# CORD GRIPS



CONTA-CLIP

## *Your Reliable Partner...*


*Manufacturing Plant*

*Over the years, Conta-Clip has gained recognition as a leading manufacturer of innovative products which provide solutions for electrical and electronic interconnection applications. Today, as your global partner, Conta-Clip serves international markets offering a diverse Product Program of Control Components which is supplied and supported through our worldwide network of subsidiaries and agencies.*

### *Cord Grips*

*This catalog describes one of the most comprehensive selections of Cord Grips offered to industry. From standard to special applications, Conta-Clip can supply an unparalleled line of high quality Cord Grips to satisfy practically any requirement. Providing cable protection solutions that range from single cable straight through, bend and pull/bend protection, increased strain relief, flat and multi-cable to EMI/RFI protection. An extensive selection of accessories complement our Cord Grip program, providing additional possibilities for your application.*

### *Our Goal and Commitment*

*Conta-Clip's goal is fundamental ... provide our world-wide customer base with top quality products, back them with outstanding service and support, and deliver these products on time to meet our customer's needs... all at fair prices.*

*To accomplish our objective, we form close relationships with customers and suppliers alike. We select and purchase only the very best raw materials from quality oriented suppliers. We utilize the most up-to-date manufacturing equipment and use advanced manufacturing methods, which are continuously monitored and verified by our strict quality control program. And, most importantly, we employ knowledgeable and well-trained personnel who are dedicated to achieving excellence in everything they do.*

*Nothing can distract us from our primary commitment of addressing and satisfying the needs of our customers. This objective has motivated us since the founding of our company over 20 years ago; and, it continues to drive us today. In the future, it will ensure our success.*

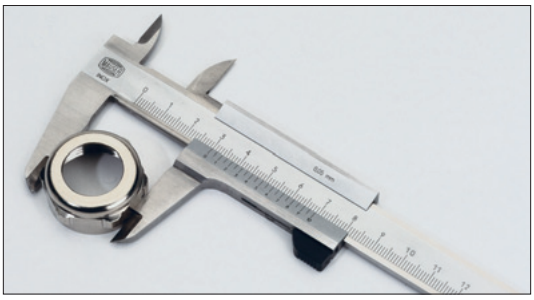
***Doing business with Conta-Clip, your reliable partner, will be a pleasant and rewarding experience.***

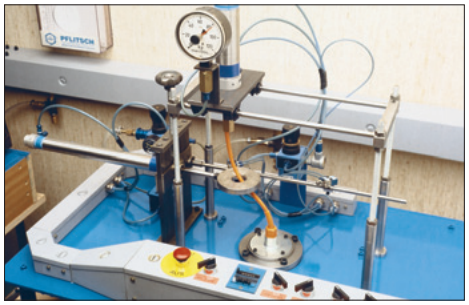

Conta-Clip, Inc., 219 Homestead Rd., B2-8/9, P.O.Box 2000, Belle Mead, NJ 08502 Tel: (908) 431-0705 Fax: (908) 431-0706

## The Keys to Manufacturing Quality Cord Grips

Since our founding in 1977, an outstanding Quality Control Program has been the basis for our success. In 1994, Conta-Clip's Quality Management System received DIN EN ISO 9001 Certification.

Meticulous quality control personnel and an advanced manufacturing system used to produce metal and non-metallic Cord Grips enables us to consistently meet or exceed our strict quality requirements.

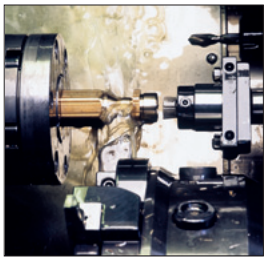


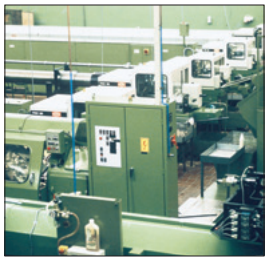


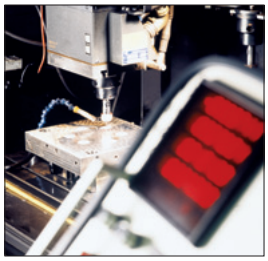
Continuous product monitoring and testing combined with superior manufacturing translate into unsurpassed product quality.

We carefully select and purchase our raw materials only from quality oriented suppliers. The efficient flow of our production process starts with large stockpiles of plastic and metal raw materials. This enables us to call upon these resources whenever our customers experience unexpected peak demands and require quick turn-around production runs..

Our production facilities feature the most up to date injection molding machines, as well as highly advanced computer controlled multi-spindle lathes. Molding tools are designed, built and maintained in house to ensure precision manufacturing of every plastic part.







Our modern production equipment, skilled personnel and advanced manufacturing methods coupled with our ISO 9001 Certified Quality System enables us to deliver Cord Grips of unsurpassed quality at competitive pricing.

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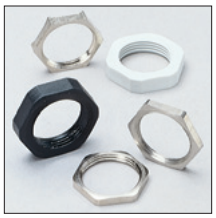



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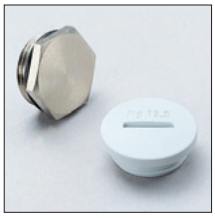


### THREADED PLUGS

## General Information

Cord Grips play a key role in the design of modern electrical/electronic products and control systems.

The Cord grip designs and the alternate construction materials presented in this catalog represent the latest advances in Cord Grip Technology.

Cord Grips are used in combination with enclosures/housings and power, control and data cabling to:

- provide liquid tight and dust proof seals at enclosure/housing entry points.
- secure cabling mechanically to an enclosure/housing.
- provide strain relief at termination points on components and devices.
- protect cabling from breakage or damage at entry points.
- provide EMI/RFI Emission and Immunity protection for shielded cables and enclosures/housings.

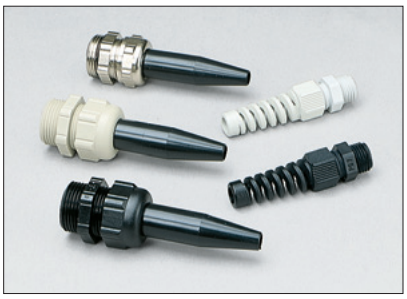
Conta-Clip's comprehensive Cord Grip Program provides users and specifiers with a broad range of selection choices and options. This ordering flexibility translates into the capability to select the Cord Grip Function that will satisfy specific application requirements and to optimize the Cord Grip Material Selection to meet the most severe ambient conditions.

Conta-Clip Cord Grips can help ensure that your product or control system will meet or exceed its design objectives as well as helping to provide the long term reliability you are seeking.

Introductions and technical information for Conta-Clip's (3) Cord Grip Product Groups can be found on the following pages:

- High Performance Cord Grips - See pages 8 and 9
- High Performance TOR-SPRING™ EMI/RFI Cord Grips - See pages 32 to 37
- Standard Cord Grips - See pages 44 and 45

**Straight Through –**
High Performance and Standard



**Bend Protection –**
High Performance and Standard

**Increased Strain Relief –**
High Performance and Standard

**Increased Strain Relief and Bend Protection –**
High Performance and Standard

**Flat Cable –**
High Performance and Standard

**Multi-Cable –**
High Performance and Standard

**EMI/RFI –**
High Performance

**90° Elbow –**
High Performance and Standard

**Harax® Quick Connect –**
High Performance

**Installation**

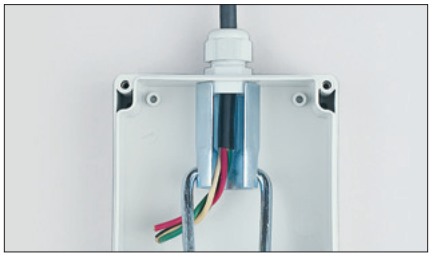
No disassembly of the Cord Grip is required prior to installation except for High Performance EMI/RFI Cord Grips (refer to page 36 for EMI/RFI Cord Grip installation).

Cord Grips can be installed into threaded or non-threaded mounting holes. We have listed the required mounting hole diameter for Cord Grip installation into non-threaded mounting holes on each ordering page.

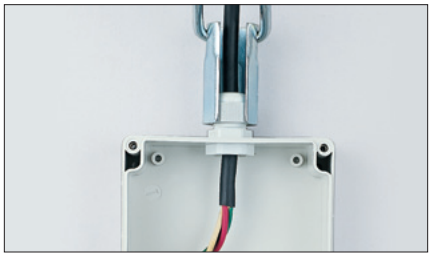
Installation into non-threaded mounting holes:

1. Drill or machine required clearance hole into enclosure/housing.
2. Install Cord Grip into mounting hole.

3. Secure with Locknut (see ordering pages or pages 60/61) and torque to recommended torque value (see page 69).



4. Feed cable through Cord Grip and adjust length inside enclosure/housing to reach termination point. Tighten Dome Nut to recommended torque value (see page 69).



Note: When Cord Grips are mounted into a threaded mounting hole, torque Cord Grip body to the recommended torque value (see page 69 External Thread).

**High Performance Body Materials**

- Polyamide (PA)
- Polyvinyledene (PVDF)
- Nickel Plated Brass (NPB)
- Stainless Steel (SS)

**High Performance Tubular Insert Materials**

- Polyvinylchloride (PVC)
- Santoprene (STP)
- Silicone (SIL)

**Standard Body Materials**

- Polyamide (PA)
- Polycarbonate (PC)
- Nickel Plated Brass (NPB)

**Standard Insert Materials**

- Neoprene (NEP)
- Polyolefin (TPE)

**Protection Rating**

- Up to IP 68

Refer to ordering pages and pages 68/69 for detailed information

**Pressure Ratings**

- Up to 10 Bar (140psi)

The pressure ratings are listed on each ordering page

**External Threads**

High Performance and Standard Cord Grips are available with PG or NPT external thread. Cord Grips with Metric or 15mm long external thread upon request

**Temperature Rating**

The temperature rating of our Cord Grips is determined by the Body and Insert Materials used.
The temperature rating is listed on every ordering page.

**Cable Diameter**

Each Cord Grip accommodates a wide range of cable diameters. Please refer to the cable diameter column on each ordering page.

**Torque Recommendations**

The recommended tightening torque for each Cord Grip is listed on page 69

**Accessories**

An extensive selection of accessories complement our Cord Grip program, providing additional possibilities for your application.
Accessories include:

- Locknuts
- Seal Rings
- Sealing Plugs
- Socket Ranges
- Reductions
- Enlargers
- Adapters NPT to PG thread
- Adapters PG to NPT thread
- Threaded Plugs

**Seal Rings**

Seal Rings are factory installed on all metal Cord Grips except Standard Flat Cable
Order Seal Rings separately for non-metallic Cord Grips except Standard PG 29 to PG 48 (factory installed).

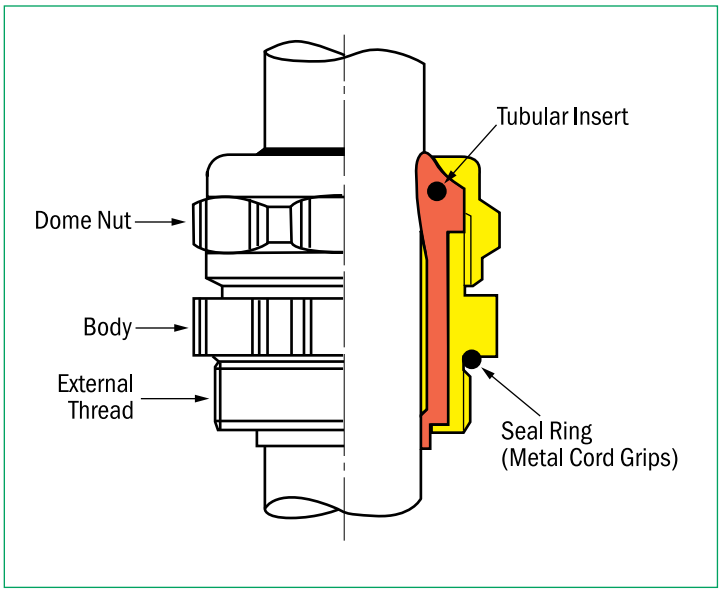
# HIGH PERFORMANCE CORD GRIPS

***Engineers' Number One choice for demanding applications, tough environments and special requirements***

High Performance Cord Grips are outstanding performers,providing a superior liquid-tight seal in a variety of materials and functions to meet any requirement.

- Outstanding Performance
- Superior Liquid-Tight Seal
- 9 Functional Designs
- 4 Body/3 Insert Material Combinations

**High Performance Cord Grip Components**




**Specifications**

| Body Materials | Insert Materials |
|---|---|
| Polyamide (PA)<br>Polyvinylidene (PVDF)<br>Nickel Plated Brass (NPB)<br>Stainless Steel (SS) | Polyvinylchloride (PVC)<br>Santoprene (STP)<br>Silicone (SIL) |
| **External Thread Sizes** | **Ratings** |
| PG7 to PG48<br>European Standard<br>NPT 3/8" to NPT 2"<br>US National Pipe Thread<br>Metric sizes available<br>M12 to M63 | Protection: Up to IP68 (NEMA 4X)<br>Pressure: Up to 10Bar (140psi) |

**Sealing Feature**

Outstanding construction details not found in conventional Sealing Inserts mean the highest quality seal possible:

- Tubular Sealing Insert extends entire length of Body for Superior Liquid-Tight Seal.
- Tubular Sealing Insert outer surface is knurled to provide a tight interlock with knurled inner surface of Body to prevent rotation of Insert and Cable when the Cord Grip Dome is tightened.

- Tubular Sealing Insert membrane has a reduced diameter to provide IP54 (NEMA13) Protection Rating even when the Cord Grip Dome is not tightened.

## High Performance Cord Grip Functions

All High Performance Cord Grips provide superior liquid-tight seals and strain relief at cable entry points. Applications requiring special materials and functions can be met with our High Performance Cord Grip Series.

### Straight Through Cord Grips

Provide a liquid -tight seal and strain relief for round cables and cords with diameters from 4.0 to 44.0mm (.16 to 1.73 in.)

*(Refer to pages 10-17 for Ordering Information)*

### Bend Protection Cord Grips

Provide a liquid-tight seal, strain relief and prevent sharp bending or kinking of cables and cords. Use for round cables and cords with diameters from 4.0 to 25.0mm (.16 to .98 in.)

*(Refer to pages 20-21 for Ordering Information)*

### NPT Size Cord Grips

Straight Through Cord Grips with NPT external thread provide a liquid-tight seal and strain relief for round cables and cords with diameters from 5.0 to 28.0mm (.20 to 1.10 in.)

*(Refer to page 55 for Ordering Information)*

### Increased Strain Relief Cord Grips

Provide a liquid -tight seal and resist higher pull-out forces. Use for round cables and cords with diameters from 4.0 to 40.0mm (.16 to 1.57 in.)

*(Refer to pages 18-19 for Ordering Information)*

### Increased Strain Relief and Bend Protection Cord Grips

Provide a liquid-tight seal, resist higher pull-out forces and prevent sharp bending of cables and cords. Use for round cables and cords with diameters from 4.0 to 25.0mm (.16 to .98i in.).

*(Refer to pages 22-23 for Ordering Information)*

### Multi-Cable Cord Grips

Provide a liquid-tight seal and strain relief for one or more cables and cords of the same or different diameters.
The perfect solution for restricted space applications.

*(Refer to pages 26-31 for Ordering Information)*

### Flat Cable Cord Grips

Provide a liquid-tight seal and strain relief. Inserts are available with rounded sides or oval openings to ensure the best possible seal. Use for flat cables with a height from 3.5 to 15.0mm (.14 to .59 in.) and a width from 5.5 to 45.0mm (.22 to 1.77 in.)

*(Refer to pages 24-25 for Ordering Information)*

### 90° Elbow Cord Grips

Designed to protect cables and cords when a 90 degree installation is required. They provide a liquid-tight seal and strain relief for cables and cords with diameters from 4.0 to 28.0mm (.16 to 1.10 in.)

*(Refer to page 57 for Ordering Information)*

### EMI/RFI Cord Grips

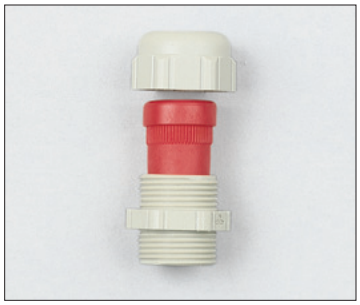
Provide a liquid-tight seal, strain relief and shielding against electro-magnetic and radio frequency interference. Use for round, shielded cables and cords with diameters from 4.0 to 37.0mm (.16 to 1.45 in.)

*(Refer to pages 38-40 for Ordering Information)*

# STRAIGHT-THROUGH
## Polyamide (PA)

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 2 Insert Materials
- Order Seal Rings and Locknuts Separately
- Standard Colors: Beige or Black

### Polyamide (PA) Beige



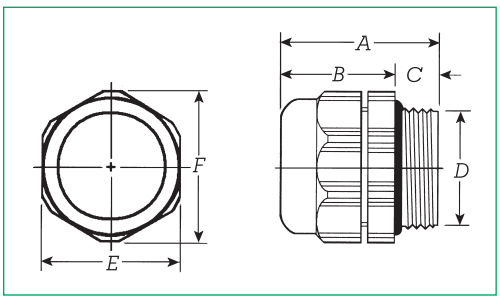
**with Polyvinylchloride (PVC) Tubular Sealing Insert**

| MATERIAL SPECIFICATIONS: | |
|---|---|
| *Body* | *Polyamide (PA)* |
| *Insert* | *Polyvinylchloride (PVC)* |
| **TEMPERATURE RANGE:** | |
| *Body* | *-20 to 100°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| **INSERT COLOR:** | *Various* |

| Type | Cable Dia. mm. | Cable Dia. (in.) | Mtg. Hole Dia. mm. | Mtg. Hole Dia. (in.) | Std. Pk. | Sealing Insert Color | Cat. No. Beige |
|---|---|---|---|---|---|---|---|
| PG9-PSPA ✻✻✻✻✻ 8.0 | 5.0 - 8.0 | (.20-.31) | 15.5 | (.61) | 50 | Gray | 20001.0 |
| PG9-PSPA ✻✻✻✻✻ 9.5 | 6.5 - 9.5 | (.26-.37) | 15.5 | (.61) | 50 | Black | 20002.0 |
| PG11-PSPA ✻✻✻✻✻ 8.0 | 5.0 - 8.0 | (.20-.31) | 19.0 | (.75) | 50 | Gray | 20004.0 |
| PG11-PSPA ✻✻✻✻✻ 9.5 | 6.5 - 9.5 | (.26-.37) | 19.0 | (.75) | 50 | Black | 20005.0 |
| PG11-PSPA ✻✻✻✻✻10.5 | 7.0 - 10.5 | (.28-.41) | 19.0 | (.75) | 50 | Green | 20006.0 |
| PG13.5-PSPA✻✻✻✻✻ 9.5 | 6.5 - 9.5 | (.26-.37) | 21.0 | (.83) | 50 | Black | 20009.0 |
| PG13.5-PSPA✻✻✻✻✻10.5 | 7.0 - 10.5 | (.28-.41) | 21.0 | (.83) | 50 | Green | 20010.0 |
| PG13.5-PSPA✻✻✻✻✻13.0 | 9.0 - 13.0 | (.35-.51) | 21.0 | (.83) | 50 | Red | 20011.0 |
| PG16-PSPA ✻✻✻✻✻10.5 | 7.0 - 10.5 | (.28-.41) | 23.0 | (.91) | 25 | Green | 20015.0 |
| PG16-PSPA ✻✻✻✻✻13.0 | 9.0 - 13.0 | (.35-.51) | 23.0 | (.91) | 25 | Red | 20016.0 |
| PG16-PSPA ✻✻✻✻✻15.5 | 11.5 - 15.5 | (.45-.61) | 23.0 | (.91) | 25 | White | 20017.0 |
| PG21-PSPA ✻✻✻✻✻15.5 | 11.5 - 15.5 | (.45-.61) | 29.0 | (1.14) | 25 | White | 20020.0 |
| PG21-PSPA ✻✻✻✻✻18.0 | 14.0 - 18.0 | (.55-.71) | 29.0 | (1.14) | 25 | Blue | 20021.0 |
| PG21-PSPA ✻✻✻✻✻20.5 | 17.0 - 20.5 | (.67-.81) | 29.0 | (1.14) | 25 | Brown | 20022.0 |
| PG29-PSPA ✻✻✻✻✻25.0 | 20.0 - 25.0 | (.79-.98) | 37.5 | (1.48) | 20 | Orange | 20026.0 |
| PG29-PSPA ✻✻✻✻✻28.0 | 24.0 - 28.0 | (.94-1.10) | 37.5 | (1.48) | 20 | Light Yellow | 20027.0 |
| PG36-PSPA ✻✻✻✻✻32.0 | 27.0 - 32.0 | (1.06-1.26) | 47.5 | (1.87) | 10 | Dark Gray | 20028.0 |
| PG36-PSPA ✻✻✻✻✻36.0 | 32.0 - 36.0 | (1.26-1.42) | 47.5 | (1.87) | 10 | Rose | 20030.0 |
| PG42-PSPA ✻✻✻✻✻40.0 | 36.0 - 40.0 | (1.42-1.57) | 54.5 | (2.15) | 5 | White | 20031.0 |
| PG48-PSPA ✻✻✻✻✻44.0 | 39.0 - 44.0 | (1.54-1.73) | 60.0 | (2.36) | 5 | White | 20032.0 |

✻✻ ✻ Add Insert Material – PVC for Polyvinylchloride, STP for Santoprene

✻✻ Add Body Color - BE for Beige, BK for Black




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 31.0 (1.22) | 22.0 (.87) | 9.0 (.35) | 15.2 (.60) | 19.0 | 16.2 (.64) |
| PG11 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 18.6 (.73) | 22.0 | 21.0 (.83) |
| PG13.5 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 20.4 (.80) | 24.0 | 24.5 (.96) |
| PG16 | 32.5 (1.28) | 23.0 (.91) | 9.5 (.37) | 22.5 (.89) | 27.0 | 26.5 (1.04) |
| PG21 | 38.0 (1.50) | 27.0 (1.06) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 29.5 (1.16) |
| PG29 | 45.5 (1.79) | 34.0 (1.34) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 36.5 (1.44) |
| PG36 | 48.0 (1.89) | 34.0 (1.34) | 14.0 (.55) | 47.0 (1.85) | 53.0 | 46.0 (1.81) |
| PG42 | 53.0 (2.09) | 38.0 (1.50) | 15.0 (.59) | 54.0 (2.13) | 60.0 | 57.0 (2.24) |
| PG48 | 53.0 (2.09) | 38.0 (1.50) | 15.0 (.59) | 59.3 (2.33) | 65.0 | 64.0 (2.52) |

## Polyamide (PA) Black

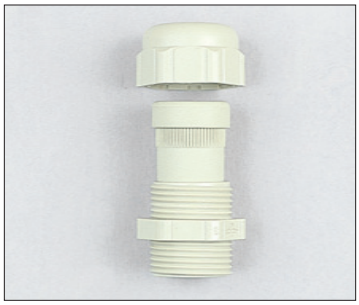
**with Polyvinylchloride (PVC) Tubular Sealing Insert**

***Polyamide (PA)***
***Polyvinylchloride (PVC)***

***-20 to 100°C (-4 to 212°F)***
***-20 to 80°C (-4 to 176°F)***
***Various***

| Sealing Insert Color | Cat. No. Black |
|---|---|
| Gray | 20036.1 |
| Black | 20037.1 |
| Gray | 20039.1 |
| Black | 20040.1 |
| Green | 20041.1 |
| Black | 20044.1 |
| Green | 20045.1 |
| Red | 20046.1 |
| Green | 20050.1 |
| Red | 20051.1 |
| White | 20052.1 |
| White | 20055.1 |
| Blue | 20056.1 |
| Brown | 20057.1 |
| Orange | 20061.1 |
| Light Yellow | 20062.1 |
| Dark Gray | 20063.1 |
| Rose | 20065.1 |
| White | 20066.1 |
| White | 20067.1 |

## Polyamide (PA) Beige



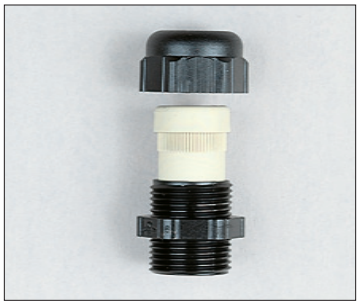
**with Santoprene (STP) Tubular Sealing Insert**

***Polyamide (PA)***
***Santoprene (STP)***

***-20 to 100°C ( -4 to 212°F)***
***-60 to 125°C (-65 to 257°F)***
***Beige***

| Cat. No. Beige |
|---|
| – |
| 20191.0 |
| – |
| – |
| 20192.0 |
| 20193.0 |
| 20194.0 |
| 20195.0 |
| 20198.0 |
| 20199.0 |
| 20200.0 |
| 20201.0 |
| 20202.0 |
| 20203.0 |
| – |
| 20204.0 |
| 20205.0 |
| 20207.0 |
| – |
| – |

## Polyamide (PA) Black



**with Santoprene (STP) Tubular Sealing Insert**

***Polyamide (PA)***
***Santoprene (STP )***

***-20 to 100°C ( -4 to 212°F)***
***-60 to 125°C (-65 to 257°F)***
***Beige***

| Cat. No. Black |
|---|
| – |
| 20211.1 |
| – |
| – |
| 20212.1 |
| 20213.1 |
| 20214.1 |
| 20215.1 |
| 20218.1 |
| 20219.1 |
| 20220.1 |
| 20221.1 |
| 20222.1 |
| 20223.1 |
| – |
| 20224.1 |
| 20225.1 |
| 20227.1 |
| – |
| – |

### LOCKNUTS -Order Separately

Polyamide (PA)
Temperature Range: -20 to 100°C (-4 to 212°F)

| Size | Cat. No. Gray | Cat. No. Black | Std. Pk. |
|---|---|---|---|
| PG9 | 23051.9 | 23061.9 | 50 |
| PG11 | 23052.9 | 23062.9 | 50 |
| PG13.5 | 23053.9 | 23063.9 | 50 |
| PG16 | 23054.9 | 23064.9 | 25 |
| PG21 | 23055.9 | 23065.9 | 25 |
| PG29 | 23056.9 | 23066.9 | 20 |
| PG36 | 23057.9 | 23067.9 | 10 |
| PG42 | 23058.9 | 23068.9 | 5 |
| PG48 | 23059.9 | 23069.9 | 5 |

See page 60 for additional information

### SEAL RINGS - Order Separately

Polyethylene (PET)
Temperature Range: -20 to 100°C (-4 to 212°F)

| Size | Cat. No. | Std. Pk. |
|---|---|---|
| PG9 | 23171.9 | 50 |
| PG11 | 23172.9 | 50 |
| PG13.5 | 23173.9 | 50 |
| PG16 | 23174.9 | 25 |
| PG21 | 23175.9 | 25 |
| PG29 | 23176.9 | 20 |
| PG36 | 23177.9 | 10 |
| PG42 | 23178.9 | 5 |
| PG48 | 23179.9 | 5 |

See page 62 for additional information

# STRAIGHT-THROUGH
## Polyvinylidene (PVDF)

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 3 Insert Materials
- Optional 15mm (.59 in.) Long External Thread
- Order Seal Rings and Locknuts Separately
- Standard Colors: Opaque or Black

### Polyvinylidene (PVDF)

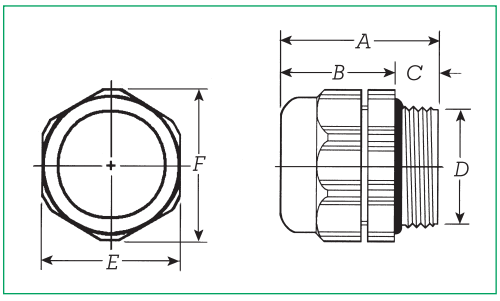
**with Polyvinylchloride (PVC) Tubular Sealing Insert**

| MATERIAL SPECIFICATIONS: | |
|---|---|
| *Body* | *Polyvinylidene (PVDF)* |
| *Insert* | *Polyvinylchloride (PVC)* |
| **TEMPERATURE RANGE:** | |
| *Body* | *-40 to 150°C (-40 to 302°F)* |
| *Insert* | *-20 to 80°C ( -4 to 176°F)* |
| **INSERT COLOR:** | *Various* |

| Type | Cable Dia. mm. | Cable Dia. (in.) | Mtg. Hole Dia. mm. | Mtg. Hole Dia. (in.) | Std. Pk. | Sealing Insert Color | Cat. No. Opaque | Cat. No. Black |
|---|---|---|---|---|---|---|---|---|
| PG7-PSP ** *** 6.5 | 4.0 - 6.5 | (.16-.26) | 13.0 | (.51) | 50 | Yellow | 20075.4 | 20110.5 |
| PG9-PSP ** *** 8.0 | 5.0 - 8.0 | (.20-.31) | 15.5 | (.61) | 50 | Gray | 20077.4 | 20112.5 |
| PG9-PSP ** *** 9.5 | 6.5 - 9.5 | (.26-.37) | 15.5 | (.61) | 50 | Black | 20078.4 | 20113.5 |
| PG11-PSP ** *** 8.0 | 5.0 - 8.0 | (.20-.31) | 19.0 | (.75) | 50 | Gray | 20080.4 | 20115.5 |
| PG11-PSP ** *** 9.5 | 6.5 - 9.5 | (.26-.37) | 19.0 | (.75) | 50 | Black | 20081.4 | 20116.5 |
| PG11-PSP ** *** 10.5 | 7.0 - 10.5 | (.28-.41) | 19.0 | (.75) | 50 | Green | 20082.4 | 20117.5 |
| PG13.5-PSP ** *** 9.5 | 6.5 - 9.5 | (.26-.37) | 21.0 | (.83) | 50 | Black | 20085.4 | 20120.5 |
| PG13.5-PSP ** *** 10.5 | 7.0 - 10.5 | (.28-.41) | 21.0 | (.83) | 50 | Green | 20086.4 | 20121.5 |
| PG13.5-PSP ** *** 13.0 | 9.0 - 13.0 | (.35-.51) | 21.0 | (.83) | 50 | Red | 20087.4 | 20122.5 |
| PG16-PSP ** *** 10.5 | 7.0 - 10.5 | (.28-.41) | 23.0 | (.91) | 25 | Green | 20091.4 | 201 26.5 |
| PG16-PSP ** *** 13.0 | 9.0 - 13.0 | (.35-.51) | 23.0 | (.91) | 25 | Red | 20092.4 | 20127.5 |
| PG16-PSP ** *** 15.5 | 11.5 - 15.5 | (.45-.61) | 23.0 | (.91) | 25 | White | 20093.4 | 20128.5 |
| PG21-PSP ** *** 15.5 | 11.5 - 15.5 | (.45-.61) | 29.0 | (1.14) | 25 | White | 20096.4 | 20131.5 |
| PG21-PSP ** *** 18.0 | 14.0 - 18.0 | (.55-.71) | 29.0 | (1.14) | 25 | Blue | 20097.4 | 20132.5 |
| PG21-PSP ** *** 20.5 | 17.0 - 20.5 | (.67-.81) | 29.0 | (1.14) | 25 | Brown | 20098.4 | 20133.5 |
| PG29-PSP ** *** 25.0 | 20.0 - 25.0 | (.79-.98) | 37.5 | (1.48) | 20 | Orange | 20102.4 | 20137.5 |
| PG29-PSP ** *** 28.0 | 24.0 - 28.0 | (.94-1.10) | 37.5 | (1.48) | 20 | Light Yellow | 20103.4 | 20138.5 |
| PG36-PSP ** *** 32.0 | 27.0 - 32.0 | (1.06-1.26) | 47.5 | (1.87) | 10 | Dark Gray | 20104.4 | 20139.5 |
| PG36-PSP ** *** 36.0 | 32.0 - 36.0 | (1.26-1.42) | 47.5 | (1.87) | 10 | Rose | 20106.4 | 20141.5 |
| PG42-PSP ** *** 40.0 | 36.0 - 40.0 | (1.42-1.57) | 54.5 | (2.15) | 5 | White | 20107.4 | 20142.5 |
| PG48-PSP ** *** 44.0 | 39.0 - 44.0 | (1.54-1.73) | 60.0 | (2.36) | 5 | White | 20108.4 | 20143.5 |

*** Add Insert Material – PVC for Polyvinylchloride, STP for Santoprene, SIL for Silicone

** Add Body Color - OP for Opaque, BK for Black




**Dimensions: mm (in.) Polyvinylidene (PVDF)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 29.0 (1.14) | 21.0 (.83) | 8.0 (.31) | 12.5 (.49) | 15.0 | 16.2 (.64) |
| PG9 | 31.0 (1.22) | 22.0 (.87) | 9.0 (.35) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 18.6 (.73) | 22.0 | 24.5 (.96) |
| PG13.5 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 32.5 (1.28) | 23.0 (.91) | 9.5 (.37) | 22.5 (.89) | 27.0 | 29.5 (1.16) |
| PG21 | 38.0 (1.50) | 27.0 (1.06) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 36.5 (1.44) |
| PG29 | 45.5 (1.79) | 34.0 (1.34) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 46.0 (1.81) |
| PG36 | 48.0 (1.89) | 34.0 (1.34) | 14.0 (.55) | 47.0 (1.85) | 53.0 | 57.0 (2.24) |
| PG42 | 53.0 (2.09) | 38.0 (1.50) | 15.0 (.59) | 54.0 (2.13) | 60.0 | 64.0 (2.52) |
| PG48 | 53.0 (2.09) | 38.0 (1.50) | 15.0 (.59) | 59.3 (2.33) | 65.0 | 70.0 (2.76) |

## Polyvinylidene (PVDF)

**with Santoprene (STP)**
**Tubular Sealing Insert**

***Polyvinylidene (PVDF)***
***Santoprene (STP)***

***-40 to 150°C (-40 to 302°F)***
***-60 to 125°C (-65 to 257°F)***
***Beige***

| Cat. No. | |
|---|---|
| **Opaque** | **Black** |
| – | – |
| – | – |
| 20271.4 | 20291.5 |
| – | – |
| – | – |
| 20272.4 | 20292.5 |
| 20273.4 | 20293.5 |
| 20274.4 | 20294.5 |
| 20275.4 | 20295.5 |
| 20278.4 | 20298.5 |
| 20279.4 | 20299.5 |
| 20280.4 | 20300.5 |
| 20281.4 | 20301.5 |
| 20282.4 | 20302.5 |
| 20283.4 | 20303.5 |
| – | – |
| 20284.4 | 20304.5 |
| 20285.4 | 20305.5 |
| 20287.4 | 2030 7.5 |
| – | – |
| – | – |

## Polyvinylidene (PVDF)

**with Silicone (SIL)**
**Tubular Sealing Insert**

***Polyvinylidene (PVDF)***
***Silicone (SIL)***

***-40 to 150°C (-40 to 302°F)***
***-60 to 200°C (-65 to 392°F)***
***Opaque***

| Cat. No. | |
|---|---|
| **Opaque** | **Black** |
| – | – |
| – | – |
| 20351.4 | 20381.5 |
| – | – |
| 20353.4 | 20383.5 |
| 20354.4 | 20384.5 |
| 20356.4 | 20386.5 |
| 20357.4 | 20387.5 |
| 20358.4 | 20388.5 |
| 20360.4 | 20390.5 |
| 20361.4 | 20391.5 |
| 20362.4 | 20392.5 |
| 20363.4 | 20393.5 |
| 20364.4 | 20394.5 |
| 20365.4 | 20395.5 |
| 20368.4 | 20398.5 |
| 20369.4 | 20399.5 |
| 20370.4 | 20400.5 |
| 20372.4 | 20402.5 |
| – | – |
| – | – |

### LOCKNUTS – Order Separately

Polyamide (PA)
Temperature Range: -20 to 100°C (-4 to 212°F)

| Size | Cat. No. Gray | Cat. No. Black | Std. Pk. |
|---|---|---|---|
| PG7 | 23050.9 | 23060.9 | 50 |
| PG9 | 23051.9 | 23061.9 | 50 |
| PG11 | 23052.9 | 23062.9 | 50 |
| PG13.5 | 23053.9 | 23063.9 | 50 |
| PG16 | 23054.9 | 23064.9 | 25 |
| PG21 | 23055.9 | 23065.9 | 25 |
| PG29 | 23056.9 | 23066.9 | 20 |
| PG36 | 23057.9 | 23067.9 | 10 |
| PG42 | 23058.9 | 23068.9 | 5 |
| PG48 | 23059.9 | 23069.9 | 5 |

See page 60 for additional information

### SEAL RINGS – Order Separately

Polyethylene (PET)
Temperature Range: -20 to 100°C (-4 to 212°F)

| Size | Cat. No. | Std. Pk. |
|---|---|---|
| PG7 | 23170.9 | 50 |
| PG9 | 23171.9 | 50 |
| PG11 | 23172.9 | 50 |
| PG13.5 | 23173.9 | 50 |
| PG16 | 23174.9 | 25 |
| PG21 | 23175.9 | 25 |
| PG29 | 23176.9 | 20 |
| PG36 | 23177.9 | 10 |
| PG42 | 23178.9 | 5 |
| PG48 | 23179.9 | 5 |

Centellen (CNT)
Temperature Range: -60 to 300°C (-65 to 572°F)

| Cat. No. | Std. Pak. |
|---|---|
| 23160.9 | 50 |
| 23161.9 | 50 |
| 23162.9 | 50 |
| 23163.9 | 50 |
| 23164.9 | 25 |
| 23165.9 | 25 |
| 23166.9 | 20 |
| 23167.9 | 10 |
| 23168.9 | 5 |
| 23169.9 | 5 |

See pages 62/63 for additional information

# STRAIGHT-THROUGH

## Nickel Plated Brass (NPB)

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 3 Insert Materials
- Optional 15mm (.59 in.) Long External Thread
- Seal Ring Factory Installed
- Order Locknuts Separately

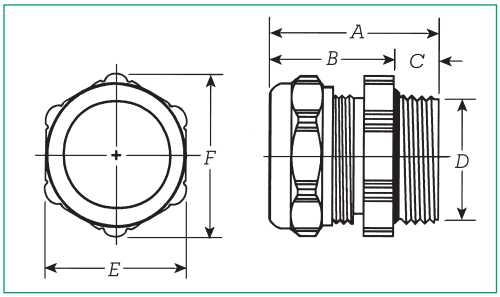
## Nickel Plated Brass (NPB)

**with Polyvinylchloride (PVC) Tubular Sealing Insert**

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Nickel Plated Brass (NPB)*** |
| ***Insert*** | ***Polyvinylchloride (PVC)*** |
| ***Seal Ring*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-40 to 300°C (-40 to 572°F)*** |
| ***Insert*** | ***-20 to 80°C ( -4 to 176°F)*** |
| ***Seal Ring*** | ***-20 to 120°C ( -4 to 248°F)*** |
| **INSERT COLOR:** | ***Various*** |

| Type | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dia. mm. (in.) | Sealing Insert Color | Cat. No. |
|---|---|---|---|---|---|
| PG7-PSNPB ✻✻✻ 6.5 | 13.0 (.51) | 50 | 4.0 - 6.5 (.16-.26) | Yellow | 20150.6 |
| PG9-PSNPB ✻✻✻ 8.0 | 15.5 (.61) | 50 | 5.0 - 8.0 (.20-.31) | Gray | 20152.6 |
| PG9-PSNPB ✻✻✻ 9.5 | 15.5 (.61) | 50 | 6.5 - 9.5 (.26-.37) | Black | 20153.6 |
| PG11-PSNPB ✻✻✻ 8.0 | 19.0 (.75) | 50 | 5.0 - 8.0 (.20-.31) | Gray | 20155.6 |
| PG11-PSNPB ✻✻✻ 9.5 | 19.0 (.75) | 50 | 6.5 - 9.5 (.26-.37) | Black | 20156.6 |
| PG11-PSNPB ✻✻✻ 10.5 | 19.0 (.75) | 50 | 7.0 - 10.5 (.28-.41) | Green | 20157.6 |
| PG13.5-PSNPB ✻✻✻ 9.5 | 21.0 (.83) | 50 | 6.5 - 9.5 (.26-.37) | Black | 20160.6 |
| PG13.5-PSNPB ✻✻✻ 10.5 | 21.0 (.83) | 50 | 7.0 - 10.5 (.28-.41) | Green | 20161.6 |
| PG13.5-PSNPB ✻✻✻ 13.0 | 21.0 (.83) | 50 | 9.0 - 13.0 (.35-.51) | Red | 20162.6 |
| PG16-PSNPB ✻✻✻ 10.5 | 23.0 (.91) | 25 | 7.0 - 10.5 (.28-.41) | Green | 20166.6 |
| PG16-PSNPB ✻✻✻ 13.0 | 23.0 (.91) | 25 | 9.0 - 13.0 (.35-.51) | Red | 20167.6 |
| PG16-PSNPB ✻✻✻ 15.5 | 23.0 (.91) | 25 | 11.5 - 15.5 (.45-.61) | White | 20168.6 |
| PG21-PSNPB ✻✻✻ 15.5 | 29.0 (1.14) | 25 | 11.5 - 15.5 (.45-.61) | White | 20171.6 |
| PG21-PSNPB ✻✻✻ 18.0 | 29.0 (1.14) | 25 | 14.0 - 18.0 (.55-.71) | Blue | 20172.6 |
| PG21-PSNPB ✻✻✻ 20.5 | 29.0 (1.14) | 25 | 17.0 - 20.5 (.67-.81) | Brown | 20173.6 |
| PG29-PSNPB ✻✻✻ 25.0 | 37.5 (1.48) | 20 | 20.0 - 25.0 (.79-.98) | Orange | 20177.6 |
| PG29-PSNPB ✻✻✻ 28.0 | 37.5 (1.48) | 20 | 24.0 - 28.0 (.94-1.10) | Light Yellow | 20178.6 |
| PG36-PSNPB ✻✻✻ 32.0 | 47.5 (1.87) | 10 | 27.0 - 32.0 (1.06-1.26) | Dark Gray | 20179.6 |
| PG36-PSNPB ✻✻✻ 36.0 | 47.5 (1.87) | 10 | 32.0 - 36.0 (1.26-1.42) | Rose | 20181.6 |
| PG42-PSNPB ✻✻✻ 40.0 | 54.5 (2.15) | 5 | 36.0 - 40.0 (1.42-1.57) | White | 20182.6 |
| PG48-PSNPB ✻✻✻ 44.0 | 60.0 (2.36) | 5 | 39.0 - 44.0 (1.54-1.73) | White | 20183.6 |

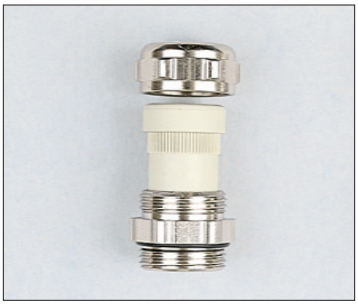
✻✻✻ Add Insert Material – PVC for Polyvinylchloride, STP for Santoprene, SIL for Silicone




