

Pressure Rating & Tubing Selection

For working pressures of CPI™/A-LOK® tube connections, please see pages 80–81 of this catalog, the Instrument Tubing Selection Guide (4200-TS) found in the Technical Section of your Parker Instrumentation Products Process Binder, or the Parker Instrument Tube Fitting Installation Manual (Bulletin 4200-B4).

In cases where a male or female pipe thread is the second end of a Parker CPI™/A-LOK® fitting, such threads may be the pressure limiting factor of the tubing system. Pressure ratings for Pipe Ends are shown on page 82.

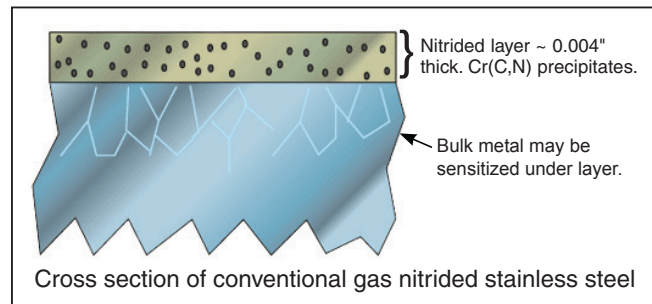
Parker Supercase® Ferrules

The ferrule is a critical, highly engineered component of tube fittings. It requires considerable expertise and care in design, metallurgy and production processes. In order to ensure a high integrity, leak-free connection the leading edge of the ferrule must be hardened for sealing and gripping on stainless steel tubing. Parker has been using a unique, proprietary process, Parker Supercase®, to harden its stainless steel ferrules for over 25 years. The Parker Supercase® process generates the hardness required without reducing the corrosion resistance of stainless steel, in fact greatly enhancing it in many demanding applications.

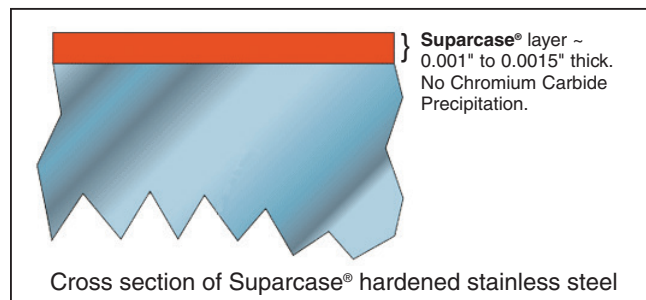
The Parker CPI™ ferrule and the Parker A-LOK® back ferrule in type 316 stainless steel and the 6Mo superaustenitic stainless steel are hardened by the Supercase® process in sizes 1/4" and larger for optimum performance.

Parker Supercase® Technology

Prior ferrule designs used traditional high temperature gas carburizing and/or nitriding to harden the ferrule. These processes formed stable chromium nitrides and carbides, making the chromium no longer available to resist corrosion in the hardened region. The high temperature employed also caused sensitization under the hardened layer leaving this region also susceptible to corrosion.



The Parker Supercase®, hardening process retains the chromium in solid solution as an alloying element available for corrosion resistance. Also, the bulk metal is unaffected by the process; there is no sensitization and the mechanical strength properties of the metal beneath the hardened layer are not changed. The Supercase® hardened layer is continuous, free of defects and voids, is ductile, able to deform with the ferrule during fitting assembly without cracking or spalling.

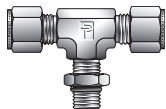


The Parker Supercase® ferrule has a surface hardness of approximately 70 on the Rockwell C scale, considerably higher than untreated stainless steel, ensuring that Parker Instrumentation fittings will seal under internal pressure without leakage or blow-out of the tube until the tubing fractures. They can be disassembled and reassembled numerous times with no loss of sealing integrity.

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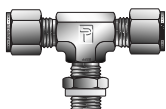
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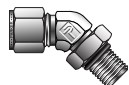
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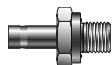
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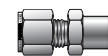
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CPI™/A-LOK® Options

Parker CPI™/A-LOK® fittings may be ordered with the following options.

How to order

After the complete CPI™/A-LOK® number simply add a "dash" then the suffix for the option.

The following example is an A-LOK® male connector for 1/2" OD tube and 1/4" male pipe that has been cleaned for oxygen service. For additional options, please consult the factory.

