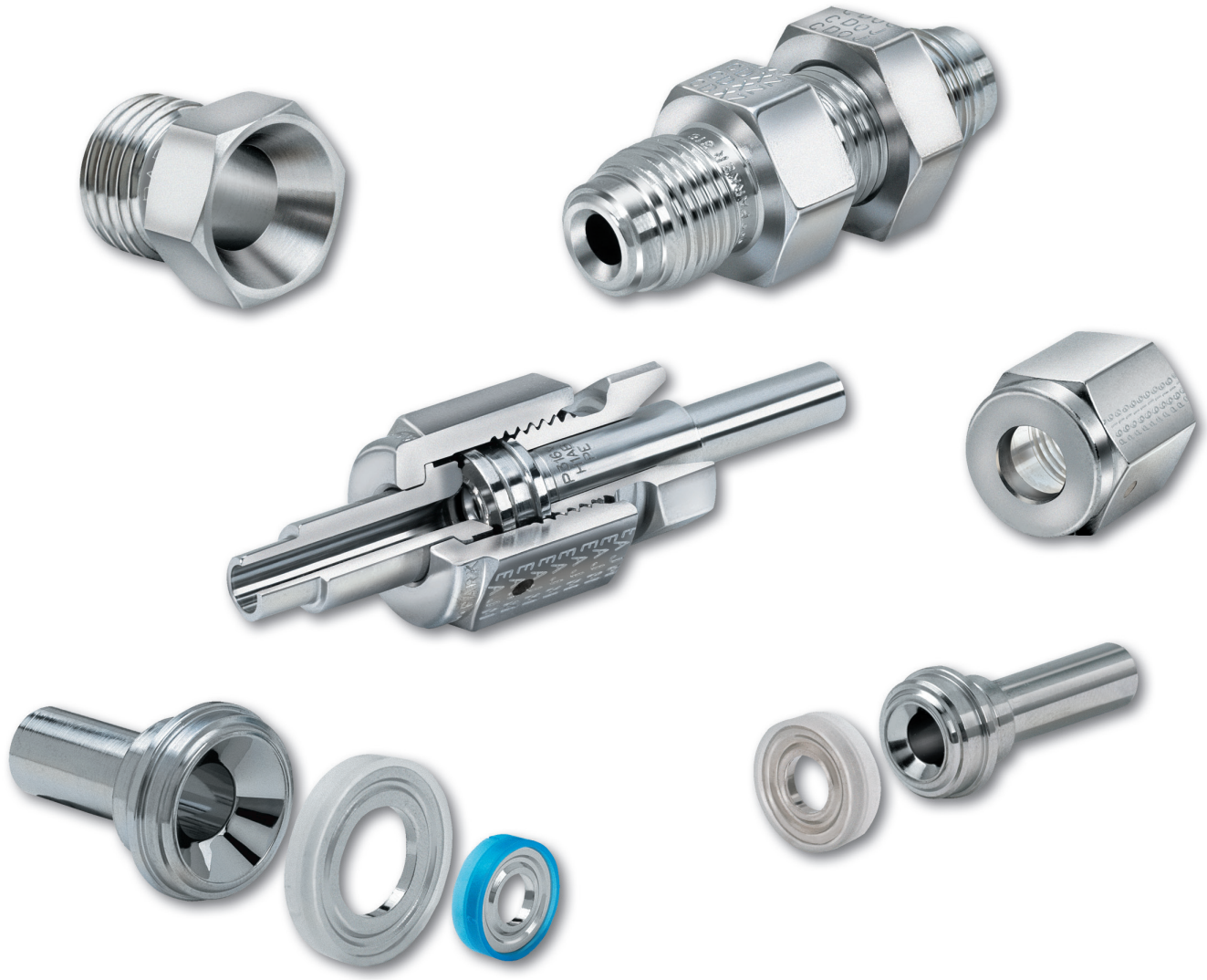

# VacuSeal™ Fittings

May 2011

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker Veriflo

ENGINEERING YOUR SUCCESS.

# VacuSeal™ Fittings

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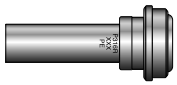

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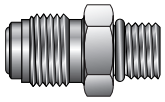

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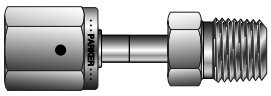

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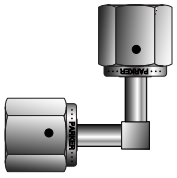

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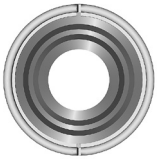

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Parker Veriflo


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Veriflo Division
Richmond, CA USA
http://www.parker.com/veriflo

## Introduction

Parker UHP fittings are designed as leak-free components for critical applications where ultra-high pure conditions are required. VacuSeal™ products, with their mating gasket and toroid design, provide a metal-to-metal seal with leak-free service from vacuum to positive pressure.

## Featured Products *(see page 13)*

- **TorqTite™** gasket to seal damaged toroids and virtually eliminate loosening of componentry due to thermocycling and vibration.
- **High-Purity Nickel and Hastelloy C-22®** glands for extremely corrosive applications.
- **Non-Rotational Female Nut** to prevent transmission of torque during make-up and therefore minimize twist of componentry which causes stress concentration.
- **Anti-Galling Female Nut** to ensure consistent make-up without plating or lubrication.

## Materials

### *Typical Raw Material Specifications*

| FITTING MATERIAL | BAR STOCK | FORGINGS | RECOMMENDED TUBING SPECIFICATIONS |
|---|---|---|---|
| Stainless Steel 316 | ASTM A276, ASME SA479 | ASME SA182 | ASME SA213, ASTM A213, ASTM A249 |
| Stainless Steel 316L | ASTM A276, ASME SA479 | ASME SA182 | ASME SA213, ASTM A213, ASTM A249 |
| Stainless Steel 316L VAR (Vacuum Arc Remelt) | ASTM A276, ASME SA479 | ASME SA182 | ASTM A269, MIL T8504, MIL T8506 |
| Stainless Steel 316L VIM/VAR (Vacuum Induction Melt/Vacuum Arc Remelt) | ASTM A276, ASME SA479 | ASME SA182 | ASTM A269, MIL T8504, MIL T8506 |

*Material is marked with heat code to ensure raw material traceability.*

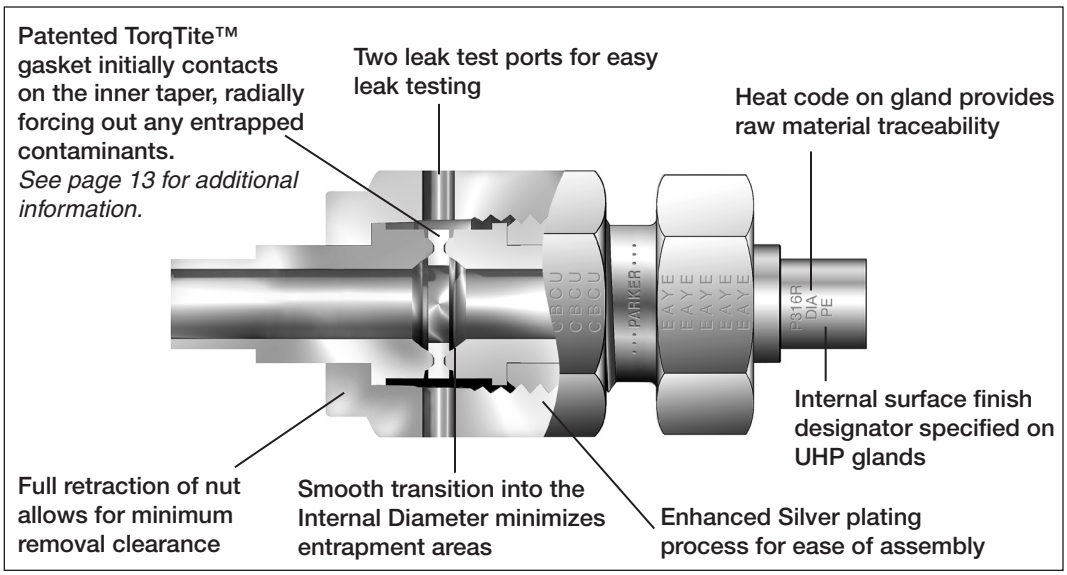
### *Gaskets Typical Raw Material Specifications*

| MATERIAL SPECIFICATIONS | |
|---|---|
| Nickel | ASTM B162 (unplated) |
| Stainless Steel | ASTM A167 (Silver plated) |

Hastelloy C-22® is a registered trademark of Haynes International, Inc.

## Specifications

- **Pressure Ratings** are based upon tests conducted on VacuSeal™ assemblies. All ratings comply with calculations per ANSI Code for Pressure Piping B31.3. **Working Pressures** are rated at ambient temperature and are based on a 4 to 1 design factor. To determine pressure ratings in accordance with ANSI B31.1, multiply **Working Pressure** by 0.94.
- **Temperature Ratings**
  Fittings:
  Stainless Steel 316, 316L, 316L VAR, 316L VIM/VAR 1000°F (537°C)
  Gaskets:
  High-Purity Nickel 600°F (315°C)
  Silver plated Stainless Steel 1000°F (537°C)
- **Dimensions** are for reference only and are subject to change. Tube ends conform to the dimensional requirements of ASTM A269.
- **Plating:** VacuSeal™ Female Nuts are Silver plated with an enhanced plating process. Avoid aggressive chemical processes used for cleaning, electropolishing and passivation that will remove plating. Removal or damage to plating will cause threads to gall, damaging fitting components and preventing a proper seal.
- **Testing:** VacuSeal™ products are rated to a Helium leak rate of 1 X $10^{-9}$ STD cc/sec.
- **Internal Surface Finishes:** VacuSeal™ components are available with controlled surface finishes to meet requirements of Ultra-High Purity systems.
- **Cleaning and Packaging:** Ultra-High Purity cleaning and packaging in a Class 100 Clean Room environment, is standard for all VacuSeal™ components.




For Make-Up Instructions see page 14.

For Ordering Instructions see page 15.



