td>2.60&quot;</td>
<td>2.80&quot;</td>
<td>.700&quot;</td>
<td>1.000&quot;</td>
<td>1.690&quot;</td>
<td>1.500&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6.60)</td>
<td>(7.11)</td>
<td>(1.78)</td>
<td>(2.54)</td>
<td>(4.29)</td>
<td>(3.81)</td>
</tr>
<tr>
<td>1 1/4&quot;-11</td>
<td>5</td>
<td>3.90&quot;</td>
<td>3.90&quot;</td>
<td>.740&quot;</td>
<td>1.250&quot;</td>
<td>2.45&quot;</td>
<td>2.125&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(9.91)</td>
<td>(9.91)</td>
<td>(1.88)</td>
<td>(3.17)</td>
<td>(6.22)</td>
<td>(5.40)</td>
</tr>
</tbody>
</table>

*Dimensions shown are approximate and are subject to change without notice.*
Kellems® Grips for Strain Relief
Technical Section

Deluxe Cord Grips Fitting Dimensions
Female Hubbell Connectors

<table>
<thead>
<tr>
<th>Aluminum Inches (cm)</th>
<th>F</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.P.T. Form</td>
<td>Dia. Ref</td>
<td>Throat Dia.</td>
<td>Across Corners</td>
<td>Across Flats</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/16&quot;-18</td>
<td>.88&quot; (2.24)</td>
<td>.560&quot; (.142)</td>
<td>.94&quot; (2.39)</td>
<td>.81&quot; (2.06)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2&quot;-14</td>
<td>1.13&quot; (2.87)</td>
<td>.560&quot; (.142)</td>
<td>1.15&quot; (2.92)</td>
<td>1.00&quot; (2.54)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/8&quot;-14</td>
<td>1.13&quot; (2.87)</td>
<td>.750&quot; (.190)</td>
<td>1.44&quot; (3.66)</td>
<td>1.25&quot; (3.17)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1&quot;-11-1/2</td>
<td>1.75&quot; (4.44)</td>
<td>.880&quot; (.224)</td>
<td>1.88&quot; (4.78)</td>
<td>1.63&quot; (4.14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1/4&quot;-11-1/2</td>
<td>2.31&quot; (5.87)</td>
<td>.950&quot; (.241)</td>
<td>2.64&quot; (6.71)</td>
<td>2.29&quot; (5.82)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1/2&quot;-11-1/2</td>
<td>2.31&quot; (5.87)</td>
<td>.950&quot; (.241)</td>
<td>2.64&quot; (6.71)</td>
<td>2.29&quot; (5.82)</td>
<td></td>
</tr>
</tbody>
</table>

Product Data
Dust Tight Strain Relief Grips for Insulated Cables
Kellems Strain Relief Grips connect flexible cord or bus drop cable to electrical enclosures. For indoor use only, they are available with either insulated or non-insulated aluminum fittings, and feature single weave, galvanized steel mesh grips with patented wide range mesh construction. They come with a locknut and a neoprene gasket that provides a dust tight seal.

Application
Used to connect electrical cable to power boxes, cabinets, panel boards, power centers, machine tools and with bus drop systems.

Benefits
• Helps prevent cord or cable pull-out.  • Patented mesh construction.
• Provides a dust tight seal.  • One piece design.
• Easy installation.

I-Grips for Insulated Cables
Kellems I-Grips are made of high strength, plastic coated galvanized steel strand. They are offered in six sizes to fit all cable diameters used with Hubbell Insulgrip® Kellems I-Grips will control cable arc-of-bend and reduce high pull tensions from being transmitted to the wiring terminals.

Application
Kellems I-Grips will fit 2 wire, 3 wire, 4 wire and 5 wire Hubbell Insulgrip plugs and connector bodies. The eye tabs fit under the nylon cord clamp and the screws slide through the eyelets, securing the grip in place.

I-Grips can be used on any Insulgrip cord set which requires cable, arc-of-bend control or heavy duty strain relief. Cord sets used at indoor construction sites or for plant maintenance jobs are examples. These grips are for indoor use only.

Benefits
• Easily attached to Insulgrip plugs and connector bodies.  • Provides heavy duty strain relief.
• Controls cable arc-of-bend.  • Fits all sizes.

Note: I-Grips should not be used on Insulgrip devices when “Seal-Tite®” weatherproof covers are to be installed.
Cord Connectors

Features and Benefits

Machined threads provide a strong positive seal. The tapered interior dome easily drives the bushing into the connector body.

The patented GOTHCA® ring incorporates a split hinge design to prevent friction and provide strain relief, also color-coded for sizing identification.

Lubricated neoprene bushing compresses easily for a liquidtight seal and added pull-out protection.

The connector body is a one-piece design with machined threads. A tapered interior seats the bushing evenly for a liquidtight seal.

Hubbell has the broadest line and the widest choice of materials in the industry. N.P.T. hub sizes from 1/4” to 3” in straight male end, 90°, 45°, female and underground feed connectors. They are available in your choice of aluminum, plated steel, nylon and stainless steel.

Hubbell offers a full line of machined aluminum cord connectors in N.P.T. hub sizes 1/4” through 1” and cast aluminum 1” to 3”. They provide durable performance and a clean attractive look without adding unwanted weight. N.P.T. hub sizes 1/4” to 1” feature an attractive knurled finish which makes them easy to handle and maintain a U.L. listing by hand tightening.

The zinc-plated steel cord connectors offers the strength of steel and the corrosion resistance of zinc-plating. These heavy-duty connectors hold up to most manufacturing chemicals including acid solutions, solvents and other corrosive materials.

Their machined steel nut and body allows for tightening the compression nut and N.P.T. hub without worrying about stripping the threads. For larger size cord, N.P.T. hub sizes 1” to 2”, Hubbell utilizes malleable iron connectors which provide excellent holding and liquidtight performance.

Hubbell’s nylon cord connectors resist most common industrial corrosives and provide highly effective pullout protection in a lightweight design. They are ideal for any application where weight, conductivity or corrosion may be an issue. They’re available in N.P.T. hub sizes from 1/4” to 1”.

Stainless steel cord connectors provide superior strength and corrosion resistance for industrial and military applications. They are machined from 300 series stainless steel and come in 1/4” through 1”, N.P.T. hub sizes.
## Cord Connectors
### Straight Male

#### Form Size 1-3

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<th>Cord Dia.</th>
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Note: See pages T-87 to T-98 for additional technical data and dimensional drawings. *IP66 Suitability when used with optional metal clad O-ring shown on page T-83. **Cable jacket may have to be stripped to pass through connector body.
**Cord Connectors**

**Straight Male**

*Form Size 2-4*

**UL Listed to Type 4, 4X, 12 and Type 13**

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<th>Color Code</th>
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Note: See pages T-87 to T-98 for additional technical data and dimensional drawings.

*IP66 Suitability when used with optional metal clad O-ring shown on page T-83.

**Cable jacket may have to be stripped to pass through connector body.

Form 4 aluminum and plated steel nuts are machined, bodies are cast aluminum.
Cord Connectors
Straight Male
Form Size 5-8

UL Listed to Type 4, 4X, 12 and Type 13

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<th>Form Size</th>
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<td>2.06&quot;-2.19&quot; (52.4-55.6)</td>
<td>SHC1089</td>
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<tr>
<td></td>
<td>2.19&quot;-2.31&quot; (55.6-58.7)</td>
<td>SHC1090</td>
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<tr>
<td></td>
<td>2.31&quot;-2.44&quot; (58.7-61.9)</td>
<td>SHC1091</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>4&quot;</td>
<td>2.44&quot;-2.63&quot; (61.9-66.7)</td>
<td>SHC1092</td>
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<tr>
<td></td>
<td>2.63&quot;-2.81&quot; (66.7-71.4)</td>
<td>SHC1093</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>2.81&quot;-3.00&quot; (71.4-76.2)</td>
<td>SHC1094</td>
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<td>*</td>
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<tr>
<td></td>
<td>3.00&quot;-3.25&quot; (76.2-82.5)</td>
<td>SHC1095**</td>
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<td></td>
</tr>
</tbody>
</table>

Note: See pages T-87 to T-98 for additional technical data and dimensional drawings.
*IP66 Suitability when used with optional metal clad O-ring shown on page T-83.
**Cable jacket may have to be stripped to pass through connector body.
F5 and larger will not be color coded.
### Cord Connectors

#### 45° Male

**Form Size 2-5**

UL Listed to Type 4, 4X, 12 and Type 13

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia. (Inches)</th>
<th>Form Size</th>
<th>Color Code</th>
<th>Machined Aluminum†</th>
<th>Machined Zinc-Plated Steel△</th>
<th>Cast Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>.19&quot;-.25&quot;</td>
<td>(4.7-6.3)</td>
<td>F2 Red</td>
<td>VHC1021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>(6.3-9.7)</td>
<td>White</td>
<td>VHC1022</td>
<td>VHC1022ZP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.38&quot;-.50&quot;</td>
<td>(9.7-12.7)</td>
<td>Blue</td>
<td>VHC1023</td>
<td>VHC1023ZP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.50&quot;-.63&quot;</td>
<td>(12.7-15.9)</td>
<td>Brown</td>
<td>VHC1024**</td>
<td>VHC1024ZP**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.38&quot;-.50&quot;</td>
<td>(9.7-12.7)</td>
<td>Blue</td>
<td>VHC1035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>(12.7-15.9)</td>
<td>Brown</td>
<td>VHC1036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.63&quot;-.75&quot;</td>
<td>(15.9-19.0)</td>
<td>Yellow</td>
<td>VHC1037**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&quot;</td>
<td>(15.9-19.0)</td>
<td>Yellow</td>
<td>VHC1041</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.75&quot;-.88&quot;</td>
<td>(19.0-22.2)</td>
<td>Orchid</td>
<td>VHC1042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/4&quot;</td>
<td>(25.4-28.6)</td>
<td></td>
<td>VHC1052</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.00&quot;-.1.25&quot;</td>
<td>(28.6-31.7)</td>
<td></td>
<td>VHC1053**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** See pages T-87 to T-98 for additional technical data and dimensional drawings.

* IP66 Suitability when used with optional metal clad O-ring shown on page T-83.

** Cable jacket may have to be stripped to pass through connector body.

†Nuts are machined aluminum and bodies are cast aluminum.