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 25.0 (.98) | 20.0 (.79) | 5.0 (.20) | 12.5 (.49) | 14.0 | 15.5 (.61) |
| PG9 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 32.0 (1.26) | 25.0 (.98) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 35.0 (1.38) | 27.0 (1.06) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 37.0 (1.46) | 28.0 (1.10) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 54.0 (2.24) |
| PG42 | 40.0 (.157) | 30.0 (1.18) | 10.0 (.39) | 54.0 (2.13) | 57.0 | 61.0 (2.40) |
| PG48 | 40.0 (1.57) | 30.0 (1.18) | 10.0 (.39) | 59.3 (2.33) | 64.0 | 69.0 (2.72) |

## Nickel Plated Brass(NPB)



**with Santoprene (STP)**
**Tubular Sealing Insert**

| | |
|---|---|
| *Nickel Plated Brass (NPB)* | |
| *Santoprene (STP)* | |
| *Perbunan (PRB)* | |
| | |
| *-40 to 300°C (-40 to 572°F)* | |
| *-60 to 125°C (-65 to 257°F)* | |
| *-20 to 120°C (-4 to 248°F)* | |
| *Beige* | |

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| – | | – |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20431.6 |
| – | | – |
| – | | – |
| 7.0 - 10.5 | (.28-.41) | 20432.6 |
| 6.5 - 9.5 | (.26-.37) | 20433.6 |
| 7.0 - 10.5 | (.28-.41) | 20434.6 |
| 9.0 - 13.0 | (.35-.51) | 20435.6 |
| 7.0 - 10.5 | (.28-.41) | 20438.6 |
| 9.0 - 13.0 | (.35-.51) | 20439.6 |
| 11.5 - 15.5 | (.45-.61) | 20440.6 |
| 11.5 - 15.5 | (.45-.61) | 20441.6 |
| 14.0 - 18.0 | (.55-.71) | 20442.6 |
| 17.0 - 20.5 | (.67-.81) | 20443.6 |
| – | | – |
| 24.0 - 28.0 | (.94-1.10) | 20444.6 |
| 30.0 - 34.0 | (1.18-1.34) | 20445.6 |
| 32.0 - 36.0 | (1.26-1.42) | 20447.6 |
| – | | – |
| – | | – |

## Nickel Plated Brass (NPB)

**with Silicone (SIL)**
**Tubular Sealing Insert**

| | |
|---|---|
| *Nickel Plated Brass (NPB)* | |
| *Silicone (SIL)* | |
| *Silicone (SIL)* | |
| | |
| *-40 to 300°C (-40 to 572°F)* | |
| *-60 to 200°C (-65 to 392°F)* | |
| *-60 to 200°C (-65 to 392°F)* | |
| *Opaque* | |

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| – | | – |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20471.6 |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20473.6 |
| 7.0 - 10.5 | (.28-.41) | 20474.6 |
| 6.5 - 9.5 | (.26-.37) | 20476.6 |
| 7.0 - 10.5 | (.28-.41) | 20477.6 |
| 9.0 - 13.0 | (.35-.51) | 20478.6 |
| 7.0 - 10.5 | (.28-.41) | 20480.6 |
| 9.0 - 13.0 | (.35-.51) | 20481.6 |
| 11.5 - 15.5 | (.45-.61) | 20482.6 |
| 11.5 - 15.5 | (.45-.61) | 20483.6 |
| 14.0 - 18.0 | (.55-.71) | 20484.6 |
| 17.0 - 20.5 | (.67-.81) | 20485.6 |
| 20.0 - 25.0 | (.79-.98) | 20487.6 |
| 24.0 - 28.0 | (.94-1.10) | 20489.6 |
| 30.0 - 34.0 | (1.18-1.34) | 20490.6 |
| 32.0 - 36.0 | (1.26-1.42) | 20492.6 |
| – | | – |
| – | | – |

**LOCKNUTS – Order Separately**
Nickel Plated Brass
Temperature Range: -40 to 300°C (-40 to 572°F)

| Size | Cat. No. | Std. Pk. | Size | Cat.No. | Std. Pak |
|---|---|---|---|---|---|
| PG7 | 23000.9 | 50 | PG21 | 23005.9 | 25 |
| PG9 | 23001.9 | 50 | PG29 | 23006.9 | 20 |
| PG11 | 23002.9 | 50 | PG36 | 23007.9 | 10 |
| PG13.5 | 23003.9 | 50 | PG42 | 23008.9 | 5 |
| PG16 | 23004.9 | 25 | PG48 | 23009.9 | 5 |

See page 60 for additional information

# STRAIGHT-THROUGH
## Stainless Steel (SS)

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 3 Insert Materials
- Seal Ring Factory Installed
- Order Locknuts Separately

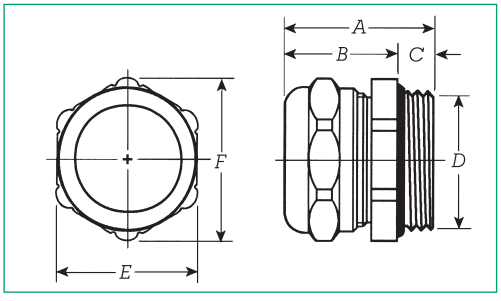
### Stainless Steel (SS)

**with Polyvinylchloride (PVC) Tubular Sealing Insert**

| MATERIAL SPECIFICATIONS: | |
|---|---|
| *Body* | *Stainless Steel (SS)* |
| *Insert* | *Polyvinylchloride (PVC)* |
| *Seal Ring* | *Perbunan (PRB)* |
| **TEMPERATURE RANGE:** | |
| *Body* | *-60 to 500°C (-65 to 932°F)* |
| *Insert* | *-20 to 80°C ( -4 to 176°F)* |
| *Seal Ring* | *-60 to 200°C ( -65 to 392°F)* |
| **INSERT COLOR:** | *Various* |

| Type | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dia. mm. (in.) | Sealing Insert Color | Cat. No. |
|---|---|---|---|---|---|
| PG7-PSSS ✻✻✻ 6.5 | 13.0 (.51) | 10 | 4.0 - 6.5 (.16-.26) | Yellow | 20500.7 |
| PG9-PSSS ✻✻✻ 8.0 | 15.5 (.61) | 10 | 5.0 - 8.0 (.20-.31) | Gray | 20502.7 |
| PG9-PSSS ✻✻✻ 9.5 | 15.5 (.61) | 10 | 6.5 - 9.5 (.26-.37) | Black | 20503.7 |
| PG11-PSSS ✻✻✻ 8.0 | 19.0 (.75) | 10 | 5.0 - 8.0 (.20-.31) | Gray | 20505.7 |
| PG11-PSSS ✻✻✻ 9.5 | 19.0 (.75) | 10 | 6.5 - 9.5 (.26-.37) | Black | 20506.7 |
| PG11-PSSS ✻✻✻ 10.5 | 19.0 (.75) | 10 | 7.0 - 10.5 (.28-.41) | Green | 20507.7 |
| PG13.5-PSSS ✻✻✻ 9.5 | 21.0 (.83) | 10 | 6.5 - 9.5 (.26-.37) | Black | 20510.7 |
| PG13.5-PSSS ✻✻✻ 10.5 | 21.0 (.83) | 10 | 7.0 - 10.5 (.28-.41) | Green | 20511.7 |
| PG13.5-PSSS ✻✻✻ 13.0 | 21.0 (.83) | 10 | 9.0 - 13.0 (.35-.51) | Red | 20512.7 |
| PG16-PSSS ✻✻✻ 10.5 | 23.0 (.91) | 5 | 7.0 - 10.5 (.28-.41) | Green | 20516.7 |
| PG16-PSSS ✻✻✻ 13.0 | 23.0 (.91) | 5 | 9.0 - 13.0 (.35-.51) | Red | 20517.7 |
| PG16-PSSS ✻✻✻ 15.5 | 23.0 (.91) | 5 | 11.5 - 15.5 (.45-.61) | White | 20518.7 |
| PG21-PSSS ✻✻✻ 15.5 | 29.0 (1.14) | 5 | 11.5 - 15.5 (.45-.61) | White | 20521.7 |
| PG21-PSSS ✻✻✻ 18.0 | 29.0 (1.14) | 5 | 14.0 - 18.0 (.55-.71) | Blue | 20522.7 |
| PG21-PSSS ✻✻✻ 20.5 | 29.0 (1.14) | 5 | 17.0 - 20.5 (.67-.81) | Brown | 20523.7 |
| PG29-PSSS ✻✻✻ 25.0 | 37.5 (1.48) | 5 | 20.0 - 25.0 (.79-.98) | Orange | 20527.7 |
| PG29-PSSS ✻✻✻ 28.0 | 37.5 (1.48) | 5 | 24.0 - 28.0 (.94-1.10) | Light Yellow | 20528.7 |
| PG36-PSSS ✻✻✻ 32.0 | 47.5 (1.87) | 2 | 27.0 - 32.0 (1.06-1.26) | Dark Gray | 20529.7 |
| PG36-PSSS ✻✻✻ 36.0 | 47.5 (1.87) | 2 | 32.0 - 36.0 (1.26-1.42) | Rose | 20531.7 |
| PG42-PSSS ✻✻✻ 40.0 | 54.5 (2.15) | 2 | 36.0 - 40.0 (1.42-1.57) | White | 20532.7 |

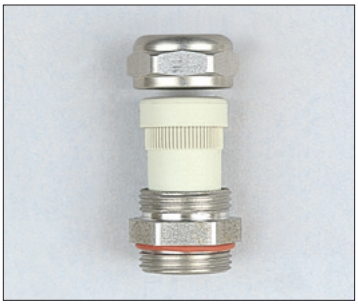
✻✻✻ Add Insert Material – PVC for Polyvinylchloride, STP for Santoprene, SIL for Silicone




**Dimensions: mm (in.) Stainless Steel (SS)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 25.0 (.98) | 20.0 (.79) | 5.0 (.20) | 12.5 (.49) | 14.0 | 15.5 (.61) |
| PG9 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 32.0 (1.26) | 25.0 (.98) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 35.0 (1.38) | 27.0 (1.06) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 37.0 (1.46) | 28.0 (1.10) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 54.0 (2.24) |
| PG42 | 40.0 (.157) | 30.0 (1.18) | 10.0 (.39) | 54.0 (2.13) | 57.0 | 61.0 (2.40) |

## Stainless Steel (SS)

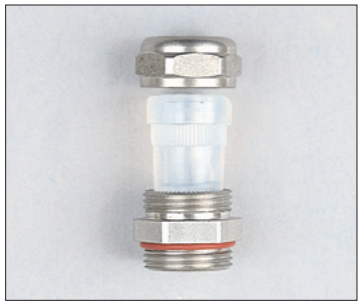


**with Santoprene (STP) Tubular Sealing Insert**

| | |
|---|---|
| ***Stainless Steel (SS)*** | |
| ***Santoprene (STP)*** | |
| ***Perbunan (PRB)*** | |
| ***-60 to 500°C (-65 to 932°F)*** | |
| ***-60 to 125°C (-65 to 257°F)*** | |
| ***-60 to 200°C ( -65 to 392°F)*** | |
| ***Beige*** | |

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| – | | – |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20541.7 |
| – | | – |
| – | | – |
| 7.0 - 10.5 | (.28-.41) | 20542.7 |
| 6.5 - 9.5 | (.26-.37) | 20543.7 |
| 7.0 - 10.5 | (.28-.41) | 20544.7 |
| 9.0 - 13.0 | (.35-.51) | 20545.7 |
| 7.0 - 10.5 | (.28-.41) | 20548.7 |
| 9.0 - 13.0 | (.35-.51) | 20549.7 |
| 11.5 - 15.5 | (.45-.61) | 20550.7 |
| 11.5 - 15.5 | (.45-.61) | 20551.7 |
| 14.0 - 18.0 | (.55-.71) | 20552.7 |
| 17.0 - 20.5 | (.67-.81) | 20553.7 |
| – | | – |
| 24.0 - 28.0 | (.94-1.10) | 20554.7 |
| 27.0 - 32.0 | (1.06-1.26) | 20555.7 |
| 32.0 - 36.0 | (1.26-1.42) | 20557.7 |
| – | | – |

## Stainless Steel (SS)



**with Silicone (SIL) Tubular Sealing Insert**

| | |
|---|---|
| ***Stainless Steel (SS)*** | |
| ***Silicone (SIL)*** | |
| ***Silicone (SIL)*** | |
| ***-60 to 500°C (-65 to 932°F)*** | |
| ***-60 to 200°C (-65 to 392°F)*** | |
| ***-60 to 200°C (-65 to 392°F)*** | |
| ***Opaque*** | |

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| – | | – |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20581.7 |
| – | | – |
| 6.5 - 9.5 | (.26-.37) | 20583.7 |
| 7.0 - 10.5 | (.28-.41) | 20584.7 |
| 6.5 - 9.5 | (.26-.37) | 20586.7 |
| 7.0 - 10.5 | (.28-.41) | 20587.7 |
| 9.0 - 13.0 | (.35-.51) | 20588.7 |
| 7.0 - 10.5 | (.28-.41) | 20590.7 |
| 9.0 - 13.0 | (.35-.51) | 20591.7 |
| 11.5 - 15.5 | (.45-.61) | 20592.7 |
| 11.5 - 15.5 | (.45-.61) | 20593.7 |
| 14.0 - 18.0 | (.55-.71) | 20594.7 |
| 17.0 - 20.5 | (.67-.81) | 20595.7 |
| 20.0 - 25.0 | (.79-.98) | 20598.7 |
| 24.0 - 28.0 | ( .94-1.10) | 20599.7 |
| 27.0 - 32.0 | (1.06-1.26) | 20600.7 |
| 32.0 - 36.0 | (1.26-1.42) | 20602.7 |
| – | | – |

**LOCKNUTS – Order Separately**

Stainless Steel

Temperature Range: -60 to 500°C (-65 to 932°F)

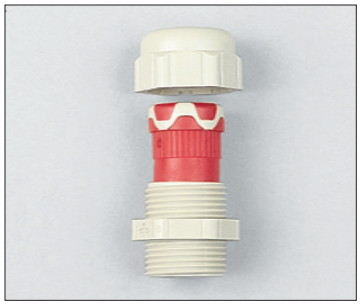
| Size | Cat. No. | Std. Pk. | Size | Cat.No. | Std. Pak |
|---|---|---|---|---|---|
| PG7 | 23020.9 | 10 | PG21 | 23025.9 | 5 |
| PG9 | 23021.9 | 10 | PG29 | 23026.9 | 5 |
| PG11 | 23022.9 | 10 | PG36 | 23027.9 | 2 |
| PG13.5 | 23023.9 | 10 | PG42 | – | – |
| PG16 | 23024.9 | 5 | PG48 | – | – |

See page 61 for additional information

# INCREASED STRAIN RELIEF PROTECTION

- Protection Rating: IP54; NEMA 13
- Selection of 3 Body Materials
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide & Polyvinylidene Cord Grips
- Order Locknuts Separately
- Standard Colors: Beige; Black; Opaque

## Polyamide (PA)



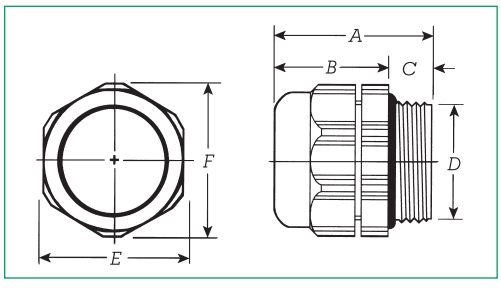
**with Polyvinylchloride (PVC) / Polyamide (PA) Tubular Sealing Insert**

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Polyamide (PA)*** |
| ***Insert*** | ***Polyvinylchloride (PVC) / Polyamide (PA)*** |
| ***Seal Ring*** | — |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-20 to 100°C (-4 to 212°F)*** |
| ***Insert*** | ***-20 to 80°C (-4 to 176°F)*** |
| ***Seal Ring*** | — |
| **INSERT COLOR:** | ***Various*** |

| Type | Insert Color | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dia. mm. (in.) | Cat. No. Beige | Cat. No. Black |
|---|---|---|---|---|---|---|
| PG7-PI ✻✻ ✻✻ PPI 6.5 | Yellow | 13.0 (.51) | 50 | – | – | – |
| PG9-PI ✻✻ ✻✻ PPI 6.5 | Yellow | 15.5 (.61) | 50 | 4.0 - 6.5 (.16-.26) | 20610.0 | 20630.1 |
| PG9-PI ✻✻ ✻✻ PPI 9.0 | Black | 15.5 (.61) | 50 | 5.5 - 9.0 (.22-.35) | 20611.0 | 20631.1 |
| PG11-PI ✻✻ ✻✻ PPI 10.0 | Gray | 19.0 (.75) | 50 | 6.0 - 10.0 (.24-.39) | 20612.0 | 20632.1 |
| PG13.5-PI ✻✻ ✻✻ PPI 9.5 | Black | 21.0 (.83) | 50 | 6.5 - 9.5 (.26-.37) | 20613.0 | 20633.1 |
| PG13.5-PI ✻✻ ✻✻ PPI 10.0 | Green | 21.0 (.83) | 50 | 6.0 - 10.0 (.24-.39) | 20614.0 | 20634.1 |
| PG13.5-PI ✻✻ ✻✻ PPI 12.0 | Red | 21.0 (.83) | 50 | 8.0 - 12.0 (.31-.47) | 20615.0 | 20635.1 |
| PG16-PI ✻✻ ✻✻ PPI 10.0 | Green | 23.0 (.91) | 25 | 6.0 - 10.0 (.24-.39) | 20616.0 | 20636.1 |
| PG16-PI ✻✻ ✻✻ PPI 12.0 | Red | 23.0 (.91) | 25 | 9.0 - 12.0 (.35-.47) | 20617.0 | 20637.1 |
| PG16-PI ✻✻ ✻✻ PPI 15.0 | White | 23.0 (.91) | 25 | 12.0 - 15.0 (.47-.59) | 20618.0 | 20638.1 |
| PG21-PI ✻✻ ✻✻ PPI 13.0 | Red | 29.0 (1.14) | 25 | 9.0 - 13.0 (.35-.51) | 20619.0 | 20639.1 |
| PG21-PI ✻✻ ✻✻ PPI 15.0 | White | 29.0 (1.14) | 25 | 12.0 - 15.0 (.47-.59) | 20620.0 | 20640.1 |
| PG21-PI ✻✻ ✻✻ PPI 17.0 | Blue | 29.0 (1.14) | 25 | 14.0 - 17.0 (.55-.67) | 20621.0 | 20641.1 |
| PG21-PI ✻✻ ✻✻ PPI 20.0 | Brown | 29.0 (1.14) | 25 | 16.0 - 20.0 (.63-.79) | 20622.0 | 20642.1 |
| PG29-PI ✻✻ ✻✻ PPI 20.0 | Brown | 37.5 (1.48) | 20 | 16.0 - 20.0 (.63-.79) | 20623.0 | 20643.1 |
| PG29-PI ✻✻ ✻✻ PPI 24.0 | Orange | 37.5 (1.48) | 20 | 20.0 - 24.0 (.79-.94) | 20624.0 | 20644.1 |
| PG29-PI ✻✻ ✻✻ PPI 27.0 | Yellow | 37.5 (1.48) | 20 | 23.0 - 27.0 (.91-1.06) | 20625.0 | 20645.1 |
| PG36-PI ✻✻ ✻✻ PPI 32.0 | Gray | 47.5 (1.87) | 10 | 27.0 - 32.0 (1.06-1.26) | 20626.0 | 20646.1 |
| PG36-PI ✻✻ ✻✻ PPI 36.0 | Rose | 47.5 (1.87) | 10 | 32.0 - 36.0 (1.26-1.42) | 20627.0 | 20647.1 |
| PG42-PI ✻✻ ✻✻ PPI 40.0 | White | 54.5 (2.15) | 5 | 34.0 - 40.0 (1.34-1.57) | 20628.0 | 20648.1 |

✻✻ Add Body Color – BG for Beige, BK for Black, OP for Opaque

✻✻ Add Body Material – PA for Polyamide, PF for Polyvinylidene, NB for Nickel Plated Brass




**Dimensions: mm (in.) Polyamide (PA) and Polyvinylidene (PVDF)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 29.0 (1.14) | 21.0 (.83) | 8.0 (.31) | 12.5 (.49) | 15.0 | 16.2 (.64) |
| PG9 | 31.0 (1.22) | 22.0 (.87) | 9.0 (.35) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 18.6 (.73) | 22.0 | 24.5 (1.00) |
| PG13.5 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 32.5 (1.28) | 23.0 (.91) | 9.5 (.37) | 22.5 (.89) | 27.0 | 29.5 (1.16) |
| PG21 | 38.0 (1.48) | 27.0 (1.06) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 36.5 (1.44) |
| PG29 | 45.5 (1.79) | 34.0 (1.34) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 46.0 (1.81) |
| PG36 | 48.0 (1.89) | 34.0 (1.34) | 14.0 (.55) | 47.0 (1.85) | 53.0 | 57.0 (2.24) |
| PG42 | 53.0 (2.09) | 38.0 (1.48) | 15.0 (.59) | 54.0 (2.13) | 60.0 | 64.0 (2.52) |

## Polyvinylidene (PVDF)

**with Polyvinylchloride (PVC) / Polyamide (PA) Tubular Sealing Insert**

| | |
|---|---|
| *Polyvinylidene (PVDF)* | |
| *Polyvinylchloride (PVC) / Polyamide (PA)* | |
| — | |
| *-40 to 150°C (-40 to 302°F)* | |
| *-20 to 80°C ( -4 to 176°F)* | |
| — | |
| *Various* | |

| Cable Dia. mm | Cable Dia. (in.) | Cat. No. Opaque | Cat. No. Black |
|---|---|---|---|
| 5.0 - 6.5 | (.20-.26) | 20650.4 | 20670.5 |
| 5.0 - 6.5 | (.20-.26) | 20651.4 | 20671.5 |
| 5.5 - 9.0 | (.22-.35) | 20652.4 | 20672.5 |
| 7.5 - 10.0 | (.30-.39) | 20653.4 | 20673.5 |
| 6.5 - 9.5 | (.26-.37) | 20654.4 | 20674.5 |
| 7.0 - 10.0 | (.28-.39) | 20655.4 | 20675.5 |
| 9.0 - 12.0 | (.35-.47) | 20656.4 | 20676.5 |
| 7.0 - 10.0 | (.28-.39) | 20657.4 | 20677.5 |
| 10.0 - 12.0 | (.39-.47) | 20658.4 | 20678.5 |
| 12.0 - 15.0 | (.47-.59) | 20659.4 | 20679.5 |
| 10.0 - 13.0 | (.39-.51) | 20660.4 | 20680.5 |
| 12.0 - 15.0 | (.47-.59) | 20661.4 | 20681.5 |
| 14.0 - 17.0 | (.55-.67) | 20662.4 | 20682.5 |
| 16.0 - 20.0 | (.63-.79) | 20663.4 | 20683.5 |
| 16.0 - 20.0 | (.63-.79) | 20664.4 | 20684.5 |
| 20.0 - 24.0 | (.79-.94) | 20665.4 | 20685.5 |
| 23.0 - 27.0 | (.91-1.06) | 20666.4 | 20686.5 |
| 27.0 - 32.0 | (1.06-1.26) | 20667.4 | 20687.5 |
| 32.0 - 36.0 | (1.26-1.42) | 20668.4 | 20688.5 |
| 34.0 - 40.0 | (1.34-1.57) | 20669.4 | 20689.5 |

## Nickel Plated Brass (NPB)

**with Polyvinylchloride (PVC) / Polyamide (PA)Tubular Sealing Insert**

| | |
|---|---|
| *Nickel Plated Brass (NPB)* | |
| *Polyvinylchloride (PVC) / Polyamide (PA)* | |
| *Perbunan (PRB)* | |
| *-40 to 300°C (-40 to 572°F)* | |
| *-20 to 80°C ( -4 to 176°F)* | |
| *-20 to 120°C ( -4 to 248°F)* | |
| *Various* | |

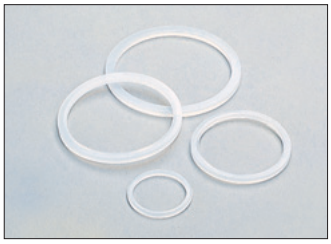
| Cable Dia. mm | Cable Dia. (in.) | Cat. No. |
|---|---|---|
| 4.0 - 6.5 | (.16-.26) | 20690.6 |
| 4.0 - 6.5 | (.16-.26) | 20691.6 |
| 5.5 - 9.0 | (.22-.35) | 20692.6 |
| 6.0 - 10.0 | (.24-.39) | 20693.6 |
| 6.5 - 9.5 | (.26-.37) | 20694.6 |
| 6.0 - 10.0 | (.24-.39) | 20695.6 |
| 8.0 - 12.0 | (.31-.47) | 20696.6 |
| 6.0 - 10.0 | (.24-.39) | 20697.6 |
| 9.0 - 12.0 | (.35-.47) | 20698.6 |
| 12.0 - 15.0 | (.47-.59) | 20699.6 |
| 9.0 - 13.0 | (.35-.51) | 20700.6 |
| 12.0 - 15.0 | (.47-.59) | 20701.6 |
| 14.0 - 17.0 | (.55-.67) | 20702.6 |
| 16.0 - 20.0 | (.63-.79) | 20703.6 |
| 16.0 - 20.0 | (.63-.79) | 20704.6 |
| 20.0 - 24.0 | (.79-.94) | 20705.6 |
| 23.0 - 27.0 | (.91-1.06) | 20706.6 |
| 27.0 - 32.0 | (1.06-1.26) | 20707.6 |
| 32.0 - 36.0 | (1.26-1.42) | 20708.6 |
| 34.0 - 40.0 | (1.34-1.57) | 20709.6 |

## Locknuts

**LOCKNUTS:**
Polyamide **(PA)**
Nickel Plated Brass **(NPB)**
Temperature Range:
**PA** -20 to 100°C (-4 to 212°F)
**NPB** -40 to 300°C (-40 to 572°F)

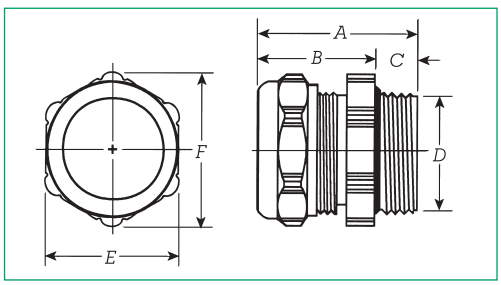
| Size | Cat. No. PA-Gray | Cat. No. PA-Black | Cat. No. NPB |
|---|---|---|---|
| PG7 | 23050.9 | 23060.9 | 23000.9 |
| PG9 | 23051.9 | 23061.9 | 23001.9 |
| PG11 | 23052.9 | 23062.9 | 23002.9 |
| PG13.5 | 23053.9 | 23063.9 | 23003.9 |
| PG16 | 23054.9 | 23064.9 | 23004.9 |
| PG21 | 23055.9 | 23065.9 | 23005.9 |
| PG29 | 23056.9 | 23066.9 | 23006.9 |
| PG36 | 23057.9 | 23067.9 | 23007.9 |
| PG42 | 23058.9 | 23068.9 | 23008.9 |

## Seal Rings



**SEAL RINGS:**
Polyethylene **(PET)**
Temperature Range:
-20 to 100°C (-4 to 212°F)

| Size | Cat. No. | Size | Cat. No. |
|---|---|---|---|
| PG7 | 23170.9 | PG21 | 23175.9 |
| PG9 | 23171.9 | PG29 | 23176.9 |
| PG11 | 23172.9 | PG36 | 23177.9 |
| PG13.5 | 23173.9 | PG42 | 23178.9 |
| PG16 | 23174.9 | | |



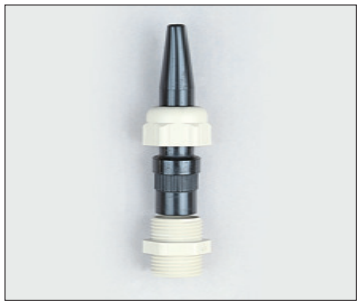

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 25.0 (.98) | 20.0 (.79) | 5.0 (.20) | 12.5 (.49) | 14.0 | 15.5 (.61) |
| PG9 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 32.0 (1.26) | 25.0 (.98) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 35.0 (1.38) | 27.0 (1.06) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 37.0 (1.46) | 28.0 (1.10) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 54.0 (2.24) |
| PG42 | 40.0 (.157) | 30.0 (1.18) | 10.0 (.39) | 54.0 (2.13) | 57.0 | 61.0 (2.40) |

# BEND PROTECTION

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 3 Body Materials
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide & Polyvinylidene Cord Grips
- Order Locknuts Separately
- Standard Colors: Beige; Black; Opaque

## Polyamide (PA)



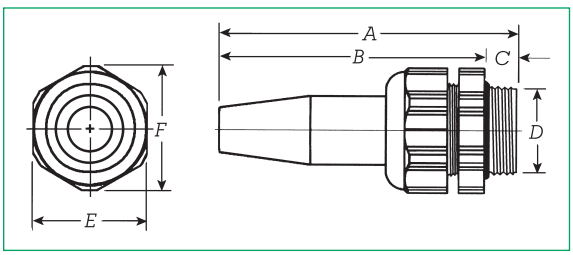
**with Polyvinylchloride (PVC) Tubular Sealing Sleeve**

| MATERIALSPECIFICATIONS: | |
|---|---|
| *Body / Locknuts* | *Polyamide (PA)* |
| *Insert* | *Polyvinylchloride (PVC)* |
| *Seal Ring* | — |
| **TEMPERATURE RANGE:** | |
| *Body / Locknuts* | *-20 to 100°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| *Seal Ring* | — |
| **INSERT COLOR:** | **Black** |

| Type | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dia. mm. (in.) | Cat. No. Beige | Cat. No. Black |
|---|---|---|---|---|---|
| PG7-PB ✻✻ ✻✻PVC 5.0 | 13.0 (.51) | 25 | – | – | – |
| PG9-PB ✻✻ ✻✻PVC 6.5 | 15.5 (.61) | 25 | 5.0 - 6.5 (.20-.26) | 20720.0 | 20735.1 |
| PG9-PB ✻✻ ✻✻PVC 7.5 | 15.5 (.61) | 25 | 5.0 - 7.5 (.20-.30) | 20721.0 | 20736.1 |
| PG11-PB ✻✻ ✻✻PVC 6.5 | 19.0 (.75) | 25 | 5.0 - 7.5 (.20-.30) | 20722.0 | 20737.1 |
| PG11-PB ✻✻ ✻✻PVC 8.5 | 19.0 (.75) | 25 | 6.0 - 8.5 (.24-.33) | 20723.0 | 20738.1 |
| PG11-PB ✻✻ ✻✻PVC 9.5 | 19.0 (.75) | 25 | 6.5 - 9.5 (.26-.37) | 20724.0 | 20739.1 |
| PG13.5-PB ✻✻ ✻✻PVC 8.5 | 21.0 (.83) | 25 | 6.0 - 8.5 (.24-.33) | 20725.0 | 20740.1 |
| PG13.5-PB ✻✻ ✻✻PVC 10.5 | 21.0 (.83) | 25 | 8.0 -10.5 (.31-.41) | 20726.0 | 20741.1 |
| PG16-PB ✻✻ ✻✻PVC 9.5 | 23.0 (.91) | 10 | 6.5 - 9.5 (.26-.37) | 20727.0 | 20742.1 |
| PG16-PB ✻✻ ✻✻PVC 10.5 | 23.0 (.91) | 10 | 8.0 -10.5 (.31-.41) | 20728.0 | 20743.1 |
| PG16-PB ✻✻ ✻✻PVC 13.0 | 23.0 (.91) | 10 | 10.5 -13.0 (.41-.51) | 20729.0 | 20744.1 |
| PG21-PB ✻✻ ✻✻PVC 15.5 | 29.0 (1.14) | 10 | – | – | – |
| PG21-PB ✻✻ ✻✻PVC 17.5 | 29.0 (1.14) | 10 | 14.0 -17.0 (.55-.67) | 20730.0 | 20745.1 |
| PG29-PB ✻✻ ✻✻PVC 20.5 | 37.5 (1.48) | 5 | – | – | – |
| PG29-PB ✻✻ ✻✻PVC 24.0 | 37.5 (1.48) | 5 | 21.0 - 24.0 (.83-.94) | 20731.0 | 20746.1 |

✻✻ Add Body Color – BE for Beige, BK for Black, OP for Opaque

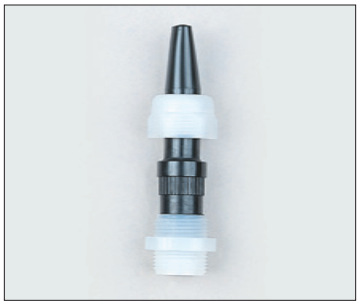
✻✻ Add Body Material – PA for Polyamide, PF for Polyvinylidene, NB for Nickel Plated Brass




**Dimensions: mm (in.) Polyamide (PA) and Polyvinylidene (PVDF)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 66.0 (2.60) | 57.0 (2.24) | 9.0 (.35) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 73.0 (2.87) | 64.0 (2.52) | 9.0 (.35) | 18.6 (.73) | 22.0 | 24.5 (1.00) |
| PG13.5 | 81.0 (3.19) | 72.0 (2.83) | 9.0 (.35) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 81.0 (3.19) | 71.5 (2.82) | 9.5 (.37) | 22.5 (.89) | 27.0 | 29.5 (1.16) |
| PG21 | 90.0 (3.54) | 79.0 (3.11) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 36.5 (1.44) |
| PG29 | 115.0 (4.53) | 103.5 (4.07) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 46.0 (1.81) |

## Polyvinylidene (PVDF)



**with Polyvinylchloride (PVC) Tubular Sealing Sleeve**

| | |
|---|---|
| ***Polyvinylidene (PVDF)*** | |
| ***Polyvinylchloride (PVC)*** | |
| — | |
| ***-40 to 150°C (-40 to 302°F)*** | |
| ***-20 to 80°C ( -4 to 176°F)*** | |
| — | |
| **Black** | |

| Cable Dia. mm | Cable Dia. (in.) | Cat. No. Opaque | Cat. No. Black |
|---|---|---|---|
| – | | – | – |
| 5.0 - 6.5 | (.20-.26) | 20750.4 | 20765.5 |
| 5.0 - 7.5 | (.20-.30) | 20751.4 | 20766.5 |
| 5.0 - 7.5 | (.20-.30) | 20752.4 | 20767.5 |
| 6.0 - 8.5 | (.24-.33) | 20753.4 | 20768.5 |
| 6.5 - 9.5 | (.26-.37) | 20754.4 | 20769.5 |
| 6.0 - 8.5 | (.24-.33) | 20755.4 | 20770.5 |
| 8.0 - 10.5 | (.31-.41) | 20756.4 | 20771.5 |
| 6.5 - 9.5 | (.26-.37) | 20757.4 | 20772.5 |
| 8.0 - 10.5 | (.31-.41) | 20758.4 | 20773.5 |
| 10.5 - 13.0 | (.41-.51) | 20759.4 | 20774.5 |
| – | | – | – |
| 14.0 - 17.0 | (.55-.67) | 20760.4 | 20775.5 |
| 17.0 - 20.5 | (.67-.81) | 20761.4 | 20776.5 |
| 21.0 - 24.0 | (.83-.94) | 20762.4 | 20777.5 |

## Nickel Plated Brass (NPB)

**with Polyvinylchloride (PVC) Tubular Sealing Sleeve**

| | |
|---|---|
| ***Nickel Plated Brass (NPB)*** | |
| ***Polyvinylchloride (PVC)*** | |
| ***Perbunan (PRB)*** | |
| ***-40 to 300°C (-40 to 572°F)*** | |
| ***-20 to 80°C ( -4 to 176°F)*** | |
| ***-20 to 120°C ( -4 to 248°F)*** | |
| **Black** | |

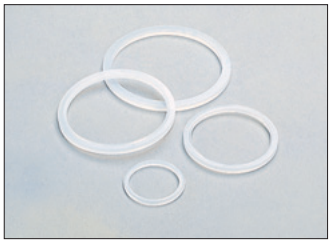
| Cable Dia. mm | Cable Dia. (in.) | Cat. No. |
|---|---|---|
| 3.5 - 5.0 | (.14-.20) | 20780.6 |
| 4.0 - 6.5 | (.16-.26) | 20781.6 |
| 5.0 - 7.5 | (.20-.30) | 20782.6 |
| 4.0 - 6.5 | (.16-.26) | 20783.6 |
| 5.0 - 8.5 | (.20-.33) | 20784.6 |
| 6.5 - 9.5 | (.26-.37) | 20785.6 |
| 5.0 - 8.5 | (.20-.33) | 20786.6 |
| 7.0 - 10.5 | (.28-.41) | 20787.6 |
| 6.0 - 9.5 | (.24-.37) | 20788.6 |
| 7.0 - 10.5 | (.28-.41) | 20789.6 |
| 9.0 - 13.0 | (.35-.51) | 20790.6 |
| 12.0 - 15.5 | (.51-.61) | 20791.6 |
| 14.0 - 17.5 | (.55-.69) | 20792.6 |
| 16.0 - 20.5 | (.63-.81) | 20793.6 |
| 20.0 - 24.0 | (.78-.94) | 20794.6 |

## Locknuts

**LOCKNUTS:**
Polyamide **(PA)**
Nickel Plated Brass **(NPB)**
Temperature Range:
**PA** -20 to 100°C (-4 to 212°F)
**NPB** -40 to 300°C (-40 to 572°F)

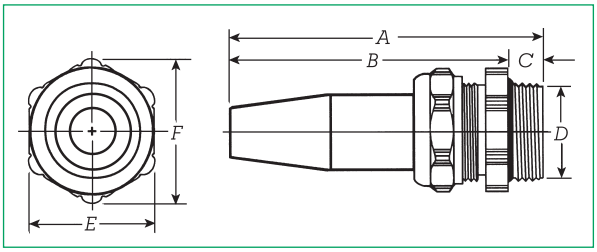
| Size | Cat. No. PA-Gray | Cat. No. PA-Black | Cat. No. NPB |
|---|---|---|---|
| PG7 | 23050.9 | 23060.9 | 23000.9 |
| PG9 | 23051.9 | 23061.9 | 23001.9 |
| PG11 | 23052.9 | 23062.9 | 23002.9 |
| PG13.5 | 23053.9 | 23063.9 | 23003.9 |
| PG16 | 23054.9 | 23064.9 | 23004.9 |
| PG21 | 23055.9 | 23065.9 | 23005.9 |
| PG29 | 23056.9 | 23066.9 | 23006.9 |

## Seal Rings



**SEAL RINGS:**
Polyethylene **(PET)**
Temperature Range:
-20 to 100°C (-4 to 212°F)

| Size | Cat. No. | Size | Cat. No. |
|---|---|---|---|
| PG7 | 23170.9 | PG16 | 23174.9 |
| PG9 | 23171.9 | PG21 | 23175.9 |
| PG11 | 23172.9 | PG29 | 23176.9 |
| PG13.5 | 23173.9 | | |




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 57.0 (2.24) | 51.0 (2.01) | 5.0 (.20) | 12.5 (.49) | 14.0 | 15.5 (.61) |
| PG9 | 61.0 (2.40) | 55.0 (2.17) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 66.0 (2.60) | 60.0 (2.36) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 76.0 (2.99) | 69.5 (2.74) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 76.0 (2.99) | 69.5 (2.74) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 83.0 (3.27) | 76.0 (2.99) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 108.0 (4.25) | 100.0 (3.94) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |

# INCREASED STRAIN RELIEF WITH BEND PROTECTION

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140 psi
- Selection of 2 Body Materials
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips
- Order Locknuts Separately
- Standard Colors: Beige or Black

## Polyamide (PA)

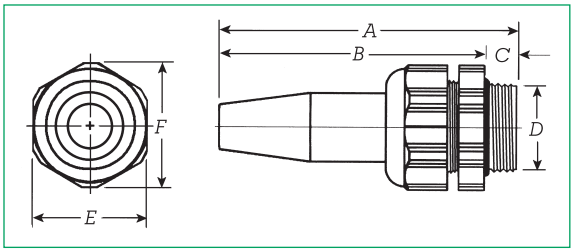
**with Polyvinylchloride (PVC) / Polyamide (PA) Tubular Sealing Sleeve**

| MATERIALSPECIFICATIONS: | |
|---|---|
| *Body / Locknuts* | *Polyamide (PA)* |
| *Insert* | *Polyvinylchloride (PVC)* |
| *Seal Ring* | — |
| **TEMPERATURE RANGE:** | |
| *Body / Locknuts* | *-20 to 100°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| *Seal Ring* | — |
| **INSERT COLOR:** | **Black** |

| Type | Mtg. Hole Dia. mm. | (in.) | Std. Pk. | Cable Dia. mm. | (in.) | Cat. No. Beige | Black |
|---|---|---|---|---|---|---|---|
| PG9-PIB ✻✻ ✻✻PVC 6.5 | 15.5 | (.61) | 25 | 4.0 - 6.5 | (.16-.26) | 20800.0 | 20820.1 |
| PG9-PIB ✻✻ ✻✻PVC 9.5 | 15.5 | (.61) | 25 | 7.5 - 9.5 | (.30-.37) | 20801.0 | 20821.1 |
| PG11-PIB ✻✻ ✻✻PVC 9.5 | 19.0 | (.75) | 25 | 6.5 - 9.5 | (.26-.37) | 20802.0 | 20822.1 |
| PG11-PIB ✻✻ ✻✻PVC 10.5 | 19.0 | (.75) | 25 | 7.0 - 10.5 | (.28-.41) | 20803.0 | 20823.1 |
| PG13.5-PIB✻✻ ✻✻PVC 9.5 | 21.0 | (.83) | 25 | 6.5 - 9.5 | (.26-.37) | 20804.0 | 20824.1 |
| PG13.5-PIB✻✻ ✻✻PVC10.5 | 21.0 | (.83) | 25 | 8.5 - 10.5 | (.33-.41) | 20805.0 | 20825.1 |
| PG16-PIB ✻✻ ✻✻PVC 9.5 | 23.0 | (.91) | 10 | 6.5 - 9.5 | (.26-.37) | 20806.0 | 20826.1 |
| PG16-PIB ✻✻ ✻✻PVC 10.5 | 23.0 | (.91) | 10 | 7.0 - 10.5 | (.28-.41) | 20807.0 | 20827.1 |
| PG16-PIB ✻✻ ✻✻PVC 13.0 | 23.0 | (.91) | 10 | 9.5 - 13.0 | (.37-.51) | 20808.0 | 20828.1 |
| PG21-PIB ✻✻ ✻✻PVC 13.0 | 29.0 | (1.14) | 10 | 9.0 - 13.0 | (.36-.51) | 20809.0 | 20829.1 |
| PG21-PIB ✻✻ ✻✻PVC 15.5 | 29.0 | (1.14) | 10 | 13.0 - 15.5 | (.51-.61) | 20810.0 | 20830.1 |
| PG21-PIB ✻✻ ✻✻PVC 18.0 | 29.0 | (1.14) | 10 | 14.0 - 18.0 | (.55-.71) | 20811.0 | 20831.1 |
| PG29-PIB ✻✻ ✻✻PVC 21.0 | 37.5 | (1.48) | 5 | 17.0 - 21.0 | (.67-.83) | 20812.0 | 20832.1 |
| PG29-PIB ✻✻ ✻✻PVC 25.0 | 37.5 | (1.48) | 5 | 21.0 - 25.0 | (.83-.98) | 20813.0 | 20833.1 |

