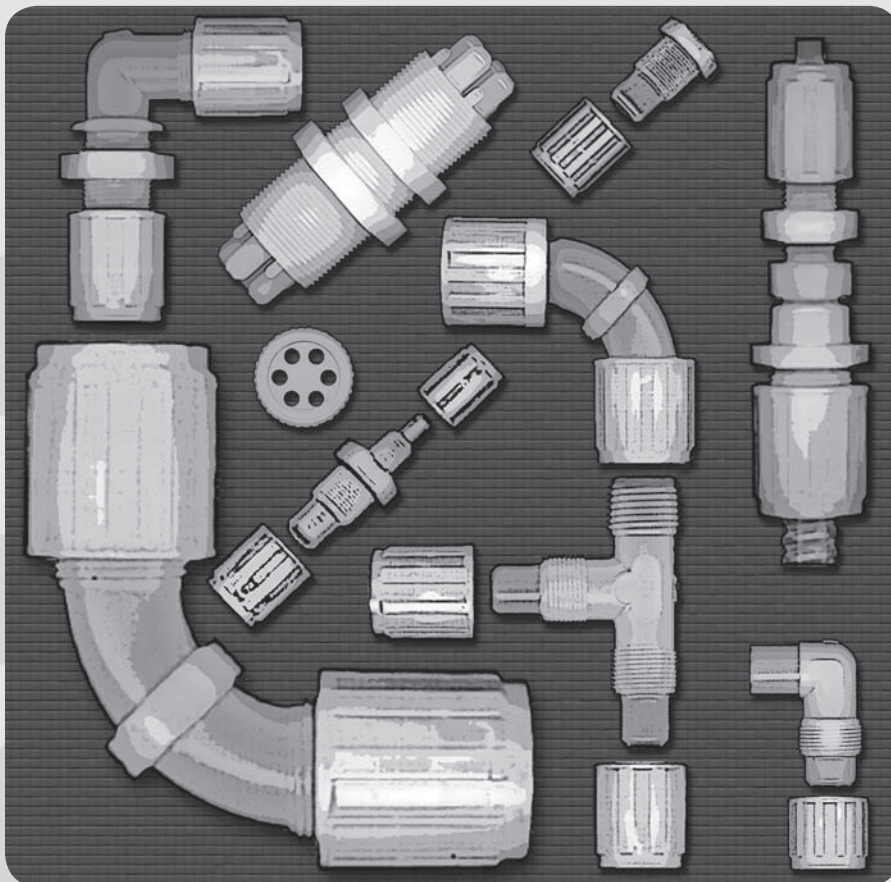


ChemBond™ Technical

PDF Published April 1, 2015

PFA Fluid Handling System

ChemBond™ PFA Pipe & Pipe Fittings



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ISO 9001:2008 Certified

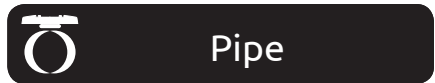
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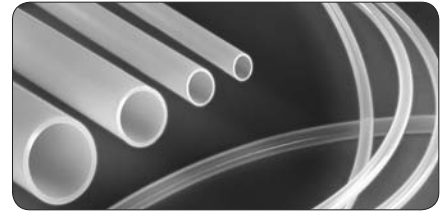
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PFA Pipe



Pipe

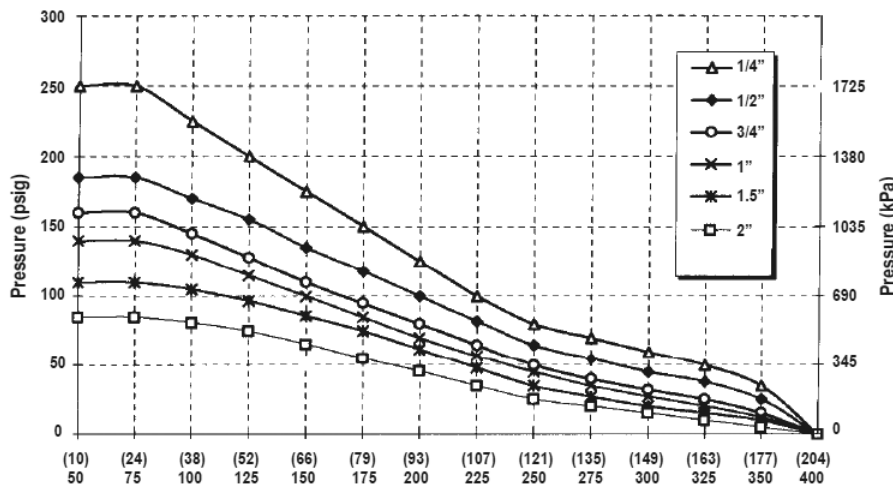


Pipe must be bought in 10 foot lengths.
Minimum quantity of 100 feet.