△Nuts are machined zinc-plated steel and bodies are malleable iron, cadmium plated.
Cord Connectors
90° Male
Form Size 1-6

UL Listed to Type 4, 4X, 12 and Type 13

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia.</th>
<th>Form Size</th>
<th>Color Code</th>
<th>Machined Aluminum</th>
<th>Machined Zinc-Plated Steel</th>
<th>Nylon Gray</th>
<th>Nylon Black</th>
<th>Cast Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>.25&quot;-.31&quot;</td>
<td>(6.3-7.9)</td>
<td>Black</td>
<td>NHC1010</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.31&quot;-.38&quot;</td>
<td>(7.9-9.5)</td>
<td>White</td>
<td>NHC1011</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.38&quot;-.44&quot;</td>
<td>(9.5-11.0)</td>
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<td>NHC1012</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>.06&quot;-.13&quot;</td>
<td>(1.6-3.2)</td>
<td>Green</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.13&quot;-.19&quot;</td>
<td>(3.2-4.7)</td>
<td>Orange</td>
<td>NHC1020</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.19&quot;-.25&quot;</td>
<td>(4.7-6.3)</td>
<td>Red</td>
<td>NHC1021</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.25&quot;-.38&quot;</td>
<td>(6.3-9.7)</td>
<td>White</td>
<td>NHC1022</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.38&quot;-.50&quot;</td>
<td>(9.7-12.7)</td>
<td>Blue</td>
<td>NHC1023</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.50&quot;-.63&quot;</td>
<td>(12.7-15.9)</td>
<td>Brown</td>
<td>NHC1024</td>
<td>•</td>
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<td>•</td>
<td>•</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>.38&quot;-.50&quot;</td>
<td>(9.7-12.7)</td>
<td>Blue</td>
<td>NHC1035</td>
<td>•</td>
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<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.50&quot;-.63&quot;</td>
<td>(12.7-15.9)</td>
<td>Brown</td>
<td>NHC1036</td>
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<td>•</td>
<td>•</td>
<td>•</td>
</tr>
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<td></td>
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<td>(15.9-19.0)</td>
<td>Yellow</td>
<td>NHC1037</td>
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<td>•</td>
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</tr>
<tr>
<td></td>
<td>.75&quot;-.88&quot;</td>
<td>(19.0-22.2)</td>
<td>Orchid</td>
<td>NHC1038</td>
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</tr>
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<td>1&quot;</td>
<td>.50&quot;-.63&quot;</td>
<td>(12.7-15.9)</td>
<td>Brown</td>
<td>NHC1040</td>
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<td>(15.9-19.0)</td>
<td>Yellow</td>
<td>NHC1041</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.75&quot;-.88&quot;</td>
<td>(19.0-22.2)</td>
<td>Orchid</td>
<td>NHC1042</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.88&quot;-1.00&quot;</td>
<td>(22.2-25.4)</td>
<td>Gray</td>
<td>NHC1043</td>
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<td>•</td>
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</tr>
<tr>
<td></td>
<td>1.00&quot;-1.13&quot;</td>
<td>(25.4-28.7)</td>
<td>Pink</td>
<td>NHC1044</td>
<td>•</td>
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</tr>
<tr>
<td>1 1/4&quot;</td>
<td>.88&quot;-1.00&quot;</td>
<td>(22.2-25.4)</td>
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<td>•</td>
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<td>•</td>
<td>•</td>
<td>NHC1051</td>
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<tr>
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<td>1.00&quot;-1.13&quot;</td>
<td>(25.4-28.6)</td>
<td>F5</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>NHC1052</td>
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<tr>
<td></td>
<td>1.13&quot;-1.25&quot;</td>
<td>(28.6-31.7)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>NHC1053**</td>
</tr>
<tr>
<td></td>
<td>1.25&quot;-1.38&quot;</td>
<td>(31.7-34.9)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>NHC1054**</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>1.00&quot;-1.13&quot;</td>
<td>(25.4-28.6)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>NHC1057</td>
</tr>
<tr>
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<td>1.13&quot;-1.25&quot;</td>
<td>(28.6-31.7)</td>
<td>F5</td>
<td>•</td>
<td>•</td>
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<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>1.25&quot;-1.38&quot;</td>
<td>(31.7-34.9)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>NHC1059</td>
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<td>(34.9-38.1)</td>
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<td>NHC1066</td>
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</table>

Note: See pages T-87 to T-98 for additional technical data and dimensional drawings.
* IP66 Suitability when used with optional metal clad O-ring shown on page T-83.
** Cable jacket may have to be stripped to pass through connector body.
† Nuts are machined aluminum and bodies are cast aluminum.
Δ Compression nuts are machined zinc-plated steel and bodies are zinc-plated malleable iron.

Cord Connectors Wire Management Products
Dimensions in Inches (mm)
### Cord Connectors

#### Straight Female and Underground Feeder

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia. (Inches)</th>
<th>Form Size</th>
<th>Color Code</th>
<th>Machined Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{2} )&quot;</td>
<td>.25&quot;-.38&quot; (6.3-9.7)</td>
<td>F2</td>
<td>White</td>
<td>FHC1022</td>
</tr>
<tr>
<td></td>
<td>.38&quot;-.50&quot; (9.7-12.7)</td>
<td>Blue</td>
<td>FHC1023</td>
<td></td>
</tr>
<tr>
<td>( \frac{3}{4} )&quot;</td>
<td>.38&quot;-.50&quot; (9.7-12.7)</td>
<td>F2</td>
<td>Blue</td>
<td>FHC1033</td>
</tr>
<tr>
<td></td>
<td>.50&quot;-.63&quot; (12.7-15.9)</td>
<td>Brown</td>
<td>FHC1034</td>
<td></td>
</tr>
<tr>
<td>1&quot;</td>
<td>.75&quot;-.88&quot; (19.0-22.2)</td>
<td>F4</td>
<td>Orchid</td>
<td>FHC1042†</td>
</tr>
<tr>
<td></td>
<td>.88&quot;-.100&quot; (22.2-25.4)</td>
<td>Gray</td>
<td>FHC1043†</td>
<td></td>
</tr>
</tbody>
</table>

Note: See pages T-87 to T-98 for additional technical data and dimensional drawings.

*Cable jacket may have to be stripped to pass through connector body.
†Nuts are machined aluminum and bodies are cast aluminum.

---

### IP66* Suitability

#### Underground Feeder Connectors

<table>
<thead>
<tr>
<th>N.P.T. Hub Diameter (Inches)</th>
<th>Wire Size</th>
<th>Machined Aluminum</th>
<th>Machined Zinc-Plated Steel</th>
<th>Nylon Gray</th>
<th>Nylon Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{2} )&quot;</td>
<td>.2&quot;x.4&quot; min (5.1 x 10.2)</td>
<td>2 # 14,</td>
<td>UFC0001</td>
<td>UFC0001ZP</td>
<td>UFC0001CR</td>
</tr>
<tr>
<td></td>
<td>.25&quot;-.55&quot; max (6.3 x 14.0)</td>
<td>2 # 12,</td>
<td>2 # 10.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \frac{3}{4} )&quot;</td>
<td>.2&quot;x.4&quot; min (5.1 x 10.2)</td>
<td>2 # 14,</td>
<td>UFC0002</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>.25&quot;-.55&quot; max (6.3 x 14.0)</td>
<td>2 # 12,</td>
<td>2 # 10.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( 1 )&quot;</td>
<td>.2&quot;x.6&quot; min (5.1 x 15.2)</td>
<td>3 # 14,</td>
<td>UFC0003</td>
<td>•</td>
<td>UFC0003CR</td>
</tr>
<tr>
<td></td>
<td>.26&quot;x.78&quot; max (6.6 x 19.8)</td>
<td>3 # 12,</td>
<td>3 # 10.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: See pages T-87 to T-98 for additional technical data and dimensional drawings.

*IP66 Suitability when used with optional metal clad O-ring shown below.
**Wire sizes vary among manufacturers.
**Non-metallic Cord Connectors**

**Straight Male N.P.T. & PG Thread**

*Low Profile*

---

### Low Profile N.P.T. Cord Connectors

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia. Inches (mm)</th>
<th>Color</th>
<th>Catalog Numbers</th>
<th>Non-metallic Locknuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8”</td>
<td>.18”-.31” (4.6-7.9)</td>
<td>Gray</td>
<td>SEC38GA*</td>
<td>31622002LPK50</td>
</tr>
<tr>
<td>3/8”</td>
<td>.18”-.31” (4.6-7.9)</td>
<td>Black</td>
<td>SEC38BA*</td>
<td>31622002LPK50</td>
</tr>
<tr>
<td>1/2”</td>
<td>.17”-.45” (4.3-11.4)</td>
<td>Gray</td>
<td>SEC50GA</td>
<td>31622003LPK50</td>
</tr>
<tr>
<td>1/2”</td>
<td>.17”-.45” (4.3-11.4)</td>
<td>Black</td>
<td>SEC50BA</td>
<td>31622003LPK50</td>
</tr>
<tr>
<td>3/4”</td>
<td>.45”-.71” (11.4-18.0)</td>
<td>Gray</td>
<td>SEC75GA</td>
<td>31622007LPK50</td>
</tr>
<tr>
<td>3/4”</td>
<td>.45”-.71” (11.4-18.0)</td>
<td>Black</td>
<td>SEC75BA</td>
<td>31622007LPK50</td>
</tr>
<tr>
<td>1”</td>
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<td>Gray</td>
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<td>31622008LPK50</td>
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<td>31622008LPK50</td>
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</tbody>
</table>

*Note: See pages T-87 to T-91 for additional technical data and dimensional drawings.*

Catalog numbers with “PK50” suffix are bulk packed 50 pieces.

### Low Profile PG Cord Connectors

<table>
<thead>
<tr>
<th>Hub Size</th>
<th>Cord Dia. Inches (mm)</th>
<th>Color</th>
<th>Catalog Numbers</th>
<th>Non-metallic Locknuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG7</td>
<td>.11”-.25” (2.9-6.4)</td>
<td>Gray</td>
<td>SECP7GA*</td>
<td>LNP7BPK100</td>
</tr>
<tr>
<td>PG7</td>
<td>.11”-.25” (2.9-6.4)</td>
<td>Black</td>
<td>SECP7BA*</td>
<td>LNP7BPK100</td>
</tr>
<tr>
<td>PG9</td>
<td>.18”-.31” (4.6-7.9)</td>
<td>Gray</td>
<td>SECP9GA*</td>
<td>LNP9BPK100</td>
</tr>
<tr>
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<td>.18”-.31” (4.6-7.9)</td>
<td>Black</td>
<td>SECP9BA*</td>
<td>LNP9BPK100</td>
</tr>
<tr>
<td>PG11</td>
<td>.23”-.40” (5.8-10.0)</td>
<td>Gray</td>
<td>SECP11GA*</td>
<td>LNP11BPK100</td>
</tr>
<tr>
<td>PG11</td>
<td>.23”-.40” (5.8-10.0)</td>
<td>Black</td>
<td>SECP11BA*</td>
<td>LNP11BPK100</td>
</tr>
<tr>
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<td>.17”-.47” (4.3-11.9)</td>
<td>Gray</td>
<td>SECP13GA</td>
<td>LNP13BPK100</td>
</tr>
<tr>
<td>PG13.5</td>
<td>.17”-.47” (4.3-11.9)</td>
<td>Black</td>
<td>SECP13BA</td>
<td>LNP13BPK100</td>
</tr>
<tr>
<td>PG16</td>
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<td>Gray</td>
<td>SECP16GA</td>
<td>LNP16BPK100</td>
</tr>
<tr>
<td>PG16</td>
<td>.23”-.53” (5.8-13.5)</td>
<td>Black</td>
<td>SECP16BA</td>
<td>LNP16BPK100</td>
</tr>
<tr>
<td>PG21</td>
<td>.45”-.71” (11.4-17.9)</td>
<td>Gray</td>
<td>SECP21GA</td>
<td>LNP21BPK100</td>
</tr>
<tr>
<td>PG21</td>
<td>.45”-.71” (11.4-17.9)</td>
<td>Black</td>
<td>SECP21BA</td>
<td>LNP21BPK100</td>
</tr>
<tr>
<td>PG29</td>
<td>.59”-.99” (15-25.2)</td>
<td>Gray</td>
<td>SECP29GA</td>
<td>LNP29BPK25</td>
</tr>
<tr>
<td>PG29</td>
<td>.59”-.99” (15-25.2)</td>
<td>Black</td>
<td>SECP29BA</td>
<td>LNP29BPK25</td>
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<tr>
<td>PG36</td>
<td>.88”-.1.30” (22.2-32.0)</td>
<td>Gray</td>
<td>SECP36GA</td>
<td>LNP36BPK25</td>
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<tr>
<td>PG36</td>
<td>.88”-.1.30” (22.2-32.0)</td>
<td>Black</td>
<td>SECP36BA</td>
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### Low Profile Metric Cord Connectors

<table>
<thead>
<tr>
<th>Hub Size</th>
<th>Cord Dia. Inches (mm)</th>
<th>Color</th>
<th>Catalog Numbers</th>
<th>Non-metallic Locknuts</th>
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<tbody>
<tr>
<td>M12</td>
<td>.12”-.25” (2.9-6.4)</td>
<td>Gray</td>
<td>SEC12G</td>
<td>LNM12BPK100</td>
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<td>.12”-.25” (2.9-6.4)</td>
<td>Black</td>
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<td>LNM12BPK100</td>
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<tr>
<td>M16</td>
<td>.11”-.31” (2.7-7.9)</td>
<td>Gray</td>
<td>SEC16G</td>
<td>LNM16BPK100</td>
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<tr>
<td>M16</td>
<td>.11”-.31” (2.7-7.9)</td>
<td>Black</td>
<td>SEC16B</td>
<td>LNM16BPK100</td>
</tr>
<tr>
<td>M20</td>
<td>.17”-.45” (4.3-11.4)</td>
<td>Gray</td>
<td>SEC20G*</td>
<td>LNM20BPK100</td>
</tr>
<tr>
<td>M20</td>
<td>.17”-.45” (4.3-11.4)</td>
<td>Black</td>
<td>SEC20B*</td>
<td>LNM20BPK100</td>
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<tr>
<td>M25</td>
<td>.49”-.71” (12.3-18.0)</td>
<td>Gray</td>
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<td>LNM25BPK100</td>
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<tr>
<td>M25</td>
<td>.49”-.71” (12.3-18.0)</td>
<td>Black</td>
<td>SEC25B*</td>
<td>LNM25BPK100</td>
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<tr>
<td>M32</td>
<td>.59”-.1.00” (15.0-25.4)</td>
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<td>SEC32G*</td>
<td>LNM32BPK100</td>
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<tr>
<td>M32</td>
<td>.59”-.1.00” (15.0-25.4)</td>
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<td>SEC32B*</td>
<td>LNM32BPK100</td>
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<tr>
<td>M40</td>
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*Note: See pages T-87 to T-91 for additional technical data and dimensional data.*

Catalog numbers above with “PK100” suffix, i.e. LNP7BPK100, are bulk packed 100 per carton.