✻✻ Add Body Color – BE for Beige, BK for Black

✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 66.0 (2.60) | 57.0 (2.24) | 9.0 (.35) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 73.0 (2.87) | 64.0 (2.52) | 9.0 (.35) | 18.6 (.73) | 22.0 | 24.5 (1.00) |
| PG13.5 | 81.0 (3.19) | 72.0 (2.83) | 9.0 (.35) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 81.0 (3.19) | 71.5 (2.82) | 9.5 (.37) | 22.5 (.89) | 27.0 | 29.5 (1.16) |
| PG21 | 90.0 (3.54) | 79.0 (3.11) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 36.5 (1.44) |
| PG29 | 115.0 (4.53) | 103.5 (4.07) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 46.0 (1.81) |

## Nickel Plated Brass (NPB)

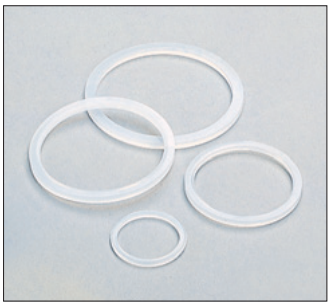
**with Polyvinylchloride (PVC) / Polyamide (PA)Tubular Sealing Sleeve**

***Nickel Plated Brass (NPB)***
***Polyvinylchloride (PVC)***
***Perbunan (PRB)***

***-40 to 150°C (-40 to 302°F)***
***-20 to 80°C ( -4 to 176°F)***
***-20 to 120°C ( -4 to 248°F)***
**Black**

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| 4.0 - 6.5 | (.16-.26) | 20840.6 |
| 7.5 - 9.5 | (.30-.37) | 20841.6 |
| 6.5 - 9.5 | (.26-.37) | 20842.6 |
| 7.0 - 10.5 | (.28-.41) | 20843.6 |
| 6.5 - 9.5 | (.26-.37) | 20844.6 |
| 8.5 - 10.5 | (.33-.41) | 20845.6 |
| 6.5 - 9.5 | (.26-.37) | 20846.6 |
| 7.0 - 10.5 | (.28-.41) | 20847.6 |
| 9.5 - 13.0 | (.37-.51) | 20848.6 |
| 9.0 - 13.0 | (.36-.51) | 20849.6 |
| 13.0 - 15.5 | (.51-.61) | 20850.6 |
| 14.0 - 18.0 | (.55-.71) | 20851.6 |
| 17.0 - 21.0 | (.67-.83) | 20852.6 |
| 21.0 - 25.0 | (.83-.98) | 20853.6 |

## Seal Rings



**Polyethylene (PET)**

**Material:**
***Polyethylene (PET)***
***Perbunan (PRB)***

**Temperature Range:**
***-20 to 100°C (-4 to 212°F)***
***-20 to 100°C (-4 to 212°F)***

| Cat. No. |
|---|
| 23171.9 |
| 23171.9 |
| 23172.9 |
| 23172.9 |
| 23173.9 |
| 23173.9 |
| 23174.9 |
| 23174.9 |
| 23174.9 |
| 23175.9 |
| 23175.9 |
| 23175.9 |
| 23176.9 |
| 23176.9 |

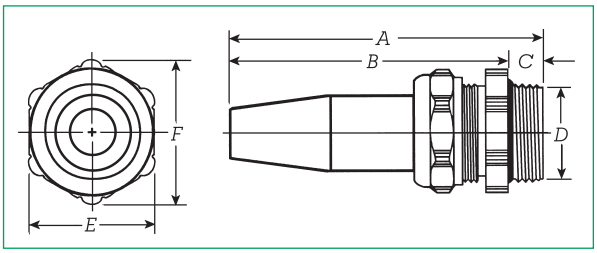
## Locknuts

**Polyamide (PA) and Nickel Plated Brass (NPB)**

**Material:**
***Polyamide (PA)***
***Nickel Plated Brass (NPB)***

**Temperature Range:**
***-20 to 100°C ( -4 to 212°F)***
***-40 to 300°C (-40 to 572°F)***

| Cat. No. PA - Gray | Cat. No. PA - Black | Cat. No. NPB |
|---|---|---|
| 23051.9 | 23061.9 | 23001.9 |
| 23051.9 | 23061.9 | 23001.9 |
| 23052.9 | 23062.9 | 23002.9 |
| 23052.9 | 23062.9 | 23002.9 |
| 23053.9 | 23063.9 | 23003.9 |
| 23053.9 | 23063.9 | 23003.9 |
| 23054.9 | 23064.9 | 23004.9 |
| 23054.9 | 23064.9 | 23004.9 |
| 23054.9 | 23064.9 | 23004.9 |
| 23055.9 | 23065.9 | 23005.9 |
| 23055.9 | 23065.9 | 23005.9 |
| 23055.9 | 23065.9 | 23005.9 |
| 23056.9 | 23066.9 | 23006.9 |
| 23056.9 | 23066.9 | 23006.9 |




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 61.0 (2.40) | 55.0 (2.17) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 66.0 (2.60) | 60.0 (2.36) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 76.0 (2.99) | 69.5 (2.74) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 76.0 (2.99) | 69.5 (2.74) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 83.0 (3.27) | 76.0 (2.99) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 108.0 (4.25) | 100.0 (3.94) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |

# FLAT CABLE with Rounded Tubular Sealing Insert

- Protection Rating: IP65; NEMA 3
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Color: Beige – Black available

## Polyamide (PA)

**with Rounded TubularSealing Insert**

## Nickel Plated Brass (NPB)

**with Rounded Tubular Sealing Insert**

| | | |
|---|---|---|
| **MATERIAL SPECIFICATIONS:** | | |
| **Body** | *Polyamide (PA)* | *Nickel Plated Brass (NPB)* |
| **Insert** | *Polyvinylchloride (PVC)* | *Polyvinylchloride (PVC)* |
| **Seal Ring** | *Polyethylene (PET)* | *Perbunan (PRB)* |
| **TEMPERATURE RANGE:** | | |
| **Body** | *-20 to 100°C (-4 to 212°F)* | *-40 to 300°C (-40 to 572°F)* |
| **Insert** | *-20 to 80°C (-4 to 176°F)* | *-20 to 80°C ( -4 to 176°F)* |
| **Seal Ring** | *-20 to 100°C (-4 to 212°F)* | *-20 to 120°C ( -4 to 248°F)* |
| **INSERT COLOR:** | *White* | *White* |

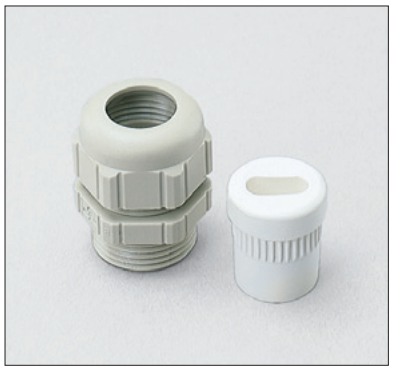
| Type | Std. Pk. | Cable Size, H x W mm (in.) | Cat. No. | Cable Size, H x W mm (in.) | Cat. No. |
|---|---|---|---|---|---|
| PG9-PF ✻✻PVC 5.5 | 50 | 3.5 x 5.5 (.14 x .22) | 21100.0 | 3.5 x 5.5 (.14 x .22) | 21150.6 |
| PG11-PF ✻✻PVC 9.0 | 50 | 3.5 x 9.0 (.14 x .35) | 21102.0 | 3.5 x 9.0 (.14 x .35) | 21152.6 |
| PG11-PF ✻✻PVC 6.0 | 50 | 4.0 x 6.0 (.16 x .24) | 21103.0 | 4.0 x 6.0 (.16 x .24) | 21153.6 |
| PG13.5-PF ✻✻PVC 12.0 | 50 | 3.0 x 12.0 (.12 x .47) | 21104.0 | 3.0 x 12.0 (.12 x .47) | 21154.6 |
| PG13.5-PF ✻✻PVC 11.0 | 50 | 5.0 x 11.0 (.20 x .34) | 21105.0 | 5.0 x 11.0 (.20 x .34) | 21155.6 |
| PG16-PF ✻✻PVC 12.0 | 25 | 5.0 x 12.0 (.20 x .47) | 21106.0 | 5.0 x 12.0 (.20 x .47) | 21156.2 |
| PG16-PF ✻✻PVC 16.0 | 25 | 5.0 x 16.0 (.20 x .63) | 21107.0 | 5.0 x 16.0 (.20 x .63) | 21157.6 |
| PG21-PF ✻✻PVC 17.0 | 20 | 5.0 x 17.0 (.20 x .67) | 21109.0 | 5.0 x 17.0 (.20 x .67) | 21159.6 |
| PG21-PF ✻✻PVC 18.0 | 20 | 7.0 x 18.0 (.28 x .71) | 21110.0 | 7.0 x 18.0 (.28 x .71) | 21160.6 |
| PG21-PF ✻✻PVC 15.0 | 20 | 9.0 x 15.0 (.35 x .59) | 21111.0 | 9.0 x 15.0 (.35 x .59) | 21161.6 |
| PG29-PF ✻✻PVC 25.0 | 15 | 8.0 x 25.0 (.31 x .98) | 21113.0 | 8.0 x 25.0 (.31 x .98) | 21163.6 |
| PG29-PF ✻✻PVC 26.0 | 15 | 10.0 x 25.0 (.39 x .98) | 21114.0 | 10.0 x 25.0 (.39 x .98) | 21164.6 |
| PG29-PF ✻✻PVC 28.0 | 15 | 13.0 x 28.0 (.51 x 1.10) | 21115.0 | 13.0 x 28.0 (.51 x 1.10) | 21165.6 |
| PG29-PF ✻✻PVC 36.0 | 10 | 6.0 x 36.0 (.24 x 1.42) | 21117.0 | 6.0 x 36.0 (.24 x 1.42) | 21167.6 |
| PG36-PF ✻✻PVC 37.0 | 10 | 8.0 x 36.0 (.31 x 1.42) | 21118.0 | 8.0 x 36.0 (.31 x 1.42) | 21168.6 |
| PG36-PF ✻✻PVC 34.0 | 10 | 11.0 x 34.0 (.43 x 1.34) | 21119.0 | 11.0 x 34.0 (.43 x 1.34) | 21169.6 |
| PG36-PF ✻✻PVC 35.0 | 10 | 12.0 x 35.0 (.47 x 1.38) | 21120.0 | 12.0 x 35.0 (.47 x 1.38) | 21170.6 |
| PG42-PF ✻✻PVC 38.0 | 5 | 10.0 x 38.0 (.39 x 1.50) | 21121.0` | 10.0 x 38.0 (.39 x 1.50) | 21171.6 |
| PG42-PF ✻✻PVC 35.0 | 5 | 13.0 x 35.0 (.51 x 1.38) | 21122.0 | 13.0 x 35.0 (.51 x 1.38) | 21172.6 |
| PG42-PF ✻✻PVC 37.0 | 5 | 14.5 x 37.0 (.57 x 1.46) | 21123.0 | 14.5 x 37.0 (.57 x 1.46) | 21173.6 |
| PG48-PF ✻✻PVC 43.0 | 5 | 9.0 x 43.0 (.35 x 1.69) | 21125.0 | 9.0 x 43.0 (.35 x 1.69) | 21175.6 |
| PG48-PF ✻✻PVC 39.0 | 5 | 14.5 x 39.0 (.57 x 1.54) | 21126.0 | 14.5 x 39.0 (.57 x 1.54) | 21176.6 |
| PG48-PF ✻✻PVC 45.0 | 5 | 15.0 x 45.0 (.59 x 1.77) | 21127.0 | 15.0 x 45.0 (.59 x 1.77) | 21177.6 |

✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass

# FLAT CABLE with Oval Tubular Sealing Insert

- Protection Rating: IP65; NEMA 3
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Color: Beige – Black avaiulable

## Polyamide (PA)



**with Oval Tubular Sealing Insert**

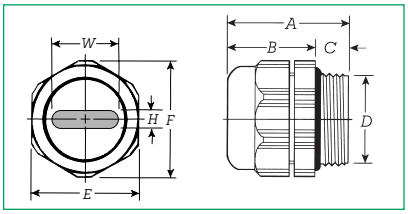
## Nickel Plated Brass (NPB)

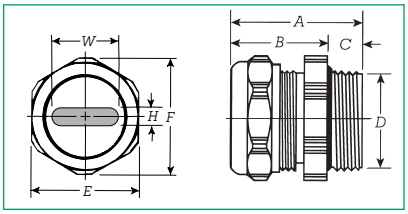
**with Oval Tubular Sealing Insert**

| | | |
|---|---|---|
| **MATERIAL SPECIFICATIONS:** | | |
| **Body** | *Polyamide (PA)* | *Nickel Plated Brass (NPB)* |
| **Insert** | *Polyvinylchloride (PVC)* | *Polyvinylchloride (PVC)* |
| **Seal Ring** | *Polyethylene (PET)* | *Perbunan (PRB)* |
| **TEMPERATURE RANGE:** | | |
| **Body** | *-20 to 100°C ( -4 to 212°F)* | *-40 to 300°C (-40 to 572°F)* |
| **Insert** | *-20 to 80°C ( -4 to 176°F)* | *-20 to 80°C ( -4 to 176°F)* |
| **Seal Ring** | *-20 to 100°C ( -4 to 212°F)* | *-20 to 120°C ( -4 to 248°F)* |
| **INSERT COLOR:** | *White* | *White* |

| Type | Std. Pk. | Cable Size, H x W mm (in.) | Cat. No. | Cable Size, H x W mm (in.) | Cat. No. |
|---|---|---|---|---|---|
| PG13.5 - PF ✻✻ PVC 8.0 | 50 | 5.0 x 8.0 (.20 x .31) | 21131.0 | 5.0 x 8.0 (.20 x .31) | 21181.6 |
| PG13.5 - PF ✻✻ PVC 12.0 | 50 | 5.0 x 12.0 (.20 x .47) | 21132.0 | 5.0 x 12.0 (.20 x .47) | 21182.6 |
| PG16 - PF ✻✻ PVC 12.0 | 25 | 5.0 x 12.0 (.20 x .47) | 21133.0 | 5.0 x 12.0 (.20 x .47) | 21183.6 |
| PG16 - PF ✻✻ PVC 15.0 | 25 | 5.0 x 15.0 (.20 x .59) | 21134.0 | 5.0 x 15.0 (.20 x .59) | 21184.6 |
| PG16 - PF ✻✻ PVC 8.5 | 25 | 5.5 x 8.5 (.22 x .33) | 21135.0 | 5.5 x 8.5 (.22 x .33) | 21185.6 |
| PG16 - PF ✻✻ PVC 16.0 | 25 | 6.0 x 15.0 (.24 x .59) | 21136.0 | 6.0 x 15.0 (.24 x .59) | 21186.6 |
| PG16 - PF ✻✻ PVC 14.0 | 25 | 7.0 x 14.0 (.28 x .55) | 21137.0 | 7.0 x 14.0 (.28 x .55) | 21187.6 |
| PG21 - PF ✻✻ PVC 16.0 | 20 | 5.0 x 16.0 (.20 x .63) | 21138.0 | 5.0 x 16.0 (.20 x .63) | 21188.6 |
| PG21 - PF ✻✻ PVC 16.5 | 20 | 7.0 x 16.5 (.28 x .65) | 21139.0 | 7.0 x 16.5 (.28 x .65) | 21189.6 |
| PG21 - PF ✻✻ PVC 20.0 | 20 | 7.0 x 20.0 (.28 x . 79) | 21140.0 | 7.0 x 20.0 (.28 x . 79) | 21190.6 |
| PG29 - PF ✻✻ PVC 27.0 | 15 | 10.0 x 27.0 (.39 x 1.06) | 21141.0 | 10.0 x 27.0 (.39 x 1.06) | 21191.6 |
| PG36 - PF ✻✻ PVC 32.0 | 10 | 6.5 x 32.0 (.26 x 1.26) | 21142.0 | 6.5 x 32.0 (.26 x 1.26) | 21192.6 |
| PG36 - PF ✻✻ PVC 35.0 | 10 | 11.0 x 35.0 (.43 x 1.38) | 21143.0 | 11.0 x 35.0 (.43 x 1.38) | 21193.6 |
| PG42 - PF ✻✻ PVC 41.0 | 5 | 6.0 x 41.0 (.24 x 1.61) | 21144.0 | 6.0 x 41.0 (.24 x 1.61) | 21194.6 |
| PG42 - PF ✻✻ PVC 38.0 | 5 | 9.0 x 38.0 (.35 x 1.50) | 21145.0 | 9.0 x 31.0 (.35 x 1.50) | 21195.6 |

✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | | B | | C | | D | | E | | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PG9 | 31.0 | (1.22) | 22.0 | (.87) | 9.0 | (.35) | 15.2 | (.60) | 19.0 | 16.2 | | (.64) |
| PG11 | 32.0 | (1.26) | 23.0 | (.91) | 9.0 | (.35) | 18.6 | (.73) | 22.0 | 21.0 | | (.83) |
| PG13.5 | 32.0 | (1.26) | 23.0 | (.91) | 9.0 | (.35) | 20.4 | (.80) | 24.0 | 24.5 | | (.96) |
| PG16 | 32.5 | (1.28) | 23.0 | (.91) | 9.5 | (.37) | 22.5 | (.89) | 27.0 | 26.5 | | (1.04) |
| PG21 | 38.0 | (1.50) | 27.0 | (1.06) | 11.0 | (.43) | 28.3 | (1.11) | 33.0 | 29.5 | | (1.16) |
| PG29 | 45.5 | (1.79) | 34.0 | (1.34) | 11.5 | (.45) | 37.0 | (1.46) | 43.0 | 36.5 | | (1.44) |
| PG36 | 48.0 | (1.89) | 34.0 | (1.34) | 14.0 | (.55) | 47.0 | (1.85) | 53.0 | 46.0 | | (1.81) |
| PG42 | 53.0 | (2.09) | 38.0 | (1.50) | 15.0 | (.59) | 54.0 | (2.13) | 60.0 | 57.0 | | (2.24) |
| PG48 | 53.0 | (2.09) | 38.0 | (1.50) | 15.0 | (.59) | 59.3 | (2.33) | 65.0 | 64.0 | | (2.52) |

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | | B | | C | | D | | E | | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 25.0 | (.98) | 20.0 | (.79) | 5.0 | (.20) | 12.5 | (.49) | 14.0 | 15.5 | | (.61) |
| PG9 | 26.0 | (1.02) | 20.0 | (.79) | 6.0 | (.24) | 15.2 | (.60) | 17.0 | 18.9 | | (.74) |
| PG11 | 26.0 | (1.02) | 20.0 | (.79) | 6.0 | (.24) | 18.6 | (.73) | 20.0 | 22.2 | | (.87) |
| PG13.5 | 27.5 | (1.08) | 21.0 | (.83) | 6.5 | (.26) | 20.4 | (.80) | 22.0 | 24.4 | | (.96) |
| PG16 | 27.5 | (1.08) | 21.0 | (.83) | 6.5 | (.26) | 22.5 | (.89) | 24.0 | 26.7 | | (1.05) |
| PG21 | 32.0 | (1.26) | 25.0 | (.98) | 7.0 | (.28) | 28.3 | (1.11) | 30.0 | 33.5 | | (1.32) |
| PG29 | 35.0 | (1.38) | 27.0 | (1.06) | 8.0 | (.31) | 37.0 | (1.46) | 40.0 | 43.5 | | (1.71) |
| PG36 | 37.0 | (1.46) | 28.0 | (1.10) | 9.0 | (.35) | 47.0 | (1.85) | 50.0 | 54.0 | | (2.24) |
| PG42 | 40.0 | (.157) | 30.0 | (1.18) | 10.0 | (.39) | 54.0 | (2.13) | 57.0 | 61.0 | | (2.40) |
| PG48 | 40.0 | (1.57) | 30.0 | (1.18) | 10.0 | (.39) | 59.3 | (2.33) | 64.0 | 69.0 | | (2.72) |

# MULTI-CABLE

Multiple Cable Cord Grips are used when space is restricted and several cables must pass through one cord grip into an enclosure.

Conta-Clip Cord Grips with Multiple Cable Inserts ensure the desired protection rating and provide reliable strain relief.

Multiple Cable Inserts are housed in your choice of Polyamide or Nickel Plated Brass Cord Grip bodies.

### Multi-Cable Inserts

Choose from a wide variety of prefabricated Multiple Cable Inserts, each with holes of the same or varying diameters.

### Solid Inserts

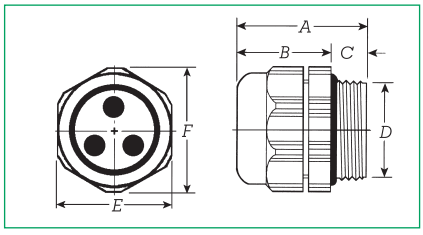
Also available are Solid Inserts, which are easily custom-drilled to fit your cable needs.

Please refer to page 31 for ordering information. Use the Solid Insert worksheet as a guide

### Sealing Plugs

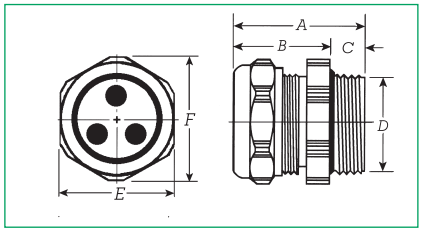
Sealing Plugs seal unused holes in Multiple Cable Inserts. The plugs ensure that the protection rating and strain relief of the Cord Grip is maintained.

Please refer to page 62 for dimensions and ordering information.




**Cord Grip Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 31.0 (1.22) | 22.0 (.87) | 9.0 (.35) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 32.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 18.6 (.73) | 22.0 | 24.5 (.96) |
| PG13.5 | 33.0 (1.26) | 23.0 (.91) | 9.0 (.35) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 32.5 (1.28) | 23.0 (.91) | 9.5 (.37) | 22.5 (.89) | 27.0 | 29.5 (1.16) |
| PG21 | 38.0 (1.50) | 27.0 (1.06) | 11.0 (.43) | 28.3 (1.11) | 33.0 | 36.5 (1.44) |
| PG29 | 45.5 (1.79) | 34.0 (1.34) | 11.5 (.45) | 37.0 (1.46) | 43.0 | 46.0 (1.81) |
| PG36 | 48.0 (1.89) | 34.0 (1.34) | 14.0 (.55) | 47.0 (1.85) | 53.0 | 57.0 (2.24) |




**Cord Grip Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 32.0 (1.26) | 25.0 (.98) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 35.0 (1.38) | 27.0 (1.06) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 37.0 (1.46) | 28.0 (1.10) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 54.0 (2.24) |

## MULTI-CABLE

- Protection Rating: IP65; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black
- Body Material: Polyamide and Nickel Plated Brass
- Insert Material: Polyvinylchloride

**Polyamide (PA) Beige**

**Polyamide (PA) Black**

**Nickel Plated Brass (NPB)**

**With Polyvinylchloride (PVC) Multiple Cable Insert**

| Size | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|
| PG9 | 1 x 3.0mm | 25 | 21305.0 | 21305.1 | 21305.6 |
| PG9 | 1 x 4.0mm | 25 | 21306.0 | 21306.1 | 21306.6 |
| PG9 | 1 x 5.0mm | 25 | 21307.0 | 21307.1 | 21307.6 |
| PG9 | 2 x 1.2mm | 25 | 21308.0 | 21308.1 | 21308.6 |
| PG9 | 2 x 3.0mm | 25 | 21309.0 | 21309.1 | 21309.6 |
| PG9 | 2 x 4.0mm | 25 | 21310.0 | 21310.1 | 21310.6 |
| PG9 | 3 x 3.0mm | 25 | 21311.0 | 21311.1 | 21311.6 |
| PG9 | 4 x 1.4mm | 25 | 21312.0 | 21312.1 | 21312.6 |
| PG9 | 4 x 3.0mm | 25 | 21313.0 | 21313.1 | 21313.6 |

| Size | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|
| PG11 | 1 x 3.0mm | 25 | 21318.0 | 21318.1 | 21318.6 |
| PG11 | 1 x 4.0mm | 25 | 21319.0 | 21319.1 | 21319.6 |
| PG11 | 1 x 5.0mm | 25 | 21320.0 | 21320.1 | 21320.6 |
| PG11 | 2 x 2.3mm | 25 | 21321.0 | 21321.1 | 21321.6 |
| PG11 | 2 x 3.0mm | 25 | 21322.0 | 21322.1 | 21322.6 |
| PG11 | 2 x 4.0mm | 25 | 21323.0 | 21323.1 | 21323.6 |
| PG11 | 2 x 5.0mm | 25 | 21324.0 | 21324.1 | 21324.6 |
| PG11 | 2 x 6.0mm | 25 | 21325.0 | 21325.1 | 21325.6 |
| PG11 | 3 x 3.0mm | 25 | 21326.0 | 21326.1 | 21326.6 |
| PG11 | 3 x 4.0mm | 25 | 21327.0 | 21327.1 | 21327.6 |
| PG11 | 4 x 1.5mm | 25 | 21328.0 | 21328.1 | 21328.6 |
| PG11 | 5 x 3.5mm | 25 | 21329.0 | 21329.1 | 21329.6 |
| PG11 | 6 x 2.0mm | 25 | 21330.0 | 21330.1 | 21330.6 |
| PG11 | 6 x 2.5mm | 25 | 21331.0 | 21331.1 | 21331.6 |
| PG11 | 7 x 1.5mm | 25 | 21332.0 | 21332.1 | 21332.6 |
| PG11 | 9 x 1.5mm | 25 | 21333.0 | 21333.1 | 21333.6 |

| Size | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|
| PG13.5 | 1 x 8.0mm | 25 | 21339.0 | 21339.1 | 21339.6 |
| PG13.5 | 2 x 3.0mm | 25 | 21340.0 | 21340.1 | 21340.6 |
| PG13.5 | 2 x 5.0mm | 25 | 21341.0 | 21341.1 | 21341.6 |
| PG13.5 | 2 x 6.0mm | 25 | 21342.0 | 21342.1 | 21342.6 |
| PG13.5 | 3 x 2.0mm | 25 | 21343.0 | 21343.1 | 21343.6 |
| PG13.5 | 3 x 3.0mm | 25 | 21344.0 | 21344.1 | 21344.6 |
| PG13.5 | 3 x 4.0mm | 25 | 21345.0 | 21345.1 | 21345.6 |

# MULTI-CABLE

- Protection Rating: IP65; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black
- Body Material: Polyamide and Nickel Plated Brass
- Insert Material: Polyvinylchloride

**Polyamide (PA) Beige**

**Polyamide (PA) Black**

**Nickel Plated Brass (NPB)**

**With Polyvinylchloride (PVC) Multiple Cable Insert**

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG13.5 | 3 x 5.3mm | – | 25 | 21346.0 | 21346.1 | 21346.6 |
| PG13.5 | 4 x 3.0mm | – | 25 | 21347.0 | 21347.1 | 21347.6 |
| PG13.5 | 6 x 3.5mm | – | 25 | 21348.0 | 21348.1 | 21348.6 |
| PG13.5 | 8 x 1.5mm | – | 25 | 21349.0 | 21349.1 | 21349.6 |
| PG13.5 | 10 x 2.0mm | – | 25 | 21350.0 | 21350.1 | 21350.6 |
| PG13.5 | 1 x 3.0mm | 2 x 6.0mm | 25 | 21351.0 | 21351.1 | 21351.6 |
| PG13.5 | 2 x 5.0mm | 1 x 5.5mm | 25 | 21353.0 | 21353.1 | 21353.6 |
| PG13.5 | 3 x 3.0mm | 1 x 6.5mm | 25 | 21354.0 | 21354.1 | 21354.6 |

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG16 | 1 x 4.0mm | – | 25 | 21357.0 | 21357.1 | 21357.6 |
| PG16 | 1 x 5.0mm | – | 25 | 21358.0 | 21358.1 | 21358.6 |
| PG16 | 1 x 8.0mm | – | 25 | 21359.0 | 21359.1 | 21359.6 |
| PG16 | 2 x 4.0mm | – | 25 | 21360.0 | 21360.1 | 21360.6 |
| PG16 | 2 x 6.0mm | – | 25 | 21361.0 | 21361.1 | 21361.6 |
| PG16 | 2 x 8.0mm | – | 25 | 21362.0 | 21362.1 | 21362.6 |
| PG16 | 3 x 3.0mm | – | 25 | 21364.0 | 21364.1 | 21364.6 |
| PG16 | 3 x 7.0mm | – | 25 | 21365.0 | 21365.1 | 21365.6 |
| PG16 | 4 x 4.0mm | – | 25 | 21366.0 | 21366.1 | 21366.6 |
| PG16 | 4 x 6.0mm | – | 25 | 21367.0 | 21367.1 | 21367.6 |
| PG16 | 6 x 4.0mm | – | 25 | 21368.0 | 21368.1 | 21368.6 |
| PG16 | 7 x 2.0mm | – | 25 | 21369.0 | 21369.1 | 21369.6 |
| PG16 | 9 x 3.0mm | – | 25 | 21370.0 | 21370.1 | 21370.6 |
| PG16 | 1 x 3.0mm | 1 X 8.0mm | 25 | 21376.0 | 21376.1 | 21376.6 |
| PG16 | 1 x 3.0mm | 1 x 9.0mm | 25 | 21377.0 | 21377.1 | 21377.6 |
| PG16 | 1 x 3.0mm | 2 x 8.0mm | 25 | 21378.0 | 21378.1 | 21378.6 |
| PG16 | 1 x 5.0mm | 2 x 6.0mm | 25 | 21379.0 | 21379.1 | 21379.6 |
| PG16 | 1 x 6.0mm | 1 x 8.0mm | 25 | 21381.0 | 21381.1 | 21381.6 |
| PG16 | 2 x 5.0mm | 1 x 6.0mm | 25 | 21382.0 | 21382.1 | 21382.6 |
| PG16 | 2 x 6.0mm | 1 x 7.0mm | 25 | 21383.0 | 21383.1 | 21383.6 |
| PG16 | 2 x 6.0mm | 1 x 8.0mm | 25 | 21384.0 | 21384.1 | 21384.6 |
| PG16 | 3 x 4.0mm | 1 x 9.0mm | 25 | 21385.0 | 21385.1 | 21385.6 |

# MULTI-CABLE

- Protection Rating: IP65; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black
- Body Material: Polyamide and Nickel Plated Brass
- Insert Material: Polyvinylchloride

**Polyamide (PA) Beige**

**Polyamide (PA) Black**

**Nickel Plated Brass (NPB)**

**With Polyvinylchloride (PVC) Multiple Cable Insert**

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG21 | 1 x 16.0mm | – | 10 | 21396.0 | 21396.1 | 21396.6 |
| PG21 | 2 x 4.5mm | – | 10 | 21398.0 | 21398.1 | 21398.6 |
| PG21 | 2 x 8.0mm | – | 10 | 21399.0 | 21399.1 | 21399.6 |
| PG21 | 2 x 9.0mm | – | 10 | 21400.0 | 21400.1 | 21400.6 |
| PG21 | 3 x 7.0mm | – | 10 | 21401.0 | 21401.1 | 21401.6 |
| PG21 | 3 x 9.0mm | – | 10 | 21402.0 | 21402.1 | 21402.6 |
| PG21 | 4 x 5.0mm | – | 10 | 21403.0 | 21403.1 | 21403.6 |
| PG21 | 4 x 6.0mm | – | 10 | 21404.0 | 21404.1 | 21404.6 |
| PG21 | 4 x 6.5mm | – | 10 | 21405.0 | 21405.1 | 21405.6 |
| PG21 | 4 x 8.0mm | – | 10 | 21406.0 | 21406.1 | 21406.6 |
| PG21 | 6 x 4.0mm | – | 10 | 21407.0 | 21407.1 | 21407.6 |
| PG21 | 6 x 5.0mm | – | 10 | 21408.0 | 21408.1 | 21408.6 |
| PG21 | 6 x 5.5mm | – | 10 | 21409.0 | 21409.1 | 21409.6 |
| PG21 | 6 x 6.5mm | – | 10 | 21410.0 | 21410.1 | 21410.6 |
| PG21 | 8 x 3.0mm | – | 10 | 21411.0 | 21411.1 | 21411.6 |
| PG21 | 8 x 4.0mm | – | 10 | 21412.0 | 21412.1 | 21412.6 |
| PG21 | 8 x 5.0mm | – | 10 | 21413.0 | 21413.1 | 21413.6 |
| PG21 | 1 x 6.0mm | 2 x 9.0mm | 10 | 21414.0 | 21414.1 | 21414.6 |
| PG21 | 1 x 7.0mm | 1 x 10.5mm | 10 | 21415.0 | 21415.1 | 21415.6 |
| PG21 | 1 x 8.5mm | 1 x 12.0mm | 10 | 21416.0 | 21416.1 | 21416.6 |
| PG21 | 2 x 6.0mm | 2 x 8.0mm | 10 | 21419.0 | 21419.1 | 21419.6 |
| PG21 | 2 x 7.0mm | 3 x 7.0mm | 10 | 21420.0 | 21420.1 | 21420.6 |
| PG21 | 6 x 4.0mm | 1 x 7.0mm | 10 | 21424.0 | 21424.1 | 21424.6 |

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG29 | 1 x 16.0mm | – | 5 | 21446.0 | 21446.1 | 21446.6 |
| PG29 | 2 x 11.0mm | – | 5 | 21447.0 | 21447.1 | 21447.6 |
| PG29 | 2 x 13.0mm | – | 5 | 21448.0 | 21448.1 | 21448.6 |
| PG29 | 3 x 11.0mm | – | 5 | 21449.0 | 21449.1 | 21449.6 |
| PG29 | 4 x 10.0mm | – | 5 | 21450.0 | 21450.1 | 21450.6 |
| PG29 | 4 x 5.5mm | – | 5 | 21451.0 | 21451.1 | 21451.6 |
| PG29 | 4 x 8.0mm | – | 5 | 21452.0 | 21452.1 | 21452.6 |
| PG29 | 4 x 9.0mm | – | 5 | 21453.0 | 21453.1 | 21453.6 |
| PG29 | 5 x 10.0mm | – | 5 | 21454.0 | 21454.1 | 21454.6 |
| PG29 | 5 x 8.0mm | – | 5 | 21455.0 | 21455.1 | 21455.6 |
| PG29 | 5 x 9.0mm | – | 5 | 21456.0 | 21456.1 | 21456.6 |
| PG29 | 6 x 6.0mm | – | 5 | 21457.0 | 21457.1 | 21457.6 |

# MULTI-CABLE

- Protection Rating: IP65; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black
- Body Material: Polyamide and Nickel Plated Brass
- Insert Material: Polyvinylchloride

**Polyamide (PA) Beige**

**Polyamide (PA) Black**

**Nickel Plated Brass (NPB)**

**With Polyvinylchloride (PVC) Multiple Cable Insert**

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG29 | 6 x 8.0mm | – | 5 | 21458.0 | 21458.1 | 21458.6 |
| PG29 | 7 x 7.0mm | – | 5 | 21459.0 | 21459.1 | 21459.6 |
| PG29 | 8 x 5.5mm | – | 5 | 21460.0 | 21460.1 | 21460.6 |
| PG29 | 10 x 6.0mm | – | 5 | 21461.0 | 21461.1 | 21461.6 |
| PG29 | 12 x 5.3mm | – | 5 | 21462.0 | 21462.1 | 21462.6 |
| PG29 | 1 x 12.0mm | 1 x 13.0mm | 5 | 21465.0 | 21465.1 | 21465.6 |
| PG29 | 1 x 6.5mm | 1 x 17.0mm | 5 | 21467.0 | 21467.1 | 21467.6 |
| PG29 | 1 x 9.0mm | 1 x 15.0mm | 5 | 21471.0 | 21471.1 | 21471.6 |
| PG29 | 2 x 6.5mm | 1 x 10.0mm | 5 | 21473.0 | 21473.1 | 21473.6 |
| PG29 | 3 x 7.0mm | 3 x 8.0mm | 5 | 21475.0 | 21475.1 | 21475.6 |
| PG29 | 4 x 5.5mm | 1 x 8.0mm | 5 | 21477.0 | 21477.1 | 21477.6 |
| PG29 | 4 x 6.0mm | 3 x 8.5mm | 5 | 21479.0 | 21479.1 | 21479.6 |

| Size | Hole Qty. x Dia. | Hole Qty. x Dia. | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|---|
| PG36 | 2 x 15.0mm | – | 5 | 21481.0 | 21481.1 | 21481.6 |
| PG36 | 3 x 10.0mm | – | 5 | 21482.0 | 21482.1 | 21482.6 |
| PG36 | 4 x 10.2mm | – | 5 | 21483.0 | 21483.1 | 21483.6 |
| PG36 | 4 x 11.5mm | – | 5 | 21484.0 | 21484.1 | 21484.6 |
| PG36 | 4 x 13.0mm | – | 5 | 21485.0 | 21485.1 | 21485.6 |
| PG36 | 5 x 11.5mm | – | 5 | 21486.0 | 21486.1 | 21486.6 |
| PG36 | 7 x 9.0mm | – | 5 | 21487.0 | 21487.1 | 21487.6 |
| PG36 | 8 x 8.0mm | – | 5 | 21488.0 | 21488.1 | 21488.6 |
| PG36 | 8 x 9.0mm | – | 5 | 21489.0 | 21489.1 | 21489.6 |
| PG36 | 11 x 8.0mm | – | 5 | 21490.0 | 21490.1 | 21490.6 |
| PG36 | 13 x 7.0mm | – | 5 | 21491.0 | 21491.1 | 21491.6 |
| PG36 | 15 x 5.0mm | – | 5 | 21492.0 | 21492.1 | 21492.6 |
| PG36 | 1 x 11.0mm | 1 x 21.0mm | 5 | 21493.0 | 21493.1 | 21493.6 |
| PG36 | 1 x 12.5mm | 1 X 16.5mm | 5 | 21494.0 | 21494.1 | 21494.6 |
| PG36 | 1 x 13.0mm | 1 x 16.5mm | 5 | 21495.0 | 21495.1 | 21495.6 |
| PG36 | 1 x 14.0mm | 1 x 17.0mm | 5 | 21496.0 | 21496.1 | 21496.6 |

# MULTI-CABLE Solid Insert

Soild Inserts are easily custom drilled to fit your cable needs. Conta-Clip will custom drill to your specifications.

- Protection Rating: IP65; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black
- Body Material: Polyamide and Nickel Plated Brass
- Insert Material: Polyvinylchloride

**Polyamide (PA) Beige**

**Polyamide (PA) Black**

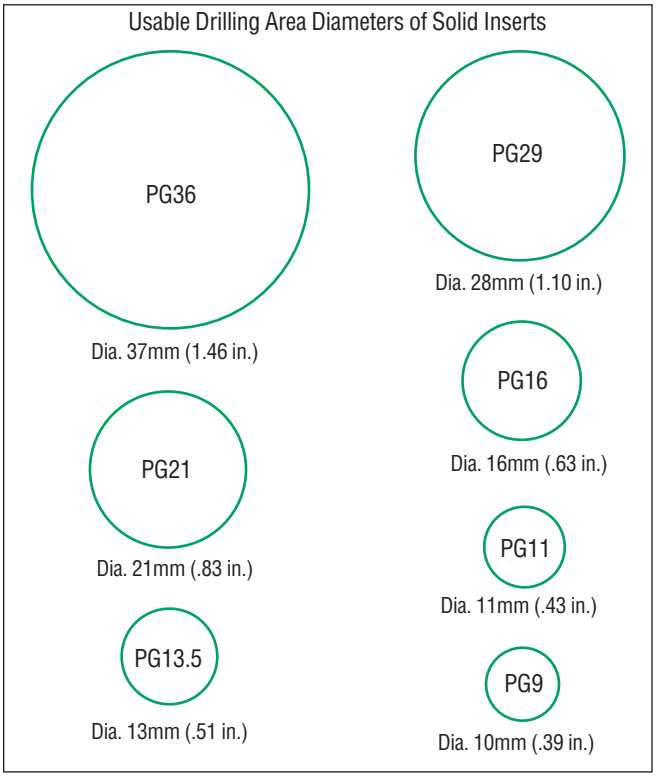
**Nickel Plated Brass (NPB)**

**With Polyvinylchloride (PVC) Solid Insert**

| Size | Insert | Std Pk. | Cat. No. PA Beige | Cat. No. PA Black | Cat. No. NPB |
|---|---|---|---|---|---|
| PG7 | Solid | 25 | – | – | 20920.6 |
| PG9 | Solid | 25 | 20921.0 | 20921.1 | 20921.6 |
| PG11 | Solid | 25 | 20922.0 | 20922.1 | 20922.6 |
| PG13.5 | Solid | 25 | 20923.0 | 20923.1 | 20923.6 |
| PG16 | Solid | 10 | 20924.0 | 20924.1 | 20924.6 |
| PG21 | Solid | 5 | 20925.0 | 20925.1 | 20925.6 |
| PG29 | Solid | 5 | 20926.0 | 20926.1 | 20926.6 |

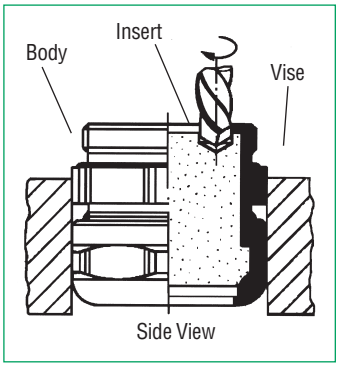
## Solid Insert Worksheet

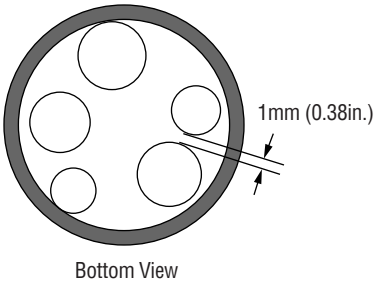
Usable Drilling Area Diameters of Solid Inserts




**Shop Drilling:**

- Cool Inserts to 7°C (45°F)
- Place Cord Grip with installed Insert into vise
- Cool drill with air or water while driling
- Drill holes at a maximum of 800 rpm
- Do not exceed a tolerance of 1mm (0.39in.)
- Minimum clearance between holes 1mm (0.39)



# HIGH PERFORMANCE TOR-SPRING™ EMI/RFI CORD GRIPS

**The Importance of Meeting EMC Requirements**

When specifying and designing today's electronic control and data acquisition systems, consideration must be given to Electro-Magnetic Compatibility (EMC).