8MSC4N-316-C3

Suffix	Option	Additional Information
ZYF	Assembled with nylon ferrule(s)	
ZY	Ferrule only (e.g., 4TZ-ZY)	
TF	Assembled with PTFE ferrule(s)	
T	Ferrule only (e.g., 4TZ-T)	
Z6	Preset nut and ferrule(s) on tube stub end	
SPF	Silver plated ferrule(s)	Contact factory.
BP*	Bulk packed	* Indicates the quantity i.e BP50 for a fifty count package.
LWH	Lock wire hole	Contact factory.
BZP	Knurled nut	Replaces standard nut on CPI™/A-LOK® fittings for use on soft plastic tubing.
C	Silver plated nut	Replaces moly coated nut (BZ).
MI	Moly inside nut	
C1	Grade A Cleaning	Special cleaning, assembly, inspection and packaging for high purity applications.
C3	Cleaned for oxygen service	Meets the requirements of ASTM G93-88; Standard Practice for Cleaning Methods for Materials and Equipment used in Oxygen-Enriched Environments.
CNG	Compressed natural gas service	Assembled with a specific o-ring compound.
NIC	Nickel plated	Contact factory.
CRM	Chrome plated	Contact factory.
VO	Viton O-ring	
N03	NACE	MRO103 - latest edition
NACE	NACE	MRO175-2002 or prior version

Insert

For fractional tube



PARKER PART NO.	INTER- CHANGES WITH	INCHES		
		TUBE O.D.	TUBE I.D.	TUBE WALL
3 TIZ .125	305-2	3/16	.125	.031
4 TIZ .125	405-2	1/4	.125	.062
4 TIZ .170	405-170	1/4	.170	.040
4 TIZ .188	405-3	1/4	.188	.031
5 TIZ .125	505-2	5/16	.125	.094
5 TIZ .188	505-3	5/16	.188	.062
5 TIZ .250	505-4	5/16	.250	.031
6 TIZ .188	605-3	3/8	.188	.094
6 TIZ .250	605-4	3/8	.250	.062
8 TIZ .250	815-4	1/2	.250	.125
8 TIZ .375	815-6	1/2	.375	.062
10 TIZ .375	1015-6	5/8	.375	.125
10 TIZ .500	1015-8	5/8	.500	.062
12 TIZ .500	1215-8	3/4	.500	.125
12 TIZ .625	1215-10	3/4	.625	.062
16 TIZ .750	1615-12	1	.750	.125
16 TIZ .875	1615-14	1	.875	.062

Dimensions for reference only, subject to change.
NOTE: Tubing wall thickness and corresponding minimum I.D. flow paths are listed so the system designer can properly match the insert to the tubing.

Example: 4 TIZ .125 is used with tubing having a wall thickness of .062 and I.D. of .125.

Insert

For metric tube



PARKER PART NO.	INTER- CHANGES WITH	MILLIMETERS		
		TUBE O.D.	TUBE I.D.	TUBE WALL
TIZ 6 (4)	6M5-4M	6	4	1,0
TIZ 8 (6)	8M5-6M	8	6	1,0
TIZ 10 (6)	10M5-6M	10	6	2,0
TIZ 10 (8)	10M5-8M	10	8	1,0
TIZ 12 (8)	12M5-8M	12	8	2,0
TIZ 12 (10)	12M5-10M	12	10	1,0
TIZ 15 (10)	15M5-10M	15	10	2,5

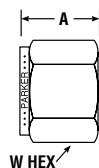
Dimensions for reference only, subject to change.
NOTE: Tubing wall thickness and corresponding minimum I.D. flow paths are listed so the system designer can properly match the insert to the tubing.

Example: TIZ 6 (4) is used with tubing having a wall thickness of 1mm and I.D. of 4mm.

TIZ inserts allow CPI™/A-LOK® fittings to be used with soft plastic tubing.

Tube Nut

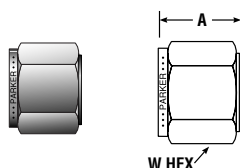
For fractional tube



CPI™ PART NO.	A-LOK® PART NO.	INTER- CHANGES WITH	INCHES		
			TUBE O.D.	A	W HEX
1 BZ	1NU1	102-1	1/16	0.31	5/16
2 BZ	2NU2	202-1	1/8	0.47	7/16
3 BZ	3NU3	302-1	3/16	0.47	1/2
4 BZ	4NU4	402-1	1/4	0.50	9/16
5 BZ	5NU5	502-1	5/16	0.53	5/8
6 BZ	6NU6	602-1	3/8	0.56	11/16
8 BZ	8NU8	812-1	1/2	0.69	7/8
10 BZ	10NU10	1012-1	5/8	0.69	1
12 BZ	12NU12	1212-1	3/4	0.69	1-1/8
14 BZ	14NU14	1412-1	7/8	0.69	1-1/4
16 BZ	16NU16	1612-1	1	0.81	1-1/2
20 BZ	20NU20	2012-1	1-1/4	1.25	1-7/8
24 BZ	24NU24	2412-1	1-1/2	1.50	2-1/4
32 BZ	32NU32	3212-1	2	2.06	3

Dimensions for reference only, subject to change.
NOTE: All size 20, 24 and 32 silver plated nuts should have a system compatible lube (Permatex Anti-seize – Parker Catalog 4290-INST) or equivalent applied to the fitting body threads and the inside back of nuts. This will minimize the effort required to assemble the fitting properly.

