

MiniButtweld™ Fittings

Catalog 4280 - MiniButtweld™
June 2000



MiniButtweld™ Fittings

Introduction

Parker UHP products are designed as leak-free components for applications where ultra-high pure applications are required. MiniButtweld™ fittings provide compact ultra-high pure designs for use with orbital weld equipment. Their unique machining and surface enhancement prevent outgassing and inhibit corrosion.

Index

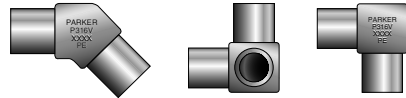
Reducer Page 3



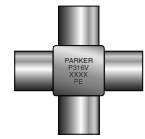
Tee Page 5



Elbow Pages 3-4

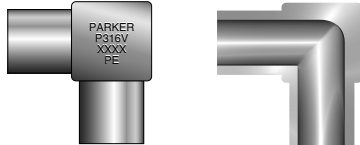


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Standard Features

- 316L VIM/VAR Material
- Permanently Heat Code marked; traceable to original mill certificate of test.
- Electropolished components permanently marked with designator on cube (PE).
- Critical surfaces are 100% visually inspected using magnification and lighting.
- Material composition printed on bag.



Materials

- 316L VIM/VAR Material complies with ASTM A276 and ASME SA479. Recommended tubing specifications include ASME SA213, ASTM A213, ASTM A249, ASTM A269, MIL T8504, and MIL T8506.

Specifications

- **Pressure Ratings** will be governed by the tubing selected for a particular application. Working Pressures are calculated below for tubing using maximum allowable stress levels in accordance with ASME/ANSI B31.3, at ambient temperature.

| Tube O.D. | Pressure Rating | | Normal Wall |
|-----------|-----------------|-----|-------------|
| | psig | bar | Thickness |
| 1/8 in. | 8500 | 580 | .028 in. |
| 1/4 in. | 5100 | 350 | .035 in. |
| 3/8 in. | 3300 | 220 | .035 in. |
| 1/2 in. | 3500 | 240 | .049 in. |
| 6mm | 6600 | 460 | 1mm |

- **Dimensions** are for reference only and are subject to change.
- **Internal Surface Finishes:** Standard finish MiniButtweld™ fittings have an internal Surface Roughness of 15 μinch Ra. Electropolished (PE) MiniButtweld fittings have an internal Surface Roughness of 5 μinch Ra.
- **Cleaning and Packaging:** Ultra-High Purity 'OMEGA' cleaning and packaging in a Class 100 Clean Room environment validated per Federal Standard 209E, is standard for all electropolished components.



UHP Products Division

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Offer of Sale

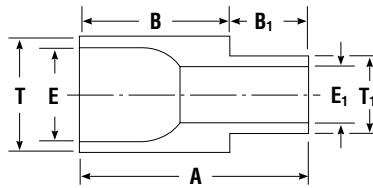
The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the VacuSeal™ Catalog 4245.

⚠ WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

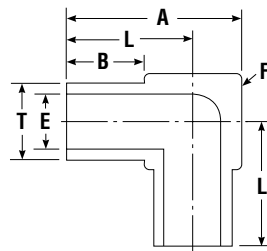
This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.



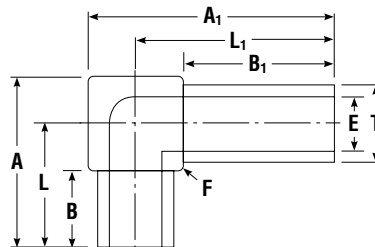
Reducing Union

| T Tube O.D. | T1 Tube O.D. | Ordering Number | A | | B | | B1 | | E | | E1 | |
|-------------------|--------------------|-----------------------|------|------|------|------|------|-----|------|------|------|-----|
| | | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| fractional | | | | | | | | | | | | |
| 1/4 | 1/8 | 4-2 MHM-SSV .035 .028 | 0.75 | 19.1 | 0.50 | 12.7 | 0.25 | 6.4 | 0.18 | 4.6 | 0.07 | 1.8 |
| 3/8 | 1/4 | 6-4 MHM-SSV .035 | 0.75 | 19.1 | 0.50 | 12.7 | 0.25 | 6.4 | 0.31 | 7.9 | 0.18 | 4.6 |
| 1/2 | 1/4 | 8-4 MHM-SSV .049 .035 | 0.75 | 19.1 | 0.50 | 12.7 | 0.25 | 6.4 | 0.40 | 10.2 | 0.18 | 4.6 |
| 1/2 | 3/8 | 8-6 MHM-SSV .049 .035 | 0.75 | 19.1 | 0.50 | 12.7 | 0.25 | 6.4 | 0.40 | 10.2 | 0.31 | 7.9 |