If not properly addressed, electro-magnetic interference can distort and impair the efficiency of signal and data transmission which in turn can adversely affect monitoring and control functions. The end result is disrupted production, costly downtime, inconsistent or substandard material quality and even dangerous accidents.

Additionally, all electronic and electrical products,devices, and equipment exported to the European Community (EC) must now be in strict compliance with EMC Directive 89/1336/EEC which sets requirements for electro–magnetic emissions and immunity.

US National EMC Requirements including ANSI/IEEE 1101.10, which is harmonized with the EMC Directive 89/336/EEC, must also be considered and satisfied.

For these reasons, ignoring EMC Guidelines or falling short of EMC Design Objectives is not an option for today's system and product designers.

**Key Elements of Effective EMC Design**

In addition to selecting and using the properly shielded control and data cabling, control components and electronic equipment should be housed within a structure that provides sufficient EMI/RFI Isolation.

At the locations where shielded signal and data cables will penetrate an enclosure, housing, compartment, or panel, the cable shields must be properly grounded to the structure in order to provide the necessary EMI/RFI Protection. Additionally, cable openings must be effectively attenuated to prevent EMI/RFI Emissions from escaping containment.

Over the years, special design EMI/RFI Cord Grips have been developed and used successfully to meet these EMC Requirements.

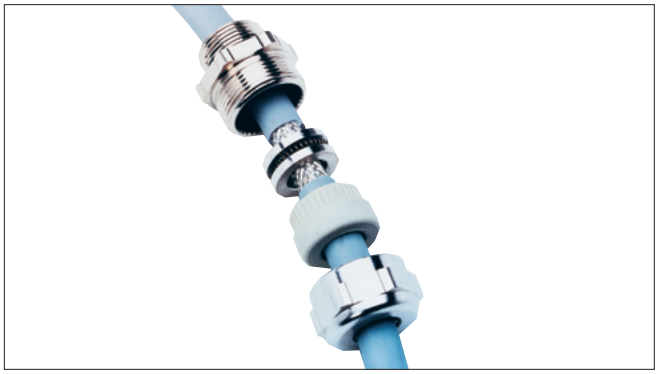
## TOR-SPRING™ – A Breakthrough in EMI/RFI Cord Grip Design and Installation

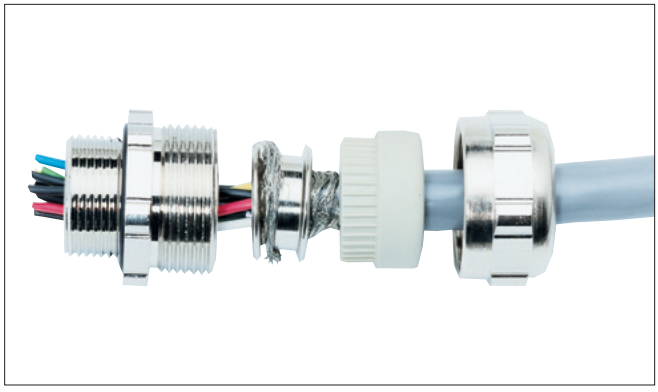
Original EMI/RFI Cord Grip designs feature one or more internal metal rings to which the cable's braided shield is attached. Because the braided shield must be cut, removed and then carefully positioned around or between these rings, the EMI/RFI Performance of field installed Cord Grips have been inconsistent and dependent on the installer's experience, skill level and willingness to follow installation instructions.

Conta-Clip's new TOR-SPRING™ Cord Grips have been especially developed to eliminate the installation and performance uncertainties associated with traditional design EMI/RFI Cord Grips. Their advanced design represents a significant technological breakthrough overcoming all installation shortcomings associated with traditional ring design Cord Grips, while providing more consistent EMI/RFI Performance.

**Installation of Traditional EMI/RFI Cord Grips**

Installation of traditional design, EMI/RFI Cord Grips onto shielded cables is difficult and time consuming. Both the cable jacket and the shield must be cut and removed at the Cord Grip's attachment point. Next, the braided shield must be carefully separated and positioned around one or a pair of metal rings. If this procedure is not followed exactly, the Cord Grip 's EMI/RFI Performance can be diminished or inconsistent. Because the braided shield is cut away and removed at the Cord Grip attachment point, continuance of EMI/RFI Performance to the cable termination point is not provided. Application of a secondary tubular braid to this length of unshielded cable is required to ensure the system's EMC Integrity.





**Installation of TOR-SPRING™ Cord Grips**

Conta-Clip's unique TOR-SPRING™ EMI/RFI Cord Grip Design featuring the toroidal spring/tapered ring principle ensures a controlled and precise installation onto shielded cables. Installation is simplified and installation time is significantly reduced because only the cable jacket needs to be cut and removed at the Cord Grip attachment point.

The cable's braided shield remains intact and is eliminated from the installation procedure. Since the braided shield extends to the termination point, continuous EMI/RFI Performance is guaranteed.

## Why use TOR-SPRING™ EMI/RFI Cord Grips?

As a designer and specifier of today's sophisticated electronic control systems and automation products, it is your responsibility to ensure that your designs will perform as intended. Subsequently, it is extremely important that the EMC Integrity of your design be maintained. If the EMC requirements are not addressed head on and incorporated into your design and planning from the very beginning, it could jeopardize the efficiency and the ultimate operational capability of your system, product or process.

Faced with this possibility, it is necessary for you to identify and employ any product which could eliminate the disruptive and damaging effects of electromagnetic radiation and thereby increase the reliability and enhance the EMC Performance of your design.

Besides helping to satisfy EMC Requirements, as well as comply with national and international EMC Guidelines, use of TOR-SPRING™ Cord Grips will provide you with a high degree of confidence that planned shielding performance will be realized on each and every application.

In summary, Tor-Spring™ Cord Grips can provide an additional level of assurance that your overall design objectives will be reached. And, the system or product will function exactly as planned while the EMC Performance attained will be repeatable and unaffected by installation variables beyond your control.

## TOR-SPRING™ EMI/RFI Cord Grip Advantages

***Specific Technical Advantages include:***

- Consistent and Repeatable EMI/RFI Performance Independent of Installer's Methods/Practices
- Continuous EMI/RFI Performance to the Termination Point Ensures System EMC Integrity
- Eliminates Secondary Shielding Requirement from the Cord Grip Attachment Point to the Termination Point
- Full, 360° EMI/RFI Protection Around Cable, No Possibility of Unshielded Sectors
- Simplified, Time Saving Installation
- Works with Braided or Foil Shields
- Lower Installation Costs
- Liquid Tight Seal
- Strain Relief

## TOR-SPRING™ EMI/RFI Cord Grip Applications

***TOR-SPRING™ Cord Grips have found widespread use in Industrial. Marine, Petro-Chemical, Automotive, Aerospace and Medical Markets. Specific applications include:***

- Industrial Process Controls
- Instrumentation
- Machine Tools
- CNC Machine Centers
- Sensor Measuring, Monitoring, Control
- Security and Access Control
- Automation Equipment
- Drive and Motor Control
- Material Handling Systems
- PC and PLC Control
- Test and Measurement
- Data Processing Equipment

***Use TOR-SPRING™ EMI/RFI Cord Grips anywhere shielded cable penetrations will be made and where electromagnetic emissions and immunity are a design requirement.***

- Enclosures
- Housings
- Equipment Racks
- Compartments
- Instrument Cases
- Control Panels
- Marshalling Cabinets
- Operator Interfaces
- Consoles

## TOR-SPRING™ EMI/RFI Cord Grip Construction

***The highest quality materials have been selected and used for the manufacture of High Performance TOR-SPRING™ Cord Grips. This ensures a precision design and rugged construction resulting in superior performance, reliabilityand a long life expectancy.***

**Body:** Nickel Plated Brass

**Dome Nut:** Nickel Plated Brass (NPB)

**Toroldal Spring:** Special Spring SteelAlloy

**Tapered Rings:** Nickel Plated Brass (NPB)

**Insert:** Polyvinylchloride (PVC) or Santoprene (STP)

**Seal Ring:** Perbunan (PRB)

**External Thread:** PG or NPT

# HIGH PERFORMANCE TOR-SPRING™ EMI/RFI CORD GRIPS

### How TOR-SPRING™ Cord Grips Work

The key features of TOR-SPRING™ Cord Grips are a unique Toroidal Spring, which is made using advanced manufacturing methods, and (2) precision machined Tapered Retaining Rings. The Toroidal Spring is positioned between the Retaining Rings and when the Dome Nut is tightened, the Cord Grip's Insert presses the Tapered Rings together, altering the shape of the Toroidal Spring and forcing it against the circumference of the Braided Shield. (See Figure #2) This action places the spring in direct contact with the shield around its entire circumference, providing full 360° EMI/RFI Protection of the cable. Because the Tapered Rings are in direct contact with the Cord Grip Body, a continuous low resistance, ground connection is made from the cable shield to the enclosure/housing structure.

Lastly, because the cable's Braided Shield does not have to be cut and removed when installing TOR-SPRING™ Cable Grips, it provides continuous EMI/RFI shielding from the Cord Grip attachment point to the internal termination point. This condition eliminates the need for specification and installation of time consuming and costly secondary shielding for this length of cabling.

*Note, secondary shielding is an extremely critical requirement when using traditional design EMI/RFI Cord Grips because unshielded control and data cabling inside an enclosure/housing can be directly affected by the harmful electromagnetic emissions contained within the structure. Subsequently, the entire system's EMC Integrity could be compromised if this run of cabling remains unshielded.*

### TOR-SPRING™ Cord Grip Shielding Principle

*Tightening the Dome Nut (1) causes the Cord Grip Insert (2) to press against the Tapered Rings (5A and 5B), which in turn, alters the shape of the Toroidal Spring (6) forcing it against the circumference of the cable's Braided Shield (See Figures #1 and #2). The resulting continuous ground potential is provided to the enclosure/housing from the Braided Shield through the Toroidal Spring and Tapered Rings to the Cord Grip Body which is secured to the structure by a Locknut.*

**Tor-Spring™ Cord Grip Components**

1. Dome Nut
2. Insert
3. Body
4. Seal Ring
5. Tapered Rings
6. Toroidal Spring

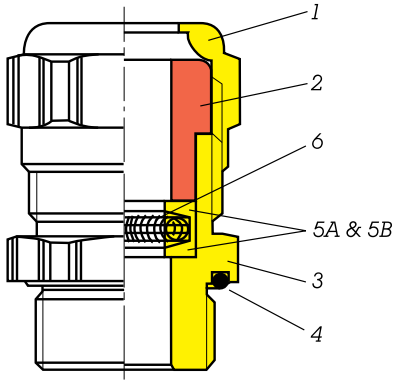



**Figure 1**

As Dome Nut is tightened, Toroidal Spring deforms, Tapered Rings close

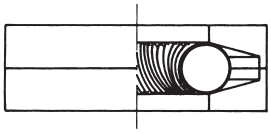
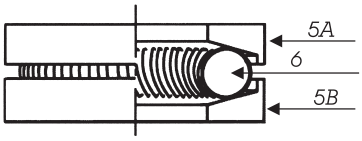


**Figure 2**

When Dome Nut is loose, Tapered Rings are open, Toroidal Spring unchanged




## TOR-SPRING™ Cord Grip EMI/RFI Shielding Performance

When properly installed, traditional ring design Cord Grips provide acceptable EMI/RFI Shielding Performance. Conversely, when installation instructions are overlooked or not followed closely and an improper installation occurs, shielding attenuation values are subject to significant variation and in some cases can be inadequate.

Because the design of TOR-SPRING™ Cord Grips is based on the toroidal spring/tapered ring principle that involves a simplified, modern installation method, EMI/RFI Performance is not influenced by installation variables.

The TOR-SPRING™ Cord Grip's shielding attenuation results are extremely consistent and repeatable from installation to installation This predictability affords the designer confidence that planned control of EMI/RFI Interference will be realized.

A representative example of the TOR-SPRING™ Cord Grip's excellent shielding characteristics is found in the graphical attenuation data presented in Figure #3.

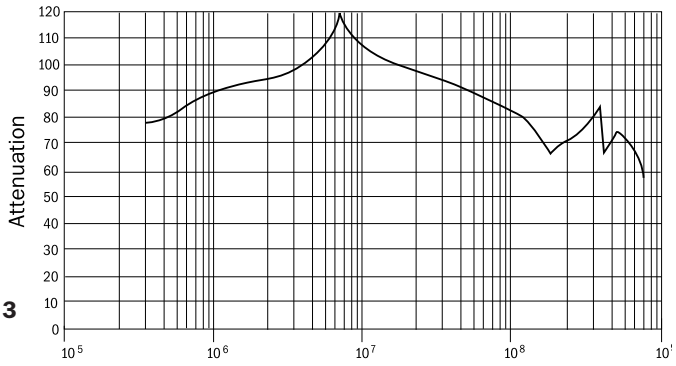



**Figure 3**

## Selecting TOR-SPRING™ EMI/RFI Cord Grips

To begin selection and specification of TOR-SPRING™ EMI/RFI Cord Grips, first determine and define the following requirements for each application:

- Cable Jacket's Outer Diameter
- Braided Shield's Outer Diameter
- Enclosure/Housing Wall Thickness
- Cable Entry, Opening Thread Type/Size (When Pre-Determined)
- Environmental Factors and Conditions, ie. Indoor/Outdoor Use, Temperature Range, Presence of Chemicals, Vapors and Gases

### Selection Options

TOR-SPRING™ EMI/RFI Cord Grips are offered in PG and NPT Thread Types in a wide range of sizes. PG Type Cord Grips are available with different combinations of Insert materials (PVC or Santoprene) and Body Styles (See Page 39). NPT Type Cord Grips feature PVC Inserts and one standard body style (See Page 39).

These selection options provide the capability to optimize a Cord Grip's configuration to suit an application's particular design requirements. TOR-SPRING™ Cord Grips with PG Thread Sizes are found on pages 36 and 37 while NPT Thread Sizes are listed on Page 38.

### How to Select/Specify TOR-SPRING™ Cord Grips

*Follow these (7) easy steps to correctly select and specify EMI/RFI TOR-SPRING™ Cord Grips*

1. Obtain the Outside Diameters of the Cable Jacket and Braided Shield from either the cable manufacturer or by taking measurements from the actual cable to be used.
2. Choose the Insert Material, either Polyvinylchloride (PVC) or Santoprene (STP) best suited for your application. Note: NPT Sizes are only available with PVC Inserts.
3. Based upon the application's requirements, determine the Cord Grip's external thread type, size and length needed. Body size, external thread length and other relevant dimensions for PG and NPT Sizes are found on Page 39. PG Size TOR-SPRING™ Cord Grips are available in (2) distinct Body Styles (See Page 39) and provide a broader range of sizes when compared with the NPT Sizes. Subsequently, PG Sizes accommodate a greater range of Cable and Shield Diameters. This expanded range makes them the first selection choice for both US and European Cabling. Depending on Thread Type selected, follow either Step 4. or Step 5. indicated below.
4. All PG Size TOR-SPRING™ Cord Grips listed on Page 37 utilize the preferred method of cable preparation which involves Segmenting the Cable Jacket (See Shielded Cable Preparation, Page 36).
   - 4a. Using the dimensional information found on Page 39, select the Body Style A or B which best satisfies your application requirements for external thread length and overall body size.
   - 4b. Referring to the Cable Dia. and Style Column Listings on Page 37, find those diameter ranges that will accept the Cable Jacket Outer Diameter.
   - 4c. Next, verify that the corresponding Shield Dia. Range will accommodate the Braided Shield Outer Diameter. If both the Cable and Shield Diameters fall within the given ranges, select the respective Cord Grip Type and Cat.No.
   - 4d. Should the Cable Shield Diameter fall outside of the listed Shield Dia. Range, it will be necessary to select a larger or smaller size TOR-SPRING™ Cord Grip PG Size so that both the cable and shield diameters fall within the listed ranges.
   - 4e. If none of the Cable and Shield Dia. Ranges listed will accommodate the cable, make your TOR-SPRING™ Cord Grip selection from the PG Sizes listed on Page 36 and utilize the alternate cable preparation method involving Stripping the Cable Jacket from the Cord Grip attachment point to end of the cable (See Shielded Cable Preparation, Page 36).
   - 4f. From the external thread of the selected PG Size TOR-SPRING™ Cord Grip, choose the corresponding special design, PG Size EMI/RFI Locknut from the listing found on Page 59.
5. The NPT Size TOR-SPRING™ Cord Grips listed at the bottom of Page 38 use the preferred method of cable preparation which involves Segmenting the Cable Jacket.
   - 5a. Referring to the Cable Dia. Column Listing on the bottom of Page 38, find the diameter range that will accept the Cable Jacket Outer Diameter.
   - 5b. Next, verify that the corresponding Shield Dia. Range will accommodate the Braided Shield Outer Diameter. If both the Cable and Shield Diameters fall within the given range, select the respective Cord Grip Type and Cat. No.
   - 5c. Should either the Cable or the Shield Diameters fall outside the listed ranges, select the TOR-SPRING™ Cord Grip from the list of additional NPT sizes found on the upper part of Page 38 and utilize the alternate method of cable preparation involving Stripping the Cable Jacket from the Cord Grip attachment point to the end of the cable (See Shielded Cable Preparation Method, Page 36).
   - 5d. If none of the NPT Sizes will accommodate the Cable and Shield Diameters, it will be necessary to select and use the appropriate PG Size as an alternate.
   - 5e. When an NPT Size TOR-SPRING™ Cord Grip will be used, select the corresponding standard design Nickel Plated Brass Locknut from the listing on Page 58 (See Special Installation Note Under EMI/RFI Locknuts).
6. From the Mtg. Hole Dia. Column and the TOR-SPRING™ Cord Grip Size chosen, obtain the dimension of the clearance hole to be drilled or machined into the enclosure/housing.
7. Follow the TOR-SPRING™ Cord Grip Installation Instructions given on Page 36.

# HIGH PERFORMANCE TOR-SPRING™ EMI/RFI CORD GRIPS

## Installation of TOR-SPRING™ EMI/RFI Cord Grips

**Shielded Cable Preparation**

Two optional methods of cable preparation are used when installing TOR-SPRING™ EMI/RFI Cord Grips. The preferred method of shielded cable preparation involves cutting and removal of a small 10mm (0.39in.) segment of cable jacket at the Cord Grip attachment point (See Figure# 3). The second method involves stripping and removing the cable jacket from the Cord Grip attachment point to the end of the cable (See Figure# 4).

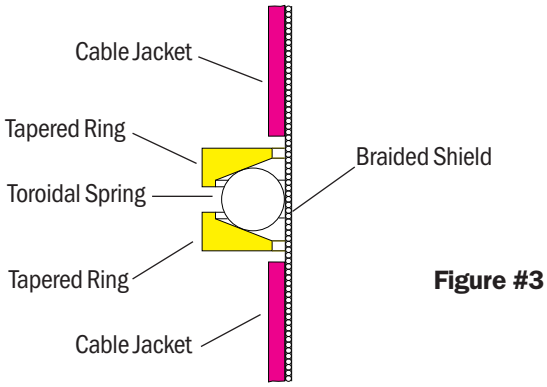



**Figure #3**

Segmented Cable Jacket

The cable preparation method used will be determined by the outer diameters of the cable jacket and braided shield and the inner diameter of the (2) available Cord Grip Styles A and B; and, whether it is possible for the cable to fit through the TOR-SPRING™ Cord Grip's Tapered Rings. If the cable dimensions are such that the cable will pass through the Cord Grip, then only a segment of the cable jacket needs to be removed. Conversely, if the cable will not pass through the Cord Grip's Tapered Rings, the cable jacket must be fully stripped from the Cord Grip attachment point to the end of the cable.

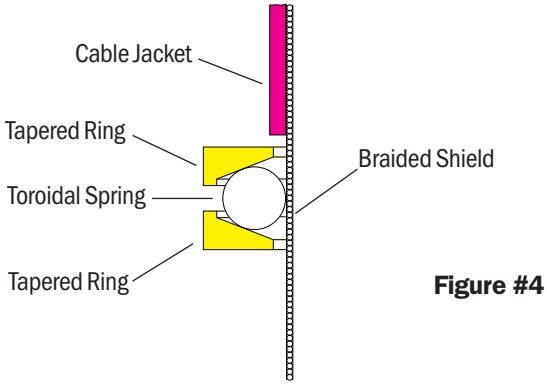


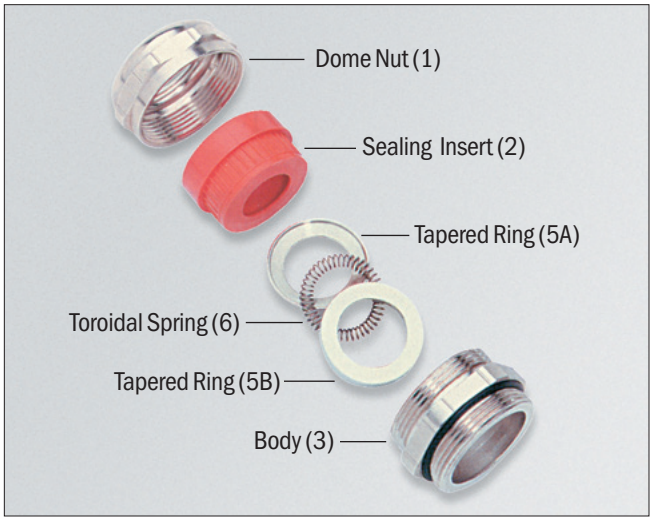

**Figure #4**

Stripped Cable Jacket

To determine which cable preparation method to use: follow the steps under How to Select/Specify TOR-SPRING™ Cord Grips. (See Page 35)

**TOR-SPRING™ Cord Grip Installation Instructions (Non-threaded mounting holes)**

1. Drill or machine required clearance hole into enclosure/housing.
2. Install TOR-SPRING™ Cord Grip into Mtg. Hole.
3. Secure with either special PG Size EMI/RFI Locknut or standard Nickel Plated Locknut (See Page 61 ) and torque to recommended torque value (See Page 69).
4. Unscrew Dome Nut Remove Sealing Insert (2),Tapered Rings(5A) and (5B) and Toroidal Spring (6). (See #5)
5. Slide Dome Nut (1) and Sealing Insert(2) onto prepared cable.
6. Install Tapered Ring (5A) with tapered side facing enclosure/housing over cable's exposed braided shield.
7. Install Toroidal Spring (6) over cable's exposed braided shield.
8. Install Tapered Ring (5B) with tapered side facing Toroidal Spring (6) onto cable's exposed braided shield.
9. Insert cable with installed parts into the Cord Grip Body (3).
10. Feed cable through Cord Grip and adjust length inside enclosure housing as required to reach termination point.
11. Tighten Dome Nut (1) to recommended torque value (See Page 69).




Note: When TOR-SPRING™ Cord Grips are mounted into a threaded mounting hole, torque Cord Grip Body to the recommended torque value (See Page 69 External Thread). Follow TOR-SPRING™ Cord Grip Installation Instructions Steps 4 - 11.

## Locknuts for PG Size TOR-SPRING™ Cord Grips

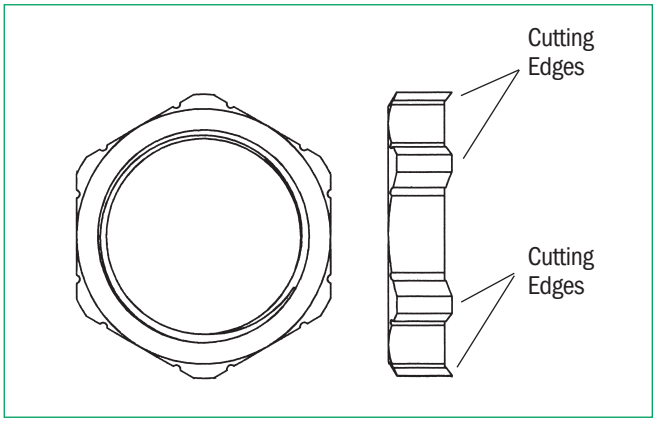
Special design, PG Size EMI/RFI Locknuts (See Page 37) have been developed to secure TOR-SPRING™ EMI/RFI Cord Grips to metal enclosures/housings. They feature six cutting edges which break through the surface paint or coating exposing the base metal and providing the required ground connection between the PG Size TOR-SPRING™ EMI/RFI Cord Grip Body and the enclosure/housing.

Note: PG Size EMI/RFI Locknuts should never be used on shielded plastic enclosures/housings. Instead, specify and use standard Nickel Plated Brass PG Size Locknuts listed on Page 60.

**Locknuts for NPT Size TOR-SPRING™ Cord Grips**
Standard Nickel Plated Brass NPT Size Locknuts (Page 60) are used to secure NPT Size TOR-SPRING™ EMI/RFI Cord Grips to enclosures/housings.

**Note:** When using a standard Nickel Plated Brass NPT Size Locknut with an NPT Size TOR-SPRING™ EMI/RFI Cord Grip on metallic enclosures/housings, it will be necessary to specify and perform a secondary grinding or sanding operation to remove the protective finish from the metal surface area directly beneath the locknut. This preparation will ensure that a sufficient electrical ground is developed between the locknut and metal surface.

**EMI/RFI Locknut**

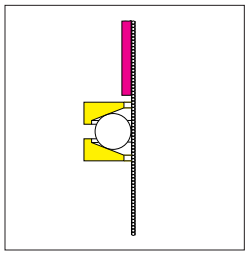


# TOR-SPRING™ EMI/RFI PG Sizes

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 BAR; 140 psi
- Seal Rings Factory Installed
- Order EMI/RFI Locknuts Separately – See Page 61

**Nickel Plated Brass (NPB)**

**Stripped Cable Jacket**



**With Polyvinylchloride (PVC) Insert**

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Nickel Plated Brass (NPB)*** |
| ***Insert*** | ***Polyvinylchloride (PVC)*** |
| ***Seal Ring*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-40 to 300°C (-40 to 572°F)*** |
| ***Insert*** | ***-20 to 80°C (-4 to 176°F)*** |
| ***Seal Ring*** | ***-20 to 120°C (-4 to 248°F)*** |
| **INSERT COLOR:** | ***Various*** |

| Type | Style [1] | Std Pk. | Cable Dia. mm | Cable Dia. (in) | Shield Dia. mm | Shield Dia. (in.) | Mtg. Hole Dia. mm | Mtg. Hole Dia. (in.) | Cat. No. |
|---|---|---|---|---|---|---|---|---|---|
| PG7 - PER - NPB PVC 6.5 | A | 10 | 4.0 - 6.0 | (.16-.24) | 1.5 - 4.0 | (.06-.16) | 13.0 | (.51) | 21500.6 |
| PG7 - PER - NPB PVC 9.5 | A | 10 | 6.0 - 9.5 | (.24-.37) | 1.5 - 6.5 | (.06-.26) | 13.0 | (.51) | 21501.6 |
| PG9 - PER - NPB PVC 6.5 | A | 10 | 4.0 - 6.5 | (.16-.26) | 1.5 - 4.0 | (.06-.16) | 15.5 | (.61) | 21650.6 |
| PG9 - PER - NPB PVC 9.5 | A | 10 | 6.5 - 9.5 | (.26-.37) | 2.5 - 6.5 | (.10-.26) | 15.5 | (.61) | 21651.6 |
| PG9 - PER - NPB PVC 10.5 | B | 10 | 8.0 - 10.5 | (.31-.41) | 3.5 - 8.5 | (.14-.33) | 15.5 | (.61) | 21503.6 |
| PG11 - PER - NPB PVC 9.5 | A | 10 | 6.5 - 9.5 | (.26-.37) | 3.5 - 8.5 | (.14-.33) | 19.0 | (.75) | 21653.6 |
| PG11 - PER - NPB PVC 10.5 | A | 10 | 8.0 - 10.5 | (.31-.41) | 3.5 - 8.5 | (.14-.33) | 19.0 | (.75) | 21654.6 |
| PG11 - PER - NPB PVC 13.0 | B | 10 | 9.0 - 13.0 | (.35-.51) | 6.5 - 10.5 | (.26-.41) | 19.0 | (.75) | 21684.6 |
| PG13.5 - PER - NPB PVC 9.5 | A | 5 | 6.5 - 9.5 | (.26-.37) | 2.5 - 6.5 | (.10-.26) | 21.0 | (.83) | 21655.6 |
| PG13.5 - PER - NPB PVC 10.5 | A | 5 | 7.0 - 10.5 | (.27-.41) | 3.0 - 8.0 | (.12-.31) | 21.0 | (.83) | 21656.6 |
| PG13.5 - PER - NPB PVC 13.0 | A | 5 | 9.0 - 13.0 | (.35-.51) | 6.5 - 10.5 | (.26-.41) | 21.0 | (.83) | 21658.6 |
| PG16 - PER - NPB PVC 9.5 | A | 5 | 6.5 - 9.5 | (.26-.37) | 3.5 - 8.0 | (.14-.31) | 23.0 | (.91) | 21659.6 |
| PG16 - PER - NPB PVC 10.5 | A | 5 | 7.0 - 10.5 | (.27-.41) | 4.5 - 8.0 | (.18-.31) | 23.0 | (.91) | 21660.6 |
| PG16 - PER - NPB PVC 13.0 | A | 5 | 9.0 - 13.0 | (.35-.51) | 4.5 - 8.0 | (.18-.31) | 23.0 | (.91) | 21661.6 |
| PG16 - PER - NPB PVC 13.1 | B | 5 | 9.0 - 13.0 | (.35-.51) | 6.5 - 10.5 | (.26-.41) | 23.0 | (.91) | 21685.6 |
| PG16 - PER - NPB PVC 15.5 | B | 5 | 11.5 - 15.5 | (.45-.61) | 9.5 - 13.5 | (.37-.53) | 23.0 | (.91) | 21686.6 |
| PG16 - PER - NPB PVC 18.0 | B | 5 | 14.0 - 18.0 | (.55-.71) | 10.5 - 14.5 | (.41-.57) | 23.0 | (.91) | 21687.6 |
| PG21 - PER - NPB PVC 13.0 | A | 3 | 9.0 - 13.0 | (.35-.51) | 5.5 - 9.5 | (.22-.37) | 29.0 | (1.14) | 21662.6 |
| PG21 - PER - NPB PVC 15.5 | A | 3 | 11.5 - 15.5 | (.45-.61) | 9.5 - 13.5 | (.37-.53) | 29.0 | (1.14) | 21664.6 |
| PG21 - PER - NPB PVC 20.0 | B | 3 | 17.0 - 20.0 | (.67-.79) | 13.0 - 18.0 | (.51-.71) | 29.0 | (1.14) | 21689.6 |
| PG21 - PER - NPB PVC 25.0 | B | 3 | 20.0 - 25.0 | (.79-.98) | 15.0 - 21.0 | (.59 -.83) | 29.0 | (1.14) | 21690.6 |
| PG29 - PER - NPB PVC 18.0 | A | 2 | 14.0 - 18.0 | (.55-.71) | 13.0 - 17.0 | (.51-.67) | 37.5 | (1.48) | 21666.6 |
| PG29 - PER - NPB PVC 20.5 | A | 2 | 17.0 - 20.5 | (.67-.81) | 13.0 - 18.0 | (.51-.71) | 37.5 | (1.48) | 21667.6 |
| PG29 - PER - NPB PVC 25.0 | A | 2 | 20.0 - 25.0 | (.79-.98) | 15.0 - 20.0 | (.59-.79) | 37.5 | (1.48) | 21669.6 |
| PG29 - PER - NPB PVC 28.0 | B | 2 | 24.0 - 28.0 | (.94-1.10) | 18.0 - 25.5 | (.71-1.00) | 37.5 | (1.48) | 21691.6 |
| PG29 - PER - NPB PVC 32.0 | B | 2 | 27.0 - 32.0 | (1.06-1.26) | 24.0 - 31.0 | (.94-1.22) | 37.5 | (1.48) | 21692.6 |
| PG29 - PER - NPB PVC 34.0 | B | 2 | 29.0 - 34.0 | (1.14-1.34) | 24.0 - 31.0 | (.94-1.22) | 37.5 | (1.48) | 21693.6 |
| PG36 - PER - NPB PVC 28.0 | A | 1 | 24.0 - 28.0 | (.94-1.10) | 18.0 - 25.5 | (.71-1.00) | 47.5 | (1.87) | 21670.6 |
| PG36 - PER - NPB PVC 34.0 | A | 1 | 29.0 - 34.0 | (1.14-1.34) | 24.0 - 31.0 | (.94-1.22) | 47.5 | (1.87) | 21672.6 |
| PG42 - PER - NPB PVC 37.0 | B | 1 | 32.0 - 37.0 | (1.26-1.45) | 29.0 - 33.0 | (1.14-1.30) | 54.5 | (2.15) | 21519.6 |

[1] For Styles see drawings on Page 41

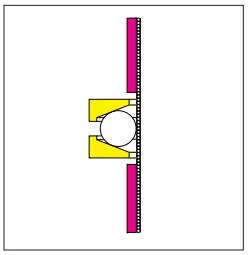
Please see Page 41 for Dimensional Information

# TOR-SPRING™ EMI/RFI PG Sizes

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 BAR; 140 psi
- Seal Rings Factory Installed
- Order EMI/RFI Locknuts Separately – See Page 61

**Nickel Plated Brass (NPB)**

**Segmented Cable Jacket**



**With Polyvinylchloride (PVC) Insert**

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Nickel Plated Brass (NPB)*** |
| ***Insert*** | ***Polyvinylchloride (PVC) / Santoprene (STP)*** |
| ***Seal Ring*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-40 to 300°C (-40 to 572°F)*** |
| ***Insert*** | ***-20 to 80°C (-4 to 176°F) / -60 to 125°C (-65 to 257°F)*** |
| ***Seal Ring*** | ***-20 to 120°C (-4 to 248°F)*** |
| **INSERT COLOR:** | ***Various / Beige*** |

| Type | Style [1] | Std Pk. | Cable Dia. mm (in) | Shield Dia. mm (in.) | Mtg. Hole Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|---|
| PG9 - PER - NPB PVC 6.5 | B | 10 | 4.0 - 6.5 (.16-.26) | 2.5 - 6.0 (.10-.24) | 15.5 (.61) | 21680.6 |
| PG11 - PER - NPB PVC 6.5 | A | 10 | 4.0 - 6.5 (.16-.26) | 2.5 - 6.5 (.10-.26) | 19.0 (.75) | 21652.6 |
| PG11 - PER - NPB PVC 10.5 | B | 10 | 7.0 - 10.5 (.27-.41) | 6.5 - 10.5 (.26-.41) | 19.0 (.75) | 21683.6 |
| PG13.5 - PER - NPB PVC 10.5 | A | 10 | 7.0 - 10.5 (.27-.41) | 6.5 - 10.5 (.26-.41) | 21.0 (.83) | 21657.6 |
| PG21 - PER - NPB PVC 13.0 | A | 3 | 9.0 - 13.0 (.35-.51) | 7.5 - 12.0 (.30-.47) | 29.0 (1.14) | 21663.6 |
| PG21 - PER - NPB PVC 18.0 | B | 3 | 14.0 - 18.0 (.55-.71) | 13.0 - 17.0 (.51-.67) | 29.0 (1.14) | 21688.6 |
| PG29 - PER - NPB PVC 20.5 | A | 2 | 17.0 - 20.5 (.67-.81) | 15.0 - 20.0 (.59-.79) | 37.5 (1.48) | 21668.6 |
| PG29 - PER - NPB PVC 32.0 | B | 2 | 27.0 - 32.0 (1.06-1.26) | 24.0 - 31.0 (.94-1.22) | 37.5 (1.48) | 21692.6 |
| PG36 - PER - NPB PVC 32.0 | A | 1 | 27.0 - 32.0 (1.06-1.26) | 24.0 - 31.0 (.94-1.22) | 47.5 (1.87) | 21671.6 |

[1] For Styles see drawings on Page 41

**With Santoprene (STP) Insert**

| Type | Style [1] | Std Pk. | Cable Dia. mm (in) | Shield Dia. mm (in.) | Mtg. Hole Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|---|
| PG9 - PER - NPB STP 6.0 | B | 10 | 4.0 - 6.0 (.16-.24) | 2.5 - 6.0 (.10-.24) | 15.5 (.61) | 21525.6 |
| PG11 - PER - NPB STP 6.0 | B | 10 | 4.0 - 6.0 (.16-.24) | 3.0 - 6.0 (.12-.24) | 19.0 (.75) | 21526.6 |
| PG11 - PER - NPB STP 9.0 | B | 10 | 6.0 - 9.0 (.24-.35) | 4.0 - 8.5 (.16-.33) | 19.0 (.75) | 21527.6 |
| PG13.5 - PER - NPB STP 6.0 | B | 10 | 4.0 - 6.0 (.16-.24) | 3.0 - 6.0 (.12-.24) | 21.0 (.83) | 21528.6 |
| PG13.5 - PER - NPB STP 9.0 | B | 10 | 6.0 - 9.0 (.24-.35) | 4.0 - 8.5 (.16-.33) | 21.0 (.83) | 21529.6 |
| PG16 - PER - NPB STP 10.5 | B | 5 | 6.0 - 10.5 (.24-.41) | 6.0 - 10.5 (.24-.41) | 23.0 (.91) | 21530.6 |
| PG16 - PER - NPB STP 14.0 | B | 5 | 10.0 - 14.0 (.39-.55) | 9.0 - 13.0 (.35-.51) | 23.0 (.91) | 21531.6 |
| PG21 - PER - NPB STP 10.5 | B | 3 | 6.0 - 10.5 (.24-41) | 6.0 - 10.5 (.24-.41) | 29.0 (1.14) | 21532.6 |
| PG21 - PER - NPB STP 14.0 | B | 3 | 10.0 - 14.0 (.39-.55) | 7.0 - 11.5 (.27-.45) | 29.0 (1.14) | 21533.6 |
| PG21 - PER - NPB STP 18.0 | B | 3 | 14.0 - 18.0 (.55-.71) | 12.5 - 17.5 (.49-.69) | 29.0 (1.14) | 21534.6 |
| PG21 - PER - NPB STP 20.0 | B | 3 | 17.0 - 20.0 (.67-.79) | 13.0 - 20.0 (.51-.79) | 29.0 (1.14) | 21535.6 |
| PG29 - PER - NPB STP 23.0 | B | 2 | 19.0 - 23.0 (.75-.91) | 15.0 - 21.0 (.59-.83) | 37.5 (1.48) | 21536.6 |

[1] For Styles see drawings on Page 41

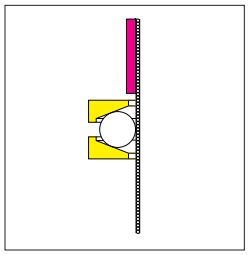
Please see Page 41 for Dimensional Information

# TOR-SPRING™ EMI/RFI NPT Sizes

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 BAR; 140 psi
- Seal Rings Factory Installed
- Order Nickel Plated Brass Locknuts Separately – See Page 60

**Nickel Plated Brass (NPB)**

**Stripped Cable Jacket**



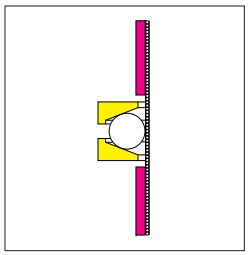
**With Polyvinylchloride (PVC) Insert**

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Nickel Plated Brass*** |
| ***Insert*** | ***Polyvinylchloride (PVC)*** |
| ***Seal Ring*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-40 to 300°C (-40 to 572°F)*** |
| ***Insert*** | ***-20 to 80°C (-4 to 176°F)*** |
| ***Seal Ring*** | ***-20 to 120°C (-4 to 248°F)*** |
| **INSERT COLOR:** | ***Various*** |

| Type | Std Pk. | Cable Dia. mm (in) | Shield Dia. mm (in.) | Mtg. Hole Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|
| NPT3/8" - PER - NPB PVC 9.5 | 10 | 6.5 - 9.5 (.26-.37) | 3.5 - 8.5 (.14-.33) | 17.5 (.69) | 21780.6 |
| NPT3/8" - PER - NPB PVC 10.5 | 10 | 8.0 - 10.5 (.31-.41) | 3.5 - 8.5 (.14-.33) | 17.5 (.69) | 21781.6 |
| NPT1/2" - PER - NPB PVC 9.5 | 5 | 6.5 - 9.5 (.26-.37) | 2.5 - 6.5 (.10-.26) | 21.5 (.85) | 21782.6 |
| NPT1/2" - PER - NPB PVC 10.5 | 5 | 7.0 - 10.5 (.27-.41) | 3.0 - 8.0 (.12-.31) | 21.5 (.85) | 21783.6 |
| NPT1/2" - PER - NPB PVC 13.0 | 5 | 9.0 - 13.0 (.35-.51) | 6.5 - 10.5 (.26-.41) | 21.5 (.85) | 21784.6 |
| NPT3/4" - PER - NPB PVC 13.0 | 3 | 9.0 - 13.0 (.35-.51) | 5.5 - 9.5 (.22-.37) | 27.0 (1.06) | 21785.6 |
| NPT3/4" - PER - NPB PVC 15.5 | 3 | 11.5 - 15.5 (.45-.61) | 9.5 - 13.5 (.37-.53) | 27.0 (1.06) | 21786.6 |
| NPT3/4" - PER - NPB PVC 18.0 | 3 | 14.0 - 18.0 (.55-.71) | 10.5 - 14.5 (.41-.57) | 27.0 (1.06) | 21787.6 |
| NPT1" - PER - NPB PVC 18.0 | 2 | 14.0 - 18.0 (.55-.71) | 13.0 - 17.0 (.51-.67) | 33.5 (1.32) | 21788.6 |
| NPT1" - PER - NPB PVC 20.5 | 2 | 17.0 - 20.5 (.67-.81) | 13.0 - 18.0 (.51-.71) | 33.5 (1.32) | 21789.6 |
| NPT1" - PER - NPB PVC 25.0 | 2 | 20.0 - 25.0 (.79-.98) | 15.0 - 20.0 (.59-.79) | 33.5 (1.32) | 21790.6 |

**Nickel Plated Brass (NPB)**

**Segmented Cable Jacket**



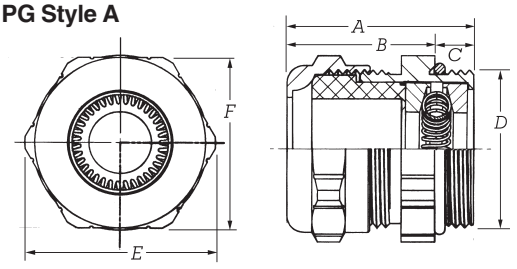
**With Polyvinylchloride (PVC) Insert**

| Type | Std Pk. | Cable Dia. mm (in) | Shield Dia. mm (in.) | Mtg. Hole Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|
| NPT3/8" - PER - NPB PVC 6.5 | 10 | 4.0 - 6.5 (.16-.26) | 2.5 - 6.5 (.10-.26) | 17.5 (.69) | 21791.6 |
| NPT1/2" - PER - NPB PVC 10.5 | 5 | 7.0 - 10.5 (.27-.41) | 6.5 - 10.5 (.26-.41) | 21.5 (.85) | 21792.6 |
| NPT3/4" - PER - NPB PVC 13.0 | 3 | 9.0 - 13.0 (.35-.51) | 7.5 - 12.0 (.30-.47) | 27.0 (1.06) | 21793.6 |
| NPT1" - PER - NPB PVC 20.5 | 2 | 17.0 - 20.5 (.67-.81) | 15.0 - 20.0 (.59-.79) | 33.5 (1.32) | 21794.6 |

## TOR-SPRING™ EMI/RFI Cord Grip Dimensions – PG and NPT Sizes

TOR-SPRING™ EMI/RFI Cord Grips with PG-External Thread are manufactured in (2) Body Styles – A and B. PG Body Style A features a compact configuration and standard external thread length while PG Body Style B features an extended external thread length (See Dimensional Information below for differences). Also, refer to the "Style" columns on Ordering Pages 38 and 39.
NPT Size TOR-SPRING™ EMI/RFI Cord Grips are offered in one body style and feature a longer length external thread.