Schedule 40 PFA Pipe (Dimensions in Inches)

| Item No. | Pipe | Pipe O.D. | Min. Wall Thickness | Stock Length (ft.) | Min. Qty. (ft.) |
|----------|------|-----------|---------------------|--------------------|-----------------|
| CB-0250 | 1/4" | 0.540 | 0.088 | 10 | 100 |
| CB-0500 | 1/2" | 0.840 | 0.109 | 10 | 100 |
| CB-0750 | 3/4" | 1.050 | 0.113 | 10 | 100 |
| CB-1000 | 1" | 1.315 | 0.133 | 10 | 100 |
| CB-2000 | 2" | 2.375 | 1.154 | 10 | 100 |

pressure vs. temperature



Technical Specifications

PFA physical properties

Upper Service Temperature
Specific Gravity
Tensile Strength
Elongation
Flex Modulus
MIT Flex Life
Hardness

ASTM test

D 792
D 1708
D 638
D 790
D 2176
D 2240

values

260°C (500°F)
2.15
4200 PSI
400 %
90,000 PSI
500,000+
60 Shore D

PFA features

- 100% virgin grade high performance resins used to resist stress cracking
- Chemically inert to nearly all industrial chemicals and solvents
- Higher thermal stability than with FEP
- Lower permeability than with FEP
- Translucent
- Moisture absorption nearly zero
- FDA compliant for food contact
- Non-flammable

PFA applications

- Chemical process
- Heat exchangers
- Laboratory applications
- Semiconductor
- Flow monitoring
- Emissions monitoring
- Double containment systems
- Food processing
- Electrical insulation
- Automotive hose
- Automotive paint spray
- Sodium Bisulfite and Sodium Hypochlorite chemical feed systems

PFA specifications

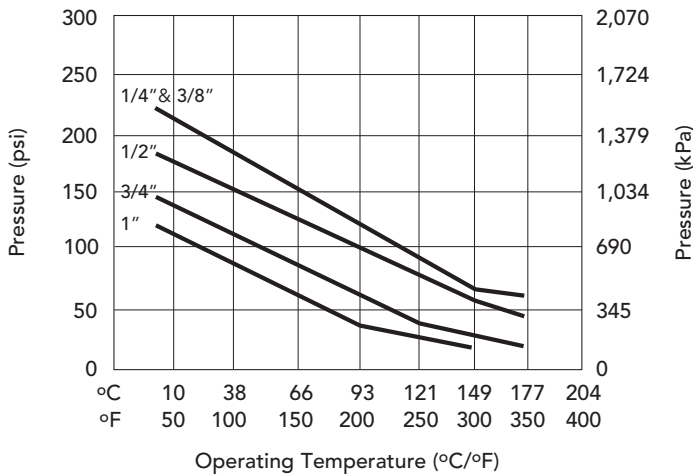
- General: Chemline PFA meets or exceeds the requirements listed in ASTM D 6867-03
- Temperature: -300° F to 500° F
- Flammability: UL 94 VO rated. Chemline PFA tubing resists combustion and does not promote flame spread
- FDA: Chemline PFA is approved for the use in food contact applications in compliance with FDA regulation: 21 CFR 177.1550
- USP Class VI: Chemline PFA tubing meets the requirements of UPS Class VI



pressure vs. temperature

Pressure ratings based on 0.047" wall for 1/4" fittings and 0.062" wall for 3/8", 1/2", 3/4" and 1".

