Parker
Instrumentation

A-LOK® Tube Fittings

Catalog 4233
Revised, January 2003

A-LOK® Tube Fittings

Introduction

Parker A-LOK® Instrumentation Tube Fittings are designed as leak-free connections for process, power and instrumentation applications. These two ferrule fittings are manufactured to the highest quality standards and are available in a broad range of sizes, materials and configurations.

Features

The Parker A-LOK® tube fitting has been specifically designed for use on instrumentation, process and control systems, analysers and environmental equipment employed in chemical, petroleum, power generating and pulp and paper plants. The A-LOK® tube fitting has also found extensive application in other fields where a high quality tube fitting is required.

Materials

Parker A-LOK® fittings are available as standard in Heat Code Traceable, 316 stainless steel. Other standard materials include steel, brass, aluminum, nickel-copper, Hastelloy C®, Alloy 600, Titanium, 6Mo, Incoloy 625 and 825. Straight fittings are machined from cold finished bar stock and shaped bodies are machined from close grain forgings. The raw materials used fully conform to the chemical requirements listed in Specification Table 1. For nuclear and other critical applications, stainless steel A-LOK® fittings are readily available with documented heat code traceability.

Pipe Fittings/Adapters

Parker A-LOK® tube fittings are available in a wide variety of ISO and ANSI pipe thread configurations. For a full line of these fittings, see Catalog 4260.

Tubing

Parker A-LOK® tube fittings can be used with a wide variety of tubing materials and a broad range of tube wall thicknesses. A-LOK® seals equally well on both thin wall and heavy wall tubing. **Tubing and fitting materials should be selected to be compatible with the fluid media. Due to thermal expansion characteristics and chemical stability, the tubing should be of the same material as the fitting. (The exception is brass fittings and copper tubing.)**

Torque

Parker A-LOK® tube fittings **do not** twist the tubing during installation. A-LOK's® ferrule design assures that all make and remake motion is transmitted axially to the tubing. Since no radial movement of the tubing occurs, the tubing is not stressed. The mechanical integrity of the tubing is maintained.

No Distortion

In make-up, there is no undue force in an outward direction to distort the fitting body or ferrules to cause interference between the ferrules and nut. This assures that the nut will back-off freely for disassembly and permits a greater number of easy remakes.

Sealing

Positive, reliable connections with Parker A-LOK® fittings have been qualified by exhaustive tests and over four decades of experience in the manufacture of quality tube fittings.

Nomenclature

Parker A-LOK® fittings part numbers are constructed from symbols that identify the size and style of the fitting and material used.

Assembly, Remake, Gaugeability

For proper assembly and remake of Parker A-LOK® tube fittings, refer to page 74 in the engineering report section. For gauging of Parker A-LOK® tube fittings, refer to page 74.

Pressure Rating & Tubing Selection

For working pressures of A-LOK® tube connections, please see the Instrument Tubing Selection Guide, found in the Technical Section of your Parker Instrumentation Products Master Binder, or the Parker Instrument Tube Fitting Installation Manual (Bulletin 4200-B4).

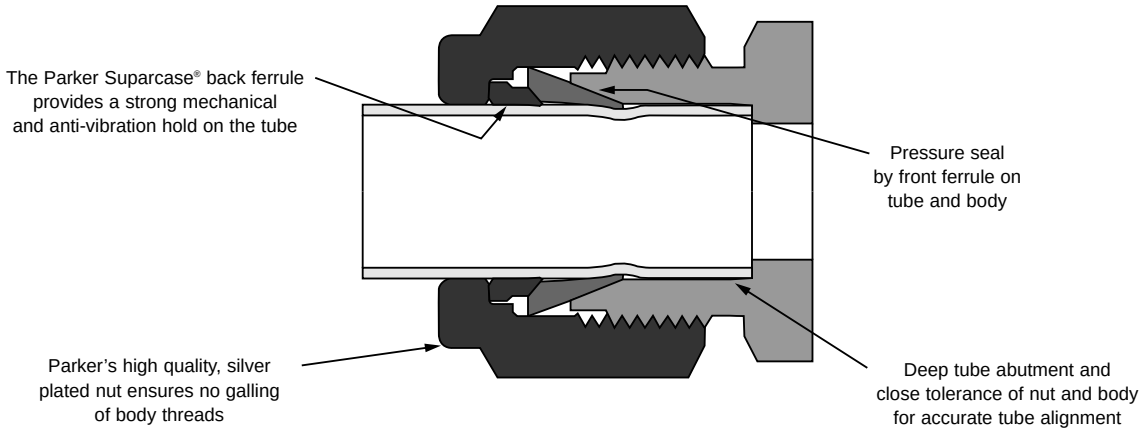
In some cases where a male or female pipe thread is the second end of a Parker A-LOK® fitting, such threads may be the pressure limiting factor of the tubing system. See Catalog 4260, Instrumentation Pipe Fittings for pressure ratings of Parker Instrumentation Pipe Fittings.

Huntsville, Alabama, USA

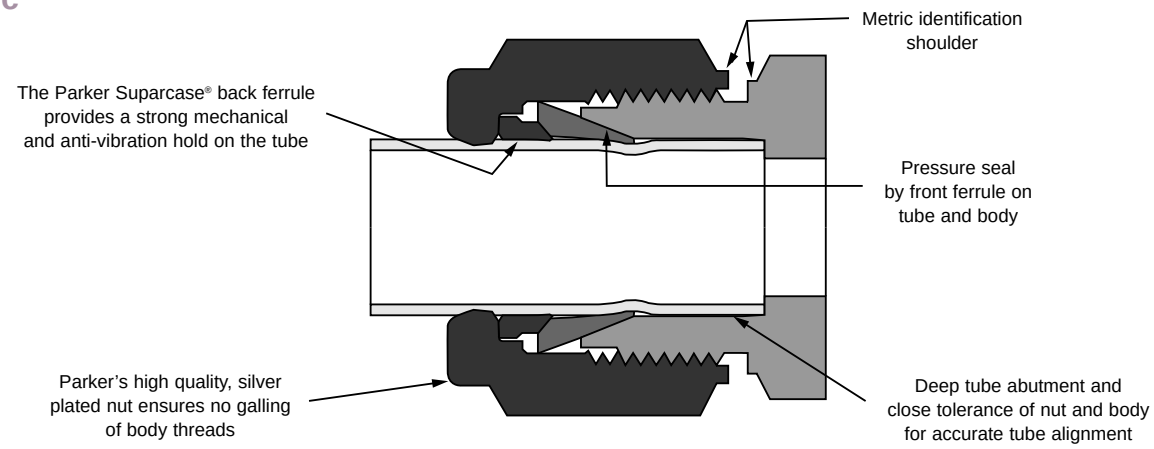
Barnstaple, UK

The Parker A-LOK® twin ferrule fitting consists of four precision engineered parts designed to provide secure leak-proof joints capable of satisfying high pressure, vacuum and vibration applications.

Inch



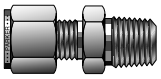
Metric



Parker Instrumentation Tube Fittings are supplied complete and ready to use. The front ferrule swages onto the tube as it moves down the body seat creating a pressure/vacuum-tight seal on both tube and body by the interface pressure and surface finish of mating components. The Parker Suparcase back ferrule then moves inwards in the cone of the front ferrule, forming into the tube and creating a strong mechanical hold on the tube.

Visual Index

Tube to Male Pipe



MSCN
MSCK
MSCR
Male Connnector
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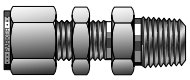
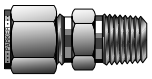
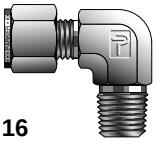


MBCN
Male Bulkhead Connector
page 13



MTCN
Thermocouple Connector
page 14



MSELN
MSELK
Male Elbow
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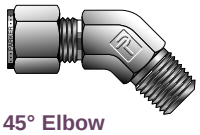
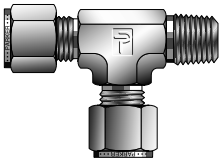
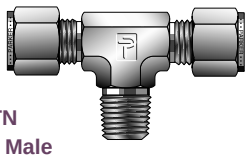


MVELN
NPT Male 45° Elbow
page 17

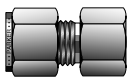


MRTN
NPT Male Run Tee
page 18



MBTN
NPT Male
Branch Tee
page 19

Tube to Female Pipe



FSCN
FSCK
Female Connnector
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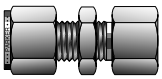

FBCN
Female Bulkhead Connector
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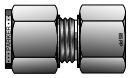

GCR
Gauge Connector
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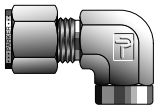

FELN
Female Elbow
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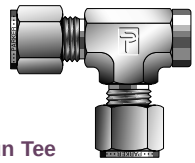

FRTN
Female Run Tee
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FBTN
Female Branch Tee
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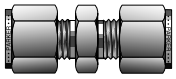
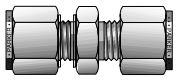
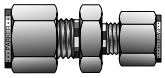
Tube to Tube Unions



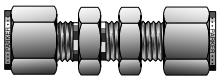
SC
SCM
Union
page 26



CU
Conversion Union
page 26



RU
RUM
Reducing Union
page 27



BC
BCM
Bulkhead Union
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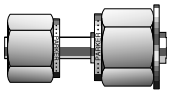
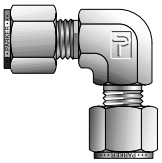


DELTA
Dielectric Union Adapter,
Dielectric Assembly
page 29



EE
EEM
ELZ
Union Elbow
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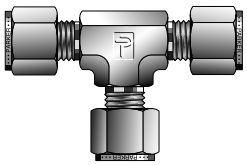

ET
ETM
Union Tee
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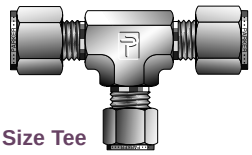
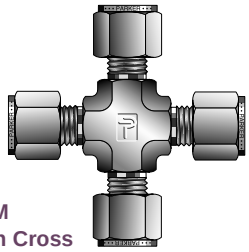


JLZ
Drop Size Tee
page 32



ECR
ECRM
Union Cross
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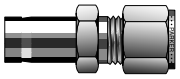
Port Connectors



TUR
TUCM
TURM
Tube End Reducer
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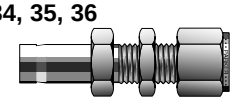

TUBC
Tube End Bulkhead Adapter
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PC
PCM
Port Connector
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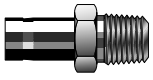
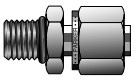


MAN
MAR
MAK
Tube End Male Adapter
page 38, 39, 40, 41



TUHA
Tube End to
SAE Straight Thread Adapter
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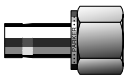

FAN
FAK
FAR
Tube End Female Adapter
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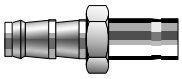

P2T3
Push-Lok
to Tube Adapter
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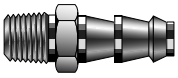

P2HF
Push-Lok
to Male Adapter
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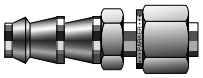
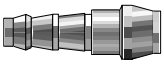


P2LZ6
Push-Lok to A-LOK®
page 45



ZP2
Push-Lok to Port Connector
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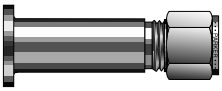
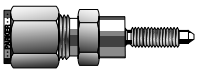


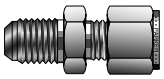
LJF
Lapped Joint Tube Adaptors
page 46



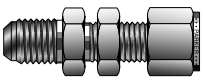
ZH2X
DP Transmitter
Calibration Adapters
page 46

37° Flare (AN) to A-LOK®

X6TU
37° Flare (AN) to A-LOK®
page 47



XASC
37° Flare Connector to A-LOK®
page 47



XABC
37° Flare Bulkhead Connector
to A-LOK®
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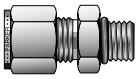
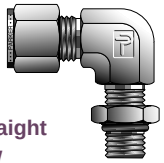
Visual Index

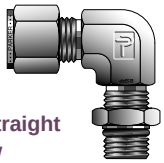
Tube to "O" Ring Seal



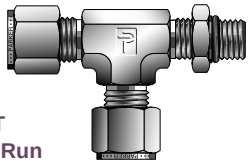
M1SC
Male Connector SAE Straight Thread
page 49



M5SEL
Male SAE Straight Thread Elbow
page 50



MSEL (R)
Male BSPP Straight Thread Elbow
page 50



M5RT
Male Run Tee SAE Straight Thread
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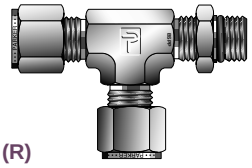
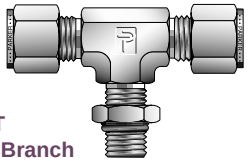
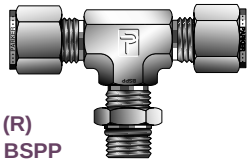


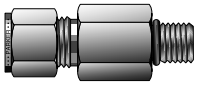
MRT (R)
Male BSPP Run Tee Straight Thread
page 51



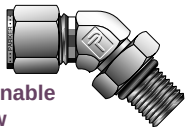
M5BT
Male Branch Tee SAE Straight Thread
page 52



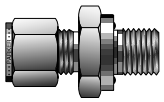
MBT (R)
Male BSPP Branch Tee Straight Thread
page 52



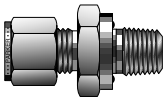
ZH3LA
Long Male Connector SAE Straight Thread
page 53



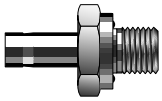
M5VEL
45° Positionable Male Elbow
page 53



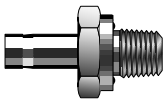
M2SC
Male Connector to "O" Ring Straight Thread
page 54



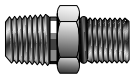
M3SC
Male Connector to "O" Ring Pipe Thread
page 54



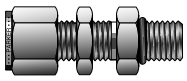
M2TU
Tube End to "O" Ring Straight Thread
page 55



M3TU
Tube End to "O" Ring Pipe Thread
page 55

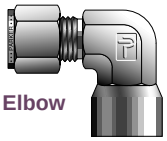


FHOA
Pipe Thread to SAE Straight Thread Adapter
page 56

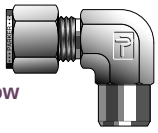


AH2LZ
Bulkhead to Conversion Adapter
page 56

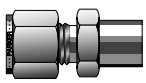
Tube to Welded Systems



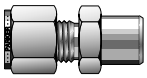
ZELW
Socket Weld Elbow
page 58



ZELW2
Buttweld Elbow
page 58

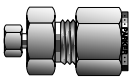


ZHLW
Socket Weld Connector
page 59

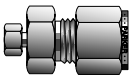


ZHLW2
Buttweld Connector
page 59, 60

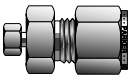
Analytical Fittings



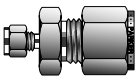
Z2HLZ7
Column End Fitting
page 62



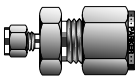
Z3HLZ7
Column End Fitting
page 62



ZHLZ7
Column End Fitting (without Frit)
page 63

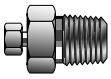


Z2HLZ
Column End Fitting
page 63



ZHLZ
Column End Fitting (without Frit)
page 64

Z7HLZ7
Union Connector
page 64

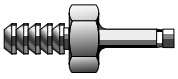


FLZ7
Male Connector
page 65

ZHLS
Sanitary Flange Fitting
page 65

Barbed Fittings

B2HF
Barbed Connector to Male Pipe
page 66



B2TU
Barbed Connector to Tube Adapter
page 66

HCS
Hose Connector Sleeve
page 66

Components

TIZ Insert
page 67

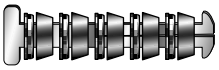
NU, NUM Tube Nut
page 67, 68

BZI Inverted Tube Nut
page 68

BZP Knurled Nut
page 68

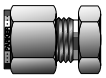
FF, FFM
Front Ferrules
page 69

BF, BFM
Back Ferrules
page 69



Ferrule Holder
page 69

BLP, BLPM Plug
page 70



BLEN, BLENM Cap
page 70, 71

MDF
Vent Protector
page 71

Sealing Washers
page 72

WLZ, WLN
Bulkhead Locknut
page 73

BN Bulkhead Locknut
page 73

L5N Accessory Locknut
page 73

Table 1 – Typical Raw Material Specifications

BASIC FITTING MATERIAL	BAR STOCK	FORGING	COMMON TUBING SPECIFICATION
BRASS	CA-360 QQ-B 626 Alloy 360 ASTM-B16 Alloy 360 CA-345 ASTM-B-453 Alloy 345 BS970 316-S31 DIN 4401 ASME SA479-316	CA-377 QQ-B 626 Alloy 377 ASTM-B-124 Alloy 377 BS2872 CZ122	ASTM-B75 ASME-SB75 (TEMPER "O")
STAINLESS STEEL (Type 316)(1)	ASME-SA-479 Type 316-SS BS970 316-S31 DIN 4401	ASME-SA-182 316 BS970 316-S31 DIN 4401	ASME-SA-213 ASTM-A-213 ASTM-A-249 ASTM-A-269(2) MIL T-8504 MIL T-8506
STEEL	ASTM-A-108 QQ-S-637	ASTM-A-576	SAE J524b SAE J525b ASTM-A-179
ALUMINUM	2017-T4 or 2024-T4 ASTM-B211 QQ-A-225/5 or 6	2014T (as fabricated) ASTM-B-211 QQ-A-225/4	303, 6061T6 ASTM-B-210
NICKEL-COPPER	ASTM-B-164 QQ-N-281 BS3076 NA13	ASTM-B-164 QQ-N-281 BS3076 NA13	ASTM-B-165
HASTELLOY C-276®	ASTM-B-574 ASTMB575	ASTM-B-574	ASTM-B-622 ASTM-B-626
ALLOY 600	ASTM B-166 ASME-SB-166	ASTM-B-564	ASTM-B-163
CARPENTER 20®	ASTM-B-473	ASTM-B-462 ASTM-B-472	ASTM-B-468
TITANIUM	ASTM-B-348	ASTM-B-381	ASTM-B-338
INCOLOY 625 INCOLOY 825	BS3076 NA16 ASTMB425	BS3076 NA16 ASTMB425	ASTM-B-625 ASTM-B-444 ASTM-B-423 ASTM-B-829
6MO	UNS S31254 ASTM A479	UNS S31254 ASTM A 479	ASTM-A-269

(1) If more specific information, including heat code traceability, is required, your Parker Hannifin A-LOK® distributor will provide details.
(2) Stainless steel A-LOK® tube fittings work reliably on both seamless and welded-redrawn, fully annealed type 304, 316 and 316L tubing.

Tube End Dimensional Data

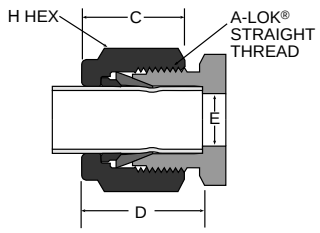
SIZE NO.	INCHES					
	TUBE O.D.	A-LOK® STRAIGHT THREAD	†C	H HEX	E DIA.	†D TUBE INS. DEPTH
1	1/16	10-32	.43	5/16	.052	.34
2	1/8	5/16-20	.60	7/16	.093	.50
3	3/16	3/8-20	.64	1/2	.125	.54
4	1/4	7/16-20	.70	9/16	.187	.60
5	5/16	1/2-20	.73	5/8	.250	.64
6	3/8	9/16-20	.76	11/16	.281	.67
8	1/2	3/4-20	.87	7/8	.406	.90
10	5/8	7/8-20	.87	1	.500	.96
12	3/4	1-20	.87	1-1/8	.625	.96
14	7/8	1-1/8-20	.87	1-1/4	.750	1.03
16	1	1-5/16-20	1.05	1-1/2	.875	1.24
20	1-1/4	1-5/8-20	1.52	1-7/8	1.09	1.61
24	1-1/2	1-15/16-20	1.77	2-1/4	1.34	1.96
32	2	2-5/8-20	2.47	2-3/4	1.81	2.65

NOTE: Dimensions C and D are shown in the finger-tight position.

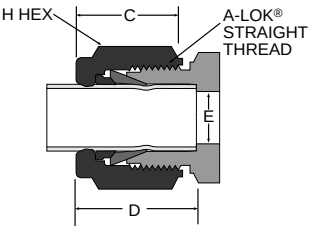
† Average Value

Dimensions for reference only, subject to change.

INCHES



MILLIMETERS



SIZE NO.	MILLIMETERS					
	TUBE O.D.	A-LOK® STRAIGHT THREAD	†C	H HEX	E DIA.	†D TUBE INS. DEPTH
2	2mm	5/16-20	15,3	12,0	1,7	12,9
3	3mm	5/16-20	15,3	12,0	2,4	12,9
4	4mm	3/8-20	16,1	12,0	2,4	13,7
6	6mm	7/16-20	17,7	14,0	4,8	15,3
8	8mm	1/2-20	18,6	15,0	6,4	16,2
10	10mm	5/8-20	19,5	18,0	7,9	17,2
12	12mm	3/4-20	22,0	22,0	9,5	22,8
14	14mm	7/8-20	22,0	24,0	11,1	24,4
15	15mm	7/8-20	22,0	24,0	11,9	24,4
16	16mm	7/8-20	22,0	24,0	12,7	24,4
18	18mm	1-20	22,0	27,0	15,1	24,4
20	20mm	1-1/8-20	22,0	30,0	15,9	26,0
22	22mm	1-1/8-20	22,0	30,0	18,3	26,0
25	25mm	1-5/16-20	26,5	35,0	21,8	31,3

NOTE: Dimensions C and D are shown in the finger-tight position.

† Average Value

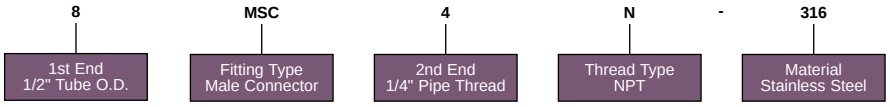
Dimensions for reference only, subject to change.

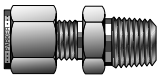
Nomenclature

Parker A-LOK® tube fittings part numbers are constructed from symbols that identify the size and style of the fitting and material used.

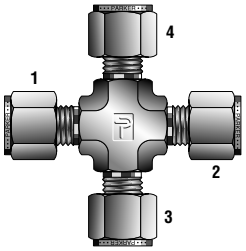
Example: The part number shown below is for a Parker A-LOK® stainless steel male connector for 1/2" O.D. tube (–8) and 1/4" male pipe thread (–4).

How To Order Inch Parts





Parker A-LOK® Tube Fittings are ordered by part number as listed in this catalog.



Size: Tube and pipe thread sizes are designed by the number of sixteenths of an inch (1/2" tube = 8/16" = 8). (1/4" pipe thread = 4/16" = 4).

Straights & Elbows: Call out largest A-LOK® tube end size first followed by the smaller A-LOK® tube end or pipe thread size.

Tees & Crosses: For drop size tees – first size the run (1 to 2) and then branch (3). Example – the size designator for a male run tee for 3/8" O.D. tube and 1/4" male pipe thread would be 6-4-6. For crosses – first size the run (1 to 2) and then the branch (3 to 4). For tees with all ends the same, use the tube and size before and after the style designator; i.e. 4ET4.

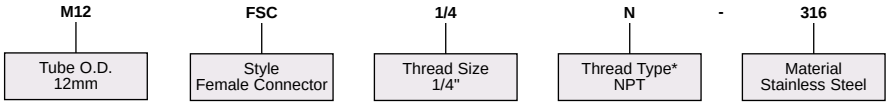
Type: A letter or combination of letters and numbers are used to designate the type of fitting. (i.e. MBT = male branch tee, FA = female adapter, etc.) See the visual index for fitting types.

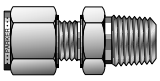
Material: Basic material type (B = brass, 316 = stainless steel, type 316; S = steel; A = aluminum; M = Monel; HC = Hastelloy C-276®; IN = Alloy 600; SS20 = Carpenter 20®; 6MO = 6Mo; 625 = 625; 825 = 825; T = Titanium). Parker A-LOK® Tube fittings, for special applications, can be furnished in almost any material suitable for machining.

Special Fittings: If there is any question as to the fitting desired, particularly for special fitting configurations, it is suggested that a customer print be submitted with the fitting request for quote.

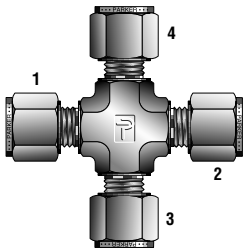
Availability: Items priced in current price list 4233 are carried in stock. Price and delivery for non-stocked items quoted on request through the Quick Response Department.

How To Order Metric Parts





Parker A-LOK® tube fittings are ordered by part number as listed in this catalog.



Size: Metric tube is designated in millimeters and prefixed “M” (i.e. 12mm tube = M12.) The pipe thread size is written as a fraction (i.e. 1/4 NPT = 1/4N).

Straights & Elbows: Call out largest A-LOK® tube end size first followed by the smaller A-LOK® tube end or pipe thread size.

Tees & Crosses: For drop size tees – first size the run (1 to 2) and then branch (3). Example – the size designator for a male run tee for 6mm tube and 1/4" male pipe thread would be 6-4-6. For crosses – first size the run (1 to 2) and then the branch (3 to 4). For tees with all ends the same size, use the tube end size after the style designator; i.e, ETM4

Type: A letter or combination of letters and numbers are used to designate the type of fitting. See the visual index for fitting types.

Material: Basic material type (B = brass, 316 = stainless steel, type 316; S = steel; A = aluminum; M = Monel; HC = Hastelloy C-276®; IN = Alloy 600; SS20 = Carpenter 20®; 6MO = 6Mo; 625 = 625; 825 = 825; T = Titanium). Parker A-LOK® Tube fittings, for special applications, can be furnished in almost any material suitable for machining.

Thread types:

N = NPT	ANSI B1.20.1
K = BSP Taper	BS21, ISO7/1
R = BSPP	BS2779, ISO 228/1+2, DIN 3852 FORM A
BR = BSPP	BS2779, ISO 228/1+2, DIN 3852 FORM B
M = Metric	BS2779, ISO 228/1+2, DIN 3852
RED = BSPP	BS2779, ISO 228/1+2, DIN 3852 with elastic sealing

Please see visual index.

Color Coding

For easy reference, table heads are color indicated as follows:

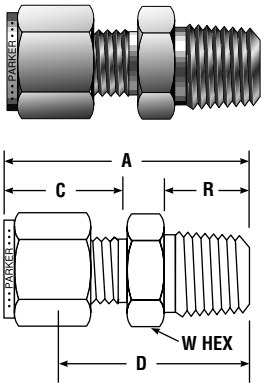
fractional

metric

Availability: Items priced in current price list 4233 are carried in stock. Price and delivery for non-stocked items quoted on request through the Parker ICD Quick Response Department.

NOTE: Hastelloy C-276 is a registered trademark of Cabot Corporation. Carpenter 20 is a registered trademark of Carpenter Technology Corporation.

MSCN
NPT Male Connector
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	C	D	R	W HEX
1MSC1N	100-1-1	1/16	1/16	.93	.43	.78	.38	5/16
1MSC2N	100-1-2	1/16	1/8	1.03	.43	.88	.38	7/16
1MSC4N	100-1-4	1/16	1/4	1.23	.43	1.08	.56	9/16
2MSC1N	200-1-1	1/8	1/16	1.17	.60	.91	.38	3/8
2MSC2N	200-1-2	1/8	1/8	1.20	.60	.94	.38	7/16
2MSC4N	200-1-4	1/8	1/4	1.40	.60	1.14	.56	9/16
2MSC6N	200-1-6	1/8	3/8	1.42	.60	1.16	.56	11/16
2MSC8N	200-1-8	1/8	1/2	1.67	.60	1.41	.75	7/8
3MSC1N	300-1-1	3/16	1/16	1.23	.64	.97	.38	7/16
3MSC2N	300-1-2	3/16	1/8	1.23	.64	.97	.38	7/16
3MSC4N	300-1-4	3/16	1/4	1.43	.64	1.17	.56	9/16
4MSC1N	400-1-1	1/4	1/16	1.29	.70	1.00	.38	1/2
4MSC2N	400-1-2	1/4	1/8	1.29	.70	1.00	.38	1/2
4MSC4N	400-1-4	1/4	1/4	1.49	.70	1.20	.56	9/16
4MSC6N	400-1-6	1/4	3/8	1.51	.70	1.22	.56	11/16
4MSC8N	400-1-8	1/4	1/2	1.76	.70	1.47	.75	7/8
4MSC12N	400-1-12	1/4	3/4	1.82	.70	1.53	.75	1-1/16
5MSC2N	500-1-2	5/16	1/8	1.34	.73	1.05	.38	9/16
5MSC4N	500-1-4	5/16	1/4	1.52	.73	1.23	.56	9/16
5MSC6N	500-1-6	5/16	3/8	1.55	.73	1.25	.56	11/16
5MSC8N	500-1-8	5/16	1/2	1.79	.73	1.5	.75	7/8
6MSC2N	600-1-2	3/8	1/8	1.38	.76	1.09	.38	5/8
6MSC4N	600-1-4	3/8	1/4	1.57	.76	1.28	.56	5/8
6MSC6N	600-1-6	3/8	3/8	1.57	.76	1.28	.56	11/16
6MSC8N	600-1-8	3/8	1/2	1.82	.76	1.53	.75	7/8
6MSC12N	600-1-12	3/8	3/4	1.88	.76	1.59	.75	1-1/16
8MSC2N	810-1-2	1/2	1/8	1.53	.87	1.13	.38	13/16
8MSC4N	810-1-4	1/2	1/4	1.71	.87	1.31	.56	13/16
8MSC6N	810-1-6	1/2	3/8	1.71	.87	1.31	.56	13/16
8MSC8N	810-1-8	1/2	1/2	1.93	.87	1.53	.75	7/8
8MSC12N	810-1-12	1/2	3/4	1.99	.87	1.59	.75	1-1/16
8MSC16N	810-1-16	1/2	1	2.28	.87	1.88	.94	1-3/8
10MSC6N	1010-1-6	5/8	3/8	1.74	.87	1.34	.56	15/16
10MSC8N	1010-1-8	5/8	1/2	1.93	.87	1.53	.75	15/16
10MSC12N	1010-1-12	5/8	3/4	1.99	.87	1.59	.75	1-1/16
12MSC8N	1210-1-8	3/4	1/2	1.99	.87	1.59	.75	1-1/16
12MSC12N	1210-1-12	3/4	3/4	1.99	.87	1.59	.75	1-1/16
12MSC16N	1210-1-16	3/4	1	2.28	.87	1.88	.94	1-3/8
14MSC12N	1410-1-12	7/8	3/4	1.99	.87	1.59	.75	1-3/16
14MSC16N	1410-1-16	7/8	1	2.28	.87	1.88	.94	1-3/8
16MSC8N	1610-1-8	1	1/2	2.27	1.05	1.78	.75	1-3/8
16MSC12N	1610-1-12	1	3/4	2.27	1.05	1.78	.75	1-3/8
16MSC16N	1610-1-16	1	1	2.46	1.05	1.97	.94	1-3/8
20MSC20N	2010-1-20	1-1/4	1-1/4	3.03	1.52	2.17	.97	1-3/4
24MSC24N	2410-1-24	1-1/2	1-1/2	3.50	1.77	2.44	1.00	2-1/8
32MSC32N	3210-1-32	2	2	4.47	2.47	3.00	1.04	2-3/4

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Sizes 20, 24, 32 require additional lubrication to assembly.