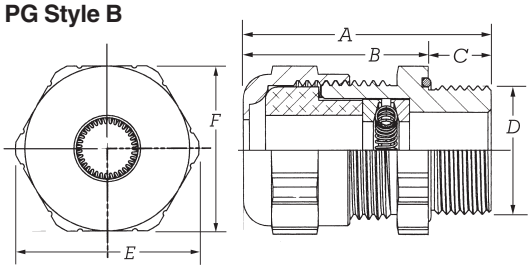
**PG Style A**




**Dimensions Style A - mm (in.)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG7 | 25.0 (.98) | 20.0 (.79) | 5.0 (.20) | 12.5 (.49) | 14.0 | 15.5 (.61) |
| PG9 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 15.2 (.60) | 17.0 | 18.9 (.74) |
| PG11 | 26.0 (1.02) | 20.0 (.79) | 6.0 (.24) | 18.6 (.73) | 20.0 | 22.2 (.87) |
| PG13.5 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 20.4 (.80) | 22.0 | 24.4 (.96) |
| PG16 | 27.5 (1.08) | 21.0 (.83) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.7 (1.05) |
| PG21 | 32.0 (1.26) | 25.0 (.98) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 35.0 (1.38) | 27.0 (1.06) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 37.0 (1.46) | 28.0 (1.10) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 54.0 (2.24) |

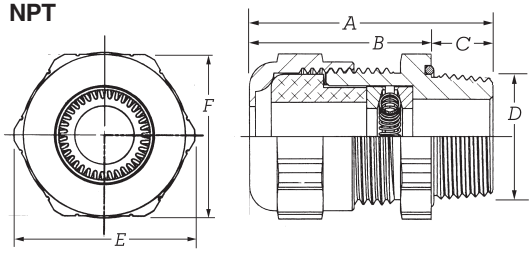
**PG Style B**




**Dimensions Style B - mm (in.)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 41.0 (1.61) | 31.0 (1.22) | 10.0 (.39) | 15.2 (.60) | 24.0 | 26.7 (1.05) |
| PG11 | 41.0 (1.61) | 31.0 (1.22) | 10.0 (.39) | 18.6 (.73) | 24.0 | 26.7 (1.05) |
| PG13.5 | 41.0 (1.61) | 31.0 (1.22) | 10.0 (.39) | 20.4 (.80) | 24.0 | 26.7 (1.05) |
| PG16 | 43.0 (1.70) | 32.0 (1.26) | 11.0 (.43) | 22.5 (.89) | 30.0 | 33.5 (1.32) |
| PG21 | 46.0 (1.73) | 34.0 (1.34) | 12.0 (.47) | 28.3 (1.11) | 30.0 | 33.5 (1.32) |
| PG29 | 52.0 (2.05) | 39.0 (1.54) | 13.0 (.51) | 37.0 (1.46) | 40.0 | 43.5 (1.71) |
| PG36 | 59.0 (2.32) | 45.0 (1.77) | 14.0 (.55) | 47.0 (1.85) | 50.0 | 54.0 (2.13) |
| PG42 | 65.0 (2.56) | 50.0 (1.97) | 15.0 (.59) | 54.0 (2.13) | 60.0 | 65.0 (2.56) |

**NPT**

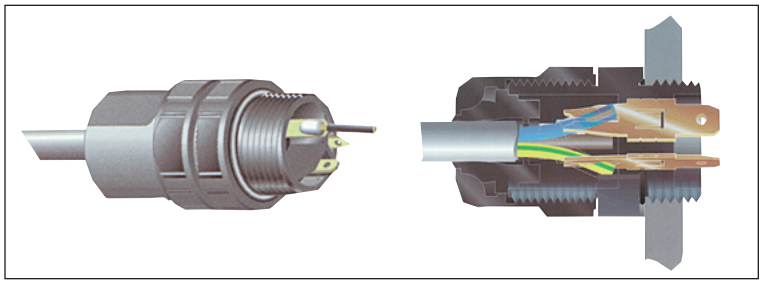



**Dimensions NPT Sizes - mm (in.)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | 41.0 (1.61) | 28.0 (1.10) | 13.0 (.51) | 17.2 (.68) | 20.0 | 22.2 (.87) |
| NPT 1/2" | 44.0 (1.73) | 28.0 (1.10) | 16.0 (.63) | 21.3 (.84) | 24.0 | 26.7 (1.05) |
| NPT 3/4" | 50.0 (1.97) | 34.0 (1.34) | 16.0 (.63) | 26.7 (1.05) | 30.0 | 33.5 (1.32) |
| NPT 1" | 58.0 (2.28) | 38.0 (1.50) | 20.0 (.79) | 33.3 (1.31) | 40.0 | 43.5 (1.71) |

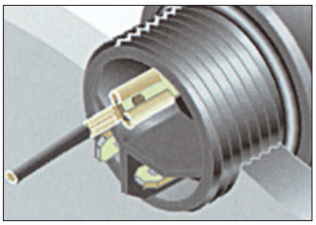
# HARAX®

**• Innovative • Cost Effective • Simple • Fast**



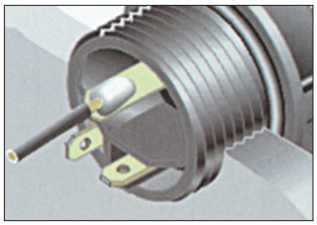
The new and innovative HARAX® Quick Connect System is both a three-pole Quick Connector and a Cord Grip.

Its unique design offers an advantageous cable connection system combined with a liquid tight connection that seals cable entries and provides integrated strain relief to reduce stress on components and termination points.



Fast-On Terminals

HARAX® Quick Connectors are available with Fast-On or Solder-Tab Terminals.

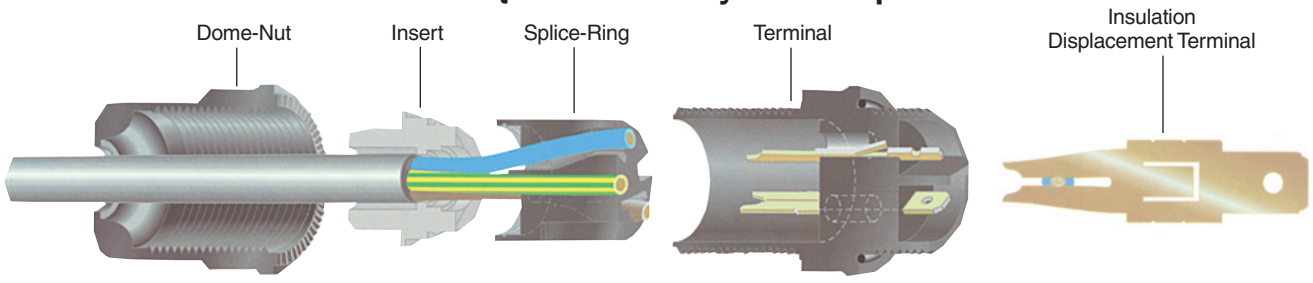


Solder Tab Terminals

## How the HARAX® Quick Connect System works –

When the Dome-Nut is tightened, the wires which are securely installed into the Splice-Ring Channels, are forced between the two blades of the Insulation Dsiplacement Terminal. The blades cut through the wire insulation and the electrical contact is made.

### The HARAX® Quick Connect System Components




## The HARAX® Quick Connect System Advantages –

- One-Unit Quick Connect Cord Grip
- Integrated Keying System
- Protection Rating of IP68, NEMA 4X
- Cost Effective Installation
- Forced Reliable Electrical Contact
- No Stripping of Wire Required
- Provides Strain Relief

## Keying –

To prevent missplugging, Splice-Ring and Terminal Carrier feature a tongued and grooved system.
Splice-Ring Wire Channels and Insulation Displacement Terminals are numbered.

## Installation

1.) Strip the Cable Jacket approx. 15.0mm (.59 in.). Fig.1

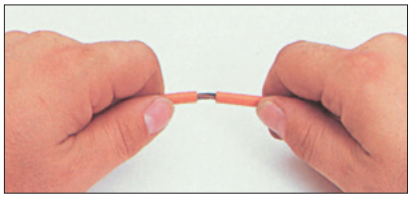


**Fig. 1**

2.) Install Dome-Nut and insert on to Cable. (see illustration Page 42).

3.) Push the wires through the Splice-Ring Wire Channels. Fig.2

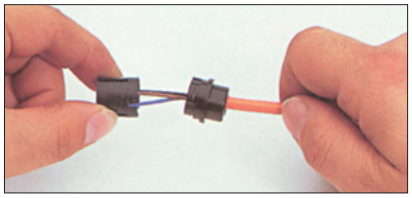


**Fig. 2**

4.) Cut away any excess wire flush to the Splice-Ring bottom.

5.) Press Insert into upper half of Splice-Ring.

6.) Install Splice-Ring/Insert Unit into the Terminal Carrier.

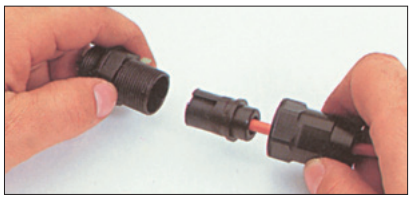


**Fig. 3**

7.) Slide Dome-nut on to Terminal Carrier and fasten. Fig.3

## HARAX® UNI Connect®

- Protection Rating IP68, NEMA 4X
- Integrated Strain Relief
- Seal Ring Factory Installed
- Color: Black

## Polyamide (PA)

## with Polyurethane (PUR) Sealing Insert

| | |
|---|---|
| **MATERIAL SPECIFICATIONS:** | |
| ***Body*** | ***Polyamide (PA)*** |
| ***Insert*** | ***Polyurethanr (PUR)*** |
| ***Contacts*** | ***Copper Alloy*** |
| **TEMPERATURE RANGE:** | |
| ***Body*** | ***-20 to 100°C (-4 to 212°F)*** |
| ***Insert*** | ***-40 to 85°C (-40 to 185°F)*** |
| ***Contacts*** | ***-40 to 150°C (-40 to 302°F)*** |
| **COLOR:** | ***Black*** |

| Description | Std. Pk. | Type | Cat. No. |
|---|---|---|---|
| HARAX® UNI CONNECT® with Fast-On Terminals | 50 | 152n51IC08/FL | 21804.1 |
| HARAX® UNI CONNECT® with Solder Tab Terminals | 50 | 152n51IC08/LO | 21805.1 |

| **Technical Data** | |
|---|---|
| No. of Poles | 3 |
| Cable Connection | Fast-On or Solder Tabs |
| Dimensions Fast-On Connector | 4.8 x 0.8mm (.19x.035 in.) |
| Cable Outer Diameter | 5.6 - 8.5mm (.22-.33in.) |
| Wire Range | .75 -1.5mm$^2$* (20-16 AWG) |
| Wire Insulation Material | PVC/PE |
| Stripping Length Cable Jacket | 15.0mm (.59 in.) |
| Mounting Hole Diameter | 21.0mm (.83 in.) |
| Voltage Rating | 250V(1) |
| Current Rating | 17.5A |

* It may require additional insulation of the Female Tab Connectors to obtain the creepage distance at 250V for Quick-Connectors equipped with Fast-Ons.

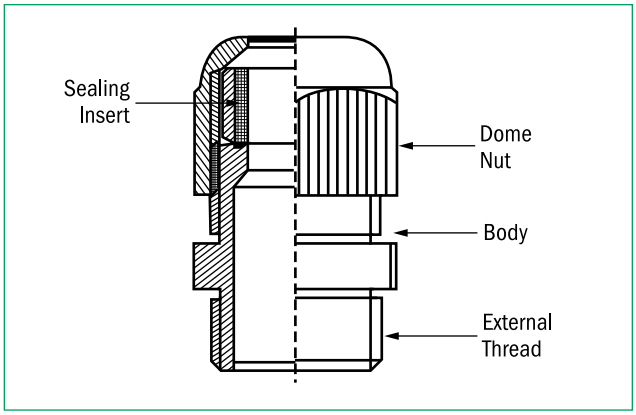
# STANDARD CORD GRIPS

***The right choice for reliability and safety — technically advanced to meet today's requirements***

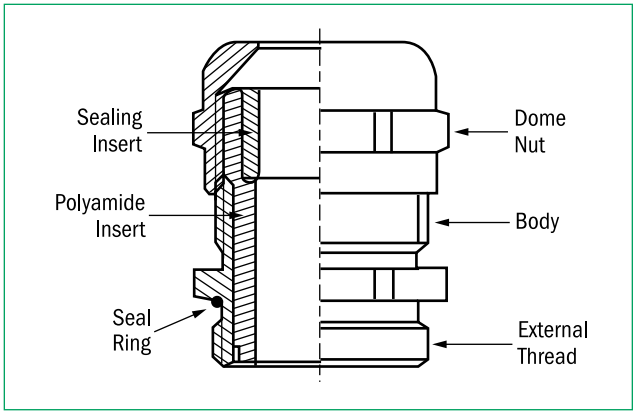
Standard Cord Grips are proven performers, providing a reliable liquid-tight seal and strain relief in a variety of materials and functions to match your application

- Complete, Ready to Install
- Reliable Liquid-Tight Seal
- 6 Functional Designs
- 3 Body/Insert Material Combinations

**Standard Non-Metallic Cord Grip Components**

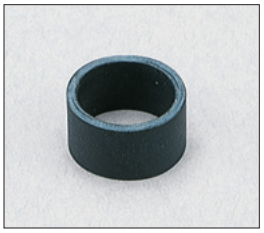



**Standard Metal Cord Grip Components**

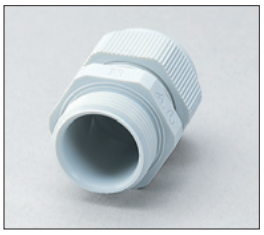



**Sealing Feature**

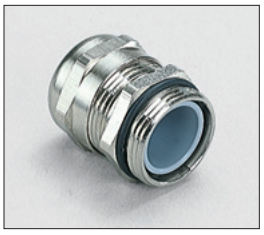
- Sealing Inserts provide a hermetic, reliable seal at cable entry points when the Dome Nut is tightened



- Integral Sealing Ridges are part of non-metallic Cord Grip Bodies, Sizes PG7 to PG21



- Seal Rings are factory installed on non-metallic Cord Grips, Sizes PG36 to PG48, and on all Straight Through Brass Nickel Plated Cord Grips



**Specifications**

| Body Materials | Insert Materials |
|---|---|
| Polyamide (PA)<br>Polycarbonate (PC)<br>Nickel Plated Brass (NPB) | Neoprene (NEP)<br>Polyolifin (TPE) |
| **External Thread Sizes** | **Ratings** |
| PG7 to PG48<br>European Standard<br>NPT 3/8" to NPT 1"<br>US National Pipe Thread<br>Metric or 15mm Long External Thread Sizes Available | Protection: Up to IP68 (NEMA 4X)<br>Pressure: Up to 5Bar (70psi) |

## Standard Cord Grip Functions

All Standard Cord Grips provide reliable liquid-tight seals and strain relief at cable entry points. The wide variety of materials and functions available qualify our Standard Cord Grip Series for many applications.

### Straight Through Cord Grips

Provide a liquid-tight seal, and strain relief. Use for round cables or cords with diameters from 2.0 to 44.0mm (.08 to 1.73 in.)

*(Refer to pages 46-47 for Ordering Information)*

### Bend Protection Cord Grips

Prevent sharp bending or kinking of cables or cords. The integrated flex Spiral protects cables and cords at the most stressed point. For cables and cords with diameters from 2.0 to 18.0mm (.08 to .71 in.)

*(Refer to pages 48-49 for Ordering Information)*

### Pull/Bend Protection Cord Grips

Resist higher pull-out forces and prevent sharp bending or kinking of cables or cords. Use for cables or cords with diameters from 3.5 to 30.0mm (.14 to 1.18 in.)

*(Refer to pages 48-49 for Ordering Information)*

### Multi Cable Cord Grips

Provide a liquid -tight seal and strain relief for one or more cables or cords with the same or different diameters. The perfect solution for restricted space applications.

*(Refer to pages 50-51 for Ordering Information)*

### Flat Cable Cord Grips

Provide a liquid-tight seal and strain relief. The rounded corners of the Sealing Insert ensure a reliable seal. Use for Flat cables with a height from 5.0 to 16.0mm (.20 to .63 in.) and a width from 15.0 to 45.0mm (.59 to 1.73 in.)

*(Refer to pages 52-53 for Ordering Information)*

### NPT Size Cord Grips

Straight Through Cord Grips with NPT external thread provide a liquid-tight seal and strain relief for cables and cords with diameters from 3.0 to 25.0mm (.12 to .98 in.)

*(For Ordering Information refer to pages 54-55 for Straight Through Cord Grips, and to pages 48-49 for Bend Protection Cord Grips)*

### 90° Elbow Cord Grips

Designed to protect cables and cords when a 90 degree installation is required, they provide a liquid-tight seal and strain relief for cables and cords with diameters from 2.0 to 28.0mm (.08 to 1.10 in.)

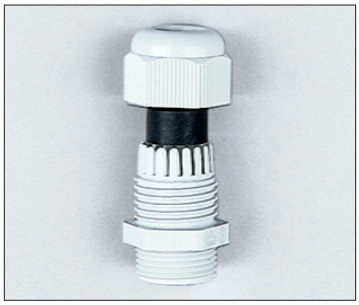
*(Refer to pages 56-57 for Ordering Information)*

# STRAIGHT THROUGH

## •Polyamide (PA)
## •Nickel Plated Brass (NPB)

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 5 Bar; 70 psi
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips & Polyamide Cord Grips PG 29 to PG48
- Order Seal Rings Separately for Polyamide Cord Grips PG7 to PG21
- Order Locknuts Separately
- Standard Colors: Light Gray or Black

## Polyamide (PA)



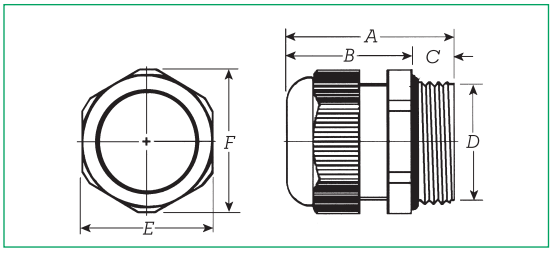
**with Neoprene (NEP) Sealing Insert**

| | |
|---|---|
| **MATERIALSPECIFICATIONS:** | |
| ***Body / Locknuts*** | ***Polyamide (PA)*** |
| ***Insert*** | ***Neoprene (NEP)*** |
| ***Seal Ring*** | ***Polyethylene (PET)*** |
| **TEMPERATURE RANGE:** | |
| ***Body / Locknuts*** | ***-20 to 100°C (-4 to 212°F)*** |
| ***Insert*** | ***-20 to 80°C (-4 to 176°F)*** |
| ***Seal Ring*** | ***-20 to 100°C (-4 to 212°F)*** |
| **INSERT COLOR:** | **Black** |

| Type | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dia. mm. | (in.) | Cat. No. Lt. Gray | Black |
|---|---|---|---|---|---|---|
| PG7-JS ✻✻ ✻✻NEP 5.0 | 13.0 (.51) | 100 | 2.0 - 5.0 | (.08-.20) | 22010.2 | 22030.1 |
| PG7-JS ✻✻ ✻✻NEP 6.5 | 13.0 (.51) | 100 | 3.0 - 6.5 | (.12-.26) | 22000.2 | 22020.1 |
| PG9-JS ✻✻ ✻✻NEP 6.0 | 15.5 (.61) | 100 | 2.0 - 6.0 | (.08-.24) | 22011.2 | 22031.1 |
| PG9-JS ✻✻ ✻✻NEP 8.0 | 15.5 (.61 | 100 | 4.0 - 8.0 | (.16-.31) | 22001.2 | 22021.1 |
| PG11-JS ✻✻ ✻✻NEP 7.0 | 19.0 (.75) | 100 | 3.0 - 7.0 | (.12-.28) | 22012.2 | 22032.1 |
| PG11-JS ✻✻ ✻✻NEP 10.0 | 19.0 (.75) | 100 | 5.0 - 10.0 | (.20-.39) | 22002.2 | 22022.1 |
| PG13.5-JS ✻✻ ✻✻NEP 9.0 | 21.0 (.83) | 100 | 5.0 - 9.0 | (.20-.35) | 22013.2 | 22033.1 |
| PG13.5-JS ✻✻ ✻✻NEP 12.0 | 21.0 (.83) | 100 | 6.0 - 12.0 | (.24-.47) | 22003.2 | 22023.1 |
| PG16-JS ✻✻ ✻✻NEP 12.0 | 23.0 (.91) | 50 | 7.0 - 12.0 | (.28-.47) | 22014.2 | 22034.1 |
| PG16-JS ✻✻ ✻✻NEP 14.0 | 23.0 (.91) | 50 | 10.0 - 14.0 | (.39-.55) | 22004.2 | 22024.1 |
| PG21-JS ✻✻ ✻✻NEP 16.0 | 29.0 (1.14) | 50 | 9.0 - 16.0 | (.35-.63) | 22015.2 | 22035.1 |
| PG21-JS ✻✻ ✻✻NEP 18.0 | 29.0 (1.14) | 50 | 13.0 - 18.0 | (.51-.71) | 22005.2 | 22025.1 |
| PG29-JS ✻✻ ✻✻NEP 20.0 | 37.5 (1.48) | 25 | 12.0 - 20.0 | (.47-.79) | 22016.2 | 22036.1 |
| PG29-JS ✻✻ ✻✻NEP 25.0 | 37.5 (1.48) | 25 | 18.0 - 25.0 | (.71-.98) | 22006.2 | 22026.1 |
| PG36-JS ✻✻ ✻✻NEP 26.0 | 47.5 (1.87) | 10 | 20.0 - 26.0 | (.79-1.02) | 22017.2 | 22037.1 |
| PG36-JS ✻✻ ✻✻NEP 32.0 | 47.5 (1.87) | 10 | 22.0 - 32.0 | (.87-1.26) | 22007.2 | 22027.1 |
| PG42-JS ✻✻ ✻✻NEP 31.0 | 54.5 (2.15) | 5 | 25.0 - 31.0 | (.98-1.22) | 22018.2 | 22038.1 |
| PG42-JS ✻✻ ✻✻NEP 38.0 | 54.5 (2.15) | 5 | 30.0 - 38.0 | (1.18-1.50) | 22008.2 | 22028.1 |
| PG48-JS ✻✻ ✻✻NEP 35.0 | 60.0 (2.36) | 5 | 29.0 - 35.0 | (1.14-1.38) | 22019.2 | 22039.1 |
| PG48-JS ✻✻ ✻✻NEP 44.0 | 60.0 (2.36) | 5 | 34.0 - 44.0 | (1.34-1.73) | 22009.2 | 22029.1 |

✻✻ Add Body Color – LG for Light Gray, BK for Black

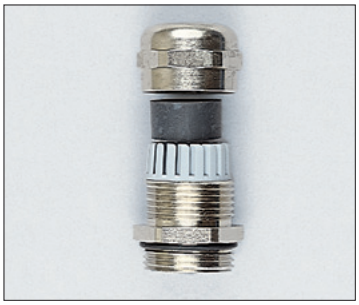
✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass.




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | | B | | C | | D | | E | | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 30.0 | (1.18) | 22.0 | (.87) | 8.0 | (.31) | 12.5 | (.49) | 15.0 | | 16.5 | (.65) |
| PG9 | 33.5 | (1.32) | 25.5 | (1.00) | 8.0 | (.31) | 15.2 | (.60) | 19.0 | | 21.0 | (.83) |
| PG11 | 36.0 | (1.42) | 28.5 | (1.12) | 8.0 | (.31) | 18.6 | (.73) | 22.0 | | 24.5 | (.96) |
| PG13.5 | 38.5 | (1.52) | 29.7 | (1.17) | 9.0 | (.35) | 20.4 | (.80) | 24.0 | | 26.6 | (1.05) |
| PG16 | 42.0 | (1.65) | 32.0 | (1.26) | 10.0 | (.39) | 22.5 | (.89) | 27.0 | | 30.0 | (1.16) |
| PG21 | 47.5 | (1.87) | 36.5 | (1.44) | 11.0 | (.43) | 28.3 | (1.11) | 33.0 | | 36.6 | (1.44) |
| PG29 | 53.5 | (2.11) | 43.5 | (1.71) | 11.0 | (.45) | 37.0 | (1.46) | 42.0 | | 46.3 | (1.82) |
| PG36 | 66.5 | (2.62) | 54.0 | (2.13) | 13.0 | (.51) | 47.0 | (1.85) | 53.0 | | 58.0 | (2.28) |
| PG42 | 65.8 | (2.59) | 53.6 | (2.11) | 13.0 | (.51) | 54.0 | (2.13) | 60.0 | | 66.0 | (2.60) |
| PG48 | 69.5 | (2.74) | 56.7 | (2.19) | 14.0 | (.55) | 59.3 | (2.33) | 65.0 | | 71.0 | (2.80) |

## Nickel Plated Brass (NPB)



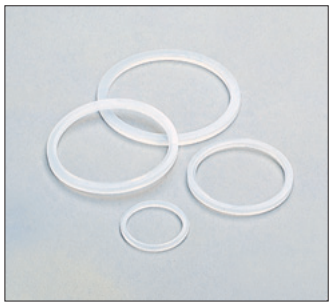
**with Neoprene (NEP) Sealing Insert**

***Nickel Plated Brass (NPB)***
***Neoprene (NEP)***
***Perbunan (PRB)***

***-40 to 300°C (-40 to 572°F)***
***-20 to 80°C ( -4 to 176°F)***
***-20 to 120°C ( -4 to 248°F)***
**Black**

| Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|
| 2.0 - 5.0 | (.08-.20) | 22310.6 |
| 3.0 - 6.5 | (.12-.26) | 22300.6 |
| 2.0 - 6.0 | (.08-.24) | 22311.6 |
| 4.0 - 8.0 | (.16-.31) | 22301.6 |
| 3.0 - 7.0 | (.12-.28) | 22312.6 |
| 5.0 - 10.0 | (.20-.39) | 22302.6 |
| 5.0 - 9.0 | (.20-.35) | 22313.6 |
| 6.0 - 12.0 | (.24-.47) | 22303.6 |
| 7.0 - 12.0 | (.28-.47) | 22314.6 |
| 10.0 - 14.0 | (.39-.55) | 22304.6 |
| 9.0 - 16.0 | (.35-.63) | 22315.6 |
| 13.0 - 18.0 | (.51-.71) | 22305.6 |
| 12.0 - 20.0 | (.47-.79) | 22316.6 |
| 18.0 - 25.0 | (.71-.98) | 22306.6 |
| 20.0 - 26.0 | (.79-1.02) | 22317.6 |
| 22.0 - 32.0 | (.87-1.26) | 22307.6 |
| 25.0 - 31.0 | (.98-1.22) | 22318.6 |
| 30.0 - 38.0 | (1.18-1.50) | 22308.6 |
| 29.0 - 35.0 | (1.14-1.38) | 22319.6 |
| 34.0 - 44.0 | (1.34-1.73) | 22309.6 |

## Seal Rings



**Polyethylene (PET)**

**Material:**
***Polyethylene (PET)***

**Temperature Range:**
***-20 to 100°C (-4 to 212°F)***

| Cat. No. |
|---|
| 23170.9 |
| 23170.9 |
| 23171.9 |
| 23171.9 |
| 23172.9 |
| 23172.9 |
| 23173.9 |
| 23173.9 |
| 23174.9 |
| 23174.9 |
| 23175.9 |
| 23175.9 |

Factory Installed on Polyamide Cord Grips PG29 to PG48

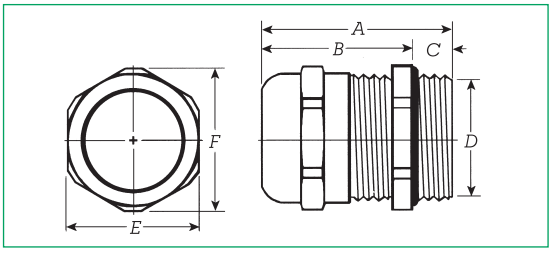
## Locknuts

**Polyamide (PA) and Nickel Plated Brass (NPB)**

**Material:**
***Polyamide (PA)***
***Nickel Plated Brass (NPB)***

**Temperature Range:**
***PA: -20 to 100°C ( -4 to 212°F)***
***NPB: -40 to 300°C (-40 to 572°F)***

| Cat. No. PA - Gray | Cat. No. PA - Black | Cat.No. NPB |
|---|---|---|
| 23050.9 | 23060.9 | 23000.9 |
| 23050.9 | 23060.9 | 23000.9 |
| 23051.9 | 23061.9 | 23001.9 |
| 23051.9 | 23061.9 | 23001.9 |
| 23052.9 | 23062.9 | 23002.9 |
| 23052.9 | 23062.9 | 23002.9 |
| 23053.9 | 23063.9 | 23003.9 |
| 23053.9 | 23063.9 | 23003.9 |
| 23054.9 | 23064.9 | 23004.9 |
| 23054.9 | 23064.9 | 23004.9 |
| 23055.9 | 23065.9 | 23005.9 |
| 23055.9 | 23065.9 | 23005.9 |
| 23056.9 | 23066.9 | 23006.9 |
| 23056.9 | 23066.9 | 23006.9 |
| 23057.9 | 23067.9 | 23007.9 |
| 23057.9 | 23067.9 | 23007.9 |
| 23058.9 | 23068.9 | 23008.9 |
| 23058.9 | 23068.9 | 23008.9 |
| 23059.9 | 23069.9 | 23009.9 |
| 23059.9 | 23069.9 | 23009.9 |




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

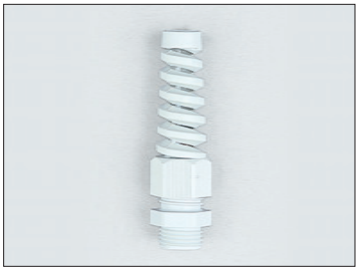
| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 24.0 | (.94) | 19.3 | (.75) | 5.0 | (.20) | 12.5 | (.49) | 14.0 | 15.5 | (.61) |
| PG9 | 28.8 | (1.13) | 22.0 | (.87) | 6.0 | (.24) | 15.2 | (.60) | 17.0 | 18.9 | (.74) |
| PG11 | 29.2 | (1.15) | 22.5 | (.89) | 6.0 | (.24) | 18.6 | (.73) | 20.0 | 22.2 | (.87) |
| PG13.5 | 29.5 | (1.16) | 23.0 | (.91) | 6.5 | (.26) | 20.4 | (.80) | 22.0 | 24.4 | (.96) |
| PG16 | 31.0 | (1.22) | 24.5 | (.96) | 6.5 | (.26) | 22.5 | (.89) | 24.0 | 26.7 | (1.05) |
| PG21 | 34.3 | (1.35) | 27.7 | (1.09) | 7.0 | (.28) | 28.3 | (1.11) | 30.0 | 33.5 | (1.32) |
| PG29 | 41.0 | (1.61) | 32.0 | (1.26) | 8.0 | (.31) | 37.0 | (1.46) | 40.0 | 43.5 | (1.71) |
| PG36 | 46.2 | (1.82) | 38.0 | (1.50) | 9.0 | (.35) | 47.0 | (1.85) | 50.0 | 54.0 | (2.13) |
| PG42 | 48.3 | (1.90) | 39.3 | (1.55) | 10.0 | (.39) | 54.0 | (2.13) | 57.0 | 61.0 | (2.40) |
| PG48 | 50.4 | (1.98) | 41.3 | (1.63) | 10.0 | (.39) | 59.3 | (2.33) | 64.0 | 69.0 | (2.72) |

# BEND AND PULL/BEND PROTECTION

## Polyamide (PA) • Polycarbonate (PC) • Nickel Plated Brass (NPB)

- Protection Rating:
  Polyamide Pull/Bend IP68; NEMA 4X
  All other Cord Grips IP55; NEMA 13
- Order Seal Rings Separately – See page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Light Gray or Black

### Polyamide (PA)
**Bend Protection**

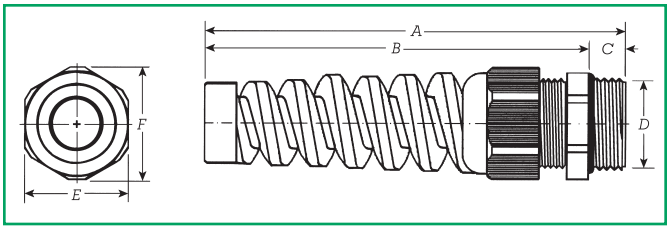


**with Neoprene (NEP) Sealing Insert**

| MATERIAL SPECIFICATIONS: | |
|---|---|
| *Body* | *Polyamide (PA)* |
| *Insert* | *Neoprene (NEP)* |
| *Locknuts* | *Polyamide (PA)* |
| *Seal Ring* | *Polyethylene (PET)* |
| **TEMPERATURE RANGE:** | |
| *Body* | *-20 to 100°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| *Locknuts* | *-20 to 100°C (-4 to 212°F)* |
| *Seal Ring* | *-20 to 100°C (-4 to 212°F)* |
| **INSERT COLOR:** | *Black* |

| Type | Mtg. Hole Dia. mm. | (in.) | Std. Pk. | Cable Dia. mm. | (in.) | Cat. No. Lt. Gray | Black |
|---|---|---|---|---|---|---|---|
| PG7-J ** ** ** NEP 5.0 | 13.0 | (.51) | 50 | 2.0 - 5.0 | (.08-.20) | 22970.2 | 22980.1 |
| PG7-J ** ** ** NEP 6.5 | 13.0 | (.51) | 50 | 3.0 - 6.5 | (.12-.26) | 22110.2 | 22120.1 |
| PG9-J ** ** ** NEP 6.0 | 15.5 | (.61) | 50 | 2.0 - 6.0 | (.08-.24) | 22971.2 | 22981.1 |
| PG9-J ** ** ** NEP 8.0 | 15.5 | (.61) | 50 | 4.0 - 8.0 | (.16-.31) | 22111.2 | 22121.1 |
| PG11-J ** ** ** NEP 7.0 | 19.0 | (.75) | 50 | 3.0 - 7.0 | (.12-.28) | 22972.2 | 22982.1 |
| PG11-J ** ** ** NEP10.0 | 19.0 | (.75) | 50 | 5.0 - 10.0 | (.20-.39) | 22112.2 | 22122.1 |
| PG13.5-J ** ** ** NEP 9.0 | 21.0 | (.83) | 50 | 5.0 - 9.0 | (.20-.35) | 22973.2 | 22983.1 |
| PG13.5-J ** ** ** NEP 12.0 | 21.0 | (.83) | 50 | 6.0 - 12.0 | (.24-.47) | 22113.2 | 22123.1 |
| PG16-J ** ** ** NEP 12.0 | 23.0 | (.91) | 25 | 7.0 - 12.0 | (.28-.47) | 22974.2 | 22984.1 |
| PG16-J ** ** ** NEP 14.0 | 23.0 | (.91) | 25 | 10.0 - 14.0 | (.39-.55) | 22114.2 | 22124.1 |
| PG21-J ** ** ** NEP 16.0 | 29.0 | (1.14) | 20 | 9.0 - 16.0 | (.35-.63) | 22975.2 | 22985.1 |
| PG21-J ** ** ** NEP 18.0 | 29.0 | (1.14) | 20 | 13.0 - 18.0 | (.51-.71) | 22115.2 | 22125.1 |
| NPT3/8-J ** ** ** NEP 7.0 | 17.5 | (.69) | 50 | 3.0 - 7.0 | (.12-.28) | 23400.2 | 23410.1 |
| NPT3/8-J ** ** ** NEP 10.0 | 17.5 | (.69) | 50 | 5.0 - 10.0 | (.20-.39) | 23401.2 | 23411.1 |
| NPT1/2-J ** ** ** NEP 12.0 | 21.5 | (.85) | 50 | 7.0 - 12.0 | (.28-.47) | 23402.2 | 23412.1 |
| NPT1/2-J ** ** ** NEP 14.0 | 21.5 | (.85) | 50 | 10.0 - 14.0 | (.39-.55) | 23403.2 | 23413.1 |
| NPT3/4-J ** ** ** NEP 16.0 | 27.0 | (1.06) | 25 | 9.0 - 16.0 | (.35-.63) | 23404.2 | 23414.1 |
| NPT3/4-J ** ** ** NEP 18.0 | 27.0 | (1.06) | 25 | 13.0 - 18.0 | (.51-.71) | 23405.2 | 23415.1 |

** Add Body Color – LG for Light Gray, BK for Black
** Add Body Material – PA for Polyamide, PC for Polycarbonate, NB for Nickel Plated Brass
** Add Function – BP for Bend Protection, PB for Pull / Bend Protection




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 68.0 | (2.67) | 60.0 | (2.36) | 8.0 | (.31) | 12.5 | (.49) | 15.0 | 16.5 | (.65) |
| PG9 | 80.0 | (3.14) | 72.0 | (2.83) | 8.0 | (.31) | 15.2 | (.60) | 19.0 | 21.0 | (.82) |
| PG11 | 92.0 | (3.62) | 84.0 | (3.30) | 8.0 | (.31) | 18.6 | (.73) | 22.0 | 24.4 | (.96) |
| PG13.5 | 104.5 | (4.11) | 95.0 | (3.75) | 9.0 | (.35) | 20.4 | (.80) | 24.0 | 26.6 | (1.05) |
| PG16 | 119.5 | (4.68) | 109.0 | (4.29) | 10.0 | (.39) | 22.5 | (.89) | 27.0 | 30.0 | (1.18) |
| PG21 | 138.0 | (5.43) | 128.0 | (5.03) | 11.0 | (.43) | 28.3 | (1.11) | 33.0 | 36.6 | (1.44) |
| NPT3/8" | 92.0 | (3.62) | 84.0 | (3.30) | 15.0 | (.59) | 17.2 | (.68) | 22.0 | 24.3 | (.96) |
| NPT1/2" | 119.0 | (4.68) | 109.0 | (4.29) | 15.0 | (.59) | 21.3 | (.84) | 27.0 | 29.6 | (1.17) |
| NPT3/4" | 138.0 | (5,43) | 128.0 | (5.03) | 15.0 | (.59) | 26.7 | (1.05) | 33.0 | 36.1 | (1.42) |

## Polycarbonate (PC)
### Pull/Bend Protection

**with Neoprene (NEP) Sealing Insert**

| |
|---|
| *Polycarbonate (PC)* |
| *Neoprene (NEP)* |
| *Polyamide (PA)* |
| *Polyethylene (PET)* |
| *-40 to 130°C (-40 to 266°F)* |
| *-20 to 80°C ( -4 to 176°F)* |
| *-20 to 100°C ( -4 to 212°F)* |
| *-20 to 100°C ( -4 to 212°F)* |
| *Black* |

| Size | Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|---|
| PG7 | 3.5 - 6.0 | (.14-.24) | 22260.8 |
| PG9 | 6.0 - 8.0 | (.24-.31) | 22261.8 |
| PG11 | 8.0 - 10.0 | (.31-.39) | 22262.8 |
| PG 13.5 | 10.0 - 12.0 | (.39-.47) | 22263.8 |
| PG16 | 12.0 - 13.5 | (.47-.53) | 22264.8 |
| PG21 | 14.0 - 18.0 | (.55-.71) | 22265.8 |
| PG29 | 18.0 - 24.0 | (.71-.94) | 22266.8 |
| PG36 | 24.0 - 30.0 | (.94-1.18) | 22268.8 |

## Nickel Plated Brass (NPB)
### Bend Protection

**with Neoprene (NEP) Sealing Insert**

| |
|---|
| *Nickel Plated Brass (NPB)* |
| *Neoprene (NEP)* |
| *Nickel Plated Brass (NPB)* |
| *Perbunan (PRB)* |
| *-40 to 300°C (-40 to 572°F)* |
| *-20 to 80°C ( -4 to 176°F)* |
| *-40 to 300°C (-40 to 572°F)* |
| *-20 to 120°C ( -4 to 248°F)* |
| *Black* |

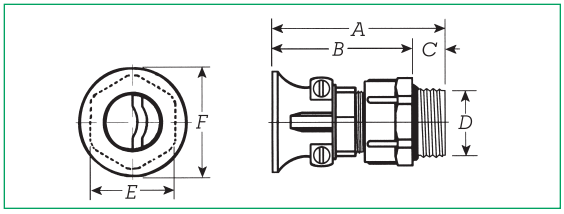
| Size | Cable Dia. mm | (in.) | Cat. No. |
|---|---|---|---|
| PG9 | 6.0 - 9.0 | (.24-.35) | 23030.6 |
| PG11 | 8.0 - 12.0 | (.31-.47) | 23031.6 |
| PG13.5 | 9.0 - 14.0 | (.35-.55) | 23032.6 |
| PG16 | 10.0 - 16.0 | (.39-.62) | 23033.6 |
| PG21 | 14.0 - 21.0 | (.55-.82) | 23034.6 |
| PG29 | 18.0 - 30.0 | (.70-1.18) | 23035.6 |
| – | – | – | – |
| – | – | – | – |