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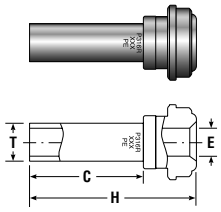
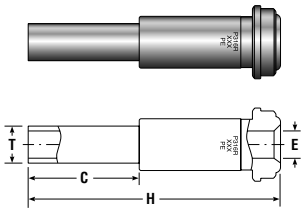
## Glands




### *Short Tube Butt Weld*

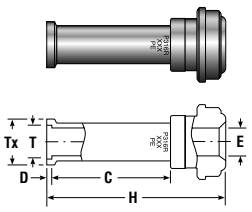
| T Tube O.D. | Ordering Number | C | | E | | H | | Normal Wall Thickness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | psi | bar |
| ***fractional*** | | | | | | | | | | |
| 1/8 | 2-2 V1T3-* 1.08 | 0.75 | 19.0 | 0.07 | 1.8 | 1.08 | 27.4 | 0.028 | 8500 | 580 |
| 1/4 | ^4-4 V1M-* .60 | 0.25 | 6.3 | 0.18 | 4.6 | 0.60 | 15.2 | 0.035 | 5100 | 350 |
| 1/4 | 4-4 V1TW-* .72 | 0.38 | 9.7 | 0.18 | 4.6 | 0.72 | 18.3 | 0.035 | 5100 | 350 |
| 1/4 | 4-4 V1T3-* 1.10 | 0.75 | 19.0 | 0.18 | 4.6 | 1.10 | 27.9 | 0.035 | 5100 | 350 |
| 1/4 | 8-4 V1T3-* 1.12 | 0.75 | 19.0 | 0.18 | 4.6 | 1.12 | 28.4 | 0.035 | 3500 | 240 |
| 3/8 | 8-6 V1M-* .62 | 0.25 | 6.3 | 0.31 | 7.9 | 0.62 | 15.7 | 0.035 | 3300 | 220 |
| 3/8 | 8-6 V1T3-* 1.12 | 0.75 | 19.0 | 0.31 | 7.9 | 1.12 | 28.4 | 0.035 | 3300 | 220 |
| 1/2 | ^^8-8 V1M-* .62 | 0.25 | 6.3 | 0.40 | 10.2 | 0.62 | 15.7 | 0.049 | 3500 | 240 |
| 1/2 | 8-8 V1TW-* .74 | 0.38 | 9.7 | 0.40 | 10.2 | 0.74 | 18.8 | 0.049 | 3500 | 240 |
| 1/2 | 8-8 V1T3-* 1.12 | 0.75 | 19.0 | 0.40 | 10.2 | 1.12 | 28.4 | 0.049 | 3500 | 240 |
| ***metric*** | | | | | | | | | | |
| 6 mm | 4-6M V1T3-*-1.16 | 0.75 | 19.0 | 0.16 | 4.1 | 1.16 | 29.5 | 1.0 mm | 6800 | 460 |
| 8 mm | 4-8M V1T3-*-1.16 | 0.75 | 19.0 | 0.24 | 6.1 | 1.16 | 29.5 | 1.0 mm | 4900 | 330 |
| 10 mm | 8-10M V1T3-*-1.16 | 0.75 | 19.0 | 0.31 | 7.9 | 1.16 | 29.5 | 1.0 mm | 3500 | 240 |
| 12 mm | 8-12M V1T3-*-1.16 | 0.75 | 19.0 | 0.39 | 9.9 | 1.16 | 29.5 | 1.0 mm | 3100 | 210 |
| 18 mm | 12-18M V1T3-*-1.22 | 0.75 | 19.0 | 0.59 | 15.0 | 1.22 | 31.0 | 1.5 mm | 3000 | 200 |

^Old Part Number 4-4 V1M-* .035
^^Old Part Number 8-8 V1M-* .049




### *Long Tube Weld*

| T Tube O.D. | Ordering Number | C | | E | | H | | Normal Wall Thickness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | psi | bar |
| ***fractional*** | | | | | | | | | | |
| 1/8 | 2-2 V1T3-* 1.42 | 0.75 | 19.0 | 0.07 | 1.8 | 1.42 | 36.1 | 0.028 | 8500 | 580 |
| 1/4 | 4-4 V1M-* 1.20 | 0.25 | 6.3 | 0.18 | 4.6 | 1.20 | 30.5 | 0.035 | 5100 | 350 |
| 1/4 | 4-4 V1T3-* | 0.40 | 10.2 | 0.18 | 4.6 | 1.31 | 33.3 | 0.035 | 5100 | 350 |
| 1/4 | 4-4 V1TW-* 1.32 | 0.38 | 9.7 | 0.18 | 4.6 | 1.32 | 33.5 | 0.035 | 5100 | 350 |
| 1/4 | 4-4 V1T3-* 1.70 | 0.75 | 19.0 | 0.18 | 4.6 | 1.70 | 43.2 | 0.035 | 5100 | 350 |
| 1/4 | 8-4 V1T3-* 1.79 | 0.75 | 19.0 | 0.18 | 4.6 | 1.80 | 45.7 | 0.035 | 3500 | 240 |
| 3/8 | 8-6 V1M-* 1.29 | 0.25 | 6.3 | 0.31 | 7.9 | 1.29 | 32.8 | 0.035 | 3300 | 220 |
| 3/8 | 8-6 V1T3-* 1.79 | 0.75 | 19.0 | 0.31 | 7.9 | 1.79 | 45.5 | 0.035 | 3300 | 220 |
| 1/2 | 8-8 V1M-* 1.29 | 0.25 | 6.3 | 0.40 | 10.2 | 1.29 | 32.8 | 0.049 | 3500 | 240 |
| 1/2 | 8-8 V1TW-* 1.41 | 0.38 | 9.7 | 0.40 | 10.2 | 1.41 | 35.8 | 0.049 | 3500 | 240 |
| 1/2 | 8-8 V1T3-* 1.79 | 0.75 | 19.0 | 0.40 | 10.2 | 1.79 | 45.5 | 0.049 | 3500 | 240 |
| 3/4 | 12-12 V1T3-*2.03 | 0.75 | 19.0 | 0.65 | 16.5 | 2.03 | 51.6 | 0.049 | 2400 | 160 |
| 1 | 16-16 V1T3-*2.32 | 0.75 | 19.0 | 0.87 | 22.1 | 2.32 | 58.9 | 0.065 | 2400 | 160 |
| ***metric*** | | | | | | | | | | |
| 6 mm | 4-6M V1T3-* 1.70 | 0.75 | 19.0 | 0.16 | 4.1 | 1.70 | 43.2 | 1.0 mm | 6800 | 460 |
| 8 mm | 4-8M V1T3-* 170 | 0.75 | 19.0 | 0.24 | 6.1 | 1.70 | 43.2 | 1.0 mm | 4900 | 330 |
| 10 mm | 8-10M V1T3-* 1.79 | 0.75 | 19.0 | 0.31 | 7.9 | 1.79 | 45.5 | 1.0 mm | 3500 | 240 |
| 12 mm | 8-12M V1T3-* 1.79 | 0.75 | 19.0 | 0.39 | 9.9 | 1.79 | 45.5 | 1.0 mm | 3100 | 210 |
| 18 mm | 12-18M V1T3-* 2.03 | 0.75 | 19.0 | 0.59 | 15.0 | 2.03 | 51.6 | 1.5 mm | 3000 | 200 |




### Short Automatic Tube Butt Weld

| T Tube Size | Ordering Number | C | | D | | E | | H | | Tx | | Normal Wall Thickness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | psi | bar |
| ***fractional*** | | | | | | | | | | | | | | |
| 1/4 | 4-4 V1Y3-* 1.12 | 0.75 | 19.0 | 0.02 | 0.5 | 0.18 | 4.6 | 1.12 | 28.4 | 0.29 | 7.4 | 0.035 | 5100 | 250 |
| 1/2 | 8-8 V1Y3-* 1.16 | 0.75 | 19.0 | 0.04 | 1.0 | 0.40 | 10.2 | 1.16 | 29.5 | 0.55 | 14.0 | 0.049 | 3500 | 240 |
| 3/8 | 8-6 V1Y3-* 1.15 | 0.75 | 19.0 | 0.03 | 0.8 | 0.30 | 7.6 | 1.15 | 29.2 | 0.41 | 10.4 | 0.035 | 3300 | 220 |
| ***metric*** | | | | | | | | | | | | | | |
| 6 mm | 4-6M V1Y3-* 1.18 | 0.75 | 19.0 | 0.02 | 0.5 | 0.16 | 4.1 | 1.18 | 30.0 | 0.27 | 6.9 | 1.0 mm | 6800 | 460 |
| 8 mm | 4-8M V1Y3-* 1.19 | 0.75 | 19.0 | 0.03 | 0.8 | 0.24 | 6.1 | 1.19 | 30.2 | 0.35 | 8.9 | 1.0 mm | 4900 | 330 |
| 10 mm | 8-10M V1Y3-* 1.22 | 0.75 | 19.0 | 0.03 | 0.8 | 0.31 | 7.9 | 1.22 | 31.0 | 0.43 | 10.9 | 1.0 mm | 3500 | 240 |
| 12 mm | 8-12M V1Y3-* 1.20 | 0.75 | 19.0 | 0.04 | 1.0 | 0.39 | 9.9 | 1.20 | 30.5 | 0.52 | 13.2 | 1.0 mm | 3100 | 210 |



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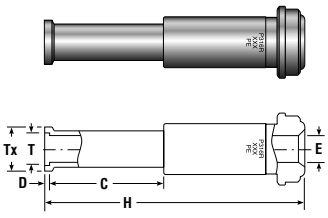
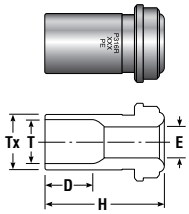
## Glands (Continued)

### *Long Automatic Tube Butt Weld*



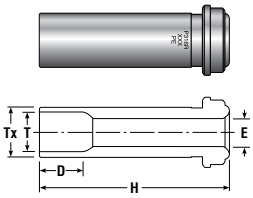

| T Tube Size | Ordering Number | C | | D | | E | | H | | Tx | | Normal Wall Thickness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | |
| 1/4 | 4-4 V1Y3-* 1.72 | 0.75 | 19.0 | 0.02 | 0.5 | 0.18 | 4.6 | 1.72 | 43.7 | 0.29 | 7.4 | 0.035 | 5100 | 350 |
| 1/4 | 8-4 V1Y3-* 1.82 | 0.75 | 19.0 | 0.02 | 0.5 | 0.18 | 4.6 | 1.82 | 46.2 | 0.29 | 7.4 | 0.035 | 5100 | 350 |
| 3/8 | 8-6 V1Y3-* 1.82 | 0.75 | 19.0 | 0.03 | 0.8 | 0.31 | 7.9 | 1.82 | 46.2 | 0.41 | 10.4 | 0.035 | 3300 | 220 |
| 1/2 | 8-8 V1Y3-* 1.83 | 0.75 | 19.0 | 0.04 | 1.0 | 0.40 | 10.2 | 1.83 | 46.5 | 0.55 | 14.0 | 0.049 | 3500 | 240 |
| 3/4 | 12-12 V1Y3-* 2.07 | 0.75 | 19.0 | 0.04 | 1.0 | 0.65 | 16.5 | 2.07 | 52.6 | 0.80 | 20.3 | 0.049 | 2400 | 160 |
| 1 | 16-16 V1Y3-* 2.57 | 0.96 | 24.4 | 0.04 | 1.0 | 0.87 | 22.1 | 2.57 | 65.3 | 1.06 | 26.9 | 0.065 | 2400 | 160 |
| ***metric*** | | | | | | | | | | | | | | |
| 6 mm | 4-6M V1Y3-* 1.72 | 0.75 | 19.0 | 0.02 | 0.5 | 0.16 | 4.1 | 1.72 | 43.7 | 0.27 | 6.9 | 1.0 mm | 6800 | 460 |
| 12 mm | 8-12M V1Y3-* 1.83 | 0.75 | 19.0 | 0.04 | 1.0 | 0.39 | 9.9 | 1.83 | 46.5 | 0.52 | 13.2 | 1.0 mm | 3100 | 210 |
| 18 mm | 12-18M V1Y3-* 2.07 | 0.75 | 19.0 | 0.04 | 1.0 | 0.59 | 15.0 | 2.07 | 52.6 | 0.76 | 19.3 | 1.5 mm | 3000 | 200 |