PFA Fittings



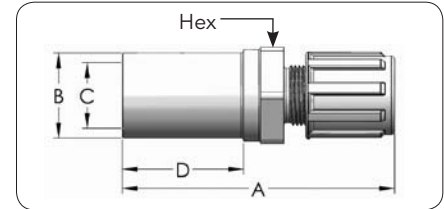
Warning: Not for use in applications exceeding 120°C (248°F).

Infrared Butt Fusion SP110C.10S Welder



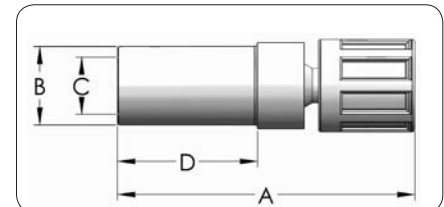
The **SP110S.10S** is an automatic welding machine for heating element infrared welding of PE, PP, PVDF, ECTFE and PFA pipes and fittings from OD 20 to OD 110 mm and 1/2" to 2" IPS sizes. in the workshop or in the field. It has two large aluminum pipe clamps which accept reducers for different pipe sizes, as well as two narrow fitting clamps for fittings with short legs.

The electronically controlled infrared heating element with limit stops has a special ceramic coating and control lamps for system and interval checking. Temperature adjustment is carried out by means of a digital control unit with separate mains plug and switch. The electric planer and heater rest on precise 2-axis-guiding and are automatically slid out between the welding pieces from the protective cover when in use. A shipping crate serves for the transport and the protected storage of the complete SP110 welding kit.



Weld Straight Connector – Pipe x Tube Inches

| Item No. | Pipe | Tube | Orifice | A | B | C | D | HEX |
|-----------------|------|------|---------|------|------|------|------|---------|
| CB-WSC4P-4N-1 | 1/4" | 1/4" | 0.15 | 2.02 | 0.54 | 0.35 | 0.75 | 5/8" |
| CB-WSC4P-6N-1 | 1/4" | 3/8" | 0.25 | 2.12 | 0.54 | 0.35 | 0.75 | 1-3/16" |
| CB-WSC4P-8N-1 | 1/4" | 1/2" | 0.35 | 2.21 | 0.54 | 0.35 | 0.75 | 1-3/16" |
| CB-WSC8P-4N-1 | 1/2" | 1/4" | 0.15 | 3.15 | 0.84 | 0.61 | 1.50 | 1" |
| CB-WSC8P-6N-1 | 1/2" | 3/8" | 0.25 | 3.26 | 0.84 | 0.61 | 1.50 | 1" |
| CB-WSC8P-8N-1 | 1/2" | 1/2" | 0.38 | 3.36 | 0.84 | 0.61 | 1.50 | 1" |
| CB-WSC8P-12N-1 | 1/2" | 3/4" | 0.61 | 3.50 | 0.84 | 0.61 | 1.50 | 1-3/16" |
| CB-WSC12P-4N-1 | 3/4" | 1/4" | 0.15 | 3.15 | 1.05 | 0.81 | 1.50 | 1-3/16" |
| CB-WSC12P-6N-1 | 3/4" | 3/8" | 0.25 | 3.26 | 1.05 | 0.81 | 1.50 | 1-3/16" |
| CB-WSC12P-8N-1 | 3/4" | 1/2" | 0.38 | 3.36 | 1.05 | 0.81 | 1.50 | 1-3/16" |
| CB-WSC12P-12N-1 | 3/4" | 3/4" | 0.63 | 3.50 | 1.05 | 0.81 | 1.50 | 1-3/16" |
| CB-WSC12P-16N-1 | 3/4" | 1" | 0.81 | 3.71 | 1.05 | 0.81 | 1.50 | 1-7/16" |
| CB-WSC16P-8N-1 | 1" | 1/2" | 0.38 | 2.63 | 1.32 | 1.05 | 1.50 | 1-7/16" |
| CB-WSC16P-12N-1 | 1" | 3/4" | 0.63 | 3.50 | 1.32 | 1.03 | 1.50 | 1-7/16" |
| CB-WSC16P-16N-1 | 1" | 1" | 0.88 | 3.71 | 1.32 | 1.03 | 1.50 | 1-7/16" |