## Nickel Plated Brass (NPB)
### Pull/Bend Protection

**with Neoprene (NEP) Sealing Insert**

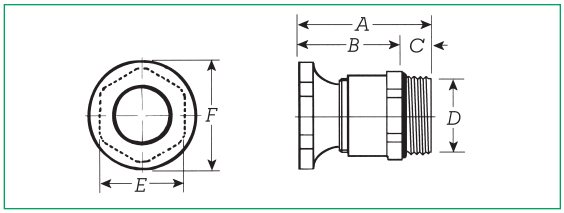
| |
|---|
| *Nickel Plated Brass (NPB)* |
| *Neoprene (NEP)* |
| *Nickel Plated Brass (NPB)* |
| *Perbunan (PRB)* |
| *-40 to 300°C (-40 to 572°F)* |
| *-20 to 80°C ( -4 to 176°F)* |
| *-40 to 300°C (-40 to 572°F)* |
| *-20 to 120°C ( -4 to 248°F)* |
| *Black* |

| Size | Cable Dia. mm | (in. ) | Cat. No. |
|---|---|---|---|
| PG9 | 5.0 - 7.0 | (.20-.28) | 22631.6 |
| PG11 | 5.0 - 9.0 | (.20-.35) | 22632.6 |
| PG13.5 | 7.0 - 11.0 | (.28-.43) | 22633.6 |
| PG16 | 9.0 - 13.0 | (.35-.51) | 22634.6 |
| PG21 | 14.0 - 18.0 | (.55-.71) | 22635.6 |
| PG29 | 20.0 - 26.0 | (.79-1.02) | 22636.6 |
| – | – | – | – |
| – | – | – | – |



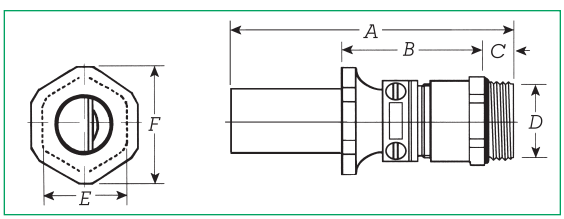

**Dimensions: mm (in.) Polycarbonate (PC) Pull/Bend Protection**

| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 44.5 | (1.75) | 36.5 | (1.44) | 8.0 | (.31) | 12.5 | (.49) | 15.0 | 27.9 | (1.10) |
| PG9 | 55.5 | (2.19) | 47.5 | (1.87) | 8.0 | (.31) | 15.2 | (.60) | 19.0 | 22.3 | (.88) |
| PG11 | 60.0 | (2.36) | 52.0 | (2.05) | 8.0 | (.31) | 18.6 | (.73) | 22.0 | 25.6 | (1.01) |
| PG13.5 | 62.0 | (2.44) | 53.0 | (2.09) | 9.0 | (.35) | 20.4 | (.80) | 24.0 | 27.3 | (1.07) |
| PG16 | 69.0 | (2.71) | 59.0 | (2.32) | 10.0 | (.39) | 22.5 | (.89) | 27.0 | 29.9 | (1.18) |
| PG21 | 69.0 | (2.71) | 59.0 | (2.28) | 11.0 | (.43) | 28.3 | (1.11) | 32.0 | 35.7 | (1.41) |
| PG29 | 72.0 | (2.83) | 61.0 | (2.40) | 11.0 | (.43) | 37.0 | (1.46) | 42.0 | 57.7 | (2.27) |
| PG36 | 79.0 | (3.11) | 66.0 | (2.60) | 13.0 | (.51) | 47.0 | (1.85) | 53.0 | 65.3 | (2.57) |




**Dimensions: mm (in.) Nickel Plated Brass (NPB) Bend Protection**

| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG9 | 28.0 | (1.10) | 22.0 | (.87) | 6.0 | (.24) | 15.2 | (.60) | 17.0 | 20.0 | (.79) |
| PG11 | 30.0 | (1.18) | 24.0 | (.94) | 6.0 | (.24) | 18.6 | (.73) | 20.0 | 24.0 | (.94) |
| PG13.5 | 32.0 | (1.26) | 26.0 | (1.02) | 6.0 | (.24) | 20.4 | (.80) | 22.0 | 27.0 | (1.06) |
| PG16 | 34.0 | (1.34) | 28.0 | (1.10) | 6.0 | (.24) | 22.5 | (.89) | 24.0 | 30.0 | (1.18) |
| PG21 | 37.0 | (1.46) | 30.0 | (1.18) | 7.0 | (.28) | 28.3 | (1.11) | 30.0 | 34.0 | (1.34) |
| PG29 | 45.0 | (1.77) | 37.5 | (1.48) | 7.5 | (.30) | 37.0 | (1.46) | 40.0 | 46.0 | (1.81) |




**Dimensions: mm (in.) Nickel Plated Brass (NPB) Pull/Bend Protection**

| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG9 | 58.0 | (2.28) | 22.0 | (.87) | 6.0 | (.24) | 15.2 | (.60) | 17.0 | 20.0 | (.79) |
| PG11 | 60.0 | (2.36) | 24.0 | (.94) | 6.0 | (.24) | 18.6 | (.73) | 20.0 | 24.0 | (.94) |
| PG13.5 | 62.0 | (2.44) | 26.0 | (1.02) | 6.0 | (.24) | 20.4 | (.80) | 22.0 | 27.0 | (1.06) |
| PG16 | 70.0 | (2.76) | 28.0 | (1.10) | 6.0 | (.24) | 22.5 | (.89) | 24.0 | 30.0 | (1.18) |
| PG21 | 82.0 | (3.23) | 30.0 | (1.18) | 7.0 | (.28) | 28.3 | (1.11) | 30.0 | 34.0 | (1.34) |
| PG29 | 85.0 | (3.35) | 37.5 | (1.48) | 7.5 | (.30) | 37.0 | (1.46) | 40.0 | 46.0 | (1.81) |

# MULTI CABLE

## Polyamide (PA) • Nickel Plated Brass (NPB)

- Protection Rating: IP54; NEMA 13
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips and Polyamide Cord Grip PG29
- Order Seal Rings Separately for Polyamide Cord Grips PG7 to PG21 – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Light Gray or Black

### Polyamide (PA)

**with Polyolefin (TPE) Sealing Insert**

| MATERIALSPECIFICATIONS: | |
|---|---|
| *Body* | *Polyamide (PA)* |
| *Insert* | *Neoprene (NEP)* |
| *Seal Ring* | *Polyethylene (PET)* |
| **TEMPERATURE RANGE:** | |
| *Body* | *-20 to 100°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| *Seal Ring* | *-20 to 100°C (-4 to 212°F)* |
| **INSERT COLOR:** | **Black** |

| Type | Mtg. Hole Dia. mm. (in.) | Cable Dia. mm. (in.) | No. of Cables | Cat. No. Lt. Gray | Cat. No. Black | Std. Pk. |
|---|---|---|---|---|---|---|
| PG7-JM ✻✻ ✻✻ TPE 0.0 | 13.0 (.51) | Solid Insert | – | – | – | – |
| PG9-JM ✻✻ ✻✻ TPE 3.0 | 15.5 (.61) | 3.0 (.12) | 2 | 23330.2 | 23360.1 | 50 |
| PG9-JM ✻✻ ✻✻ TPE 2.0 | 15.5 (.61) | 2.0 (.08) | 3 | 23331.2 | 23361.1 | 50 |
| PG9-JM ✻✻ ✻✻ TPE 2.0 | 15.5 (.61) | 2.0 (.08) | 4 | 23332.2 | 23362.1 | 50 |
| PG9-JM ✻✻ ✻✻ TPE 3.0 | 15.5 (.61) | 3.0 (.12) | 4 | 23333.2 | 23363.1 | 50 |
| PG11-JM ✻✻ ✻✻ TPE 0.0 | 19.0 (.75) | Solid Insert | – | 23334.2 | 23364.1 | 50 |
| PG11-JM ✻✻ ✻✻ TPE 4.0 | 19.0 (.75) | 4.0 (.16) | 2 | 23335.2 | 23365.1 | 50 |
| PG11-JM ✻✻ ✻✻ TPE 5.0 | 19.0 (.75) | 5.0 (.20) | 2 | 23336.2 | 23366.1 | 50 |
| PG11-JM ✻✻ ✻✻ TPE 4.0 | 19.0 (.75) | 4.0 (.16) | 3 | 23337.2 | 23367.1 | 50 |
| PG11-JM ✻✻ ✻✻ TPE 5.0 | 19.0 (.75) | 5.0 (.20) | 3 | 23338.2 | 23368.1 | 50 |
| PG13.5-JM ✻✻ ✻✻ TPE 0.0 | 21.0 (.83) | Solid Insert | – | 23339.2 | 23369.1 | 50 |
| PG13.5-JM ✻✻ ✻✻ TPE 5.0 | 21.0 (.83) | 5.0 (.20) | 2 | 23340.2 | 23370.1 | 50 |
| PG13.5-JM ✻✻ ✻✻ TPE 6.0 | 21.0 (.83) | 6.0 (.24) | 2 | 23341.2 | 23371.1 | 50 |
| PG13.5-JM ✻✻ ✻✻ TPE 4.0 | 21.0 (.83) | 4.0 (.16) | 3 | 23342.2 | 23372.1 | 50 |
| PG13.5-JM ✻✻ ✻✻ TPE 5.0 | 21.0 (.83) | 5.0 (.20) | 3 | 23343.2 | 23373.1 | 50 |
| PG16-JM ✻✻ ✻✻ TPE 0.0 | 23.0 (.91) | Solid Insert | – | 23344.2 | 23374.1 | 50 |
| PG16-JM ✻✻ ✻✻ TPE 6.0 | 23.0 (.91) | 6.0 (.24) | 2 | 23345.2 | 23375.1 | 50 |
| PG16-JM ✻✻ ✻✻ TPE 5.0 | 23.0 (.91) | 5.0 (.20) | 3 | 23346.2 | 23376.1 | 50 |
| PG16-JM ✻✻ ✻✻ TPE 6.0 | 23.0 (.91) | 6.0 (.24) | 4 | 23347.2 | 23377.1 | 50 |
| PG16-JM ✻✻ ✻✻ TPE 4.0 | 23.0 (.91) | 4.0 (.16) | 5 | 23348.2 | 23378.1 | 50 |
| PG21-JM ✻✻ ✻✻ TPE 0.0 | 29.0 (1.14) | Solid Insert | – | 23349.2 | 23379.1 | 25 |
| PG21-JM ✻✻ ✻✻ TPE 7.0 | 29.0 (1.14) | 7.0 (.28) | 2 | 23350.2 | 23380.1 | 25 |
| PG21-JM ✻✻ ✻✻ TPE 9.0 | 29.0 (1.14) | 9.0 (.35) | 2 | 23351.2 | 23381.1 | 25 |
| PG21-JM ✻✻ ✻✻ TPE 8.0 | 29.0 (1.14) | 8.0 (.31) | 3 | 23352.2 | 23382.1 | 25 |
| PG21-JM ✻✻ ✻✻ TPE 7.0 | 29.0 (1.14) | 7.0 (.28) | 4 | 23353.2 | 23383.1 | 25 |
| PG29-JM ✻✻ ✻✻ TPE 0.0 | 37.5 (1.48) | Solid Insert | – | 23354.2 | 23384.1 | 25 |
| PG29-JM ✻✻ ✻✻ TPE 5.0 | 37.5 (1.48) | 5.0 (.20) | 6 | 23355.2 | 23385.1 | 25 |
| PG29-JM ✻✻ ✻✻ TPE 5.0 | 37.5 (1.48) | 5.0 (.20) | 8 | 23356.2 | 23386.1 | 25 |

✻✻ Add Body Color – LG for Light Gray, BK for Black

✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass

## Nickel Plated Brass (NPB)

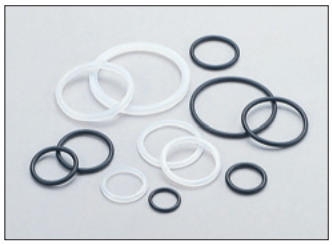
**with Polyolefin (TPE) Sealing Insert**

***Nickel Plated Brass (NPB)***
***Neoprene (NEP)***
***Perbunan (PRB)***

***-40 to 300°C (-40 to 572°F)***
***-20 to 80°C ( -4 to 176°F)***
***-20 to 120°C ( -4 to 248°F)***
**Black**

| Cat. No. | Std. Pk. |
|---|---|
| 23300.6 | 50 |
| 23301.6 | 50 |
| 23302.6 | 50 |
| 23303.6 | 50 |
| 23304.6 | 50 |
| 23305.6 | 50 |
| 23306.6 | 50 |
| 23307.6 | 50 |
| 23308.6 | 50 |
| 23309.6 | 50 |
| 23310.6 | 50 |
| 23311.6 | 50 |
| 23312.6 | 50 |
| 23313.6 | 50 |
| 23314.6 | 50 |
| 23315.6 | 50 |
| 23316.6 | 50 |
| 23317.6 | 50 |
| 23318.6 | 50 |
| 23319.6 | 50 |
| 23320.6 | 25 |
| 23321.6 | 25 |
| 23322.6 | 25 |
| 23323.6 | 25 |
| 23324.6 | 25 |
| 23325.6 | 25 |
| 23326.6 | 25 |
| 23327.6 | 25 |

## Seal Rings



**SEAL RINGS:**
Polyethylene **(PET)**
Perbunan **(PRB)**
Temperature Range:
**PET** -20 to 100°C (-4 to 212°F)
**PRB** -20 to 120°C (-4 to 248°F)

| Size | Polyethylene (PET) Cat.No. | Std. Pk. | Perbunan (PRB) Cat. No. | Std. Pk. |
|---|---|---|---|---|
| PG7 | – | – | 23150.9 | 50 |
| PG7 | 23171.9 | 50 | 23151.9 | 50 |
| PG9 | 23172.9 | 50 | 23152.9 | 50 |
| PG11 | 23173.9 | 50 | 23153.9 | 50 |
| PG16 | 23174.9 | 25 | 23154.9 | 25 |
| PG21 | 23175.9 | 25 | 23155.9 | 25 |
| PG29 | 23176.9 | 20 | 23156.9 | 20 |

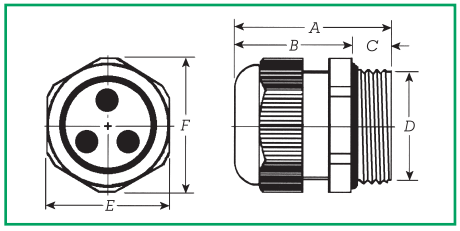
See page 62 for additional information

## Locknuts

**LOCKNUTS:**
Polyamide **(PA)**
Nickel Plated Brass **(NPB)**
Temperature Range:
**PA** -20 to 100°C (-4 to 212°F)
**NPB** -40 to 300°C (-40 to 572°F)

| Size | Polyamide (PA) Cat. No. Gray | Cat. No. Black | Std. Pk. | Nickel Plated Brass (NPB) Cat. No. | Std. Pk. |
|---|---|---|---|---|---|
| PG7 | – | – | – | 23000.9 | 50 |
| PG7 | 23051.9 | 23061.9 | 50 | 23001.9 | 50 |
| PG9 | 23052.9 | 23062.9 | 50 | 23002.9 | 50 |
| PG13.5 | 23053.9 | 23063.9 | 50 | 23003.9 | 50 |
| PG16 | 23054.9 | 23064.9 | 25 | 23004.9 | 25 |
| PG21 | 23055.9 | 23065.9 | 25 | 23005.9 | 25 |
| PG29 | 23056.9 | 23066.9 | 20 | 23006.9 | 20 |

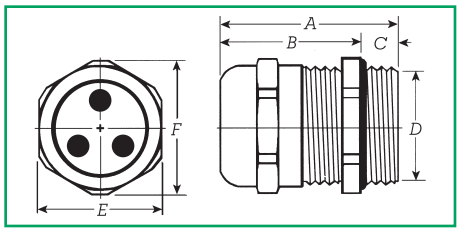
See page 60 for additional information




Polyamide (PA)

**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG9 | 33.5 | (1.32) | 25.5 | (1.00) | 8.0 | (.31) | 12.5 | (.49) | 15.0 | 16.5 | (.65) |
| PG11 | 36.0 | (1.42) | 28.5 | (1.12) | 8.0 | (.31) | 18.6 | (.73) | 22.0 | 24.5 | (.96) |
| PG13.5 | 38.5 | (1.52) | 29.7 | (1.17) | 9.0 | (.35) | 20.4 | (.80) | 24.0 | 26.6 | (1.05) |
| PG16 | 42.0 | (1.65) | 32.0 | (1.26) | 10.0 | (.39) | 22.5 | (.89) | 27.0 | 30.0 | (1.18) |
| PG21 | 47.5 | (1.87) | 36.5 | (1.44) | 11.0 | (.43) | 28.3 | (1.11) | 33.0 | 36.6 | (1.44) |
| PG29 | 53.5 | (2.11) | 43.5 | (1.71) | 11.0 | (.43) | 37.0 | (1.46) | 42.0 | 46.3 | (1.82) |




Nickel Plated Brass (NPB)

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

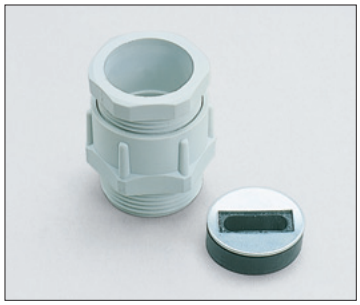
| Size | A | | B | | C | | D | | E | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PG7 | 24.0 | (.94) | 19.3 | (.75) | 5.0 | (.20) | 12.5 | (.49) | 14.0 | 15.5 | (.61) |
| PG9 | 28.8 | (1.13) | 22.0 | (.87) | 6.0 | (.24) | 15.2 | (.60) | 17.0 | 18.9 | (.74) |
| PG11 | 29.2 | (1.15) | 22.5 | (.89) | 6.0 | (.24) | 18.6 | (.73) | 20.0 | 22.2 | (.87) |
| PG13.5 | 29.5 | (1.16) | 23.0 | (.91) | 6.5 | (.26) | 20.4 | (.80) | 22.0 | 24.4 | (.96) |
| PG16 | 31.0 | (1.22) | 24.5 | (.96) | 6.5 | (.26) | 22.5 | (.89) | 24.0 | 26.7 | (1.05) |
| PG21 | 34.3 | (1.35) | 27.7 | (1.09) | 7.0 | (.28) | 28.3 | (1.11) | 30.0 | 33.5 | (1.32) |
| PG29 | 41.0 | (1.61) | 32.0 | (1.26) | 8.0 | (.31) | 37.0 | (1.46) | 40.0 | 43.5 | (1.71) |

# FLAT CABLE

## Polyamide (PA) • Nickel Plated Brass (NPB)

- Protection Rating: IP55; NEMA 13
- Selection of 2 Body Materials
- Custom Inserts Available
- Order Seal Rings Separately – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Color: Light Gray

### Polyamide (PA)



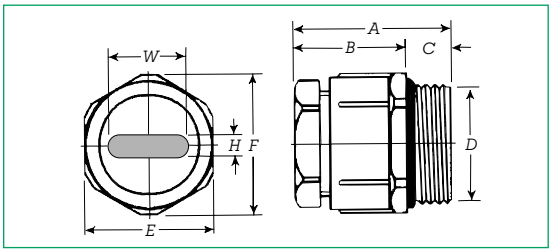
**with Neoprene (NEP) Sealing Insert**

| MATERIALSPECIFICATIONS: | |
|---|---|
| *Body* | *Polyamide (PA)* |
| *Insert* | *Neoprene (NEP)* |
| *Seal Ring* | — |
| **TEMPERATURE RANGE:** | |
| *Body* | *-20 to 110°C (-4 to 212°F)* |
| *Insert* | *-20 to 80°C (-4 to 176°F)* |
| *Seal Ring* | — |
| **INSERT COLOR:** | **Black** |

| Type | Mtg. Hole Dia. mm. (in.) | Std. Pk. | Cable Dim. H x W mm. (in.) | Cat. No. |
|---|---|---|---|---|
| PG16-JF ✻✻ ✻✻ NEP 15.0 | 23.0 (.91) | 50 | 5.0 x 15.0 (.20 x .59) | 22220.2 |
| PG21-JF ✻✻ ✻✻ NEP 18.0 | 29.0 (1.14) | 50 | 6.0 x 18.0 (.24 x .71) | 22221.2 |
| PG21-JF ✻✻ ✻✻ NEP 19.0 | 29.0 (1.14) | 50 | 7.5 x 19.0 (.30 x .75) | 22222.2 |
| PG21-JF ✻✻ ✻✻ NEP 21.0 | 29.0 (1.14) | 50 | 11.0 x 21.0 (.43 x .83) | 22223.2 |
| PG29-JF ✻✻ ✻✻ NEP 24.0 | 37.5 (1.48) | 25 | 6.0 x 24.0 (.24 x .94) | 22224.2 |
| PG29-JF ✻✻ ✻✻ NEP 30.0 | 37.5 (1.48) | 25 | 7.0 x 30.0 (.28 x 1.18) | 22226.2 |
| PG29-JF ✻✻ ✻✻ NEP 22.0 | 37.5 (1.48) | 25 | 8.0 x 22.0 (.31 x .87) | 22227.2 |
| PG29-JF ✻✻ ✻✻ NEP 26.0 | 37.5 (1.48) | 25 | 9.0 x 26.0 (.35 x 1.02) | 22228.2 |
| PG36-JF ✻✻ ✻✻ NEP 32.0 | 47.5 (1.87) | 10 | 6.0 x 32.0 (.24 x 1.26) | 22230.2 |
| PG36-JF ✻✻ ✻✻ NEP 38.0 | 47.5 (1.87) | 10 | 7.0 x 38.0 (.28 x 1.50) | 22232.2 |
| PG36-JF ✻✻ ✻✻ NEP 32.1 | 47.5 (1.87) | 10 | 10.0 x 32.0 (.39 x 1.26) | 22234.2 |
| PG36-JF ✻✻ ✻✻ NEP 34.0 | 47.5 (1.87) | 10 | 13.0 x 34.0 (.51 x 1.34) | 22236.2 |
| PG42-JF ✻✻ ✻✻ NEP 40.0 | 54.5 (2.15) | 5 | 6.0 x 40.0 (.24 x 1.57) | 22237.2 |
| PG42-JF ✻✻ ✻✻ NEP 40.1 | 54.5 (2.15) | 5 | 7.5 x 40.0 (.30 x 1.57) | 22238.2 |
| PG42-JF ✻✻ ✻✻ NEP 39.0 | 54.5 (2.15) | 5 | 11.5 x 39.0 (.45 x 1.54) | 22239.2 |
| PG42-JF ✻✻ ✻✻ NEP 41.0 | 54.5 (2.15) | 5 | 13.5 x 41.0 (.53 x 1.61) | 22240.2 |
| PG48-JF ✻✻ ✻✻ NEP 49.0 | 60.0 (2.36) | 5 | 7.0 x 49.0 (.28 x 1.93) | 22241.2 |
| PG48-JF ✻✻ ✻✻ NEP 44.0 | 60.0 (2.36) | 5 | 10.0 x 44.0 (.39 x 1.73) | 22242.2 |
| PG48-JF ✻✻ ✻✻ NEP 46.0 | 60.0 (2.36) | 5 | 14.0 x 44.0 (.55 x 1.73) | 22243.2 |
| PG48-JF ✻✻ ✻✻ NEP 45.0 | 60.0 (2.36) | 5 | 16.0 x 45.0 (.63 x 1.73) | 22244.2 |

✻✻ Add Body Color – LG for Light Gray

✻✻ Add Body Material – PA for Polyamide, NB for Nickel Plated Brass




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG16 | 40.5 (1.59) | 30.5 (1.20) | 10.0 (.39) | 22.5 (.89) | 27.0 | 29.0 (1.14) |
| PG21 | 43.5 (1.71) | 32.5 (1.28) | 11.0 (.43) | 28.3 (1.11) | 32.0 | 35.5 (1.40) |
| PG29 | 46.0 (1.81) | 35.0 (1.38) | 11.0 (.43) | 37.0 (1.46) | 42.0 | 45.5 (1.79) |
| PG36 | 57.0 (2.24) | 44.0 (1.73) | 13.0 (.51) | 47.0 (1.85) | 53.0 | 57.0 (2.24) |
| PG42 | 61.0 (2.40) | 48.0 (1.89) | 13.0 (.51) | 54.0 (2.13) | 60.0 | 65.0 (2.56) |
| PG48 | 60.0 (2.36) | 46.0 (1.81) | 14.0 (.55) | 59.3 (2.33) | 65.0 | 70.0 (2.76) |

**Please Note:** Cable Size should be not less than 0.5mm (0.02in.) in width and height than opening in Sealing Insert.

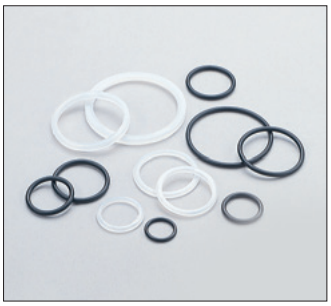
## Nickel Plated Brass (NPB)

**with Neoprene (NEP) Sealing Insert**

| | |
|---|---|
| | |
| *Nickel Plated Brass (NPB)* | |
| *Neoprene (NEP)* | |
| — | |
| | |
| *-40 to 300°C (-40 to 572°F)* | |
| *-20 to 80°C ( -4 to176°F)* | |
| — | |
| **Black** | |

| Cable Dia. H x W mm | (in.) | Cat. No. |
|---|---|---|
| 5.0 x 15.0 | (.20 x .59) | 22640.6 |
| 6.0 x 18.0 | (.24 x .71) | 22641.6 |
| 7.5 x 19.0 | (.30 x .75) | 22642.6 |
| 11.0 x 21.0 | (.43 x .83) | 22643.6 |
| 6.0 x 24.0 | (.24 x .94) | 22644.6 |
| 7.0 x 30.0 | (.28 x 1.18) | 22646.6 |
| 8.0 x 22.0 | (.31 x .87) | 22647.6 |
| 9.0 x 26.0 | (.35 x 1.02) | 22648.6 |
| 6.0 x 32.0 | (.24 x 1.26) | 22650.6 |
| 7.0 x 38.0 | (.28 x 1.50) | 22652.6 |
| 10.0 x 32.0 | (.39 x 1.26) | 22654.6 |
| 10.3 x 34.0 | (.51 x 1.34) | 22656.6 |
| 6.0 x 40.0 | (.24 x 1.57) | 22657.6 |
| 7.5 x 40.0 | (.30 x 1.57) | 22658.6 |
| 11.5 x 39.0 | (.45 x 1.54) | 22659.6 |
| 13.5 x 41.0 | (.53 x 1.61) | 22660.6 |
| 7.0 x 49.0 | (.28 x 1.93) | 22661.6 |
| 10.0 x 44.0 | (.39 x 1.73) | 22662.6 |
| 14.0 x 44.0 | (.55 x 1.73) | 22663.6 |
| 16.0 x 45.0 | (.63 x 1.73) | 22664.6 |

## Seal Rings



**Polyethylene (PET) and Neoprene (NEP)**

| | |
|---|---|
| **Material:** | |
| *Polyethylene (PET)* | |
| *Neoprene (NEP)* | |
| | |
| **Temperature Range:** | |
| *PET: -20 to 100°C (-4 to 212°F)* | |
| *NEP: -20 to 120°C (-4 to 248°F)* | |

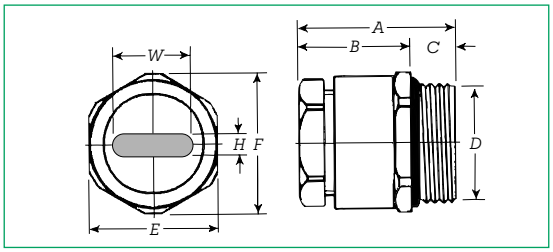
| Cat. No. PET | Cat. No. NEP |
|---|---|
| 23174.9 | 23154.9 |
| 23175.9 | 23155.9 |
| 23175.9 | 23155.9 |
| 23175.9 | 23155.9 |
| 23176.9 | 23156.9 |
| 23176.9 | 23156.9 |
| 23176.9 | 23156.9 |
| 23176.9 | 23156.9 |
| 23177.9 | 23157.9 |
| 23177.9 | 23157.9 |
| 23177.9 | 23157.9 |
| 23177.9 | 23157.9 |
| 23178.9 | 23158.9 |
| 23178.9 | 23158.9 |
| 23178.9 | 23158.9 |
| 23178.9 | 23158.9 |
| 23179.9 | 23159.9 |
| 23179.9 | 23159.9 |
| 23179.9 | 23159.9 |
| 23179.9 | 23159.9 |

## Locknuts

**Polyamide (PA) and Nickel Plated Brass (NPB)**

| | |
|---|---|
| **Material:** | |
| *Polyamide (PA)* | |
| *Nickel Plated Brass (NPB)* | |
| | |
| **Temperature Range:** | |
| *PA: -20 to 100°C ( -4 to 212°F)* | |
| *NPB: -40 to 300°C (-40 to 572°F)* | |

| Cat. No. PA | Cat. No. NPB |
|---|---|
| 23054.9 | 23004.9 |
| 23055.9 | 23005.9 |
| 23055.9 | 23005.9 |
| 23055.9 | 23005.9 |
| 23056.9 | 23006.9 |
| 23056.9 | 23006.9 |
| 23056.9 | 23006.9 |
| 23056.9 | 23006.9 |
| 23057.9 | 23007.9 |
| 23057.9 | 23007.9 |
| 23057.9 | 23007.9 |
| 23057.9 | 23007.9 |
| 23058.9 | 23008.9 |
| 23058.9 | 23008.9 |
| 23058.9 | 23008.9 |
| 23058.9 | 23008.9 |
| 23059.9 | 23009.9 |
| 23059.9 | 23009.9 |
| 23059.9 | 23009.9 |
| 23059.9 | 23009.9 |




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG16 | 26.5 (1.04) | 33.0 (1.30) | 6.5 (.26) | 22.5 (.89) | 24.0 | 26.5 (1.04) |
| PG21 | 30.0 (1.18) | 37.0 (1.46) | 7.0 (.28) | 28.3 (1.11) | 30.0 | 30.0 (1.18) |
| PG29 | 33.0 (1.23) | 41.0 (1.61) | 8.0 (.31) | 37.0 (1.46) | 40.0 | 33.0 (1.30) |
| PG36 | 39.0 (1.54) | 48.0 (1.89) | 9.0 (.35) | 47.0 (1.85) | 50.0 | 39.0 (1.54) |
| PG42 | 44.0 (1.73) | 54.0 (2.13) | 10.0 (.39) | 54.0 (2.13) | 57.0 | 44.0 (1.73) |
| PG48 | 46.0 (1.81) | 56.0 (2.20) | 10.0 (.39) | 59.3 (2.33) | 64.0 | 46.0 (1.81) |

**Please Note:** Cable Size should be not less than 0.5mm (0.02in.) in width and height than opening in Sealing Insert.

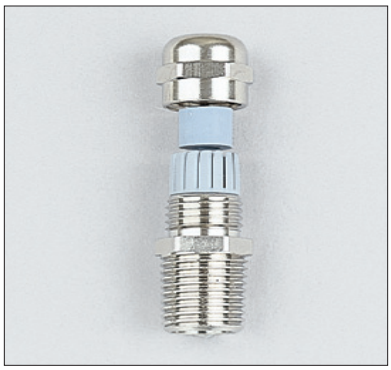
## STRAIGHT THROUGH NPT – Sizes

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 5 Bar; 70psi
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Light Gray or Black

### Polyamide (PA)

**with Neoprene (NEP) Sealing Insert**

### Nickel Plated Brass (NPB)



**with Neoprene (NEP) Sealing Insert**

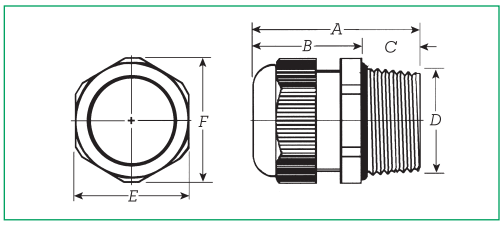
| | | |
|---|---|---|
| **MATERIAL SPECIFICATIONS:** | | |
| **Body** | *Polyamide (PA)* | *Nickel Plated Brass (NPB)* |
| **Insert** | *Neoprene (NEP)* | *Neoprene (NEP)* |
| **Seal Ring** | *Polyethylene (PET)* | *Perbunan (PRB)* |
| **TEMPERATURE RANGE:** | | |
| **Body** | *-20 to 100°C (-4 to 212°F)* | *-40 to 300°C (-40 to 572°F)* |
| **Insert** | *-20 to 80°C (-4 to 176°F)* | *-20 to 80°C ( -4 to 176°F)* |
| **Seal Ring** | *-20 to 100°C (-4 to 212°F)* | *-20 to 120°C ( -4 to 248°F)* |
| **INSERT COLOR:** | *Black* | *Black* |

| Type | Std. Pk. | Cable Dia. mm (in.) | Cat. No. Light Gray | Cat. No. Black | Cable Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|---|
| NPT 3/8" - J** **NEP 7.0 | 50 | 3.0 - 7.0 (.12-.28) | 22100.2 | 22105.1 | 2.0 - 6.0 (.08-.24) | 22404.6 |
| NPT 3/8" - J** **NEP 10.0 | 50 | 5.0 - 10.0 (.20-.39) | 22090.2 | 22095.1 | 4.0 - 8.0 (.16-.31) | 22400.6 |
| NPT 1/2" - J** **NEP 12.0 | 50 | 7.0 - 12.0 (.28-.47) | 22101.2 | 22106.1 | 5.0 - 9.0 (.20-.35) | 22405.6 |
| NPT 1/2" - J** **NEP 14.0 | 50 | 10.0 - 14.0 (.39-.55) | 22091.2 | 22096.1 | 6.0 - 12.0 (.24-.47) | 22401.6 |
| NPT 3/4" - J** **NEP 16.0 | 25 | 9.0 - 16.0 (.35-.63) | 22102.2 | 22107.1 | 9.0 - 16.0 (.35-.63) | 22406.6 |
| NPT 3/4" - J** **NEP 18.0 | 25 | 13.0 - 18.0 (.51-.71) | 22092.2 | 22097.1 | 13.0 - 18.0 (.51-.71) | 22402.2 |
| NPT 1" - J** **NEP 20.0 | 5 | 12.0 - 20.0 (.47-.79) | 22103.2 | 22108.1 | 12.0 - 20.0 (.47-.79) | 22407.6 |
| NPT 1" - J** **NEP 25.0 | 5 | 18.0 - 25.0 (.71- .98) | 22093.2 | 22098.1 | 18.0 - 25.0 (.71-.98) | 22403.6 |

** Add Body Color – LG for Light Gray, BK for Black

** Add Body Material – PA for Polyamide, NB for Nickel Plated Brass

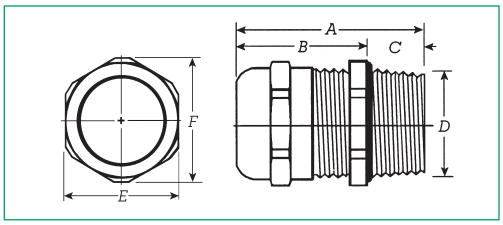
**Polyamide (PA)**




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | 44.2 (1.74) | 29.0 (1.14) | 15.0 (.59) | 17.2 (.68) | 22.0 | 24.3 (.96) |
| NPT 1/2" | 46.0 (1.81) | 31.3 (1.23) | 15.0 (.59) | 21.3 (.84) | 27.0 | 29.6 (1.17) |
| NPT 3/4" | 51.6 (2.03) | 36.7 (1.44) | 15.0 (.59) | 26.7 (1.05) | 33.0 | 36.1 (1.42) |
| NPT 1" | 55.0 (2.17) | 51.0 (2.01) | 15.0 (.59) | 33.3 (1.31) | 42.0 | 46.5 (1.83) |

**Nickel Plated Brass (NPB)**



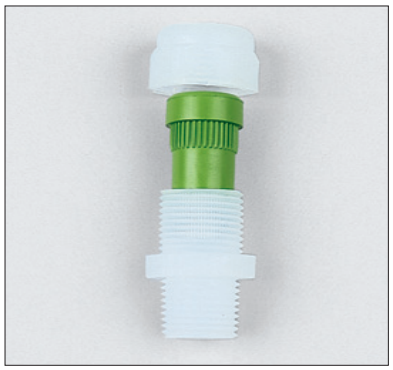

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | 37.0 (1.46) | 23.0 (.91) | 15.0 (.59) | 17.2 (.68) | 17.0 | 18.3 (.72) |
| NPT 1/2" | 40.0 (1.57) | 27.0 (1.06) | 15.0 (.59) | 21.3 (.84) | 22.0 | 24.0 (.94) |
| NPT 3/4" | 40.5 (1.59) | 28.0 (1.10) | 18.0 (.71) | 26.7 (1.05) | 30.0 | 33.5 (1.32) |
| NPT 1" | 51.5 (2.03) | 33.5 (1.32) | 18.0 (.71) | 33.3 (1.31) | 40.0 | 43.5 (1.71) |

## STRAIGHT THROUGH NPT – Sizes

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140psi
- Seal Rings Factory Installed on Nickel Plated Brass Cord Grips
- Order Seal Rings Separately for Polyvinylidene Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Opaque or Black
- Other Tubular Sealing Insert Materials available

### Polyvinylidene (PVDF)



**with Polyvinylchloride (PVC) Tubular Sealing Insert**

### Nickel Plated Brass (NPB)

**with Polyvinylchloride (PVC) Tubular Sealing Insert**

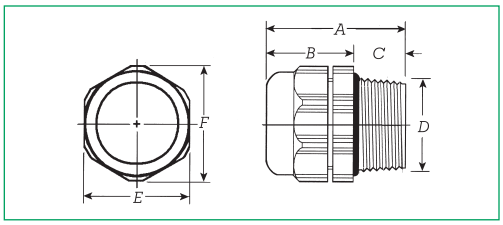
| | | |
|---|---|---|
| **MATERIAL SPECIFICATIONS:** | | |
| **Body** | ***Polyvinylidene (PVDF)*** | ***Nickel Plated Brass (NPB)*** |
| **Insert** | ***Polyvinylchloride (PVC)*** | ***Polyvinylchloride (PVC)*** |
| **Seal Ring** | ***Polyethylene (PET)*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | | |
| **Body** | ***-40 to 150°C (-40 to 302°F)*** | ***-40 to 300°C (-40 to 572°F)*** |
| **Insert** | ***-20 to 80°C ( -4 to 176°F)*** | ***-20 to 80°C ( -4 to 176°F)*** |
| **Seal Ring** | ***-20 to 100°C ( -4 to 212°F)*** | ***-20 to 120°C ( -4 to 248°F)*** |
| **INSERT COLOR:** | ***Various*** | ***Various*** |

| Type | Std. Pk. | Cable Dia. mm (in.) | Cat. No. Opaque | Cat. No. Black | Cable Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|---|
| NPT 3/8" - P✻✻ ✻✻PVC 8.0 | 50 | 5.0 - 8.0 (.20-.31) | 20860.4 | 20870.5 | 5..0 - 8.0 (.20-.31) | 20900.6 |
| NPT 3/8" - P✻✻ ✻✻PVC 10.5 | 50 | 7.0 - 10.5 (.28-.41) | 20861.4 | 20871.5 | 7.0 - 10.5 (.28-.41) | 20901.6 |
| NPT 1/2" - P✻✻ ✻✻PVC 13.0 | 50 | 9.0 - 13.0 (.35-.51) | 20862.4 | 20872.5 | 9.0 - 13.0 (.35-.51) | 20903.6 |
| NPT 1/2" - P✻✻ ✻✻PVC 15.5 | 50 | 11.5 - 15.5 (.45-.61) | 20863.4 | 20873.5 | 11.5 - 15.5 (.45-.61) | 20904.6 |
| NPT 3/4" - P✻✻ ✻✻PVC 18.0 | 25 | 14.0 - 18.0 (.55-.71) | 20864.4 | 20874.5 | 14.0 - 18.0 (.55-.71) | 20906.6 |
| NPT 3/4" - P✻✻ ✻✻PVC 20.5 | 25 | 17.0 - 20.5 (.67-.81) | 20865.4 | 20875.5 | 17.0 - 20.5 (.67-.81) | 20907.6 |
| NPT 1" - P✻✻ ✻✻PVC x.x | 5 | – | – | – | 20.0 - 25.0 (.79-.98) | 20908.6 |
| NPT 1" - P✻✻ ✻✻PVC x.x | 5 | – | – | – | 24.0 - 28.0 (.94-1.10) | 20909.6 |

✻✻ Add Body Color – OP for Opaque, BK for Black

✻✻ Add Body Material – PF for Polyvinylidene, NB for Nickel Plated Brass

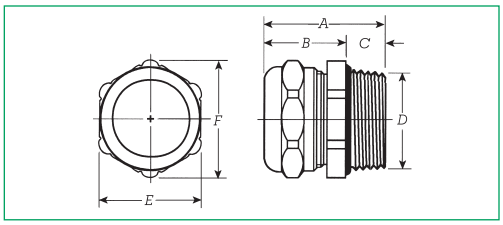
**Polyvinylidene (PVDF)**




**Dimensions: mm (in.) Polyvinylidene (PVDF)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | 41.5 (1.63) | 28.5 (1.12) | 13.0 (.51) | 17.2 (.68) | 22.0 | 24.4 (.96) |
| NPT 1/2" | 44.5 (1.75) | 28.5 (1.12) | 16.0 (.63) | 21.3 (.84) | 24.0 | 26.7 (1.05) |
| NPT 3/4" | 48.5 (1.91) | 32.5 (1.28) | 16.0 (.63) | 26.7 (1.05) | 33.0 | 36.5 (1.44) |

**Nickel Plated Brass (NPB)**



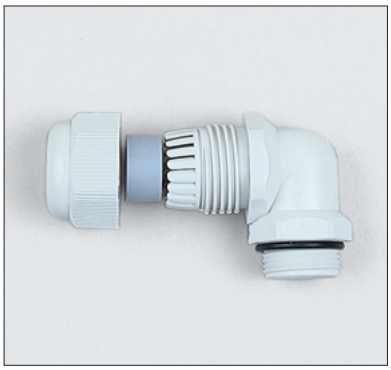

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | 41.0 (1.61) | 28.0 (1.10) | 13.0 (.51) | 17.2 (.68) | 20.0 | 22.2 (.87) |
| NPT 1/2" | 44.0 (1.73) | 28.0 (1.10) | 16.0 (.63) | 21.3 (.84) | 24.0 | 26.7 (1.05) |
| NPT 3/4" | 50.0 (1.97) | 34.0 (1.34) | 16.0 (.63) | 26.7 (1.05) | 30.0 | 33.5 (1.32) |
| NPT 1" | 58.0 (2.28) | 38.0 (1.50) | 20.0 (.79) | 33.3 (1.31) | 40.0 | 43.5 (1.71) |