Catalog numbers above with “PK25” suffix, i.e. LNP29BPK25, are bulk packed 25 per carton.

Items indicated with a * are UL recognized components.
## Cord Connectors
Accessories

### Cord Connector Parts

<table>
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<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia. Form (inches (mm))</th>
<th>Bushing Catalog Numbers</th>
<th>GOTCHA® Ring Color Code</th>
<th>Catalog Numbers</th>
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<tbody>
<tr>
<td>1/4&quot;, 3/8&quot;, 1/2&quot;</td>
<td>.062&quot;-.125&quot; (1.58-3.17)</td>
<td>31518101BPK100</td>
<td>Green</td>
<td>31648035GPK100</td>
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<td>.125&quot;-.187&quot; (3.17-4.76)</td>
<td>31518102BPK100</td>
<td>Orange</td>
<td>31648036GPK100</td>
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<tr>
<td></td>
<td>.187&quot;-.250&quot; (4.76-6.35)</td>
<td>31518103BPK100</td>
<td>Red</td>
<td>31648037GPK100</td>
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<tr>
<td></td>
<td>.250&quot;-.312&quot; (6.35-7.93)</td>
<td>31518104BPK100</td>
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<td>31648038GPK100</td>
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<td>.375&quot;-.500&quot; (9.50-12.7)</td>
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<td>.500&quot;-.625&quot; (12.7-15.8)</td>
<td>31518113BPK100</td>
<td>Brown</td>
<td>31648044GPK100</td>
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<td>.375&quot;-.500&quot; (9.50-12.7)</td>
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</tr>
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<td>.500&quot;-.625&quot; (12.7-15.8)</td>
<td>31518117BPK100</td>
<td>Brown</td>
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<td>.625&quot;-.750&quot; (15.8-19.0)</td>
<td>31518118BPK100</td>
<td>Yellow</td>
<td>31648047GPK100</td>
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<td>.750&quot;-.875&quot; (19.0-22.2)</td>
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<td>Orchid</td>
<td>31648048GPK100</td>
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<tr>
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<td>31648052GPK100</td>
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<tr>
<td></td>
<td>1.00&quot;-1.125&quot; (25.4-28.5)</td>
<td>31518127BPK100</td>
<td>Pink</td>
<td>31648054GPK100</td>
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Note: Catalog numbers above with “PK100” suffix, i.e. 31518101BPK100, are bulk packed 100 per carton.

### Locknuts — Steel and Non-metallic

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<thead>
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<th>N.P.T. Hub Size</th>
<th>Zinc-Plated Steel</th>
<th>Non-metallic</th>
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<tbody>
<tr>
<td>1/4&quot;</td>
<td>31622001LPK50</td>
<td>31622002LPK50</td>
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<td>3/8&quot;</td>
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<td>00322001LPK50</td>
<td>31622003LPK50</td>
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<td>00322002LPK50</td>
<td>31622007LPK50</td>
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<td>1&quot;</td>
<td>00322003LPK50</td>
<td>31622004LPK50</td>
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<tr>
<td>1 1/4&quot;</td>
<td>00322004LPK50</td>
<td>31622008LPK50</td>
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<tr>
<td>1 1/2&quot;</td>
<td>00322005LPK50</td>
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</table>

Notes: Catalog numbers above with “PK50” suffix, i.e. 00322001LPK50, are bulk packed 50 per carton. See page T-96 for additional technical data and dimensional drawings.

### Metal Clad Sealing O-Rings

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Catalog Numbers</th>
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<td>20509002</td>
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<td>1 1/4&quot;</td>
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</tr>
<tr>
<td>2&quot;</td>
<td>20509006</td>
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<tr>
<td>2 1/2&quot;</td>
<td>20509007</td>
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<td>20509008</td>
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</table>

Note: See page T-96 for additional technical data and dimensional drawings.
Hubbell Juniors® Miniature Cord Connectors

**Features and Benefits**

Hubbell Juniors are a miniature liquidtight version of the full-sized Hubbell cord connectors. They feature the same GOTCHA® ring technology and neoprene bushings. They also come with or without a nylon spiral for arc-of-bend control and longer cord life. They are available in ¼”, ⅜”, and ⅝” N.P.T. sizes in both gray and black.

- **Nylon spiral provides arc-of-bend control for cord protection.**
- **Nylon compression nut has a tapered interior dome to easily drive the bushing into the connector body.**
- **Patented GOTCHA® ring incorporates a split hinge design to prevent friction and provide strain relief.**
- **Lubricated neoprene bushing compresses evenly for a liquidtight seal and added pull-out protection.**
- **Nylon connector body is a one piece design with a tapered interior that seals the bushing evenly for a positive seal.**
- **Threaded hexagon shaped nylon locknut secures tightly and is also corrosion resistant.**
### Miniature Nylon Cord Connectors

**HUBBELL JUNIORS®**

#### Gray Snap-In Cord Connector

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Cord Dia. Range Inches</th>
<th>Gray</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>.08&quot;-.14&quot;</td>
<td>HJ1001GPK25</td>
<td>HJ1001BPK25</td>
</tr>
<tr>
<td></td>
<td>.14&quot;-.20&quot;</td>
<td>HJ1002GPK25</td>
<td>HJ1002BPK25</td>
</tr>
<tr>
<td></td>
<td>.20&quot;-.27&quot;</td>
<td>HJ1003GPK25</td>
<td>HJ1003BPK25</td>
</tr>
<tr>
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<td>HJ1005BPK25</td>
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<tr>
<td></td>
<td>.28&quot;-.34&quot;</td>
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<tr>
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<td></td>
<td>.28&quot;-.34&quot;</td>
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#### Black Snap-In Cord Connector

<table>
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<th>N.P.T. Hub Size</th>
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<th>Gray</th>
<th>Black</th>
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<tbody>
<tr>
<td>1/4&quot;</td>
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#### Gray Cord Connector with Spiral

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<th>Cord Dia. Range Inches</th>
<th>Gray</th>
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#### Black Cord Connector with Spiral

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#### Gray Snap-In Cord Connector with Spiral

<table>
<thead>
<tr>
<th>Cord Diameter Range Inches (mm)</th>
<th>For Chassis Thickness</th>
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<tbody>
<tr>
<td>.22&quot;-.27&quot; (5.6-6.9)</td>
<td>.10&quot; (2.5) Max</td>
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<tr>
<td>.28&quot;-.32&quot; (7.1-8.1)</td>
<td>.10&quot; (2.5) Max</td>
<td>HS1002GPK25</td>
<td>HS1002BPK25</td>
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<tr>
<td>.30&quot;-.36&quot; (7.9-9.5)</td>
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<td>HS1003BPK25</td>
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<tr>
<td>.32&quot;-.43&quot; (8.1-10.9)</td>
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</table>

Notes: Catalog numbers above with “PK25” suffix, i.e. HJ1001GPK25, are bulk packed 25 per carton. See pages T-97 and T-98 for additional technical data and dimensional drawings.
Cord Connectors
Technical Data

Operating Temperatures

<table>
<thead>
<tr>
<th>Material</th>
<th>Temperature Range</th>
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<td>Aluminum (connectors and GOTCHA® rings)</td>
<td>-40°F to +300°F (-40°C to +149°C)</td>
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<tr>
<td>Aluminum</td>
<td>-40°F to +225°F (-40°C to +107°C)</td>
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<td>Plated steel</td>
<td>-60°F to +1000°F (-51°C to +537°C)</td>
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<td>Stainless steel</td>
<td>-60°F to +1000°F (-51°C to +537°C)</td>
</tr>
<tr>
<td>Neoprene (bushings)</td>
<td>-30°F to +240°F (-34°C to +115°C)</td>
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</table>

*Due to the limiting factors of nylon and neoprene, any complete cord connector with a GOTCHA ring, Form 1-5, will continuously perform in the range of -30°F to +225°F (-34°C to +107°C).
Cord connectors without GOTCHA rings, Form 6-8, will continuously operate in the range -30°F to +240°F (-34°C to +115°C) due to the limiting factor of neoprene.

Hazardous Locations
Hubbell cord connectors are suitable for use in hazardous locations per Class I Div. 2, Class II Div. 1 & 2, Class III Div. 1 & 2 in accordance with the NEC.

Flammability
Hubbell nylon cord connectors have a UL 94-V2 rating.

Approvals
Agency
UL Listed in accordance with Standard 514B.
CSA Certified.
United States Coast Guard Approved, Title 46-Part 111.

Form Size Definition
The term “Form Size” refers to the physical overall size of a cord connector.
Form 1 is the smallest size.
Form 8 is the largest size.

Knockout Holes

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Knockout Hole Recommended Min. to Max.</th>
<th>PG Hub Size</th>
<th>Inches</th>
<th>(mm)</th>
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N.P.T, PG and Metric Thread Low Profile Connectors

Specifications
Material: 6/6 Nylon
Gland: Buna N
Temperature Range: -22°F to 225°F (-30°C to 107°C)
Cord Connectors are Halogen and Silicon free.
Protection Class: IP66.
Listings/Certifications: UL Listing File E-41567, UL Recognition File E-41567.
CSA File LR17378C, VDE Marks Licence #136681.