### *Short Socket Weld*



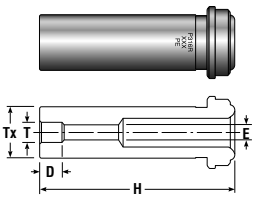

| T Tube Socket | Ordering Number | D | | E | | H | | Tx | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 1/4 | 4-4 V1W-* .50 | 0.28 | 7.1 | 0.19 | 4.8 | 0.50 | 12.7 | 0.35 | 8.9 | 5500 | 370 |
| 1/4 | 4-4 V1W-* .75 | 0.28 | 7.1 | 0.19 | 4.8 | 0.75 | 19.0 | 0.35 | 8.9 | 5500 | 370 |

### *Socket Weld*



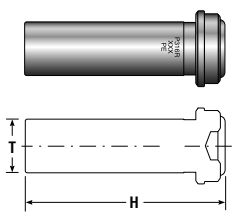

| T Tube Socket | Ordering Number | D | | E | | H | | Tx | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 1/16 | 1-1 V1W-* (1) | 0.10 | 2.5 | 0.05 | 1.3 | 0.70 | 17.8 | 0.13 | 3.3 | 9000 | 620 |
| 1/8 | 2-2 V1W-* .70 | 0.10 | 2.5 | 0.09 | 2.3 | 0.70 | 17.8 | 0.20 | 5.1 | 7100 | 480 |
| 1/4 | 4-4 V1W-* | 0.28 | 7.1 | 0.19 | 4.6 | 1.31 | 33.3 | 0.35 | 8.9 | 5500 | 370 |
| 3/8 | 8-6 V1W-* | 0.31 | 7.9 | 0.28 | 7.1 | 1.50 | 38.1 | 0.60 | 15.2 | 3500 | 240 |
| 1/2 | 8-8 V1W-* | 0.38 | 9.7 | 0.40 | 10.2 | 1.50 | 38.1 | 0.60 | 15.2 | 3000 | 200 |
| 3/4 | 12-12 V1W-* | 0.44 | 11.2 | 0.62 | 15.7 | 2.00 | 50.8 | 0.88 | 22.4 | 2800 | 190 |
| 1 | 16-16 V1W-* | 0.62 | 15.7 | 0.87 | 22.1 | 2.22 | 56.4 | 1.19 | 30.2 | 2400 | 160 |

### *Reducing Socket Weld*




| T Tube Socket | Ordering Number | D | | E | | H | | Tx | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 1/8 | 4-2 V1W-* 1.31 | 0.16 | 4.1 | 0.09 (2) | 2.3 | 1.31 | 33.3 | 0.35 | 8.9 | 8000 | 550 |
| 1/4 | 8-4 V1W-* | 0.25 | 6.3 | 0.19 | 4.8 | 1.50 | 38.1 | 0.60 | 15.2 | 3500 | 240 |

### *Blind (undrilled) Gland*




| T Tube O.D. | Ordering Number | H | |
|---|---|---|---|
| | | in. | mm |
| ***fractional*** | | | |
| 1/8 | 2-2 V1W-*-BL | 0.70 | 17.8 |
| 1/4 | 4-4 V1W-*-BL | 1.31 | 33.3 |
| 1/2 | 8-8 V1W-*-BL | 1.50 | 38.1 |
| 3/4 | 12-12 V1W-* -BL | 2.00 | 50.8 |
| 1 | 16-16 V1W-*-BL | 2.22 | 56.4 |

(1) Uses 2 BV-SS and 2 BVI-SS nuts

(2) May contain internal transitions

(3) O-rings fluorocarbon is standard. Contact local Parker representative for other available materials



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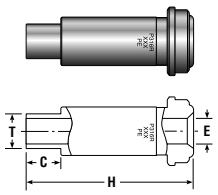
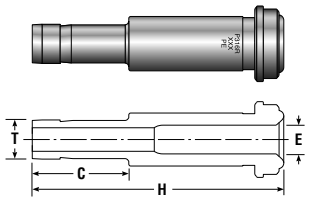
## Glands (Continued)




### *Male Weld*

| T Tube O.D. | Ordering Number | C | | E | | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | |
| 1/8 | 2-2 V1T3-* .70 .035 | 0.28 | 7.1 | 0.06 (2) | 1.5 | 0.70 | 17.8 | 9000 | 620 |
| 1/8 | 4-2 V1T3-* 1.31 .035 | 0.28 | 7.1 | 0.06 (2) | 1.5 | 1.31 | 33.3 | 8000 | 550 |
| 1/4 | 4-4 V1T3-* 1.31 .065 | 0.41 | 10.4 | 0.12 | 3.0 | 1.31 | 33.3 | 8000 | 550 |
| 1/4 | 8-4 V1T3-* D970351 | 0.41 | 10.4 | 0.12 | 3.0 | 1.50 | 38.1 | 3500 | 240 |
| 3/8 | 8-6 V1T3-* 1.50 .049 | 0.41 | 10.4 | 0.28 | 7.1 | 1.50 | 38.1 | 3500 | 240 |
| 1/2 | 8-8 V1T3-* | 0.50 | 12.7 | 0.40 | 10.2 | 1.50 | 38.1 | 3500 | 240 |
| 3/4 | 12-12 V1T3-* 2.00 .109 | 0.62 | 15.7 | 0.53 | 13.5 | 2.00 | 50.8 | 3000 | 200 |
| 1 | 16-16 V1T3-* 2.22 .120 | 0.81 | 20.6 | 0.75 | 19.0 | 2.22 | 56.4 | 2400 | 160 |

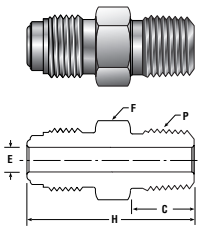



### *Tube Adapter (A-LOK®)*

| T Tube O.D. | Ordering Number | C | | E | | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | |
| 1/4 | 4-4 V1TU-* | 0.62 | 15.7 | 0.16 | 4.1 | 1.62 | 41.1 | 8000 | 550 |
| 3/8 | 8-6 V1TU-* | 0.69 | 17.5 | 0.28 (2) | 7.1 | 1.81 | 46.0 | 3500 | 240 |
| 1/2 | 8-8 V1TU-* | 0.91 | 23.1 | 0.39 | 9.9 | 1.78 | 45.2 | 3500 | 240 |

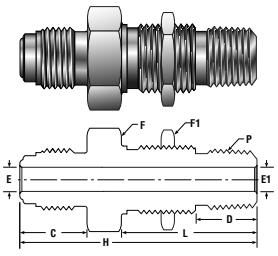
Replace 'U' with a '2' to designate groove for CPI™ Fitting.

## Bodies



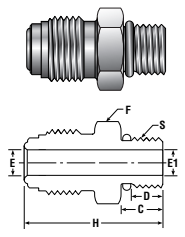

### *Male NPT Connector*

| P Male NPT Size | Ordering Number | C | | E | | F Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | |
| 1/16 | 2-1 FV-SS | 0.38 | 9.6 | 0.09 (2) | 2.3 | 3/8 | 1.07 | 27.2 | 9000 | 620 |
| 1/8 | 2-2 FV-SS | 0.38 | 9.6 | 0.09 (2) | 2.3 | 7/16 | 1.07 | 27.2 | 9000 | 620 |
| 1/8 | 4-2 FV-SS | 0.38 | 9.6 | 0.19 | 4.8 | 5/8 | 1.28 | 32.5 | 8000 | 550 |
| 1/4 | 4-4 FV-SS | 0.57 | 14.5 | 0.25 | .64 | 5/8 | 1.49 | 37.8 | 8000 | 550 |
| 3/8 | 8-6 FV-SS | 0.57 | 14.5 | 0.38 | 9.6 | 15/16 | 1.62 | 41.1 | 3500 | 240 |
| 1/2 | 8-8 FV-SS | 0.76 | 19.3 | 0.41 | 10.4 | 15/16 | 1.81 | 46.0 | 3500 | 240 |
| 3/4 | 12-12 FV-SS | 0.76 | 19.3 | 0.62 | 15.7 | 1 15/16 | 2.19 | 55.6 | 3000 | 200 |
| 1 | 16-16 FV-SS | 0.95 | 24.1 | 0.87 | 22.1 | 1 15/16 | 2.47 | 62.7 | 2400 | 160 |




### *Male Bulkhead Connector*

| P Male NPT Size | Ordering Number | C | | D | | E | | E1 | | F Hex Flat | F1 Hex Flat | H | | L | | Panel Hole Size | Max. Panel Thick-ness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | | in. | mm | in. | mm | | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | | | | |
| 1/4 | 4-4 VH2BF-SS | 0.62 | 15.7 | 0.57 | 14.5 | 0.25 | 6.4 | 0.25 | 6.4 | 13/16 | 13/16 | 2.21 | 56.134 | 1.24 | 31.5 | 21/32 | 0.38 | 8000 | 550 |
| 1/4 | 8-4 VH2BF-SS | 0.75 | 19.1 | 0.57 | 14.5 | 0.41 | 10.4 | 0.28 | 7.1 | 15/16 | 13/16 | 2.34 | 59.436 | 1.24 | 31.5 | 21/32 | 0.38 | 3500 | 240 |




### *Straight Thread O-Ring Seal Male Connector* (3)

| S Straight Thread Size | Ordering Number | C | | D | | E | | E1 | | F Hex Flat | H | | Uniform O-Ring Size | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | |
| 9/16-18 | 4-6 VHOA-SS | 0.39 | 9.9 | 0.25 | 6.4 | 0.18 | 4.6 | 0.28 | 7.1 | 3/4 | 1.33 | 33.78 | Fluorocarbon 906 | 4500 | 310 |
| 7/8-14 | 8-10 VHOA-SS | 0.50 | 12.7 | 0.4 | 10.2 | 0.28 | 7.1 | 0.59 | 15.0 | 1 | 1.66 | 42.16 | Fluorocarbon 910 | 3500 | 240 |
| 9/16-18 | 8-6 VHOA-SS | 0.39 | 9.9 | 0.39 | 9.9 | 0.28 | 7.1 | 0.28 | 7.1 | 15/16 | 1.48 | 7.59 | Fluorocarbon 906 | 3500 | 240 |