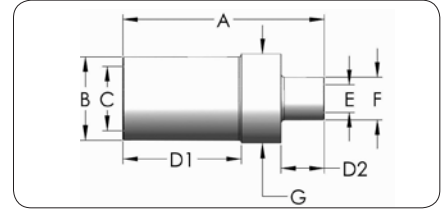


Weld Straight Connector – Pipe x Tight Flare Inches

| Item No. | Pipe | Tight Flare | Orifice | A | B | C | D |
|------------------|------|-------------|---------|------|------|------|------|
| CB-WSC4P-4TN-1 | 1/4" | 1/4" | 0.15 | 2.17 | 0.54 | 0.35 | 0.75 |
| CB-WSC4P-6TN-1 | 1/4" | 3/8" | 0.25 | 2.21 | 0.54 | 0.35 | 0.75 |
| CB-WSC8P-6TN-1 | 1/2" | 3/8" | 0.25 | 3.38 | 0.84 | 0.61 | 1.50 |
| CB-WSC8P-8TN-1 | 1/2" | 1/2" | 0.38 | 3.42 | 0.84 | 0.61 | 1.50 |
| CB-WSC8P-12TN-1 | 1/2" | 3/4" | 0.61 | 3.58 | 0.84 | 0.61 | 1.50 |
| CB-WSC12P-8TN-1 | 3/4" | 1/2" | 0.38 | 3.42 | 1.05 | 0.81 | 1.50 |
| CB-WSC12P-12TN-1 | 3/4" | 3/4" | 0.63 | 3.58 | 1.05 | 0.81 | 1.50 |
| CB-WSC12P-16TN-1 | 3/4" | 1" | 0.81 | 4.02 | 1.05 | 0.81 | 1.50 |
| CB-WSC16P-12TN-1 | 1" | 3/4" | 0.63 | 3.58 | 1.32 | 1.03 | 1.50 |
| CB-WSC16P-16TN-1 | 1" | 1" | 0.88 | 4.02 | 1.32 | 1.03 | 1.50 |

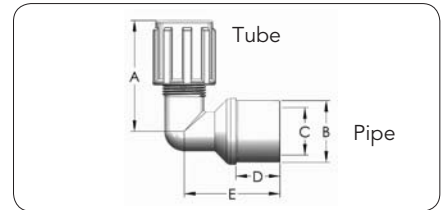
ChemBond™ PFA Fittings

Welded Fittings



Weld Straight Reducer Inches

| Item No. | Pipe | Pipe | Orifice | A | B | C | D ₁ | D ₂ | E | F | G |
|--------------|------|------|---------|------|------|------|----------------|----------------|------|------|------|
| CB-WSR8P4P | 1/2" | 1/4" | 0.35 | 2.75 | 0.84 | 0.61 | 1.50 | 0.75 | 0.35 | 0.54 | 0.83 |
| CB-WSR12P4P | 3/4" | 1/4" | 0.35 | 2.75 | 1.05 | 0.81 | 1.50 | 0.75 | 0.35 | 0.54 | 1.11 |
| CB-WSR12P8P | 3/4" | 1/2" | 0.61 | 3.50 | 1.05 | 0.81 | 1.50 | 1.50 | 0.61 | 0.84 | 1.11 |
| CB-WSR16P4P | 1" | 1/4" | 0.35 | 3.50 | 1.32 | 1.03 | 1.50 | 1.50 | 0.35 | 0.54 | 1.41 |
| CB-WSR16P8P | 1" | 1/2" | 0.61 | 3.50 | 1.32 | 1.03 | 1.50 | 1.50 | 0.61 | 0.84 | 1.41 |
| CB-WSR16P12P | 1" | 3/4" | 0.81 | 3.50 | 1.32 | 1.03 | 1.50 | 1.50 | 0.81 | 1.05 | 1.41 |