90° Union Elbow

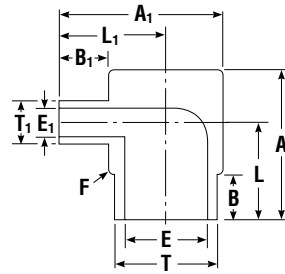
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|-------------------|--------------------|------|------|------|-----|------|------|-------------------|------|------|
| | | in. | mm | in. | mm | in. | mm | | in. | mm |
| fractional | | | | | | | | | | |
| 1/8 | 2-2 MEM-SSV .028 | 0.56 | 14.2 | 0.25 | 6.4 | 0.07 | 1.8 | 5/16 | 0.41 | 10.4 |
| 1/4 | 4-4 MEM-SSV .035 | 0.56 | 14.2 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 |
| 3/8 | 6-6 MEM-SSV .035 | 0.69 | 17.5 | 0.25 | 6.4 | 0.31 | 7.9 | 7/16 | 0.47 | 11.9 |
| 1/2 | 8-8 MEM-SSV .049 | 0.81 | 20.6 | 0.25 | 6.4 | 0.40 | 10.2 | 9/16 | 0.53 | 13.5 |
| 6 mm | 6M-6M MEM-SSV | 0.56 | 14.2 | 0.25 | 6.4 | 0.16 | 4.1 | 5/16 | 0.41 | 10.4 |



Extended Leg 90° Union Elbow

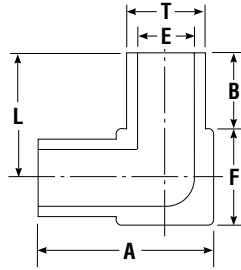
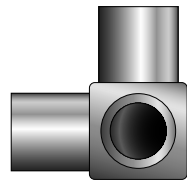
| T Tube O.D. | Ordering Number | A | | A1 | | B | | B1 | | E | | F Body Cube | L | | L1 | |
|-------------------|--------------------|------|------|------|------|------|------|-----|-----|------|-----|-------------------|------|-------|------|------|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | in. | mm |
| fractional | | | | | | | | | | | | | | | | |
| 1/4 | 4-4 MEM1-SSV .035 | 0.56 | 14.2 | 0.76 | 19.3 | 0.25 | 6.4 | .45 | 0.5 | 0.18 | 4.6 | 5/16 | 0.41 | 10.41 | 0.61 | 15.5 |
| 1/4 | 4-4 MEM2-SSV .035 | 0.56 | 14.2 | 0.81 | 20.6 | 0.25 | 6.4 | .50 | 0.5 | 0.18 | 4.6 | 5/16 | 0.41 | 10.41 | 0.66 | 16.8 |
| 1/4 | 4-4 M1EM1-SSV .035 | 0.76 | 19.3 | 0.76 | 19.3 | 0.45 | 11.4 | .45 | 0.5 | 0.18 | 4.6 | 5/16 | 0.61 | 15.49 | 0.61 | 15.5 |
| 1/4 | 4-4 M2EM2-SSV .035 | 0.81 | 20.6 | 0.81 | 20.6 | 0.50 | 12.7 | .50 | 0.5 | 0.18 | 4.6 | 5/16 | 0.66 | 16.76 | 0.66 | 16.8 |