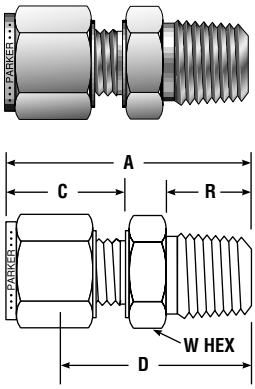
Color Coding

For easy reference, table heads are color indicated as follows:

fractional

metric

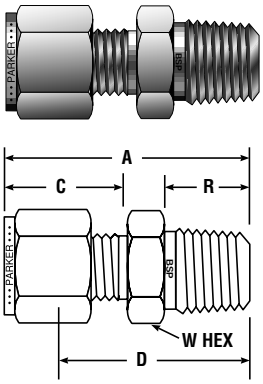
MSCN
NPT Male Connector
For metric tube



PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	NPT THREAD	A	C	D	R	W HEX
M2MSC1/8N	2MO-1-2	2	1/8	29,7	15,3	23,1	9,5	12,0
M3MSC1/8N	3MO-1-2	3	1/8	29,7	15,3	23,1	9,5	12,0
M3MSC1/4N	3MO-1-4	3	1/4	35,3	15,3	28,7	14,3	14,0
M4MSC1/8N	4MO-1-2	4	1/8	31,2	16,1	24,6	9,5	12,0
M4MSC1/4N	4MO-1-4	4	1/4	36,3	16,1	29,7	14,3	14,0
M6MSC1/8N	6MO-1-2	6	1/8	32,9	17,7	25,4	9,5	14,0
M6MSC1/4N	6MO-1-4	6	1/4	38,1	17,7	30,6	14,3	14,0
M6MSC3/8N	6MO-1-6	6	3/8	38,5	17,7	31,0	14,3	18,0
M6MSC1/2N	6MO-1-8	6	1/2	44,8	17,7	37,3	19,1	22,0
M8MSC1/8N	8MO-1-2	8	1/8	34,2	18,6	26,7	9,5	15,0
M8MSC1/4N	8MO-1-4	8	1/4	38,8	18,6	31,3	14,3	15,0
M8MSC3/8N	8MO-1-6	8	3/8	39,3	18,6	31,8	14,3	18,0
M8MSC1/2N	8MO-1-8	8	1/2	45,6	18,6	38,1	19,1	22,0
M10MSC1/8N	10MO-1-2	10	1/8	36,1	19,5	28,6	9,5	18,0
M10MSC1/4N	10MO-1-4	10	1/4	40,9	19,5	33,3	14,3	18,0
M10MSC3/8N	10MO-1-6	10	3/8	40,9	19,5	33,3	14,3	18,0
M10MSC1/2N	10MO-1-8	10	1/2	47,5	19,5	38,9	19,1	22,0
M10MSC3/4N	10MO-1-12	10	3/4	46,4	19,5	38,9	19,1	27,0
M10MSC1N	10MO-1-16	10	1	55,0	19,5	47,5	23,8	35,0
M12MSC1/4N	12MO-1-4	12	1/4	43,4	22,0	33,3	14,3	22,0
M12MSC3/8N	12MO-1-6	12	3/8	43,4	22,0	33,3	14,3	22,0
M12MSC1/2N	12MO-1-8	12	1/2	49,0	22,0	38,9	19,1	22,0
M12MSC3/4N	12MO-1-12	12	3/4	50,5	22,0	40,4	19,1	27,0
M14MSC1/4N	14MO-1-4	14	1/4	44,2	22,0	34,1	14,3	24,0
M14MSC3/8N	14MO-1-6	14	3/8	44,2	22,0	34,1	14,3	24,0
M14MSC1/2N	14MO-1-8	14	1/2	49,0	22,0	38,9	19,1	24,0
M15MSC1/2N	15MO-1-8	15	1/2	49,0	22,0	38,9	19,1	24,0
M16MSC3/8N	16MO-1-6	16	3/8	44,1	22,0	34,01	14,3	24,0
M16MSC1/2N	16MO-1-8	16	1/2	49,0	22,0	38,9	19,1	24,0
M16MSC3/4N	16MO-1-12	16	3/4	50,5	22,0	40,5	19,1	27,0
M18MSC1/2N	18MO-1-8	18	1/2	50,6	22,0	40,5	19,1	27,0
M18MSC3/4N	18MO-1-12	18	3/4	50,6	22,0	40,5	19,1	27,0
M20MSC1/2N	20MO-1-8	20	1/2	50,6	22,0	42,2	19,1	30,0
M20MSC3/4N	20MO-1-12	20	3/4	52,3	22,0	42,2	19,1	30,0
M20MSC1N	20MO-1-16	20	1	57,7	22,0	47,6	23,8	35,0
M22MSC3/4N	22MO-1-12	22	3/4	52,3	22,0	42,2	19,1	35,0
M25MSC1/2N	25MO-1-8	25	1/2	57,5	26,5	45,3	19,1	35,0
M25MSC3/4N	25MO-1-12	25	3/4	57,5	26,5	45,2	19,1	35,0
M25MSC1N	25MO-1-16	25	1	62,3	26,5	50,0	23,8	35,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

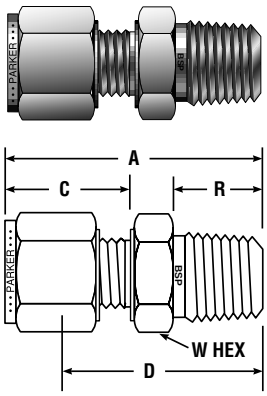
MSCK
BSP Taper Male Connector
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	BSP TR THREAD	A	C	D	R	W HEX	BORE
2MSC2K	200-1-2RT	1/8	1/8	1.20	.60	.938	.38	7/16	.19
2MSC4K	200-1-4RT	1/8	1/4	1.40	.60	1.14	.56	9/16	.19
4MSC2K	400-1-2RT	1/4	1/8	1.30	.70	1.00	.38	1/2	.19
4MSC4K	400-1-4RT	1/4	1/4	1.50	.70	1.20	.56	9/16	.19
4MSC6K	400-1-6RT	1/4	3/8	1.52	.70	1.22	.56	11/16	.19
4MSC8K	400-1-8RT	1/4	1/2	1.77	.70	1.47	.75	7/8	.19
5MSC2K	500-1-2RT	5/16	1/8	1.34	.73	1.05	.38	9/16	.19
5MSC4K	500-1-4RT	5/16	1/4	1.52	.73	1.23	.56	9/16	.19
6MSC2K	600-1-2RT	3/8	1/8	1.39	.76	1.09	.38	5/8	.19
6MSC4K	600-1-4RT	3/8	1/4	1.57	.76	1.28	.56	5/8	.28
6MSC6K	600-1-6RT	3/8	3/8	1.57	.76	1.28	.56	11/16	.28
6MSC8K	600-1-8RT	3/8	1/2	1.82	.76	1.53	.75	7/8	.28
8MSC4K	810-1-4RT	1/2	1/4	1.69	.86	1.31	.56	13/16	.28
8MSC6K	810-1-6RT	1/2	3/8	1.69	.86	1.31	.56	13/16	.38
8MSC8K	810-1-8RT	1/2	1/2	1.91	.66	1.53	.75	7/8	.41

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

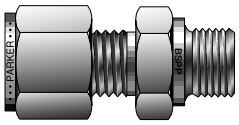
MSCK
BSP Taper Male Connector
For metric tube

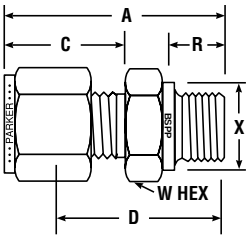


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	BSP TR THREAD	A	C	D	R	W HEX
M2MSC1/8K	2MO-1-2RT	2	1/8	29,7	15,3	23,1	9,5	12,0
M3MSC1/8K	3MO-1-2RT	3	1/8	29,7	15,3	23,1	9,7	12,0
M3MSC1/4K	3MO-1-4RT	3	1/4	35,3	15,3	28,7	14,2	14,0
M4MSC1/8K	4MO-1-2RT	4	1/8	31,2	16,1	24,6	9,7	12,0
M4MSC1/4K	4MO-1-4RT	4	1/4	36,3	16,1	29,7	14,2	14,0
M6MSC1/8K	6MO-1-2RT	6	1/8	32,9	17,7	25,4	9,7	14,0
M6MSC1/4K	6MO-1-4RT	6	1/4	40,0	17,7	30,5	14,2	14,0
M6MSC3/8K	6MO-1-6RT	6	3/8	38,5	17,7	31,0	14,2	18,0
M6MSC1/2K	6MO-1-8RT	6	1/2	45,6	17,7	38,1	19,1	22,0
M8MSC1/8K	8MO-1-2RT	8	1/8	33,9	18,6	26,4	9,5	15,0
M8MSC1/4K	8MO-1-4RT	8	1/4	38,7	18,6	31,2	14,2	15,0
M8MSC3/8K	8MO-1-6RT	8	3/8	39,3	18,6	31,8	14,2	18,0
M8MSC1/2K	8MO-1-8RT	8	1/2	45,6	18,6	38,1	19,1	22,0
M10MSC1/8K	10MO-1-2RT	10	1/8	36,2	19,5	28,6	9,5	18,0
M10MSC1/4K	10MO-1-4RT	10	1/4	40,9	19,5	33,3	14,2	18,0
M10MSC3/8K	10MO-1-6RT	10	3/8	40,9	19,5	33,3	14,2	18,0
M10MSC1/2K	10MO-1-8RT	10	1/2	46,5	19,5	38,9	19,1	22,0
M12MSC1/4K	12MO-1-4RT	12	1/4	43,4	22,0	33,3	14,2	22,0
M12MSC3/8K	12MO-1-6RT	12	3/8	43,4	22,0	33,3	14,2	22,0
M12MSC1/2K	12MO-1-8RT	12	1/2	49,0	22,0	38,9	19,1	22,0
M12MSC3/4K	12MO-1-12RT	12	3/4	49,5	22,0	40,4	19,1	27,0
M15MSC1/2K	15MO-1-8RT	15	1/2	49,0	22,0	38,9	19,1	24,0
M16MSC3/8K	16MO-1-6RT	16	3/8	44,2	22,0	34,1	14,2	24,0
M16MSC1/2K	16MO-1-8RT	16	1/2	49,0	22,0	38,9	19,1	24,0
M16MSC3/4K	16MO-1-12RT	16	3/4	49,5	22,0	40,5	19,1	27,0
M18MSC1/2K	18MO-1-8RT	18	1/2	50,6	22,0	40,4	19,1	27,0
M18MSC3/4K	18MO-1-12RT	18	3/4	50,6	22,0	40,4	19,1	27,0
M20MSC1/2K	20MO-1-8RT	20	1/2	52,3	22,0	42,2	19,1	30,0
M20MSC3/4K	20MO-1-12RT	20	3/4	52,3	22,0	42,2	19,1	30,0
M22MSC3/4K	22MO-1-12RT	22	3/4	52,3	22,0	42,2	19,1	30,0
M25MSC3/4K	25MO-1-12RT	25	3/4	57,5	26,5	45,2	19,1	35,0
M25MSC1K	25MO-1-16RT	25	1	62,3	26,5	50,0	23,9	35,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MSCR
BSPP Male Connector
For fractional tube

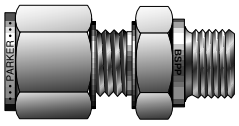


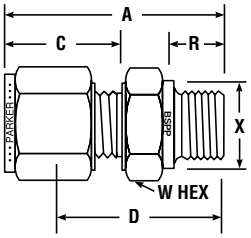


PARKER PART NO.	INTER-CHANGES WITH	INCHES								
		TUBE O.D.	BSPP THREAD	A	C	D	R	X	W HEX	BORE
2MSC2R	200-1-2RS	1/8	1/8	1.18	.60	.922	.28	.54	9/16	.16
2MSC4R	200-1-4RS	1/8	1/4	1.27	.60	1.13	.44	.70	3/4	.09
2MSC6R	200-1-6RS	1/8	3/8	1.46	.60	1.172	.44	.86	7/8	.28
4MSC2R	400-1-2RS	1/4	1/8	1.28	.70	.98	.28	.54	9/16	.16
4MSC4R	400-1-4RS	1/4	1/4	1.49	.70	1.19	.44	.70	3/4	.19
4MSC6R	400-1-6RS	1/4	3/8	1.55	.70	1.25	.44	.86	7/8	.19
4MSC8R	400-1-8RS	1/4	1/2	1.77	.70	1.47	.56	1.01	1-1/16	.19
6MSC2R	600-1-2RS	3/8	1/8	1.35	.76	1.06	.28	.54	5/8	.16
6MSC4R	600-1-4RS	3/8	1/4	1.54	.76	1.25	.44	.70	3/4	.25
6MSC6R	600-1-6RS	3/8	3/8	1.57	.76	1.28	.44	.86	7/8	.28
6MSC8R	600-1-8RS	3/8	1/2	1.82	.76	1.53	.56	1.01	1-1/16	.28
8MSC4R	810-1-4RS	1/2	1/4	1.66	.86	1.28	.44	.70	13/16	.25
8MSC6R	810-1-6RS	1/2	3/8	1.69	.86	1.31	.44	.86	7/8	.31
8MSC8R	810-1-8RS	1/2	1/2	1.91	.86	1.53	.56	1.01	1-1/16	.41
12MSC8R	1210-1-8RS	3/4	1/2	1.93	.86	1.531	.56	1.01	1-1/16	.41
12MSC12R	1210-1-12RS	3/4	3/4	2.07	.86	1.69	.63	1.25	1-3/8	.63
16MSC8R	1610-1-8RS	1	1/2	2.21	1.04	1.719	.56	1.01	1-3/8	.41
16MSC16R	1610-1-16RS	1	1	2.35	1.04	1.88	.72	1.52	1-5/8	.88

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Sealing washer must be used with BSPP end shown ISO228/1 (Form A).
For Form B undercut change part number and add B before R. e.g. M6MSC1/4BR.

MSCR
BSPP Male Connector
For metric tube

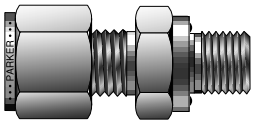


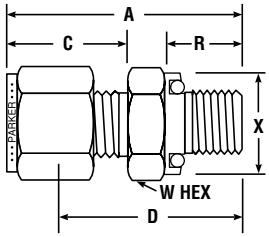


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS							
		TUBE O.D.	BSPP THREAD	A	C	D	R	X	W HEX
M2MSC1/8R	2MO-1-2RS	2	1/8	28,4	15,3	21,8	7,1	14,0	13,7
M3MSC1/8R	3MO-1-2RS	3	1/8	30,0	15,3	23,4	7,1	13,7	14,0
M3MSC1/4R	3MO-1-4RS	3	1/4	35,3	15,3	28,7	11,2	17,8	19,0
M6MSC1/8R	6MO-1-2RS	6	1/8	32,5	17,7	25,0	7,1	13,7	14,0
M6MSC1/4R	6MO-1-4RS	6	1/4	37,7	17,7	30,2	11,2	17,8	19,0
M6MSC3/8R	6MO-1-6RS	6	3/8	39,0	17,7	31,5	11,2	21,8	22,0
M6MSC1/2R	6MO-1-8RS	6	1/2	45,6	17,7	38,1	14,2	25,7	27,0
M8MSC1/8R	8MO-1-2RS	8	1/8	33,1	18,6	25,6	7,1	15,0	13,7
M8MSC1/4R	8MO-1-4RS	8	1/4	38,5	18,6	31,0	11,2	17,8	19,0
M8MSC3/8R	8MO-1-6RS	8	3/8	39,8	18,6	32,3	11,2	21,8	22,0
M8MSC1/2R	8MO-1-8RS	8	1/2	45,6	18,6	38,1	14,2	25,7	27,0
M10MSC1/4R	10MO-1-4RS	10	1/4	39,4	19,5	31,8	11,2	17,8	19,0
M10MSC3/8R	10MO-1-6RS	10	3/8	40,6	19,5	33,0	11,2	21,8	22,0
M10MSC1/2R	10MO-1-8RS	10	1/2	46,5	19,5	38,9	14,2	25,7	27,0
M12MSC1/4R	12MO-1-4RS	12	1/4	42,6	22,0	32,5	11,2	17,8	22,0
M12MSC3/8R	12MO-1-6RS	12	3/8	43,1	22,0	33,0	11,2	21,8	22,0
M12MSC1/2R	12MO-1-8RS	12	1/2	49,0	22,0	38,9	14,2	25,7	27,0
M12MSC3/4R	12MO-1-12RS	12	3/4	52,8	22,0	42,7	16,0	31,8	35,0
M16MSC3/8R	16MO-1-6RS	16	3/8	43,5	22,0	33,4	11,2	22,0	21,8
M16MSC1/2R	16MO-1-8RS	16	1/2	49,0	22,0	38,9	14,2	26,0	27,0
M18MSC1/2R	18MO-1-8RS	18	1/2	49,0	22,0	38,9	14,2	26,0	27,0
M18MSC3/4R	18MO-1-12RS	18	3/4	53,1	22,0	43,0	16,0	35,0	32,0
M20MSC1/2R	20MO-1-8RS	20	1/2	50,5	22,0	40,4	14,2	30,0	25,7
M20MSC3/4R	20MO-1-12RS	20	3/4	52,8	22,0	42,7	16,0	32,0	35,0
M22MSC3/4R	22MO-1-12RS	22	3/4	52,8	22,0	42,7	16,0	32,0	35,0
M25MSC3/4R	25MO-1-12RS	25	3/4	59,8	26,5	47,6	16,0	35,0	31,8
M25MSC1R	25MO-1-16RS	25	1	60,1	26,5	47,8	18,3	39,0	41,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Sealing washer must be used with BSPP end shown ISO228/1 (Form A).
For Form B undercut change part number and add B before R. e.g. M6MSC1/4BR.

MSCR
BSPP Male Connector with ED seal
For fractional tube

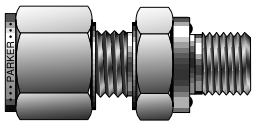


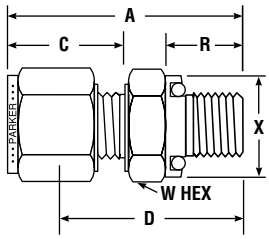


PARKER PART NO.	INTER-CHANGES WITH	INCHES								
		TUBE O.D.	BSPP THREAD	A	C	D	R	X	W HEX	BORE
4MSCR4-ED	–	1/4	1/4	1.48	.70	1.19	.47	.74	3/4	.19
4MSCR8-ED	–	1/4	1/2	1.76	.70	1.38	.55	1.04	1-1/16	.19
6MSC6R-ED	–	3/8	3/8	1.60	.76	1.31	.47	.86	7/8	.28
8MSC4R-ED	–	1/2	1/4	1.69	.86	1.31	.47	.74	13/16	.25
8MSC6R-ED	–	1/2	3/8	1.69	.86	1.31	.47	.86	7/8	.31
8MSC8R-ED	–	1/2	1/2	1.85	.86	1.47	.55	1.04	1-1/16	.41
12MSC12R-ED	–	3/4	3/4	1.98	.86	1.59	.63	1.25	1-5/16	.63

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change. ED fittings are supplied with sealing washers in Buna-N as standard, suitable for temperatures of between –35°C and +100°C (–31°F to +212°F). Viton seals are available upon request which are suitable for temperatures of between –25°C and +120°C (–13°F to +248°F).

MSCR
BSPP Male Connector with ED seal
For metric tube

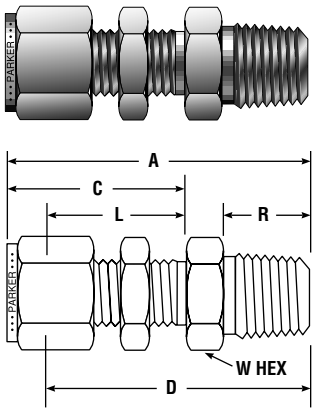




PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS							
		TUBE O.D.	BSPP THREAD	A	C	D	R	X	W HEX
M6MSC1/8R-ED	–	6	1/8	32,5	17,7	25,0	7,9	13,7	14,0
M6MSC1/4R-ED	–	6	1/4	38,2	17,7	30,7	11,9	18,8	19,0
M6MSC3/8R-ED	–	6	3/8	39,5	17,7	32,0	11,9	21,8	22,0
M6MSC1/2R-ED	–	6	1/2	44,5	17,7	37,0	14,0	26,4	27,0
M10MSC1/4R-ED	–	10	1/4	40,0	19,5	32,3	11,9	18,8	19,0
M10MSC3/8R-ED	–	10	3/8	41,1	19,5	38,1	11,9	21,8	22,0
M10MSC1/2R-ED	–	10	1/2	46,0	19,5	38,4	14,0	26,4	27,0
M12MSC1/4R-ED	–	12	1/4	43,1	22,0	33,0	11,9	18,8	22,0
M12MSC3/8R-ED	–	12	3/8	43,6	22,0	33,5	11,9	21,8	22,0
M12MSC1/2R-ED	–	12	1/2	48,5	22,0	38,4	14,0	26,4	27,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change. ED fittings are supplied with sealing washers in Buna-N as standard, suitable for temperatures of between –35°C and +100°C (–31°F to +212°F). Viton seals are available upon request which are suitable for temperatures of between –25°C and +120°C (–13°F to +248°F).

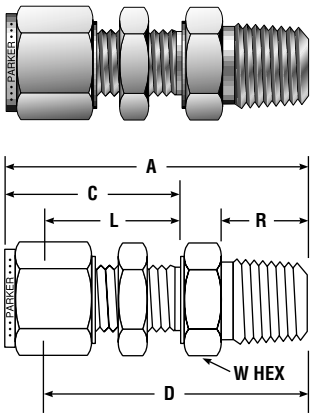
MBCN
NPT Male Bulkhead Connector
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	NPT PIPE THREAD	A	C	D	L	R	W HEX
1MBC1N	100-11-1	1/16	1/16	1.19	.68	1.038	.53	.38	5/16
1MBC2N	100-11-2	1/16	1/8	1.27	.68	1.116	.53	.38	7/16
2MBC2N	200-11-2	1/8	1/8	1.83	1.23	1.571	.97	.38	1/2
3MBC2N	300-11-2	3/16	1/8	1.89	1.26	1.634	1.00	.38	9/16
4MBC2N	400-11-2	1/4	1/8	1.95	1.31	1.655	1.02	.38	5/8
4MBC4N	400-11-4	1/4	1/4	2.132	1.31	1.842	1.02	.56	5/8
4MBC6N	400-11-6	1/4	3/8	2.162	1.31	1.872	1.02	.56	11/16
4MBC8N	400-11-8	1/4	1/2	2.374	1.31	2.084	1.02	.75	7/8
5MBC2N	500-11-2	5/16	1/8	2.08	1.42	1.779	1.12	.38	11/16
5MBC4N	500-11-4	5/16	1/4	2.27	1.42	1.966	1.12	.56	11/16
6MBC2N	600-11-2	3/8	1/8	2.08	1.44	1.788	1.15	.38	3/4
6MBC4N	600-11-4	3/8	1/4	2.265	1.44	1.975	1.15	.56	3/4
6MBC6N	600-11-6	3/8	3/8	2.265	1.44	1.975	1.15	.56	3/4
6MBC8N	600-11-8	3/8	1/2	2.48	1.44	2.219	1.15	.75	7/8
8MBC4N	810-11-4	1/2	1/4	2.494	1.65	2.094	1.25	.56	15/16
8MBC6N	810-11-6	1/2	3/8	2.494	1.65	2.094	1.25	.56	15/16
8MBC8N	810-11-8	1/2	1/2	2.712	1.65	2.312	1.25	.75	15/16
8MBC12N	810-11-12	1/2	3/4	2.722	1.65	2.322	1.25	.75	1-1/8
10MBC6N	1010-11-6	5/8	3/8	2.628	1.68	2.228	1.28	.56	1-1/16
10MBC8N	1010-11-8	5/8	1/2	2.816	1.68	2.416	1.28	.75	1-1/16
12MBC8N	1210-11-8	3/4	1/2	3.00	1.87	2.601	1.47	.75	1-3/16
12MBC12N	1210-11-12	3/4	3/4	3.00	1.87	2.601	1.47	.75	1-3/16
14MBC12N	1410-11-12	7/8	3/4	3.31	2.09	2.913	1.69	.75	1-3/8
16MBC12N	1610-11-12	1	3/4	3.54	2.27	3.006	1.78	.75	1-5/8
16MBC16N	1610-11-16	1	1	3.72	2.27	3.194	1.78	.94	1-5/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
For bulkhead hole drill size and maximum bulkhead thickness, see Page 28, Part BC.

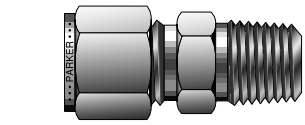
MBCN
NPT Male Bulkhead Connector
For metric tube

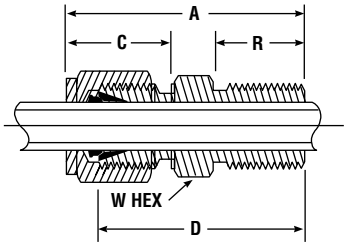


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS									
		TUBE O.D.	NPT THREAD	A	C	D	L	R	W HEX	B'HEAD HOLE DRILL SIZE	MAX. B'HEAD THICK.
M6MBC1/8N	6MO-11-2	6	1/8	49,6	33,7	42,1	26,2	9,5	16,0	11,5	10,2
M6MBC1/4N	6MO-11-4	6	1/4	53,5	33,7	46,0	26,2	14,3	16,0	11,5	10,2
M8MBC1/8N	8MO-11-2	8	1/8	52,3	36,0	44,8	28,5	9,5	18,0	13,1	11,2
M8MBC1/4N	8MO-11-4	8	1/4	57,5	36,0	50,0	28,5	14,3	18,0	13,1	11,2
M10MBC1/4N	10MO-11-4	10	1/4	58,4	37,0	50,8	29,4	14,3	22,0	16,3	11,2
M10MBC3/8N	10MO-11-6	10	3/8	58,4	37,0	50,8	29,4	14,3	22,0	16,3	11,2
M10MBC1/2N	10MO-11-8	10	1/2	63,1	37,0	55,5	29,4	19,0	22,0	16,3	11,2
M12MBC1/4N	12MO-11-4	12	1/4	63,3	10,1	53,2	31,8	14,3	24,0	19,5	12,7
M12MBC3/8N	12MO-11-6	12	3/8	64,5	10,1	54,4	31,8	14,3	24,0	19,5	12,7
M12MBC1/2N	12MO-11-8	12	1/2	67,5	10,1	57,4	31,8	19,0	24,0	19,5	12,7

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MTCN
Thermocouple Connector
For fractional tube

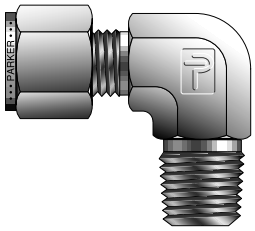


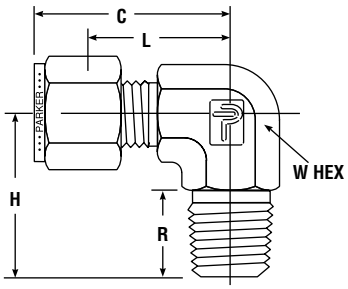


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	C	D	R	W HEX
1MTC1N	100-1-1BT	1/16	1/16	.93	.43	.78	.38	5/16
1MTC2N	100-1-2BT	1/16	1/8	1.03	.43	.88	.38	7/16
1MTC4N	100-1-4BT	1/16	1/4	1.23	.43	1.08	.56	9/16
2MTC1N	200-1-1BT	1/8	1/16	1.17	.60	.91	.38	3/8
2MTC2N	200-1-2BT	1/8	1/8	1.20	.60	.94	.38	7/16
2MTC4N	200-1-4BT	1/8	1/4	1.40	.60	1.14	.56	9/16
3MTC2N	300-1-2BT	3/16	1/8	1.23	.64	.97	.38	7/16
3MTC4N	300-1-4BT	3/16	1/4	1.43	.64	1.17	.56	9/16
4MTC2N	400-1-2BT	1/4	1/8	1.29	.70	1.00	.38	1/2
4MTC4N	400-1-4BT	1/4	1/4	1.49	.70	1.20	.56	9/16
4MTC6N	400-1-6BT	1/4	3/8	1.60	.70	1.22	.56	11/16
4MTC8N	400-1-8BT	1/4	1/2	1.87	.70	1.47	.75	7/8
5MTC4N	500-1-4BT	5/16	1/4	1.52	.73	1.22	.56	9/16
6MTC4N	600-1-4BT	3/8	1/4	1.57	.76	1.28	.56	5/8
6MTC6N	600-1-6BT	3/8	3/8	1.57	.76	1.28	.56	11/16
6MTC8N	600-1-8BT	3/8	1/2	1.82	.76	1.53	.75	7/8
6MTC12N	600-1-12BT	3/8	3/4	1.88	.76	1.59	.75	1-1/16
8MTC8N	810-1-8BT	1/2	1/2	1.93	.87	1.53	.76	7/8
8MTC12N	810-1-12BT	1/2	3/4	1.99	.87	1.59	.75	1-1/16
10MTC12N	1010-1-12BT	5/8	3/4	1.99	.87	1.59	.75	1-1/16
12MTC12N	1210-1-12BT	3/4	3/4	1.99	.87	1.59	.75	1-1/16
16MTC16N	1610-1-16BT	1	1	2.46	1.05	1.97	.94	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MSELN
NPT Male Elbow
For fractional tube



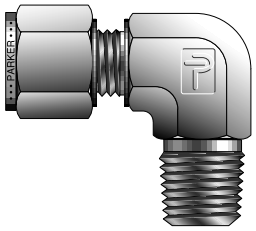


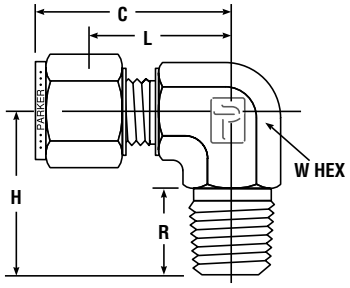
PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	C	H	L	R	W HEX
1MSEL1N	100-2-1	1/16	1/16	.75	.71	.60	.38	7/16
1MSEL2N	100-2-2	1/16	1/8	.75	.71	.60	.38	7/16
2MSEL1N	200-2-1	1/8	1/16	.93	.71	.67	.38	7/16
2MSEL2N	200-2-2	1/8	1/8	.93	.70	.67	.38	7/16
2MSEL4N	200-2-4	1/8	1/4	.98	1.00	.72	.56	9/16
3MSEL2N	300-2-2	3/16	1/8	1.00	.74	.74	.38	1/2
3MSEL4N	300-2-4	3/16	1/4	1.01	.94	.75	.56	9/16
4MSEL1N	400-2-1	1/4	1/16	1.06	.74	.77	.38	1/2
4MSEL2N	400-2-2	1/4	1/8	1.08	.76	.79	.38	1/2
4MSEL4N	400-2-4	1/4	1/4	1.07	1.00	.78	.56	9/16
4MSEL6N	400-2-6	1/4	3/8	1.17	1.13	.88	.56	3/4
4MSEL8N	400-2-8	1/4	1/2	1.26	1.31	.97	.75	7/8
5MSEL2N	500-2-2	5/16	1/8	1.17	.82	.88	.38	5/8
5MSEL4N	500-2-4	5/16	1/4	1.17	1.01	.88	.56	5/8
6MSEL2N	600-2-2	3/8	1/8	1.20	.82	.91	.38	5/8
6MSEL4N	600-2-4	3/8	1/4	1.20	1.01	.91	.56	5/8
6MSEL6N	600-2-6	3/8	3/8	1.26	1.13	.97	.56	3/4
6MSEL8N	600-2-8	3/8	1/2	1.32	1.31	1.03	.75	7/8
6MSEL12N	600-2-12	3/8	3/4	1.45	1.50	1.16	.75	1-1/16
8MSEL4N	810-2-4	1/2	1/4	1.42	1.12	1.02	.56	13/16
8MSEL6N	810-2-6	1/2	3/8	1.42	1.12	1.02	.56	13/16
8MSEL8N	810-2-8	1/2	1/2	1.43	1.31	1.03	.75	7/8
8MSEL12N	810-2-12	1/2	3/4	1.53	1.50	1.13	.75	1-1/16
10MSEL6N	1010-2-6	5/8	3/8	1.43	1.25	1.03	.56	7/8
10MSEL8N	1010-2-8	5/8	1/2	1.43	1.31	1.03	.75	7/8
10MSEL12N	1010-2-12	5/8	3/4	1.56	1.50	1.16	.75	1-1/16
12MSEL8N	1210-2-8	3/4	1/2	1.56	1.50	1.16	.75	1-1/16
12MSEL12N	1210-2-12	3/4	3/4	1.56	1.50	1.16	.75	1-1/16
14MSEL12N	1410-2-12	7/8	3/4	1.76	1.66	1.36	.75	1-3/8
16MSEL12N	1610-2-12	1	3/4	1.94	1.65	1.45	.75	1-3/8
16MSEL16N	1610-2-16	1	1	1.94	1.84	1.45	.94	1-3/8
20MSEL20N	2010-2-20	1-1/4	1-1/4	2.61	1.88	1.75	.97	1-5/8
24MSEL24N	2410-2-24	1-1/2	1-1/2	3.06	2.38	2.00	1.00	1-7/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

Sizes 20, 24 require additional lubrication prior to assembly.

MSELN
NPT Male Metric Elbow
For metric tube

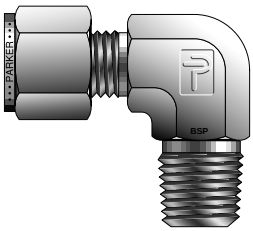


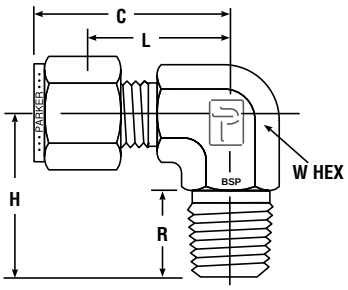


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						INCH
		TUBE O.D.	NPT THREAD	C	H	L	R	W HEX
M3MSEL1/8N	3MO-2-2	3	1/8	23,6	17,8	17,0	9,7	7/16
M3MSEL1/4N	3MO-2-4	3	1/4	24,6	23,4	18,0	14,2	1/2
M4MSEL1/8N	4M0-2-2	4	1/8	25,4	18,8	19,2	9,7	1/2
M4MSEL1/4N	4MO-2-4	4	1/4	26,2	25,4	19,6	14,2	1/2
M6MSEL1/8N	6MO-2-2	6	1/8	27,0	18,8	19,6	9,7	1/2
M6MSEL1/4N	6MO-2-4	6	1/4	27,0	23,4	19,6	14,2	1/2
M6MSEL3/8N	6MO-2-6	6	3/8	29,8	26,2	22,4	14,2	11/16
M6MSEL1/2N	6MO-2-8	6	1/2	31,8	33,0	24,4	19,0	13/16
M8MSEL1/8N	8MO-2-2	8	1/8	28,8	19,8	21,3	9,7	9/16
M8MSEL1/4N	8MO-2-4	8	1/4	28,8	24,4	21,3	14,2	9/16
M8MSEL3/8N	8MO-2-6	8	3/8	30,6	26,2	23,1	14,2	11/16
M8MSEL1/2N	8MO-2-8	8	1/2	32,7	33,0	25,2	19,1	13/16
M10MSEL1/8N	10MO-2-8	10	1/8	31,5	21,6	23,9	9,7	11/16
M10MSEL1/4N	10MO-2-4	10	1/4	31,5	26,2	23,9	14,2	11/16
M10MSEL3/8N	10MO-2-6	10	3/8	31,5	26,2	23,9	14,2	11/16
M10MSEL1/2N	10MO-2-8	10	1/2	33,5	33,0	25,9	19,0	13/16
M12MSEL1/4N	12MO-2-4	12	1/4	36,0	28,2	25,9	14,2	13/16
M12MSEL3/8N	12MO-2-6	12	3/8	36,0	28,2	25,9	14,2	13/16
M12MSEL1/2N	12MO-2-8	12	1/2	36,0	33,0	25,9	19,0	13/16
M12MSEL3/4N	12MO-2-12	12	3/4	39,8	36,8	29,7	19,0	1-1/16
M15MSEL1/2N	15MO-2-8	15	1/2	38,0	35,1	27,9	19,0	15/16
M16MSEL3/8N	16MO-2-6	16	3/8	38,0	30,2	27,9	14,2	15/16
M16MSEL1/2N	16MO-2-8	16	1/2	38,0	35,1	27,9	19,0	15/16
M16MSEL3/4N	16MO-2-12	16	3/4	39,8	36,8	29,7	19,0	1-1/16
M18MSEL1/2N	18MO-2-8	18	1/2	39,8	36,8	29,7	19,0	1-1/16
M18MSEL3/4N	18MO-2-12	18	3/4	39,8	36,8	29,7	19,0	1-1/16
M20MSEL1/2N	20MO-2-8	20	1/2	44,6	41,7	34,5	19,0	1-3/8
M20MSEL3/4N	20MO-2-12	20	3/4	44,6	41,7	34,5	19,0	1-3/8
M22MSEL3/4N	22MO-2-12	22	3/4	44,6	41,7	34,5	19,0	1-3/8
M25MSEL3/4N	25MO-2-12	25	3/4	49,1	41,7	36,8	19,0	1-3/8
M25MSEL1N	25MO-2-16	25	1	49,1	46,5	36,8	23,9	1-3/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

MSELK
BSP Taper Male Elbow
For fractional tube

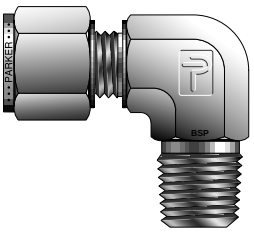


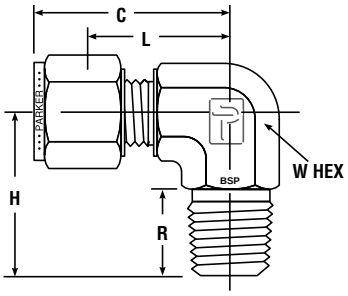


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSP TR THREAD	C	H	L	R	W HEX
4MSEL2K	400-2-2RT	1/4	1/8	1.02	.78	.72	.38	7/16
4MSEL4K	400-2-4RT	1/4	1/4	1.08	.94	.78	.56	9/16
4MSEL6K	400-2-6RT	1/4	3/8	1.17	1.13	.88	.56	3/4
4MSEL8K	400-2-8RT	1/4	1/2	1.26	1.31	.97	.75	7/8
5MSEL4K	500-2-4RT	5/16	1/4	1.17	.82	.88	.38	5/8
6MSEL4K	600-2-4RT	3/8	1/4	1.13	1.00	.84	.56	9/16
6MSEL6K	600-2-4RT	3/8	3/8	1.26	1.25	.97	.56	3/4
8MSEL6K	810-2-6RT	1/2	3/8	1.35	1.25	.97	.56	3/4
8MSEL8K	810-2-8RT	1/2	1/2	1.41	1.31	1.03	.75	7/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

MSELK
BSP Taper Male Elbow
For metric tube

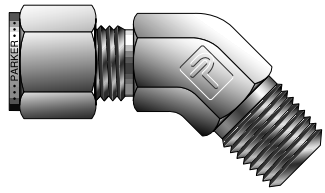


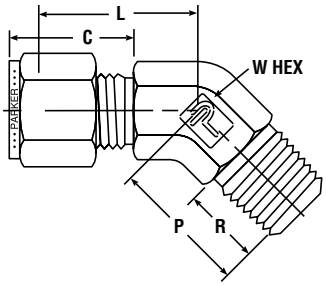


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						INCH
		TUBE O.D.	BSP TR THREAD	C	H	L	R	W HEX
M3MSEL1/8K	3MO-2-2RT	3	1/8	23,6	17,8	17,0	9,7	7/16
M3MSEL1/4K	3MO-2-4RT	3	1/4	24,6	23,4	18,0	14,2	1/2
M4MSEL1/8K	4MO-2-2RT	4	1/8	25,4	18,8	18,8	9,7	1/2
M4MSEL1/4K	4MO-2-4RT	4	1/4	24,6	23,4	18,8	14,2	1/2
M6MSEL1/8K	6MO-2-2RT	6	1/8	27,0	18,8	19,6	9,7	1/2
M6MSEL1/4K	6MO-2-4RT	6	1/4	27,0	23,4	19,6	14,2	1/2
M6MSEL3/8K	6MO-2-6RT	6	3/8	29,8	26,2	22,4	14,2	11/16
M6MSEL1/2K	6MO-2-8RT	6	1/2	31,8	33,0	24,4	19,0	13/16
M8MSEL1/8K	8MO-2-2RT	8	1/8	28,8	19,8	21,3	9.7	9/16
M8MSEL1/4K	8MO-2-4RT	8	1/4	28,8	24,4	21,3	14,2	9/16
M8MSEL3/8K	8MO-2-6RT	8	3/8	30,6	26,2	23,1	14,2	11/16
M8MSEL1/2K	8MO-2-8RT	8	1/2	32,7	33,0	25,2	19,1	13/16
M10MSEL1/8K	10MO-2-2RT	10	1/8	31,5	21,6	23,9	9,7	11/16
M10MSEL1/4K	10MO-2-4RT	10	1/4	31,5	26,2	23,9	14,2	11/16
M10MSEL3/8K	10MO-2-6RT	10	3/8	31,5	26,2	23,9	14,2	11/16
M10MSEL1/2K	10MO-2-8RT	10	1/2	33,5	33,0	25,9	19,0	13/16
M12MSEL1/4K	12MO-2-4RT	12	1/4	36,0	28,2	25,9	14,2	13/16
M12MSEL3/8K	12MO-2-6RT	12	3/8	36,0	28,2	25,9	14,2	13/16
M12MSEL1/2K	12MO-2-8RT	12	1/2	36,0	33,0	25,9	19,0	13/16
M12MSEL3/4K	12MO-2-12RT	12	3/4	39,8	36,8	29,7	19,1	1-1/16
M16MSEL3/8K	16MO-2-6RT	16	3/8	38,0	30,2	27,9	14,2	15/16
M16MSEL1/2K	16MO-2-8RT	16	1/2	38,0	35,1	27,9	19,0	15/16
M18MSEL1/2K	18MO-2-8RT	18	1/2	39,8	36,8	29,7	19,0	1-1/16
M18MSEL3/4K	18MO-2-12RT	18	3/4	39,8	36,8	29,7	19,0	1-1/16
M20MSEL3/4K	20MO-2-12RT	20	3/4	44,6	41,7	34,5	19,0	1-3/8
M25MSEL3/4K	25MO-2-12RT	25	3/4	49,0	41,7	36,8	19,1	1-3/8
M25MSEL1K	25MO-2-16RT	25	1	49,1	46,5	36,8	23,9	1-3/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