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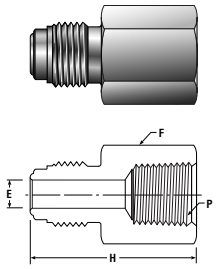
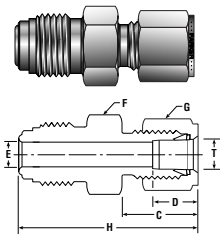
## Bodies (Continued)

### *Female NPT Connector*




| P Female NPT Size | Ordering Number | E | | F Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|
| | | in. | mm | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | |
| 1/8 | 4-2 GV-SS | 0.18 | 4.6 | 5/8 | 1.41 | 35.8 | 8000 | 550 |
| 1/4 | 4-4 GV-SS | 0.25 | 6.4 | 3/4 | 1.44 | 36.6 | 6600 | 450 |
| 3/8 | 8-6 GV-SS | 0.41 | 10.4 | 15/16 | 1.62 | 41.1 | 3500 | 240 |
| 1/2 | 8-8 GV-SS | 0.41 | 10.4 | 1 1/16 | 1.91 | 48.5 | 3500 | 240 |
| 3/4 | 12-12 GV-SS | 0.62 | 15.7 | 1 5/16 | 2.36 | 59.9 | 3000 | 200 |
| 1 | 16-16 GV-SS | 0.87 | 22.1 | 1 5/8 | 2.51 | 63.8 | 2400 | 160 |

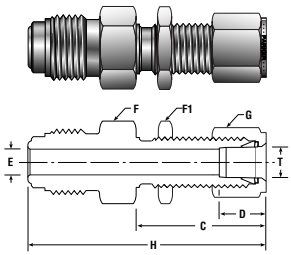
### *Compression Tube Fitting Connector (A-LOK®)*




| T Tube O.D. | Ordering Number | C | | D | | E | | F Hex Flat | G Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | | | |
| 1/8 | 2-2 VHLZ-SS | 0.60 | 15.2 | 0.50 | 12.7 | 0.09 (2) | 2.3 | 5/8 | 7/16 | 1.53 | 38.86 | 8000 | 550 |
| 1/4 | 4-4 VHLZ-SS | 0.70 | 17.8 | 0.60 | 15.2 | 0.19 | 4.8 | 5/8 | 9/16 | 1.62 | 41.15 | 8000 | 550 |
| 3/8 | 8-6 VHLZ-SS | 0.76 | 19.3 | 0.66 | 16.8 | 0.28 | 7.1 | 15/16 | 11/16 | 1.84 | 46.74 | 3500 | 240 |
| 1/2 | 8-8 VHLZ-SS | 0.87 | 22.1 | 0.90 | 22.9 | 0.41 | 10.4 | 15/16 | 7/8 | 1.95 | 49.53 | 3500 | 240 |

Dimensions - C, D, H are typical finger-tight.
Change "L" to a "B" to select CPI™ one ferrule connector.
Instrumentation Master Binder.
For maximum pressure ratings reference the Instrument Tubing Selection Guide, found in the Technical Section of your Parker

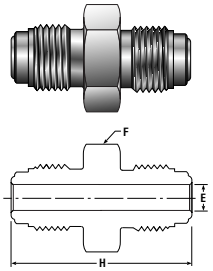
### *Compression Tube Fitting Bulkhead Connector (A-LOK®)*




| T Tube O.D. | Ordering Number | C | | D | | E | | F Hex Flat | F1 Hex Flat | G Hex Flat | H | | Panel Hole Size | Max. Panel Thick-ness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | | | in. | mm | | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | |
| 1/4 | 4-4 VH2LZ-SS | 1.32 | 33.5 | 0.60 | 15.2 | 0.18 | 4.6 | 5/8 | 5/8 | 9/16 | 2.25 | 57.2 | 15/32 | 0.40 | 8000 | 550 |
| 1/4 | 4-4 VH2LZ-SS 1.88 | 1.05 | 26.7 | 0.60 | 15.2 | 0.18 | 4.6 | 5/8 | 5/8 | 9/16 | 1.88 | 47.8 | 15/32 | 0.13 | 8000 | 550 |
| 3/8 | 8-6 VH2LZ-SS | 1.45 | 36.8 | 0.66 | 16.8 | 0.28 | 7.1 | 15/16 | 3/4 | 11/16 | 2.54 | 64.5 | 19/32 | 0.44 | 3500 | 240 |
| 1/2 | 8-8 VH2LZ-SS | 1.65 | 41.9 | 0.90 | 22.9 | 0.41 | 10.4 | 15/16 | 15/16 | 7/8 | 2.74 | 69.6 | 25/32 | 0.50 | 3500 | 240 |

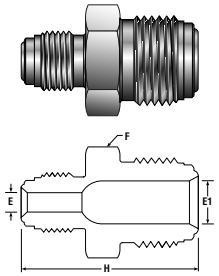
Dimensions - C, D, H are typical finger-tight.
Change "L" to a "B" to select CPI™ one ferrule connector.
Instrumentation Master Binder.
For maximum pressure ratings reference the Instrument Tubing Selection Guide, found in the Technical Section of your Parker

### *Double Male Union*




| Size | Ordering Number | E | | F Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|
| | | in. | mm | | in. | mm | psig | bar |
| 1/8 | 2-2 HV-SS | 0.09 | 2.3 | 3/8 | 1.13 | 28.7 | 9000 | 620 |
| 1/4 | 4-4 HV-SS | 0.25 | 6.4 | 5/8 | 1.53 | 38.9 | 8000 | 550 |
| 1/2 | 8-8 HV-SS | 0.41 | 10.4 | 15/16 | 1.84 | 46.7 | 3500 | 240 |
| 3/4 | 12-12 HV-SS | 0.62 | 15.7 | 1 5/16 | 2.44 | 62.0 | 3000 | 200 |
| 1 | 16-16 HV-SS | 0.87 | 22.1 | 1 5/8 | 2.59 | 65.8 | 2400 | 160 |

### *Double Male Reducing Union*




| Size | Ordering Number | E | | E1 | | F Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | in. | mm | psig | bar |
| 1/4x1/8 | 4-2 HV-SS | 0.09 | 2.3 | 0.18 | 4.6 | 5/8 | 1.37 | 34.8 | 8000 | 550 |
| 1/2x1/4 | 8-4 HV-SS | 0.18 | 4.6 | 0.41 | 10.4 | 15/16 | 1.71 | 43.4 | 3500 | 240 |

(1) Uses 2 BV-SS and 2 BVI-SS nuts
(2) May contain internal transitions
(3) O-rings fluorocarbon is standard. Contact local Parker representative for other available materials



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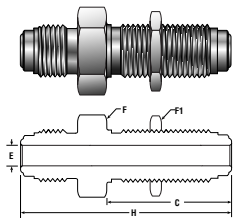
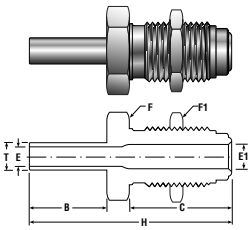
## Bodies (Continued)



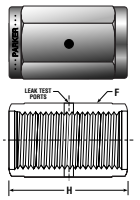

### *Bulkhead Union*

| Size | Ordering Number | C | | E | | F Hex Flat | F1 Hex Flat | H | | Panel Hole Size | Max. Panel Thick-ness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | | in. | mm | | | psig | bar |
| 1/4 | 4-4 WBV-SS 2.23 | 1.30 | 33.0 | 0.25 | 6.4 | 3/4 | 3/4 | 2.23 | 56.6 | 19/32 | 0.44 | 8000 | 550 |
| 1/4 | 4-4 WBV-SS 1.82 | 0.99 | 25.1 | 0.25 | 6.4 | 3/4 | 3/4 | 1.82 | 46.2 | 19/32 | 0.13 | 8000 | 550 |
| 1/2 | 8-8 WBV-SS 2.57 | 1.45 | 36.8 | 0.41 | 10.4 | 1 1/16 | 1 1/16 | 2.57 | 65.3 | 29/32 | 0.50 | 3500 | 240 |
| 1/2 | 8-8 WBV-SS 2.14 | 1.11 | 28.2 | 0.41 | 10.4 | 1 1/16 | 1 1/16 | 2.14 | 54.4 | 29/32 | 0.13 | 3500 | 240 |



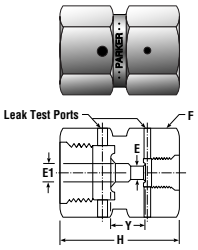

### *Tube Butt Weld Bulkhead Connector*

| T Tube O.D. Size | Ordering Number | B | | C | | E | | E1 | | F Hex Flat | F1 Hex Flat | H | | Panel Hole Size | Max. Panel Thick-ness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | | in. | mm | | | psig | bar |
| *fractional* | | | | | | | | | | | | | | | | | |
| 1/4 | 4-4 T3H2BV-* 2.36 | 0.75 | 19.1 | 1.30 | 33.0 | 0.18 | 4.6 | 0.22 | 5.6 | 3/4 | 3/4 | 2.36 | 59.9 | 19/32 | 0.44 | 5100 | 350 |
| 1/4 | 4-4 T3H2BV-* 1.95 | 0.75 | 19.1 | 0.99 | 25.1 | 0.18 | 4.6 | 0.22 | 5.6 | 3/4 | 3/4 | 1.95 | 49.5 | 19/32 | 0.13 | 5100 | 350 |



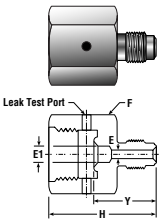

### *Coupling*

| Size | Ordering Number | F Hex Flat | H | |
|---|---|---|---|---|
| | | | in. | mm |
| 1/8 | 2 VHC-SS | 7/16 | 0.66 | 16.8 |
| 1/4 | 4 VHC-SS | 3/4 | 1.19 | 30.2 |
| 1/2 | 8 VHC-SS | 1 1/16 | 1.31 | 33.3 |
| 3/4 | 12 VHC-SS | 1 1/2 | 1.68 | 42.7 |
| 1 | 16 VHC-SS | 1 3/4 | 2.04 | 51.8 |