Dimensions in Inches (mm)
# Cord Connectors

## Technical Data

### Dimensional Charts

#### Straight Hubbell Connectors

<table>
<thead>
<tr>
<th>N.P.T.</th>
<th>Form</th>
<th>Dia.</th>
<th>Ref.</th>
<th>A/C*</th>
<th>A/F*</th>
<th>Dia.</th>
<th>Ref.</th>
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<th>A/F*</th>
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*A/C—Across Corners; A/F—Across Flats

Dimensions shown are approximate and are subject to change without notice.
## Cord Connectors
### Technical Data
#### Dimensional Charts

### Straight Hubbell Connectors

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<th>A/F*</th>
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* A/C—Across Corners; A/F—Across Flats

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Dimensions in Inches (mm)
### 45° Hubbell Connectors

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<th>C</th>
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<th>E Diam.</th>
<th>Across Corners</th>
<th>Across Flats</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E Diam.</th>
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### 90° Hubbell Connectors

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<th>Across Flats</th>
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<th>C</th>
<th>D</th>
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### 90° Hubbell Connectors

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<th>B</th>
<th>C</th>
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Dimensions shown are approximate and are subject to change without notice.
### Female Hubbell Connectors

#### Aluminum (mm)

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<tr>
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</tr>
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<tr>
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#### Female Hubbell Connectors

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### Underground Feeder Connectors

#### Aluminum Inches (mm)

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<th>E</th>
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#### Nylon Inches (mm)

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<tr>
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#### Zinc-Plated Steel Inches (mm)

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<td>1.13°</td>
<td>2.10°</td>
<td>19°</td>
<td>20°</td>
</tr>
<tr>
<td>3/8&quot;-14</td>
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<td>1.13°</td>
<td>2.10°</td>
<td>19°</td>
<td>20°</td>
</tr>
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</table>

*A/C - Across Corners; A/F - Across Flats

### Low Profile Non-Metallic N.P.T, PG and Metric Thread Connectors

#### Nylon Inches (mm)

<table>
<thead>
<tr>
<th>Hub Size</th>
<th>A</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<tbody>
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<td>3/8&quot; NPT</td>
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<td>0.21“</td>
<td>0.83“</td>
<td>0.55“</td>
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<td>1.70“</td>
<td>0.61“</td>
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<td>0.88“</td>
<td>0.66“</td>
</tr>
<tr>
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<td>1.73“</td>
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<tr>
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<td>1.16“</td>
<td>0.32“</td>
<td>0.21“</td>
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</tr>
<tr>
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</tr>
<tr>
<td>PG29</td>
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<td>2.23“</td>
<td>0.58“</td>
<td>0.30“</td>
<td>1.73“</td>
<td>1.05“</td>
</tr>
<tr>
<td>PG36</td>
<td>1.85“</td>
<td>2.39“</td>
<td>0.47“</td>
<td>0.31“</td>
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<td>0.83“</td>
<td>0.55“</td>
</tr>
<tr>
<td>M20</td>
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<td>1.73“</td>
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<td>2.05“</td>
<td>1.19“</td>
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## Cord Connectors

### Selection Chart

#### 2 Conductors

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<tr>
<th>Cord Type</th>
<th>SVO, SV, SVT</th>
<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
</tr>
</thead>
<tbody>
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<td><strong>Cord Size</strong></td>
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<td>#18</td>
<td>#16</td>
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<td>.31&quot;</td>
<td>.33&quot;</td>
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</tr>
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</tr>
<tr>
<td>1/2&quot;</td>
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<td>HC1016 HC1016 HC1017 HC1017 HC1018 HC1018</td>
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</tr>
<tr>
<td>1/8&quot;</td>
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</tr>
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* Must add prefix, see Note 1; suffix, see Note 2, on page T-95.

‡ F5 and larger will not be color coded.

#### 3 Conductors

<table>
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<tr>
<th>Cord Type</th>
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<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
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<tbody>
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<td>White</td>
</tr>
</tbody>
</table>

* Must add prefix, see Note 1; suffix, see Note 2, on page T-95.

‡ F5 and larger will not be color coded.

Dimensions in Inches (mm)

[www.hubbell-wiring.com](http://www.hubbell-wiring.com)
# Cord Connectors
## Selection Chart

### 2 Conductors

<table>
<thead>
<tr>
<th>Cord Type</th>
<th>SVO, SV, SVT</th>
<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
</tr>
</thead>
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<tr>
<td>Approx. Diameter</td>
<td>#6</td>
<td>#4</td>
<td>#3</td>
</tr>
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<td>250 SVO</td>
<td>94&quot;</td>
<td>1.08&quot;</td>
<td>1.17&quot;</td>
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<tr>
<td>250 SV</td>
<td>(23.8)</td>
<td>(27.4)</td>
<td>(29.7)</td>
</tr>
<tr>
<td>250 SJT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>250 SJO</td>
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<table>
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</table>

* Must add prefix, see Note 1; suffix, see Note 2, on page T-95.
‡ F5 and larger will not be color coded.

### 3 Conductors

<table>
<thead>
<tr>
<th>Cord Type</th>
<th>SVO, SV, SVT</th>
<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Diameter</td>
<td>#6</td>
<td>#4</td>
<td>#3</td>
</tr>
<tr>
<td>250 SVO</td>
<td>1.00&quot;</td>
<td>1.17&quot;</td>
<td>1.24&quot;</td>
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<tr>
<td>250 SV</td>
<td>(25.4)</td>
<td>(29.7)</td>
<td>(31.5)</td>
</tr>
<tr>
<td>250 SJT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250 SJO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250 SJ</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>N.P.T.</th>
<th>Form</th>
<th>Catalog Numbers*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>1</td>
<td>••••</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>1</td>
<td>••••</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>1</td>
<td>••••</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>2</td>
<td>••••</td>
</tr>
<tr>
<td>1&quot;</td>
<td>4</td>
<td>HC1044</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>5</td>
<td>HC1047</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>5</td>
<td>HC1052</td>
</tr>
<tr>
<td>2&quot;</td>
<td>6</td>
<td>••••</td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>7</td>
<td>••••</td>
</tr>
<tr>
<td>3&quot;</td>
<td>7</td>
<td>••••</td>
</tr>
<tr>
<td>Color</td>
<td>Gray‡</td>
<td>Pink‡</td>
</tr>
</tbody>
</table>

* Must add prefix, see Note 1; suffix, see Note 2, on page T-95.
‡ F5 and larger will not be color coded.
## Cord Connectors
### Selection Chart

#### 4 Conductors

<table>
<thead>
<tr>
<th>Cord Type</th>
<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cord Size</strong></td>
<td><strong>#18</strong></td>
<td><strong>#16</strong></td>
</tr>
<tr>
<td><strong>Approx. Diameter</strong></td>
<td>.36&quot; (9.0)</td>
<td>.39&quot; (9.8)</td>
</tr>
<tr>
<td><strong>N.P.T.</strong></td>
<td><strong>Form</strong></td>
<td><strong>Catalog Numbers</strong></td>
</tr>
<tr>
<td>1/4&quot;</td>
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<td>HC1005 HC1006 HC1006 HC1006</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>1</td>
<td>HC1011 HC1012 HC1012</td>
</tr>
<tr>
<td>1/2&quot;</td>
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<td>HC1017 HC1018 HC1018</td>
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<td>2</td>
<td>HC1022 HC1023 HC1023 HC1023 HC1024</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>3</td>
<td>HC1025 HC1025 HC1025 HC1025 HC1026 HC1026</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>2</td>
<td>HC1033 HC1033 HC1033 HC1033 HC1034</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3</td>
<td>HC1035 HC1035 HC1035 HC1035 HC1036 HC1036 HC1037 HC1038</td>
</tr>
<tr>
<td>1&quot;</td>
<td>4</td>
<td>HC1039 HC1039 HC1039 HC1039 HC1040 HC1040 HC1041 HC1042 HC1042 HC1043</td>
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<tr>
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<td>5</td>
<td></td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>2</td>
<td>HC1045 HC1045 HC1045 HC1045 HC1047 HC1047</td>
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<td>2&quot;</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td>7</td>
<td></td>
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<tr>
<td>2 1/2&quot;</td>
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</tr>
<tr>
<td>3&quot;</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

**Color:** White Blue Blue Blue Blue Brown Yellow Orchid Gray

*Must add prefix, see Note 1; suffix, see Note 2, on page T-95.
‡ F5 and larger will not be color coded.

#### 5 Conductors

<table>
<thead>
<tr>
<th>Cord Type</th>
<th>S, SO, ST, STO</th>
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</thead>
<tbody>
<tr>
<td><strong>Cord Size</strong></td>
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</tr>
<tr>
<td><strong>Approx. Diameter</strong></td>
<td>.50&quot; (12.7)</td>
</tr>
<tr>
<td><strong>N.P.T.</strong></td>
<td><strong>Form</strong></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>2</td>
</tr>
<tr>
<td>1/2&quot;</td>
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<td>4</td>
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<td>1 1/4&quot;</td>
<td>5</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>5</td>
</tr>
</tbody>
</table>
| **Color:** Blue Brown Yellow Orchid Orchid Pink

*Must add prefix, see Note 1; suffix, see Note 2, on page T-95.
‡ F5 and larger will not be color coded.

Dimensions in Inches (mm)

www.hubbell-wiring.com
## Cord Connectors
### Selection Chart

#### 4 Conductors

<table>
<thead>
<tr>
<th>Cord Type</th>
<th>SJ, SJO, SJT, SJTO</th>
<th>S, SO, ST, STO</th>
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</thead>
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</tr>
<tr>
<td></td>
<td>#6</td>
<td>#3</td>
</tr>
<tr>
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<td>.94&quot;</td>
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<td>3/8&quot;</td>
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<td>.94&quot;</td>
<td>.94&quot;</td>
</tr>
<tr>
<td>1&quot;</td>
<td>.94&quot;</td>
<td>.94&quot;</td>
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<table>
<thead>
<tr>
<th>N.P.T.</th>
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<tbody>
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</tr>
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<td>1</td>
<td>• • • • • • • • •</td>
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</tr>
<tr>
<td>1/3&quot;</td>
<td>2</td>
<td>• • • • • • • • •</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>2</td>
<td>• • • • • • • • •</td>
</tr>
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<td>2</td>
<td>• • • • • • • • •</td>
</tr>
<tr>
<td>1&quot;</td>
<td>3</td>
<td>• • • • • • • • •</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>4</td>
<td>HC1044</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>5</td>
<td>HC1047 HC1049 HC1049</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
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<td>HC1057 HC1059 HC1059</td>
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<td>3&quot;</td>
<td>6</td>
<td>HC1064 HC1065 HC1066 HC1068 HC1069</td>
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</tr>
<tr>
<td>2 1/2&quot;</td>
<td>7</td>
<td>HC1070 HC1071 HC1073 HC1074</td>
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<tr>
<td>3&quot;</td>
<td>7</td>
<td>HC1086 HC1087 HC1089 HC1090</td>
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### Color

<table>
<thead>
<tr>
<th>Color</th>
<th>Pink‡</th>
</tr>
</thead>
</table>

* Must add prefix, see Note 1; suffix, see Note 2, below.
‡ F5 and larger will not be color coded.

### Notes

1. Add the proper prefix to the HC number to identify the type of connector desired:
   - SHC = Straight Hubbell Connector
   - NHC = 90° Hubbell Connector
   - FHC = Female Hubbell Connector
   - VHC = 45° Hubbell Connector

2. Add the proper suffix to identify material desired:
   - Aluminum = No suffix
   - Zinc-Plated Steel = ZP
   - Corrosion Resistant Nylon = CR
   - Stainless Steel = SS

3. This chart is a general guide to assist in the selection of Hubbell Cord Connectors for various cord sizes. The Hubbell Cord Connector catalog numbers selected, have been inserted into spaces which in our judgment represent the best cord connector which will fit the listed cord size. The diameters of the cords are approximate and may vary depending on the manufacturer. It is suggested that the appropriate cord manufacturer's dimension chart be consulted for exact dimensions.