MiniButtweld™ Fittings



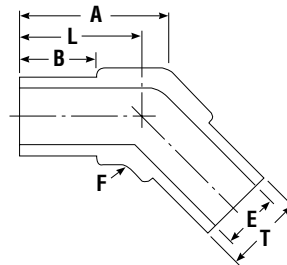
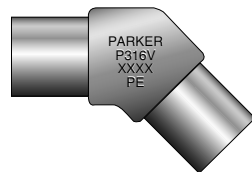
Reducing Elbow

| T Tube O.D. | T1 Tube O.D. | Ordering Number | A | | A1 | | B | | B1 | | E | | E1 | | F Body Cube | L | | L1 | |
|-------------------|--------------------|-----------------------|------|------|------|------|------|-----|------|-----|------|------|------|-----|-------------------|------|------|------|------|
| | | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | in. | mm |
| fractional | | | | | | | | | | | | | | | | | | | |
| 3/8 | 1/4 | 6-4 MEM-SSV .035 | 0.69 | 17.5 | 0.69 | 17.5 | 0.25 | 6.4 | 0.25 | 6.4 | 0.31 | 7.9 | 0.18 | 4.6 | 7/16 | 0.47 | 11.9 | 0.47 | 11.9 |
| 1/2 | 1/4 | 8-4 MEM-SSV .049 .035 | 0.81 | 20.6 | 0.81 | 20.6 | 0.25 | 6.4 | 0.25 | 6.4 | 0.40 | 10.2 | 0.18 | 4.6 | 9/16 | 0.53 | 13.5 | 0.53 | 13.5 |
| 1/2 | 3/8 | 8-6 MEM-SSV .049 .035 | 0.81 | 20.6 | 0.81 | 20.6 | 0.25 | 6.4 | 0.25 | 6.4 | 0.40 | 10.2 | 0.31 | 7.9 | 9/16 | 0.53 | 13.5 | 0.53 | 13.5 |



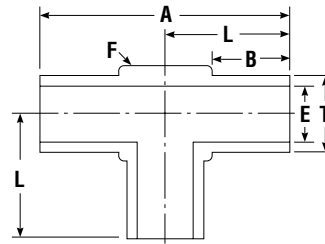
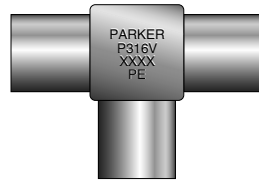
Tribow

| T Tube O.D. | Ordering Number | A | | B | | E | | F Body Cube | L | |
|-------------------|---------------------|------|------|------|-----|------|------|-------------------|------|------|
| | | in. | mm | in. | mm | in. | mm | | in. | mm |
| fractional | | | | | | | | | | |
| 1/4 | 4-4-4 MOJM-SSV .035 | 0.56 | 14.2 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 |
| 3/8 | 6-6-6 MOJM-SSV .035 | 0.69 | 17.5 | 0.25 | 6.4 | 0.31 | 7.9 | 7/16 | 0.47 | 11.9 |
| 1/2 | 8-8-8 MOJM-SSV .049 | 0.81 | 20.6 | 0.25 | 6.4 | 0.40 | 10.2 | 9/16 | 0.53 | 13.5 |



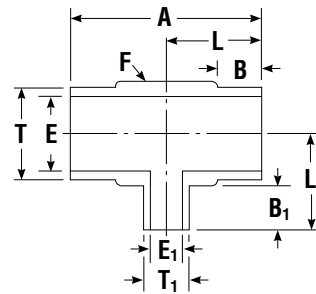
45° Union Elbow

| T Tube O.D. | Ordering Number | A | | B | | E | | F Body Cube | L | |
|-------------------|--------------------|------|------|------|-----|------|------|-------------------|------|------|
| | | in. | mm | in. | mm | in. | mm | | in. | mm |
| fractional | | | | | | | | | | |
| 1/4 | 4-4 MVM-SSV .035 | 0.47 | 11.9 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 |
| 3/8 | 6-6 MVM-SSV .035 | 0.56 | 14.2 | 0.25 | 6.4 | 0.31 | 7.9 | 7/16 | 0.47 | 11.9 |
| 1/2 | 8-8 MVM-SSV .049 | 0.64 | 16.3 | 0.25 | 6.4 | 0.40 | 10.2 | 9/16 | 0.53 | 13.5 |