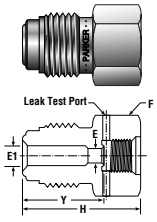

### *Double Female Reducing Union*

| Size | Ordering Number | E | | E1 | | F Hex Flat | H | | Y | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | in. | mm | in. | mm | psig | bar |
| 1/4x1/8 | 4-2 HV7-SS | 0.13 | 3.3 | .25 | 6.4 | 3/4 | 1.16 | 29.5 | 0.36 | 9.1 | 8000 | 550 |
| 1/2x1/4 | 8-4 HV7-SS | 0.25 | 6.4 | .41 | 10.3 | 1 1/16 | 1.41 | 35.8 | 0.35 | 8.9 | 3500 | 240 |




### *Reducing Adapter*

| Size | Ordering Number | E | | E1 | | F Hex Flat | H | | Y | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | in. | mm | in. | mm | psig | bar |
| 1/8x1/4 | 4-2 V7HV-SS | 0.09 | 2.3 | .25 | 6.4 | 3/4 | 1.19 | 30.2 | 0.69 | 17.5 | 8000 | 550 |
| 1/4x1/2 | 8-4 V7HV-SS | 0.18 | 4.6 | .41 | 10.3 | 1 1/16 | 1.41 | 35.8 | 0.85 | 21.6 | 3500 | 240 |




### *Reducing Bushing*

| Size | Ordering Number | E | | E1 | | F Hex Flat | H | | Y | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | in. | mm | in. | mm | psig | bar |
| 1/4x1/8 | 4-2 VHV7-SS | 0.13 | 3.3 | .18 | 4.6 | 5/8 | 1.06 | 26.9 | 0.76 | 19.3 | 8000 | 550 |
| 1/2x1/4 | 8-4 VHV7-SS | 0.25 | 6.4 | .41 | 10.3 | 15/16 | 1.41 | 35.8 | 0.91 | 23.1 | 3500 | 240 |



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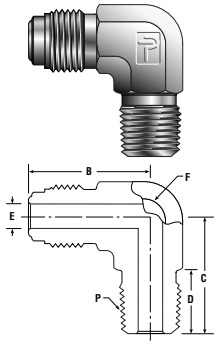
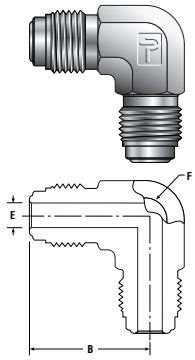
## Bodies (Continued)

### *VacuSeal™ To Male NPT Elbow*



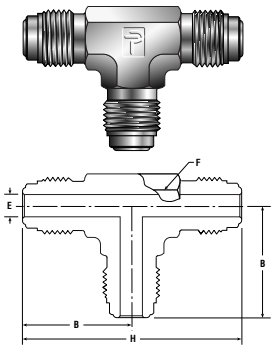

| P Male NPT Size | Ordering Number | B | | C | | D | | E | | F Hex Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | psig | bar |
| 1/8 | 2-2 CV-SS | 1.07 | 27.2 | 0.87 | 22.1 | 0.38 | 9.6 | 0.18 | 4.6 | 9/16 | 8000 | 550 |
| 1/4 | 4-4 CV-SS | 1.13 | 28.7 | 1.06 | 26.9 | 0.57 | 14.5 | 0.25 | 6.4 | 9/16 | 8000 | 550 |
| 3/8 | 8-6 CV-SS | 1.45 | 36.8 | 1.26 | 32.0 | 0.57 | 14.5 | 0.40 | 10.2 | 7/8 | 3500 | 240 |
| 1/2 | 8-8 CV-SS | 1.31 | 33.3 | 1.31 | 33.3 | 0.76 | 19.3 | 0.41 | 10.4 | 7/8 | 3500 | 240 |

### *Union Elbow*



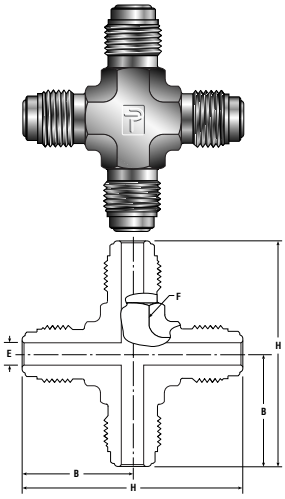

| Size | Ordering Number | B | | E | | F Wrench Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | psig | bar |
| 1/8 | 2-2 EV-SS | 0.89 | 22.6 | 0.09 | 2.3 | 7/16 | 9000 | 620 |
| 1/4 | 4-4 EV-SS | 1.13 | 28.7 | 0.25 | 6.4 | 9/16 | 8000 | 550 |
| 1/2 | 8-8 EV-SS | 1.31 | 33.3 | 0.41 | 10.4 | 7/8 | 3500 | 240 |
| 3/4 | 12-12 EV-SS | 1.92 | 48.8 | 0.62 | 15.7 | 1 1/4 | 3000 | 200 |
| 1 | 16-16 EV-SS | 2.00 | 50.8 | 0.87 | 22.1 | 1 5/8 | 2400 | 160 |

### *Union Tee*




| Size | Ordering Number | B | | E | | H | | F Wrench Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | psig | bar |
| 1/8 | 2-2-2 JV-SS | 0.89 | 22.6 | 0.09 | 2.3 | 1.78 | 45.21 | 7/16 | 9000 | 620 |
| 1/4 | 4-4-4 JV-SS | 1.13 | 28.7 | 0.25 | 6.4 | 2.25 | 57.15 | 9/16 | 8000 | 550 |
| 1/2 | 8-8-8 JV-SS | 1.31 | 33.3 | 0.41 | 10.4 | 2.62 | 66.55 | 7/8 | 3500 | 240 |
| 3/4 | 12-12-12 JV-SS | 1.92 | 48.8 | 0.62 | 15.7 | 3.84 | 97.54 | 1 1/4 | 3000 | 200 |
| 1 | 16-16-16 JV-SS | 2.00 | 50.8 | 0.87 | 22.1 | 4.00 | 101.6 | 1 5/8 | 2400 | 160 |

### *Union Cross*




| Size | Ordering Number | B | | E | | H | | F Wrench Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | psig | bar |
| 1/8 | 2 KV-SS | 0.89 | 22.6 | 0.09 | 2.3 | 1.78 | 45.21 | 7/16 | 9000 | 620 |
| 1/4 | 4 KV-SS | 1.13 | 28.7 | 0.25 | 6.4 | 2.25 | 57.15 | 9/16 | 8000 | 550 |
| 1/2 | 8 KV-SS | 1.45 | 36.8 | 0.41 | 10.4 | 2.90 | 73.66 | 7/8 | 3500 | 240 |
| 3/4 | 12 KV-SS | 1.92 | 48.8 | 0.62 | 15.7 | 3.84 | 97.54 | 1 1/4 | 3000 | 200 |
| 1 | 16 KV-SS | 2.00 | 50.8 | 0.87 | 22.1 | 4.00 | 101.6 | 1 5/8 | 2400 | 160 |

1. Uses 2 BV-SS and 2 BVI-SS nuts
2. May contain internal transitions
3. O-rings fluorocarbon is standard. Contact local Parker representative for other available materials



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Richmond, CA USA
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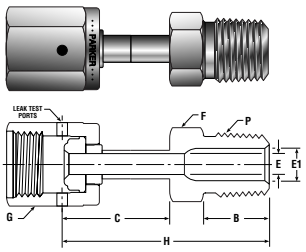
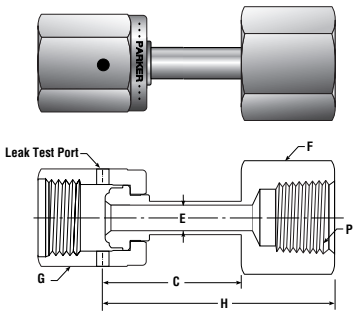
## Welded Assemblies



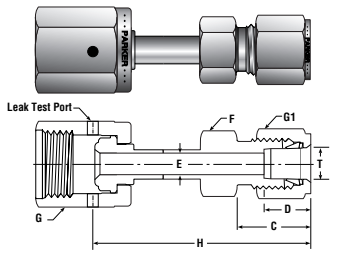

### *Male NPT Connector*

| P Male NPT Size | Ordering Number | B | | C | | E | | E1 | | F Hex Flat | G Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | |
| 1/8 | 2-2 V1HBF-* | .38 | 9.6 | 0.95 | 24.1 | 0.18 | 4.6 | 0.19 | 4.8 | 7/16 | 3/4 | 1.58 | 40.1 | 8000 | 550 |
| 1/4 | 4-4 V1HBF-* | .57 | 14.5 | 0.93 | 23.6 | 0.18 | 4.6 | 0.28 | 7.1 | 9/16 | 3/4 | 1.79 | 45.5 | 5100 | 350 |
| 3/8 | 8-6 V1HBF-* | .57 | 14.5 | 1.00 | 25.4 | 0.40 | 10.2 | 0.41 | 10.3 | 1 1/16 | 1 1/16 | 1.89 | 48.0 | 3500 | 240 |
| 1/2 | 8-8 V1HBF-* | .76 | 19.3 | 1.01 | 25.6 | 0.40 | 10.2 | 0.53 | 13.5 | 7/8 | 1 1/16 | 2.09 | 53.1 | 3500 | 240 |




### *Female NPT Connector*

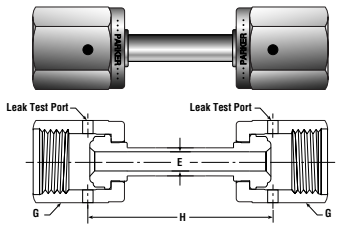
| P Female NPT Size | Ordering Number | C | | E | | F Hex Flat | G Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 1/4 | 4-4 V1HBG-* | 1.05 | 26.7 | 0.18 | 4.6 | 3/4 | 3/4 | 1.77 | 45.0 | 5100 | 350 |
| 3/8 | 8-6 V1HBG-* | 1.06 | 26.9 | 0.40 | 10.2 | 7/8 | 1 1/16 | 1.95 | 49.5 | 3500 | 240 |
| 1/2 | 8-8 V1HBG-* | 1.04 | 26.4 | 0.40 | 10.2 | 1 1/16 | 1 1/16 | 2.18 | 55.4 | 3500 | 240 |




### *Compression Tube Fitting Connector (A-LOK)*

| T Tube O.D. | Ordering Number | C | | D | | E | | F Hex Flat | G Hex Flat | G1 Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | |
| 1/4 | 4-4 V1HLZ-* | 0.70 | 17.8 | 0.60 | 15.2 | 0.18 | 4.6 | 1/2 | 3/4 | 9/16 | 1.94 | 49.3 | 5100 | 350 |
| 3/8 | 4-6 V1HLZ-* | 0.76 | 19.3 | 0.67 | 17.0 | 0.18 | 4.6 | 5/8 | 3/4 | 11/16 | 1.97 | 50.0 | 5100 | 350 |
| 1/2 | 8-8 V1HLZ-* | 0.87 | 22.1 | 0.90 | 22.9 | 0.40 | 10.2 | 13/16 | 1 1/16 | 1 7/8 | 2.23 | 56.6 | 3500 | 240 |

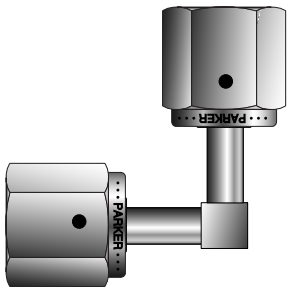
Dimensions - C, D, H are typical finger-tight.
Change "L" to a "B" to select CPI™ one ferrule connector.
For maximum pressure ratings reference the Instrument Tubing Selection Guide, found in the Technical Section of your Parker Instrumentation Master Binder.