4. Cable jacket may have to be stripped to allow conductors to pass through connector body.
## Technical Data

### NPT Thread Locknuts

Zinc-Plated Steel and Non-metallic

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>A Inside Dia. inch (mm)</th>
<th>B Outside Dia. inch (mm)</th>
<th>C Thk. inch (mm)</th>
<th>Steel Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>0.09” (2.3)</td>
<td>1.14” (29.0)</td>
<td>1.77” (45.0)</td>
<td>00322001</td>
</tr>
<tr>
<td>3/4”</td>
<td>0.11” (2.8)</td>
<td>1.43” (36.3)</td>
<td></td>
<td>00322002</td>
</tr>
<tr>
<td>1”</td>
<td>0.13” (3.3)</td>
<td>1.77” (45.0)</td>
<td></td>
<td>00322003</td>
</tr>
<tr>
<td>1 1/4”</td>
<td>0.13” (3.3)</td>
<td>2.28” (57.9)</td>
<td></td>
<td>00322004</td>
</tr>
<tr>
<td>1 1/2”</td>
<td>0.13” (3.3)</td>
<td>2.60” (66.0)</td>
<td></td>
<td>00322005</td>
</tr>
<tr>
<td>2”</td>
<td>0.18” (4.6)</td>
<td>3.18” (80.8)</td>
<td></td>
<td>00322006</td>
</tr>
<tr>
<td>2 1/2”</td>
<td>0.18” (4.6)</td>
<td>3.56” (90.4)</td>
<td></td>
<td>00322007</td>
</tr>
<tr>
<td>3”</td>
<td>0.36” (9.1)</td>
<td>4.13” (104.9)</td>
<td></td>
<td>00322008</td>
</tr>
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### Metal Clad Sealing O-Rings – Sizes 1/2” - 4”

Zinc-Plated Steel with Neoprene Ring

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>A Inside Dia. inch (mm)</th>
<th>B Outside Dia. inch (mm)</th>
<th>C Thk. inch (mm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>0.80” (20.3)</td>
<td>1.08” (27.4)</td>
<td>0.16” (3.2)</td>
<td>20509001</td>
</tr>
<tr>
<td>3/4”</td>
<td>1.00” (25.4)</td>
<td>1.34” (34.0)</td>
<td>0.16” (3.2)</td>
<td>20509002</td>
</tr>
<tr>
<td>1”</td>
<td>1.25” (31.6)</td>
<td>1.63” (41.4)</td>
<td>0.16” (3.2)</td>
<td>20509003</td>
</tr>
<tr>
<td>1 1/4”</td>
<td>1.61” (40.9)</td>
<td>2.00” (50.8)</td>
<td>0.16” (3.2)</td>
<td>20509004</td>
</tr>
<tr>
<td>1 1/2”</td>
<td>1.84” (46.7)</td>
<td>2.36” (59.9)</td>
<td>0.16” (3.2)</td>
<td>20509005</td>
</tr>
<tr>
<td>2”</td>
<td>2.31” (58.7)</td>
<td>2.83” (71.9)</td>
<td>0.16” (3.2)</td>
<td>20509006</td>
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</tbody>
</table>

Chrome Plated Steel with Neoprene Ring

<table>
<thead>
<tr>
<th>Size</th>
<th>A Inside Dia. inch (mm)</th>
<th>B Outside Dia. inch (mm)</th>
<th>C Thk. inch (mm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2”</td>
<td>2.91” (73.9)</td>
<td>3.44” (87.4)</td>
<td>0.24” (6.1)</td>
<td>20509007</td>
</tr>
<tr>
<td>3”</td>
<td>3.52” (89.4)</td>
<td>4.08” (103.6)</td>
<td>0.24” (6.1)</td>
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<tr>
<td>4”</td>
<td>4.54” (115.3)</td>
<td>5.30” (134.6)</td>
<td>0.29” (7.4)</td>
<td>20509009</td>
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### Nylon PG Thread Locknuts

<table>
<thead>
<tr>
<th>PG Thread Size</th>
<th>A inch (mm)</th>
<th>B inch (mm)</th>
<th>C inch (mm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG7</td>
<td>.22” (5.6)</td>
<td>.80” (20.3)</td>
<td>.75” (19.1)</td>
<td>LNP7BPK100</td>
</tr>
<tr>
<td>PG9</td>
<td>.22” (5.6)</td>
<td>.91” (23.2)</td>
<td>.86” (21.8)</td>
<td>LNP9BPK100</td>
</tr>
<tr>
<td>PG11</td>
<td>.22” (5.6)</td>
<td>1.03” (26.2)</td>
<td>.94” (23.9)</td>
<td>LNP11BPK100</td>
</tr>
<tr>
<td>PG13.5</td>
<td>.24” (6.1)</td>
<td>1.14” (29.0)</td>
<td>1.06” (26.9)</td>
<td>LNP13BPK100</td>
</tr>
<tr>
<td>PG16</td>
<td>.25” (6.1)</td>
<td>1.30” (33.0)</td>
<td>1.18” (30.0)</td>
<td>LNP16BPK100</td>
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<tr>
<td>PG21</td>
<td>.25” (7.1)</td>
<td>1.54” (39.1)</td>
<td>1.41” (35.8)</td>
<td>LNP21BPK100</td>
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<tr>
<td>PG29</td>
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<td>2.00” (50.8)</td>
<td>1.81” (46.0)</td>
<td>LNP29BPK25</td>
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<tr>
<td>PG36</td>
<td>.25” (7.1)</td>
<td>2.50” (63.5)</td>
<td>2.24” (56.9)</td>
<td>LNP36BPK25</td>
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</table>

### Nylon Metric Thread Locknuts

<table>
<thead>
<tr>
<th>PG Thread Size</th>
<th>A inch (mm)</th>
<th>B inch (mm)</th>
<th>C inch (mm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12</td>
<td>.22” (5.6)</td>
<td>.82” (20.8)</td>
<td>.75” (19.1)</td>
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</tr>
<tr>
<td>M16</td>
<td>.22” (5.6)</td>
<td>.98” (25.0)</td>
<td>.87” (22.09)</td>
<td>LNM16BPK100</td>
</tr>
<tr>
<td>M20</td>
<td>.25” (6.4)</td>
<td>1.18” (30.0)</td>
<td>1.06” (27.0)</td>
<td>LNM20BPK100</td>
</tr>
<tr>
<td>M25</td>
<td>.28” (7.1)</td>
<td>1.54” (39.1)</td>
<td>1.38” (35.1)</td>
<td>LNM25BPK100</td>
</tr>
<tr>
<td>M32</td>
<td>.28” (7.1)</td>
<td>1.80” (45.7)</td>
<td>1.61” (40.9)</td>
<td>LNM32BPK100</td>
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<tr>
<td>M40</td>
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<td>2.18” (55.4)</td>
<td>1.97” (50.0)</td>
<td>LNM40BPK100</td>
</tr>
</tbody>
</table>

Dimensions shown are approximate and are subject to change without notice.
Hubbell Juniors

Operating Temperature Range

Nylon (connectors and GOTCHA® rings)  -40°F to +225°F (-40°C to +107°C)
Neoprene (bushings)  -30°F to +240°F (-34°C to +115°C)

Due to the limiting factors of nylon and neoprene, any complete liquidtight Hubbell Junior will continuously perform in the range of -30°F to +225°F (-34°C to +107°C).
Snap-In continuously performs -40°F to +225°F (-40°C to +107°C).

Flammability
Hubbell Juniors have a UL 94V-2 rating.

Certifications

<table>
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<tr>
<th>Product</th>
<th>Agency</th>
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<tbody>
<tr>
<td>Liquidtight and Liquidtight with Spiral</td>
<td>UL Listed</td>
</tr>
<tr>
<td>Snap-In</td>
<td>CSA Certified</td>
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</tbody>
</table>

Knockout Holes

<table>
<thead>
<tr>
<th>N.P.T. Hub Size</th>
<th>Knockout Hole Recommended Min. to Max. inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>.54&quot;-.57&quot; (13.7-14.5)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>.67&quot;-.70&quot; (17.0-17.8)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>.86&quot;-.91&quot; (21.8-23.1)</td>
</tr>
</tbody>
</table>

Dimensions shown are subject to change without notice.
## Technical Data

### HUBBELL JUNIORS® Miniature Nylon Cord Connectors

#### Snap-In

<table>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.22”-.27”</td>
<td>.10”</td>
<td>.50”</td>
<td>.45”</td>
<td>.28”</td>
<td>.28”</td>
<td>.54”</td>
<td>.12”</td>
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<tr>
<td>(5.6-6.9)</td>
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<td>(12.7)</td>
<td>(11.4)</td>
<td>(7.1)</td>
<td>(7.1)</td>
<td>(13.7)</td>
<td>(3.0)</td>
</tr>
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<td>.28”-.32”</td>
<td>.10”</td>
<td>.50”</td>
<td>.47”</td>
<td>.28”</td>
<td>.33”</td>
<td>.59”</td>
<td>.12”</td>
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<td>(7.1-8.1)</td>
<td>(2.5)</td>
<td>(12.7)</td>
<td>(11.9)</td>
<td>(7.1)</td>
<td>(8.4)</td>
<td>(15.0)</td>
<td>(3.0)</td>
</tr>
<tr>
<td>.30”-.36”</td>
<td>.13”</td>
<td>.63”</td>
<td>.55”</td>
<td>.36”</td>
<td>.37”</td>
<td>.65”</td>
<td>.14”</td>
</tr>
<tr>
<td>(7.6-9.1)</td>
<td>(3.3)</td>
<td>(16.0)</td>
<td>(14.0)</td>
<td>(9.1)</td>
<td>(9.4)</td>
<td>(16.5)</td>
<td>(3.6)</td>
</tr>
<tr>
<td>.32”-.43”</td>
<td>.13”</td>
<td>.75”</td>
<td>.66”</td>
<td>.45”</td>
<td>.44”</td>
<td>.75”</td>
<td>.14”</td>
</tr>
<tr>
<td>(8.1-10.9)</td>
<td>(3.3)</td>
<td>(19.0)</td>
<td>(16.8)</td>
<td>(11.4)</td>
<td>(11.2)</td>
<td>(19.1)</td>
<td>(3.6)</td>
</tr>
</tbody>
</table>

#### Liquidtight

<table>
<thead>
<tr>
<th>N.P.T.</th>
<th>Dia. (Inches)</th>
<th>Ref. Inches</th>
<th>Across Throat</th>
<th>Across Flat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4”-18</td>
<td>.65” (16.5)</td>
<td>1.30” (33.0)</td>
<td>.40” (10.2)</td>
<td>.29” (7.4)</td>
</tr>
<tr>
<td>3/8”-18</td>
<td>.81” (20.6)</td>
<td>1.44” (36.6)</td>
<td>.41” (10.4)</td>
<td>.36” (9.1)</td>
</tr>
<tr>
<td>1/2”-14</td>
<td>1.00” (25.4)</td>
<td>1.56” (39.6)</td>
<td>.46” (11.7)</td>
<td>.45” (11.4)</td>
</tr>
</tbody>
</table>

#### Liquidtight with Spiral

<table>
<thead>
<tr>
<th>N.P.T.</th>
<th>Dia. (Inches)</th>
<th>Ref. Inches</th>
<th>Across Throat</th>
<th>Across Flat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4”-18</td>
<td>.65” (16.5)</td>
<td>2.55” (64.8)</td>
<td>.40” (10.2)</td>
<td>.29” (7.4)</td>
</tr>
<tr>
<td>3/8”-18</td>
<td>.81” (20.6)</td>
<td>3.10” (78.7)</td>
<td>.41” (10.4)</td>
<td>.36” (9.1)</td>
</tr>
<tr>
<td>1/2”-14</td>
<td>1.00” (25.4)</td>
<td>3.72” (94.5)</td>
<td>.46” (11.7)</td>
<td>.45” (11.4)</td>
</tr>
</tbody>
</table>
Read This Data

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-106 through T-107.