MVELN
NPT Male 45° Elbow
For fractional tube

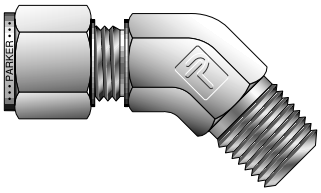


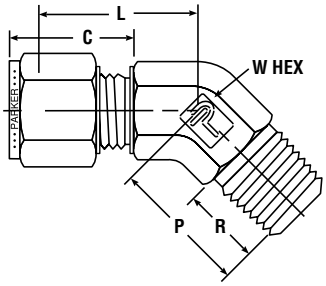


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	C	L	P	R	W HEX
1MVEL1N	100-5-1	1/16	1/16	.43	.468	.569	.38	3/8
2MVEL2N	200-5-2	1/8	1/8	.60	.59	.66	.38	7/16
3MVEL2N	300-5-2	3/16	1/8	.64	.56	.58	.38	7/16
4MVEL2N	400-5-2	1/4	1/8	.70	.63	.66	.38	9/16
4MVEL4N	400-5-4	1/4	1/4	.70	.66	.86	.56	9/16
5MVEL2N	500-5-2	5/16	1/8	.73	.66	.66	.38	9/16
6MVEL2N	600-5-2	3/8	1/8	.76	.72	.67	.38	9/16
6MVEL4N	600-5-4	3/8	1/4	.76	.72	.86	.56	9/16
6MVEL6N	600-5-6	3/8	3/8	.76	.75	.95	.56	3/4
8MVEL6N	810-5-6	1/2	3/8	.87	.75	.95	.56	3/4
10MVEL8N	1010-5-8	5/8	1/2	.87	.81	1.17	.75	7/8
12MVEL12N	1210-5-8	3/4	3/4	.87	.84	1.20	.75	1-1/16
14MVEL12N	1410-5-8	7/8	3/4	.87	1.36	1.27	.75	1-5/16
16MVEL16N	1610-5-8	1	1	1.05	1.19	1.48	.94	1-5/16

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

MVELN
NPT Male 45° Elbow
For metric tube

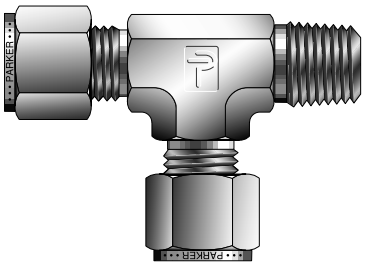


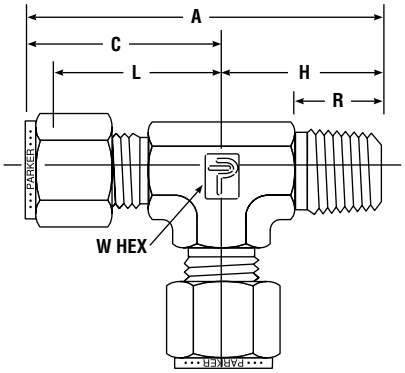


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	NPT PIPE THREAD	C	L	P	R	W HEX
M6MVEL1/8N	–	6	1/8	17,7	16,0	16,8	9,5	14,0
M6MVEL1/4N	–	6	1/4	17,7	16,0	21,8	14,3	14,0
M8MVEL1/8N	–	8	1/8	18,6	16,8	16,8	9,5	14,0
M10MVEL1/4N	–	10	1/4	19,5	19,0	24,1	14,3	19,0
M12MVEL3/8N	–	12	3/8	22,0	19,0	24,1	14,3	19,0
M12MVEL1/2N	–	12	1/2	22,0	20,6	29,7	19,0	22,0
M16MVEL1/2N	–	16	1/2	22,0	20,6	29,7	19,0	22,0

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

MRTN
NPT Male Run Tee
For fractional tube

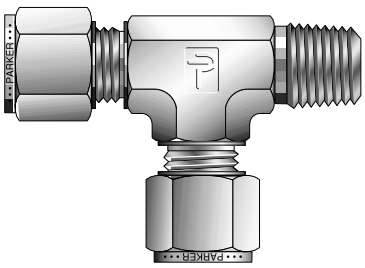


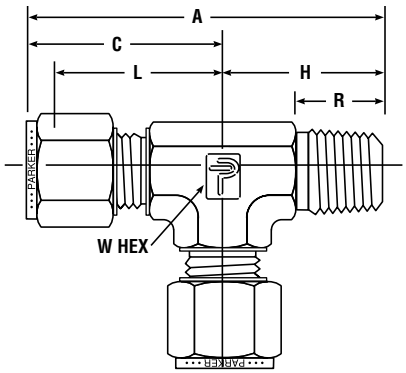


PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	NPT PIPE THREAD	A	C	H	L	R	W HEX
2MRT2N	200-3-2TMT	1/8	1/8	1.67	.92	.71	.66	.38	5/16
2MBT4N	200-3-4TMT	1/8	1/4	1.98	.98	1.00	.72	.56	1/2
3MRT2N	300-3-2TMT	3/16	1/8	1.74	1.00	.74	.74	.38	1/2
4MRT2N	400-3-2TMT	1/4	1/8	1.80	1.06	.74	.77	.38	1/2
4MRT4N	400-3-4TMT	1/4	1/4	2.07	1.07	1.00	.78	.56	9/16
5MRT2N	500-3-2TMT	5/16	1/8	2.00	1.17	.82	.88	.38	5/8
5MRT4N	500-3-4TMT	5/16	1/4	2.18	1.17	1.01	.88	.56	5/8
6MRT4N	600-3-4TMT	3/8	1/4	2.21	1.20	1.01	.91	.56	5/8
6MRT6N	600-3-6TMT	3/8	3/8	2.43	1.31	1.12	1.02	.56	13/16
8MRT6N	810-3-6TMT	1/2	3/8	2.82	1.42	1.12	1.02	.56	13/16
8MRT8N	810-3-8TMT	1/2	1/2	2.74	1.43	1.31	1.03	.75	7/8
10MRT8N	1010-3-8TMT	5/8	1/2	2.81	1.43	1.38	1.03	.75	7/8
12MRT12N	1210-3-12TMT	3/4	3/4	3.06	1.56	1.50	1.16	.75	1-1/16
14MRT12N	1410-3-12TMT	7/8	3/4	3.26	1.76	1.50	1.36	.75	1-5/16
16MRT12N	1610-3-12TMT	1	3/4	3.60	1.94	1.66	1.45	.75	1-5/16
16MRT16N	1610-3-16TMT	1	1	3.78	1.94	1.84	1.45	.94	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MRTN
NPT Male Run Tee
For metric tube

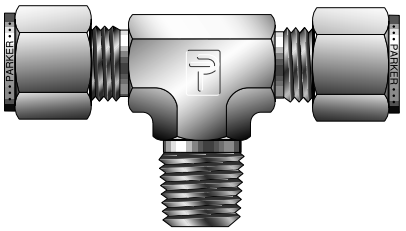


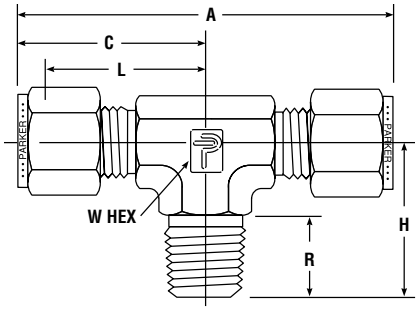


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS							INCH
		TUBE O.D.	NPT THREAD	A	C	H	L	R	W HEX
M6MRT1/8N	6MO-3-2TMT	6	1/8	45,8	27,0	18,0	19,6	9,7	1/2
M6MRT1/4N	6MO-3-4TMT	6	1/4	50,3	27,0	23,4	19,6	14,2	1/2
M8MRT1/8N	8MO-3-2TMT	8	1/8	50,7	29,9	20,8	22,4	9,7	5/8
M8MRT1/4N	8MO-3-4TMT	8	1/4	55,3	29,9	25,4	22,4	14,2	5/8
M10MRT1/4N	10MO-3-4TMT	10	1/4	61,7	33,5	28,2	25,9	14,2	13/16
M10MRT1/2N	10MO-3-8TMT	10	1/2	66,5	33,5	33,0	25,9	19,0	13/16
M12MRT1/4N	12MO-3-4TMT	12	1/4	64,2	36,0	28,2	25,9	14,2	13/16
M12MRT3/8N	12MO-3-6TMT	12	3/8	64,2	36,0	28,2	25,9	14,2	13/16
M12MRT1/2N	12MO-3-8TMT	12	1/2	69,0	36,0	33,0	25,9	19,0	13/16
M16MRT1N	16MO-3-16TMT	16	1	93,1	46,6	46,5	34,4	23,9	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MBTN
NPT Male Branch Tee
For fractional tube

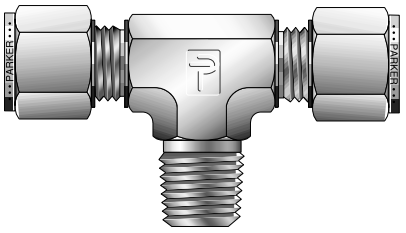


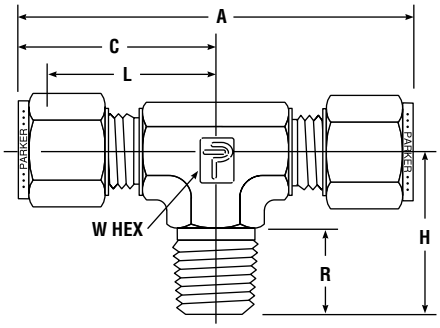


PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	NPT PIPE THREAD	A	C	H	L	R	W HEX
2MBT2N	200-3-2TTM	1/8	1/8	1.84	.92	.71	.66	.38	7/16
2MBT4N	200-3-4TTM	1/8	1/4	1.96	.98	1.00	.72	.56	9/16
3MBT2N	300-3-2TTM	3/16	1/8	2.00	1.00	.74	.74	.38	1/2
4MBT2N	400-3-2TTM	1/4	1/8	2.12	1.06	.74	.77	.38	1/2
4MBT4N	400-3-4TTM	1/4	1/4	2.14	1.07	1.00	.78	.56	9/16
5MBT2N	500-3-2TTM	5/16	1/8	2.34	1.17	.82	.88	.38	5/8
5MBT4N	500-3-4TTM	5/16	1/4	2.34	1.17	1.01	.88	.56	5/8
6MBT4N	600-3-4TTM	3/8	1/4	2.40	1.20	1.01	.91	.56	5/8
6MBT6N	600-3-6TTM	3/8	3/8	2.62	1.31	1.12	1.02	.56	13/16
8MBT6N	810-3-6TTM	1/2	3/8	2.84	1.42	1.12	1.02	.56	13/16
8MBT8N	810-3-8TTM	1/2	1/2	2.86	1.43	1.31	1.03	.75	7/8
10MBT8N	1010-3-8TTM	5/8	1/2	2.86	1.43	1.31	1.03	.75	7/8
12MBT12N	1210-3-12TTM	3/4	3/4	3.12	1.56	1.50	1.16	.75	1-1/16
14MBT12N	1410-3-12TTM	7/8	3/4	3.52	1.76	1.50	1.36	.75	1-3/8
16MBT12N	1610-3-12TTM	1	3/4	3.88	1.94	1.66	1.45	.75	1-3/8
16MBT16N	1610-3-16TTM	1	1	3.88	1.94	1.84	1.45	.94	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MBTN
NPT Male Branch Tee
For metric tube

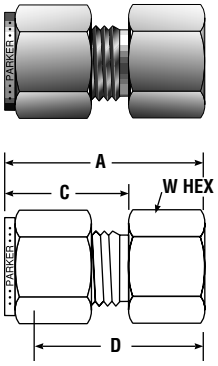




PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS							INCH
		TUBE O.D.	NPT THREAD	A	C	H	L	R	W HEX
M6MBT1/8N	6MO-3TTM	6	1/8	53,9	27,0	18,8	19,6	9,7	1/2
M6MBT1/4N	6MO-3-4TTM	6	1/4	53,9	27,0	23,4	19,6	14,2	1/2
M8MBT1/8N	8MO-3TTM	8	1/8	59,7	29,9	20,8	22,4	9,7	5/8
M8MBT1/4N	8MO-3-4TTM	8	1/4	59,7	29,9	25,4	22,4	14,2	5/8
M10MBT1/4N	10MO-3-4TTM	10	1/4	67,0	33,5	28,2	25,9	14,2	13/16
M10MBT3/8N	10MO-3-6TTM	10	3/8	67,0	33,5	28,2	25,9	14,2	13/16
M12MBT1/4N	12MO-3-4TTM	12	1/4	72,0	36,0	28,2	25,9	14,2	13/16
M12MBT3/8N	12MO-3-6TTM	12	3/8	72,0	36,0	28,2	25,9	14,2	13/16
M12MBT1/2N	12MO-3-8TTM	12	1/2	72,0	36,0	33,0	25,9	19,0	13/16
M16MBT1/2N	16MO-3-8TTM	16	1/2	77,6	38,8	35,8	28,7	19,1	1

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FSCN
NPT Female Connector
For fractional tube

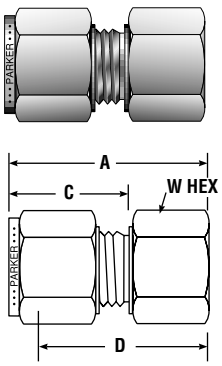


PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	NPT PIPE THREAD	A	C	D	W HEX
1FSC1N	100-7-1	1/16	1/16	.93	.43	.78	7/16
1FSC2N	100-7-2	1/16	1/8	.95	.43	.81	9/16
2FSC2N	200-7-2	1/8	1/8	1.14	.60	.88	9/16
2FSC4N	200-7-4	1/8	1/4	1.32	.60	1.06	3/4
3FSC2N	300-7-2	3/16	1/8	1.17	.64	.91	9/16
3FSC4N	300-7-4	3/16	1/4	1.35	.64	1.09	3/4
4FSC2N	400-7-2	1/4	1/8	1.23	.70	.94	9/16
4FSC4N	400-7-4	1/4	1/4	1.42	.70	1.13	3/4
4FSC6N	400-7-6	1/4	3/8	1.48	.70	1.19	7/8
4FSC8N	400-7-8	1/4	1/2	1.67	.70	1.38	1-1/16
5FSC2N	500-7-2	5/16	1/8	1.27	.73	.97	9/16
5FSC4N	500-7-4	5/16	1/4	1.46	.73	1.16	3/4
5FSC6N	500-7-6	5/16	3/8		.73	1.219	7/8
6FSC2N	600-7-2	3/8	1/8	1.29	.76	1.00	5/8
6FSC4N	600-7-4	3/8	1/4	1.48	.76	1.19	3/4
6FSC6N	600-7-6	3/8	3/8	1.54	.76	1.25	7/8
6FSC8N	600-7-8	3/8	1/2	1.73	.76	1.44	1-1/16
6FSC12N	600-7-12	3/8	3/4	1.85	.76	1.56	1-1/4
8FSC4N	810-7-4	1/2	1/4	1.59	.87	1.19	13/16
8FSC6N	810-7-6	1/2	3/8	1.65	.87	1.25	7/8
8FSC8N	810-7-8	1/2	1/2	1.84	.87	1.44	1-1/16
8FSC12N	810-7-12	1/2	3/4	1.96	.87	1.56	1-1/4
10FSC6N	1010-7-6	5/8	3/8	1.65	.87	1.25	15/16
10FSC8N	1010-7-8	5/8	1/2	1.84	.87	1.44	1-1/16
10FSC12N	1010-7-12	5/8	3/4	1.96	.87	1.56	1-3/8
12FSC8N	1210-7-8	3/4	1/2	1.84	.87	1.44	1-1/16
12FSC12N	1210-7-12	3/4	3/4	1.96	.87	1.56	1-3/8
14FSC12N	1410-7-12	7/8	3/4	1.96	.87	1.56	1-3/8
16FSC12N	1610-7-12	1	3/4	2.15	1.05	1.66	1-3/8
16FSC16N	1610-7-16	1	1	2.46	1.05	1.97	1-5/8
20FSC20N	2010-7-20	1-1/4	1-1/4	2.94	1.52	2.08	2
24FSC24N	2410-7-24	1-1/2	1-1/2	3.28	1.77	2.22	2-3/8
32FSC32N	3210-7-32	2	2	4.00	2.47	2.53	2-7/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Sizes 20, 24, 32 require additional lubrication prior to assembly.

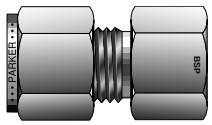
FSCN
NPT Female Connector
For metric tube

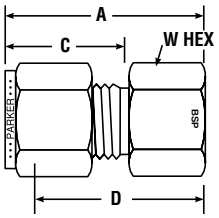


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	NPT THREAD	A	C	D	W HEX
M3FSC1/8N	3MO-7-2	3	1/8	28,8	15,3	22,2	14,0
M3FSC1/4N	3MO-7-4	3	1/4	33,6	15,3	27,0	19,0
M4FSC1/8N	4MO-7-2	4	1/8	29,6	16,1	23,0	14,0
M6FSC1/8N	6MO-7-2	6	1/8	31,3	17,7	23,8	14,0
M6FSC1/4N	6MO-7-4	6	1/4	36,1	17,7	28,6	19,0
M6FSC3/8N	6MO-7-6	6	3/8	37,7	17,7	30,2	22,0
M6FSC1/2N	6MO-7-8	6	1/2	42,5	17,7	35,0	27,0
M8FSC1/8N	8MO-7-2	8	1/8	32,1	18,6	24,6	14,0
M8FSC1/4N	8MO-7-4	8	1/4	36,9	18,6	29,4	19,0
M8FSC3/8N	8MO-7-6	8	3/8	38,5	18,6	31,0	22,0
M10FSC1/4N	10MO-7-4	10	1/4	37,8	19,5	30,2	19,0
M10FSC3/8N	10MO-7-6	10	3/8	39,4	19,5	31,8	22,0
M10FSC1/2N	10MO-7-8	10	1/2	44,1	19,5	36,5	27,0
M12FSC1/4N	12MO-7-4	12	1/4	41,9	22,0	31,8	22,0
M12FSC3/8N	12MO-7-6	12	3/8	41,9	22,0	31,8	22,0
M12FSC1/2N	12MO-7-8	12	1/2	46,6	22,0	36,5	27,0
M16FSC3/8N	16MO-7-6	16	3/8	41,9	22,0	31,8	27,0
M16FSC1/2N	16MO-7-8	16	1/2	46,9	22,0	36,5	27,0
M20FSC1/2N	20MO-7-8	20	1/2	47,9	22,0	37,8	30,0
M20FSC3/4N	20MO-7-12	20	3/4	49,7	22,0	39,6	35,0
M22FSC3/4N	22MO-7-12	22	3/4	49,7	22,0	39,6	35,0
M25FSC3/4N	25MO-7-12	25	3/4	53,6	26,5	41,3	35,0
M25FSC1N	25MO-7-16	25	1	62,3	26,5	50,0	41,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FSCK
BSP Taper Female Connector
For fractional tube

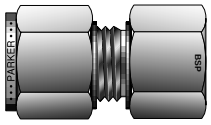


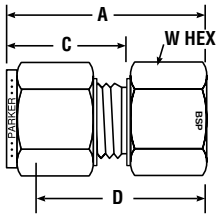


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPT THREAD	A	C	D	W HEX	BORE
4FSC2K	400-7-2RT	1/4	1/8	1.24	.70	.94	9/16	.19
4FSC4K	400-7-4RT	1/4	1/4	1.42	.70	1.13	3/4	.19
4FSC6K	400-7-6RT	1/4	3/8	1.49	.70	1.19	7/8	.19
4FSC8K	400-7-8RT	1/4	1/2	1.68	.70	1.38	1-1/16	.19
6FSC4K	600-7-4RT	3/8	1/4	1.48	.76	1.19	3/4	.28
6FSC6K	600-7-6RT	3/8	3/8	1.54	.76	1.25	7/8	.28
6FSC8K	600-7-8RT	3/8	1/2	1.73	.76	1.44	1-1/16	.28
8FSC4K	810-7-4RT	1/2	1/4	1.59	.87	1.19	13/16	.406
8FSC6K	810-7-6RT	1/2	3/8	1.65	.87	1.25	7/8	.406
8FSC8K	810-7-8RT	1/2	1/2	1.84	.87	1.44	1-1/16	.406

Dimensions for reference only, subject to change.

FSCK
BSP Taper Female Connector
For metric tube



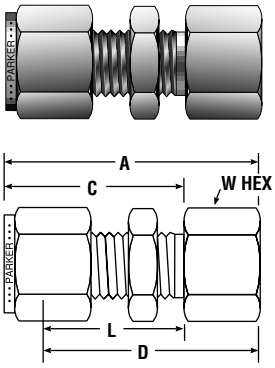


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	BSPT THREAD	A	C	D	W HEX
M3FSC1/8K	3MO-7-2RT	3	1/8	29,2	15,3	22,6	14,0
M6FSC1/8K	6MO-7-2RT	6	1/8	31,3	17,7	23,8	14,0
M6FSC1/4K	6MO-7-4RT	6	1/4	35,8	17,7	28,3	19,0
M6FSC3/8K	6MO-7-6RT	6	3/8	37,6	17,7	30,1	22,0
M6FSC1/2K	6MO-7-8RT	6	1/2	42,5	17,7	35,0	27,0
M8FSC1/8K	8MO-7-2RT	8	1/8	32,8	18,6	25,3	15,0
M8FSC1/4K	8MO-7-4RT	8	1/4	37,0	18,6	29,5	19,0
M8FSC3/8K	8MO-7-6RT	8	3/8	38,5	18,6	31,0	22,0
M8FSC1/2K	8MO-7-8RT	8	1/2	43,3	18,6	35,8	27,0
M10FSC1/8K	10MO-7-2RT	10	1/8	33,0	19,5	25,4	18,0
M10FSC1/4K	10MO-7-4RT	10	1/4	37,8	19,5	30,2	19,0
M10FSC3/8K	10MO-7-6RT	10	3/8	39,4	19,5	31,8	22,0
M10FSC1/2K	10MO-7-8RT	10	1/2	44,2	19,5	36,6	27,0
M12FSC1/4K	12MO-7-4RT	12	1/4	40,3	22,0	30,2	22,0
M12FSC3/8K	12MO-7-6RT	12	3/8	41,9	22,0	31,8	22,0
M12FSC1/2K	12MO-7-8RT	12	1/2	46,7	22,0	36,6	27,0
M16FSC1/2K	16MO-7-8RT	16	1/2	48,4	22,0	38,3	18,0
M20FSC1/2K	20MO-7-8RT	20	1/2	54,7	22,0	44,6	30,0
M20FSC3/4K	20MO-7-12RT	20	3/4	49,7	22,0	39,6	35,0
M22FSC1K	22MO-7-16RT	22	1	57,9	22,0	47,8	41,0
M25FSC3/4K	25MO-7-12RT	25	3/4	54,3	26,5	42,1	35,0
M25FSC1K	25MO-7-16RT	25	1	61,5	26,5	49,3	41,0

NOTE: A and C dimensions are typical finger-tight.

Dimensions for reference only, subject to change.

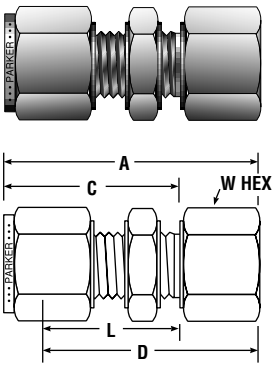
FBCN
NPT Female Bulkhead Connector
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	C	D	L	W HEX
2FBC2N	200-71-2	1/8	1/8	1.76	1.23	1.50	.97	9/16
3FBC2N	300-71-2	3/16	1/8	1.79	1.26	1.53	1.00	9/16
4FBC2N	400-71-2	1/4	1/8	1.85	1.31	1.56	1.02	5/8
4FBC4N	400-71-4	1/4	1/4	2.04	1.31	1.75	1.02	3/4
5FBC2N	500-71-2	5/16	1/8	1.96	1.42	1.66	1.12	11/16
5FBC8N	500-71-8	5/16	1/2	2.38	1.42	2.08	1.12	1-1/16
6FBC4N	600-71-4	3/8	1/4	2.17	1.44	1.88	1.15	3/4
8FBC6N	810-71-6	1/2	3/8	2.43	1.65	2.03	1.25	15/16
8FBC8N	810-71-8	1/2	1/2	2.62	1.65	2.22	1.25	1-1/16
10FBC8N	1010-71-8	5/8	1/2	2.65	1.68	2.25	1.28	1-1/16
12FBC12N	1210-71-12	3/4	3/4	2.90	1.87	2.50	1.47	1-3/8
14FBC12N	1410-71-12	7/8	3/4	3.18	2.09	2.78	1.69	1-3/8
16FBC16N	1610-71-16	1	1	3.68	2.27	3.19	1.78	1-5/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
For bulkhead hole drill size and maximum bulkhead thickness, see Page 28, Part BC.

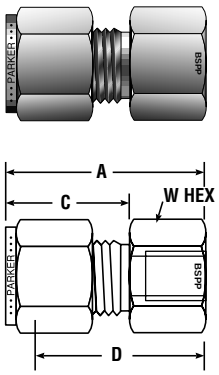
FBCN
NPT Female Bulkhead Connector
For metric tube



PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS								
		TUBE O.D.	NPT THREAD	A	C	D	L	W HEX	B'HEAD HOLE DRILL SIZE	MAX. B'HEAD THICK.
M6FBC1/8N	6MO-71-2	6	1/8	47,2	33,7	39,7	26,2	16,0	11,5	10,2
M6FBC1/4N	6MO-71-4	6	1/4	52,0	33,7	44,5	26,2	19,0	11,5	10,2
M8FBC1/8N	8MO-71-2	8	1/8	49,6	36,1	42,1	28,5	18,0	13,1	11,2
M10FBC1/4N	10MO-71-4	10	1/4	55,2	37,0	47,6	29,4	19,0	16,3	11,2
M12FBC3/8N	12MO-71-6	12	3/8	60,9	41,9	50,8	31,8	24,0	19,5	12,7
M12FBC1/2N	12MO-71-8	12	1/2	66,4	41,9	56,3	31,8	27,0	19,5	12,7

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
For bulkhead hole drill size and maximum bulkhead thickness, see Page 28, Part BC.

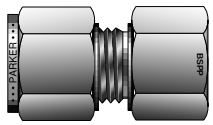
GCR
BSPP Gauge Connector
For fractional tube

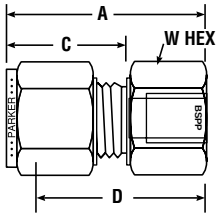


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPP THREAD	A	C	D	W HEX	BORE
4FSC4GC	400-7-4RG	1/4	1/4	1.48	.70	1.19	3/4	.19
4FSC6GC	400-7-6RG	1/4	3/8	1.48	.70	1.19	7/8	.19
4FSC8GC	400-7-8RG	1/4	1/2	1.70	.70	1.41	1-1/16	.19
5FSC4GC	500-7-4RG	5/16	1/4	1.51	.73	1.22	3/4	.21
5FSC8GC	500-7-8RG	5/16	1/2	1.59	.73	1.30	1-1/16	.28
6FSC4GC	600-7-4RG	3/8	1/4	1.55	.76	1.25	3/4	.21
6FSC6GC	600-7-6RG	3/8	3/8	1.55	.76	1.25	7/8	.26
6FSC8GC	600-7-8RG	3/8	1/2	1.63	.76	1.33	1-1/16	.28
8FSC4GC	810-7-4RG	1/2	1/4	1.65	.86	1.25	13/16	.21
8FSC6GC	810-7-6RG	1/2	3/8	1.75	.86	1.35	7/8	.26
8FSC8GC	810-7-8RG	1/2	1/2	1.90	.86	1.50	1-1/16	.28

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
See Catalog 4260 Pipe/ISO Fittings for detailed information.
Sealing Washer on page 72 to be used with this fitting.

GCR
BSPP Gauge Connector
For metric tube

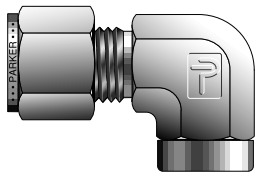


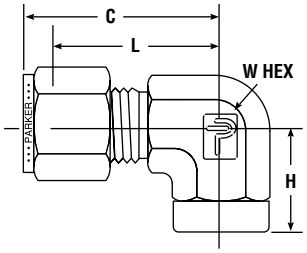


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	BSPP THREAD	A	C	D	W HEX
M3GC1/4R	3MO-7-4RG	3	1/4	35,3	15,3	28,7	19,0
M6GC1/4R	6MO-7-4RG	6	1/4	37,7	17,7	30,2	19,0
M6GC3/8R	6MO-7-6RG	6	3/8	37,7	17,7	30,2	22,0
M6GC1/2R	6MO-7-8RG	6	1/2	43,2	17,7	35,7	27,0
M8GC1/4R	8MO-7-4RG	8	1/4	38,5	18,6	31,0	19,0
M8GC3/8R	8MO-7-6RG	8	3/8	40,8	18,6	33,3	22,0
M8GC1/2R	8MO-7-8RG	8	1/2	44,0	18,6	36,5	27,0
M10GC1/4R	10MO-7-4RG	10	1/4	39,4	19,5	31,8	19,0
M10GC3/8R	10MO-7-6RG	10	3/8	38,8	19,5	31,2	22,0
M10GC1/2R	10MO-7-8RG	10	1/2	41,3	19,5	33,7	27,0
M12GC1/4R	12MO-7-4RG	12	1/4	41,9	22,0	31,8	22,0
M12GC3/8R	12MO-7-6RG	12	3/8	44,4	22,0	34,3	22,0
M12GC1/2R	12MO-7-8RG	12	1/2	48,2	22,0	38,1	27,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
See Catalog 4260 Pipe/ISO Fittings for detailed information.
Sealing Washer on page 72 to be used with this fitting.

FELN
NPT Female Elbow
For fractional tube

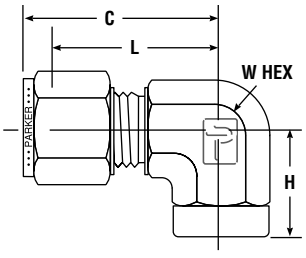




PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	NPT PIPE THREAD	C	H	L	W HEX
1FEL1N	100-8-1	1/16	1/16	.71	.56	.56	7/16
1FEL2N	100-8-2	1/16	1/8	.81	.75	.66	9/16
2FEL2N	200-8-2	1/8	1/8	.98	.75	.72	9/16
2FEL4N	200-8-4	1/8	1/4	1.10	.88	.84	3/4
3FEL2N	300-8-2	3/16	1/8	1.01	.75	.75	9/16
4FEL2N	400-8-2	1/4	1/8	1.07	.75	.78	9/16
4FEL4N	400-8-4	1/4	1/4	1.20	.88	.91	3/4
4FEL6N	400-8-6	1/4	3/8	1.26	.88	.97	7/8
4FEL8N	400-8-8	1/4	1/2	1.35	1.13	1.06	1-1/16
5FEL2N	500-8-2	5/16	1/8	1.17	.75	.88	5/8
5FEL4N	500-8-4	5/16	1/4	1.24	.88	.94	3/4
6FEL2N	600-8-2	3/8	1/8	1.20	.75	.91	5/8
6FEL4N	600-8-4	3/8	1/4	1.26	.88	.97	3/4
6FEL6N	600-8-6	3/8	3/8	1.32	.88	1.03	7/8
6FEL8N	600-8-8	3/8	1/2	1.42	1.13	1.13	1-1/16
8FEL4N	810-8-4	1/2	1/4	1.42	.88	1.02	13/16
8FEL6N	810-8-6	1/2	3/8	1.43	.88	1.03	7/8
8FEL8N	810-8-8	1/2	1/2	1.53	1.13	1.13	1-1/16
10FLE6N	1010-8-6	5/8	3/8	1.43	.88	1.03	7/8
10FEL8N	1010-8-8	5/8	1/2	1.53	1.13	1.13	1-1/16
12FEL8N	1210-8-8	3/4	1/2	1.56	1.13	1.16	1-1/16
12FEL12N	1210-8-12	3/4	3/4	1.65	1.25	1.36	1-3/8
14FEL12N	1410-8-12	7/8	3/4	1.76	1.25	1.36	1-3/8
16FEL12N	1610-8-12	1	3/4	1.94	1.25	1.45	1-3/8
16FEL16N	1610-8-16	1	1	2.02	1.50	1.53	1-5/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

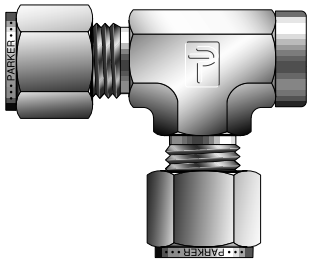
FELN
NPT Female Elbow
For metric tube

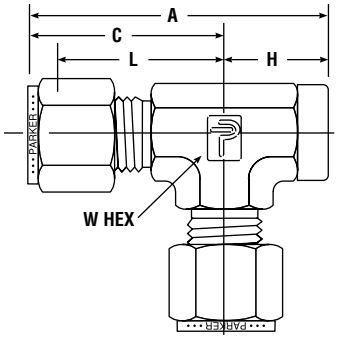


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					INCH
		TUBE O.D.	NPT THREAD	C	H	L	W HEX
M6FEL1/8N	6MO-8-2	6	1/8	27,0	19,0	19,6	1/2
M6FEL1/4N	6MO-8-4	6	1/4	29,8	22,4	22,4	11/16
M8FEL1/8N	8MO-8-2	8	1/8	28,8	19,1	21,3	9/16
M8FEL1/4N	8MO-8-4	8	1/4	30,6	22,4	23,1	11/16
M10FEL1/4N	10MO-8-4	10	1/4	33,5	22,4	25,9	13/16
M10FEL3/8N	10MO-8-6	10	3/8	33,5	22,4	25,9	13/16
M10FEL1/2N	10MO-8-8	10	1/2	36,3	28,5	28,7	1
M12FEL1/4N	12MO-8-4	12	1/4	36,0	22,4	25,9	13/16
M12FEL3/8N	12MO-8-6	12	3/8	36,0	22,4	25,9	13/16
M12FEL1/2N	12MO-8-8	12	1/2	38,8	28,4	28,7	1
M16FEL3/8N	16MO-8-6	16	3/8	39,5	23,6	29,7	1-1/16
M16FEL1/2N	16MO-8-8	16	1/2	39,5	28,4	29,7	1-1/16

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

FRTN
NPT Female Run Tee
For fractional tube

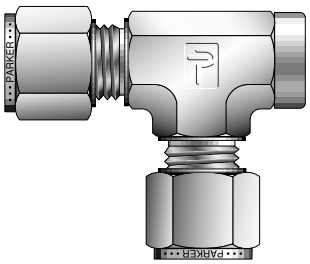


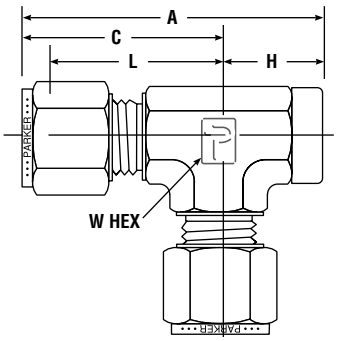


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	C	H	L	W HEX
2FRT2N	200-3-2TFT	1/8	1/8	1.76	1.01	.75	.75	9/16
3FRT2N	300-3-2TFT	3/16	1/8	1.76	1.01	.75	.75	9/16
4FRT2N	400-3-2TFT	1/4	1/8	1.82	1.07	.75	.78	9/16
4FRT4N	400-3-4TFT	1/4	1/4	2.08	1.20	.88	.91	3/4
5FRT2N	500-3-2TFT	5/16	1/8	1.92	1.17	.75	.88	5/8
6FRT4N	600-3-4TFT	3/8	1/4	2.14	1.26	.88	.97	3/4
8FRT4N	810-3-4TFT	1/2	1/2	2.56	1.43	1.13	1.13	13/16
8FRT6N	810-3-6TFT	1/2	3/8	2.34	1.43	.91	1.03	7/8
8FRT8N	810-3-8TFT	1/2	1/2	2.66	1.53	1.13	1.13	1-1/16
10FRT8N	1010-3-8TFT	5/8	1/2	2.66	1.53	1.13	1.13	1-1/16
12FRT12N	1210-3-12TFT	3/4	3/4	2.90	1.65	1.25	1.36	1-3/8
14FRT8N	1410-3-8TFT	7/8	1/2	3.01	1.76	1.25	1.36	1-3/8
14FRT12N	1410-3-12TFT	7/8	3/4	3.01	1.76	1.25	1.36	1-3/8
16FRT12N	1610-3-12TFT	1	3/4	3.19	1.94	1.25	1.45	1-3/8
16FRT16N	1610-3-16TFT	1	1	3.52	2.02	1.50	1.53	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FRTN
NPT Female Run Tee
For metric tube