### *Rotating Female Union*

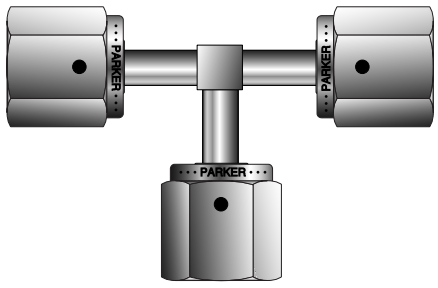
| Size | Ordering Number | E | | G Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|
| | | in. | mm | | in. | mm | psig | bar |
| 1/4 | 4-4 V1HBV1-* | .18 | 4.6 | 3/4 | 1.35 | 34.3 | 5100 | 350 |
| 1/4 | 4-4 V1HBV1-* 1.70 | .18 | 4.6 | 3/4 | 1.70 | 43.2 | 5100 | 350 |
| 1/2 | 8-8 V1HBV1-* | .40 | 10.2 | 1 1/16 | 1.25 | 31.8 | 3500 | 240 |
| 1/2 | 8-8 V1HBV1-* 1.84 | .40 | 10.2 | 1 1/16 | 1.84 | 46.7 | 3500 | 240 |

### *Female Elbow*



Ordering Number:
MEM-44-*VFVF

### *Female Tee*

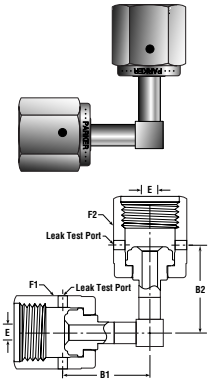


Ordering Number:
MJM-444-*VFVFVF



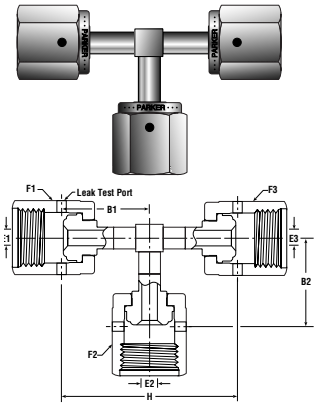
Parker Hannifin Corporation
Veriflo Division
Richmond, CA USA
http://www.parker.com/veriflo

## Welded Modules



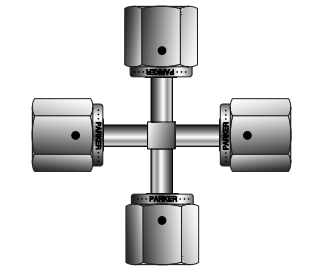

### *Elbow Modules*

| Size | Ordering Number | B1 | | B2 | | E | | F1 Hex Flat | F2 Hex Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | | | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 1/4 | MEM-44*VMSVF | 1.60 | 40.6 | 1.00 | 25.4 | 0.18 | 4.6 | 5/8 | 3/4 | 5100 | 350 |
| 1/4 | MEM-44*VMSVMS | 1.60 | 40.6 | 1.60 | 40.6 | 0.18 | 4.6 | 5/8 | 5/8 | 5100 | 350 |
| 1/4 | MEM-44*VFVF | 1.00 | 25.4 | 1.00 | 25.4 | 0.18 | 4.6 | 3/4 | 3/4 | 5100 | 350 |
| 1/2 | MEM-88*VFVF | 1.17 | 29.7 | 1.17 | 29.7 | 0.18 | 4.6 | 1 1/16 | 1 1/16 | 3500 | 240 |



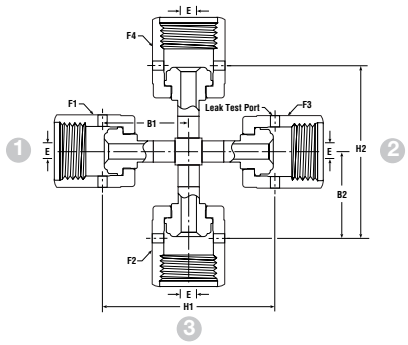

### *Tee Modules*

| Size | Ordering Number | B1 | | B2 | | H | | E1 | | E2 | | E3 | | F1 Hex Flat | F2 Hex Flat | F3 Hex Flat | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | | | |
| 1/4 | MJM-444*VFVFVMS | 1.00 | 25.4 | 1.00 | 25.4 | 2.60 | 66.0 | 0.18 | 4.6 | 0.18 | 4.6 | 0.18 | 4.6 | 3/4 | 3/4 | 5/8 | 5100 | 350 |
| 1/4 | MJM-444*VFVMSVMS | 1.00 | 25.4 | 1.60 | 40.6 | 2.60 | 66.0 | 0.18 | 4.6 | 0.18 | 4.6 | 0.18 | 4.6 | 3/4 | 5/8 | 5/8 | 5100 | 350 |
| 1/4 | MJM-444*VFVFVF | 1.00 | 25.4 | 1.00 | 25.4 | 2.00 | 50.8 | 0.18 | 4.6 | 0.18 | 4.6 | 0.18 | 4.6 | 3/4 | 3/4 | 3/4 | 5100 | 350 |
| 1/4 | MJM-444*VMSVMSVMS | 1.60 | 40.6 | 1.60 | 40.6 | 3.20 | 81.3 | 0.18 | 4.6 | 0.18 | 4.6 | 0.18 | 4.6 | 5/8 | 5/8 | 5/8 | 5100 | 350 |
| 1/2x1/4 | MJM-884*VFVMSVF | 1.17 | 29.7 | 1.12 | 28.4 | 3.20 | 81.3 | 0.40 | 10.2 | 0.18 | 4.6 | 0.40 | 10.2 | 1 1/16 | 3/4 | 15/16 | 3500 | 240 |



### *Cross Modules*

| Size | Ordering Number | B1 | | B2 | | H1 | | H2 | | E | | F1 | F2 | F3 | F4 | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | | | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | | |
| 1/4 | MKM-4444*VMSVFVFVF | 1.60 | 40.6 | 1.00 | 25.4 | 2.60 | 66.0 | 2.00 | 50.8 | 0.18 | 4.6 | 5/8 | 3/4 | 3/4 | 3/4 | 5100 | 350 |
| 1/4 | MKM-4444*VFVFVFVF | 1.00 | 25.4 | 1.00 | 25.4 | 2.00 | 50.8 | 2.00 | 50.8 | 0.18 | 4.6 | 3/4 | 3/4 | 3/4 | 3/4 | 5100 | 350 |




## Welded Module Ordering Information:

| MKM | - | 4 4 4 4 | 2 | VF VF VF VF |
|---|---|---|---|---|
| Type | | Size | Stainless Steel 316L | End Connections |

VF = Female VacuSeal™ Swivel
VMS = Male VacuSeal™ Swivel
Replace asterisk with 2 to specify Stainless Steel 316L.
For additional configurations and sizes contact your local Parker Representative.



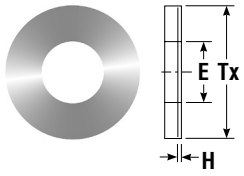
Parker Veriflo
Parker Hannifin Corporation
Veriflo Division
Richmond, CA USA
http://www.parker.com/veriflo

# Gaskets

*VacuSeal™ gaskets are compatible with other high quality gasket face seal fittings.*

## *Non-Retained Flat Style*

| Size | Ordering Number | E | | H | | Tx | |
|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm |
| 1/8 | 2 VG-* | 0.09 | 2.3 | 0.02 | 0.5 | 0.26 | 6.6 |
| 1/4 | 4 VG-* | 0.22 | 5.5 | 0.03 | 0.8 | 0.47 | 11.9 |
| 1/2 | 8 VG-* | 0.44 | 11.1 | 0.03 | 0.8 | 0.78 | 19.9 |
| 3/4 | 12 VG-* | 0.66 | 16.8 | 0.03 | 0.8 | 1.14 | 28.9 |
| 1 | 16 VG-* | 0.89 | 22.7 | 0.03 | 0.8 | 1.41 | 35.7 |

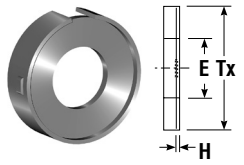



## *Retained Flat Style*

*Retainer and gasket must be used as an assembly.*

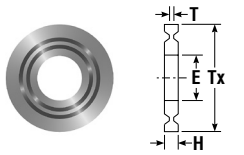
***Note:*** *Nickel Retained Flat Style Gaskets utilize a Stainless Steel Retainer*

| Size | Ordering Number | E | | H | | Tx | |
|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm |
| 1/4 | 4 VGR-* | 0.23 | 5.8 | 0.03 | 0.8 | 0.50 | 12.7 |
| 1/2 | 8 VGR-* | 0.44 | 11.2 | 0.03 | 0.8 | 0.79 | 20.1 |



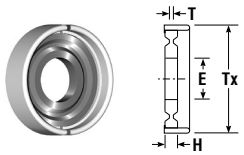

## *Non-Retained Grooved Style (TorqTite™ Gasket)*

| Size | Ordering Number | E | | H | | Tx | | T | |
|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm |
| 1/4 | 4 GVG-* | 0.21 | 5.3 | 0.06 | 1.6 | 0.50 | 12.6 | 0.03 | 0.8 |
| 1/2 | 8 GVG-* | 0.43 | 10.9 | 0.06 | 1.6 | 0.78 | 19.8 | 0.03 | 0.8 |




## *Retained Grooved Style (Retained TorqTite™ Gasket)*

| Size | Ordering Number | E | | H | | Tx | | T | |
|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm |
| 1/4 | 4 GVGR-* | 0.21 | 1.3 | 0.06 | 1.6 | 0.49 | 12.4 | 0.03 | 0.8 |
| 1/2 | 8 GVGR-* | 0.43 | 2.7 | 0.06 | 1.6 | 0.79 | 20.1 | 0.03 | 0.8 |




## *Gasket Ordering Information*

*Specify gasket material by replacing asterisk with appropriate Ordering Number Designator.*

| MATERIAL | ORDERING NUMBER DESIGNATOR | EXAMPLE |
|---|---|---|
| High-Purity Nickel (electropolished) | N | 4 VGR-N |
| Stainless Steel3 | SS | 4 VGR-SS |
| Kel-F®12 | K | 4 VG-K |
| Teflon®12 | T | 4 VG-T |