### Straight Male Hubbell Fitting

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3 3/4&quot; (9.52)</td>
<td>H038CNK</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>4 1/2&quot; (11.43)</td>
<td>H050CNK</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>6 1/4&quot; (15.87)</td>
<td>H075CNK</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1&quot;</td>
<td>7 1/2&quot; (19.05)</td>
<td>H100CNK</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>1 1/4&quot;</td>
<td>9&quot; (22.86)</td>
<td>H125CNK</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>1 3/4&quot;</td>
<td>13 1/2&quot; (34.29)</td>
<td>H150CNK</td>
</tr>
<tr>
<td>2&quot;</td>
<td>2&quot;</td>
<td>14 1/2&quot; (36.83)</td>
<td>H200CNK</td>
</tr>
</tbody>
</table>

### 90° Male Hubbell Fitting

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3 3/4&quot; (9.52)</td>
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</tr>
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<td>1/2&quot;</td>
<td>4 1/2&quot; (11.43)</td>
<td>H0509CNK</td>
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<td>H0759CNK</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1&quot;</td>
<td>7 1/2&quot; (19.05)</td>
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</tr>
<tr>
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<td>1 1/4&quot;</td>
<td>9&quot; (22.86)</td>
<td>H1259CNK</td>
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<tr>
<td>1 1/2&quot;</td>
<td>1 3/4&quot;</td>
<td>13 1/2&quot; (34.29)</td>
<td>H1509CNK</td>
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<tr>
<td>2&quot;</td>
<td>2&quot;</td>
<td>14 1/2&quot; (36.83)</td>
<td>H2009CNK</td>
</tr>
</tbody>
</table>
**Strain Relief**

**Flexible Metallic Conduit Grips**

*Steel Fitting, Stainless Steel Mesh, Liquidtight, for Liquidtight Flexible Metal Conduit*

---

**Read This Data**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-103 through T-105.

---

**Benefits**

- Helps prevent conduit pull-out and damage at the fitting.
- Reduces equipment downtime.

---

### Straight With Male Fitting

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches</th>
<th>Catalog Numbers (Insulated)</th>
<th>Catalog Numbers (Non-insulated)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>074093401</td>
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<td>074093404</td>
</tr>
<tr>
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<td>074093405</td>
</tr>
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<td>6 3/4&quot;</td>
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<td>074093406</td>
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<td>11&quot;</td>
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<td>074093412</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4&quot;</td>
<td>14&quot;</td>
<td>074093526</td>
<td>*</td>
</tr>
</tbody>
</table>

---

### 90° Angle With Male Fitting

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches</th>
<th>Catalog Numbers (Insulated)</th>
<th>Catalog Numbers (Non-insulated)</th>
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</thead>
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<td>074093421</td>
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<td>1/2&quot;</td>
<td>3 1/2&quot;</td>
<td>074093542</td>
<td>074093422</td>
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<td>3/4&quot;</td>
<td>4&quot;</td>
<td>074093543</td>
<td>074093423</td>
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<td>5&quot;</td>
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<td>074093424</td>
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<td>1 1/4&quot;</td>
<td>6&quot;</td>
<td>074093545</td>
<td>074093425</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>1 1/2&quot;</td>
<td>6 3/4&quot;</td>
<td>074093546</td>
<td>074093426</td>
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<tr>
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<td>2&quot;</td>
<td>8&quot;</td>
<td>074093548</td>
<td>074093428</td>
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<tr>
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<tr>
<td>3&quot;</td>
<td>3&quot;</td>
<td>11&quot;</td>
<td>074093552</td>
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</table>
Strain Relief
Flexible Metallic Conduit Grips
Steel Fitting, Stainless Steel Mesh, Liquidtight, for Flexible Metal Liquidtight Conduit

**45° Angle With Male Fitting**

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches (cm)</th>
<th>Catalog Numbers (Insulated)</th>
<th>Catalog Numbers (Non-insulated)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1/2”</td>
<td>3” (7.62)</td>
<td>074093561</td>
<td>074093441</td>
</tr>
<tr>
<td>1/2”</td>
<td>1/2”</td>
<td>31/2” (8.89)</td>
<td>074093562</td>
<td>074093442</td>
</tr>
<tr>
<td>3/4”</td>
<td>3/4”</td>
<td>4” (10.16)</td>
<td>074093563</td>
<td>074093443</td>
</tr>
<tr>
<td>1”</td>
<td>1”</td>
<td>5” (12.70)</td>
<td>074093564</td>
<td>074093444</td>
</tr>
<tr>
<td>1 1/4”</td>
<td>11/4”</td>
<td>6” (15.24)</td>
<td>074093565</td>
<td>074093445</td>
</tr>
<tr>
<td>1 1/2”</td>
<td>11/2”</td>
<td>61/2” (17.14)</td>
<td>074093566</td>
<td>074093446</td>
</tr>
<tr>
<td>2”</td>
<td>2”</td>
<td>8” (20.32)</td>
<td>074093568</td>
<td>074093448</td>
</tr>
</tbody>
</table>

*Note: Refer to page T-89 for fitting dimensions.*

**Straight With Chase Fitting**

<table>
<thead>
<tr>
<th>Conduit Trade Size (Inches)</th>
<th>Trade Size N.P.T. (Inches)</th>
<th>Mesh Length Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
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<td>31/2” (8.89)</td>
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<tr>
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<td>3/4”</td>
<td>4” (10.16)</td>
<td>07406080</td>
</tr>
<tr>
<td>1”</td>
<td>1”</td>
<td>5” (12.70)</td>
<td>07406081</td>
</tr>
<tr>
<td>1 1/4”</td>
<td>11/4”</td>
<td>6” (15.24)</td>
<td>07406082</td>
</tr>
<tr>
<td>1 1/2”</td>
<td>11/2”</td>
<td>61/2” (17.14)</td>
<td>07406083</td>
</tr>
</tbody>
</table>

**Read This Data**

It is important that you read all breaking strength, safety and technical data relating to this product on pages T-103 through T-105.

---

**Dimensions in Inches (mm)**

www.hubbell-wiring.com
Strain Relief
Hose Containment Grips
Custom Designed Grips, for High Pressure Hose Restraint

Read This Data
It is important that you read all breaking strength, safety and technical data relating to this product on pages T-68 through T-69.

Types of Attachment
The five attachment methods shown below provide unlimited flexibility of attachment to meet any condition.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type E</td>
<td>Double Eye Grip, used where fastening is made with eyebolts or similar anchor terminations.</td>
</tr>
<tr>
<td>Type A</td>
<td>Single Eye Grip, used where fastening MUST be made from one point.</td>
</tr>
<tr>
<td>Type U</td>
<td>Universal Bale Grip, used to fasten around a structure or closed eye.</td>
</tr>
<tr>
<td>Type Y</td>
<td>Threaded bolt (5/16-18 x 1 1/2&quot; long), used to fasten through drilled holes in plate.</td>
</tr>
<tr>
<td>Type F</td>
<td>Split fitting to fit AN-818 nuts. Fitting is positioned over nut and located with internal flange. A hose clamp is furnished and required to hold the fitting in correct position.</td>
</tr>
</tbody>
</table>

Note: It should be emphasized that Kellems® Hose Containment Grips are not to be used as a pressure reinforcing device for hose systems. These grips are custom made. To order, consult Technical Services for details.

Kellems Hose Containment Grips are used on high pressure, flexible hose lines to prevent the hose from whipping violently in the event of hose failure at the fitting. These grips will prevent serious injury to personnel and damage to equipment by holding the hose in place in the event of hose failure.

Kellems patented Hose Containment Grips are made of stainless steel with double weave mesh construction for high strength and come complete with hose clamps.

Kellems Hose Containment Grips are supplied in diameters, length and attachments to meet individual requirements. Contact the Wiring Device-Kellems factory for specific information. These grips help meet OSHA Federal Register 1926-302 (b), 1926-603 (9), (10), JIC H-1-1973 (H13.11) and JIC P-1-1975 (P11.34) requirements.
Kellems® Grips for Strain Relief

Technical Section

Conduit Grips for Liquidtight Flexible Metal Conduit
Kellem Liquidtight Flexible Metal Conduit Grips are offered with high quality Hubbell plated steel fittings in a wide variety of N.P.T. sizes and configurations, either insulated or non-insulated. The addition of a stainless steel mesh to these fittings makes them stronger than the conduit itself. Kellem Conduit Grips helps prevent conduit pull-out from the connecting fitting that is subject to stress, pull tension, vibration, motion or strain. They promote safe electrical systems and reduce equipment downtime.

Benefits
- Helps prevent conduit pull-out and damage at the fitting.
- Reduces equipment downtime.
- Liquidtight fittings.
- Easily installed.
- Stainless steel grip resists corrosion.

Kellem Conduit Grips are suitable for use in hazardous locations per Class I Div. 2, Class II Div. 1 & 2, Class III Div. 1 & 2 of the National Electric Code.

Application
Kellem Conduit Grips are used in the wiring of machine tools, motors, molding equipment, transformers, weaving and paper machines, fans, lighting, bakeries, breweries, food processing, chemical plants, dairies, mines and any application that requires Liquidtight Conduit.

Safety And Working Load Factors For Wire Mesh Grips

The broad application of Kellem's grips on a wide variety of objects requires that adequate safety factors be used to establish working loads. The approximate breaking strength of a Kellem grip represents an average calculation based on data established from actual direct tension testing done in our engineering laboratories.

It is impossible to catalog or guarantee a safety factor suitable for all applications as operating conditions are never the same. The tension, diameter, movement, number of objects gripped, gripping surface, and the attachments used are just some of the factors which vary with each application. These factors, together with the effects of abrasion, corrosion, prior use or abuse and any other variables of a specific application, must be considered by the user and the grip replaced as appropriate. Where the conditions of the application are not well defined or known or where risk of injury to persons or property is involved, a greater safety factor should be utilized. Should our opinion be needed, call Technical Services.

Under normal conditions, Kellem's recommended factor of safety is five for catalog listed pulling grips, and ten for catalog listed support grips. Technical Services should be consulted for specific application recommendations where strength and holding power are important factors.

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published breaking strengths apply only to new, unused grips, and that such products are properly stored, handled, used, maintained and inspected by the user at a frequency appropriate for the use and condition of the grip.

For grip applications on materials other than those the grips have been specifically designed for, consult Technical Services.

Examples

<table>
<thead>
<tr>
<th>Grip Style</th>
<th>Approx. Breaking Strength Lbs. (N)</th>
<th>Safety Factor</th>
<th>Max. Rec. Load Lbs. (N)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Drop</td>
<td>1,000 (4,448)</td>
<td>10</td>
<td>100 (445)</td>
<td>074093402</td>
</tr>
</tbody>
</table>

The maximum recommended working load then is the tension to be exerted on the grip in application with a margin of safety to take care of unforeseen and unusual circumstances.

Much of a safety factor is acceptable to him.
Kellems® Grips for Strain Relief
Technical Section

Conduit Grips for Liquidtight Flexible Metal Conduit

Hardened Steel Locknut has tangs that dig into box for excellent continuity of ground. Locknut will not slip or spin.

Connectors with insulated throats protect insulation on wires during wire pulling. Yellow color easily seen by inspectors. 2 ½" - 4" sizes include insulating bushing instead of fixed insulator.

Steel grounding ferrule easily threaded by hand. Fits convolutions to conduit. Eliminates pullouts and insures continuity of ground. Distortion free to remain reusable.

Optional Sealing Washer gives better liquidtight protection around knockout of sheet metal box. Neoprene gasket seals out liquids and steel retaining ring protects gasket from distortion. Order separately.

Body is virtually unbreakable. Straight connectors through 1" are screw machine steel; other sizes malleable iron. Threads at left are tapered to insure liquidtight seal in threaded hub. Liquidtight conduit cutaway view shows flexible steel core under plastic jacket.

Nylon gland ring is split for ease of installation and greater compression. Reversible design cannot be installed facing the wrong way. Nylon is impervious to liquids, resistant to temperature extremes and resists abrasion.

Hexagonal compression nut is screw machined steel through 1" and malleable iron on larger sizes.

Wire mesh grip prevents pullout.