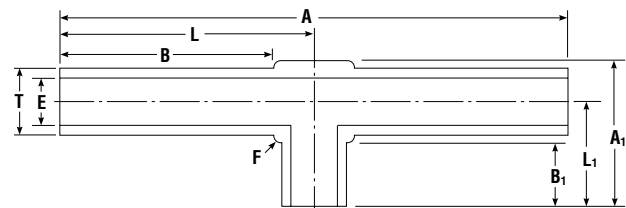
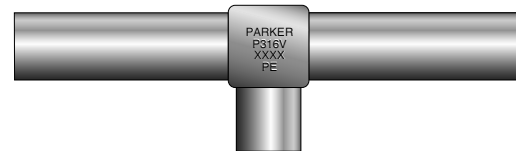
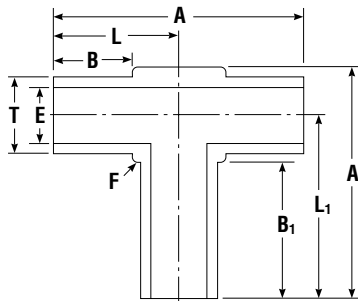
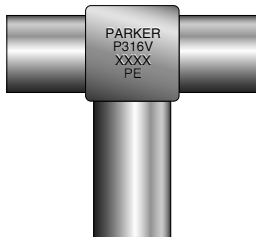
Union Tee

| T Tube O.D. | Ordering Number | A | | B | | E | | F Body Cube | L | |
|-------------------|--------------------|------|------|------|-----|------|------|-------------------|------|------|
| | | in. | mm | in. | mm | in. | mm | | in. | mm |
| fractional | | | | | | | | | | |
| 1/8 | 2-2-2 MJM-SSV .028 | 0.82 | 20.8 | 0.25 | 6.4 | 0.07 | 1.8 | 5/16 | 0.41 | 10.4 |
| 1/4 | 4-4-4 MJM-SSV .035 | 0.82 | 20.8 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 |
| 3/8 | 6-6-6 MJM-SSV .035 | 0.94 | 23.9 | 0.25 | 6.4 | 0.31 | 7.9 | 7/16 | 0.47 | 11.9 |
| 1/2 | 8-8-8 MJM-SSV .049 | 1.06 | 26.9 | 0.25 | 6.4 | 0.40 | 10.2 | 9/16 | 0.53 | 13.5 |
| 6 mm | 6M-6M-6M MJM-SSV | 0.82 | 20.8 | 0.25 | 6.4 | 0.16 | 4.1 | 5/16 | 0.41 | 10.4 |



Reducing Tee

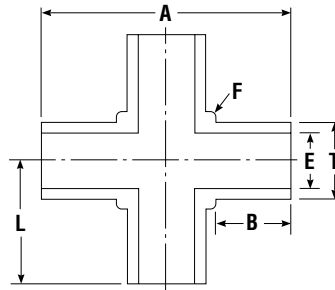
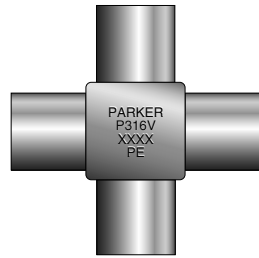
| T Tube O.D. | T1 Tube O.D. | Ordering Number | A | | B | | B1 | | E | | E1 | | F Body Cube | L | | L1 | |
|-------------------|--------------------|------------------------|------|------|------|-----|------|-----|------|------|------|-----|-------------------|------|------|------|------|
| | | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | in. | mm |
| fractional | | | | | | | | | | | | | | | | | |
| 3/8 | 1/4 | 6-6-4 MJM-SSV .035 | 0.94 | 23.9 | 0.25 | 6.4 | 0.25 | 6.4 | 0.31 | 7.9 | 0.18 | 4.6 | 7/16 | 0.47 | 11.9 | 0.47 | 11.9 |
| 1/2 | 1/4 | 8-8-4 MJM-SSV049049035 | 1.06 | 26.9 | 0.25 | 6.4 | 0.25 | 6.4 | 0.40 | 10.2 | 0.18 | 4.6 | 9/16 | 0.53 | 13.5 | 0.53 | 13.5 |
| 1/2 | 3/8 | 8-8-6 MJM-SSV049049035 | 1.06 | 26.9 | 0.25 | 6.4 | 0.25 | 6.4 | 0.40 | 10.2 | 0.31 | 7.9 | 9/16 | 0.53 | 13.5 | 0.53 | 13.5 |



Extended Leg Union Tee

| T Tube O.D. | Ordering Number | A | | A1 | | B | | B1 | | E | | F Body Cube | L | | L1 | |
|-------------------|---------------------|------|------|------|------|------|------|------|------|------|-----|-------------------|------|------|------|------|
| | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | | in. | mm | | |
| fractional | | | | | | | | | | | | | | | | |
| 1/4 | 4-4-4 MJM1-SSV .035 | 0.82 | 20.8 | 0.76 | 19.3 | 0.25 | 6.4 | 0.45 | 11.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 | 0.61 | 15.5 |
| 1/4 | 4-4-4 M3JM-SSV .035 | 1.97 | 50.0 | 0.56 | 14.2 | 0.83 | 21.1 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.98 | 24.9 | 0.41 | 10.4 |