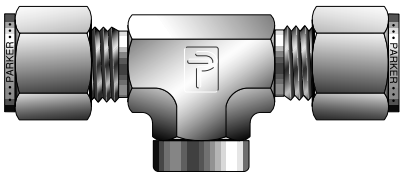


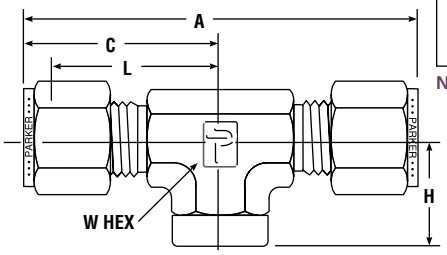


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						INCH
		TUBE O.D.	NPT THREAD	A	C	H	L	W HEX
M6FRT1/8N	6MO-3TFT	6	1/8	46,0	27,0	19,0	19,6	1/2
M6FRT1/4N	6MO-3-4TFT	6	1/4	52,1	29,8	22,4	22,4	11/16
M8FRT1/8N	8MO-3TFT	8	1/8	48,9	29,9	19,0	22,4	5/8
M10FRT1/4N	10MO-3TFT	10	1/4	55,9	33,5	22,4	25,9	13/16
M12FRT1/4N	12MO-3-4TFT	12	1/4	58,4	36,0	22,4	25,9	13/16
M12FRT3/8N	12MO-3TFT	12	3/8	58,4	36,0	22,4	25,9	13/16
M12FRT1/2N	12MO-3-8TFT	12	1/2	67,3	38,8	28,5	28,7	1
M16FRT1/2N	16MO-3TTF	16	1/2	68,2	39,8	28,4	29,7	1-1/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FBTN
NPT Female Branch Tee
For fractional tube

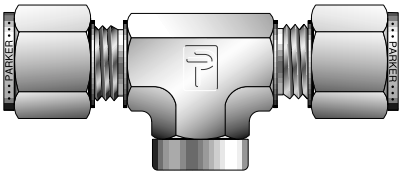


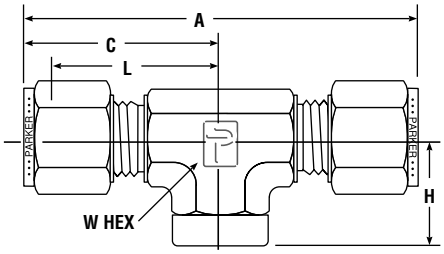


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	C	H	L	W HEX
2FBT2N	200-3-2TTF	1/8	1/8	2.02	1.01	.75	.75	9/16
3FBT2N	300-3-2TTF	3/16	1/8	2.02	1.01	.75	.75	9/16
4FBT2N	400-3-2TTF	1/4	1/8	2.14	1.07	.75	.78	9/16
4FBT4N	400-3-4TTF	1/4	1/4	2.40	1.20	.88	.91	3/4
5FBT2N	500-3-2TTF	5/16	1/8	2.34	1.17	.75	.88	5/8
6FBT4N	600-3-4TTF	3/8	1/4	2.52	1.26	.88	.97	3/4
8FBT4N	810-3-4TTF	1/2	1/4	2.86	1.43	.88	1.02	13/16
8FBT6N	810-3-6TTF	1/2	3/8	2.86	1.43	.91	1.03	7/8
8FBT8N	810-3-8TTF	1/2	1/2	3.06	1.53	1.13	1.13	1-1/16
10FBT8N	1010-3-8TTF	5/8	1/2	3.06	1.53	1.13	1.13	1-1/16
12FBT12N	1210-3-12TTF	3/4	3/4	3.30	1.65	1.25	1.36	1-3/8
14FBT12N	1410-3-12TTF	7/8	3/4	3.52	1.76	1.25	1.36	1-3/8
16FBT12N	1610-3-12TTF	1	3/4	3.88	1.94	1.25	1.45	1-3/8
16FBT16N	1610-3-16TTF	1	1	4.04	2.02	1.50	1.53	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FBTN
NPT Female Branch Tee
For metric tube





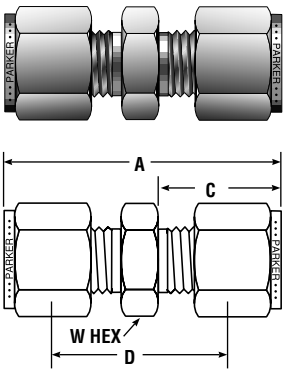
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						INCH
		TUBE O.D.	NPT THREAD	A	C	H	L	W HEX
M6FBT1/8N	6MO-3TTF	6	1/8	53,9	27,0	19,0	19,6	1/2
M6FBT1/4N	6MO-3-4TTF	6	1/4	59,5	29,8	22,4	22,4	11/16
M8FBT1/8N	8MO-3TTF	8	1/8	59,7	29,9	19,0	22,4	5/8
M10FBT1/4N	10MO-3TTF	10	1/4	67,0	33,5	22,4	25,9	13/16
M12FBT1/8N	12MO-3TTF	12	1/8	72,0	36,0	22,3	25,9	13/16
M12FBT1/4N	12MO-3-4TTF	12	1/4	72,0	36,0	22,3	25,9	13/16
M12FBT3/8N	12MO-3TTF	12	3/8	72,0	36,0	22,4	25,9	13/16
M12FBT1/2N	12MO-3-8TTF	12	1/2	77,6	38,8	28,5	28,7	1
M16FBT1/2N	16MO-3TTF	16	1/2	77,6	38,8	28,4	28,7	1

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Tube to Tube Unions

SC Union

For fractional tube



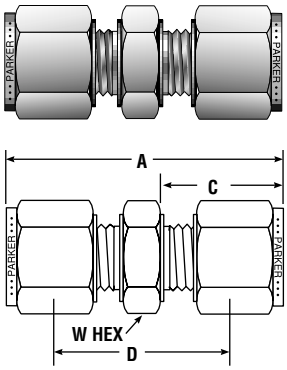
PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		TUBE O.D.	A	C	D	W HEX
1SC1	100-6	1/16	.99	.43	.69	5/16
2SC2	200-6	1/8	1.39	.60	.88	7/16
3SC3	300-6	3/16	1.48	.64	.95	7/16
4SC4	400-6	1/4	1.62	.70	1.03	1/2
5SC5	500-6	5/16	1.70	.73	1.11	9/16
6SC6	600-6	3/8	1.77	.76	1.19	5/8
8SC8	810-6	1/2	2.02	.87	1.22	13/16
10SC10	1010-6	5/8	2.05	.87	1.25	15/16
12SC12	1210-6	3/4	2.11	.87	1.31	1-1/16
14SC14	1410-6	7/8	2.18	.87	1.38	1-3/16
16SC16	1610-6	1	2.57	1.05	1.59	1-3/8
20SC20	2010-6	1-1/4	3.61	1.52	1.89	1-3/4
24SC24	2410-6	1-1/2	4.23	1.77	2.11	2-1/8
32SC32	3210-6	2	5.88	2.47	2.94	2-3/4

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Sizes 20, 24, 32 require additional lubrication prior to assembly.

SCM Union

For metric tube



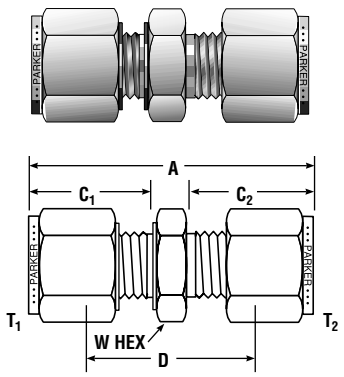
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS				
		TUBE O.D.	A	C	D	W HEX
SCM2	2MO-6	2	35,6	15,3	22,4	12,0
SCM3	3MO-6	3	35,3	15,3	22,1	12,0
SCM4	4MO-4	4	37,4	16,1	24,2	12,0
SCM6	6MO-6	6	41,2	17,7	26,2	14,0
SCM8	8MO-6	8	43,2	18,6	28,2	15,0
SCM10	10MO-6	10	46,2	19,5	31,0	18,0
SCM12	12MO-6	12	51,2	22,0	31,0	22,0
SCM14	14MO-6	14	52,0	22,0	31,8	24,0
SCM15	15MO-6	15	52,0	22,0	31,8	24,0
SCM16	16MO-6	16	52,0	22,0	31,8	24,0
SCM18	18MO-6	18	53,5	22,0	33,3	27,0
SCM20	20MO-6	20	55,0	22,0	34,8	30,0
SCM22	22MO-6	22	55,0	22,0	34,8	30,0
SCM25	25MO-6	25	65,1	26,5	40,5	35,0

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

CU Conversion Union

For metric tube

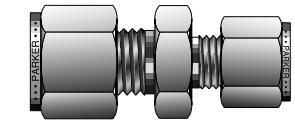
Metric Tube to Inch Tube

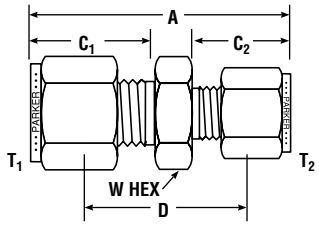


PARKER PART NO.	INTER-CHANGES WITH	TUBE O.D.		MILLIMETERS				
		T_1 MM	T_2 INCH	A	C_1	C_2	D	W HEX
M3CU2	3MO-6-2	3	1/8	36,3	15,3	15,3	22,6	12,0
M4CU2	4MO-6-2	4	1/8	36,5	16,1	15,3	23,6	12,0
M4CU4	4MO-6-4	4	1/4	39,3	16,1	17,7	26,4	14,0
M6CU2	6MO-6-2	6	1/8	38,5	17,7	15,3	24,6	14,0
M6CU4	6MO-6-4	6	1/4	41,1	17,7	17,7	25,9	14,0
M6CU5	6MO-6-5	6	5/16	42,3	17,7	18,8	27,2	14,0
M8CU4	8MO-6-4	8	1/4	42,3	18,6	17,7	27,2	15,0
M8CU6	8MO-6-6	8	6	44,0	18,6	19,3	29,1	15,0
M10CU2	10MO-6-2	10	1/8	41,8	19,5	15,3	27,9	18,0
M10CU4	10MO-6-4	10	1/4	44,5	19,5	17,7	29,2	18,0
M10CU6	10MO-6-6	10	3/8	46,0	19,5	19,3	30,7	18,0
M12CU6	12MO-6-6	12	3/8	48,4	22,0	19,3	30,7	22,0
M12CU8	12MO-6-8	12	1/2	51,1	22,0	21,8	31,0	22,0
M15CU8	15MO-6-8	15	1/2	52,0	22,0	21,8	32,0	24,0
M16CU6	16MO-6-6	16	3/8	52,0	22,0	19,3	34,3	24,0
M18CU12	18MO-6-12	18	3/4	53,5	22,0	21,8	33,5	27,0

NOTE: A, C_1 and C_2 dimensions are typical finger-tight. Dimensions for reference only, subject to change.

RU
Reducing Union
For fractional tube

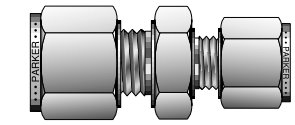


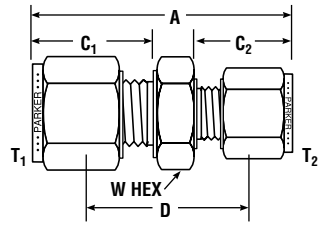


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		T_1 TUBE O.D.	T_2 TUBE O.D.	A	D	C_1	C_2	W HEX
2RU1	200-6-1	1/8	1/16	1.21	.81	.60	.43	7/16
3RU1	300-6-1	3/16	1/16	1.27	.86	.64	.43	7/16
3RU2	300-6-2	3/16	1/8	1.44	.92	.64	.60	7/16
4RU1	400-6-1	1/4	1/16	1.38	.91	.70	.43	1/2
4RU2	400-6-2	1/4	1/8	1.52	.97	.70	.60	1/2
4RU3	400-6-3	1/4	3/16	1.55	1.00	.70	.64	1/2
5RU2	500-6-2	5/16	1/8	1.58	1.03	.73	.60	9/16
5RU4	500-6-4	5/16	1/4	1.67	1.08	.73	.70	9/16
6RU1	600-6-1	3/8	1/16	1.44	1.00	.76	.43	5/8
6RU2	600-6-2	3/8	1/8	1.61	1.06	.76	.60	5/8
6RU4	600-6-4	3/8	1/4	1.71	1.13	.76	.70	5/8
6RU5	600-6-5	3/8	5/16	1.75	1.16	.76	.73	5/8
8RU2	810-6-2	1/2	1/8	1.75	1.09	.87	.60	13/16
8RU4	810-6-4	1/2	1/4	1.85	1.16	.87	.70	13/16
8RU6	810-6-6	1/2	3/8	1.91	1.22	.87	.76	13/16
10RU6	1010-6-6	5/8	3/8	1.94	1.25	.87	.76	15/16
10RU8	1010-6-8	5/8	1/2	2.05	1.25	.87	.87	15/16
12RU4	1210-6-4	3/4	1/4	1.95	1.25	.87	.76	1-1/16
12RU6	1210-6-6	3/4	3/8	2.00	1.31	.87	.76	1-1/16
12RU8	1210-6-8	3/4	1/2	2.11	1.31	.87	.87	1-1/16
12RU10	1210-6-10	3/4	5/8	2.11	1.31	.87	.87	1-1/16
16RU8	1610-6-8	1	1/2	2.39	1.50	1.05	.87	1-3/8
16RU12	1610-6-12	1	3/4	2.39	1.50	1.05	.87	1-3/8

NOTE: A, C_1 and C_2 dimensions are typical finger-tight. Dimensions for reference only, subject to change.

RUM
Reducing Union
For metric tube

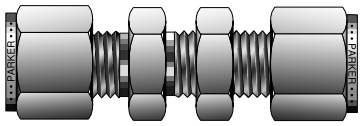


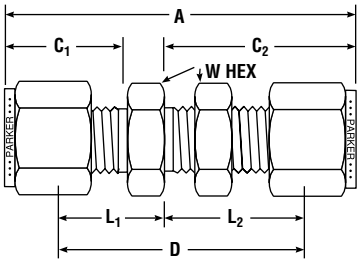


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		T_1 TUBE O.D.	T_2 TUBE O.D.	A	C_1	C_2	D	W HEX
M3RUM2	3M0-6-2M	3	2	35,8	15,3	15,3	22,6	12,0
M6RUM2	6MO-6-2M	6	2	38,7	17,7	15,3	24,6	14,0
M6RUM3	6MO-6-3M	6	3	38,7	17,7	15,3	24,6	14,0
M6RUM4	6MO-6-4M	6	4	39,5	17,7	16,1	25,4	14,0
M8RUM6	8MO-6-6M	8	6	42,4	18,6	17,7	27,4	15,0
M10RUM6	10MO-6-6M	10	6	44,5	19,5	17,7	29,4	18,0
M10RUM8	10MO-6-8M	10	8	44,5	19,5	18,6	29,4	18,0
M12RUM6	12MO-6-6M	12	6	47,0	22,0	17,7	29,4	22,0
M12RUM8	12MO-6-8M	12	8	47,8	22,0	18,6	30,2	22,0
M12RUM10	12MO-6-10M	12	10	48,7	22,0	19,5	31,0	22,0
M16RUM10	16MO-6-10M	16	10	49,5	22,0	19,5	31,8	24,0
M16RUM12	16MO-6-12M	16	12	52,0	22,0	22,0	31,8	24,0
M18RUM12	18MO-6-12M	18	12	53,5	22,0	22,0	33,3	27,0
M25RUM18	25MO-6-18M	25	18	60,5	26,5	22,0	38,1	35,0
M25RUM20	25MO-6-20M	25	20	62,3	26,5	22,0	39,9	35,0

NOTE: A, C_1 and C_2 dimensions are typical finger-tight. Dimensions for reference only, subject to change.

BC
Bulkhead Union
For fractional tube



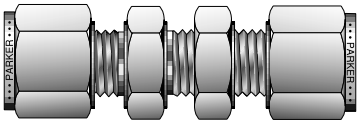


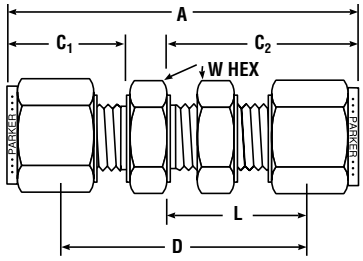
PARKER PART NO.	INTER-CHANGES WITH	INCHES									
		TUBE O.D.	A	C_1	D	C_2	L_1	L_2	W HEX	BULKHEAD HOLE DRILL SIZE	MAXIMUM BULKHEAD THICKNESS
1BC1	100-61	1/16	1.23	.43	.94	.68	.28	.53	5/16	13/64	1/8
2BC2	200-61	1/8	2.02	.60	1.50	1.23	.34	.97	1/2	21/64	1/2
3BC3	300-61	3/16	2.11	.64	1.59	1.26	.38	1.00	9/16	25/64	1/2
4BC2	400-61-2	1/4	2.17	.70	1.03	1.23	.41	.97	5/8	21/64	1/2
4BC4	400-61	1/4	2.27	.70	1.69	1.31	.41	1.02	5/8	29/64	17/32
5BC5	500-61	5/16	2.40	.73	1.81	1.42	.44	1.12	11/16	33/64	9/16
6BC6	600-61	3/8	2.46	.76	1.88	1.44	.47	1.15	3/4	37/64	9/16
8BC8	810-61	1/2	2.80	.87	2.00	1.65	.47	1.25	15/16	49/64	19/32
10BC10	1010-61	5/8	2.86	.87	2.06	1.68	.47	1.28	1-1/16	57/64	19/32
12BC12	1210-61	3/4	3.11	.87	2.31	1.87	.47	1.47	1-3/16	1-1/64	25/32
14BC14	1410-61	7/8	3.33	.87	2.53	2.09	.47	1.69	1-3/8	1-9/64	15/16
16BC16	1610-61	1	3.78	1.05	2.81	2.27	.56	1.78	1-5/8	1-21/64	15/16

NOTE: For reducer sizes call out short end first.
A, C_1 and C_2 dimensions are typical finger-tight.
For replacement bulkhead nuts, see Page 73, Part WLZ.

Dimensions for reference only, subject to change.

BCM
Bulkhead Union
For metric tube





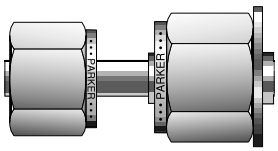
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS								
		TUBE O.D.	A	C_1	C_2	D	L	W HEX	B'HEAD HOLE DRILL SIZE	MAX. B'HEAD THICK.
BCM3	3MO-61	3	51,3	15,3	31,2	38,2	24,6	14,0	8,3	12,7
BCM4	4MO-61	4	53,7	16,1	32,0	40,5	25,4	14,0	9,9	12,7
BCM6	6MO-61	6	57,9	17,7	33,7	42,9	26,2	16,0	11,5	10,2
BCM8	8MO-61	8	61,0	18,6	36,0	46,0	28,5	18,0	13,1	11,2
BCM10	10MO-61	10	63,6	19,5	37,0	48,4	29,4	22,0	16,3	11,2
BCM12	12MO-61	12	71,0	22,0	41,9	50,8	31,8	24,0	19,5	12,7
BCM15	15MO-61	15	72,5	22,0	42,6	52,3	32,5	27,0	22,5	12,7
BCM16	16MO-61	16	72,6	22,0	42,6	52,4	32,5	27,0	22,5	12,7
BCM18	18MO-61	18	78,9	22,0	47,4	58,7	37,3	30,0	26,0	16,8
BCM20	20MO-61	20	88,2	22,0	51,0	68,0	40,9	35,0	29,0	19,0
BCM25	25MO-61	25	95,8	26,5	54,4	71,4	42,2	41,0	33,8	24,0

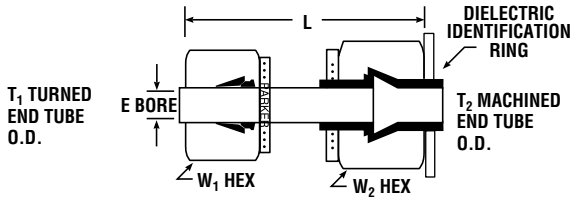
NOTE: A, C_1 and C_2 dimensions are typical finger-tight.
For replacement bulkhead nuts, see Page 73, Part BN.
For reducer sizes call out short end first.

Dimensions for reference only, subject to change.

DELTA
Dielectric Union Adapter
For fractional tube

includes nuts, machined tube with molded ferrule, preset ferrule, and dielectric identification ring



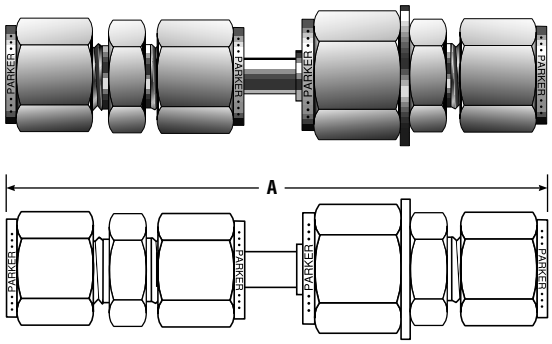


PARKER ADAPTER PART NO.	INCHES					
	TUBE END T_1	TUBE END T_2	L	E BORE	W_1 HEX	W_2 HEX
6-8 DELTA	3/8	1/2	2.08	.30	11/16	7/8
8-10 DELTA	1/2	5/8	2.58	.38	7/8	1

NOTE: Makeup instructions included with parts in box when ordered as an Adapter only.
*Other end connectors available upon request. Dimensions for reference only, subject to change.

DELTA
Dielectric Assembly
For fractional tube

includes dielectric union adapter with assembled tube fitting unions



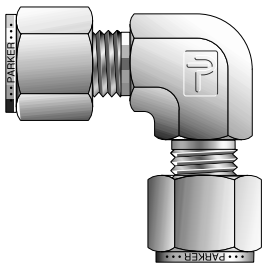
PARKER ASSEMBLY PART NO.	INCHES		
*COMPRESSION	A†	ADAPTER	END CONNECTORS
4H DELTA	4.08	6-8 DELTA	6RU4/8RU4
6H DELTA	4.20	6-8 DELTA	6SC6/8RU6
8H DELTA	4.79	8-10 DELTA	8SC8/10RU8

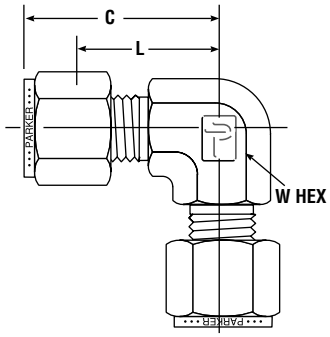
*COMPRESSION–FEMALE PIPE	A	ADAPTER	END CONNECTORS
4G DELTA	3.59	6-8 DELTA	6FSC4N/8FSC4N
6G DELTA	3.71	6-8 DELTA	6FSC6N/8FSC6N
8G DELTA	4.40	8-10 DELTA	8FSC8N/10FSC8N

*COMPRESSION–MALE PIPE	A	ADAPTER	END CONNECTORS
4F DELTA	3.80	6-8 DELTA	6MSC4N/8MSC4N
6F DELTA	3.80	6-8 DELTA	6MSC6N/8MSC6N
8F DELTA	4.58	8-10 DELTA	8MSC8N/10MSC8N

†Finger tight assembly dimensions.

EE
Union Elbow
For fractional tube

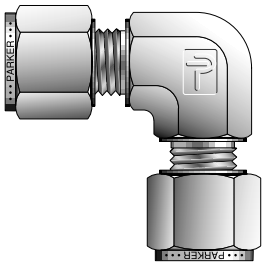


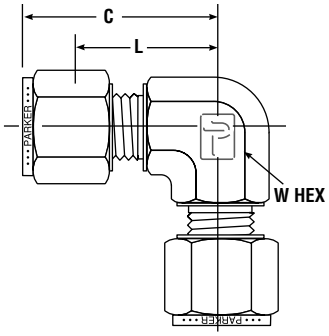


PARKER PART NO.	INTER-CHANGES WITH	INCHES			
		TUBE O.D.	C	L	W HEX
1EE1	100-9	1/16	.71	.56	3/8
2EE2	200-9	1/8	.88	.62	3/8
3EE3	300-9	3/16	1.00	.74	1/2
4EE4	400-9	1/4	1.06	.77	1/2
5EE5	500-9	5/16	1.17	.88	5/8
6EE6	600-9	3/8	1.20	.91	5/8
8EE8	810-9	1/2	1.42	1.02	13/16
10EE10	1010-9	5/8	1.43	1.03	7/8
12EE12	1210-9	3/4	1.56	1.16	1-1/16
14EE14	1410-9	7/8	1.76	1.36	1-3/8
16EE16	1610-9	1	1.94	1.45	1-3/8
20EE20	2010-9	1-1/4	2.61	1.75	1-5/8
24EE24	2410-9	1-1/2	3.06	2.00	1-7/8
32EE32	3210-9	2	4.22	2.75	2-13/16

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.
Sizes 20, 24, 32 require additional lubrication prior to assembly.

EEM
Union Elbow
For metric tube

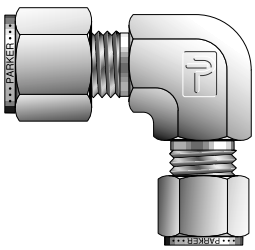


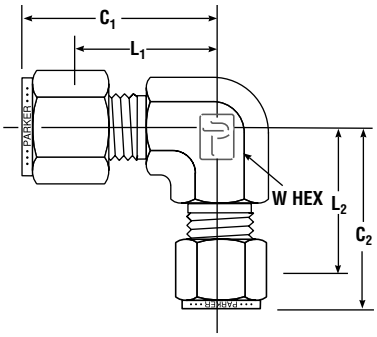


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS			INCH
		TUBE O.D.	C	L	W HEX
EEM3	3MO-9	3	22,3	15,7	3/8
EEM4	4MO-9	4	25,4	18,8	1/2
EEM6	6MO-9	6	27,0	19,6	1/2
EEM8	8MO-9	8	28.8	21,3	9/16
EEM10	10MO-9	10	31,5	23,9	11/16
EEM12	12MO-9	12	36,0	25,9	13/16
EEM14	14MO-9	14	38,1	28,0	15/16
EEM15	15MO-9	15	38,0	27,9	15/16
EEM16	16MO-9	16	38,0	27,9	15/16
EEM18	18MO-9	18	39,8	29,7	1-1/16
EEM20	20MO-9	20	44,6	34,5	1-3/8
EEM22	22MO-9	22	44,6	34,5	1-3/8
EEM25	25MO-9	25	49,1	36,8	1-3/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

ELZ
Drop Size Elbows
For fractional tube

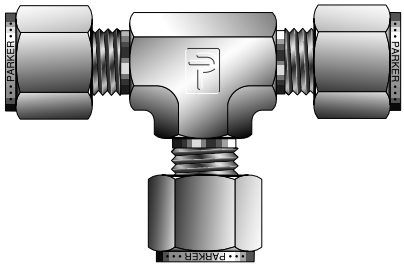


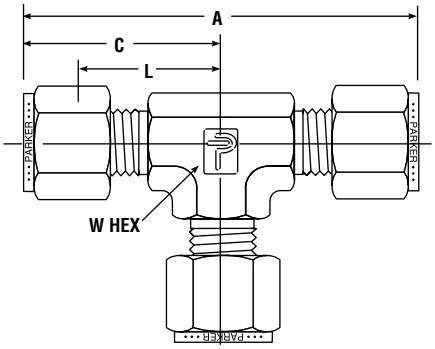


PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	L_1	C_1	L_2	C_2	W HEX
3-2 ELZ	300-9-2	3/16-1/8	.69	.96	.66	.92	7/16
4-2 ELZ	400-9-2	1/4-1/8	.77	1.06	.70	.96	1/2
5-2 ELZ	500-9-2	5/16-1/8	.88	1.17	.78	1.04	5/8
5-4 ELZ	500-9-4	5/16-1/4	.88	1.17	.85	1.14	5/8
6-2 ELZ	600-9-2	3/8-1/8	.91	1.20	.78	1.04	5/8
6-4 ELZ	600-9-4	3/8-1/4	.91	1.20	.85	1.09	5/8
6-5 ELZ	600-9-5	3/8-5/16	.91	1.20	.88	1.17	5/8
8-4 ELZ	810-9-4	1/2-1/4	1.02	1.42	.96	1.25	13/16
8-5 ELZ	810-9-5	1/2-5/16	1.02	1.42	.99	1.28	13/16
8-6 ELZ	810-9-6	1/2-3/8	1.02	1.42	1.02	1.31	13/16
10-6 ELZ	1010-9-6	5/8-3/8	1.03	1.43	1.03	1.32	7/8
10-8 ELZ	1010-9-8	5/8-1/2	1.03	1.43	1.03	1.43	7/8
12-4 ELZ	1210-9-4	3/4-1/4	1.16	1.56	1.09	1.38	1-1/16
12-6 ELZ	1210-9-6	3/4-3/8	1.16	1.56	1.16	1.45	1-1/16
12-8 ELZ	1210-9-8	3/4-1/2	1.16	1.56	1.16	1.56	1-1/16
14-4 ELZ	1410-9-4	7/8-1/4	1.36	1.76	1.22	1.51	1-3/8
16-8 ELZ	1610-9-8	1-1/2	1.45	1.94	1.22	1.62	1-5/16
16-12 ELZ	1610-9-12	1-3/4	1.45	1.94	1.36	1.76	1-3/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

ET
Union Tee
For fractional tube



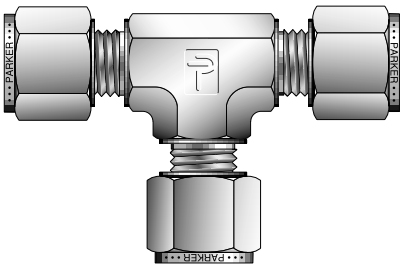


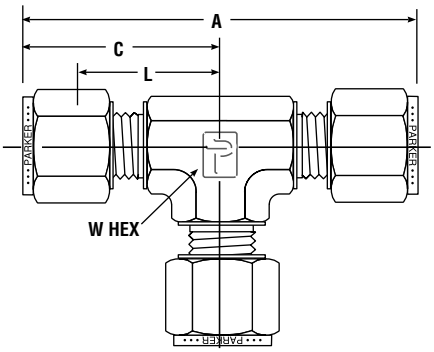
PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		TUBE O.D.	A	C	L	W HEX
1ET1	100-3	1/16	1.42	.71	.56	3/8
2ET2	200-3	1/8	1.76	.88	.62	3/8
3ET3	300-3	3/16	2.00	1.00	.74	1/2
4ET4	400-3	1/4	2.12	1.06	.77	1/2
5ET5	500-3	5/16	2.34	1.17	.88	5/8
6ET6	600-3	3/8	2.40	1.20	.91	5/8
8ET8	810-3	1/2	2.84	1.42	1.02	13/16
10ET10	1010-3	5/8	2.86	1.43	1.03	7/8
12ET12	1210-3	3/4	3.12	1.56	1.16	1-1/16
14ET14	1410-3	7/8	3.52	1.76	1.36	1-3/8
16ET16	1610-3	1	3.88	1.94	1.45	1-3/8
20ET20	2010-3	1-1/4	5.22	2.61	1.75	1-5/8
24ET24	2410-3	1-1/2	6.12	3.06	2.00	1-7/8
32ET32	3210-3	2	8.44	4.22	2.75	2-13/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Sizes 20, 24, 32 require additional lubrication prior to assembly.