Liquidtight conduit cutaway view shows flexible steel core under plastic jacket.
### Kellems® Grips for Strain Relief

#### Technical Section

#### Liquidtight Flexible Metal Conduit Grip Fitting Dimensions-Inches

**45° Angle with Male Fitting**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>1.19</td>
<td>1.28 .59 .120 &quot;1.06 &quot;</td>
<td>.61 .107 &quot;93&quot;</td>
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</tr>
<tr>
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<td>1.19</td>
<td>1.28 .59 .134 &quot;1.19 &quot;</td>
<td>.61 .121 &quot;96&quot;</td>
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<tr>
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<td>.82 .150 &quot;59&quot;</td>
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<td>2.25 .66 .308 &quot;2.88 &quot;</td>
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</table>

**45° Angle with Male Fitting with Insulated Throat**

<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.28 .66 .120 &quot;1.06 &quot;</td>
<td>.57 .116 &quot;10&quot;</td>
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</tr>
<tr>
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<td>1.25</td>
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<td>.57 .121 &quot;10&quot;</td>
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</tr>
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<td>1.25</td>
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<td>1.53 .262 &quot;29&quot;</td>
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<td>2.05 .314 &quot;27&quot;</td>
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**90° Angle with Male Fitting**

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<th>F G Ref.</th>
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<th>A/C&quot; A/F&quot;</th>
<th>Catalog Numbers</th>
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<tbody>
<tr>
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<td>.60 .13 &quot;99&quot;</td>
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<td>.59 .155 &quot;1.45 &quot;</td>
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<td>2.19 .180 &quot;57&quot;</td>
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<td>2.50 .232 &quot;23&quot;</td>
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**90° Angle with Male Fitting with Insulated Throat**

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<th>A/C&quot; A/F&quot;</th>
<th>Catalog Numbers</th>
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<td>.66 .155 &quot;1.45 &quot;</td>
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<td>4.87 .464 &quot;30&quot;</td>
<td>074093552</td>
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</tbody>
</table>

Dimensions shown are approximate and are subject to change without notice.

Dimensions in Inches (mm)

www.hubbell-wiring.com  
T-105

Wire Management Products  
Technical Data
Kellems® Grips for Strain Relief
Technical Section

Conduit Grips for (UL Type A) Non-metallic, Flexible, Liquidtight Conduit

Kellems Grips for UL Type A, non-metallic, flexible, liquidtight conduit are available in straight and 90° male and feature a high quality Hubbell plated steel or malleable iron fitting, complete with a sealing O-ring, lock nut and stainless steel mesh. These grips increase the retention of the conduit in the fitting, control its arc-of-bend and provide a liquidtight seal.

Application

These grips are used on UL Type A non-metallic conduit connections at limit switches, motor boxes, panel boards, control stations and on all types of machinery and machine tools.

Benefits

- Provides a liquidtight seal.
- Helps prevent conduit pull-out.
- Reduces conduit cutting, kinking, fraying and splitting at the fitting.
- Easily installed.

Steel Locknut has tangs that dig into box for excellent continuity of ground. Locknut will not slip or spin.

Neoprene "O"-ring is factory assembled into the body to seal out liquids.

Body is virtually unbreakable. Straight connectors through 1" are screw machine steel; other sizes are malleable iron. Threads are tapered to insure liquidtight seal when used in threaded hub. Octagonal shape inside holds the ferrule to prevent conduit from twisting during installation.

Wire mesh grip prevents pullout.

Insulated throat protects insulation on wires during pulling. Yellow color easily seen by inspectors.

Yellow nylon ferrule fits inside non-metallic conduit to hold the shape. Barb in designed to assure liquidtight seal even with non-square cut. Ferrule is keyed to fit into body to prevent conduit twisting.

Yellow nylon sleeve installs over conduit. Six slits in sleeve permit tight compression onto conduit as compression nut is tightened.

Hexagonal compression nut is machine steel through 1" malleable iron on larger sizes. Tapered interior compresses sleeve over conduit sealing out liquids and preventing pullout.

Yellow nylon sleeve fits inside non-metallic conduit to hold the shape. Barb in designed to assure liquidtight seal even with non-square cut. Ferrule is keyed to fit into body to prevent conduit twisting.

Hexagonal compression nut is machine steel through 1" malleable iron on larger sizes. Tapered interior compresses sleeve over conduit sealing out liquids and preventing pullout.

Dimensions in Inches (mm)
Kellems® Grips for Strain Relief
Technical Section

Dimensional Charts For (UL Type A) Non-metallic, Liquidtight, Conduit Grip Fittings

### Straight with Male Fitting with Insulated Throat

<table>
<thead>
<tr>
<th>Trade Size</th>
<th>Dimensions Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.P.T. Inches</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3/8”</td>
<td>1.922” (4.88)</td>
<td>.594” (1.51)</td>
</tr>
<tr>
<td>1/2”</td>
<td>1.922” (4.88)</td>
<td>.594” (1.51)</td>
</tr>
<tr>
<td>3/4”</td>
<td>2.016” (5.12)</td>
<td>.594” (1.51)</td>
</tr>
<tr>
<td>1”</td>
<td>2.157” (5.48)</td>
<td>.719” (1.83)</td>
</tr>
<tr>
<td>11/4”</td>
<td>2.219” (5.64)</td>
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</tr>
<tr>
<td>11/2”</td>
<td>2.344” (5.95)</td>
<td>.750” (1.91)</td>
</tr>
<tr>
<td>2”</td>
<td>2.406” (6.11)</td>
<td>.750” (1.91)</td>
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### 90° Angle with Male Fitting with Insulated Throat

<table>
<thead>
<tr>
<th>Trade Size</th>
<th>Dimensions Inches (cm)</th>
<th>Catalog Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.P.T. Inches</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>3/8”</td>
<td>1.250” (3.18)</td>
<td>.594” (1.51)</td>
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<tr>
<td>1/2”</td>
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<td>1.438” (3.65)</td>
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<tr>
<td>1”</td>
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<td>11/4”</td>
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<tr>
<td>2”</td>
<td>2.531” (6.43)</td>
<td>.750” (1.91)</td>
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Dimensions shown are approximate and are subject to change without notice.
**Non-metallic Liquidtight Conduit**

**Product Features and Benefits**

**POLYTUFF® Liquidtight Conduit**

**PolyTuff I Conduit—Gray**

Rigid PVC core bonded to flexible PVC jacket.

All nonmetallic construction ends metal fatigue and separation problems.

UL Listed and CSA Certified.

Cuts cleanly with a knife or PVC cutter so there are no jagged metal edges.

---

**PolyTuff I Conduit**

<table>
<thead>
<tr>
<th>Size (metric designator)</th>
<th>Trade Name</th>
<th>Feet (m)</th>
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<tbody>
<tr>
<td>3/8&quot; (12)</td>
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</tr>
<tr>
<td>1/2&quot; (16)</td>
<td>G1050</td>
<td>100 (30.5)</td>
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<tr>
<td>5/8&quot; (21)</td>
<td>G1075</td>
<td>100 (30.5)</td>
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<tr>
<td>1&quot; (27)</td>
<td>G1100</td>
<td>100 (30.5)</td>
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<tr>
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<td>G1125</td>
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<td>1 1/2&quot; (41)</td>
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<td>50 (15.2)</td>
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<tr>
<td>2&quot; (53)</td>
<td>G1200</td>
<td>50 (15.2)</td>
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</table>

Note: See pages T-114 to T-115 for additional technical data and dimensional drawings.
Non-metallic Liquidtight Tubing

Product Features and Benefits
POLYTUFF® Liquidtight Conduit

PolyTuff II Tubing—Black

PVC core with corrugated walls bonded to PVC jacket.

Handles twists, turns, bends, switchbacks and straightaways with ease.

All nonmetallic construction ends fatigue and separation problems.

Can be cut with a knife or PVC cutters.

UL Recognized and CSA Certified.

<table>
<thead>
<tr>
<th>Trade Size (metric designator)</th>
<th>Catalog Numbers</th>
<th>Feet (m)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>100 (30.5)</td>
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<td>100 (30.5)</td>
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<tr>
<td>1&quot; (27)</td>
<td>B2100</td>
<td>100 (30.5)</td>
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<td>1 1/4&quot; (35)</td>
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<td>100 (30.5)</td>
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<td>2&quot; (53)</td>
<td>B2200</td>
<td>50 (15.2)</td>
</tr>
</tbody>
</table>

Note: See pages T-114 to T-115 for additional technical data and dimensional drawings.
Nylon two-piece swivel body enables fitting to twist from 0° to 90°.

Non-integral ferrule provides conduit seal and superior pullout protection.

Nylon compression nut has a tapered dome to tighten ferrule onto conduit.

Neoprene O-ring provides liquidtight seal at hub or enclosure.

Nylon locknut fastens connector securely to enclosure and provides superior corrosion resistance.
Non-metallic Liquidtight Connectors

Flexible Non-metallic Conduit and Tubing Fittings

POLYTUFF® Non-metallic Fittings

Type 4X, 12 and 13

**Straight with Male Non-Metallic Liquidtight Fittings**

<table>
<thead>
<tr>
<th>Trade Size (metric designator)</th>
<th>Black Catalog Numbers</th>
<th>Gray Catalog Numbers</th>
</tr>
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<tbody>
<tr>
<td>3/8&quot; (12)</td>
<td>P038NBKA</td>
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<tr>
<td>1/2&quot; (16)</td>
<td>P050NBKA</td>
<td>P050NGYA</td>
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<tr>
<td>3/4&quot; (21)</td>
<td>P075NBKA</td>
<td>P075NGYA</td>
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<td>1&quot; (27)</td>
<td>P100NBKA</td>
<td>P100NGYA</td>
</tr>
<tr>
<td>1/4&quot; (10)</td>
<td>F2025</td>
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<tr>
<td>1/4&quot; (35)</td>
<td>P125NBK</td>
<td>P125NGY</td>
</tr>
<tr>
<td>1/2&quot; (41)</td>
<td>P150NBK</td>
<td>P150NGY</td>
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<tr>
<td>2&quot; (53)</td>
<td>P200NBK</td>
<td>P200NGY</td>
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Note: See pages T-116 and T-117 for additional technical data and dimensional drawings.

**SwivelLok® Multi-Position with Male Non-Metallic Liquidtight Fittings**

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<tr>
<td>3/4&quot; (21)</td>
<td>PS0759NBK</td>
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<tr>
<td>1&quot; (27)</td>
<td>PS1009NBK</td>
<td>PS1009NGY</td>
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Note: See pages T-116 and T-117 for additional technical data and dimensional drawings.

**90° Angle with Male Non-Metallic Liquidtight Fittings**

<table>
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<th>Trade Size (metric designator)</th>
<th>Black Catalog Numbers</th>
<th>Gray Catalog Numbers</th>
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<tbody>
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<td>1/4&quot; (35)</td>
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Note: See pages T-116 and T-117 for additional technical data and dimensional drawings.

**SwivelLok Flexible Conduit Kit**

<table>
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<th>Catalog Numbers</th>
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<td>3/4&quot; (21)</td>
<td>2 PS0759NGY, 6' G1075</td>
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</table>

Note: See pages T-116 and T-117 for additional technical data and dimensional drawings.
Hexagonal, screw-machined steel thru 1", and malleable iron on larger sizes. Nut compresses gland-ring onto conduit.

Split, nylon, gland-ring compresses conduit onto ferrule.

Non-integral, reusable steel, ferrule is easily installed, to seal conduit.

Threaded one-piece steel body.

Tapered, machined threads fasten securely and provide additional liquidtight sealing.

Optional insulated and non-insulated throat.

Optional Neoprene O-ring provides liquidtight seal at hub.