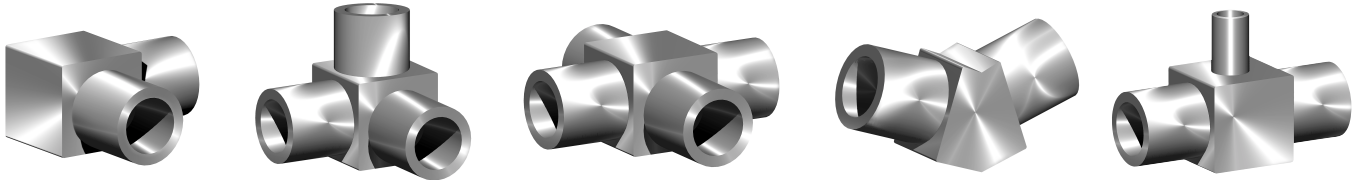
MiniButtweld™ Fittings



Union Cross

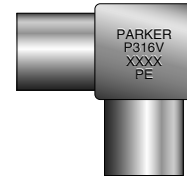
| T Tube O.D. | Ordering Number | A | | B | | E | | F Body Cube | L | |
|-------------------|--------------------|------|------|------|-----|------|------|-------------------|------|------|
| | | in. | mm | in. | mm | in. | mm | | in. | mm |
| fractional | | | | | | | | | | |
| 1/8 | 2 MKM-SSV .028 | 0.82 | 20.8 | 0.25 | 6.4 | 0.07 | 1.8 | 5/16 | 0.41 | 10.4 |
| 1/4 | 4 MKM-SSV .035 | 0.82 | 20.8 | 0.25 | 6.4 | 0.18 | 4.6 | 5/16 | 0.41 | 10.4 |
| 3/8 | 6 MKM-SSV .035 | 0.94 | 23.9 | 0.25 | 6.4 | 0.31 | 7.9 | 7/16 | 0.47 | 11.9 |
| 1/2 | 8 MKM-SSV .049 | 1.06 | 26.9 | 0.25 | 6.4 | 0.40 | 10.2 | 9/16 | 0.53 | 13.5 |
| 6 mm | 6M MKM-SSV | 0.82 | 20.8 | 0.25 | 6.4 | 0.16 | 4.1 | 5/16 | 0.41 | 10.4 |

Ordering Instructions



Example: If your system requires an electropolished 90° Elbow orbital tube weld fitting connecting from 1/4" O.D. tubing to 1/4" O.D. tubing, .035" wall thickness, you would order the following part:

4-4 - MEM - SSV .035 - PE
 Size - Type - Material - Wall Thickness - Electropolished 5 µinch Ra



Size: Tube sizes are designated by the number of sixteenths of an inch. (i.e. 1/4" O.D. tube=4/16"=4) Metric Tube O.D. is designated in millimeters and prefixed by "M". (i.e. 6M-6M MEM-SSV)

Type: Designates shape of component: H=Union, E=90° Elbow, V= 45° Elbow, J=Tee, K=Cross, OJ=Tribow.

Material: 316L VIM/VAR Stainless Steel. High-purity Nickel and Hastelloy C-22® available upon request.

Wall Thickness: Fittings must be specified to match tube wall thicknesses. See page 2 for standard wall thicknesses, other sizes available upon request.

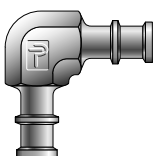
Hastelloy C-22® is a registered trademark of Haynes International, Inc.

How To Order

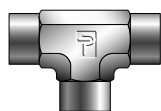
Parker MiniButtweld™ Components are ordered by ordering number, as listed in this catalog.

Additional Products

Automatic Buttweld



Socket Weld



VacuSeal™



Parker also offers a full line of Automatic Buttweld and Socket Weld (Weld-lok) fittings. See Catalog 4280 for additional information.

See Catalog 4245 VacuSeal™ for Parker's full line of Gasket Face Seal products.