ETM
Union Tee
For metric tube





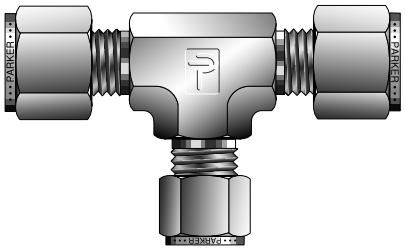
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS				INCH
		TUBE O.D.	A	C	L	W HEX
ETM2	2MO-3	2	44,7	22,3	15,7	3/8
ETM3	3MO-3	3	44,7	22,3	15,7	3/8
ETM4	4MO-3	4	50,8	25,4	18,8	1/2
ETM6	6MO-3	6	53,9	27,0	19,6	1/2
ETM8	8MO-3	8	59,7	29,9	22,4	5/8
ETM10	10MO-3	10	63,0	31,5	23,9	11/16
ETM12	12MO-3	12	72,0	36,0	25,9	13/16
ETM14	14MO-3	14	77,6	38,8	28,7	1
ETM15	15MO-3	15	77,6	38,8	28,7	1
ETM16	16MO-3	16	77,6	38,8	28,7	1
ETM18	18MO-3	18	79,5	38,8	29,7	1-1/16
ETM20	20MO-3	20	89,3	44,6	34,5	1-3/8
ETM22	22MO-3	22	89,3	44,6	34,5	1-3/8
ETM25	25MO-3	25	98,3	49,1	36,8	1-3/8

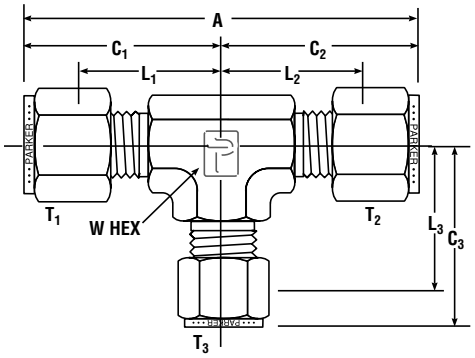
NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Tube to Tube Unions

JLZ
Drop Size Tees
For fractional tube

Eliminates the extra connection when adapting with a tube stub reducer



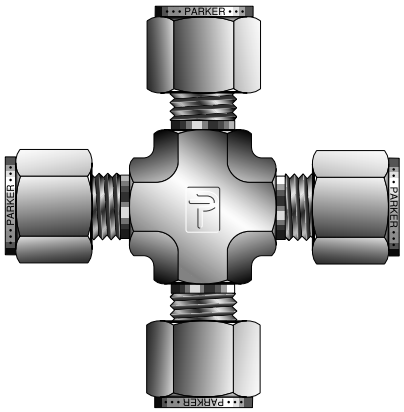


PARKER PART NO.	INTERCHANGES WITH	INCHES										
		T_1 TUBE O.D.	T_2 TUBE O.D.	T_3 TUBE O.D.	A	L_1	C_1	L_2	C_2	L_3	C_3	W HEX
4-4-2 JLZ	400-3-4-2	1/4	1/4	1/8	2.10	.76	1.05	.76	1.05	.70	.96	1/2
6-6-4 JLZ	600-3-6-4	3/8	3/8	1/4	2.40	.91	1.20	.91	1.20	.85	1.14	5/8
6-4-6 JLZ	600-3-4-6	3/8	1/4	3/8	2.34	.91	1.20	.85	1.14	.91	1.20	5/8
6-4-4 JLZ	600-3-4-4	3/8	1/4	1/4	2.34	.91	1.20	.85	1.14	.85	1.14	5/8
8-8-6 JLZ	810-3-8-6	1/2	1/2	3/8	2.84	1.02	1.42	1.02	1.42	1.02	1.31	13/16
8-8-4 JLZ	810-3-8-4	1/2	1/2	1/4	2.84	1.02	1.42	1.02	1.42	.96	1.25	13/16
8-6-8 JLZ	810-3-6-8	1/2	3/8	1/2	2.73	1.02	1.42	1.02	1.31	1.02	1.42	13/16
8-4-8 JLZ	810-3-4-8	1/2	1/4	1/2	2.67	1.02	1.42	.96	1.25	1.02	1.42	13/16
8-6-6 JLZ	810-3-6-6	1/2	3/8	3/8	2.73	1.02	1.42	1.02	1.31	1.02	1.31	13/16
8-4-4 JLZ	810-3-4-4	1/2	1/4	1/4	2.67	1.02	1.42	.96	1.25	.96	1.25	13/16
10-10-8 JLZ	1010-3-10-8	5/8	5/8	1/2	2.86	103	1.43	1.03	1.43	1.03	1.43	7/8
10-10-6 JLZ	1010-3-10-6	5/8	5/8	3/8	2.86	1.03	1.43	1.03	1.43	1.03	1.32	7/8
10-8-8 JLZ	1010-3-8-8	5/8	1/2	1/2	2.86	1.03	1.43	1.03	1.43	1.03	1.43	7/8
10-8-6 JLZ	1010-3-8-6	5/8	1/2	3/8	2.86	1.03	1.43	1.03	1.43	1.03	1.32	7/8
10-6-6 JLZ	1010-3-6-6	5/8	3/8	3/8	2.75	1.03	1.43	1.03	1.32	1.03	1.32	7/8
10-6-8 JLZ	1010-3-6-8	5/8	3/8	1/2	2.75	1.03	1.43	1.03	1.32	1.03	1.43	7/8
12-12-10 JLZ	1210-3-12-10	3/4	3/4	5/8	3.12	1.16	1.56	1.16	1.56	1.16	1.56	1-1/16
12-12-8 JLZ	1210-3-12-8	3/4	3/4	1/2	3.12	1.16	1.56	1.16	1.56	1.16	1.56	1-1/16
12-12-6 JLZ	1210-3-12-6	3/4	3/4	3/8	3.12	1.16	1.56	1.16	1.56	1.16	1.45	1-1/16
12-12-4 JLZ	1210-3-12-4	3/4	3/4	1/4	3.12	1.16	1.56	1.16	1.56	1.09	1.38	1-1/16
12-10-10 JLZ	1210-3-10-10	3/4	5/8	5/8	3.12	1.16	1.56	1.16	1.56	1.16	1.56	1-1/16
12-8-8 JLZ	1210-3-8-8	3/4	1/2	1/2	3.12	1.16	1.56	1.16	1.56	1.16	1.56	1-1/16
12-6-6 JLZ	1210-3-6-6	3/4	3/8	3/8	3.01	1.16	1.56	1.16	1.45	1.16	1.45	1-1/16
12-10-8 JLZ	1210-3-10-8	3/4	5/8	1/2	3.12	1.16	1.56	1.16	1.56	1.16	1.56	1-1/16
12-10-6 JLZ	1210-3-10-6	3/4	5/8	3/8	3.12	1.16	1.56	1.16	1.56	1.16	1.45	1-1/16
12-8-6 JLZ	1210-3-8-6	3/4	1/2	3/8	3.12	1.16	1.56	1.16	1.56	1.16	1.45	1-1/16
14-14-6 JLZ	1410-3-14-6	7/8	7/8	3/8	3.52	1.36	1.76	1.36	1.76	1.36	1.65	1-3/8
14-14-4 JLZ	1410-3-14-4	7/8	7/8	1/4	3.52	1.36	1.76	1.36	1.76	1.30	1.59	1-3/8
14-12-12 JLZ	1410-3-12-12	7/8	3/4	3/4	3.52	1.36	1.76	1.36	1.76	1.36	1.76	1-3/8
14-12-8 JLZ	1410-3-12-8	7/8	3/4	1/2	3.52	1.36	1.76	1.36	1.76	1.36	1.76	1-3/8
14-12-6 JLZ	1410-3-12-6	7/8	3/4	3/8	3.52	1.36	1.76	1.36	1.76	1.36	1.65	1-3/8
14-10-6 JLZ	1410-3-10-6	7/8	5/8	3/8	3.52	1.36	1.76	1.36	1.76	1.36	1.65	1-3/8
14-8-12 JLZ	1410-3-8-12	7/8	1/2	3/4	3.52	1.36	1.76	1.36	1.76	1.36	1.76	1-3/8
16-16-12 JLZ	1610-3-16-12	1	1	3/4	3.88	1.45	1.94	1.45	1.94	1.36	1.76	1-5/16
16-16-10 JLZ	1610-3-16-10	1	1	5/8	3.88	1.45	1.94	1.45	1.94	1.36	1.76	1-5/16
16-16-8 JLZ	1610-3-16-8	1	1	1/2	3.88	1.45	1.94	1.45	1.94	1.36	1.76	1-5/16
16-16-6 JLZ	1610-3-16-6	1	1	3/8	3.88	1.45	1.94	1.45	1.94	1.36	1.65	1-5/16
16-16-4 JLZ	1610-3-16-4	1	1	1/4	3.88	1.45	1.94	1.45	1.94	1.30	1.59	1-5/16
16-12-16 JLZ	1610-3-12-16	1	3/4	1	3.70	1.45	1.94	1.36	1.76	1.45	1.94	1-5/16
16-14-14 JLZ	1610-3-14-14	1	7/8	7/8	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-14-12 JLZ	1610-3-14-12	1	7/8	3/4	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-14-8 JLZ	1610-3-14-8	1	7/8	1/2	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-14-6 JLZ	1610-3-14-6	1	7/8	3/8	3.70	1.45	1.94	1.36	1.76	1.36	1.65	1-5/16
16-14-4 JLZ	1610-3-14-4	1	7/8	1/4	3.70	1.45	1.94	1.36	1.76	1.30	1.59	1-5/16
16-16-14 JLZ	1610-3-16-14	1	1	7/8	3.70	1.45	1.94	1.45	1.76	1.36	1.76	1-5/16
16-12-10 JLZ	1610-3-12-10	1	3/4	5/8	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-12-8 JLZ	1610-3-12-8	1	3/4	1/2	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-10-6 JLZ	1610-3-10-6	1	5/8	3/8	3.70	1.45	1.94	1.36	1.76	1.36	1.65	1-5/16
16-8-16 JLZ	1610-3-8-16	1	1/2	1	3.70	1.45	1.94	1.36	1.76	1.45	1.94	1-5/16
16-8-8 JLZ	1610-3-8-8	1	1/2	1/2	3.70	1.45	1.94	1.36	1.76	1.36	1.76	1-5/16
16-8-6 JLZ	1610-3-8-6	1	1/2	3/8	3.70	1.45	1.94	1.36	1.76	1.36	1.65	1-5/16
16-8-4 JLZ	1610-3-8-4	1	1/2	1/4	3.70	1.45	1.94	1.36	1.76	1.30	1.59	1-5/16
16-6-6 JLZ	1610-3-6-6	1	3/8	3/8	3.59	1.45	1.94	1.36	1.65	1.36	1.65	1-5/16

NOTE: C dimensions are typical finger-tight.

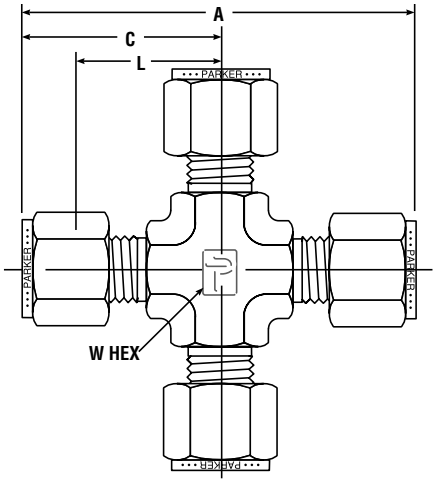
Dimensions for reference only, subject to change.

ECR
Union Cross
For fractional tube

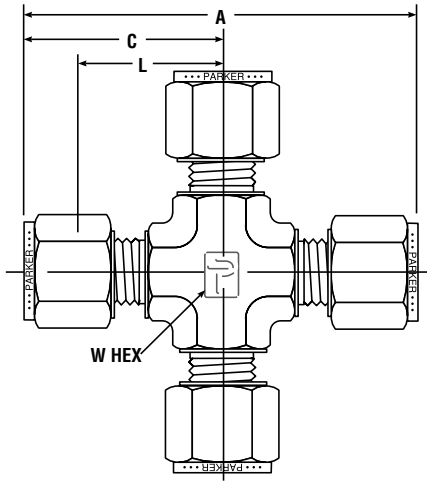


PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		TUBE O.D.	A	C	L	W HEX
2ECR2	200-4	1/8	1.84	.92	.66	7/16
3ECR3	300-4	3/16	1.92	.95	.69	7/16
4ECR4	400-4	1/4	2.02	1.01	.72	7/16
5ECR5	500-4	5/16	2.28	1.14	.84	9/16
6ECR6	600-4	3/8	2.26	1.13	.84	9/16
8ECR8	810-4	1/2	2.74	1.37	.97	3/4
10ECR10	1010-4	5/8	2.86	1.43	1.03	1-1/16
12ECR12	1210-4	3/4	3.12	1.56	1.16	1-1/16
14ECR14	1410-4	7/8	3.52	1.76	1.36	1-5/16
16ECR16	1610-4	1	3.86	1.93	1.45	1-5/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.



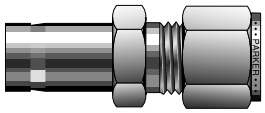
ECRM
Union Cross
For metric tube

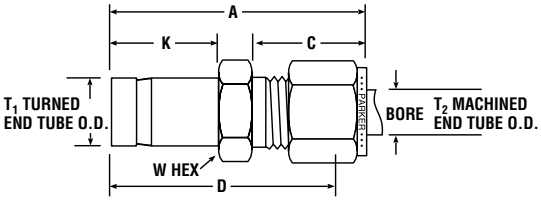


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS				INCH
		TUBE O.D.	A	C	L	W HEX
ECRM3	3MO-4	3	44,7	22,3	15,7	7/16
ECRM4	4MO-4	4	50,8	25,4	18,8	1/2
ECRM6	6MO-4	6	53,9	27,0	19,6	1/2
ECRM8	8MO-4	8	59,7	29,9	22,4	5/8
ECRM10	10MO-4	10	67,0	33,5	25,9	13/16
ECRM12	12MO-4	12	72,0	36,0	25,9	13/16
ECRM16	16MO-4	16	74,0	37,0	26,9	15/16
ECRM18	18MO-4	18	76,6	38,3	28,2	1-1/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

TUR
Tube End Reducer
For fractional tube

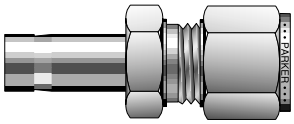


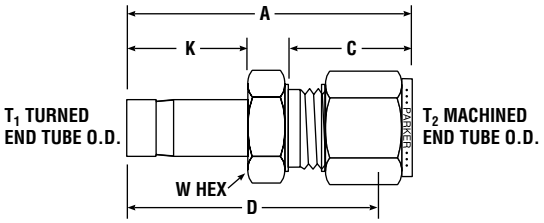


PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		T_1 TURNED END TUBE O.D.	T_2 MACHINE END TUBE O.D.	A	C	D	K	W HEX	BORE
2TUR1*	100-R-2	1/8	1/16	1.10	.43	.95	.53	5/16	.05
3TUR1*	100-R-3	3/16	1/16	1.13	.43	.98	.58	5/16	.05
4TUR1	100-R-4	1/4	1/16	1.24	.43	1.09	.63	7/16	.05
1TUR2*	200-R-1	1/16	1/8	1.18	.60	.922	.38	7/16	.09
2TUR2*	200-R-2	1/8	1/8	1.34	.43	1.09	.54	7/16	.07
3TUR2*	200-R-3	3/16	1/8	1.35	.60	1.09	.58	7/16	.09
4TUR2	200-R-4	1/4	1/8	1.42	.60	1.16	.63	7/16	.09
6TUR2	200-R-6	3/8	1/8	1.48	.60	1.22	.69	7/16	.09
8TUR2	200-R-8	1/2	1/8	1.74	.60	1.48	.91	9/16	.09
2TUR3*	300-R-2	1/8	3/16	1.37	.63	1.11	.53	7/16	.08
4TUR3	300-R-4	1/4	3/16	1.46	.63	1.20	.63	7/16	.13
2TUR4*	400-R-2	1/8	1/4	1.45	.70	1.16	.53	1/2	.08
3TUR4*	400-R-3	3/16	1/4	1.48	.60	1.19	.56	1/2	.12
4TUR4	400-R-4	1/4	1/4	1.54	.70	1.25	.63	1/2	.19
5TUR4	400-R-5	5/16	1/4	1.57	.70	1.28	.66	1/2	.19
6TUR4	400-R-6	3/8	1/4	1.60	.70	1.31	.69	1/2	.19
8TUR4	400-R-8	1/2	1/4	1.82	.70	1.53	.91	9/16	.19
10TUR4	400-R-10	5/8	1/4	1.89	.70	1.60	.97	11/16	.19
12TUR4	400-R-12	3/4	1/4	1.88	.70	1.59	.97	13/16	.19
6TUR5	500-R-6	3/8	5/16	1.65	.73	1.36	.69	9/16	.25
8TUR5	500-R-8	1/2	5/16	1.87	.73	1.58	.91	9/16	.25
4TUR6	600-R-4	1/4	3/8	1.63	.76	1.34	.63	5/8	.19
6TUR6	600-R-6	3/8	3/8	1.70	.76	1.41	.69	5/8	.28
8TUR6	600-R-8	1/2	3/8	1.91	.76	1.62	.91	5/8	.28
10TUR6	600-R-10	5/8	3/8	1.98	.76	1.69	.97	11/16	.28
12TUR6	600-R-12	3/4	3/8	1.98	.76	1.69	.97	13/16	.28
4TUR8	810-R-4	1/4	1/2	1.77	.87	1.37	.63	13/16	.19
6TUR8	810-R-6	3/8	1/2	1.84	.87	1.44	.69	13/16	.19
10TUR8	810-R-10	5/8	1/2	2.12	.87	1.72	.97	13/16	.41
12TUR8	810-R-12	3/4	1/2	2.12	.87	1.72	.97	13/16	.41
16TUR8	810-R-16	1	1/2	2.37	.87	1.97	1.22	1-1/16	.41
12TUR10	1010-R-12	3/4	5/8	2.15	.87	1.75	.97	15/16	.50
14TUR10	1010-R-14	7/8	5/8	2.21	.87	1.81	1.03	15/16	.50
16TUR10	1010-R-16	1	5/8	2.40	.87	2.00	1.22	1-1/16	.50
8TUR12	1210-R-8	1/2	3/4	2.15	.87	1.75	.91	1-1/16	.39
16TUR12	1210-R-16	1	3/4	2.46	.87	2.06	1.22	1-1/16	.63
24TUR16	1610-R-24	1-1/2	1	3.519	1.05	3.03	2.05	1-5/8	.88
24TUR20	2010-R-24	1-1/2	1-1/4	4.10	1.52	3.23	2.05	1-7/8	1.09
32TUR24	2410-R-32	2	1-1/2	5.17	1.52	4.10	2.74	2-1/4	1.34

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Size 4 and above tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
*Size 1, 2, and 3 do not require a groove.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.
Sizes 20, 24 require additional lubrication prior to assembly.

TUCM
Tube End Converter
For metric tube

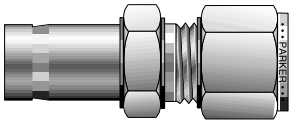


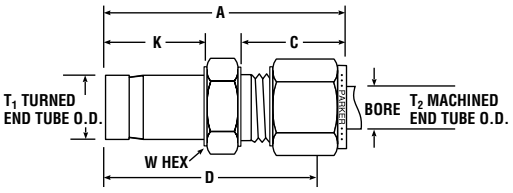


PARKER PART NO.	INTER-CHANGES WITH	TUBE O.D.		MILLIMETERS					
		T_1 INCH	T_2 MM	A	C	D	K	W A/F HEX	BORE
2TUCM3	3MO-R-2	1/8	3	34,3	15,3	27,7	13,5	12,0	1,4
4TUCM3	3MO-R-4	1/4	3	36,1	15,3	29,5	16,0	12,0	4,8
4TUCM6	6MO-R-4	1/4	6	39,3	17,7	31,8	16,0	14,0	4,8
5TUCM6	6MO-R-5	5/16	6	40,0	17,7	32,5	16,8	14,0	6,4
6TUCM6	6MO-R-6	3/8	6	40,8	17,7	33,3	17,5	14,0	7,1
8TUCM6	6MO-R-8	1/2	6	46,4	17,7	38,9	23,1	14,0	9,9
6TUCM8	8MO-R-6	3/8	8	42,0	18,6	34,5	17,5	15,0	7,1
8TUCM8	8MO-R-8	1/2	8	47,5	18,6	40,1	23,1	15,0	9,9
6TUCM10	10MO-R-6	3/8	10	44,4	19,5	36,8	17,5	18,0	7,1
8TUCM10	10MO-R-8	1/2	10	47,6	19,5	41,4	23,1	18,0	9,9
8TUCM12	12MO-R-8	1/2	12	52,3	22,0	42,2	23,1	22,0	9,9
12TUCM12	12MO-R-12	3/4	12	53,8	22,0	43,7	24,6	22,0	15,1
12TUCM18	18MO-R-12	3/4	18	57,5	22,0	47,5	24,6	27,0	15,1

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Size 1, 2, and 3 do not require a groove.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

TURM
Tube End Reducer
For metric tube

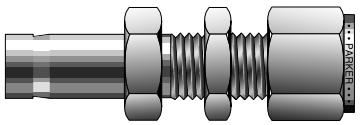


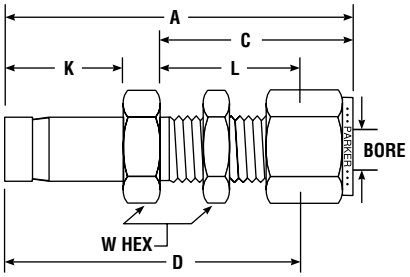


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS								
		TUBE O.D.								
		T_1	T_2	A	C	D	K	Q	W HEX	BORE
M3TURM2	2MO-R-3M	3	2	34,3	15,3	27,7	13,5	0,6	14,0	1,4
M3TURM6	6MO-R-3M	3	6	37,0	17,7	29,5	13,5	0,6	14,0	1,4
M4TURM3	3MO-R-4M	4	3	35,0	15,3	28,4	14,3	1,0	12,0	2,0
M6TURM3	3MO-R-6M	6	3	36,1	15,3	29,5	15,9	1,0	12,0	2,4
M6TURM4	4MO-R-6M	6	4	37,1	16,1	30,5	15,9	1,0	12,0	3,0
M6TURM8	8MO-R-6M	6	8	40,0	18,6	32,5	15,9	1,0	15,0	4,0
M6TURM10	10MO-R-6M	6	10	41,7	19,5	34,1	15,9	1,0	18,0	4,0
M6TURM12	12MO-R-6M	6	12	44,9	22,0	34,8	15,9	1,0	22,0	4,0
M8TURM6	6MO-R-8M	8	6	40,0	17,7	32,5	16,7	0,8	14,0	4,8
M8TURM10	10MO-R-8M	8	10	43,4	19,5	35,8	15,3	1,5	19,5	18,0
M10TURM3	3MO-R-10M	10	3	38,6	15,3	32,0	17,7	2,0	15,3	12,0
M10TURM6	6MO-R-10M	10	6	40,8	17,7	33,3	17,5	1,3	14,0	4,8
M10TURM8	8MO-R-10M	10	8	42,0	18,6	34,5	17,5	1,3	15,0	6,4
M10TURM12	12MO-R-10M	10	12	46,6	22,0	36,5	17,5	1,3	22,0	7,5
M12TURM6	6MO-R-12M	12	6	46,4	17,7	38,9	23,0	1,4	14,0	4,8
M12TURM8	8MO-R-12M	12	8	47,6	18,6	40,1	23,0	1,4	15,0	6,4
M12TURM10	10MO-R-12M	12	10	49,7	19,5	42,1	23,0	1,4	18,0	7,9
M12TURM16	16MO-R-12M	12	16	53,0	22,0	42,9	23,0	1,4	24,0	9,1
M12TURM18	18MO-R-12M	12	18	54,6	22,0	44,5	23,0	1,4	27,0	9,1
M15TURM10	10MO-R-15M	15	10	51,3	19,5	43,7	23,8	1,6	27,0	7,9
M16TURM12	12MO-R-16M	16	12	53,8	22,0	43,7	24,6	1,7	22,0	9,5
M16TURM18	18MO-R-16M	16	18	56,1	22,0	46,0	24,6	1,7	27,0	12,7
M16TURM20	20MO-R-16M	16	20	57,9	22,0	47,8	24,6	1,7	27,0	12,7
M16TURM25	25MO-R-16M	16	25	63,2	26,5	51,0	24,8	2,0	26,5	35,0
M18TURM12	12MO-R-18M	18	12	53,8	22,0	43,7	24,6	2,0	22,0	9,5
M18TURM16	16MO-R-18M	18	16	54,7	22,0	44,6	24,8	2,5	22,0	24,0
M18TURM20	20MO-R-18M	18	20	57,9	22,0	47,8	24,6	2,0	30,0	13,9
M18TURM25	25MO-R-18M	18	25	63,1	26,5	50,8	24,6	2,0	35,0	14,0
M20TURM12	12MO-R-20M	20	12	56,1	22,0	46,0	25,4	2,5	22,0	9,5
M20TURM16	16MO-R-20M	20	16	55,3	22,0	45,2	25,6	2,5	22,0	24,0
M20TURM18	18MO-R-20M	20	18	57,6	22,0	47,5	25,4	2,5	27,0	15,1
M20TURM25	25MO-R-20M	20	25	64,5	26,5	52,3	25,4	2,5	35,0	15,1
M22TURM18	18MO-R-22M	22	18	56,1	22,0	46,0	26,2	2,5	27,0	15,1
M22TURM20	20MO-R-22M	22	20	57,7	22,0	47,6	26,2	2,5	30,0	15,8
M25TURM12	12MO-R-25M	25	12	60,9	22,0	50,8	31,8	2,6	27,0	9,5
M25TURM16	16MO-R-25M	25	16	64,0	22,0	51,8	32,0	3,0	22,0	27,0
M25TURM18	18MO-R-25M	25	18	62,5	22,0	52,4	31,8	2,6	27,0	15,1
M25TURM20	20MO-R-25M	25	20	64,2	22,0	54,1	31,8	2,6	30,0	15,8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

TUBC
Tube End Bulkhead Adapter
For fractional tube

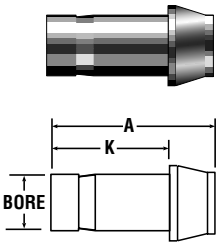




PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	A	C	L	K	D	BORE	W HEX
2TUBC2	200-R1-2	1/8	1.95	1.23	.97	.53	1.69	.093	1/2
4TUBC4	400-R1-4	1/4	2.20	1.31	1.02	.63	1.91	.187	5/8
6TUBC6	600-R1-6	3/8	2.42	1.44	1.15	.69	2.13	.281	3/4
8TUBC8	810-R1-8	1/2	2.87	1.65	1.25	.91	2.47	.406	15/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

PC
Port Connector
For fractional tube

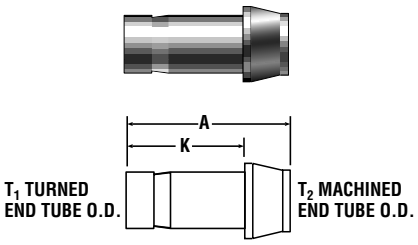


PARKER PART NO.	INTER-CHANGES WITH	INCHES			
		TUBE O.D.	A	K	BORE
1PC1	101-PC	1/16	.63	.44	.031
1PC2	201-PC-1	1/16-1/8	.84	.44	.031
1PC4	401-PC-1	1/16-1/4	.91	.44	.031
2PC2	201-PC	1/8	.95	.54	.078
2PC4	401-PC-2	1/8-1/4	1.05	.54	.078
2PC6	601-PC-2	1/8-3/8	1.09	.54	.031
3PC3	301-PC	3/16	.981	.67	.116
4PC4	401-PC	1/4	1.07	.76	.156
4PC6	601-PC-4	1/4-3/8	1.15	.64	.156
4PC8	811-PC-4	1/4-1/2	1.36	.64	.156
6PC6	601-PC	3/8	1.16	.84	.281
6PC8	811-PC-6	3/8-1/2	1.40	.72	.281
8PC8	811-PC	1/2	1.59	1.11	.375
8PC12	1211-PC-8	1/2-3/4	1.72	.91	.375
12PC12	1211-PC	3/4	1.65	1.16	.578
16PC16	1611-PC	1	2.12	1.44	.813

Dimensions for reference only, subject to change.

NOTE: Tube stub is pre-grooved as standard. (Size 1, 2, and 3 not grooved). Generic (non-grooved 4-16) can be ordered through Quick Response Department.
The machined ferrule end (T_2) requires only 1/4 turn from finger tight to assemble.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

PCM
Port Connector
For metric tube

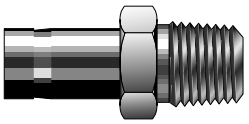


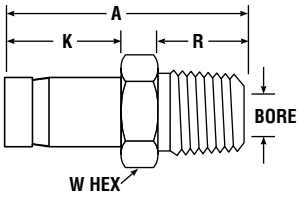
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS				
		TUBE O.D.		A	K	BORE
		T_1	T_2			
PCM 3	3M1-PC	3	3	22,2	15,7	1,6
PCM 6	6M1-PC	6	6	24,6	18,7	3,0
PCM 8	8M1-PC	8	8	25,9	20,0	5,0
PCM 10	10M1-PC	10	10	26,1	20,2	6,0
PCM 12	12M1-PC	12	12	35,8	26,0	8,0
PCM 16	16M1-PC	16	16	40,5	27,7	12,0
PCM 18	18M1-PC	18	18	40,8	27,7	13,0
M3PCM6	6M1-PC-3M	3	6	22,6	13,5	1,6
M6PCM8	8M1-PC-6M	6	8	25,5	16,1	3,0
M6PCM10	10M1-PC-6M	6	10	25,5	16,1	3,0
M6PCM12	12M1-PC-6M	6	12	31,2	16,1	3,0
M8PCM10	10M1-PC-8M	8	10	29,5	16,8	5,0
M8PCM12	12M1-PC-8M	8	12	31,4	16,8	5,0

Dimensions for reference only, subject to change.

NOTE: Tube stub is pre-grooved as standard. (Size M2, M3, and M4 not grooved).
The machined ferrule end (T_2) requires only 1/4 turn from finger tight to assemble.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

MAN
NPT Tube End Male Adapter
For fractional tube

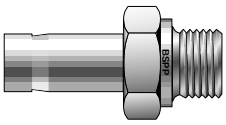


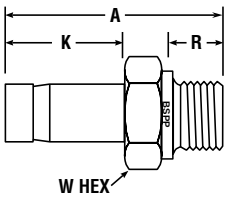


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	NPT PIPE THREAD	A	R	K	W HEX	BORE
1MA2N	1-TA-1-1	1/16	1/8	1.00	.38	.38	7/16	.031
2MA2N	2-TA-1-2	1/8	1/8	1.16	.38	.54	7/16	.078
2MA4N	2-TA-1-4	1/8	1/4	1.38	.56	.54	9/16	.078
3MA2N	3-TA-1-2	3/16	1/8	1.20	.38	.58	7/16	.116
3MA4N	3-TA-1-4	3/16	1/4	1.42	.56	.58	9/16	.116
4MA2N	4-TA-1-2	1/4	1/8	1.25	.38	.63	7/16	.156
4MA4N	4-TA-1-4	1/4	1/4	1.46	.56	.63	9/16	.156
4MA6N	4-TA-1-6	1/4	3/8	1.49	.56	.63	11/16	.156
4MA8N	4-TA-1-8	1/4	1/2	1.71	.75	.63	7/8	.156
5MA2N	5-TA-1-2	5/16	1/8	1.29	.38	.66	7/16	.219
5MA4N	5-TA-1-4	5/16	1/4	1.50	.56	.66	9/16	.219
5MA6N	5-TA-1-6	5/16	3/8	1.53	.56	.66	11/16	.219
5MA8N	5-TA-1-8	5/16	1/2	1.74	.75	.66	7/8	.219
6MA2N	6-TA-1-2	3/8	1/8	1.32	.38	.69	7/16	.281
6MA4N	6-TA-1-4	3/8	1/4	1.53	.56	.69	9/16	.281
6MA6N	6-TA-1-6	3/8	3/8	1.56	.56	.69	11/16	.281
6MA8N	6-TA-1-8	3/8	1/2	1.78	.75	.69	7/8	.281
8MA4N	8-TA-1-4	1/2	1/4	1.75	.56	.91	9/16	.281
8MA6N	8-TA-1-6	1/2	3/8	1.78	.56	.91	11/16	.375
8MA8N	8-TA-1-8	1/2	1/2	2.00	.75	.91	7/8	.375
10MA8N	10-TA-1-8	5/8	1/2	2.06	.75	.97	7/8	.469
12MA8N	12-TA-1-8	3/4	1/2	2.06	.75	.97	7/8	.469
12MA12N	12-TA-1-12	3/4	3/4	2.06	.75	.97	1-1/16	.578
12MA16N	12-TA-1-16	3/4	1	2.41	.94	.97	1-3/8	.813
16MA12N	16-TA-1-12	1	3/4	2.31	.75	1.22	1-1/16	.813
16MA16N	16-TA-1-16	1	1	2.68	.94	1.22	1-3/8	.813
20MA20N	20-TA-1-20	1-1/4	1-1/4	3.16	.97	1.71	1-3/4	1.00
24MA24N	24-TA-1-24	1-1/2	1-1/2	3.72	1.00	2.05	2-1/8	1.25
32MA32N	32-TA-1-32	2	2	4.70	1.04	2.74	2-3/4	1.72

NOTE: Add -Z6 for assembly of nuts and ferrules on the tube stub end. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Inch sizes 1, 2, and 3 and metric sizes 2, 3, and 4mm do not have grooves.
Sizes 20, 24, 32 require additional lubrication prior to assembly.

MAR
BSPP Tube End Male Adapter
For fractional tube

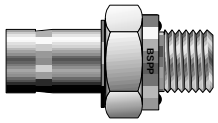


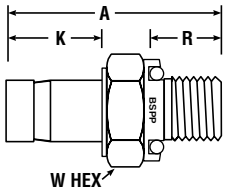


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPP THREAD	A	K	R	HEX	W BORE
2MA2R	2TA-1-2RS	1/8	1/8	1.09	.53	.28	9/16	.05
2MA4R	2TA-1-4RS	1/8	1/4	1.31	.53	.44	3/4	.05
4MA2R	4TA-1-2RS	1/4	1/8	1.19	.63	.28	9/16	.16
4MA4R	4TA-1-4RS	1/4	1/4	1.50	.63	.44	3/4	.18
6MA2R	6TA-1-2RS	3/8	1/8	1.34	.69	.28	3/4	.05
6MA4R	6TA-1-4RS	3/8	1/4	1.47	.69	.44	3/4	.25
6MA6R	6TA-1-6RS	3/8	3/8	1.50	.69	.44	7/8	.28
6MA8R	6TA-1-8RS	3/8	1/2	1.69	.69	.56	1-1/16	.28
8MA4R	8TA-1-4RS	1/2	1/4	1.69	.91	.44	3/4	.25
8MA6R	8TA-1-6RS	1/2	3/8	1.72	.91	.44	7/8	.31
8MA8R	8TA-1-8RS	1/2	1/2	1.94	.91	.56	1-1/16	.39
10MA8R	10TA-1-8RS	5/8	1/2	1.97	.97	.56	1-1/16	.47
12MA12R	12TA-1-12RS	3/4	3/4	2.09	.97	.63	1-5/16	.578
16MA16R	16TA-1-16RS	1	1	2.53	1.22	.72	1-5/8	.80

NOTE: Add -Z6 for assembly of nuts and ferrules on the tube stub end. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Bonded sealing washer must be used with this design.

MAR
BSPP Tube End Male Adapter
For metric tube

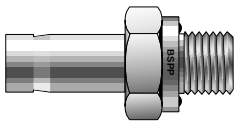


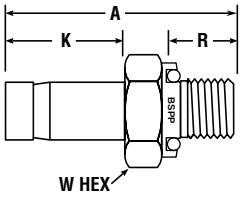


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS								
		TUBE O.D.	BSPP THREAD	A	K	Q	R	X	W HEX	BORE
M3MA1/8R	3-MTA-1-2RS	3	1/8	31,0	13,5	0,6	7,1	13,7	14,0	1,8
M4MA1/8R	4-MTA-1-2RS	4	1/8	31,8	14,3	1,0	7,1	13,7	14,0	2,0
M6MA1/8R	6-MTA-1-2RS	6	1/8	33,3	15,9	1,0	7,1	13,7	14,0	4,0
M6MA1/4R	6-MTA-1-4RS	6	1/4	38,1	15,9	1,0	11,2	17,8	19,0	4,0
M8MA1/4R	8-MTA-1-4RS	8	1/4	38,9	16,7	0,8	11,2	17,8	19,0	6,4
M10MA1/4R	10-MTA-1-4RS	10	1/4	39,7	17,5	1,3	11,2	17,8	19,0	6,4
M10MA3/8R	10-MTA-1-6RS	10	3/8	38,9	17,5	1,3	11,2	21,8	22,0	7,5
M10MA1/2R	10-MTA-1-8RS	10	1/2	42,9	17,5	1,3	14,2	25,7	27,0	7,5
M12MA1/4R	12-MTA-1-4RS	12	1/4	43,7	23,0	1,4	11,2	17,8	19,0	6,4
M12MA3/8R	12-MTA-1-6RS	12	3/8	44,5	23,0	1,4	11,2	21,8	22,0	7,9
M12MA1/2R	12-MTA-1-8RS	12	1/2	49,2	23,0	1,4	14,2	25,7	27,0	9,1
M16MA1/2R	16-MTA-1-8RS	16	1/2	50,8	24,6	1,7	14,2	25,7	27,0	11,9
M18MA3/4R	18-MTA-1-12RS	18	3/4	53,2	24,6	2,0	16,0	31,8	33,0	14,0
M20MA3/4R	20-MTA-1-12RS	20	3/4	54,0	25,4	2,5	16,0	31,8	33,0	15,1
M25MA1R	25-MTA-1-16RS	25	1	65,1	31,8	2,6	18,3	38,6	41,0	19,8

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Bonded sealing washer must be used with this design. Dimensions for reference only, subject to change.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

MAR
BSPP Tube End Male Adapter with ED Seal
For fractional tube

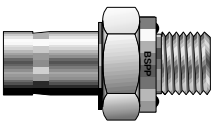


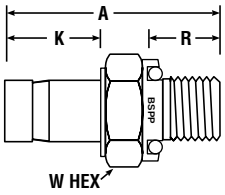


PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	BSPP THREAD	A	K	R	X	W HEX	BORE
4MA4R-ED	–	1/4	1/4	1.50	.63	.47	.74	3/4	.18
4MA6R-ED	–	1/4	3/8	1.50	.63	.47	.86	3/4	.18
8MA4R-ED	–	1/2	1/4	1.75	.91	.47	.74	3/4	.25
8MA6R-ED	–	1/2	3/8	1.78	.91	.47	.86	7/8	.31
8MA8R-ED	–	1/2	1/2	1.94	.91	.55	1.04	1.1/16	.39

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
ED fitttings are supplied with sealing washers in Buna-N as standard, suitable for temperatures between –35°C and +100°C (–31°F to +212°F). Viton seals are available upon request which are suitable for temperatures between –25°C and +120°C (13°F to +248°F). Dimensions for reference only, subject to change.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

MAR
BSPP Tube End Male Adapter with ED Seal
For metric tube



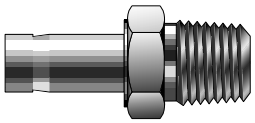


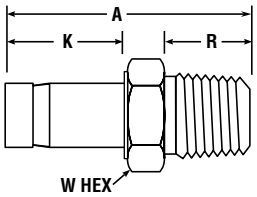
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	BSPP THREAD	A	K	R	W HEX	BORE
M6MA1/4R-ED	–	6	1/4	36,6	15,9	7,9	19,0	4,0
M6MA1/2R-ED	–	6	1/2	42,7	15,9	14,0	27,0	4,0
M10MA1/4R-ED	–	10	1/4	38,1	17,5	11,9	19,0	6,4
M10MA1/2R-ED	–	10	1/2	44,2	17,5	14,0	27,0	7,5
M12MA1/4R-ED	–	12	1/4	43,7	23,0	11,9	19,0	6,4
M12MA3/8R-ED	–	12	3/8	45,0	23,0	11,9	22,0	7,9
M12MA1/2R-ED	–	12	1/2	49,8	23,0	14,0	27,0	9,1

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
ED fittings are supplied with sealing washers in Buna-N as standard, suitable for temperatures between –35°C and +100°C (–31°F to +212°F). Viton seals are available upon request which are suitable for temperatures between –25°C and +120°C (13°F to +248°F).
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