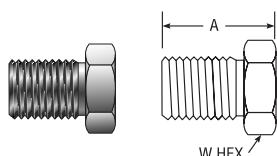
Tube Nut For metric tube



CPI™ PART NO.	A-LOK® PART NO.	INTER- CHANGES WITH	UN THREAD	MILLIMETERS		
				TUBE O.D.	A	W HEX
BZ 2	NUM2	2M2-1	5/16-20	2	11,9	12,0
BZ 3	NUM3	3M2-1	5/16-20	3	11,9	12,0
BZ 4	NUM4	4M2-1	3/8-20	4	11,9	12,0
BZ 6	NUM6	6M2-1	7/16-20	6	12,7	14,0
BZ 8	NUM8	8M2-1	1/2-20	8	13,5	16,0
BZ 10	NUM10	10M2-1	5/8-20	10	15,1	19,0
BZ 12	NUM12	12M2-1	3/4-20	12	17,5	22,0
BZ 14	NUM14	14M2-1	7/8-20	14	17,5	25,0
BZ 15	NUM15	15M2-1	7/8-20	15	17,5	25,0
BZ 16	NUM16	16M2-1	7/8-20	16	17,5	25,0
BZ 18	NUM18	18M2-1	1-20	18	17,5	30,0
BZ 20	NUM20	20M2-1	1.1/8-20	20	17,5	32,0
BZ 22	NUM22	22M2-1	1.1/8-20	22	17,5	32,0
BZ 25	NUM25	25M2-1	1.5/16-20	25	20,6	38,0

Dimensions for reference only, subject to change.

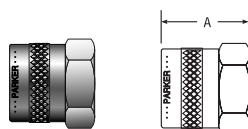
Inverted Tube Nut For fractional tube



PARKER PART NO.	INTER- CHANGES WITH	INCHES		
		TUBE O.D.	A	W HEX
1 BZI	1F2-1GC	1/16	.39	1/4
2 BZI	2F2-1GC	1/8	.44	7/16

Dimensions for reference only, subject to change.

Knurled Nut For fractional tube



PARKER PART NO.	INTER- CHANGES WITH	INCHES	
		TUBE O.D.	A
1 BZP	102-1K	1/16	.32
2 BZP	202-1K	1/8	.47
3 BZP	302-1K	3/16	.47
4 BZP	402-1K	1/4	.51
5 BZP	502-1K	5/16	.54
6 BZP	812-1K	3/8	.57
8 BZP	602-1K	1/2	.69
10 BZP	1012-1K	5/8	.69

Dimensions for reference only, subject to change.

HOW TO ASSEMBLE BZP

1. Replaces BZ/NU nuts on Parker CPI™/A-LOK® fitting bodies.
2. Insert plastic tubing until it bottoms in fitting body.
3. Tighten finger tight.

The knurled nut is designed for use with soft plastic tubing on low pressure applications where a finger tight assembly procedure is satisfactory.

Example: Laboratory test hook-ups. Nylon or PTFE ferrules are frequently used instead of metal ferrules in this type of application.

Ferrules



Color Coding

For easy reference, table column headings are color indicated as follows:

fractional

metric

PARKER PART NO.	INCHES TUBE O.D.
1 TZ	1/16
2 TZ	1/8
3 TZ	3/16
4 TZ	1/4
5 TZ	5/16
6 TZ	3/8
8 TZ	1/2
10 TZ	5/8
12 TZ	3/4
14 TZ	7/8
16 TZ	1
20 TZ	1-1/4
24 TZ	1-1/2
32 TZ	2

Dimensions for reference only, subject to change.

PARKER PART NO.	MILLIMETER TUBE O.D.
TZ 3	3
TZ 6	6
TZ 8	8
TZ 10	10
TZ 12	12
TZ 16	16
TZ 20	20
TZ 25	25

Dimensions for reference only, subject to change.

Note: Ferrules are available in standard metal materials as well as standard plastics like PTFE and nylon. Please consult the factory for availability.