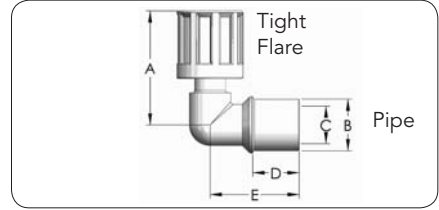


Weld Elbow Connector – Pipe x Tube Inches

| Item No. | Pipe | Tube | Orifice | A | B | C | D | E |
|-----------------|------|------|---------|------|------|------|------|------|
| CB-WEC4P-4N-1 | 1/4" | 1/4" | 0.15 | 1.66 | 0.54 | 0.35 | 0.75 | 1.27 |
| CB-WEC4P-6N-1 | 1/4" | 3/8" | 0.25 | 1.76 | 0.54 | 0.35 | 0.75 | 1.27 |
| CB-WEC8P-4N-1 | 1/2" | 1/4" | 0.15 | 1.66 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-6N-1 | 1/2" | 3/8" | 0.25 | 1.76 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-8N-1 | 1/2" | 1/2" | 0.38 | 1.87 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-12N-1 | 1/2" | 3/4" | 0.61 | 2.22 | 0.84 | 0.61 | 0.75 | 1.71 |
| CB-WEC12P-8N-1 | 3/4" | 1/2" | 0.38 | 1.87 | 1.05 | 0.81 | 0.75 | 1.44 |
| CB-WEC12P-12N-1 | 3/4" | 3/4" | 0.63 | 2.22 | 1.05 | 0.81 | 0.75 | 1.71 |
| CB-WEC12P-16N-1 | 3/4" | 1" | 0.63 | 2.70 | 1.05 | 0.81 | 0.75 | 1.71 |
| CB-WEC16P-12N-1 | 1" | 3/4" | 0.63 | 2.22 | 1.32 | 1.03 | 0.75 | 1.72 |
| CB-WEC16P-16N-1 | 1" | 1" | 0.88 | 2.70 | 1.32 | 1.03 | 0.75 | 1.72 |

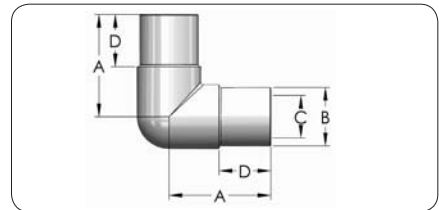
ChemBond™ PFA Fittings

Welded Fittings



Weld Elbow Connector – Pipe x Tight Flare Inches

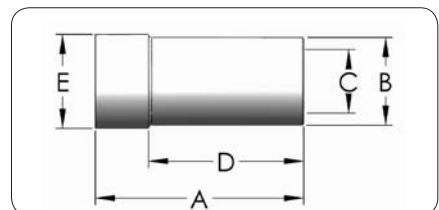
| Item No. | Pipe | Tight Flare | Orifice | A | B | C | D | E |
|------------------|------|-------------|---------|------|------|------|------|------|
| CB-WEC4P-4TN-1 | 1/4" | 1/4" | 0.15 | 1.64 | 0.54 | 0.35 | 0.75 | 1.27 |
| CB-WEC4P-6TN-1 | 1/4" | 3/8" | 0.25 | 1.73 | 0.54 | 0.35 | 0.75 | 1.27 |
| CB-WEC8P-4TN-1 | 1/2" | 1/4" | 0.15 | 1.64 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-6TN-1 | 1/2" | 3/8" | 0.25 | 1.73 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-8TN-1 | 1/2" | 1/2" | 0.38 | 1.84 | 0.84 | 0.61 | 0.75 | 1.44 |
| CB-WEC8P-12TN-1 | 1/2" | 3/4" | 0.61 | 2.13 | 0.84 | 0.61 | 0.75 | 1.50 |
| CB-WEC12P-8TN-1 | 3/4" | 1/2" | 0.38 | 1.84 | 1.05 | 0.81 | 0.75 | 1.71 |
| CB-WEC12P-12TN-1 | 3/4" | 3/4" | 0.63 | 2.13 | 1.05 | 0.81 | 0.75 | 1.71 |
| CB-WEC12P-16TN-1 | 3/4" | 1" | 0.81 | 2.74 | 1.05 | 0.81 | 0.75 | 1.71 |
| CB-WEC16P-12TN-1 | 1" | 3/4" | 0.63 | 2.13 | 1.32 | 1.03 | 0.75 | 1.72 |
| CB-WEC16P-16TN-1 | 1" | 1" | 0.88 | 2.74 | 1.32 | 1.03 | 0.75 | 1.72 |