## 90° ELBOW

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 5 Bar; 70psi
- Seal Rings Factory Installed
- Order Locknuts Separately – See Page 60
- Standard Colors: Light Gray or Black

### Polyamide (PA)



with Neoprene (NEP) Sealing Insert

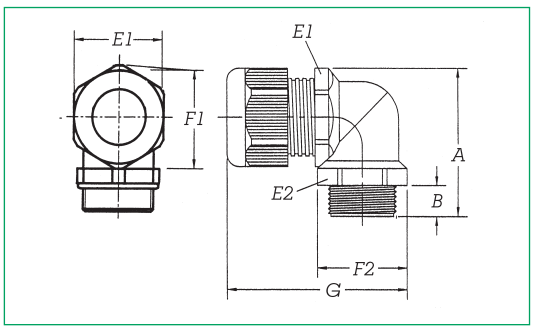
### Polyamide (PA)

with Neoprene (NEP) Sealing Insert

| | | |
|---|---|---|
| **MATERIAL SPECIFICATIONS:** | | |
| **Body** | *Polyamide (PA)* | *Polyamide (PA)* |
| **Insert** | *Neoprene (NEP)* | *Neoprene (NEP)* |
| **Seal Ring** | *Perbunan (PRB)* | *Perbunan (PRB)* |
| **TEMPERATURE RANGE:** | | |
| **Body** | *-20 to 100°C (-4 to 212°F)* | |
| **Insert** | *-20 to 80°C (-4 to 176°F)* | *-20 to 80°C (-4 to 176°F)* |
| **Seal Ring** | *-20 to 120°C (-4 to 248°F)* | *-20 to 120°C (-4 to 248°F)* |
| **INSERT COLOR:** | *Black* | *Black* |

| Type | Std. Pk. | Cable Dia. mm (in.) | Cat. No. Light Gray | Cable Dia. mm (in.) | Cat. No. Black |
|---|---|---|---|---|---|
| PG7- JE ✻✻NEP 6.0 | 50 | 2.0 - 6.0 (.08-.24) | 22730.2 | 2.0 - 6.0 (.08-.24) | 22750.1 |
| PG7- JE ✻✻NEP 8.0 | 50 | 4.0 - 8.0 (.16-.31) | 22720.2 | 4.0 - 8.0 (.16-.31) | 22740.1 |
| PG9- JE ✻✻NEP 7.0 | 50 | 3.0 - 7.0 (.12-.28) | 22731.2 | 3.0 - 7.0 (.12-.28) | 22751.1 |
| PG9- JE ✻✻NEP 10.0 | 50 | 5.0 - 10.0 (.20-.39) | 22721.2 | 5.0 - 10.0 (.20-.39) | 22741.1 |
| PG11- JE ✻✻NEP 9.0 | 50 | 5.0 - 9.0 (.20-.35) | 22732.2 | 5.0 - 9.0 (.20-.35) | 22752.1 |
| PG11- JE ✻✻NEP 12.0 | 50 | 6.0 - 12.0 (.24-.47) | 22722.2 | 6.0 - 12.0 (.24-.47) | 22742.1 |
| PG13.5- JE✻✻ NEP 12.0 | 50 | 7.0 - 12.0 (.28-.47) | 22733.2 | 7.0 - 12.0 (.28-.47) | 22753.1 |
| PG13.5- JE✻✻ NEP 14.0 | 50 | 10.0 - 14.0 (.39-.55) | 22723.2 | 10.0 - 14.0 (.39-.55) | 22743.1 |
| PG16 - JE ✻✻NEP 12.0 | 25 | 8.0 - 12.0 (.31-.47) | 22734.2 | 8.0 - 12.0 (.31-.47) | 22754.1 |
| PG16 - JE ✻✻NEP 17.0 | 25 | 12.0 - 17.0 (.47-.67) | 22724.2 | 12.0 - 17.0 (.47-.67) | 22744.1 |
| PG21 - JE ✻✻NEP 16.0 | 25 | 12.0 - 16.0 (.47-.63) | 22735.2 | 12.0 - 16.0 (.47-.63) | 22755.1 |
| PG21 - JE ✻✻NEP 21.0 | 25 | 16.0 - 21.0 (.63-.83) | 22725.2 | 16.0 - 21.0 (.63-.83) | 22745.1 |
| PG29 - JE ✻✻NEP 21.0 | 10 | 16.0 - 21.0 (.63-.83) | 22736.2 | 16.0 - 21.0 (.63-.83) | 22756.1 |
| PG29 - JE ✻✻NEP 28.0 | 10 | 20.0 - 28.0 (.79-1.10) | 22726.2 | 20.0 -28.0 (.79-1.10) | 22746.1 |

✻✻ Add Body Color – LG for Light Gray, BK for Black



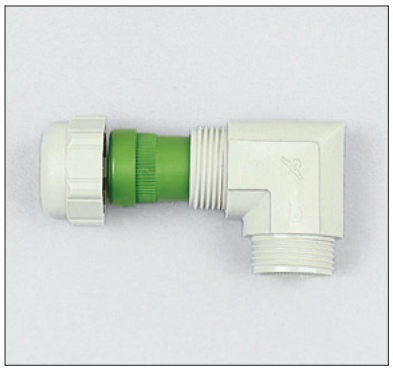

**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | E1 | E2 | F1 | F2 | G |
|---|---|---|---|---|---|---|---|
| PG7 | 34.0 (1.34) | 8.0 (.31) | 19.0 | 15.0 | 21.0 (.83) | 16.5 (.65) | 38.5 (1.52) |
| PG9 | 37.0 (1.46) | 8.0 (.31) | 22.0 | 19.0 | 24.3 (.96) | 21.0 (.83) | 47.0 (1.85) |
| PG11 | 39.6 (1.56) | 8.0 (.31) | 24.0 | 22.0 | 26.5 (1.04) | 24.0 (.94) | 51.0 (2.01) |
| PG13.5 | 43.0 (1.69) | 9.0 (.35) | 27.0 | 24.0 | 29.6 (1.17) | 26.3 (1.04) | 54.7 (2.15) |
| PG16 | 48.2 (1.90) | 10.0 (.39) | 29.0 | 27.0 | 32.0 (1.26) | 29.7 (1.17) | 61.5 (2.42) |
| PG21 | 56.7 (2.23) | 11.0 (.43) | 36.0 | 33.0 | 40.0 (1.57) | 36.0 (1.42) | 71.0 (2.80) |
| PG29 | 68.0 (2.68) | 11.0 (.43) | 46.0 | 42.0 | 50.0 (1.97) | 45.6 (1.80) | 85.0 (3.35) |

## 90° ELBOW

- Protection Rating: IP68; NEMA 4X
- Pressure Rating: 10 Bar; 140psi
- Seal Rings Factory Installed on Galvanized Zinc Cord Grips
- Order Seal Rings Separately for Polyamide Cord Grips – See Page 62
- Order Locknuts Separately – See Page 60
- Standard Colors: Beige or Black

### Polyamide (PA)



**with Polyvinylchloride (PVC) Sealing Insert**

### Galvanized Zinc (GZ)

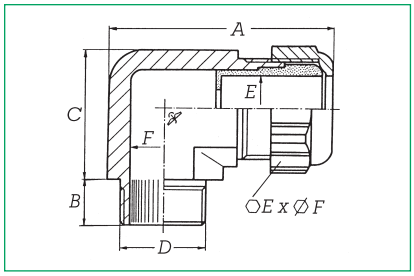
**with Polyvinylchloride (PVC) Sealing Insert**

| MATERIUAL SPECIFICATIONS | | |
|---|---|---|
| **Body** | ***Polyamide (PA)*** | ***Galvanized Zinc (GZ)*** |
| **Insert** | ***Polyvinylchloride (PVC)*** | ***Polyvinylchloride (PVC)*** |
| **Seal Ring** | ***Polyethylene (PET)*** | ***Perbunan (PRB)*** |
| **TEMPERATURE RANGE:** | | |
| **Body** | ***-20 to 100°C (-4 to 212°F)*** | ***-20 to 105°C (-4 to 227°F)*** |
| **Insert** | ***-20 to 80°C (-4 to 176°F)*** | ***-20 to 80°C (-4 to 176°F)*** |
| **Seal Ring** | ***-20 to 100°C (-4 to 212°F)*** | ***-20 to 120°C (-4 to 248°F)*** |
| **INSERT COLOR:** | ***Various*** | ***Various*** |

| Type | Std. Pk. | Cable Dia. mm (in.) | Cat. No. Beige | Cat. No. Black | Cable Dia. mm (in.) | Cat. No. |
|---|---|---|---|---|---|---|
| PG9-PE ✻✻ ✻✻PVC 6.5 | 50 | 4.0 - 6.5 (.16-.26) | 20940.0 | 20985.1 | 4.0 - 6.5 (.16-.26) | 20961.6 |
| PG9-PE ✻✻ ✻✻PVC 8.0 | 50 | 5.0 - 8.0 (.20-.31) | 20941.0 | 20986.1 | 5.0 - 8.0 (.20-.31) | 20962.6 |
| PG9-PE ✻✻ ✻✻PVC 9.5 | 50 | 6.5 - 9.5 (.26-.37) | 20942.0 | 20987.1 | 6.5 - 9.5 (.26-.37) | 20963.6 |
| PG11-PE ✻✻ ✻✻PVC 8.0 | 50 | 5.0 - 8.0 (.20-.31) | 20944.0 | 20989.1 | 5.0 - 8.0 (.20-.31) | 20965.6 |
| PG11-PE ✻✻ ✻✻PVC 9.5 | 50 | 6.5 - 9.5 (.26-.37) | 20945.0 | 20990.1 | 6.5 - 9.5 (.26-.37) | 20966.6 |
| PG11-PE ✻✻ ✻✻PVC 10.5 | 50 | 7.0 - 10.5 (.28-.41) | 20946.0 | 20991.1 | 7.0 - 10.5 (.28-.41) | 20967.6 |
| PG13.5-PE ✻✻ ✻✻PVC 10.5 | 50 | 7.0 - 10.5 (.28-.41) | 20950.0 | 20995.1 | 7.0 - 10.5 (.28-.41) | 20971.6 |
| PG13.5-PE ✻✻ ✻✻PVC 13.0 | 50 | 9.0 - 13.0 (.35-.51) | 20951.0 | 20996.1 | 9.0 - 13.0 (.35-.51) | 20972.6 |
| PG16-PE ✻✻ ✻✻PVC 10.5 | 25 | 7.0 - 10.5 (.28-.41) | 20953.0 | 20998.1 | 7.0 - 10.5 (.28-.41) | 20974.6 |
| PG16-PE ✻✻ ✻✻PVC 13.0 | 25 | 9.0 - 13.0 (.35-.51) | 20954.0 | 20999.1 | 9.0 - 13.0 (.35-.51) | 20975.6 |
| PG16-PE ✻✻ ✻✻PVC 15.5 | 25 | 11.5 - 15.5 (.45-.61) | 20955.0 | 20984.1 | 11.5 - 15.5 (.45-.61) | 20976.6 |
| PG21-PE ✻✻ ✻✻PVC 15.5 | 25 | – | – | – | 11.5 - 15.5 (.45-.61) | 20977.6 |
| PG21-PE ✻✻ ✻✻PVC 18.0 | 25 | – | – | – | 14.0 - 18.0 (.55-.71) | 20978.6 |
| PG29-PE ✻✻ ✻✻PVC 25.0 | 10 | – | – | – | 20.0 - 25.0 (.79-.98) | 20980.6 |

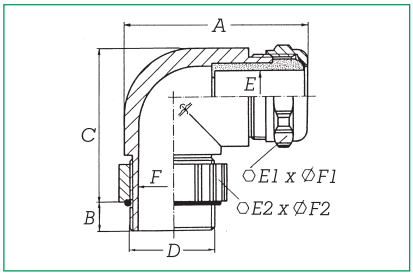
✻✻ Add Body Color – BG for Beige, BK for Black

✻✻ Add Body Material – PA for Polyamide, GZ for Galvanized Steel




**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| PG9 | 38.0 (1.50) | 8.0 (.31) | 23.0 (.91) | 15.2 (.60) | 19.0 | 21.0 (.83) |
| PG11 | 42.0 (1.65) | 9.0 (.35) | 25.0 (.98) | 18.6 (.73) | 22.0 | 24.5 (1.00) |
| PG13.5 | 46.0 (1.81) | 9.0 (.35) | 30.0 (1.18) | 20.4 (.80) | 24.0 | 26.5 (1.04) |
| PG16 | 52.0 (2.05) | 10.0 (.39) | 33.0 (1.30) | 22.5 (.89) | 27.0 | 29.5 (1.16) |




**Dimensions: mm (in.) Galvanized Steel (GZ)**

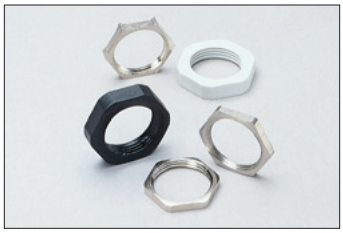
| Size | A | B | C | D | E 1 | F1 | E2 | F2 |
|---|---|---|---|---|---|---|---|---|
| PG9 | 40.0 (1.57) | 7.0 (.28) | 27.0 (1.06) | 15.2 (.60) | 17.0 | 18.0 | 18.0 | 20.0 |
| PG11 | 45.0 (1.77) | 7.0 (.28) | 34.0 (1.34) | 18.6 (.73) | 20.0 | 22.2 | 21.0 | 24.0 |
| PG13.5 | 47.0 (1.85) | 7.0 (.28) | 34.0 (1.34) | 20.4 (.80) | 22.0 | 24.4 | 24.0 | 26.7 |
| PG16 | 47.0 (1.85) | 7.0 (.28) | 37.0 (1.46) | 22.5 (.89) | 24.0 | 26.7 | 26.0 | 29.0 |
| PG21 | 57.0 (2.24) | 9.0 (.35) | 47.0 (1.85) | 28.3 (1.11) | 30.0 | 33.5 | 32.0 | 35.5 |
| PG29 | 68.0 (2.68) | 9.0 (.35) | 55.0 (2.17) | 37.0 (1.46) | 40.0 | 43.5 | 41.0 | 46.0 |

# ACCESSORIES
## Introduction

Conta-Clip offers an extensive selection of accessories to complement every Cord Grip application.

Accessories shown here include Locknuts, Seal Rings, Sealing Plugs, Socket Wrenches, Reductions, Enlargers, Adapters and Threaded Plugs. If your application requires something special, please contact us.

To help with your selection, we have also listed the most commonly used accessories on each Cord Grip Ordering page.



### LOCKNUTS

Locknuts are used when Cord Grips are installed into non-threaded holes.
Locknuts are available in three materials:

- Polyamide – use with non-metallic Cord Grips
- Nickel Plated Brass – use with Nickel Plated Brass Cord Grips
- Stainless Steel – use with Stainless Steel Cord Grips
- EMI/RFI – use with EMI/RFI Cord Grips

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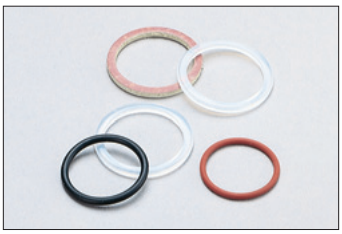
### SEAL RINGS

Seal Rings provide the external seal between enclosure and Cord Grip.
Seal Rings are available in four materials:

- Polyethylene – use with non-metallic Cord Grips
- Perbunan – use with metallic Cord Grips
- Silicone – for high temperature applications up to 200°C (392°F)
- Centellen – for extremely high temperature applications up to 300°C (572°F)



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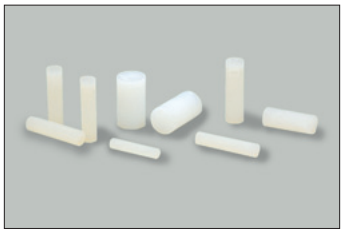

### SEALING PLUGS

Sealing Plugs are used in Multi-Cable Cord Grips to seal unused Insert Holes in order to maintain protection ratings and ensure reliable strain relief.

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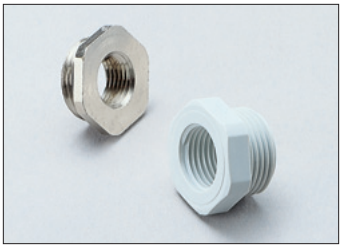
### SOCKET WRENCHES

Socket Wrenches simplify Cord Grip installations. Made of hardened steel with a moveable handle, they make high density Cord Grip installations fast and easy.

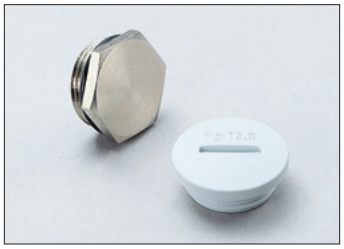


**REDUCTIONS**
Reductions are used when the existing mounting hole is too large for the required Cord Grip.
- Polyamide Reductions – use with non-metallic Cord Grips
- Nickel Plated Brass Reductions – use with Metal Cord Grips

**ENLARGERS**
Enlargers are used when the existing mounting hole is too small for the required Cord Grip.
- Polyamide Enlargers – use with non-metallic Cord Grips
- Nickel Plated Brass Enlargers – use with metal Cord Grips

**ADAPTERS**
Adapters are available in Nickel Plated Brass.
They convert:
- **PG** thread to **NPT** thread sizes
- **NPT** thread sizes to **PG** thread sizes

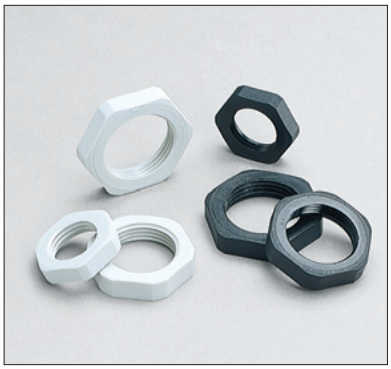
**THREADED PLUGS**
Threaded Plugs are used to seal holes threaded with PG threads.
Threaded plugs are available in two materials.
- Polyamide
- Nickel Plated Brass



## LOCKNUTS

- Use Polyamide Locknuts for Non-metallic Cord Grips
- Use Nickel Plated Brass Locknuts for Nickel Plated Brass Cord Grips
- Use Stainless Steel Locknuts for Stainless Steel Cord Grips
- Use EMI/RFI Locknuts for PG Size TOR-SPRING™EMI/RFI Cord Grips
- Use Nickel Plated Brass NPT Size Locknuts for NPT Size TOR-SPRING™ EMI/RFI Cord Grips

### Polyamide (PA)



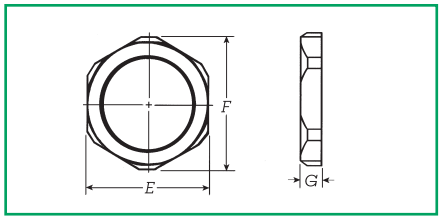
### Nickel Plated Brass (NPB)

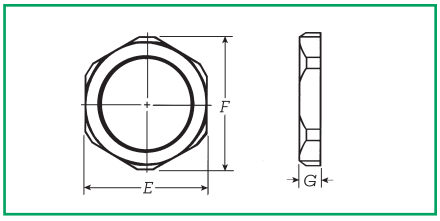
| | | |
|---|---|---|
| **MATERIAL:** | ***Polyamide (PA)*** | ***Nickel Plated Brass (NPB)*** |
| **TEMPERATURE RANGE:** | ***-20 to 100°C (-4 to 212°F)*** | ***-40 to 300°C (-40 to 572°F)*** |
| **COLOR:** | ***Light Gray and Black*** | **–** |

| Type | Cat. No. Gray | Cat. No. Black | Std. Pk. | Cat. No. | Std. Pk. |
|---|---|---|---|---|---|
| PG7-CL ✻✻ ✻✻ | 23050.9 | 23060.9 | 50 | 23000.9 | 50 |
| PG9-CL ✻✻ ✻✻ | 23051.9 | 23061.9 | 50 | 23001.9 | 50 |
| PG11-CL ✻✻ ✻✻ | 23052.9 | 23062.9 | 50 | 23002.9 | 50 |
| PG13.5-CL ✻✻ ✻✻ | 23053.9 | 23063.9 | 50 | 23003.9 | 50 |
| PG16-CL ✻✻ ✻✻ | 23054.9 | 23064.9 | 25 | 23004.9 | 25 |
| PG21-CL ✻✻ ✻✻ | 23055.9 | 23065.9 | 25 | 23005.9 | 25 |
| PG29-CL ✻✻ ✻✻ | 23056.9 | 23066.9 | 20 | 23006.9 | 20 |
| PG36-CL ✻✻ ✻✻ | 23057.9 | 23067.9 | 10 | 23007.9 | 10 |
| PG42-CL ✻✻ ✻✻ | 23058.9 | 23068.9 | 5 | 23008.9 | 5 |
| PG48-CL ✻✻ ✻✻ | 23059.9 | 23069.9 | 5 | 23009.9 | 5 |
| NPT 3/8"-CL ✻✻ ✻✻ | 23203.9 | 23207.9 | 50 | 23200.9 | 50 |
| NPT 1/2"-CL ✻✻ ✻✻ | 23204.9 | 23208.9 | 50 | 23201.9 | 50 |
| NPT 3/4"-CL ✻✻ ✻✻ | 23205.9 | 23209.9 | 25 | 23202.9 | 25 |
| NPT 1"-CL ✻✻ ✻✻ | 23206.9 | 23210.9 | 5 | 23211.9 | 5 |

✻✻ Add Color – LG for Light Gray, BK for Black

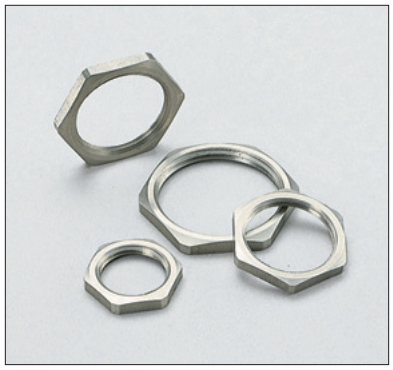
✻✻ Add Material – PA for Polyamide, NB for Nickel Plated Brass, SS for Stainless Steel




| Type | Dimensions: mm (in.) E | F | G | Dimensions: mm (in.) E | F | G |
|---|---|---|---|---|---|---|
| PG7 | 19.0 (.75) | 21.0 (.83) | 5.0 (.20) | 15.0 (.59) | 16.6 (.65) | 2.8 (.11) |
| PG9 | 22.0 (.87) | 24.0 (.94) | 5.0 (.20) | 18.0 (.71) | 20.0 (.79) | 2.8 (.11) |
| PG11 | 24.0 (.94) | 26.0 (1.02) | 5.0 (.20) | 21.0 (.83) | 23.5 (.93) | 3.0 (.12) |
| PG13.5 | 27.0 (1.06) | 29.0 (1.14) | 6.0 (.24) | 23.0 (.91) | 25.5 (1.00) | 3.0 (.12) |
| PG16 | 30.0 (1.18) | 33.0 (1.30) | 6.0 (.24) | 26.0 (1.02) | 29.0 (1.14) | 3.0 (.12) |
| PG21 | 36.0 (1.42) | 39.0 (1.54) | 7.0 (.28) | 32.0 (1.26) | 35.5 (1.40) | 3.5 (.14) |
| PG29 | 46.0 (1.81) | 50.0 (1.97) | 7.0 (.28) | 41.0 (1.61) | 45.0 (1.77) | 4.0 (.16) |
| PG36 | 60.0 (2.36) | 66.0 (2.20) | 8.0 (.32) | 51.0 (2.01) | 56.0 (2.20) | 5.0 (.20) |
| PG42 | 65.0 (2.56) | 73.0 (2.87) | 8.0 (.32) | 60.0 (2.36) | 65.0 (2.56) | 5.0 (.20) |
| PG48 | 70.0 (2.76) | 78.0 (3.07) | 8.0 (.32) | 64.0 (2.52) | 69.0 (2.72) | 5.5 (.22) |
| NPT 3/8" | 22.0 (.87) | 24.0 (.94) | 5.0 (.20) | 17.0 (.67) | 24.0 (.94) | 3.0 (.12) |
| NPT 1/2" | 27.0 (1.06) | 29.0 (1.14) | 6.0 (.24) | 24.0 (.94) | 26.7 (1.05) | 3.0 (.12) |
| NPT 3/4" | 36.0 (1.42) | 39.0 (1.54) | 7.0 (.28) | 30.0 (1.18) | 33.5 (1.32) | 3.5 (.14) |
| NPT 1" | 42.0 (1.65) | 46.0 (1.81) | 7.0 (.28) | 36.0 (1.42) | 39.0 (1.54) | 7.0 (.28) |

## Stainless Steel (SS)



*Stainless Steel (SS)*

*-60 to 500°C (-65 to 932°F)*

–

| Cat. No. | Std. Pk. |
|---|---|
| 23020.9 | 10 |
| 23021.9 | 10 |
| 23022.9 | 10 |
| 23023.9 | 10 |
| 23024.9 | 5 |
| 23025.9 | 5 |
| 23026.9 | 5 |
| 23027.9 | 2 |
| – | – |
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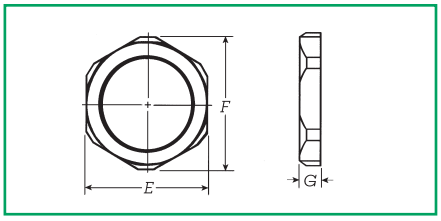


| Dimensions: mm (in.) | | |
|---|---|---|
| E | F | G |
| 19.0 (.75) | 21.1 (.83) | 3.0 (.12) |
| 19.0 (.75) | 21.1 (.83) | 3.0 (.12) |
| 22.0 (.87) | 24.3 (.96) | 3.0 (.12) |
| 24.0 (.94) | 26.8 (1.05) | 3.0 (.12) |
| 27.0 (1.06) | 30.2 (1.19) | 3.0 (.12) |
| 32.0 (1.26) | 35.8 (1.41) | 3.5 (.14) |
| 41.0 (1.61) | 45.7 (1.80) | 4.0 (.16) |
| 50.0 (1.97) | 55.8 (2.19) | 5.0 (.20) |
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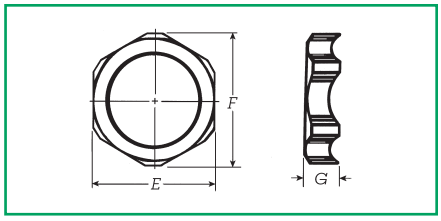
## EMI / RFI
## Nickel Plated Brass (NPB)

*Nickel Plated Brass (NPB)*

*-40 to 300°C (-40 t0 572°F)*

–

| Cat. No. | Std. Pk. |
|---|---|
| 23010.9 | 10 |
| 23011.9 | 10 |
| 23012.9 | 10 |
| 23013.9 | 10 |
| 23014.9 | 10 |
| 23015.9 | 5 |
| 23016.9 | 5 |
| 23017.9 | 5 |
| 23018.9 | 2 |
| 23019.9 | 2 |
| – | – |
| – | – |
| – | – |
| – | – |




| Dimensions: mm (in.) | | |
|---|---|---|
| E | F | G |
| 15.0 (.59) | 16.6 (.65) | 4.7 (.19) |
| 18.0 (.71) | 19.5 (.77) | 4.7 (.19) |
| 21.0 (.83) | 24.4 (.96) | 4.7 (.19) |
| 23.0 (.91) | 26.7 (1.05) | 4.7 (.19) |
| 26.0 (1.02) | 28.8 (1.13) | 4.7 (.19) |
| 32.0 (1.26) | 38.5 (1.52) | 5.2 (.20) |
| 41.0 (1.61) | 43.5 (1.71) | 5.7 (.22) |
| 51.0 (2.01) | 54.0 (2.13) | 6.0 (.24) |
| 60.0 (2.36) | 65.0 (2.56) | 6.0 (.24) |
| 64.0 (2.52) | 69.0 (2.72) | 6.5 (.26) |
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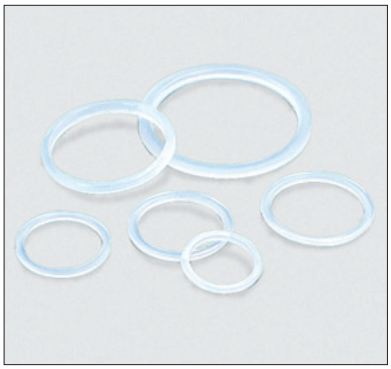
| – | – | – |

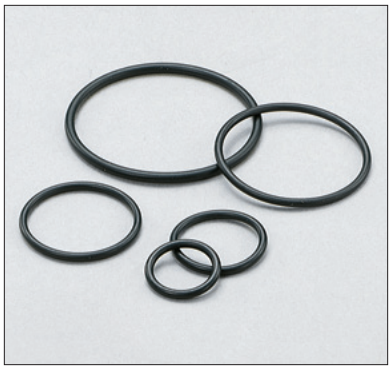
## SEAL RINGS

- Use Polyethylene Seal Rings for Non-metallic Cord Grips
- Use Perbunan Seal Rings for Metal Cord Grips
- Use Silicone and Centellen Seal Rings for High Temperature Applications

### Polyethylene (PET)



### Perbunan (PRB)

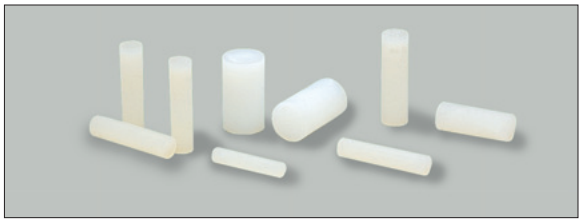


| MATERIAL SPECIFICATIONS: | *Polyethylene (PET)* | | *Perbunan (PRB)* | |
|---|---|---|---|---|
| **TEMPERATURE RANGE:** | *-20 to 100°C (-4 to 212°F)* | | *-20 to 120°C (-4 to 248°F)* | |
| **COLOR:** | *Opaque* | | *Black* | |
| **Type** | **Cat. No.** | **Std. Pk.** | **Cat. No.** | **Std. Pk.** |
| PG7 | 23170.9 | 50 | 23150.9 | 50 |
| PG9 | 23171.9 | 50 | 23151.9 | 50 |
| PG11 | 23172.9 | 50 | 23152.9 | 50 |
| PG13.5 | 23173.9 | 50 | 23153.9 | 50 |
| PG16 | 23174.9 | 25 | 23154.9 | 25 |
| PG21 | 23175.9 | 25 | 23155.9 | 25 |
| PG29 | 23176.9 | 20 | 23156.9 | 20 |
| PG36 | 23177.9 | 10 | 23157.9 | 10 |
| PG42 | 23178.9 | 5 | 23158.9 | 5 |
| PG48 | 23179.9 | 5 | 23159.9 | 5 |
| NPT 3/8" | 23188.9 | 50 | 23152.9 | 50 |
| NPT 1/2" | 23190.9 | 50 | 23153.9 | 50 |
| NPT 3/4" | 23192.9 | 25 | 23155.9 | 25 |
| NPT 1" | 23194.9 | 5 | 23156.9 | 5 |

## SEALING PLUGS

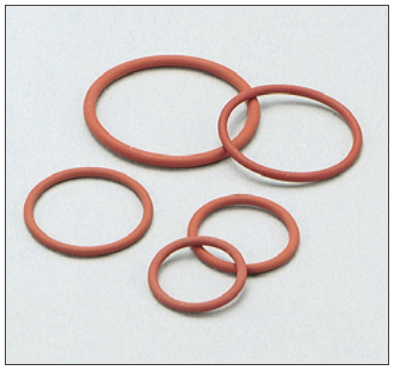
Sealing Plugs are used in Multi-Cable Cord Grips to seal unused Insert Holes.

- Maintain Cord Grip Protection Rating
- Ensure Strain Relief



| Type | Cat. No. | Size | Std. Pk. |
|---|---|---|---|
| BO 1 | 23240.9 | 3.0 x 25.0 (.12 x .98) | 25 |
| BO 2 | 23241.9 | 4.0 x 20.0 (.16 x .79) | 25 |
| BO 3 | 23242.9 | 4.0 x 25.0 (.16 x .98) | 25 |
| BO 4 | 23243.9 | 5.3 x 25.0 (.21 x .98) | 25 |
| BO 5 | 23244.9 | 6.0 x 25.0 (.24 x .98) | 25 |
| BO 6 | 23245.9 | 6.4 x 25.0 (.25 x .98) | 25 |
| BO 7 | 23246.9 | 7.0 x 25.0 (.28 x .98) | 25 |
| BO 8 | 23247.9 | 7.5 x 20.0 (.30 x .79) | 25 |
| BO 9 | 23248.9 | 8.0 x 20.0 (.32 x .79) | 25 |
| BO 10 | 23249.9 | 9.3 x 20.0 (.37 x .79) | 25 |
| BO 11 | 23250.9 | 10.0 x 20.0 (.39 x .79) | 25 |
| BO 12 | 23251.9 | 12.0 x 25.0 (.47 x .98) | 25 |
| BO 13 | 23252.9 | 13.0 x 25.0 (.51 x .98) | 25 |

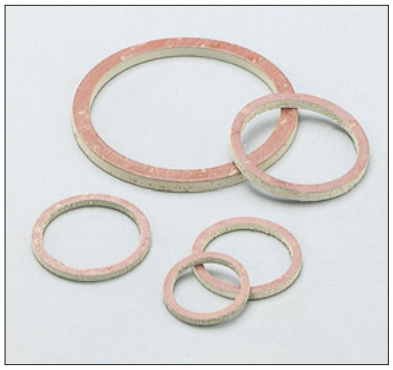
## Silicone (SIL)



*Silicone (SIL)*
*-60 to 200°C (-65 to 392°F)*
*Red*

| Cat. No. | Std. Pk. |
|---|---|
| 23230.9 | 10 |
| 23231.9 | 10 |
| 23232.9 | 10 |
| 23233.9 | 10 |
| 23234.9 | 5 |
| 23235.9 | 5 |
| 23236.9 | 5 |
| 23237.9 | 2 |
| – | – |
| – | – |
| – | – |
| – | – |
| – | – |
| – | – |

## Centellen (CNT)



*Centellen (CNT)*
*-60 to 300°C (-65 to 572°F)*
*Red*

| Cat. No. | Std. Pk. |
|---|---|
| 23160.9 | 50 |
| 23161.9 | 50 |
| 23162.9 | 50 |
| 23163.9 | 50 |
| 23164.9 | 25 |
| 23165.9 | 25 |
| 23166.9 | 20 |
| 23167.9 | 10 |
| 23168.9 | 5 |
| 23169.9 | 5 |
| – | – |
| – | – |
| – | – |
| – | – |

## SOCKET WRENCHES

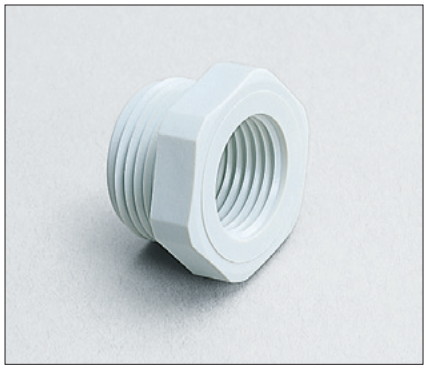
Socket Wrenches are designed for fast and easy Cord Grip installation

- Hardened Steel, Zinc Plated
- Moveable Handle

Select the suitable socket wrench by matching the number in the Size column to the 'E' diameter of the Cord Grip and Locknut.

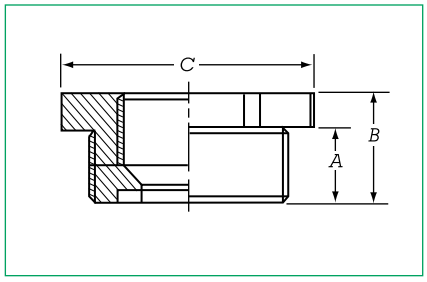
| Type | Size mm | Cat. No. | Type | Size mm | Cat. No. |
|---|---|---|---|---|---|
| SW 14 | 14.0 | 23260.9 | SW 32 | 32.0 | 23273.9 |
| SW 15 | 15.0 | 23261.9 | SW 33 | 33.0 | 23274.9 |
| SW 17 | 17.0 | 23262.9 | SW 35 | 35.0 | 23275.9 |
| SW 18 | 18.0 | 23263.9 | SW 40 | 40.0 | 23276.9 |
| SW 19 | 19.0 | 23264.9 | SW 41 | 41.0 | 23277.9 |
| SW 20 | 20.0 | 23265.9 | SW 43 | 43.0 | 23278.9 |
| SW 21 | 21.0 | 23266.9 | SW 50 | 50.0 | 23279.9 |
| SW 22 | 22.0 | 23267.9 | SW 51 | 51.0 | 23280.9 |
| SW 23 | 23.0 | 23268.9 | SW 53 | 53.0 | 23281.9 |
| SW 24 | 24.0 | 23269.9 | SW 57 | 57.0 | 23282.9 |
| SW 26 | 26.0 | 23270.9 | SW 64 | 64.0 | 23283.9 |
| SW 27 | 27.0 | 23271.9 | SW 65 | 65.0 | 23284.9 |
| SW 30 | 30.0 | 23272.9 | SW 70 | 70.0 | 23285.9 |

## REDUCTIONS
### Polyamide (PA)

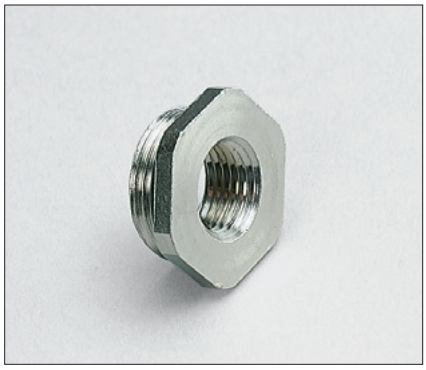


| | |
|---|---|
| **MATERIAL:** | ***Polyamide (PA)*** |
| **TEMPERATURE RANGE:** | ***-20 to 100°C (-4 to 212°F)*** |
| **COLOR:** | ***Light Gray*** |
| **SEAL RINGS:** | ***Order Separately (see page 62)*** |

| External Thread | Internal Thread | Cat. No. | Dimensions mm* A | B | C | Std. Pk. |
|---|---|---|---|---|---|---|
| PG11 | PG7 | 22931.9 | 8.0 | 12.0 | 22.0 | 100 |
| PG13.5 | PG7 | 22933.9 | 9.0 | 12.0 | 24.0 | 100 |
| PG13.5 | PG9 | 22934.9 | 9.0 | 12.0 | 24.0 | 100 |
| PG16 | PG9 | 22936.9 | 10.0 | 12.0 | 27.0 | 100 |
| PG16 | PG11 | 22937.9 | 10.0 | 15.0 | 27.0 | 100 |
| PG21 | PG11 | 22939.9 | 10.5 | 15.0 | 32.0 | 100 |
| PG21 | PG13.5 | 22940.9 | 10.5 | 15.5 | 32.0 | 100 |
| PG21 | PG16 | 22941.9 | 10.5 | 16.0 | 32.0 | 100 |
| PG29 | PG13.5 | 22942.9 | 12.0 | 17.0 | 39.0 | 50 |
| PG29 | PG16 | 22943.9 | 12.0 | 17.5 | 39.0 | 50 |
| PG29 | PG21 | 22944.9 | 12.0 | 18.5 | 40.0 | 50 |
| PG36 | PG16 | 22945.9 | 13.0 | 16.0 | 50.0 | 50 |
| PG36 | PG21 | 22946.9 | 13.0 | 18.5 | 50.0 | 50 |
| PG36 | PG29 | 22947.9 | 18.0 | 22.5 | 50.0 | 50 |
| PG42 | PG21 | 22948.9 | 16.0 | 22.5 | 55.0 | 25 |
| PG42 | PG29 | 22949.9 | 16.0 | 18.5 | 55.0 | 25 |
| PG42 | PG36 | 22950.9 | 17.0 | 25.5 | 55.0 | 25 |
| PG48 | PG29 | 22951.9 | 17.0 | 24.0 | 60.0 | 10 |
| PG48 | PG36 | 22952.9 | 17.0 | 25.5 | 60.0 | 10 |
| PG48 | PG42 | 22953.9 | 17.0 | 26.0 | 60.0 | 10 |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |

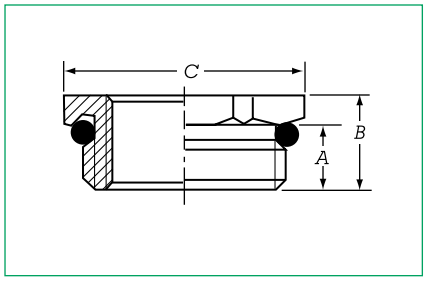



## REDUCTIONS
### Nickel Plated Brass (NPB)



| | |
|---|---|
| | ***Nickel Plated Brass (NPB)*** |
| | ***-40 to 300°C (-40 to 572°F)*** |
| | ***–*** |
| | ***Factory Installed*** |

| External Thread | Internal Thread | Cat. No. | Dimensions mm* A | B | C | Std. Pk. |
|---|---|---|---|---|---|---|
| PG9 | PG7 | 22800.9 | 6.0 | 8.5 | 18.0 | 100 |
| PG11 | PG7 | 22801.9 | 6.0 | 8.5 | 20.0 | 100 |
| PG11 | PG9 | 22802.9 | 6.0 | 8.5 | 20.0 | 100 |
| PG13.5 | PG7 | 22803.9 | 6.5 | 9.5 | 20.0 | 100 |
| PG13.5 | PG9 | 22804.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG13.5 | PG11 | 22805.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG16 | PG7 | 22806.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG16 | PG9 | 22807.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG16 | PG11 | 22808.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG16 | PG13.5 | 22809.9 | 6.5 | 9.5 | 24.0 | 100 |
| PG21 | PG11 | 22810.9 | 7.0 | 10.0 | 32.0 | 100 |
| PG21 | PG13.5 | 22811.9 | 7.0 | 10.0 | 32.0 | 100 |
| PG21 | PG16 | 22812.9 | 7.0 | 10.0 | 32.0 | 50 |
| PG29 | PG13.5 | 22813.9 | 8.0 | 11.5 | 41.0 | 50 |
| PG29 | PG16 | 22814.9 | 8.0 | 11.5 | 41.0 | 50 |
| PG29 | PG21 | 22815.9 | 8.0 | 11.5 | 41.0 | 50 |
| PG36 | PG21 | 22816.9 | 9.0 | 12.5 | 50.0 | 25 |
| PG36 | PG29 | 22817.9 | 9.0 | 12.5 | 50.0 | 25 |
| PG42 | PG29 | 22818.9 | 10.0 | 14.0 | 60.0 | 25 |
| PG42 | PG36 | 22819.9 | 10.0 | 14.0 | 60.0 | 25 |
| PG48 | PG29 | 22820.9 | 10.0 | 14.0 | 64.0 | 10 |
| PG48 | PG36 | 22821.9 | 10.0 | 14.0 | 64.0 | 10 |