MAN
NPT Male Adapter
For metric tube



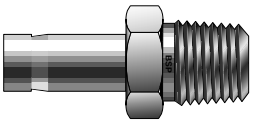


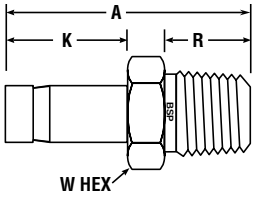
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	NPT THREAD	A	K	R	W HEX	BORE
M3MA1/8N	3-MTA-1-2	3	1/8	29,4	13,5	9,7	12,0	1,8
M4MA1/8N	4-MTA-1-2	4	1/8	29,4	14,3	9,7	12,0	2,0
M6MA1/8N	6-MTA-1-2	6	1/8	31,0	15,9	9,7	12,0	4,0
M6MA1/4N	6-MTA-1-4	6	1/4	35,7	15,9	14,2	14,0	4,0
M6MA3/8N	6-MTA-1-6	6	3/8	36,5	16,1	14,2	18,0	3,0
M6MA1/2N	6-MTA-1-8	6	1/2	42,1	16,1	19,1	22,0	3,0
M8MA1/4N	8-MTA-1-4	8	1/4	37,3	16,7	14,2	14,0	6,4
M8MA3/8N	8-MTA-1-6	8	3/8	38,1	16,7	14,2	12,0	6,4
M10MA1/4N	10-MTA-1-4	10	1/4	38,1	17,5	14,2	14,0	7,1
M10MA3/8N	10-MTA-1-6	10	3/8	43,7	17,5	14,2	18,0	7,5
M10MA1/2N	10-MTA-1-8	10	1/2	44,5	17,5	19,1	22,0	7,5
M12MA1/4N	12-MTA-1-4	12	1/4	43,7	23,0	14,2	14,0	7,1
M12MA3/8N	12-MTA-1-6	12	3/8	44,5	23,0	14,2	27,0	9,1
M12MA1/2N	12-MTA-1-8	12	1/2	49,2	23,0	19,1	22,0	9,1
M16MA1/2N	16-MTA-1-8	16	1/2	50,8	24,6	19,1	22,0	12,7
M16MA3/4N	16-MTA-1-12	16	3/4	51,6	24,6	19,1	27,0	12,7
M18MA1/2N	18-MTA-1-8	18	1/2	50,8	24,6	19,1	22,0	12,7
M18MA3/4N	18-MTA-1-12	18	3/4	51,6	24,6	19,1	27,0	14,0
M20MA1/2N	20-MTA-1-8	20	1/2	51,8	25,6	19,1	22,0	15,0
M20MA3/4N	20-MTA-1-12	20	3/4	52,4	25,4	19,1	27,0	15,1
M25MA1N	25-MTA-1-16	25	1	65,9	31,8	23,9	35,0	19,8

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

MAK
BSP Taper Male Adapter
For fractional tube



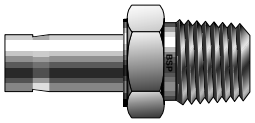


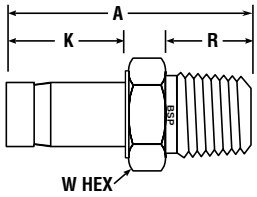
PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSP TR THREAD	A	K	R	W HEX	BORE
4MA2K	4-TA-1-2RT	1/4	1/8	1.25	.63	.38	7/16	.156
4MA4K	4-TA-1-4RT	1/4	1/4	1.46	.63	.56	9/16	.156
4MA6K	4-TA-1-6RT	1/4	3/8	1.44	.63	.56	11/16	.156
4MA8K	4-TA-1-8RT	1/4	1/2	1.66	.63	.75	7/8	.219
5MA2K	5-TA-1-2RT	5/16	1/8	1.29	.66	.38	7/16	.219
5MA4K	5-TA-1-4RT	5/16	1/4	1.50	.66	.56	9/16	.219
6MA4K	6-TA-1-4RT	3/8	1/4	1.50	.69	.56	9/16	.281
6MA6K	6-TA-1-6RT	3/8	3/8	1.50	.69	.56	11/16	.281
6MA8K	6-TA-1-8RT	3/8	1/2	1.72	.69	.75	7/8	.281
8MA4K	8-TA-1-4RT	1/2	1/4	1.72	.91	.56	9/16	.375
8MA6K	8-TA-1-6RT	1/2	3/8	1.75	.91	.56	11/16	.375
8MA8K	8-TA-1-8RT	1/2	1/2	1.94	.91	.75	7/8	.375
10MA8K	10-TA-1-8RT	5/8	1/2	2.06	.97	.75	7/8	.469

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

MAK
BSP Taper Male Adapter
For metric tube



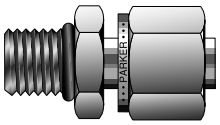


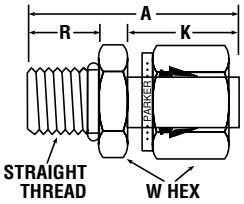
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	BSP TR THREAD	A	K	R	W HEX	BORE
M3MA1/8K	3-MTA-1-2RT	3	1/8	29,4	13,5	9,7	12,0	1,8
M4MA1/8K	4-MTA-1-2RT	4	1/8	29,4	14,3	9,7	12,0	2,0
M6MA1/8K	6-MTA-1-2RT	6	1/8	31,0	15,9	9,7	12,0	4,0
M6MA1/4K	6-MTA-1-4RT	6	1/4	35,7	15,9	14,2	14,0	4,0
M8MA1/4K	8-MTA-1-4RT	8	1/4	37,3	16,7	14,2	14,0	6,4
M8MA3/8K	8-MTA-1-6RT	8	3/8	38,3	16,8	14,2	18,0	5,0
M10MA1/4K	10-MTA-1-4RT	10	1/4	38,1	17,5	14,2	14,0	7,1
M10MA3/8K	10-MTA-1-6RT	10	3/8	38,1	17,5	14,2	18,0	7,5
M10MA1/2K	10-MTA-1-8RT	10	1/2	44,5	17,5	19,1	22,0	7,5
M12MA1/4K	12-MTA-1-4RT	12	1/4	43,7	23,0	14,2	14,0	7,1
M12MA3/8K	12-MTA-1-6RT	12	3/8	44,5	23,0	14,2	18,0	9,1
M12MA1/2K	12-MTA-1-8RT	12	1/2	49,2	23,0	19,1	22,0	9,1
M16MA1/2K	16-MTA-1-8RT	16	1/2	50,8	24,6	19,1	22,0	12,7
M18MA3/4K	18-MTA-1-12RT	18	3/4	51,6	24,6	19,1	27,0	14,0
M20MA3/4K	20-MTA-1-12RT	20	3/4	52,4	25,4	19,1	27,0	15,1
M25MA1K	25-MTA-1-16RT	25	1	65,9	31,8	23,9	35,0	19,8

NOTE: Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

TUHA
Tube End to SAE Straight Thread Adapter
For fractional tube

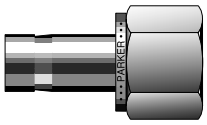


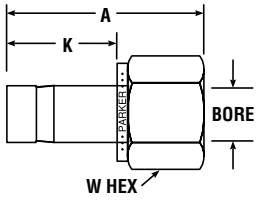


PARKER PART NO.	INCHES							O-RING APR UNIFORM DASH NO.
	INTER-CHANGES WITH	T TUBE O.D.	STRAIGHT THREAD SIZE	A	K	R	W HEX	
6TUHA4	6-TA-1-4ST	3/8	7/16-20	1.46	.69	.36	9/16	3-904
6TUHA8	6-TA-1-8ST	3/8	3/4-16	1.59	.69	.44	7/8	3-908
8TUHA6	8-TA-1-6ST	1/2	9/16-18	1.74	.91	.39	11/16	3-906
10TUHA10	10-TA-1-10ST	5/8	7/8-14	1.94	.91	.50	1	3-910
24TUHA24	24-TA-1-24ST	1-1/2	1-7/8-12	3.28	2.05	.59	2-1/8	3-924

NOTE: Preassembled with nut and ferrules. Dimensions for reference only, subject to change.
A dimension is typical finger-tight.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.
Size 24 requires additional lubrication prior to assembly.

FAN
Tube End NPT Female Adapter
For fractional tube

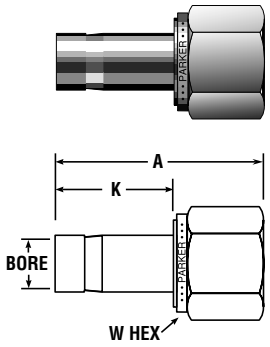




PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	NPT PIPE THREAD	A	K	W HEX	BORE
1FA2N	1-TA-7-2	1/16	1/8	1.07	.34	9/16	.031
2FA2N	2-TA-7-2	1/8	1/8	1.23	.53	9/16	.093
2FA4N	2-TA-7-4	1/8	1/4	1.38	.53	3/4	.093
3FA2N	3-TA-7-2	3/16	1/8	1.25	.56	9/16	.116
3FA4N	3-TA-7-4	3/16	1/4	1.42	.56	3/4	.116
4FA2N	4-TA-7-2	1/4	1/8	1.31	.63	9/16	.188
4FA4N	4-TA-7-4	1/4	1/4	1.47	.63	3/4	.188
4FA6N	4-TA-7-6	1/4	3/8	1.56	.63	7/8	.188
4FA8N	4-TA-7-8	1/4	1/2	1.80	.63	1-1/16	.188
5FA2N	5-TA-7-2	5/16	1/8	1.34	.66	9/16	.219
5FA4N	5-TA-7-4	5/16	1/4	1.50	.66	3/4	.219
5FA6N	5-TA-7-6	5/16	3/8	1.59	.66	7/8	.219
6FA2N	6-TA-7-2	3/8	1/8	1.36	.69	9/16	.281
6FA4N	6-TA-7-4	3/8	1/4	1.55	.69	3/4	.281
6FA6N	6-TA-7-6	3/8	3/8	1.59	.69	7/8	.281
6FA8N	6-TA-7-8	3/8	1/2	1.84	.69	1-1/16	.281
8FA4N	8-TA-7-4	1/2	1/4	1.72	.91	3/4	.391
8FA6N	8-TA-7-6	1/2	3/8	1.80	.91	7/8	.391
8FA8N	8-TA-7-8	1/2	1/2	2.10	.91	1-1/16	.390
10FA6N	10-TA-7-6	5/8	3/8	1.86	.97	7/8	.469
10FA8N	10-TA-7-8	5/8	1/2	2.09	.97	1-1/16	.469
12FA8N	12-TA-7-8	3/4	1/2	2.10	.97	1-1/16	.578
12FA12N	12-TA-7-12	3/4	3/4	2.16	.97	1-1/4	.578
12FA16N	12-TA-7-16	3/4	1	2.30	.97	1-5/8	.578
14FA12N	14-TA-7-12	7/8	3/4	2.22	1.02	1-5/16	.578
16FA12N	16-TA-7-12	1	3/4	2.41	1.22	1-5/16	.813
16FA16N	16-TA-7-16	1	1	2.54	1.22	1-5/8	.813
20FA20N	20-TA-7-20	1-1/4	1-1/4	3.06	1.71	2-1/8	1.000
24FA24N	24-TA-7-24	1-1/2	1-1/2	3.50	2.05	2-3/8	1.25
32FA32N	32-TA-7-32	2	2	4.23	2.74	2-7/8	1.72

NOTE: Tube stub is pre-grooved as standard. Dimensions for reference only, subject to change.
Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

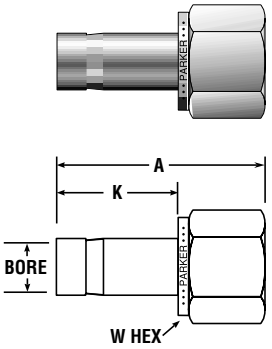
FAN
Tube End NPT Female Adapter
For metric tube



PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	NPT THREAD	A	K	W HEX	BORE
M3FA1/8N	3-MTA-7-2	3	1/8	31,3	13,5	14,0	1,3
M4FA1/8N	4-MTA-7-2	4	1/8	29,4	14,3	14,0	2,0
M6FA1/8N	6-MTA-7-2	6	1/8	29,4	15,9	14,0	4,0
M6FA1/4N	6-MTA-7-4	6	1/4	34,1	15,9	19,0	4,0
M8FA1/8N	8-MTA-7-2	8	1/8	35,5	16,7	14,0	6,4
M8FA1/4N	8-MTA-7-4	8	1/4	35,1	16,7	19,0	6,4
M8FA3/8N	8-MTA-7-6	8	3/8	36,5	16,7	22,0	6,4
M10FA1/4N	10-MTA-7-4	10	1/4	37,3	17,5	19,0	7,5
M10FA3/8N	10-MTA-7-6	10	3/8	37,3	17,5	22,0	7,5
M10FA1/2N	10-MTA-7-8	10	1/2	42,1	17,5	27,0	7,5
M12FA1/4N	12-MTA-7-4	12	1/4	41,3	23,0	19,0	9,1
M12FA3/8N	12-MTA-7-6	12	3/8	42,9	23,0	22,0	9,1
M12FA1/2N	12-MTA-7-8	12	1/2	47,6	23,0	27,0	9,1
M16FA1/2N	16-MTA-7-8	16	1/2	49,2	24,6	27,0	12,7
M18FA3/4N	18-MTA-7-12	18	3/4	52,4	24,6	33,0	14,0
M20FA1/2N	20-MTA-7-8	20	1/2	50,0	25,6	27,0	15,0
M20FA3/4N	20-MTA-7-12	20	3/4	53,2	25,4	33,0	15,1
M25FA1N	25-MTA-7-16	25	1	66,7	31,8	41,0	19,8

NOTE: Tube stub is pre-grooved as standard. Dimensions for reference only, subject to change.
Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

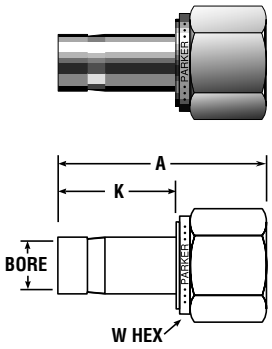
FAK
BSP Taper Female Adapter
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	BSP TR THREAD	A	K	W HEX	BORE
4FA2K	4-TR-7-2RT	1/4	1/8-28	1.31	.64	9/16	.156
4FA4K	4-TR-7-4RT	1/4	1/4-19	1.48	.64	3/4	.156
6FA4K	6-TR-7-4RT	3/8	1/4-19	1.56	.72	3/4	.281
6FA6K	6-TR-7-6RT	3/8	3/8-19	1.63	.72	7/8	.281
8FA4K	8-TR-7-4RT	1/2	1/4-19	1.83	.98	3/4	.375
8FA6K	8-TR-7-6RT	1/2	3/8-19	1.89	.98	7/8	.375
8FA8K	8-TR-7-8RT	1/2	1/2-14	2.14	.98	1-1/16	.375

NOTE: Tube stub is pre-grooved as standard. Dimensions for reference only, subject to change.
Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

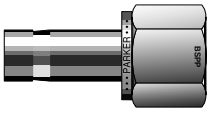
FAK
BSP Taper Female Adapter
For metric tube

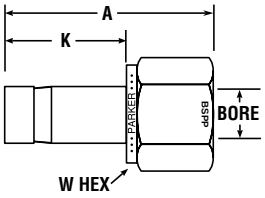


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	BSP TR THREAD	A	K	W HEX	BORE
M3FA1/8K	3-MTA-7-2RT	3	1/8	27,8	13,5	14,0	1,8
M4FA1/8K	4-MTA-7-2RT	4	1/8	28,6	14,3	14,0	2,0
M6FA1/8K	6-MTA-7-2RT	6	1/8	30,2	15,9	14,0	4,0
M8FA1/4K	8-MTA-7-4RT	8	1/4	39,1	16,7	19,0	6,4
M10FA1/4K	10-MTA-7-4RT	10	1/4	36,5	17,5	19,0	7,5
M10FA3/8K	10-MTA-7-6RT	10	3/8	31,8	17,5	22,0	7,5
M10FA1/2K	10-MTA-7-8RT	10	1/2	41,3	17,5	27,0	7,5
M12FA1/4K	12-MTA-7-4RT	12	1/4	40,5	23,0	19,0	9,1
M12FA3/8K	12-MTA-7-6RT	12	3/8	43,7	23,0	22,0	9,1
M12FA1/2K	12-MTA-7-8RT	12	1/2	46,8	23,0	27,0	9,1
M16FA1/2K	16-MTA-7-8RT	16	1/2	48,4	24,6	27,0	12,7
M18FA3/4K	18-MTA-7-12RT	18	3/4	51,6	24,6	32,0	14,0
M20FA3/4K	20-MTA-7-12RT	20	3/4	52,4	25,4	32,0	15,1
M25FA1K	25-MTA-7-16RT	25	1	66,7	31,8	41,0	19,8

NOTE: Tube stub is pre-grooved as standard. Dimensions for reference only, subject to change.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

FAR
BSPP
Female Adapter
For fractional tube

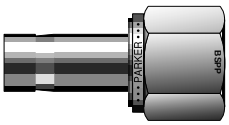


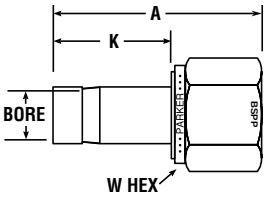


PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		TUBE O.D.	BSPP THREAD	A	K	W HEX	BORE
4FA4R	4-TA-7-4RP	1/4	1/4	1.47	.63	3/4	.18
6FA6R	6-TA-7-6RP	3/8	3/8	1.53	.69	7/8	.28
8FA8R	8-TA-7-8RP	1/2	1/2	1.91	.91	1-1/16	.39

NOTE: Copper washer must be used for this design. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

FAR
BSPP Female Adapter
For metric tube

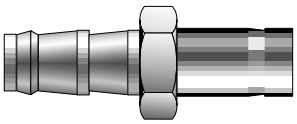


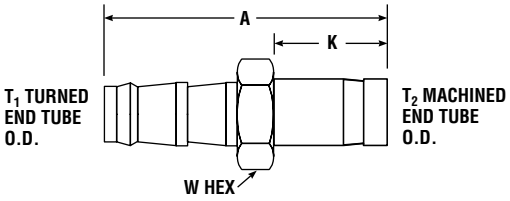


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS					
		TUBE O.D.	BSPP THREAD	A	K	W HEX	BORE
M3FA1/8R	3-MTA-7-2RP	3	1/8	28,6	13,5	14,0	1,8
M3FA1/4R	3-MTA-7-4RP	3	1/4	28,6	13,7	19,0	1,6
M4FA1/8R	4-MTA-7-2RP	4	1/8	29,4	14,3	14,0	2,0
M6FA1/8R	6-MTA-7-4RP	6	1/8	31,0	15,9	14,0	4,0
M6FA1/4R	6-MTA-7-4RP	6	1/4	37,3	15,9	19,0	4,0
M8FA1/4R	8-MTA-7-4RP	8	1/4	38,1	16,7	19,0	6,4
M10FA1/4R	10-MTA-7-4RP	10	1/4	38,9	17,5	19,0	7,5
M10FA1/2R	10-MTA-7-8RP	10	1/2	43,7	17,5	27,0	7,5
M12FA3/8R	12-MTA-7-6RP	12	3/8	44,5	23,0	22,0	9,1
M12FA1/2R	12-MTA-7-8RP	12	1/2	48,4	23,0	27,0	9,1
M16FA1/2R	16-MTA-7-8RP	16	1/2	50,0	24,6	27,0	12,7
M18FA3/4R	18-MTA-7-12RP	18	3/4	53,2	24,6	33,0	14,0
M20FA3/4R	20-MTA-7-12RP	20	3/4	54,0	25,4	33,0	15,1
M25FA1R	25-MTA-7-16RP	25	1	67,5	31,8	41,0	19,8

NOTE: Copper washer must be used for this design. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

P2TU
Push-Lok to Tube Adapter
For fractional tube

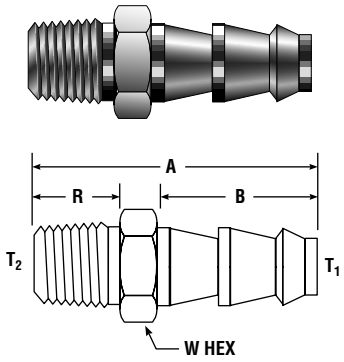




PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		T_1 TUBE O.D.	T_2 HOSE SIZE	A	K	W HEX
4-4 P2TU	PB4-TA4	1/4	–4	1.80	.64	7/16
6-6 P2TU	PB6-TA6	3/8	–6	2.02	.72	9/16
8-8 P2TU	PB8-TA8	1/2	–8	2.42	.98	11/16

NOTE: Drawing does not show Push-Lok collar. Dimensions for reference only, subject to change.
Tube stub is pre-grooved as standard. Generic (non-grooved) can be ordered through Quick Response Department.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

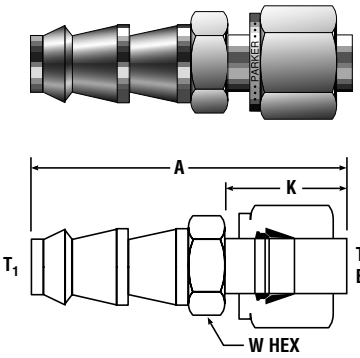
P2HF
Push-Lok to Male Adapter
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		T_2 NPT PIPE THREAD	T_1 HOSE SIZE	A	B	R	W HEX
4-4 P2HF	PB4-PM4	–4	1/4	1.65	.80	.56	9/16

NOTE: Drawing does not show Push-Lok collar. Dimensions for reference only, subject to change.

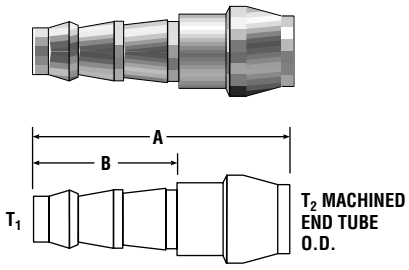
P2LZ6
Push-Lok to A-LOK®
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		T_2 TUBE O.D.	T_1 HOSE SIZE	A	K	W HEX
4-4 P2LZ6	PB4-TA4	1/4	–4	1.77	.72	7/16
6-6 P2LZ6	PB6-TA6	3/8	–6	1.98	.78	9/16
8-8 P2LZ6	PB8-TA8	1/2	–8	2.42	1.03	11/16

NOTE: A dimension is typical finger-tight. Dimensions for reference only, subject to change.
Drawing does not show Push-Lok collar. Assembly includes nut and ferrules.

ZP2
Push-Lok to Port Connector
For fractional tube

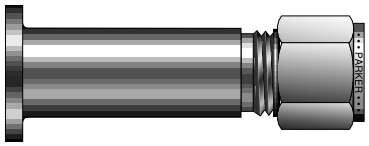


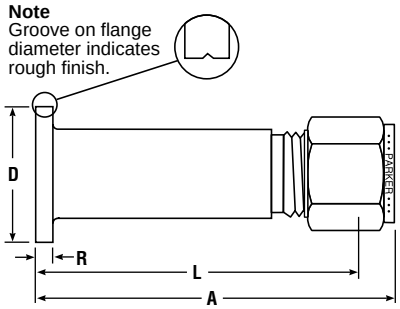
PARKER PART NO.	INCHES			
	T_1 HOSE SIZE	T_2 PORT SIZE	A	B
4-6 ZP2	–4	3/8	1.40	.80

Dimensions for reference only, subject to change.

NOTE: Drawing does not show Push-Lok collar and size 6 A-LOK® nut.

LJF
Lapped Joint Tube Adapters
For metric tube





PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS						
		TUBE O.D.	FLANGE SIZE	A	D	L	R	SURFACE FINISH
M10LJF-5	10M0-1-0005	10	DN15(½"NB)	83,0	34,5	75,5	6,5	Smooth 3,2-6,3 Ra
M10LJF-9	10M0-1-0006	10	DN15(½"NB)	83,0	34,5	75,5	6,5	Rough 6,3-12,5 Ra
M12LJF-5	–	12	DN15(½"NB)	85,0	34,5	75,4	6,5	Smooth 3,2-6,3 Ra
M12LJF-9	–	12	DN15(½"NB)	85,0	34,5	75,4	6,5	Rough 6,3-12,5 Ra

NOTE: Groove on flange diameter indicates rough finish. Dimensions for reference only, subject to change.

The lapped joint tube adaptor is a fitting designed to be used with a lap joint flange which enables a direct hook-up to the instrument tube from the process line.

The compression fitting is incorporated into the body of the adaptor thus the number of components needed for hook-up is reduced. It is therefore cost efficient as well as space saving.

The face of the fitting forms the gasket face of the flange and comes with either a smooth or serrated surface finish.

Adapters to suit other tube and flange sizes may be furnished upon request.

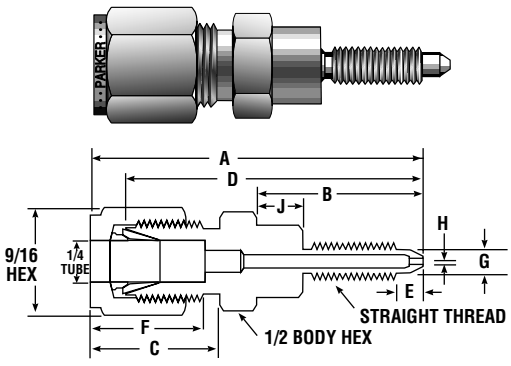
ZH2X
DP Transmitter Calibration Adapters
For fractional tube

Parker A-LOK® adapters connect directly to the bleed port of a differential pressure transmitter so that the calibration process can be simplified. Two sizes of adapters (1/4-28 Thd., 5/16-24 Thd.) are available to fit the vent ports of Rosemount, Honeywell, and Foxboro DP transmitters. Both adapters are available in 316SS.

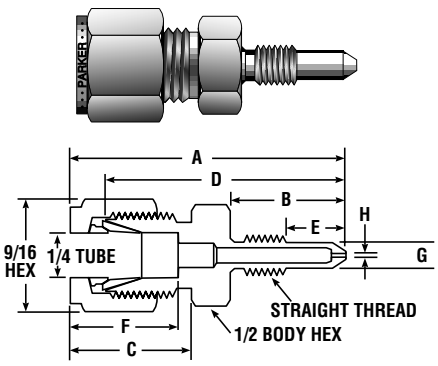
TRANSMITTER TYPE	PARKER PART NO.	INTERCHANGES WITH
Rosemount/Foxboro	4-2 ZH2LX-SS-D950373	SS-400-1-0253
Honeywell	4-2 ZH2LX-SS-D940336	SS-400-1-0257

STRAIGHT THREAD	INCHES									
	A	B	C	D	E	F	G	H	J	HEX
1/4-28	1.75	.80	.70	1.46	.47	.60	.20	.03	–	1/2
5/16-24	2.32	1.00	.70	2.03	.24	.60	.25	.06	.41	1/2

Dimensions for reference only, subject to change.

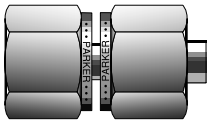


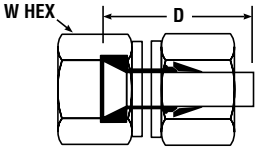
Calibration Adapter For Rosemount/Foxboro DP Transmitters



Calibration Adapter For Honeywell DP Transmitters

X6TU
37° Flare (AN) to A-LOK®
For fractional tube

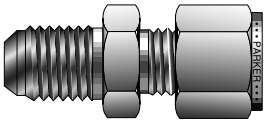


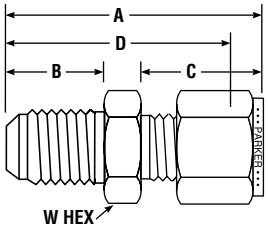


PARKER PART NO.	INTER-CHANGES WITH	INCHES		
		TUBE O.D.	D	W HEX
2X6TU2	200-A-2 ANF	1/8	.88	3/8
4X6TU4	400-A-4 ANF	1/4	.96	9/16
6X6TU6	600-A-6 ANF	3/8	1.07	11/16
8X6TU8	810-A-8 ANF	1/2	1.37	7/8
12X6TU12	1210-A-12ANF	3/4	1.49	1-1/4
16X6TU16	1610-A-16ANF	1	1.80	1-1/2

Dimensions for reference only, subject to change.

XASC
37° Flare Connector
For fractional tube

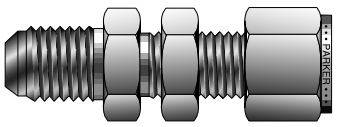


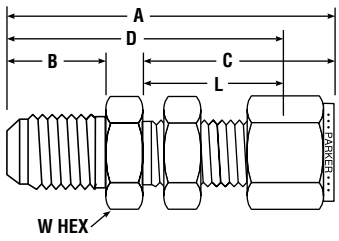


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		FLARE END	TUBE O.D.	A	B	C	D	W HEX
2XASC1	100-6-2 AN	1/8	1/16	1.07	.45	.43	.92	7/16
2XASC2	200-6-2 AN	1/8	1/8	1.28	.45	.60	1.02	7/16
4XASC2	200-6-4 AN	1/4	1/8	1.39	.55	.60	1.13	1/2
3XASC3	300-6-3 AN	3/16	3/16	1.32	.48	.64	1.06	7/16
4XASC4	400-6-4 AN	1/4	1/4	1.48	.55	.70	1.19	1/2
5XASC5	500-6-5 AN	5/16	5/16	1.52	.55	.73	1.22	9/16
4XASC6	600-6-4 AN	1/4	3/8	1.56	.55	.76	1.27	5/8
6XASC6	600-6-6 AN	3/8	3/8	1.56	.56	.76	1.27	5/8
8XASC8	810-6-8 AN	1/2	1/2	1.81	.66	.87	1.41	13/16
10XASC10	1010-6-10 AN	5/8	5/8	1.93	.76	.87	1.53	15/16
12XASC12	1210-6-12 AN	3/4	3/4	2.11	.86	.87	1.70	1-1/8
16XASC16	1610-6-16 AN	1	1	2.43	.91	1.05	1.94	1-3/8

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

XABC
37° Flare Bulkhead Connector
For fractional tube





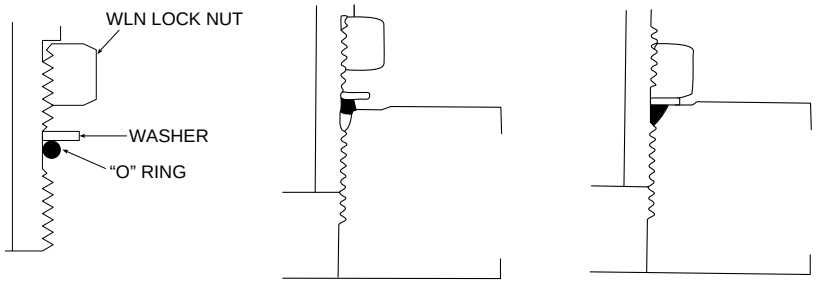
PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		FLARE END	TUBE O.D.	A	D	C	L	B	W HEX
2XABC2	200-61-2 AN	1/8	1/8	1.91	1.65	1.23	.97	.45	1/2
4XABC2	200-61-4 AN	1/4	1/8	2.04	1.78	1.23	.97	.55	5/8
3XABC3	300-61-3 AN	3/16	3/16	1.98	1.71	1.26	1.00	.48	9/16
4XABC4	400-61-4 AN	1/4	1/4	2.12	1.83	1.31	1.02	.55	5/8
5XABC5	500-61-5 AN	5/16	5/16	2.21	1.92	1.41	1.12	.55	11/16
4XABC6	600-61-4 AN	1/4	3/8	2.25	1.96	1.44	1.15	.55	3/4
6XABC6	600-61-6 AN	3/8	3/8	2.25	1.96	1.44	1.15	.56	3/4
8XABC8	810-61-8 AN	1/2	1/2	2.59	2.19	1.65	1.25	.66	15/16
10XABC10	1010-61-10 AN	5/8	5/8	2.74	2.34	1.68	1.28	.76	1-1/16
12XABC12	1210-61-12 AN	3/4	3/4	3.11	2.71	1.87	1.47	.86	1-3/16
16XABC16	1610-61-16 AN	1	1	3.65	3.16	2.27	1.78	.91	1-9/16

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
For bulkhead hole drill size and maximum bulkhead thickness, see Page 28, Part BC

Tube to "O" Ring Seal

Introduction

BSPP SAE Straight Thread Fittings Installation Procedure



1. Lubricate "O" ring with a lubricant that is compatible with the system.
2. Screw fitting into the straight thread port until the metal back-up washer contacts the face of the port.
3. Position the fitting by backing it out *no more than one turn.*
4. Hold the fitting in position and tighten the locknut until the washer contacts the face of the port. (See torque chart.)

NOTE: WLN Lock Nuts are ordered separately by size and part number. Refer to page 73.

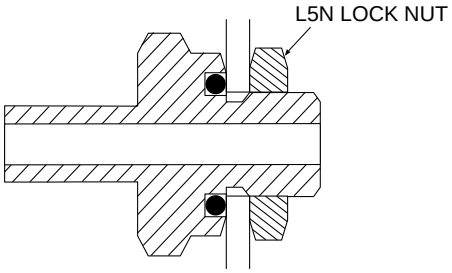
Size	Straight Port		Adjustable Port	
	Torque (in-lbs)	(F.F.F.T.)	Torque (in-lbs)	(F.F.F.T)
4	245 ± 10	1.0 ± .25	200 ± 10	1.5 ± 25
6	630 ± 25	1.5 ± .25	400 ± 10	1.5 ± 25
8	1150 ± 50	1.5 ± .25	640 ± 10	1.5 ± 25
10	1550 ± 50	1.5 ± .25	1125 ± 50	1.5 ± 25
12	2050 ± 50	1.5 ± .25	1450 ± 50	1.5 ± 25
16	3000 ± 50	1.5 ± .25	2150 ± 50	1.5 ± 25
20	3400 ± 100	1.5 ± .25	2800 ± 100	2.0 ± 25
24	4500 ± 100	1.5 ± .25	3450 ± 100	2.0 ± 25

NOTES
- Restrain fitting body on adjustables if necessary in installation.
- Values in charts are for assemblies with O-ring lubricated.
- Use upper limits of torque ranges for stainless steel fittings.

Face Seal "O" Ring Fittings Installation Procedure

The "O" ring requires a smooth, flat seating surface.This surface must be perpendicular to the axis of the threads.

1. Turn the "O" ring seal fitting in the port until finger tight.
2. The "squeezing" effect on the "O" ring can be felt during the last 1/4 turn.
3. Snug lightly with a wrench.



Typical Application

The fitting can be adapted as a bulkhead fitting on thin wall tanks or vessels, eliminating welding, brazing or threading. Simply order the L5N locknut to take advantage of this option.

PORT SIZE	STRAIGHT THREAD MACHINE LENGTH	L5N LOCKNUT THICKNESS	MAXIMUM TANK WALL THICKNESS
2	.297	.219	.078 = 5/64
3	.297	.219	.078 = 5/64
4	.360	.250	.109 = 7/65
5	.360	.250	.109 = 7/64
6	.391	.265	.125 = 1/8
8	.438	.312	.125 = 1/8
10	.500	.360	.140 = 9/64
12	.594	.406	.188 = 3/16
14	.594	.406	.188 = 3/16
16	.594	.406	.188 = 3/16

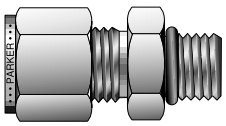
Notes

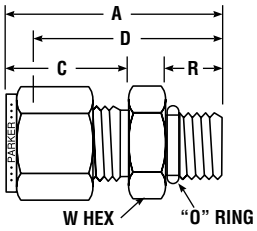
Standard "O" rings are Buna-N material. For other "O" rings, state material after the part number.

L5N locknuts are ordered separately by size and part number. Refer to page 73.

O-rings used with SAE/MS straight threads are Buna-N. Other O-ring materials are available on request. Lubricate O-ring with a lubricant compatible with the system fluid, environment and O-ring material.