Weld Union Elbow Inches

| Item No. | Pipe | A | B | C | D |
|------------|------|------|------|------|------|
| CB-WUE4P | 1/4" | 1.27 | 0.54 | 0.35 | 0.75 |
| CB-WUE8P | 1/2" | 1.47 | 0.84 | 0.61 | 0.75 |
| CB-WUE8PX | 1/2" | 2.22 | 0.84 | 0.61 | 1.50 |
| CB-WUE12P | 3/4" | 1.55 | 1.05 | 0.81 | 0.75 |
| CB-WUE12PX | 3/4" | 2.30 | 1.05 | 0.81 | 1.50 |
| CB-WUE16P | 1" | 1.50 | 1.32 | 1.03 | 0.75 |
| CB-WUE16PX | 1" | 2.18 | 1.32 | 1.03 | 1.48 |

X = Extended

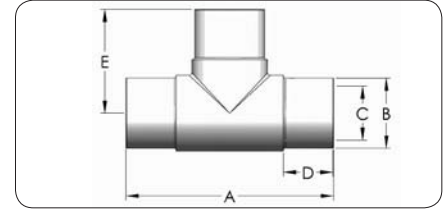


Weld Pipe Cap Inches

| Item No. | Pipe | A | B | C | D | E |
|-----------|------|------|------|------|------|------|
| CB-WCAP4 | 1/4" | 0.75 | 0.54 | 0.35 | 0.55 | 0.62 |
| CB-WCAP8 | 1/2" | 2.00 | 0.84 | 0.61 | 1.49 | 0.90 |
| CB-WCAP12 | 3/4" | 2.01 | 1.05 | 0.81 | 1.49 | 1.11 |
| CB-WCAP16 | 1" | 2.01 | 1.32 | 1.03 | 1.49 | 1.43 |

ChemBond™ PFA Fittings

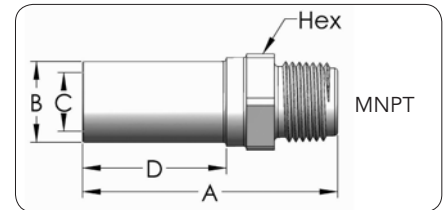
Welded Fittings



Weld Union Tee Inches

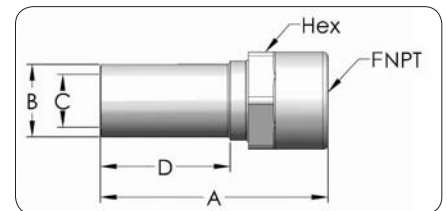
| Item No. | Pipe | A | B | C | D | E |
|------------|------|------|------|------|------|------|
| CB-WUT4P | 1/4" | 2.54 | 0.54 | 0.35 | 0.75 | 1.27 |
| CB-WUT8P | 1/2" | 2.94 | 0.84 | 0.61 | 0.75 | 1.47 |
| CB-WUT8PX | 1/2" | 4.44 | 0.84 | 0.61 | 1.50 | 2.22 |
| CB-WUT12P | 3/4" | 3.10 | 1.05 | 0.81 | 0.75 | 1.55 |
| CB-WUT12PX | 3/4" | 4.60 | 1.05 | 0.81 | 1.50 | 2.30 |
| CB-WUT16P | 1" | 3.00 | 1.32 | 1.03 | 0.75 | 1.50 |
| CB-WUT16PX | 1" | 4.36 | 1.32 | 1.03 | 1.43 | 2.18 |

X = Extended



Weld Male Adaptor Inches

| Item No. | Pipe | MNPT | Orifice | A | B | C | D | HEX |
|--------------|------|------|---------|------|------|------|------|---------|
| CB-WMA4P-4 | 1/4" | 1/4" | 0.28 | 1.78 | 0.54 | 0.35 | 0.75 | 5/8" |
| CB-WMA8P-6 | 1/2" | 3/8" | 0.36 | 2.56 | 0.84 | 0.61 | 1.49 | 1" |
| CB-WMA8P-8 | 1/2" | 1/2" | 0.51 | 2.66 | 0.84 | 0.61 | 1.49 | 1" |
| CB-WMA12P-8 | 3/4" | 1/2" | 0.51 | 2.66 | 0.84 | 0.61 | 1.49 | 1-3/16" |
| CB-WMA12P-12 | 3/4" | 3/4" | 0.66 | 2.68 | 1.05 | 0.81 | 1.49 | 1-3/16" |
| CB-WMA16P-16 | 1" | 1" | 0.94 | 2.85 | 1.32 | 1.03 | 1.49 | 1-7/16" |