*Millimeter (mm) to Inch Conversion: mm ÷ 25.4 = inches, inches x 25.4 = mm

## ENLARGERS
### Polyamide (PA)

*Polyamide (PA)*
*-20 to 100°C (-4 to 212°F)*
*Light Gray*
*Order Separately (see page 62)*

| External Thread | Internal Thread | Cat. No. | Dimensions mm* A | B | C | Std. Pk. |
|---|---|---|---|---|---|---|
| PG7 | PG9 | 22956.9 | 7.4 | 17.7 | 19.0 | 100 |
| PG9 | PG11 | 22957.9 | 8.0 | 20.0 | 22.0 | 100 |
| PG11 | PG13.5 | 22958.9 | 8.0 | 20.0 | 24.0 | 100 |
| PG11 | PG16 | 22959.9 | 8.0 | 20.5 | 27.0 | 100 |
| PG13.5 | PG16 | 22960.9 | 8.0 | 20.0 | 27.0 | 100 |
| PG16 | PG21 | 22961.9 | 9.0 | 23.0 | 32.0 | 100 |
| PG21 | PG29 | 22962.9 | 10.0 | 25.0 | 42.0 | 50 |
| PG29 | PG36 | 22963.9 | 10.0 | 29.3 | 53.0 | 25 |
| PG36 | PG42 | 22964.9 | 13.0 | 36.5 | 60.0 | 10 |
| PG42 | PG48 | 22965.9 | 13.0 | 36.5 | 65.0 | 10 |
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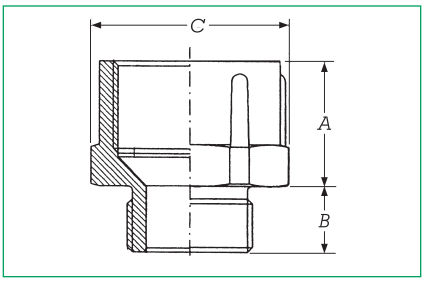
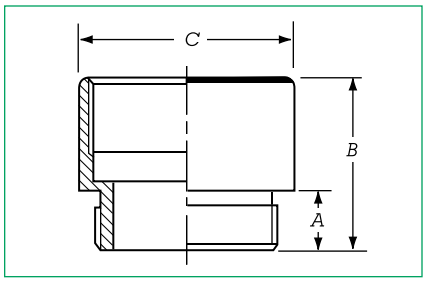
| – | – | – | – | – | – | – |




## ENLARGERS
### Nickel Plated Brass (NPB)

*Nickel Plated Brass (NPB)*
*-40 to 300°C (-40 t0 572°F)*
*–*
*Order Separately (see page 62)*

| External Thread | Internal Thread | Cat. No. | Dimensions mm* A | B | C | Std. Pk. |
|---|---|---|---|---|---|---|
| PG7 | PG9 | 22866.9 | 5.0 | 15.0 | 17.0 | 100 |
| PG9 | PG11 | 22867.9 | 6.0 | 16.5 | 20.0 | 100 |
| PG9 | PG13.5 | 22868.9 | 6.0 | 16.5 | 22.0 | 100 |
| PG11 | PG13.5 | 22869.9 | 6.0 | 17.5 | 22.0 | 100 |
| PG11 | PG16 | 22870.9 | 6.0 | 17.5 | 24.0 | 100 |
| PG11 | PG21 | 22871.9 | 6.0 | 17.5 | 30.0 | 100 |
| PG13.5 | PG16 | 22872.9 | 6.5 | 19.0 | 24.0 | 100 |
| PG13.5 | PG21 | 22873.9 | 6.5 | 19.0 | 30.0 | 100 |
| PG16 | PG21 | 22874.9 | 6.5 | 21.0 | 30.0 | 100 |
| PG16 | PG29 | 22875.9 | 6.5 | 21.0 | 39.0 | 50 |
| PG21 | PG29 | 22876.9 | 7.0 | 23.0 | 39.0 | 50 |
| PG29 | PG36 | 22877.9 | 8.0 | 27.5 | 50.0 | 25 |
| PG36 | PG42 | 22878.9 | 9.0 | 31.0 | 50.0 | 10 |
| PG42 | PG48 | 22879.9 | 10.0 | 33.0 | 64.0 | 10 |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |
| – | – | – | – | – | – | – |

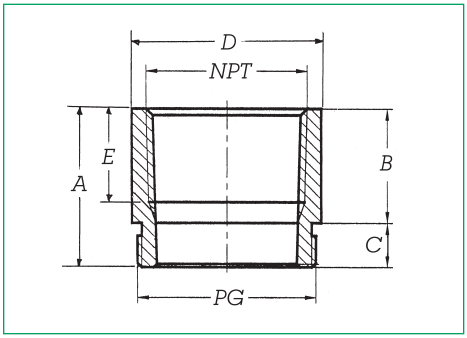



*Millimeter (mm) to Inch Conversion: mm ÷ 25.4 = inches, inches x 25.4 = mm

# ADAPTERS PG TO NPT
## Nickel Plated Brass (NPB)

| | |
|---|---|
| **MATERIAL:** | *Nickel Plated Brass (NPB)* |
| **TEMPERATURE RANGE:** | *40 to 300°C (-40 to 572°F)* |
| **COLOR:** | – |
| **SEAL RINGS:** | *Order Separately (see page 62)* |

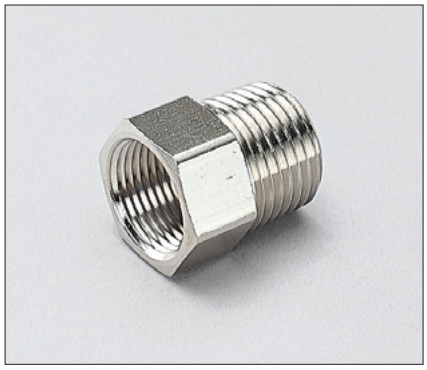
| Type | Cat. No. | Std. Pk. |
|---|---|---|
| PG11/ NPT 3/8"-AP-NPB | 22890.9 | 100 |
| PG11/ NPT 1/2"-AP-NPB | 22891.9 | 100 |
| PG13.5/ NPT 1/2"-AP-NPB | 22892.9 | 100 |
| PG16/ NPT 1/2"-AP-NPB | 22893.9 | 100 |
| PG21/ NPT 3/4"-AP-NPB | 22894.9 | 100 |
| PG29 /NPT 1"-AP-NPB | 22895.9 | 25 |
| PG36/ NPT 1.1/4"-AP-NPB | 22896.9 | 10 |
| PG42/ NPT 1.1/2"-AP-NPB | 22897.9 | 10 |




**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

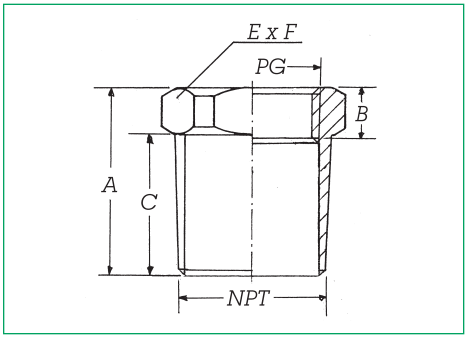
| External Thread | Internal Thread | A | B | C | D | E |
|---|---|---|---|---|---|---|
| PG11 | NPT 3/8" | 20.0 (.79) | 14.5 (.57) | 5.5 (.22) | 20.0 (.79) | 13.0 (.51) |
| PG11 | NPT 1/2" | 24.5 (.96) | 18.0 (.71) | 6.5 (.26) | 24.0 (.94) | 15.0 (.59) |
| PG13.5 | NPT 1/2" | 24.5 (.96) | 18.0 (.71) | 6.0 (.24) | 24.0 (.94) | 15.0 (.59) |
| PG16 | NPT 1/2" | 24.5 (.96) | 18.0 (.71) | 6.0 (.24) | 24.0 (.94) | 15.0 (.59) |
| PG21 | NPT 3/4" | 25.0 (.98) | 18.0 (.71) | 6.5 (.26) | 25.0 (.98) | 15.0 (.59) |
| PG29 | NPT 1" | 26.0 (1.02) | 18.0 (.71) | 7.5 (.30) | 39.0 (1.54) | 15.0 (.59) |
| PG36 | NPT 1-1/4" | 29.0 (1.14) | 20.0 (.79) | 8.5 (.33) | 50.0 (1.97) | 15.0 (.59) |
| PG42 | NPT 1-1/2" | 28.0 (1.10) | 18.0 (.71) | 9.5 (.37) | 57.0 (2.24) | 17.0 (.67) |

# ADAPTERS NPT TO PG
## Nickel Plated Brass (NPB)



| | |
|---|---|
| | *Nickel Plated Brass (NPB)* |
| | *-40 to 300°C (-40 to 572°F)* |
| | – |
| | *Order Separately (see page 62)* |

| Type | Cat. No. | Std. Pk. |
|---|---|---|
| NPT 3/8"/ PG7-AN-NPB | 22900.9 | 50 |
| NPT 1/2"/ PG9-AN-NPB | 22901.9 | 50 |
| NPT 1/2"/ PG11-AN-NPB | 22902.9 | 50 |
| NPT 1/2"/ PG13.5-AN-NPB | 22903.9 | 50 |
| NPT 3/4"/ PG13.5-AN-NPB | 22904.9 | 50 |
| NPT 3/4"/ PG16-AN-NPB | 22905.9 | 50 |
| NPT 1"/ PG21-AN-NPB | 22906.9 | 10 |
| NPT 1.1/4"/ PG29-AN-NPB | 22907.9 | 10 |
| NPT 1.1/2"/ PG36-AN-NPB | 22908.9 | 10 |
| NPT 2"/ PG48-AN-NPB | 22909.9 | 10 |



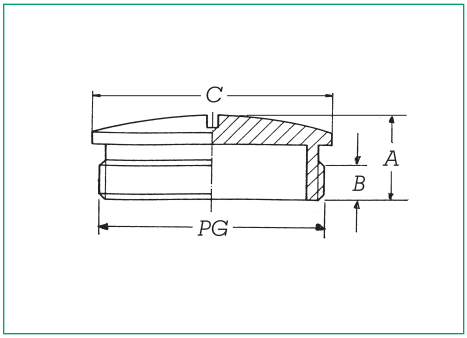

**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| External Thread | Internal Thread | A | B | C | E | F |
|---|---|---|---|---|---|---|
| NPT 3/8" | PG7 | 20.0 (.79) | 8.0 (.31) | 15.0 (.59) | 19.0 | 21.3 (.84) |
| NPT 1/2" | PG9 | 20.0 (.79) | 10.0 (.39) | 15.0 (.59) | 22.0 | 24.1 (.95) |
| NPT 1/2" | PG11 | 28.0 (1.10) | 8.0 (.31) | 20.0 (.79) | 22.0 | 25.0 (.98) |
| NPT 1/2" | PG13.5 | 30.0 (1.18) | 9.0 (.35) | 20.0 (.79) | 24.0 | 26.9 (1.06) |
| NPT 3/4" | PG13.5 | 32.0 (1.26) | 11.0 (.43) | 18.0 (.71) | 29.0 | 32.4 (1.28) |
| NPT 3/4" | PG16 | 32.0 (1.26) | 13.5 (.53) | 18.0 (.71) | 29.0 | 32.4 (1.28) |
| NPT 1" | PG21 | 35.0 (1.38) | 10.0 (.39) | 25.0 (.98) | 36.0 | 40.6 (1.60) |
| NPT 1-1/4" | PG29 | 35.0 (1.38) | 13.0 (.51) | 25.0 (.98) | 46.0 | 52.9 (2.01) |
| NPT 1-1/2" | PG36 | 44.0 (1.73) | 14.0 (.55) | 26.0 (1.02) | 52.0 | 59.9 (2.34) |
| NPT 2" | PG48 | 52.0 (2.05) | 17.0 (.67) | 30.0 (1.18) | 64.0 | 73.5 (2.28) |

## THREADED PLUGS
### Polyamide (PA)

| | |
|---|---|
| *Polyamide (PA)* | |
| *-20 to 100°C (-4 to 212°F)* | |
| *Light Gray* | |
| *Order Separately (see page 62)* | |

| Type | Cat. No. | Std. Pk. |
|---|---|---|
| PG7-TP-PA | 23140.9 | 100 |
| PG9-TP-PA | 23141.9 | 100 |
| PG11-TP-PA | 23142.9 | 100 |
| PG13.5-TP-PA | 23143.9 | 100 |
| PG16-TP-PA | 23144.9 | 100 |
| PG21-TP-PA | 23145.9 | 100 |
| PG29-TP-PA | 23146.9 | 100 |
| PG36-TP-PA | 23147.9 | 50 |
| PG42-TP-PA | 23148.9 | 50 |
| PG48-TP-PA | 23149.9 | 50 |



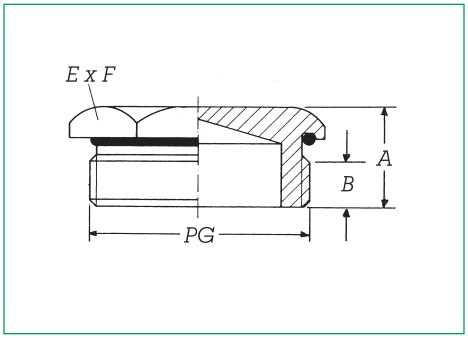

**Dimensions: mm (in.) Polyamide (PA)**

| Size | A | B | C |
|---|---|---|---|
| PG7 | 10.0 (.39) | 6.0 (.24) | 15.0 (.59) |
| PG9 | 10.0 (.39) | 6.0 (.24) | 19.0 (.75) |
| PG11 | 10.0 (.39) | 6.0 (.24) | 22.0 (.87) |
| PG13.5 | 10.0 (.39) | 6.0 (.24) | 25.0 (.98) |
| PG16 | 10.0 (.39) | 6.0 (.24) | 27.0 (1.06) |
| PG21 | 12.5 (.49) | 8.0 (.31) | 33.0 (1.30) |
| PG29 | 11.5 (.45) | 7.5 (.30) | 44.5 (1.75) |
| PG36 | 15.0 (.59) | 10.0 (.39) | 55.5 (2.19) |
| PG42 | 15.0 (.59) | 9.5 (.37) | 62.5 (2.46) |
| PG48 | 17.0 (.67) | 11.8 (.46) | 69.7 (2.74) |

## THREADED PLUGS
### Nickel PLated Brass (NPB)

| | |
|---|---|
| *Nickel Plated Brass (NPB)* | |
| *-40 to 300°C (-40 to 572°F)* | |
| *–* | |
| *Factory Installed* | |

| Type | Cat. No. | Std. Pk. |
|---|---|---|
| PG7-TP-NPB | 23100.9 | 100 |
| PG9-TP-NPB | 23101.9 | 100 |
| PG11-TP-NPB | 23102.9 | 100 |
| PG13.5-TP-NPB | 23103.9 | 100 |
| PG16-TP-NPB | 23104.9 | 100 |
| PG21-TP-NPB | 23105.9 | 100 |
| PG29-TP-NPB | 23106.9 | 50 |
| PG36-TP-NPB | 23107.9 | 25 |
| PG42-TP-NPB | 23108.9 | 25 |
| PG48-TP-NPB | 23109.9 | 10 |

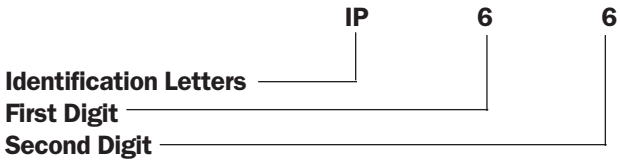



**Dimensions: mm (in.) Nickel Plated Brass (NPB)**

| Size | A | B | E | F |
|---|---|---|---|---|
| PG7 | 8.2 (.32) | 4.5 (.18) | 14.0 | 16.0 (.63) |
| PG9 | 9.6 (.38) | 4.5 (.18) | 17.0 | 19.5 (.77) |
| PG11 | 9.3 (.37) | 4.5 (.18) | 20.0 | 22.8 (.90) |
| PG13.5 | 9.6 (.38) | 6.0 (.24) | 22.0 | 25.2 (.99) |
| PG16 | 9.6 (.38) | 6.0 (.24) | 24.0 | 27.6 (1.09) |
| PG21 | 11.0 (.43) | 6.0 (.24) | 30.0 | 34.6 (1.36) |
| PG29 | 12.0 (.47) | 8.0 (.31) | 40.0 | 45.0 (1.77) |
| PG36 | 15.0 (.59) | 9.0 (.35) | 50.0 | 57.5 (2.26) |
| PG42 | 16.0 (.63) | 10.0 (.39) | 57.0 | 63.0 (2.48) |
| PG48 | 16.0 (.63) | 10.0 (.39) | 64.0 | 69.0 (2.72) |

# IP Ratings per EN60529/IEC 529

**IP Ratings are defined by two numerals**
**Example:**




| First Digit: Protection against ingress of foreign objects | | | Second Digit: Protection against ingress of water | |
|---|---|---|---|---|
| 1st Digit | Protection of persons against access to hazardous parts | Protection of equipment against ingress of solid foreign objects | 2nd Digit | Protection of equipment against ingress of water |
| 0 | No Protection | No Protection | 0 | No Protection |
| 1 | Protection against touch by hand | Protection against solid foreign objects with a diameter of 50mm or larger | 1 | Protected against vertically falling water drops |
| 2 | Protection against touch by finger | Protection against solid foreign objects with a diameter of 12.5mm or larger | 2 | Protected against vertically falling drops of water up to 15° from the vertical |
| 3 | Protection against touching with tools, wires etc., with a diameter of 2.5mm or larger | Protection against solid foreign objects with a diameter of 2.5mm or larger | 3 | Protected against water sprays up to 60° from the vertical |
| 4 | Protection against touching with tools, wires etc., with a diameter of 1.0mm or larger | Protection against solid foreign objects with a diameter of 1.0mm or larger | 4 | Protection against splashed water from any direction<br><br>Limited ingress permitted |
| 5 | Protection against touching with tools, wires etc., with a diameter of 1.0mm or larger | Dust-protected. Ingress of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation or to impair safety | 5 | Protected against low pressure water jets<br><br>Water, hosed at low pressure shall have no harmful effect |
| 6 | Protection against touching with tools, wires etc., with a diameter of 1.0mm or larger | Dust-tight<br>No ingress of dust | 6 | Protected against powerful jets of water<br><br>Water, hosed at high pressure from all directions shall have no harmful effect |
| | | | 7 | Protected against the effects of temporary immersion in water under standardized pressure and time conditions |
| | | | 8 | Protected against the effects of long submersion in water |

# NEMA to IP Cross Reference

This cross-reference is an approximation of NEMA to International Protection Ratings (IP) and is for reference purposes only. These correlations should not be interpreted to imply that complete qualifications, published by the various regulatory bodies, are identical to one another.

| Protection Ratings To EN 60529/IEC 529 | NEMA RATINGS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 3R | 4 | 4X | 5 | 6 | 12 | 13 |
| IP00 | • | • | • | • | • | • | • | • | • | • |
| IP10 | • | • | • | • | • | • | • | • | • | • |
| IP11 | | • | • | • | • | • | • | • | • | • |
| IP20 | | | • | • | • | • | • | • | • | • |
| IP21 | | | • | • | • | • | • | • | • | • |
| IP22 | | | • | • | • | • | • | • | • | • |
| IP23 | | | • | • | • | • | • | • | • | • |
| IP30 | | | • | • | • | • | • | • | • | • |
| IP31 | | | • | • | • | • | • | • | • | • |
| IP32 | | | • | • | • | • | • | • | • | • |
| IP33 | | | • | | • | • | • | • | • | • |
| IP40 | | | • | | • | • | • | • | • | • |
| IP41 | | | • | | • | • | • | • | • | • |
| IP42 | | | • | | • | • | • | • | • | • |
| IP43 | | | • | | • | • | • | • | • | • |
| IP50 | | | • | | • | • | • | • | • | • |
| IP51 | | | • | | • | • | • | • | • | • |
| IP52 | | | • | | • | • | | • | • | • |
| IP53 | | | • | | • | • | | • | • | • |
| IP54 | | | • | | • | • | | • | • | • |
| IP55 | | | • | | • | • | | • | | |
| IP56 | | | • | | • | • | | • | | |
| IP60 | | | • | | • | • | | • | | |
| IP61 | | | • | | • | • | | • | | |
| IP62 | | | • | | • | • | | • | | |
| IP63 | | | • | | • | • | | • | | |
| IP64 | | | | | • | • | | • | | |
| IP65 | | | | | • | • | | • | | |
| IP66 | | | | | • | • | | • | | |
| IP67 | | | | | | | | • | | |
| IP68 | | | | | | | | | | |

**Torque Recommendations 1bf-in. (NM)**

The listed torque values are for reference only. Due to wide range of cable insulation materials used and the varying degrees of hardness between material types, torque value for Dome Nuts can vary depending on the cable jacket's characteristics. We recommend that applied torques be determined empirically by testing the actual cable and Cord Grip used.

| External Thread Sizes | Non-Metallic Cord Grips | | Metal Cord Grips | |
|---|---|---|---|---|
| | Dome Nuts | External Thread Lock Nuts | Dome Nuts | External Thread Lock Nuts |
| PG7 | 14.00 (1.90) | 22.00 (2.50) | 37.00 (4.00) | 55.00 (6.20) |
| PG9 | 22.00 (2.50) | 33.00 (4.00) | 36.00 (4.00) | 55.00 (6.20) |
| PG11 | 22.00 (2.50) | 33.00 (4.00) | 36.00 (4.00) | 55.00 (6.20) |
| PG13.5 | 22.00 (2.50) | 33.00 (4.00) | 36.00 (4.00) | 55.00 (6.20) |
| PG16 | 29.00 (3.30) | 44.00 (5.00) | 44.00 (5.00) | 66.00 (7.50) |
| PG21 | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| PG29 | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| PG36 | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| PG42 | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| PG48 | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| NPT3/8" | 22.00 (2.50) | 33.00 (4.00) | 36.00 (4.00) | 55.00 (6.20) |
| NPT1/2" | 22.00 (2.50) | 33.00 (4.00) | 36.00 (4.00) | 55.00 (6.20) |
| NPT3/4" | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |
| NPT1" | 44.00 (5.00) | 66.00 (7.50) | 59.00 (6.50) | 88.50 (10.00) |

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# INDEX

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# OTHER PRODUCTS FROM CONTA-CLIP...

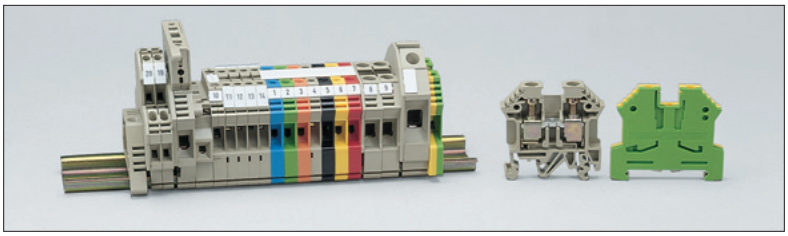
## DIN RAIL MOUNT TERMINAL BLOCKS

When making wire terminations in control, power and automation equipment and devices, use Conta-Clip's Terminal Blocks to:

- Save Space
- Simplify Wiring
- Facilitate Troubleshooting
- Increase Safety
- Identify Circuits
- Increase Reliability
- Reduce Installation Time
- Gain National and International Acceptance

Conta-Clip"s comprehensive DIN Rail Mount Terminal Black Product Program includes the Industry Standard Screw-Cage Clamp and the Innovative Spring Clamp Technology,

### Screw-Cage Clamp, DIN Rail Terminal Blocks and Assemblies



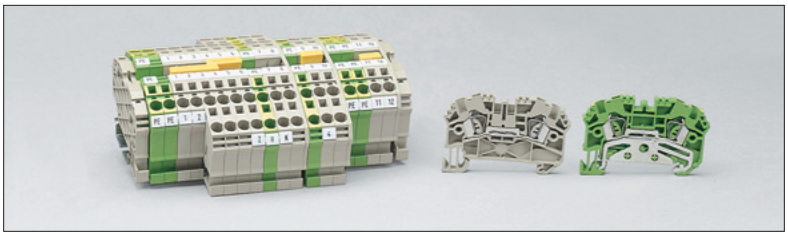
For more than 20 years, Conta-Clip's Screw-Cage Clamp Terminal Blocks have provided highly reliable, vibration-proof and gas- tight, wire terminations. By design, Conta-Clip's DIN Rail Terminal Block System allows multiple functions to be combined on a standard mounting rail to make wire-to-wire connections, distribute power and ground potentials, protect against overloads, isolate, monitor and to minimize the thermovoltage deviations.

Choose from a wide selection of standard and special application Terminal Block Types:

- Feed Through
- Disconnect
- Multi-level
- Ground
- Thermocouple
- Fuse
- Multi-Connection
- High Current
- Diode, Indicator, Surge

Order pre-made DIN Rail Terminal Block Assemblies to your exact specifications with one part number or build your own assemblies in house using individual components including marking tags, jumpers and related accessories.

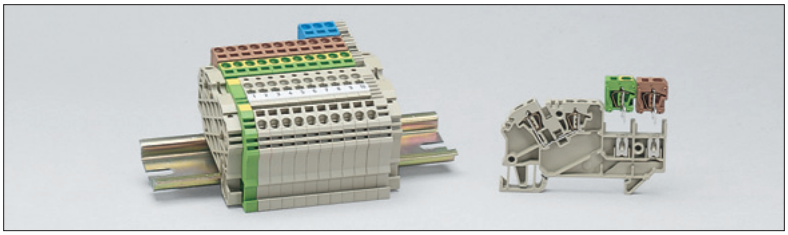
### Spring Clamp Clamp, DIN Rail Terminal Blocks and Assemblies



An advanced design Spring Clamp Terminal Block System for Top Entry Wiring. The compact, low profile housing design is ideal for restricted height applications, A high strength, stainless steel spring clamp ensures that the conductor is held against the copper alloy current bar and provides a vibration proof, gas tight connection. Dual Jumper provision for Plug-In Jumpers provides for selective jumpering of potentials. Because screw clamps are eliminated, wiring time is reduced and cost savings are realized. Requires no special tool,..only a straight blade screwdriver.

- Individual Components or Pre-Made DIN Rail Terminal Block Assemblies
- 5mm and 6mm Feed Through and Ground Terminal Blocks
- Stainless Steel Spring Clamp
- Complete Accessories Including End Plates, Jumpers, End Stops and Marking Tags Available
- Up to 32A, 600V, 22-10 AWG

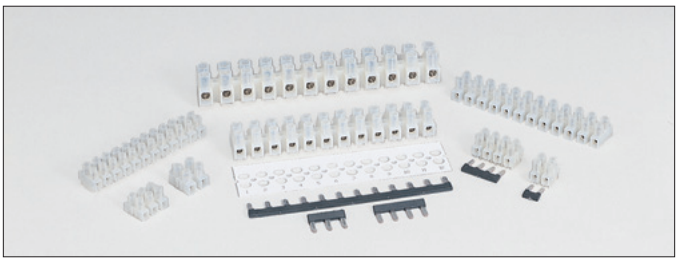
### ZINI-ZAKTO™ Spring Clamp, Sensor/ Actuator Terminal Block System



Especially designed and developed to meet the demanding requirements of (3) and (4) Wire Sensor/Actuator Applications. Signal, Power and Ground provisions are located on a single compact 5mm width, Base Terminal Block. Plug-In Distribution Terminals provide quick and easy busing of Power and Ground Potentials. The Compact, Low Profile Housing Design is ideal for tight spaces. Spring Clamp connections facilitate Sensor/Actuator Wiring saving time and money.

- Individual Components or Pre-Made DIN Rail Terminal Block Assemblies
- Spring Clamp Connection
- Top Wire Entry
- Color-Coded Distribution Terminals
- 10A, 300V, 26-14 AWG

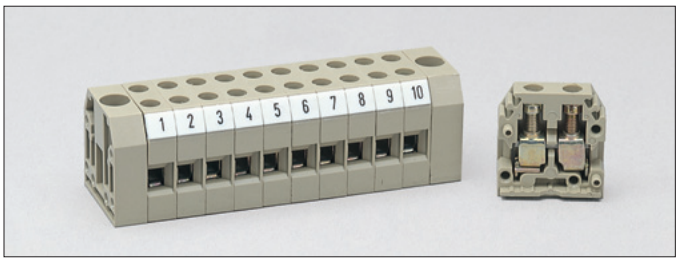
## PANEL MOUNT TERMINAL BLOCKS



### Conta-Strips

For wire-to-wire connections in HVAC, appliance, equipment and commercial applications where an extremely cost effective terminal strip is required. The touch proof, double row terminal strips are easy to install and use and they are ideal replacements for outdated barrier strips. Simply strip the wire, insert and tighten the screw. Wire lugs are eliminated, saving material cost and installation time while increasing connection reliability.

- Tubular Screw Clamp
- Stainless Steel Wire Protectors
- Flat Base or Standoff Foot Designs
- Up to 65A, 600V, 22-6 AWG
- External Jumpers Available
- Factory Imprinted or Marking Plates

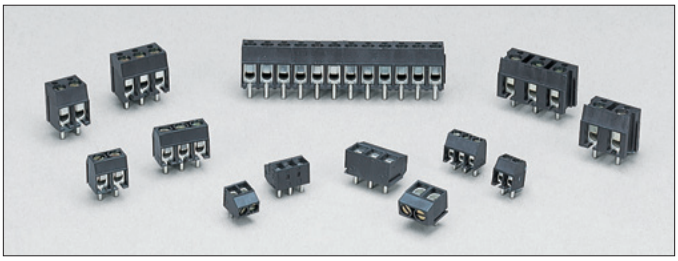



### BKA's

For wire-to-wire applications when a DIN Rail is not used, where space is a constraint, or when a modern replacement for outdated barrier blocks is required. BKA Type Terminal Blocks are offered as completed multipole assemblies up to 24 poles or as individual components consisting of snap together single pole terminal elements and mounting sections. Mounting sections are used on the ends of an assembly or between the terminal block elements to provide the required mounting points.

- Compact and Cost Effective
- High Density, Space Saving 5mm, 6mm and 8mm Versions
- Screw-Cage Clamp
- Up to 55A, 300V, 22-8 AWG
- Custom Multipole Assemblies Available
- External Jumpers Available

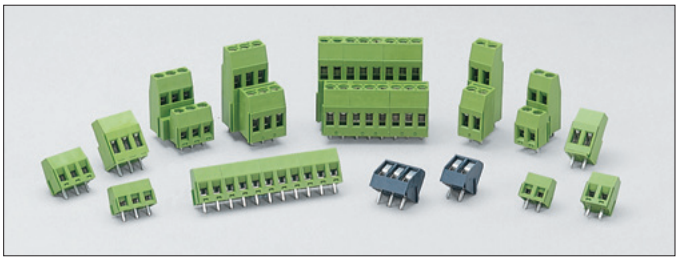
## PRINTED CIRCUIT TERMINAL BLOCKS



### Fixed, Screw-Wire Protector Clamp

For cost sensitive wire-to-board applications where infrequent wire terminations will be made, The ideal choice for high usage security, alarm, HVAC and other applications. Use (2) and (3) pole modules to create multipole assemblies, simplifying ordering and minimizing inventory.

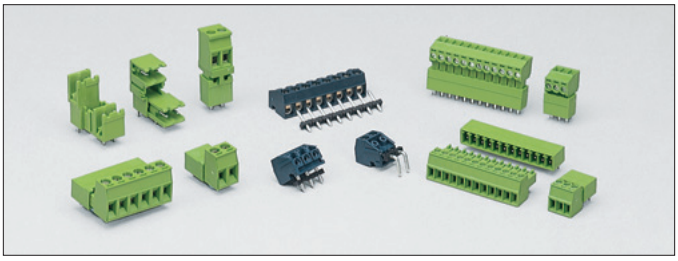
- Front and Top Wire Entry
- Inch and Metric Pin Spacings
- Wire Protector is Standard
- Up to 15A, 300V, 28-14 AWG



### Fixed Screw-Cage Clamp

For tough wire-to-board industrial applications where frequent wire terminations occur. Screw-cage clamps ensure efficient and highly reliable connections after repeated terminations. Multipole assemblies are made from (2) and (3) pole modules providing additional flexibility to meet rapidly changing demand.

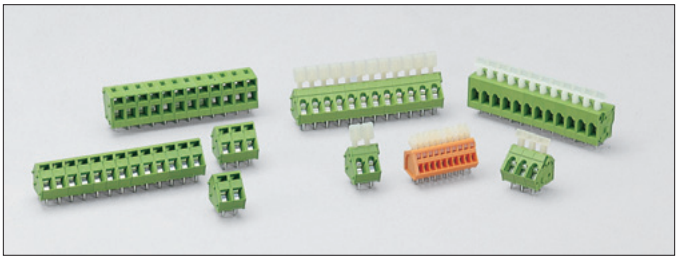
- Front, 45° and Top Wire Entry
- Single and Double Levels
- Inch and Metric Pin Spacings
- Up to 30A, 300V, 28-10 AWG



### Pluggables

For applications where multiple wire-to-board connections must be made simultaneously. Two-piece plugs and mating headers speed and simplify board installation and removal, Screw-cage and screw-wire protector clamp designs are offered in single mold configurations for industrial and commercial applications. Industry compatible, Standard and Miniature Pluggables are featured.

- Right Angle, Straight and Front Plugs
- Single and Double Headers
- Horizontal, Vertical and 45°, Open or Closed End Headers
- Up to 15A, 300V, 28-10 AWG
- 3.5mm, 3.81mm, 5.0mm, 5.08mm and 7.62mm Pole/Pin Spacings
- Optional Keying and Hot Stamp Imprinting



### Fixed, Spring Clamp

For wire-to-board applications where quick, cost effective wire terminations are required. Because screws are eliminated, wiring time is minimized. Choose from (3) methods of spring spring clamp actuations – screwdriver, push lever with screwdriver, or push lever with finger.

- Interlocking Sectional Design
- 45° and Front Wire Entries
- Metric and Inch Pin Spacing
- Stainless Steel Spring
- Up to 15A, 300V, 28-14 AWG
- Dual Pins for Added Strength

# Terms & Conditions

**1. GENERAL**
No additions or modifications to the Terms and Conditions of Sale herein shall be binding upon Conta-Clip, Inc. unless authorized in writing by an Officer of Conta-Clip Inc.
The conditions and provisions herein constitute and are essential portions of this agreement. No prior agreement, oral or in writing, shall have validity, force or effect whatever unless incorporated herein. Should any provision or condition or Buyer's order conflict with any provision herein contained, the provisions of this agreement shall prevail and be binding. The rights and obligations under this agreement shall be governed by the Laws of the State of New Jersey. Errors and omissions by Seller may be corrected by Seller, if any, all, or a part of one or more of the terms and conditions of this agreement should be declared illegal by any court of law, such part or such term or terms be considered deleted from this agreement, the remaining to be unaffected and in full force and effect.

**2. ORDER ACCEPTANCE**
All customer orders will be in written form and are subject to acceptance by an authorized individual of Conta-Clip, Inc. in Belle Mead, NJ. Typographical and other errors made in quotations, order entry and acknowledgements are subject to correction. The minimum order is $100 net.

**3. PRICES AND QUOTATIONS**
Ah prices are based on Conta-Clip, Inc.'s current Price List and are those in effect at the time of shipment. Conta-Clip, Inc. reserves the right to change prices at any time without prior notification. All quotations must be confirmed in writing and are valid for (30) days from the date of quotation, unless otherwise specified, and must be signed by individuals authorized to make quotations. Unless otherwise stated on the quotation, prices are F.O.B. Belle Mead, NJ. Prices exclude sales, use, excise, or other taxes which arise out of the sale. Where applicable and required, such taxes will be added to the sale price.

**4. TAXES**
The Purchaser shall provide Conta-Clip, Inc. with a Resale Tax Certificate for the purchased goods. If purchased items are not for resale, the Purchaser will be responsible to pay all applicable sales, use, excise or similar taxes charged.

**5. SHIPMENT AND FREIGHT**
The shipment method and routing will be defined by the Purchaser on the purchase order. If instructions are not provided, Conta-Clip, Inc. will choose the shipment method based upon the best way. All shipments will be sent prepaid with the shipping charges added to Purchaser's invoice, unless otherwise directed by the Purchaser on the purchase order or provided for by a separate agreement between the parties.

**6. DELIVERIES**
Delivery dates given on a quotation or in an order acknowledgement are based upon good faith estimates and are not guaranteed by Conta-Clip, Inc. Conta-Clip, Inc. shall not be liable for delays in delivery or in performance due to causes beyond its control including transportation and customs delays, acts of God, acts of the Purchaser, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot, or natural disasters.
In the event of such delay, the promised date or performance shall be extended for a period equal to the time lost by reason of the delay. All stock items, unless reserved specifically for a customer, are subject to prior sale.

**7. PAYMENT TERMS**
Payment is due within (30) days from the invoice date. In the event of referral to an attorney or agency for collection of a delinquent account, a collection fee of 10% of the overdue amount plus interest charges of one and one half percent per month will be due.

**8. ORDER CANCELLATION**
Orders placed by the Purchaser may be cancelled by the Purchaser with Conta-Clip, Inc.'s written consent subject to assessment of a cancellation charge based on any costs incurred by Conta-Clip, Inc. in relation to production, processing and transportation of the cancelled order.

**9. CLAIMS**
Purchaser claims of shortages or deductions for erroneous charges must be made within (10) business days of Purchaser's receipt of ordered product or such claims will not be allowed.

**10. RETURNED GOODS**
Any product returned to Conta-Clip, Inc. by the Purchaser will be accepted only if the following conditions are met:

All products returned to Conta-Clip, Inc. must be accompanied with a Returned Material Authorization Number obtained from Conta-Clip, Inc. No returned product will be accepted without the Returned Material Authorization Number clearly marked and visible on each carton.
All returned product is subject to inspection by Conta-Clip, Inc.. This material must conform to current catalog descriptions and be in resaleable condition.
Custom-made, specially designed, or obsolete products, or those products designated as non-returnable in the current Price List are not returnable for credit.
ALL returned material is to be shipped freight prepaid. No "freight collect" shipments will be accepted.
The credit amount will be calculated on a last invoice basis. In the event that the original invoice cannot be found, credit will be issued based on prices reflected in the Price List from two years back.
A restocking charge will apply to any returned product and the percentage will be determined by Conta-Clip, Inc. No restocking charge will apply to product deemed non-conforming.
Any non-conforming product returned under warranty by Purchaser will be repaired or replaced at no charge for labor or parts if deemed deficient by Conta-Clip, Inc. provided the return complies with the following requirements:

a. Purchaser must submit a written claim to Conta-Clip, Inc. describing the specific nature of and relevant details relating to the non-conformance. Purchaser must not return non-conforming product to Conta-Clip, Inc. until a Returned Material Authorization Number has been requested by the Purchaser and issued by Conta-Clip, Inc.

b. A return of non-conforming product must be made by Purchaser within (10) business days after the issuance date of the Returned Material Authorization.

c. Failure to satisfy any of these requirements for non-conforming products could result in a warranty claim as provided for under Limited Warranty (11.) to be disallowed.

Should any product returned to Conta-Clip, Inc. not meet the prescribed requirements as defined herein under Returned Goods (10.), Conta-Clip, Inc. reserves the right to either refuse receipt of returned product or to send back any returned product which was already received at the Purchaser's expense.

**11. LIMITED WARRANTY**
Conta-Clip, Inc. warrants to the Purchaser that the products purchased will be of merchantable quality and free from defects of material and workmanship and will be of kind and quality designated or so specified in the contract. This warranty shall only apply to defects appearing within one year from the date of the Conta-Clip, Inc. invoice, with the exception of tools which will carry a six month warranty. Conta-Clip, Inc. will not be liable for any modification to its products by the purchaser. Satisfaction of this warranty will be limited to (a) the replacement of the product by Conta-Clip, Inc., or (b) repair or modification of the product by Conta-Clip, Inc., or (c) issuance of a credit for the non-conforming products delivered under the order involved. Rights under this warranty are available only if Conta-Clip, Inc. is notified promptly in writing of the alleged non-conformance and Conta-Clip, Inc.'s examination of the product discloses that the non-conformance was not due to misuse, improper installation, improper operation, improper maintenance, alteration, modification, accident, or unusual degradation of the equipment or parts due to physical environments in excess of the limits.

There are no warranties which extend beyond this provision. This warranty is in lieu of all other warranties whether expressed, implied, or statutory including implied warranties of merchantability or fitness. The Buyer acknowledges that we are not relying on the seller's skill or judgement to select or furnish goods suitable for any particular purpose. This warranty extends only to the purchaser from Conta-Clip, Inc. or its authorized distributor.

*We reserve the right to correct errors, omissions, and make revisions wihout notice.*

# Literature Request Form

Please Fax Back to (908) 431-0706

Please check the box to the right of the product you would like literature on:

Name Title

Company

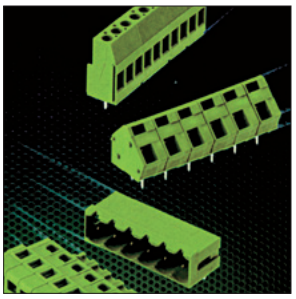
Address

State Zip

Phone Fax

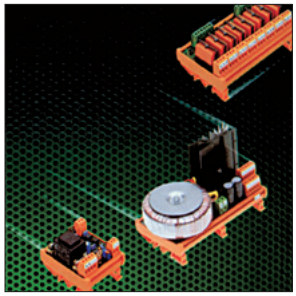
E-mail

DIN RAIL Terminal Blocks ☐

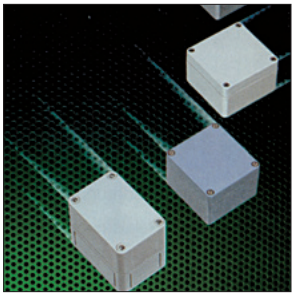


PB Board Terminal Blocks ☐

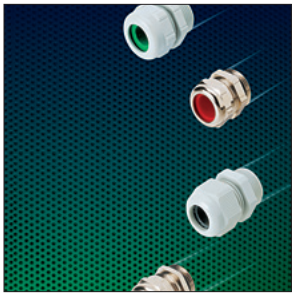
Conta Strips ☐



Interface Modules ☐

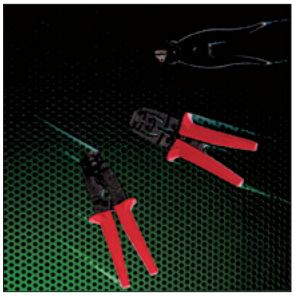


Enclosures ☐



Cord Grips ☐

Ferrules ☐



Tools ☐

Mini Cable Trays ☐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