M1SC
Male Connector to SAE Straight Thread
For fractional tube

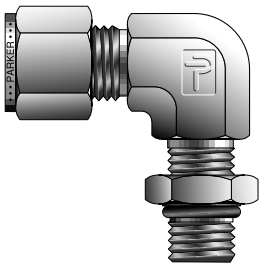


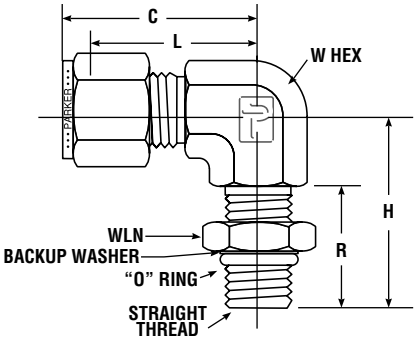


PARKER PART NO.	INTER-CHANGES WITH	INCHES							O-RING AS UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	D	R	W HEX	
1M1SC2	100-1-2 ST	1/16	5/16-24	.92	.43	.77	.30	7/16	3-902
2M1SC2	200-1-2 ST	1/8	5/16-24	1.18	.60	.92	.30	7/16	3-902
2M1SC6	200-1-6 ST	1/8	9/16-18	1.35	.60	1.06	.39	11/16	3-906
3M1SC3	300-1-3 ST	3/16	3/8-24	1.20	.64	.94	.30	1/2	3-903
4M1SC4	400-1-4 ST	1/4	7/16-20	1.34	.70	1.05	.36	9/16	3-904
4M1SC6	400-1-6 ST	1/4	9/16-18	1.40	.70	1.11	.39	11/16	3-906
4M1SC8	400-1-8 ST	1/4	3/4-16	1.48	.70	1.19	.44	7/8	3-908
4M1SC10	400-1-10 ST	1/4	7/8-14	1.60	.70	1.31	.50	1	3-910
5M1SC5	500-1-5 ST	5/16	1/2-20	1.37	.73	1.08	.36	5/8	3-905
6M1SC4	600-1-4 ST	3/8	7/16-20	1.40	.76	1.11	.36	5/8	3-904
6M1SC6	600-1-6 ST	3/8	9/16-18	1.46	.76	1.17	.39	11/16	3-906
6M1SC8	600-1-8 ST	3/8	3/4-16	1.54	.76	1.25	.44	7/8	3-908
6M1SC10	600-1-10 ST	3/8	7/8-14	1.67	.76	1.38	.50	1.00	3-910
8M1SC6	810-1-6 ST	1/2	9/16-18	1.54	.87	1.14	.39	7/8	3-906
8M1SC8	810-1-8 ST	1/2	3/4-16	1.65	.87	1.25	.44	7/8	3-908
8M1SC12	810-1-12 ST	1/2	1-1/16-12	1.93	.87	1.53	.59	1-1/4	3-912
10M1SC10	1010-1-10 ST	5/8	7/8-14	1.78	.87	1.38	.50	1	3-910
12M1SC10	1210-1-10 ST	3/4	7/8-14	1.68	.87	1.28	.50	1-1/8	3-910
12M1SC12	1210-1-12 ST	3/4	1-1/16-12	1.93	.87	1.53	.59	1-1/4	3-912
14M1SC14	1410-1-14 ST	7/8	1-3/16-12	1.93	.87	1.53	.59	1-3/8	3-914
16M1SC12	1610-1-12 ST	1	1-1/16-12	2.12	1.05	1.63	.59	1-3/8	3-912
16M1SC16	1610-1-16 ST	1	1-5/16-12	2.15	1.04	1.66	.59	1-1/2	3-916
20M1SC20	2010-1-20 ST	1-1/4	1-5/8-12	2.59	1.52	1.82	.59	1-7/8	3-920
24M1SC24	2410-1-24 ST	1-1/2	1-7/8-12	3.05	1.77	1.99	.59	2-1/8	3-924
32M1SC32	3210-1-32 ST	2	2-1/2-12	4.00	2.47	2.53	.59	2-3/4	3-932

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.
For use with SAE J.1926/1 port can also be used with MS-16142 port.
Sizes 20, 24, 32 require additional lubrication prior to assembly.

M5SEL
Male SAE Straight Thread Elbow
For fractional tube

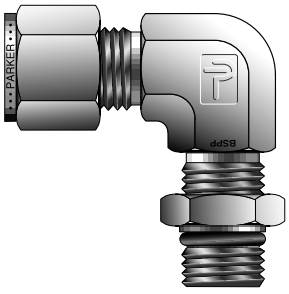


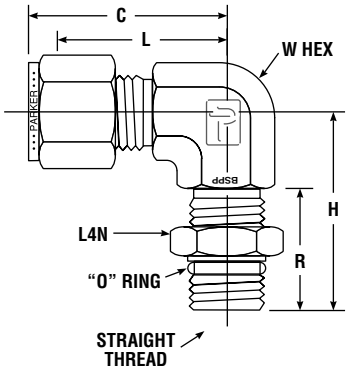


PARKER PART NO.	INTER-CHANGES WITH	INCHES							O-RING ARP UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	C	H	L	R	W HEX	
4M5SEL4	400-2-4ST	1/4	7/16-20	1.12	1.13	.83	.83	1/2	3-904
6M5SEL6	600-2-6ST	3/8	9/16-18	1.26	1.27	.97	.84	9/16	3-906
8M5SEL8	810-2-8ST	1/2	3/4-16	1.48	1.48	1.08	.97	3/4	3-908
12M5SEL12	1210-2-12ST	3/4	1-1/16-12	1.63	1.92	1.23	1.28	1-1/16	3-912
16M5SEL16	1610-2-16ST	1	1-5/16-12	1.87	2.11	1.38	1.28	1-5/16	3-916
24M5SEL24	2410-2-24ST	1-1/2	1-7/8-12		2.33	2.00	1.16	1-7/8	3-924

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.
Size 24 requires additional lubrication prior to assembly.

MSEL (R)
BSPP Male Elbow (Positionable)
For fractional tube

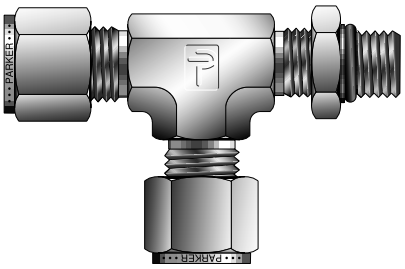


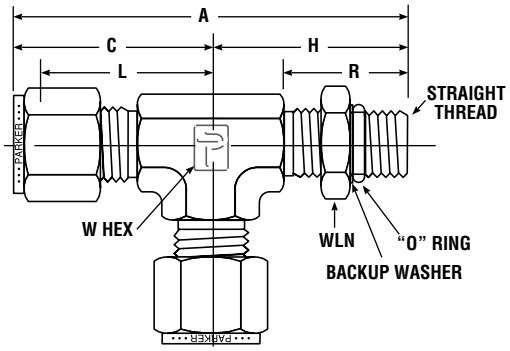


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPP THREAD	C	H	L	R	W HEX
4MSEL2R	400-2-2PR	1/4	1/8-28	1.14	1.25	.85	.81	9/16
4MSEL4R	400-2-4PR	1/4	1/4-19	1.31	1.27	.85	.83	9/16
6MSEL4R	600-2-4PR	3/8	1/4-19	1.31	1.27	1.02	.83	9/16
6MSEL6R	600-2-6PR	3/8	3/8-19	1.50	1.46	1.02	.83	3/4
8MSEL4R	810-2-4PR	1/2	1/4-19	1.50	1.38	1.10	.83	7/8
8MSEL6R	810-2-6PR	1/2	3/8-19	1.48	1.46	1.10	.85	7/8
8MSEL8R	810-2-8PR	1/2	1/2-14	1.50	1.70	1.10	1.09	7/8
10MSEL8R	1010-2-8PR	5/8	1/2-14	1.50	1.81	1.10	1.09	1-1/16
12MSEL8R	1210-2-8PR	3/4	1/2-14	1.57	1.81	1.17	1.09	1-1/16
12MSEL12R	1210-2-12PR	3/4	3/4-14	1.57	1.92	1.17	1.20	1-1/16
16MSEL12R	1610-2-12PR	1	3/4-14	1.94	2.11	1.45	1.20	1-5/16
16MSEL16R	1610-2-16PR	1	1-11	1.94	2.11	1.45	1.20	1-5/16

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.
Connects fractional tube to female ISO parallel thread.

M5RT
Male Run Tee SAE Straight Thread
For fractional tube



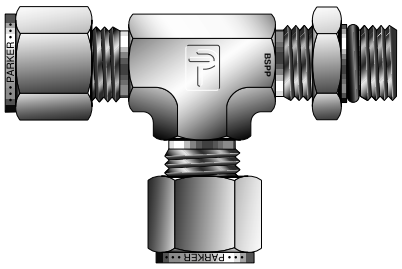


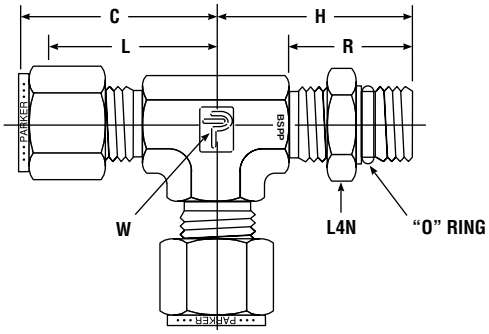
PARKER PART NO.	INTER-CHANGES WITH	INCHES								O-RING ARP UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	H	L	R	W HEX	
4M5RT4	400-3TST	1/4	7/16-20	2.25	1.12	1.13	.83	.83	7/16	3-904
6M5RT6	600-3TST	3/8	9/16-18	2.53	1.26	1.27	.97	.84	9/16	3-906
8M5RT8	810-3TST	1/2	3/4-16	3.59	1.48	1.48	1.08	.97	3/4	3-908
12M5RT12	1210-3TST	3/4	1-1/16-12	3.55	1.63	1.92	1.23	1.28	1-1/16	3-912
16M5RT16	1610-3TST	1	1-5/16-12	3.98	1.87	2.11	1.38	1.28	1-5/16	3-916

NOTE: A and C dimensions are typical finger-tight.

Dimensions for reference only, subject to change.

MRT (R)
BSPP Male Run Tee (Positionable)
For fractional tube



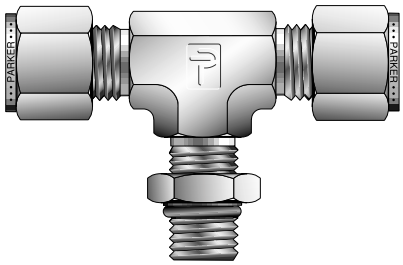


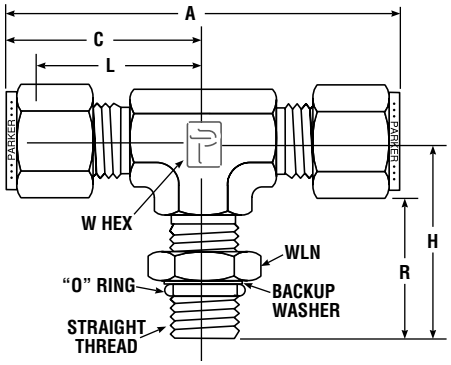
PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPP THREAD	C	H	L	R	W HEX
4MRT2R	400-3TRT	1/4	1/8-28	1.14	1.25	.85	.81	9/16
4MRT4R	400-3-4TRT	1/4	1/4-19	1.14	1.28	.85	.83	9/16
6MRT6R	600-3TRT	3/8	1/4-19	1.31	1.27	1.02	.83	9/16
8MRT8R	810-3TRT	1/2	3/8-19	1.50	1.36	1.10	.85	7/8
8MRT8R	810-3-8TRT	1/2	1/2-14	1.50	1.71	1.10	1.09	7/8
10MRT8R	1010-3TRT	5/8	1/2-14	1.50	1.81	1.10	1.09	1-1/16
12MRT8R	1210-3-8TRT	3/4	1/2-14	1.567	1.81	1.17	1.09	1-1/16
12MRT12R	1210-3TRT	3/4	3/4-14	1.57	1.92	1.17	1.20	1-1/16
16MRT16R	1610-3TRT	1	1-11	1.94	2.11	1.45	1.20	1-5/16

NOTE: C dimension is typical finger-tight.

Dimensions for reference only, subject to change.

M5BT
Male Branch Tee
SAE Straight Thread
For fractional tube

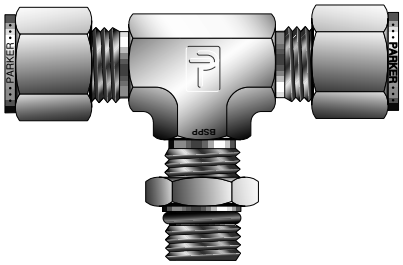


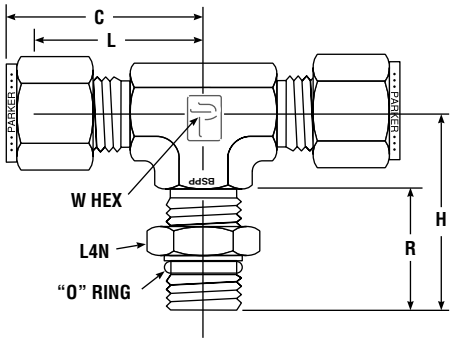


PARKER PART NO.	INTER-CHANGES WITH	INCHES								O-RING ARP UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	H	L	R	W HEX	
4M5BT4	400-3TTS	1/4	7/16-20	2.24	1.12	1.13	.83	.83	7/16	3-904
6M5BT6	600-3TTS	3/8	9/16-18	2.52	1.26	1.27	.97	.84	9/16	3-906
8M5BT8	810-3TTS	1/2	3/4-16	2.96	1.48	1.48	1.08	.97	3/4	3-908
12M5BT12	1210-3TTS	3/4	1-1/16-12	3.26	1.63	1.92	1.23	1.28	1-1/16	3-912
16M5BT16	1610-3TTS	1	1-5/16-12	3.74	1.87	2.11	1.38	1.28	1-5/16	3-916

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

MBT (R)
BSPP Male Branch Tee (Positionable)
For fractional tube

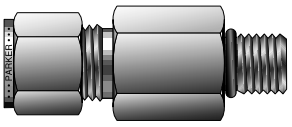


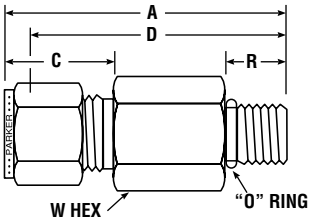


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	BSPP THREAD	C	H	L	R	W HEX
4MBT2R	400-3TTR	1/4	1/8-28	1.14	1.25	.85	.81	9/16
4MBT4R	400-3-4TTR	1/4	1/4-19	1.14	1.27	.85	.83	9/16
6MBT4R	600-3TTR	3/8	1/4-19	1.31	1.27	1.02	.83	9/16
8MBT6R	810-3TTR	1/2	3/8-19	1.50	1.36	1.10	.85	7/8
8MBT8R	810-3-8TTR	1/2	1/2-14	1.50	1.71	1.10	1.09	7/8
10MBT8R	1010-3TTR	5/8	1/2-14	1.50	1.81	1.10	1.09	1-1/16
12MBT8R	1210-3-8TTR	3/4	1/2-14	1.57	1.81	1.17	1.09	1-1/16
12MBT12R	1210-3-TTR	3/4	3/4-14	1.57	1.92	1.17	1.20	1-1/16
16MBT16R	1610-3TTR	1	1-11	1.94	2.11	1.45	1.20	1-5/16

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.
Connects fractional tube to female ISO parallel thread.

ZH3LA
Long Male Connector
SAE/MS Straight Thread
For fractional tube



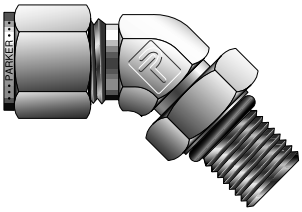


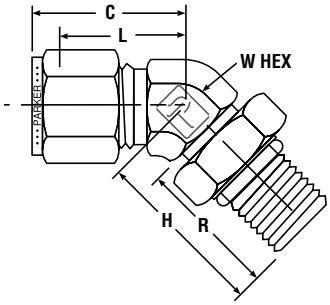
PARKER PART NO.	INTERCHANGES WITH	INCHES								ST O-RING UNIFORM SIZE NO.
		T TUBE O.D.	S-SAE/MS THREAD SIZE	A	R	C	D	E MIN. OPENING	W HEX	
4-4 ZH3LA	400-1L-4ST	1/4	7/16-20	2.26	.36	.70	1.97	.19	9/16	-904
6-6 ZH3LA	600-1L-6ST	3/8	9/16-18	2.48	.39	.76	2.19	.28	11/16	-906
8-8 ZH3LA	810-1L-8ST	1/2	3/4-16	3.01	.44	.86	2.58	.41	7/8	-908
12-12 ZH3LA	1210-1L-12ST	3/4	1-1/16-12	3.88	.59	.86	3.48	.62	1-1/4	-912
16-16 ZH3LA	1610-1L-16ST	1	1-5/16-12	4.34	.59	1.04	3.86	.88	1-1/2	-916

NOTE: A and C dimensions are typical finger-tight.

Dimensions for reference only, subject to change.

M5VEL
45° Positionable Male Elbow
SAE/MS Straight Thread
For fractional tube





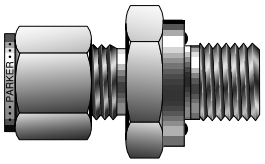
PARKER PART NO.	INTERCHANGES WITH	INCHES							O-RING UNIFORM SIZE NUMBER
		TUBE O.D.	STRAIGHT THREAD SIZE	C	H	L	R	W HEX	
4M5VEL4	400-5-4ST	1/4	7/16-20	.93	1.02	.65	.75	7/16	3-904
6M5VEL6	600-5-6ST	3/8	9/16-18	1.01	1.27	.72	.77	9/16	3-906
8M5VEL8	810-5-8ST	1/2	3/4-16	1.15	1.48	.75	.88	3/4	3-908
12M5VEL12	1210-5-12ST	3/4	1-1/16-12	1.63	1.92	1.23	1.16	1-1/16	3-912
16M5VEL16	1610-5-16ST	1	1-5/16-12	1.87	2.11	1.39	1.16	1-5/16	3-916

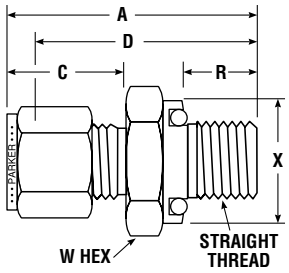
NOTE: C dimension is typical finger-tight.

Dimensions for reference only, subject to change.

• Adapts to SAE J1926 straight thread boss and MS16142 boss.

M2SC
Male Connector to "O" Ring Straight Thread
For fractional tube

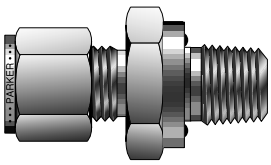


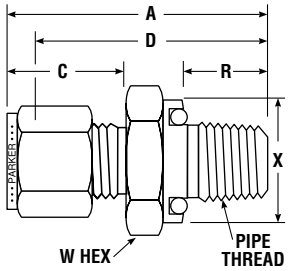


PARKER PART NO.	INTER-CHANGES WITH	INCHES								O-RING ARP UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	D	R	X DIA.	W HEX	
1M2SC2	100-1-OR	1/16	5/16-24	1.06	.43	.91	.34	.55	9/16	2-011
2M2SC2	200-1-OR	1/8	5/16-24	1.29	.60	1.03	.34	.55	9/16	2-011
3M2SC3	300-1-OR	3/16	3/8-24	1.35	.64	1.09	.38	.62	5/8	2-012
4M2SC4	400-1-OR	1/4	7/16-20	1.51	.70	1.22	.41	.74	3/4	2-111
5M2SC5	500-1-OR	5/16	1/2-20	1.61	.73	1.31	.44	.86	7/8	2-112
6M2SC6	600-1-OR	3/8	9/16-18	1.67	.76	1.38	.44	.93	15/16	2-113
8M2SC8	810-1-OR	1/2	3/4-16	1.81	.87	1.41	.47	1.12	1-1/8	2-116
10M2SC10	1010-1-OR	5/8	7/8-14	1.90	.87	1.50	.47	1.30	1-3/8	2-212
12M2SC12	1210-1-OR	3/4	1-1/16-12	2.06	.87	1.66	.56	1.49	1-1/2	2-215
14M2SC12	1410-1-OR	7/8	1-1/16-12	2.06	.87	1.66	.56	1.49	1-1/2	2-215
16M2SC16	1610-1-OR	1	1-5/16-12	2.30	1.05	1.81	.56	1.74	1-3/4	2-219

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

M3SC
Male Connector to "O" Ring Pipe Thread
For fractional tube

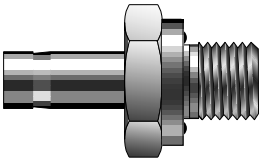


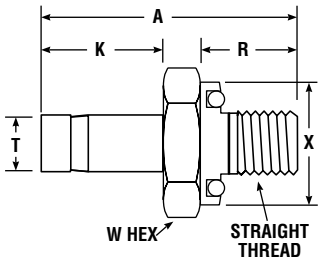


PARKER PART NO.	INTER-CHANGES WITH	INCHES								O-RING ARP UNIFORM DASH NO.
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	D	R	X DIA.	W HEX	
1M3SC2	100-1-2-OR	1/16	1/8	1.12	.43	.97	.28	.74	3/4	2-011
2M3SC2	200-1-2-OR	1/8	1/8	1.29	.60	1.03	.28	.74	3/4	2-011
2M3SC4	200-1-4-OR	1/8	1/4	1.43	.60	1.17	.38	.93	15/16	2-113
3M3SC2	300-1-2-OR	3/16	1/8	1.32	.64	1.06	.28	.74	3/4	2-011
3M3SC4	300-1-4-OR	3/16	1/4	1.46	.64	1.20	.38	.93	15/16	2-113
4M3SC2	400-1-2-OR	1/4	1/8	1.38	.70	1.09	.28	.74	3/4	2-011
4M3SC4	400-1-4-OR	1/4	1/4	1.51	.70	1.22	.38	.93	15/16	2-113
4M3SC6	400-1-6-OR	1/4	3/8	1.57	.70	1.28	.41	1.12	1-1/8	2-116
5M3SC2	500-1-2-OR	5/16	1/8	1.43	.73	1.13	.28	.74	3/4	2-011
5M3SC4	500-1-4-OR	5/16	1/4	1.46	.73	1.25	.38	.93	15/16	2-113
6M3SC2	600-1-2-OR	3/8	1/8	1.45	.76	1.16	.28	.74	3/4	2-011
6M3SC4	600-1-4-OR	3/8	1/4	1.57	.76	1.28	.38	.93	15/16	2-113
6M3SC6	600-1-6-OR	3/8	3/8	1.63	.76	1.34	.41	1.12	1-1/8	2-116
6M3SC8	600-1-8-OR	3/8	1/2	1.85	.76	1.56	.53	1.30	1-3/8	2-212
8M3SC4	810-1-4-OR	1/2	1/4	1.68	.87	1.28	.38	.93	15/16	2-113
8M3SC6	810-1-6-OR	1/2	3/8	1.76	.87	1.36	.41	1.12	1-1/8	2-116
8M3SC8	810-1-8-OR	1/2	1/2	1.98	.87	1.58	.53	1.30	1-3/8	2-212
10M3SC8	1010-1-8-OR	5/8	1/2	1.96	.87	1.56	.53	1.30	1-3/8	2-212
10M3SC12	1010-1-8-OR	5/8	3/4	2.06	.87	1.66	.56	1.49	1-1/2	2-215
12M3SC8	1210-1-8-OR	3/4	1/2	1.98	.87	1.58	.53	1.30	1-3/8	2-212
12M3SC12	1210-1-12-OR	3/4	3/4	2.06	.87	1.66	.56	1.49	1-1/2	2-215
16M3SC12	1610-1-12-OR	1	3/4	2.24	1.05	1.75	.56	1.49	1-1/2	2-215
16M3SC16	1610-1-16-OR	1	1	2.40	1.05	1.91	.66	1.74	1-3/4	2-219

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

M2TU
Tube End to "O" Ring Straight Thread
For fractional tube



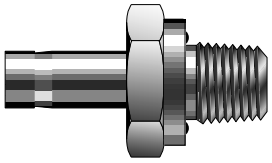


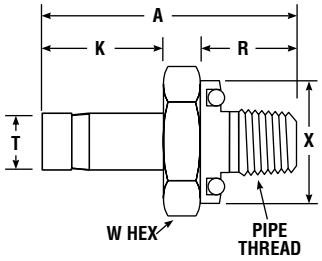
PARKER PART NO.	INTER-CHANGES WITH	INCHES							O-RING ARP UNIFORM DASH NO.
		T TUBE O.D.	STRAIGHT THREAD SIZE	A	K	R	X DIA.	W HEX	
2M2TU2	2-TA-OR-ST	1/8	5/16-24	1.22	.53	.34	.55	9/16	2-011
3M2TU3	3-TA-OR-ST	3/16	3/8-24	1.38	.56	.38	.62	5/8	2-012
4M2TU4	4-TA-OR-ST	1/4	7/16-20	1.55	.63	.41	.74	3/4	2-111
5M2TU5	5-TA-OR-ST	5/16	1/2-20	1.64	.66	.44	.86	7/8	2-112
6M2TU6	6-TA-OR-ST	3/8	9/16-18	1.70	.69	.47	.93	15/16	2-113
8M2TU8	8-TA-OR-ST	1/2	3/4-16	1.95	.91	.47	1.12	1-1/8	2-116
10M2TU10	10-TA-OR-ST	5/8	7/8-14	2.12	.97	.47	1.30	1-3/8	2-212
12M2TU12	12-TA-OR-ST	3/4	1-1/16-12	2.16	.97	.56	1.49	1-1/2	2-215
16M2TU16	16-TA-OR-ST	1	1-5/16-12	2.47	1.22	.56	1.74	1-3/4	2-219

NOTE: Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

M3TU
Tube End to "O" Ring Pipe Thread
For fractional tube



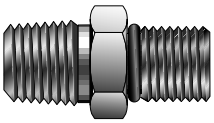


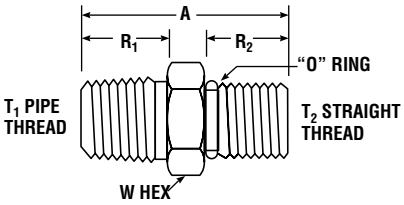
PARKER PART NO.	INTER-CHANGES WITH	INCHES							O-RING ARP UNIFORM DASH NO.
		T TUBE O.D.	NPT PIPE THREAD	A	K	R	X DIA.	W HEX	
1M3TU2	1-TA-1-20R	1/16	1/8	1.03	.34	.28	.74	3/4	2-111
4M3TU2	4-TA-1-2OR	1/4	1/8	1.31	.63	.28	.74	3/4	2-111
4M3TU4	4-TA-1-4OR	1/4	1/4	1.44	.63	.38	.93	15/16	2-113
4M3TU6	4-TA-1-6OR	1/4	3/8	1.50	.63	.41	1.12	1-1/8	2-116
5M3TU2	5-TA-1-2OR	5/16	1/8	1.34	.66	.28	.74	3/4	2-111
5M3TU4	5-TA-1-4OR	5/16	1/4	1.47	.66	.38	.93	15/16	2-113
6M3TU2	6-TA-1-2OR	3/8	1/8	1.38	.69	.28	.74	3/4	2-111
6M3TU4	6-TA-1-4OR	3/8	1/4	1.50	.69	.38	.93	15/16	2-113
6M3TU6	6-TA-1-6OR	3/8	3/8	1.59	.69	.41	1.12	1-1/8	2-116
8M3TU6	8-TA-1-6OR	1/2	3/8	1.78	.91	.41	1.12	1-1/8	2-116
10M3TU8	10-TA-1-8OR	5/8	1/2	2.14	.97	.53	1.30	1-3/8	2-212
12M3TU12	12-TA-1-12OR	3/4	3/4	2.16	.97	.56	1.49	1-1/2	2-215
16M3TU16	16-TA-1-16OR	1	1	2.56	1.22	.66	1.65	1-3/4	2-219

NOTE: Add -Z6 for assembly of nuts and ferrules on the tube stub end.

Dimensions for reference only, subject to change.

FHOA
Pipe Thread to SAE Straight Thread Adapter
For fractional tube



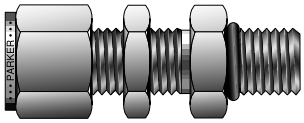


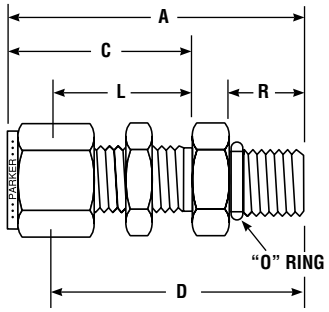
PARKER PART NO.	INTER-CHANGES WITH	INCHES						O-RING AS UNIFORM DASH NO.
		T_2 STRAIGHT THREAD	NPT T_1 PIPE THREAD	A	R_1	R_2	W HEX	
4-4 FHOA	4SAE-1-4	1/4-18	7/16-20	1.20	.56	.36	9/16	3-904
6-6 FHOA	6-SAE-1-6	3/8-18	9/16-18	1.26	.56	.39	11/16	3-906
8-8 FHOA	8-SAE-1-8	1/2-14	3/4- 16	1.53	.75	.44	7/8	3-908
12-12 FHOA	12-SAE-1-12	3/4-14	1-1/16-12	1.75	.75	.59	1-1/4	3-912
16-16 FHOA	16-SAE-1-16	1-11-1/2	1-5/16-12	2.00	.94	.59	1-1/2	3-916

NOTE: A and C dimensions are typical finger-tight.
For use with SAE J.1926/1 port can also be used with MS-16142 port.

Dimensions for reference only, subject to change.

AH2LZ
Bulkhead to Conversion Adapter
For fractional tube





PARKER PART NO.	INTER-CHANGES WITH	INCHES									
		TUBE O.D.	STRAIGHT THREAD SIZE	A	C	D	R	L	W HEX	BULKHEAD HOLD DRILL SIZE	MAX. BULKHEAD THICKNESS
4-6 AH2LZ	400-61-6ST	1/4	9/16-18	1.74	1.17	1.45	.39	.88	3/4	37/64	9/16
6-6 AH2LZ	600-61-6ST	3/8	9/16-18	1.81	1.24	1.52	.39	.94	3/4	37/64	9/16

NOTE: A and C dimensions are typical finger-tight.
For use with SAE J.1926/1 port can also be used with MS-16142 port.

Dimensions for reference only, subject to change.

General

The weld used in joining a tube to a socket weld tube fitting is like any other type of "tee" weld. The root (i.e., the point of intersection of the outside of the tube and annular end area of the fitting) must be included in the weld zone.

Careful welding procedures are normally followed to assure that this root area is included in the weld. If penetration is not achieved, the joint will have two built-in stress risers which may greatly reduce the strength of the weld. Upon application of an extreme load, these stress risers could result in cracks which could propagate out through the weld or tube depending upon the direction of the greatest load.

Often to achieve full root penetration in TIG welding of stainless steels, a fusion pass will be made first, followed by a final pass utilizing a filler rod to achieve the desired fillet size.

Assembly

The codes applicable to the welding of socket weld fittings require that the tube be inserted into the socket until bottomed against the stop. The tube is then to be backed out approximately 1/16 of an inch and then welded.

If the tube is not backed out, but welded when against a flat bottom stop, the contraction of the weld fillet and fitting socket can combine to produce a static stress on the weld. During thermal transients, the fitting and the portion of the tube within the fitting may experience a differential rate of heating or cooling, again adding to the stress level in the weld.

Tacking

If the weld joint is to be "tacked" before welding, it is recommended that the "Tack" weld build-up be held to a minimum.

Excessive build-up on the "tack" may cause an interrupted final bead and a stress riser or lack of complete fusion.

Backing Gas

Backing gas is an inert gas used to flood the interior of the fittings and tube system during welding. It serves the same purpose internally as the shielding gas used in TIG or MIG welding. By reducing the interior oxygen level to as low as practicable, it also serves to control the combustion of contaminates that could affect weld quality.

When a backing gas is not used and nearly 100% weld penetration is achieved, blisters will tend to form on the internal tube wall. This will result in scale which may later break loose. Therefore, in 0.050 wall or thinner tube or where the wall thickness is such that the selected weld process may burn through, the use of a backing gas is mandatory.

In most cases the backing gas will be argon or helium connected to the system through a control regulator. Flow rates, while small, should be high enough to purge the system. Welds should be made in downstream sequence from the gas connection.

Note that the entire system should be purged to insure that there are no openings that will allow air to be drawn into the system.

The use of backing gas, while often not mandatory, will give a better weld joint. This is because the effects of contaminate combustion by-products are eliminated and because the welds are made and cooled under a shielded atmosphere, thus eliminating internal scaling or blistering.

Welding Methods
300 Series Stainless Steels

May be welded by the TIG, MIG, or stick arc-weld process.

TIG welding is recommended as being best for welding Weld-lok systems because it allows better operator control of heat penetration and filler material deposition.

Stick arc welding is not recommended in many cases because of the likelihood of excessive burn-through and improper root penetration. In all cases where stick welding is used, it is recommended that backing gas be used.

MIG welding gives the same characteristics as stick electrode welding with faster deposition of the filler material. As this process runs "hotter" than the stick process, the use of a backing gas is mandatory. It should be noted that in welding the relatively small fitting sizes found in the Weld-lok line, filler deposition rate economies are not a factor and therefore the MIG method is not commonly applied.

C1018 Steel Fittings

May be welded by the TIG, MIG, stick and oxyacetylene methods. As scale formation remains a problem, the use of a backing gas is still recommended.

Carbide Precipitation

When unstabilized stainless steels are heated to 800°–1500°F during welding, the chromium in the steel combines with the carbon to form chrome carbides which tend to form along the grain boundaries of the metal (carbide precipitation). This lowers the dissolved chromium content in these areas and thus lowers their corrosion resistance, making them vulnerable to intergranular corrosion. Carbide precipitation is reduced by holding the carbon content of the material to a very low value. This limits the amount of carbon available to combine with the chromium. The "L" series (extra low carbon) stainless steels are often used for this purpose, but their use reduces system design stress by approximately 15%. Parker Weld-lok fittings are made from a select 316 series with carbon content in the low range of 0.04 to 0.07 percent. This results in a welded fitting with good corrosion resistance and a high strength factor.

All Parker Weld-lok fittings in stainless steel are supplied in the solution treated condition, capable of passing ASTM-A-262 Tests for Detecting Susceptibility to Intergranular Corrosion.

Arc Polarity

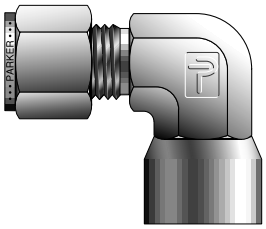
When welding Weld-lok fittings, best results will be obtained by the following arc polarities:

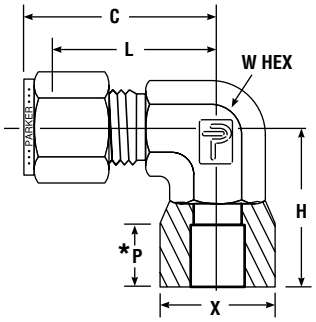
TIG – Direct Current, straight polarity
MIG – Direct Current, reverse polarity
STICK – Polarity dependent on rod used

For further information on Parker's Welded Fittings refer to Parker's Welded Fittings Catalog 4280 or contact Parker's Instrumentation Connectors Division – Product Engineering at 256-881-2040.

ZELW
Socket Weld Elbow
For fractional tube

• for A-LOK® to tubing socket weld connection





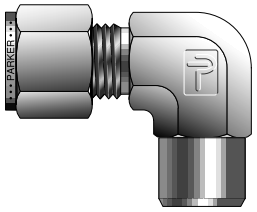
PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		TUBE O.D.	C	L	H	P*	X	W HEX
2-2 ZELW	200-9-2 W	1/8	.92	.66	.63	.16	.38	5/16
3-3 ZELW	300-9-3 W	3/16	.98	.72	.69	.20	.44	7/16
4-4 ZELW	400-9-4 W	1/4	1.07	.78	.78	.25	.50	9/16
6-6 ZELW	600-9-6 W	3/8	1.26	.97	.91	.34	.63	3/4
8-8 ZELW	810-9-8 W	1/2	1.37	.97	1.03	.41	.76	3/4
10-10 ZELW	1010-9-10 W	5/8	1.56	1.16	1.16	.49	.94	1-1/16
12-12 ZELW	1210-9-12 W	3/4	1.56	1.16	1.31	.50	1.09	1-1/16
16-16 ZELW	1610-9-16 W	1	1.94	1.45	1.47	.56	1.38	1-5/16

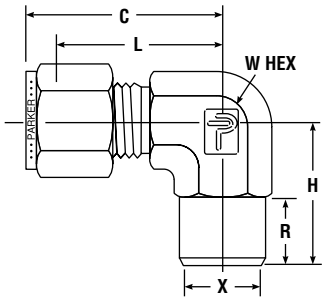
NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.

*Socket Depth

ZELW2
Buttweld Elbow
For fractional pipe

• for A-LOK® to pipe buttweld connection



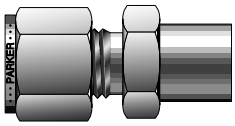


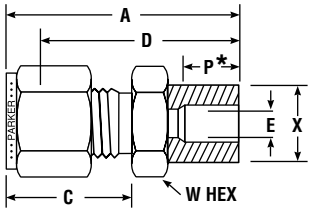
PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	BUTTWELD PIPE SIZE	C	H	L	R	X BUTTWELD O.D.	W HEX
2-1/8 ZELW2	200-2-2 W	1/8	1/8	.92	.72	.66	.34	.405	7/16
3-1/8 ZELW2	300-2-2 W	3/16	1/8	1.01	.74	.74	.38	.405	1/2
4-1/8 ZELW2	400-2-2 W	1/4	1/8	1.06	.74	.77	.38	.405	1/2
4-1/4 ZELW2	400-2-4 W	1/4	1/4	1.07	.94	.78	.56	.540	9/16
6-1/4 ZELW2	600-2-4 W	3/8	1/4	1.20	1.01	.91	.56	.540	5/8
8-3/8 ZELW2	810-2-6 W	1/2	3/8	1.37	1.13	.97	.56	.675	3/4
8-1/2 ZELW2	810-2-8 W	1/2	1/2	1.43	1.31	1.03	.75	.840	7/8
10-1/2 ZELW2	1010-2-8 W	5/8	1/2	1.43	1.31	1.03	.75	.840	7/8
12-3/4 ZELW2	1210-2-12 W	3/4	3/4	1.56	1.50	1.16	.75	1.050	1-1/16
16-3/4 ZELW2	1610-2-12 W	1	3/4	1.94	1.65	1.45	.75	1.050	1-3/8
16-1 ZELW2	1610-2-16 W	1	1	1.94	1.84	1.45	.94	1.315	1-3/8

NOTE: C dimension is typical finger-tight. Dimensions for reference only, subject to change.
Pipe buttweld end will conform to Schedule 80 unless otherwise noted.