**Blind (undrilled) gaskets are available by adding a -BL suffix at the end of the part number.**
**Example:** 4 VG-N-BL

**[1] Parker uses Kel-F 81® or equal PCTFE Polymer Parker uses Teflon® or equal PTFE Polymer**

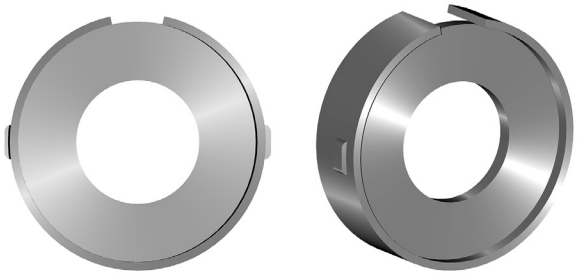
**[2] Kel-F 81® and Teflon® are only available for Non-Retained Flat Style gaskets**

**[3] Stainless Steel gaskets are Silver plated**

**Kel-F 81® is a registered trademark of 3M Company**
**Teflon® is a registered trademark of Dupont Company**

*The retainer of Parker's patented Retained Flat Gasket helps to both locate the gasket over the toroid of the gland and hold the gasket in place during assembly, therefore minimizing radial damage to the toroids of the connection.*

*The unique design of the retainer minimizes potential scratches or nicks to the critical toroid surfaces during placement onto the gland.*



**Note:** All gaskets must be ordered in increments of 10



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Richmond, CA USA
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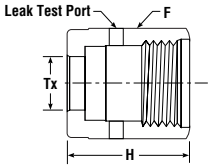
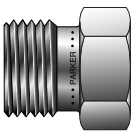
## Nuts, Caps, and Plugs

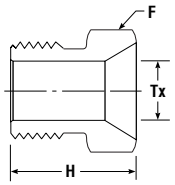



### *Female Nut*

| Ordering Number | Size | F Hex Flat | H | | Tx | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 2 BV-SS | 1/8 | 7/16 | 0.53 | 13.5 | 0.21 | 5.3 |
| 4 BV-SS* | 1/4 | 3/4 | 0.82 | 20.8 | 0.36 | 9.1 |
| 8 BV-SS | 1/2 | 1 1/16 | 0.88 | 22.4 | 0.61 | 15.5 |
| 12 BV-SS | 3/4 | 1 1/2 | 1.12 | 28.4 | 0.89 | 22.6 |
| 16 BV-SS | 1 | 1 3/4 | 1.34 | 34.0 | 1.20 | 30.5 |

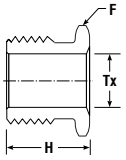
*Previous Part Number 4 BV SS-D



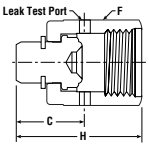

### *Male Nut*

| Ordering Number | Size | F Hex Flat | H | | Tx | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 2-BVI-SS | 1/8 | 3/8 | 0.50 | 12.7 | 0.21 | 5.3 |
| 4 BVI-SS [4] | 1/4 | 5/8 | 0.72 | 18.3 | 0.36 | 9.1 |
| 8-BVI-SS | 1/2 | 15/16 | 0.81 | 20.6 | 0.61 | 15.5 |
| 12-BVI-SS | 3/4 | 1 5/16 | 1.00 | 25.4 | 0.89 | 22.6 |
| 16-BVI-SS | 1 | 1 5/8 | 1.19 | 30.2 | 1.20 | 30.5 |



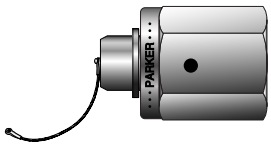

### *Short Male Nut*

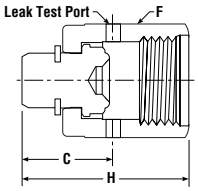
| Ordering Number | Size | F Hex Flat | H | | Tx | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 4 BVI .54-SS | 1/4 | 5/8 | 0.54 | 13.7 | 0.36 | 9.1 |
| 4 BVI .65-SS | 1/4 | 5/8 | 0.65 | 16.5 | 0.36 | 9.1 |




### *Cap*

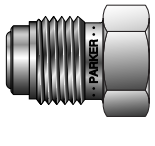
| Ordering Number | Size | C | | F Hex Flat | H | |
|---|---|---|---|---|---|---|
| | | in. | mm | | in. | mm |
| 4 FNV-SS | 1/4 | 0.59 | 15.0 | 3/4 | 1.09 | 27.7 |
| 8 FNV-SS | 1/2 | 0.59 | 15.0 | 1 1/16 | 1.16 | 29.5 |
| 12 FNV-SS | 3/4 | 0.66 | 16.8 | 1 1/2 | 1.41 | 35.8 |
| 16 FNV-SS | 1 | 0.63 | 16.0 | 1 3/4 | 1.55 | 39.4 |

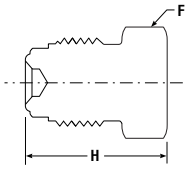



### *Cap With Lanyard*

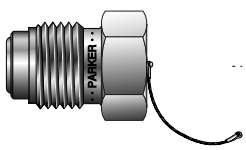
| Ordering Number | Size | C | | F Hex Flat | H | | Lanyard Length | |
|---|---|---|---|---|---|---|---|---|
| | | in. | mm | | in. | mm | in. | mm |
| 4 FNV-SS-L | 1/4 | 0.59 | 15.0 | 3/4 | 1.09 | 27.7 | 6 | 152.4 |
| 8 FNV-SS-L | 1/2 | 0.59 | 15.0 | 1 1/16 | 1.16 | 29.5 | 6 | 152.4 |

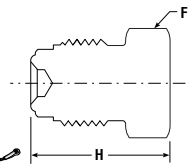



### *Plug*

| Ordering Number | Size | F Hex Flat | H | |
|---|---|---|---|---|
| | | | in. | mm |
| 2 PNV-SS | 1/8 | 3/8 | 0.68 | 17.3 |
| 4 PNV-SS | 1/4 | 5/8 | 0.91 | 23.1 |
| 8 PNV-SS | 1/2 | 15/16 | 1.08 | 27.4 |
| 12 PNV-SS | 3/4 | 1 5/16 | 1.43 | 36.3 |
| 16 PNV-SS | 1 | 1 5/8 | 1.52 | 38.6 |




### *Plug With Lanyard*

| Ordering Number | Size | F Hex Flat | H | | Lanyard Length | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 4 PNV-SS-L | 1/4 | 5/8 | 0.91 | 23.1 | 6 | 152.4 |
| 8 PNV-SS-L | 1/2 | 15/16 | 1.08 | 27.4 | 6 | 152.4 |

### *Protective Shipping Cap*

| Ordering Number | Size |
|---|---|
| C-VacuSeal | 1/4 |

[4] Taper in the back of nut allows mobility around 90° bends



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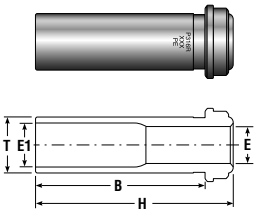
# Hi-Flo Products

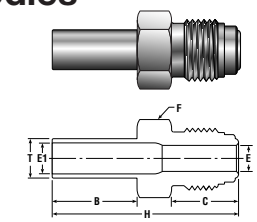
## Glands




### *Tube Butt Weld*

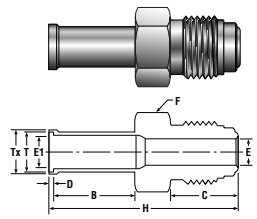
| T Tube O.D. | Ordering Number | B | | E | | E1 | | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | |
| 3/8 | 4-6 VH1T3-*.60 | 0.41 | 10.4 | 0.25 | 6.4 | 0.30 | 7.6 | 0.60 | 15.2 | 3300 | 220 |
| 3/8 | 4-6 VH1T3-* | 1.00 | 25.4 | 0.25 | 6.4 | 0.30 | 7.6 | 1.19 | 30.2 | 3300 | 220 |
| 3/8 | 4-6 VH1T3-* 1.31 | 1.12 | 28.4 | 0.25 | 6.4 | 0.30 | 7.6 | 1.31 | 33.3 | 3300 | 220 |

## Bodies



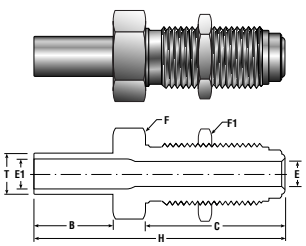

### Tube Butt Weld

| T Tube O.D. | Ordering Number | B | | C | | E | | E1 | | F Hex Flat | H | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | |
| 3/8 | 4-6 VHT3-*1.68 | 0.75 | 19.1 | 0.62 | 15.7 | 0.25 | 6.4 | 0.30 | 7.6 | 5/8 | 1.68 | 42.7 | 3300 | 220 |




### *Automatic Tube Weld*

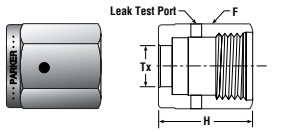
| T Tube O.D. | Ordering Number | B | | C | | D | | E | | E1 | | F Hex Flat | H | | Tx | | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | in. | mm | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | | | |
| 3/8 | 4-6 VHY3-* 1.71 | 0.75 | 19.1 | 0.62 | 15.7 | 0.03 | 0.8 | 0.25 | 6.4 | 0.30 | 7.6 | 5/8 | 1.71 | 43.4 | 0.41 | 10.4 | 3300 | 220 |




### *Bulkhead Connector*

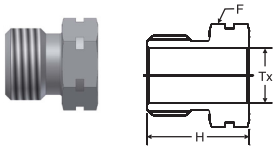
| T Tube O.D. | Ordering Number | B | | C | | E | | E1 | | F Hex Flat | F1 Hex Flat | H | | Panel Hole Size | Max. Panel Thick-ness | Working Pressure | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | in. | mm | in. | mm | in. | mm | in. | mm | | | in. | mm | | | psig | bar |
| ***fractional*** | | | | | | | | | | | | | | | | | |
| 3/8 | 6-4 T3H2BV-* 2.36 | 0.75 | 19.1 | 1.30 | 33.0 | 0.23 | 5.8 | 0.30 | 7.6 | 3/4 | 3/4 | 2.36 | 60 | 19/32 | 0.44 | 3300 | 220 |

## Nuts




### *Female Nut*

| Size | Ordering Number | F Hex Flat | H | | Tx | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 3/8 | 4 BVH-SS | 3/4 | 0.82 | 20.8 | 0.39 | 9.9 |




### *Male Nut*

| Size | Ordering Number | F Hex Flat | H | | Tx | |
|---|---|---|---|---|---|---|
| | | | in. | mm | in. | mm |
| 3/8 | 4 BVHI-SS | 5/8 | 0.72 | 18.3 | 0.39 | 9.9 |



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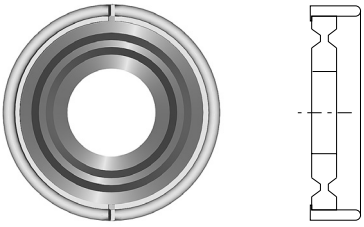
# Featured Products

## TorqTite™



**Check out the patented TorqTite™ Self-Aligning Face Seal Gasket**

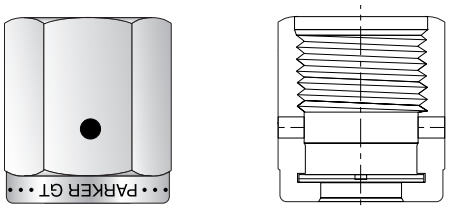
- Needs no installation tools
- Virtually eliminates loosening of components due to thermocycling and vibration (i.e. transportation)
- Seals even on damaged toroids
- Allows for higher torque without damaging sealing surfaces
- Easy open clean room bag requires no cutting
- Color coded retainers for material recognition
- Minimizes particle generation

## *Non-Rotational Female Nut

**Ordering Number:** 4 BV-SS-NR

Use Parker's Non-Rotational Female Nut to prevent transmission of torque during make-up and therefore minimize twist of componentry which causes stress concentration.