INCH Front Ferrule

For fractional tube

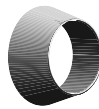


PARKER PART NO.	INTER- CHANGES WITH	INCHES TUBE O.D.
1FF1	103-1	1/16
2FF2	203-1	1/8
3FF3	303-1	3/16
4FF4	403-1	1/4
5FF5	503-1	5/16
6FF6	603-1	3/8
8FF8	813-1	1/2
10FF10	1013-1	5/8
12FF12	1213-1	3/4
14FF14	1413-1	7/8
16FF16	1613-1	1
20FF20	2013-1	1-1/4
24FF24	2413-1	1-1/2
32FF32	3213-1	2

Note: Ferrules are available in standard metal materials as well as standard plastics like PTFE and nylon. Please consult the factory for availability.

METRIC Front Ferrule

For metric tube



PARKER PART NO.	INTER- CHANGES WITH	MM TUBE O.D.
FFM2	2M3-1	2
FFM3	3M3-1	3
FFM4	4M3-1	4
FFM6	6M3-1	6
FFM8	8M3-1	8
FFM10	10M3-1	10
FFM12	12M3-1	12
FFM14	14M3-1	14
FFM15	15M3-1	15
FFM16	16M3-1	16
FFM18	18M3-1	18
FFM20	20M3-1	20
FFM22	22M3-1	22
FFM25	25M3-1	25

Note: Ferrules are available in standard metal materials as well as standard plastics like PTFE and nylon. Please consult the factory for availability.

INCH Back Ferrule

For fractional tube



For stainless steel,
sizes 4-32 are
Supercase® ferrules.

PARKER PART NO.	INTER- CHANGES WITH	INCHES TUBE O.D.
1BF1	104-1	1/16
2BF2	204-1	1/8
3BF3	304-1	3/16
4BF4	404-1	1/4
5BF5	504-1	5/16
6BF6	604-1	3/8
8BF8	814-1	1/2
10BF10	1014-1	5/8
12BF12	1214-1	3/4
14BF14	1414-1	7/8
16BF16	1614-1	1
20BF20	2014-1	1-1/4
24BF24	2414-1	1-1/2
32BF32	3214-1	2

Note: Ferrules are available in standard metal materials as well as standard plastics like PTFE and nylon. Please consult the factory for availability.

METRIC Back Ferrule

For metric tube



For stainless steel,
sizes 6mm–25mm are
Supercase® ferrules.

PARKER PART NO.	INTER- CHANGES WITH	MM TUBE O.D.
BFM2	2M4-1	2
BFM3	3M4-1	3
BFM4	4M4-1	4
BFM6	6M4-1	6
BFM8	8M4-1	8
BFM10	10M4-1	10
BFM12	12M4-1	12
BFM14	14M4-1	14
BFM15	15M4-1	15
BFM16	16M4-1	16
BFM18	18M4-1	18
BFM20	20M4-1	20
BFM22	22M4-1	22
BFM25	25M4-1	25

Note: Ferrules are available in standard metal materials as well as standard plastics like PTFE and nylon. Please consult the factory for availability.

Ferrule Holder

Package simplifies ordering, stocking, and assembling

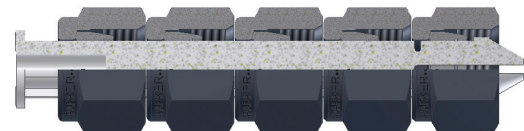
The Parker ferrule holder offers a new convenience. The holder contains individual ferrule sets. Ferrule sets may be dispensed one at a time.



A-LOK® ferrules



CPI™ ferrules



Cross-section of an arbor with five nut ferrule sets

NOTE: Assembled Nut and Ferrule Sets are available.
Use designator NFS for the assembly of 5 sets per arbor.

Examples: 4A-NFS-316 (A-LOK® nut and ferrules set)
4Z-NFS-SS (CPI™ nut and ferrule set)

CPI™ PART NO.	A-LOK® PART NO.	INCHES TUBE O.D.
2 CPI-SET	2 ALOK-SET	1/8
4 CPI-SET	4 ALOK-SET	1/4
6 CPI-SET	6 ALOK-SET	3/8
8 CPI-SET	8 ALOK-SET	1/2
12 CPI-SET	12 ALOK-SET	3/4
16 CPI-SET	16 ALOK-SET	1

*Material designator – 316-SS, B-Brass, S-Steel

CPI™ PART NO.	A-LOK® PART NO.	MM TUBE O.D.
M6 CPI-SET	M6 ALOK-SET	6
M8 CPI-SET	M8 ALOK-SET	8
M10 CPI-SET	M10 ALOK-SET	10
M12 CPI-SET	M12 ALOK-SET	12

*Material designator – 316-SS, B-Brass, S-Steel