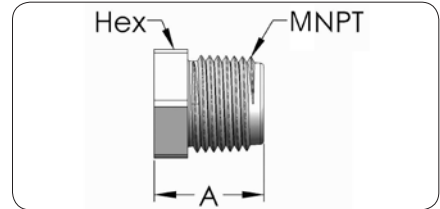
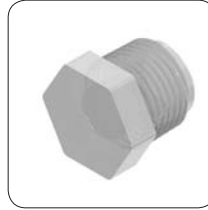


Weld Female Adaptor Inches

| Item No. | Pipe | FNPT | Orifice | A | B | C | D | HEX |
|--------------|------|------|---------|------|------|------|------|---------|
| CB-WFA4P-4 | 1/4" | 1/4" | 0.34 | 1.58 | 0.54 | 0.35 | 0.75 | 3/4" |
| CB-WFA8P-6 | 1/2" | 3/8" | 0.36 | 2.49 | 0.84 | 0.35 | 1.49 | 15/16" |
| CB-WFA8P-8 | 1/2" | 1/2" | 0.51 | 2.56 | 0.84 | 0.61 | 1.49 | 1-1/8" |
| CB-WFA12P-12 | 3/4" | 3/4" | 0.79 | 2.69 | 1.05 | 0.81 | 1.49 | 1-7/16" |
| CB-WFA16P-16 | 1" | 1" | 0.99 | 2.83 | 1.32 | 1.03 | 1.49 | 1-7/8" |

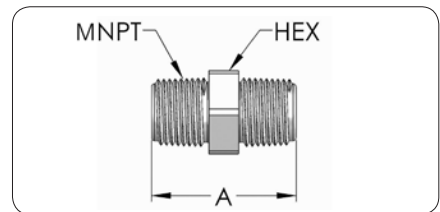
ChemBond™ PFA Fittings

Welded Fittings



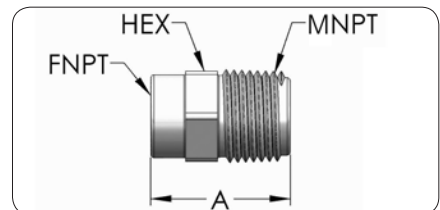
Pipe Plug Inches

| Item No. | MNPT | A | HEX |
|----------|------|------|---------|
| CB-PP2 | 1/8" | 0.80 | 1/2" |
| CB-PP4 | 1/4" | 0.85 | 5/8" |
| CB-PP6 | 3/8" | 0.85 | 11/16" |
| CB-PP8 | 1/2" | 0.96 | 13/16" |
| CB-PP12 | 3/4" | 0.96 | 1-3/16" |
| CB-PP16 | 1" | 1.14 | 1-7/16" |



Pipe Nipple Inches

| Item No. | Tube NPT | A | HEX |
|----------|----------|------|---------|
| CB-PN2 | 1/8" | 1.31 | 1/2" |
| CB-PN4 | 1/4" | 1.41 | 5/8" |
| CB-PN6 | 3/8" | 1.41 | 11/16" |
| CB-PN8 | 1/2" | 1.61 | 13/16" |
| CB-PN12 | 3/4" | 1.67 | 1-3/16" |
| CB-PN16 | 1" | 2.01 | 1-7/16" |



Female Male Connector Reducer Inches

| Item No. | Female NPT | MNTP | A | HEX |
|-------------|------------|------|------|---------|
| CB-FMCR4-8 | 1/4" | 1/2" | 1.29 | 13/16" |
| CB-FMCR6-8 | 3/8" | 1/2" | 1.38 | 15/16" |
| CB-FMCR8-12 | 1/2" | 3/4" | 1.53 | 1-3/16" |



PFA Fluid Handling System

ChemBond™ PFA Pipe & Pipe Fittings

CHEMLINE  **PLASTICS**
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