## Anti-Galling Female Nut




**Ordering Number:** 4 BV-GT

Use Parker's Anti-Galling Female Nut to ensure consistent makes and remakes without plating or lubrication on Female threads.

* Patented

***Note:*** *Outside dimensions of the Non-Rotational Female Nut and Anti-Galling Female Nut match the 4 BV-SS on Page 12.*



Parker Veriflo

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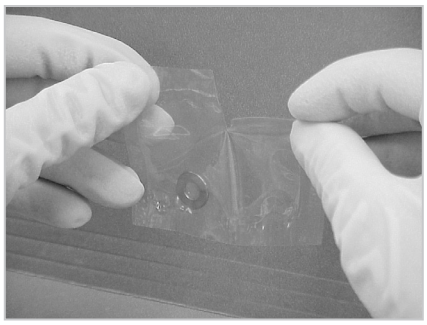
# Make-Up Instructions

## Flat and Grooved Gasket Assembly

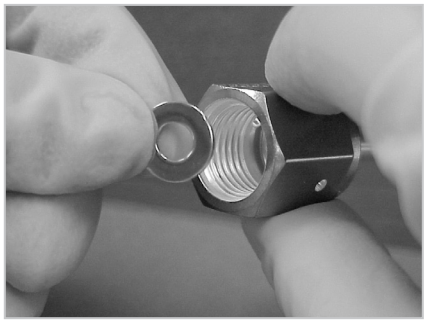
**Step 1**

Remove gasket from packaging.



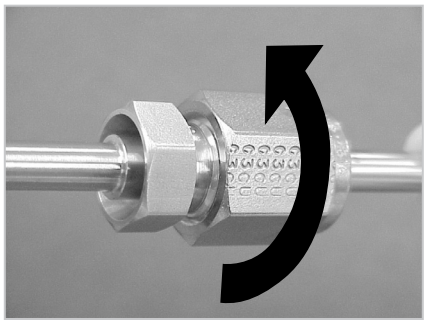
**Step 2**

Place gasket into female VacuSeal™ nut.



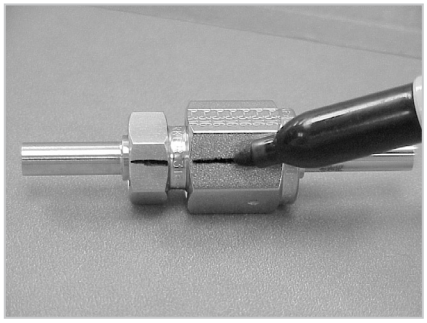
**Step 3**

Assemble components and snug to fingertight.



**Step 4**

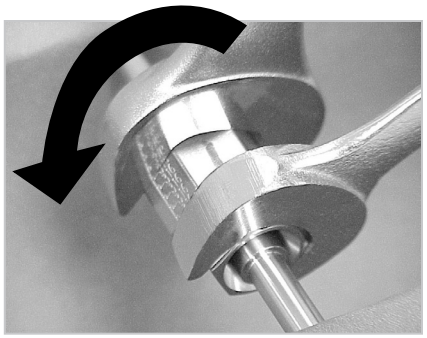
Scribe the hex flat of both the male and female nuts.



**Step 5**

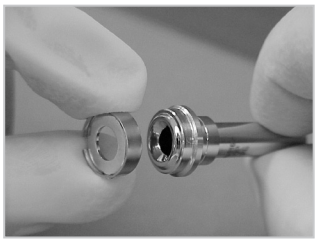
Holding the backup wrench stationary, tighten the female nut 1/8 turn past fingertight.

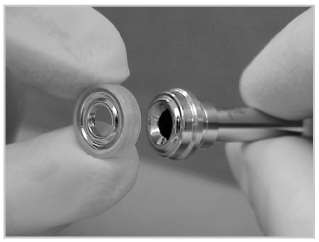
**Warning:** Extreme over tightening will damage toroid surface and cause potential leakage.



## Flat Gasket Remake

Upon remake of flat VacuSeal™ gasket, a new gasket must be installed for each remake, follow procedures for initial make-up.



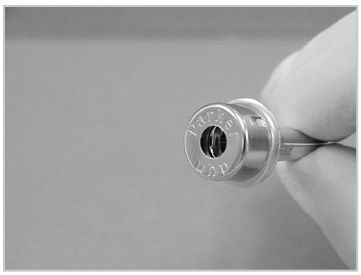


## Retained Gaskets Assembly

Guide retained gaskets over gland face, then continue step 3 of Flat and Grooved Gasket Assembly for completion of make-up.

## Protective Shipping Cap

Metallic protector caps are available to protect critical toroid surface from damage see page 11.





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# Ordering Instructions

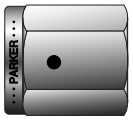
## How To Order

Parker VacuSeal™ components are ordered by Ordering Number, as listed in this catalog. Replace the asterisk within each Ordering Number with the corresponding material designator listed below.

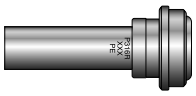
### Assembly Example:

If your system requires a VacuSeal™ assembly connecting from 1/4" O.D. tubing to 1/4" O.D. tubing, you may order the following parts.

VacuSeal™ Female Nut
4 BV-SS

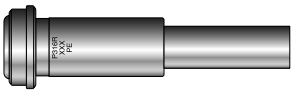


VacuSeal™ Gland
4-4 V1T3-SSR 1.10-PE



VacuSeal™ Gasket
4 VG-N

VacuSeal™ Long Gland
4-4 V1T3-SSR 1.70-PE



VacuSeal™ Male Nut
4 BVI-SS

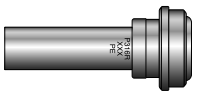
***Note:*** *Each component must be ordered separately.*

## Nomenclature

Part numbers of Parker VacuSeal™ components are constructed from symbols that identify the size, configuration and material of each component.

### Component Example:

| Size | End Connections | | Material* | | Surface Finish (5 µinch Ra) |
|---|---|---|---|---|---|
| 4 - 4 | V 1 T3 | - | SSR | 1.10 | - PE |
| | Type | | | Overall Length | |



**Size:** Tube and Pipe are designated by the number of sixteenths of an inch. (i.e. 1/4" Pipe Thread = 4/16" = 4)
Metric Tube O.D. is designated in millimeters with the suffix "M".
(i.e. 4-6M V1T3-SSR 1.16)

**Type:** Designate shape of component.
(i.e. 1=gland, E=elbow, J=tee, K=cross, etc.)

***Material:** Replace asterisks in Part Number to specify material:
SS = Stainless Steel 316 (All non-welded bodies and components)
SSR = Stainless Steel 316L VAR
SSV = Stainless Steel 316L VIM/VAR
Nickel and Hastelloy C-22® available upon request.

Forged product will be offered as a 15 RA or a standard.

**Size:** End Connections: Specify VacuSeal™ end first, followed by other corresponding ends:
V = VacuSeal™
M = Buttweld with .25" tube stub length
T3 = Buttweld with .75" tube stub length
TW = Buttweld with various tube stub length
Y3 = Buttweld with End Collar
W = Socket Weld

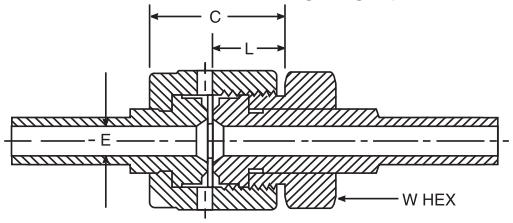
**Overall Length:** Specify length of component in inches.

***Note:*** *Contact Parker representative for information on additional materials.*

## VacuSeal End Data Information

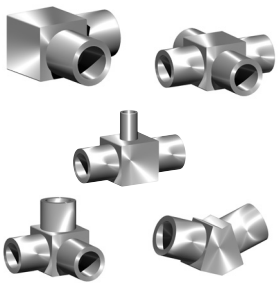
| Size | VacuSeal Thread | *L in. | **C in. | H Hex in. | E Dia. in. |
|---|---|---|---|---|---|
| 4 | 9/16-18 | .62 | .97 | 5/8 | .19 |
| 6 | 7/8-14 | .75 | 1.10 | 15/16 | .28 |
| 8 | 7/8-14 | .75 | 1.10 | 15/16 | .41 |
| 12 | 1-1/4-18 | 1.00 | 1.40 | 1-5/16 | .53 |

*Average Value
**Dimension C is shown in the finger tight position




## Additional Products

**MiniButtwelds™**



**UltraSeal™ Fittings**

Parker offers a full line of MiniButtweld™ products to complement the VacuSeal™ product line. Please refer to MiniButtweld™ (25000258) and UltraSeal™ (25000259) Fittings Catalogs for additional information.



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# Notes



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# Parker's Motion & Control Technologies

**At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 1-800-C-Parker.**

## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

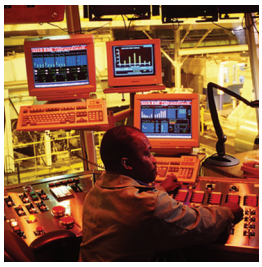
## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- $CO^2$ controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydrostatic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions

## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

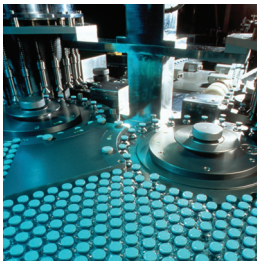
## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors

## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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