Locknut has hardened steel tangs to grip securely.
### Metallic Liquidtight Fittings

#### Flexible Metallic Conduit Fittings

**Straight Conduit Fitting**

<table>
<thead>
<tr>
<th>Trade Size (metric designator)</th>
<th>Insulated</th>
<th>Non-Insulated</th>
</tr>
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<tbody>
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<td>H038</td>
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<tr>
<td>1/2&quot; (16)</td>
<td>H0501A</td>
<td>H050A</td>
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<td>H075A</td>
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<td>H1001</td>
<td>H100</td>
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<td>H125</td>
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<td>H1501</td>
<td>H150</td>
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<tr>
<td>2&quot; (53)</td>
<td>H2001</td>
<td>H200</td>
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<td>2 1/2&quot; (63)</td>
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</tr>
<tr>
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*Note: See page T-118 for additional technical data.*

**45° Conduit Fitting**

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<tbody>
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<td>H0384</td>
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<tr>
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<td>H05041</td>
<td>H0504</td>
</tr>
<tr>
<td>3/4&quot; (21)</td>
<td>H07541</td>
<td>H0754</td>
</tr>
<tr>
<td>1&quot; (27)</td>
<td>H10041</td>
<td>H1004</td>
</tr>
<tr>
<td>1 1/4&quot; (35)</td>
<td>H12541</td>
<td>H1254</td>
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<td>2&quot; (53)</td>
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*Note: See page T-118 for additional technical data.*

**90° Conduit Fitting**

<table>
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<tbody>
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<tr>
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<td>H0509</td>
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<tr>
<td>3/4&quot; (21)</td>
<td>H07591</td>
<td>H0759</td>
</tr>
<tr>
<td>1&quot; (27)</td>
<td>H10091</td>
<td>H1009</td>
</tr>
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<td>1 1/4&quot; (35)</td>
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<td>H1259</td>
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<tr>
<td>1 1/2&quot; (41)</td>
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<td>H1509</td>
</tr>
<tr>
<td>2&quot; (53)</td>
<td>H20091</td>
<td>H2009</td>
</tr>
</tbody>
</table>

*Note: See page T-118 for additional technical data.*
## PolyTuff I Conduit

### Operating Temperature Range

- **Wet environment**: 0°F to +140°F (-18°C to +60°C)
- **Oil environment**: 0°F to +158°F (-18°C to +70°C)
- **Dry environment**: 0°F to +176°F (-18°C to +80°C)

### Certifications

- UL Listed
- UL Standard 1660. Sunlight resistant approved for outdoor use, direct burial. Meets requirements of NEC.
- CSA Certified

### Voltage Rating

- Maximum: 600V

### Material

Conduit: Co-extruded rigid and flexible PVC.

### Dimensions in Inches (mm)

<table>
<thead>
<tr>
<th>Trade Size (metric designator)</th>
<th>Conduit ID/OD Bend Radius</th>
<th>Bend Radius</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.49&quot;/.70&quot; (12.6/17.8)</td>
<td>2.00&quot; (50.8)</td>
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<tr>
<td>1/2&quot; (16)</td>
<td>.63&quot;/.83&quot; (16.1/21.1)</td>
<td>3.00&quot; (76.2)</td>
</tr>
<tr>
<td>5/8&quot; (21)</td>
<td>.83&quot;/1.04&quot; (21.1/26.4)</td>
<td>4.00&quot; (101.6)</td>
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<tr>
<td>1&quot; (27)</td>
<td>1.05&quot;/1.30&quot; (26.0/33.1)</td>
<td>5.00&quot; (127.0)</td>
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<tr>
<td>1 1/4&quot; (35)</td>
<td>1.40&quot;/1.65&quot; (35.4/41.8)</td>
<td>6.30&quot; (158.8)</td>
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<tr>
<td>1 1/2&quot; (41)</td>
<td>1.59&quot;/1.88&quot; (40.3/47.8)</td>
<td>7.50&quot; (190.5)</td>
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<tr>
<td>2&quot; (53)</td>
<td>2.03&quot;/2.36&quot; (51.6/59.9)</td>
<td>10.00&quot; (254.0)</td>
</tr>
</tbody>
</table>

## PolyTuff II Tubing

### Operating Temperature Range

- Operating Environment: 0°F to +140°F (-18°C to +60°C)

### Certifications

- UL Recognized
- CSA Certified

### Voltage Rating

- Maximum: Same as wire insulation rating.

### Material

Tubing: Co-extruded rigid and flexible PVC.

### Dimensions in Inches (mm)

<table>
<thead>
<tr>
<th>Trade Size (metric designator)</th>
<th>Conduit ID/OD Bend Radius</th>
<th>Bend Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; (10)</td>
<td>.36&quot;/.57&quot; (9.3/14.5)</td>
<td>1.50&quot; (38.1)</td>
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<tr>
<td>5/32&quot; (12)</td>
<td>.49&quot;/.70&quot; (12.6/17.8)</td>
<td>2.00&quot; (50.8)</td>
</tr>
<tr>
<td>5/32&quot; (16)</td>
<td>.63&quot;/.83&quot; (16.1/21.1)</td>
<td>2.00&quot; (50.8)</td>
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<tr>
<td>3/32&quot; (21)</td>
<td>.83&quot;/1.04&quot; (21.1/26.4)</td>
<td>3.00&quot; (76.2)</td>
</tr>
<tr>
<td>7/32&quot; (27)</td>
<td>1.05&quot;/1.30&quot; (26.0/33.1)</td>
<td>3.00&quot; (76.2)</td>
</tr>
<tr>
<td>1/4&quot; (35)</td>
<td>1.40&quot;/1.65&quot; (35.4/41.8)</td>
<td>5.00&quot; (127.0)</td>
</tr>
<tr>
<td>5/32&quot; (41)</td>
<td>1.59&quot;/1.88&quot; (40.3/47.8)</td>
<td>5.00&quot; (127.0)</td>
</tr>
<tr>
<td>2&quot; (53)</td>
<td>2.03&quot;/2.36&quot; (51.6/59.9)</td>
<td>5.00&quot; (127.0)</td>
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Dimensions in Inches (mm)
## PolyTufl I and II Conduit/Tubing; PVC Chemical Resistance

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Temp. 70°F</th>
<th>Temp. 150°F</th>
<th>Chemical</th>
<th>Temp. 70°F</th>
<th>Temp. 150°F</th>
<th>Chemical</th>
<th>Temp. 70°F</th>
<th>Temp. 150°F</th>
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<td></td>
<td>21°C</td>
<td>66°C</td>
<td></td>
<td>21°C</td>
<td>66°C</td>
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<td>66°C</td>
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<td>D</td>
<td>Coconut Oil</td>
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<td>D</td>
<td>Lubricating Oils</td>
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<td>Acetic Acid</td>
<td>B</td>
<td>C</td>
<td>Corn Oil</td>
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<td>B</td>
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<td>D</td>
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<td>C</td>
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<td>Methyl Alcohol</td>
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<td>A</td>
<td>Cysteine</td>
<td>B</td>
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<td>DDT Weed Killer (Phenol)</td>
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<td>C</td>
<td>Methyl Alcohol</td>
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<td>C</td>
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<tr>
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<td></td>
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<td>Dow General Weed Killer (H₂O)</td>
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<td>Naphtha</td>
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<td>C</td>
<td>Naphthalene</td>
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<td>A</td>
<td>A</td>
<td>Ethylene Glycol</td>
<td>B</td>
<td>C</td>
<td>Nitric Acid 35%</td>
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<td>A</td>
<td>Ethylene Glycol</td>
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<td>C</td>
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<td>Oleic Acid</td>
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<td>Oleum</td>
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<td>Ferrous Sulfate</td>
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<td>Persulfate</td>
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<td>Formaldehyde</td>
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<td>Phosphoric Acid</td>
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<td>Fuel Oil</td>
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<td>Pitch</td>
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<td>C</td>
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<td>Pentane</td>
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<td>A</td>
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<td>Phenol</td>
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<td>Glycerine</td>
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<td>B</td>
<td>C</td>
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<td>C</td>
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<td>C</td>
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<td>Heptane</td>
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<td>B</td>
<td>C</td>
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<tr>
<td>Carbolic Acid (Phenol)</td>
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<td>B</td>
<td>C</td>
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<td>C</td>
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<td>C</td>
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<td>C</td>
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<tr>
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<td>B</td>
<td>C</td>
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<tr>
<td>Chlorine Gas (wet)</td>
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<tr>
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<td>Hydrogen Peroxide</td>
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<td>B</td>
<td>Pentachlorophene in Oil</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>D</td>
<td>D</td>
<td>Jet Fuels (JP-3, and 5)</td>
<td>C</td>
<td>D</td>
<td>Phenol</td>
<td>B</td>
<td>A</td>
</tr>
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<td>Chronic Acid</td>
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<td>C</td>
<td>Jet Fuels (JP-3, and 5)</td>
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<td>Phenol</td>
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<tr>
<td>Chlorine (water solution)</td>
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<td>Lignin</td>
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<td>Phenol</td>
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<td>Phenol</td>
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<td>Phenol</td>
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<td>D</td>
<td>Lignin</td>
<td>A</td>
<td>A</td>
<td>Phenol</td>
<td>B</td>
<td>A</td>
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</table>

(All ratings apply to concentrated or saturated solutions unless otherwise specified.)

Chemical resistance ratings are based upon information supplied by the raw material manufacturers. Use as a general guide only – samples should be tested by user under actual conditions.

*Conc. - Concentration

### Rating Code

- **A-Excellent service**: No harmful effect to reduce service life. Suitable for continuous service.
- **B-Good service life**: Moderate to minor effect. Good for intermittent service. Generally suitable for continuous service.
- **C-Fair or limited service**: Depends on operating conditions. Generally suitable for intermittent service. Not recommended for continuous service.
- **D-unsatisfactory service**: Not recommended.
Non-metallic Liquidtight Fittings

Technical Data

POLYTUFF® Fittings

PolyTuff Fittings

<table>
<thead>
<tr>
<th>Operating Temperature*</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Nylon (Body, Nut, Gripping Ring and Locknut)</td>
<td>–40°F to +225°F (–40°C to +107°C).</td>
</tr>
<tr>
<td>Neoprene (Sealing Ring)</td>
<td>–30°F to +240°F (–34°C to +116°C).</td>
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<table>
<thead>
<tr>
<th>Flammability</th>
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<tbody>
<tr>
<td>Fire Gas Toxicity Product Testing</td>
<td>Nylon PolyTuff Fittings have a UL 94V-2 rating.</td>
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<table>
<thead>
<tr>
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<tr>
<td>UL Listed</td>
<td>UL50 Type 4X, 12 and 13</td>
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<td>CSA Certified</td>
<td>PolyTuff I Fittings, Poly Tuff II Fittings.</td>
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Liquidtight Fittings

<table>
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<th>Operating Temperature**</th>
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</thead>
<tbody>
<tr>
<td>Steel/Malleable Iron (Nut, Body, Ferrule)</td>
<td>–60°F to +1000°F (–51°C to +538°C).</td>
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<tr>
<td>Nylon (Gland Ring)</td>
<td>–40°F to +225°F (–40°C to +107°C).</td>
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<table>
<thead>
<tr>
<th>Hazardous Locations</th>
<th>NEC Reference</th>
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<tbody>
<tr>
<td>Class I, Div. 2</td>
<td>501-4b</td>
</tr>
<tr>
<td>Class II, Div. 1</td>
<td>502-4a2</td>
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<tr>
<td>Class II, Div. 2</td>
<td>502-4b2</td>
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<tr>
<td>Class III, Div. 1</td>
<td>503-3a2</td>
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<table>
<thead>
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</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>CSA Certified</td>
<td></td>
</tr>
</tbody>
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*Due to the limiting factors of nylon and neoprene, PolyTuff Fittings will continuously perform in the range –30°F to +225°F (–34°C to +107°C).

**Due to the limiting factors of nylon, metallic liquidtight flexible conduit fittings will continuously perform in the range of –40°F to +225°F (–40°C to +107°C).
### Non-metallic Liquidtight Fittings

#### Technical Data

**POLYTUFF® Fittings**

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* A/C = Across Corners  
A/F = Across Flats  
**md = metric designator

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### 90° with Male Non-Metallic Liquidtight Fittings

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### SwivelLok® Multi-Position Liquidtight Fittings

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Dimensions in Inches (mm)  
www.hubbell-wiring.com
### Metallic Liquidtight Conduit Fittings

#### Technical Data

**Dimensions in Inches (mm)**

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**45° with Male Metallic Metal Fitting**

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<td>(103)</td>
<td>(108.0)</td>
<td>(25.4)</td>
<td>(143.0)</td>
<td>(25.4)</td>
<td>(134.9)</td>
</tr>
</tbody>
</table>

**A/C = Across Corners** **A/F = Across Flats** **md = metric designator**