ZHLW
Socket Weld Connector
For fractional tube

• for A-LOK® to tubing socket weld connection





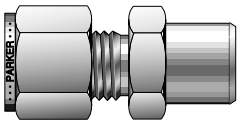
PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	A	C	D	P*	X	E BORE	W HEX
2-2 ZHLW	200-6-2 W	1/8	1.14	.60	.88	.16	.38	.093	7/16
3-3 ZHLW	300-6-3 W	3/16	1.17	.64	.91	.20	.42	.125	7/16
4-4 ZHLW	400-6-4 W	1/4	1.32	.70	1.03	.25	.48	.187	1/2
6-6 ZHLW	600-6-6 W	3/8	1.48	.76	1.19	.34	.61	.281	5/8
8-8 ZHLW	810-6-8 W	1/2	1.62	.87	1.22	.41	.79	.406	13/16
10-10 ZHLW	1010-6-10 W	5/8	1.65	.87	1.25	.47	.92	.500	15/16
12-12 ZHLW	1210-6-12 W	3/4	1.71	.87	1.31	.50	1.11	.625	1-1/8
16-16 ZHLW	1610-6-16 W	1	2.08	1.05	1.59	.56	1.36	.875	1-3/8

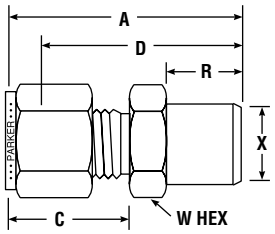
NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

*Socket Depth

ZHLW2
Buttweld Connector
For fractional pipe

• for A-LOK® to pipe buttweld connection





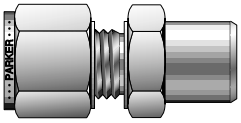
PARKER PART NO.	INTER-CHANGES WITH	INCHES							
		TUBE O.D.	BUTTWELD PIPE SIZE	A	C	D	R	X BUTTWELD O.D.	W HEX
2-1/8 ZHLW2	200-1-2 W	1/8	1/8	1.20	.60	.94	.38	.405	7/16
3-1/8 ZHLW2	300-1-2 W	3/16	1/8	1.24	.64	.97	.38	.405	7/16
4-1/8 ZHLW2	400-1-2 W	1/4	1/8	1.29	.70	1.00	.38	.405	1/2
4-1/4 ZHLW2	400-1-4 W	1/4	1/4	1.49	.70	1.20	.56	.540	9/16
5-1/8 ZHLW2	500-1-2 W	5/16	1/8	1.48	.73	1.22	.38	.405	1/2
5-1/4-ZHLW2	500-1-4-W	5/16	1/4	1.49	.73	1.23	.56	.540	9/16
6-1/4 ZHLW2	600-1-4 W	3/8	1/4	1.57	.76	1.28	.56	.540	5/8
6-3/8 ZHLW2	600-1-6 W	3/8	3/8	1.60	.76	1.31	.56	.675	3/4
6-1/2 ZHLW2	600-1-8 W	3/8	1/2	1.82	.76	1.53	.75	.840	7/8
6-3/4 ZHLW2	600-1-12 W	3/8	3/4	1.88	.76	1.59	.75	1.050	1-1/8
8-3/8 ZHLW2	810-1-6 W	1/2	3/8	1.71	.87	1.31	.56	.675	13/16
8-1/2 ZHLW2	810-1-8 W	1/2	1/2	1.93	.87	1.53	.75	.840	7/8
8-3/4 ZHLW2	810-1-12 W	1/2	3/4	1.99	.87	1.59	.75	1.050	1-1/8
10-1/2 ZHLW2	1010-1-8 W	5/8	1/2	1.93	.87	1.53	.75	.840	15/16
12-3/4 ZHLW2	1210-1-12 W	3/4	3/4	1.99	.87	1.59	.75	1.050	1-1/8
16-1 ZHLW2	1610-1-16 W	1	1	2.46	1.05	1.97	.94	1.310	1-3/8

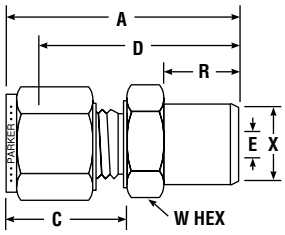
NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Pipe Buttweld end will conform to Schedule 80 unless otherwise noted.

ZHLW2
Buttweld Connector
For metric pipe

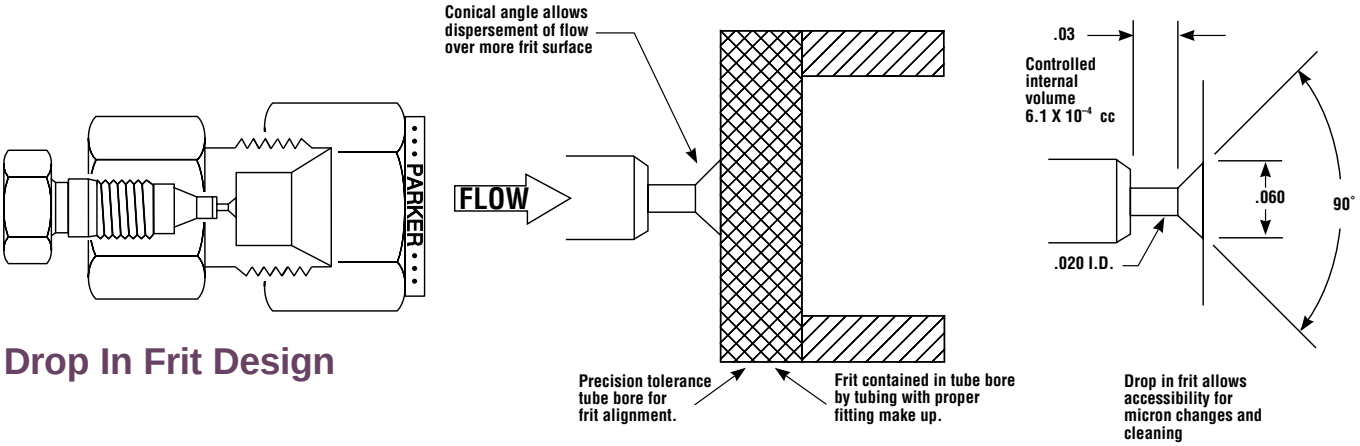
• for A-LOK® to pipe buttweld connection



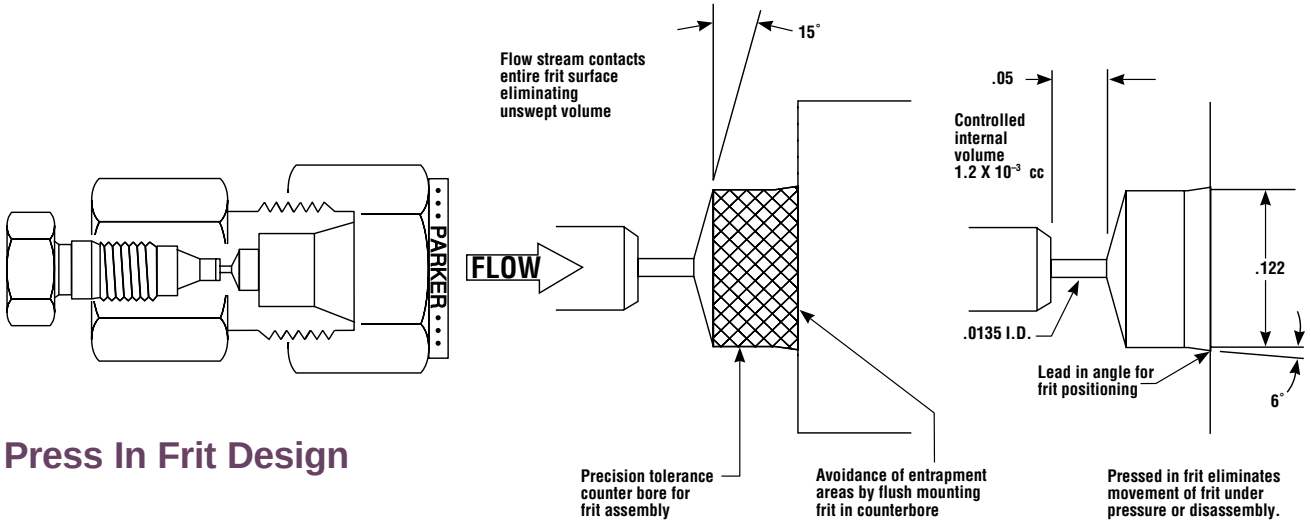


PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS								
		TUBE O.D.	BUTT-WELD PIPE N.B.	A	C	D	R	X	E BORE	W HEX
ZHLW2 3-1/8	3MO-1-2W	3	1/8	29,7	15,3	23,1	9,7	10,3	2,4*	12,0
ZHLW2 4-1/8	4MO-1-2	4	1/8	30,7	16,1	24,1	9,7	10,3	2,4*	12,0
ZHLW2 6-1/8	6MO-1-2	6	1/8	32,9	17,7	25,4	9,7	10,3	4,8	14,0
ZHLW2 6-1/4	6MO-1-4W	6	1/4	37,7	17,7	30,2	14,2	13,7	4,8*	14,0
ZHLW2 8-1/8	8MO-1-2	8	1/8	34,2	18,6	26,7	9,7	10,3	5,1	15,0
ZHLW2 8-1/4	8MO-1-1/4	8	1/4	38,7	18,6	31,2	14,2	13,7	6,4	15,0
ZHLW2 8-1/2	8MO-1-8	8	1/2	44,8	18,6	37,3	19,1	21,3	6,4*	22,0
ZHLW2 10-1/4	–	10	1/4	40,9	19,5	33,3	14,2	13,7	7,1	18,0
ZHLW2 10-3/8	10MO-1-6	10	3/8	40,1	19,5	32,5	14,2	17,2	7,9*	18,0
ZHLW2 10-1/2	–	10	1/2	45,7	19,5	38,1	19,1	21,3	7,9*	22,0
ZHLW2 12-1/4	–	12	1/4	43,4	22,0	33,3	14,2	13,7	7,1	22,0
ZHLW2 12-3/8	–	12	3/8	43,4	22,0	33,3	14,2	17,2	9,5	22,0
ZHLW2 12-1/2	12MO-1-8W	12	1/2	48,2	22,0	38,1	19,1	21,3	9,5*	22,0
ZHLW2 15-1/2			1/2	48,2	22,0	38,9	19,1	21,3	9.5*	24,0
ZHLW2 16-1/2	–	16	1/2	49,0	22,0	38,9	19,1	21,3	12,7*	24,0
ZHLW2 18-1/2	–	18	1/2	50,5	22,0	40,4	19,1	21,3	13,5	27,0

NOTE: *E dimension is minimum opening. Dimensions for reference only, subject to change.
Fittings of this group may be back-drilled to larger I.D. at pipe end.
A and C dimensions are typical finger-tight.
Pipe Buttweld end will conform to Schedule 80 unless otherwise noted.



Drop In Frit Design



Press In Frit Design

Parker Hannifin's Instrumentation Connectors Division offers a full line of analytical tube fittings. These fittings range from elbows, tees, and male connectors to low dead volume unions and column end fittings. Parker incorporates various features in the column end fittings to effectively address various industry concerns.

- Peak symmetry for critical analysis
- Internal volume reduction

As the observed media/substance migrates through the HPLC column, a "peak" or "band" is created that denotes the level of concentration. It is critical to maintain peak symmetry in order to get an accurate reading when processing the observed media/substance. Parker Hannifin, in the development of a line of column end fittings, has incorporated some key features that help to maintain this "peak symmetry" in HPLC columns.

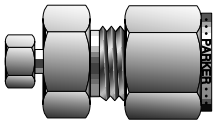
"Under most circumstances in liquid chromatography (LC), the flow through the tube is laminar, the so-called Poiseulle flow, and in this situation the velocity at all points is parallel to the tube axis."

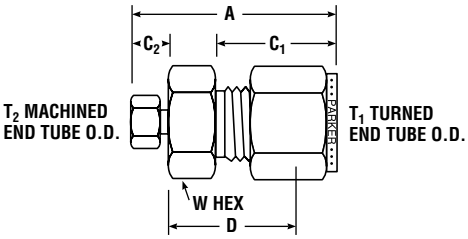
Due to the importance of maintaining smooth laminar flow after injection of the sample into the HPLC column, Parker incorporated a small conical angle on the fitting body internals. This conical angle helps to equally disperse the sample into the column tube. One of the key requirements of an effective column end fitting is not to delay or disturb the flow of the sample through the instrument (HPLC column).

A second area to address is the minimizing of tube fitting internal "cavities". A cavity is a short section of the flow path where the flow-channel diameter increases. It can occur where tubes are connected to each other (low dead volume connector) or to injectors, columns (column end fittings), and detectors. Large cavities can seriously degrade the resolution of any chromatogram, but they can be easily avoided through awareness of the geometric design details of the fittings and connecting parts manufactured by various companies.

Parker Hannifin has incorporated those critical features in both a low dead volume union connector and the column end fitting bodies. First, the utilization of inverted 1/16" connections to greatly reduce internal volume or cavities.To eliminate any confusion or occurrence of incorrect effective tube make-up, the port depths (body bore dimensions) are identical by size throughout the entire Parker Hannifin instrumentation line. Second, Parker closely monitors the dimensions of the small through-hole utilized in these low dead volume connectors.

Z2HLZ7
Column End Fitting – Low Internal Volume with Frit
For fractional tube





PARKER PART NO.	INCHES							
	T_1 TUBE O.D.	T_2 TUBE O.D.	A	C	D	W HEX	INTERNAL OPENING	INTERNAL VOLUME
2-1 Z2HLZ7	1/8	1/16	1.25	.60	.78	7/16	.013	5.4 x 10^{-4}cc
4-1 Z2HLZ7	1/4	1/16	1.35	.70	.84	1/2	.013	1.2 x 10^{-3}cc
6-1 Z2HLZ7	3/8	1/16	1.43	.76	.92	5/8	.013	3.8 x 10^{-3}cc

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

FRIT DESIGNATOR	
* MICRON DASH NO.	MICRON SIZE
–1	0.5µ
–2	2 µ
–3	5 µ
–4	10 µ

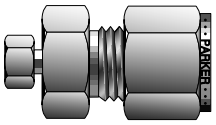
HOW TO ORDER

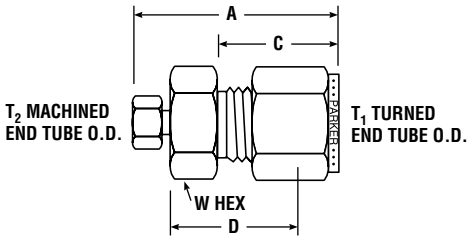
EXAMPLE: 4-1Z2HLZ7-2*-SS
To order with 2µ
frit for 1/4"
O.D. column

Features:

- Inverted 1/16" end substantially reduces internal volume
- Flow stream contacts entire frit surface reducing plugging and eliminating unswept volume
- Can be used as a low volume final filter

Z3HLZ7
Column End Fitting – Low Internal Volume
For fractional tube





PARKER PART NO.	INCHES							
	T_1 TUBE O.D.	T_2 TUBE O.D.	A	C	D	W HEX	INTERNAL OPENING	INTERNAL VOLUME
4-1 Z3HLZ7	1/4	1/16	1.28	.70	.77	1/2	.020	6.1 x 10^{-4}cc
6-1 Z3HLZ7	3/8	1/16	1.37	.76	.86	5/8	.020	8.1 x 10^{-4}cc
8-1 Z3HLZ7	1/2	1/16	1.62	.87	1.00	13/16	.030	2.8 x 10^{-3}cc
16-1 Z3HLZ7	1	1/16	2.00	1.05	1.31	1-3/8	.030	2 x 10^{-2}cc

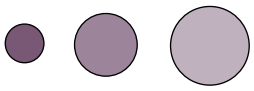
NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Features:

- Inverted 1/16" end substantially reduces internal volume
- Drop in frit for use with L.C.* columns or G.C.* columns
- Conical angle below frit directs flow over more frit surface
- Available for up to 1" columns

*G.C. = Gas Chromatagraph
L.C. = Liquid Chromatagraph

Di-Frit (drop in)

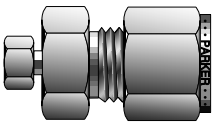


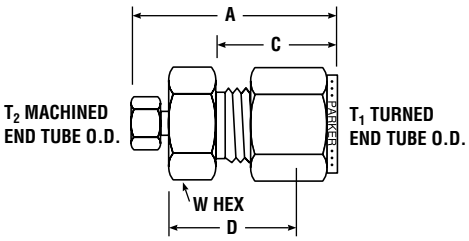
Replaceable frit for preparatory column end fitting Z3HLZ7. Frits are available in 2, 5 and 10 micron sizes.

PARKER PART NO.	MICRON SIZE	COLUMN O.D.
4DI FRIT-2MIC-SS	2	1/4"
4DI FRIT-5MIC-SS	5	1/4"
4DI FRIT-10MIC-SS	10	1/4"
6DI FRIT-2MIC-SS	2	3/8"
6DI FRIT-5MIC-SS	5	3/8"
6DI FRIT-10MIC-SS	10	3/8"

PARKER PART NO.	MICRON SIZE	COLUMN O.D.
8DI FRIT-2MIC-SS	2	1/2"
8DI FRIT-5MIC-SS	5	1/2"
8DI FRIT-10MIC-SS	10	1/2"
16DI FRIT-2MIC-SS	2	1"
16DI FRIT-5MIC-SS	5	1"
16DI FRIT-10MIC-SS	10	1"

ZHLZ7
Column End Fitting – Low Internal Volume (without Frit)
For fractional tube





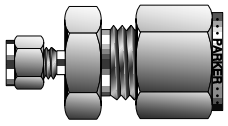
PARKER PART NO.	INTER-CHANGES WITH	INCHES							INTERNAL VOLUME
		T_1 TUBE O.D.	T_2 TUBE O.D.	A	C	D	W HEX	INTERNAL OPENING	
2-1 ZHLZ7	-200-6-1-FGC	1/8	1/16	1.16	.60	.70	7/16	.013	1.0 x 10^{-4}cc
4-1 ZHLZ7	-400-6-1-FGC	1/4	1/16	1.24	.70	.77	1/2	.013	1.1 x 10^{-4}cc
6-1 ZHLZ7	-600-6-1-FGC	3/8	1/16	1.35	.76	.86	5/8	.013	1.3 x 10^{-4}cc

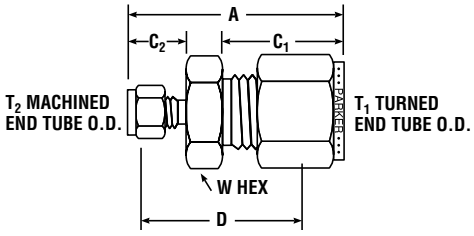
NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

Features:
- Inverted 1/16" end substantially
- No frit for use with G.C.* columns or L.C.* columns with screens
- Can be used as a low volume reducing union

*G.C. = Gas Chromatagraph
L.C. = Liquid Chromatagraph

Z2HLZ
Column End Fitting – with Frit
For fractional tube





PARKER PART NO.	INCHES								INTERNAL VOLUME
	T_1 TUBE O.D.	T_2 TUBE O.D.	A	C_1	C_2	D	W HEX	INTERNAL OPENING	
2-1 Z2HLZ	1/8	1/16	1.21	.60	.43	.81	7/16	.020	2.1 x 10^{-3}cc
4-1 Z2HLZ	1/4	1/16	1.35	.70	.43	.91	1/2	.020	1.8 x 10^{-3}cc
6-1 Z2HLZ	3/8	1/16	1.44	.76	.43	1.00	5/8	.020	5.4 x 10^{-3}cc

NOTE: A and C dimensions are typical finger-tight. Dimensions for reference only, subject to change.

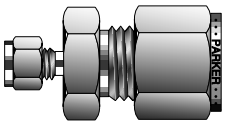
FRIT DESIGNATOR	
* MICRON DASH NO.	MICRON SIZE
–1	0.5µ
–2	2 µ
–3	5 µ
–4	10 µ

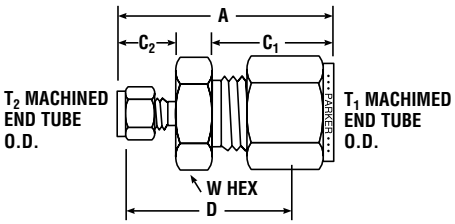
NOTE: Size 1 not silver-plated.

HOW TO ORDER
EXAMPLE: 4-1Z2HLZ-2*-SS To order with 2µ frit for 1/4" O.D. column

Features:
- Flow stream contacts entire frit surface reducing plugging and eliminating unswept volume
- Can be used as a low volume final filter with drop-in frit

ZHLZ
Column End Fitting – (without Frit)
For fractional tube



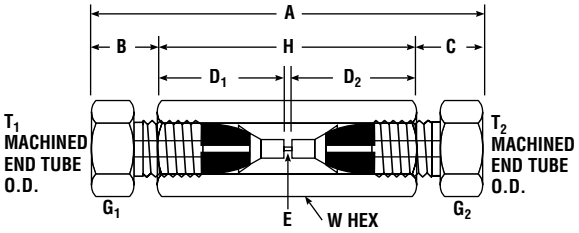


PARKER PART NO.	INTER-CHANGES WITH	INCHES								INTERNAL VOLUME
		T_1 TUBE O.D.	T_2 TUBE O.D.	A	C_1	C_2	D	W HEX	INTERNAL OPENING	
2-1 ZHLZ	200-6-1LV	1/8	1/16	1.21	.60	.43	.81	7/16	.020	2.1 x 10^{-3}cc
4-1 ZHLZ	400-6-1LV	1/4	1/16	1.35	.70	.43	.91	1/2	.020	2.1 x 10^{-3}cc
6-1 ZHLZ	600-6-1LV	3/8	1/16	1.44	.76	.43	1.00	5/8	.020	2.3 x 10^{-3}cc

NOTE: A and C dimensions are typical finger-tight.
Size 1 Nut is not silver plated

Dimensions for reference only, subject to change.

Z7HLZ7
Union Connector – Low Dead Volume
For fractional tube

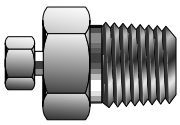


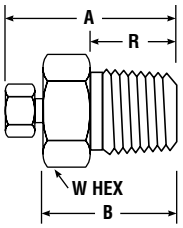
PARKER PART NO.	INTER-CHANGES WITH	INCHES												INTERNAL VOLUME
		T_1 TUBE O.D.	T_2 TUBE O.D.	†A	†B	†C	D_1	D_2	E INTERNAL OPENING	G_1	G_2	H	W HEX	
1-1 Z7HLZ7	IFO-6GC	1/16	1/16	1.26	.21	.21	.41	.41	.013	.25	.25	.84	1/4	8.7 x 10^{-5}cc
2-1 Z7HLZ7	–	1/8	1/16	1.53	.31	.21	.56	.41	.013	.38	.25	1.02	7/16	8.7 x 10^{-5}cc
2-2 Z7HLZ7	–	1/8	1/8	1.81	.31	.31	.56	.56	.052	.38	.38	1.19	7/16	9.7 x 10^{-2}cc

†Average Value

Dimensions for reference only, subject to change.

FLZ7
Male Connector – Low Dead Volume
For fractional tube



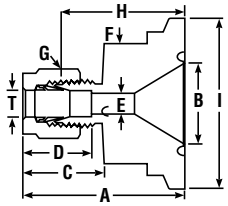


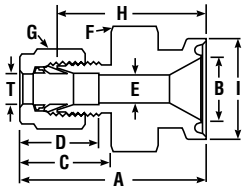
PARKER PART NO.	INCHES							INTERNAL VOLUME
	TUBE O.D.	NPT PIPE THREAD	†A	B	R	W HEX	INTERNAL OPENING	
1-1 FLZ7	1/16	1/16	.75	.55	.38	5/16	.013	3.1 x 10^{-4}cc
1-2 FLZ7	1/16	1/8	.79	.59	.38	7/16	.013	4.4 x 10^{-4}cc
1-4 FLZ7	1/16	1/4	1.01	.81	.56	5/8	.013	8.8 x 10^{-4}cc

†Average Value

Dimensions for reference only, subject to change.

ZHLS
Sanitary Flange Fitting
For fractional tube





PARKER PART NO.	INTER-CHANGES WITH	INCHES										
		TUBE OD	SANITARY FLANGE	A	B	C	D	E MIN. OPENING	F	G HEX FLAT	H	I
4-8 ZHLS-SS	SS-400-SC-8	1/4	1/2	1.57	.37	.70	.60	.19	1.00	9/16	1.34	.98
4-12 ZHLS-SS	SS-400-SC-12	1/4	3/4	1.57	.62	.70	.60	.19	1.00	9/16	1.34	.98
4-16 ZHLS-SS	SS-400-SC-16	1/4	1	1.57	.87	.70	.60	.19	1.38	9/16	1.34	1.98
4-24 ZHLS-SS	SS-400-SC-24	1/4	1 1/2	1.57	1.37	.70	.60	.19	1.38	9/16	1.28	1.98
6-8 ZHLS-SS	SS-600-SC-8	3/8	1/2	1.63	.37	.76	.66	.28	1.00	11/16	1.34	.98
6-12 ZHLS-SS	SS-600-SC-12	3/8	3/4	1.63	.62	.76	.66	.28	1.00	11/16	1.34	.98
6-16 ZHLS-SS	SS-600-SC-16	3/8	1	1.63	.87	.76	.66	.28	1.38	11/16	1.34	1.98
6-24 ZHLS-SS	SS-600-SC-24	3/8	1 1/2	1.63	1.37	.76	.66	.28	1.38	11/16	1.34	1.98
8-8 ZHLS-SS	SS-810-SC-8	1/2	1/2	1.74	.37	.90	.86	.37	1.00	7/8	1.40	.98
8-12 ZHLS-SS	SS-810-SC12	1/2	3/4	1.74	.62	.90	.86	.41	1.00	7/8	1.34	.98
8-16 ZHLS-SS	SS-810-SC-16	1/2	1	1.74	.87	.90	.86	.41	1.38	7/8	1.34	1.98
8-24 ZHLS-SS	SS-810-SC-24	1/2	1 1/2	1.74	1.37	.90	.86	.41	1.38	7/8	1.34	1.98

NOTE: A, C, and D dimensions are typical finger tight.

Dimensions for reference only, subject to change.

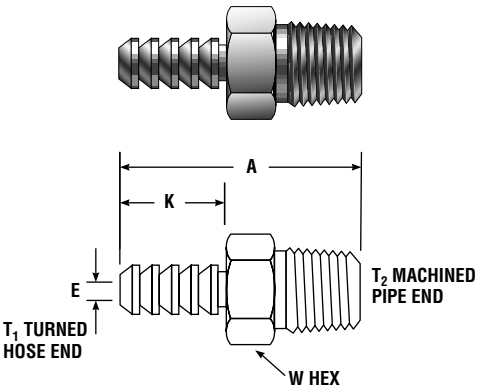
Sanitary flange fittings combine the reliability and versatility of Parker tube fittings with conventional sanitary flanges. The fittings permit direct downstream connections for hookups and sampling.

Flange sizes are 1/2, 3/4, 1, and 1-1/2 in.

Parker tube fitting ends are available in 1/4, 3/8, and 1/2 in. Parker tube fittings allow use of a variety of tubing materials including metal, hard plastic, and soft plastic.

For a Thermocouple/"Bored-Thru" version of the above Sanitary Adapter fittings, add a "4" to the part number. Example: A 4-12 ZHLS-SS becomes a 4-12 ZH4LS-SS for a 3/4" Sanitary Flange with a 1/4" diameter bored through on the A-LOK® fitting end.

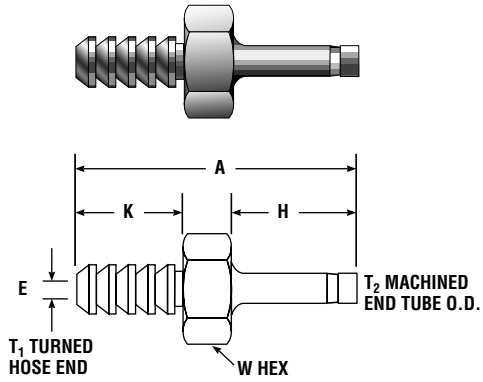
B2HF
Barbed Connector to Male Pipe
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES					
		T_1 HOSE I.D.	T_2 MALE PIPE SIZE	A	E BORE	K	W HEX
2-2 B2HF	2-HC-1-2	1/8	1/8	1.00	.078	.41	7/16
2-4 B2HF	2-HC-1-4	1/8	1/4	1.22	.078	.41	9/16
4-2 B2HF	4-HC-1-2	1/4	1/8	1.41	.188	.75	7/16
4-4 B2HF	4-HC-1-4	1/4	1/4	1.59	.188	.78	9/16
5-2 B2HF	5-HC-1-2	5/16	1/8	1.50	.188	.88	7/16
5-4 B2HF	5-HC-1-4	5/16	1/4	1.69	.250	.88	9/16
6-4 B2HF	6-HC-1-4	3/8	1/4	1.72	.281	.88	9/16
6-6 B2HF	6-HC-1-6	3/8	3/8	1.72	.297	.88	11/16
8-6 B2HF	8-HC-1-6	1/2	3/8	1.81	.375	.94	3/4
8-8 B2HF	8-HC-1-8	1/2	1/2	2.00	.375	.94	7/8
12-12 B2HF	12-HC-1-12	3/4	3/4	2.13	.625	1.03	1-1/16

Dimensions for reference only, subject to change.

B2TU
Barbed Connector to Tube Adapter
For fractional tube

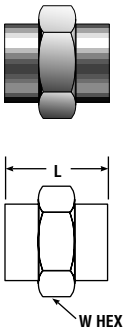


PARKER PART NO.	INTER-CHANGES WITH	INCHES						
		T_1 HOSE I.D.	T_2 TUBE O.D.	A	E BORE	H	K	W HEX
2 B2TU2	2-HC-A-201	1/8	1/8	1.16	.078	.53	.41	5/16
4 B2TU4	2-HC-A-401	1/8	1/4	1.26	.078	.64	.41	3/8
4 B2TU4	4-HC-A-401	1/4	1/4	1.64	.156	.64	.78	3/8
6 B2TU6	4-HC-A-601	1/4	3/8	1.75	.156	.72	.78	7/16

Dimensions for reference only, subject to change.

NOTE: Tube adapter end is designed for use with Parker fittings or valves. Simply insert the tube adapter end until it bottoms and tighten the Parker nut 3/4 turns for sizes 3 and below, for sizes 4 and above 1-1/4 turns from finger tight.
Add -Z6 for assembly of nuts and ferrules on the tube stub end.

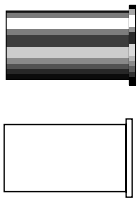
HCS
Hose Connector Sleeve
For fractional tube



PARKER PART NO.	INCHES			
	HOSE I.D.	HOSE O.D.	L	W HEX
HCS 2-4	1/8	1/4	.41	3/8
HCS 4-6	1/4	3/8	.78	9/16
HCS 4-7	1/4	7/16	.78	5/8
HCS 4-8	1/4	1/2	.78	11/16
HCS 4-9	1/4	9/16	.78	3/4
HCS 5-7	5/16	7/16	.88	5/8
HCS 6-8	3/8	1/2	.88	11/16
HCS 6-9	3/8	9/16	.88	3/4
HCS 8-11	1/2	11/16	.94	7/8
HCS 12-16	3/4	1	1.06	1-1/4

Dimensions for reference only, subject to change.

TIZ
Insert
For fractional tube



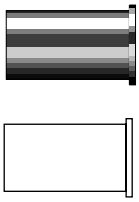
PARKER PART NO.	INTER-CHANGES WITH	INCHES		
		TUBE O.D.	TUBE I.D.	TUBE WALL
3 TIZ (.125)	305-2	3/16	.125	.031
4 TIZ (.125)	405-2	1/4	.125	.062
4 TIZ (.170)	405-170	1/4	.170	.040
4 TIZ (.188)	405-3	1/4	.188	.031
5 TIZ (.125)	505-2	5/16	.125	.094
5 TIZ (.188)	505-3	5/16	.188	.062
5 TIZ (.250)	505-4	5/16	.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: The TIZ insert is designed to be used with soft plastic tubing. 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.

TIZ
Insert
For metric tube



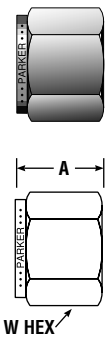
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS		
		TUBE O.D.	TUBE I.D.	TUBE WALL
TIZ6(4)	6M5-4M	6	4	1,0
TIZ8(6)	8M5-6M	8	6	1,0
TIZ10(6)	10M5-6M	10	6	2,0
TIZ10(8)	10M5-8M	10	8	1,0
TIZ12(8)	12M5-8M	12	8	2,0
TIZ12(10)	12M5-10M	12	10	1,0
TIZ15(10)	15M5-10M	15	10	2,5

Dimensions for reference only, subject to change.

NOTE: The TIZ insert is designed to be used with soft plastic tubing. 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: TIZ6(4) is used with tubing having a wall thickness of 1mm and I.D. of 4mm.

NU
Tube Nut
For fractional tube

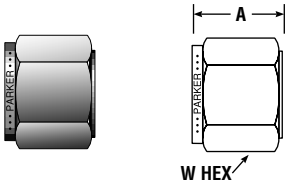


PARKER PART NO.	INTER-CHANGES WITH	INCHES		
		TUBE O.D.	A	W HEX
1NU1	102-1	1/16	.31	5/16
2NU2	202-1	1/8	.47	7/16
3NU3	302-1	3/16	.47	1/2
4NU4	402-1	1/4	.50	9/16
5NU5	502-1	5/16	.53	5/8
6NU6	602-1	3/8	.56	11/16
8NU8	812-1	1/2	.69	7/8
10NU10	1012-1	5/8	.69	1
12NU12	1212-1	3/4	.69	1-1/8
14NU14	1412-1	7/8	.69	1-1/4
16NU16	1612-1	1	.81	1-1/2
20NU20	2012-1	1-1/4	1.25	1-7/8
24NU24	2412-1	1-1/2	1.50	2-1/4
32NU32	3212-1	2	2.062	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.

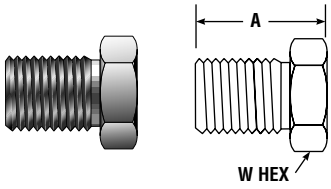
NUM
Tube Nut
For metric tube



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

Dimensions for reference only, subject to change.

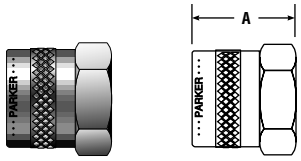
BZI
Inverted Tube Nut
For fractional tube



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.

BZP
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. Replace NU nut with BZP nut on Parker A-LOK® fitting body.
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 Teflon® ferrules are frequently used instead of metal ferrules in this type of application.

INCH

FF
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

BF
Back Ferrule
For fractional tube

For stainless steel, sizes 4-32 are Suparcase 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

METRIC

FFM
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

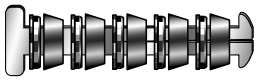
BFM
Back Ferrule
For metric tube

For stainless steel, sizes 6mm–25mm are Suparcase 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

Ferrule Holder

Package simplifies ordering, stocking, and assembling



PARKER PART NO. 1 HOLDER	T TUBE O.D. (INCHES)
2ALOK-*-SET	1/8
4ALOK-*-SET	1/4
6ALOK-*-SET	3/8
8ALOK-*-SET	1/2
12ALOK-*-SET	3/4
16ALOK-*-SET	1

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

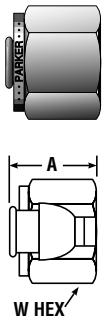
PARKER PART NO. 1 HOLDER	T TUBE O.D. (MM)
6M ALOK-*-SET	6
8M ALOK-*-SET	8
12M ALOK-*-SET	12

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

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

BLP
Plug
For fractional tube

For plugging open ended A-LOK® fitting ends



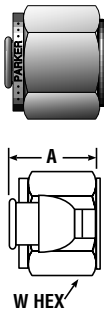
PARKER PART NO.	INTER-CHANGES WITH	INCHES			
		TUBE O.D.	THREAD	A	W HEX
1BLP1	100-P	1/16	10-32	.31	5/16
2BLP2	200-P	1/8	5/16-20	.47	7/16
3BLP3	300-P	3/16	3/8-20	.47	1/2
4BLP4	400-P	1/4	7/16-20	.50	9/16
5BLP5	500-P	5/16	1/2-20	.53	5/8
6BLP6	600-P	3/8	9/16-20	.56	11/16
8BLP8	810-P	1/2	3/4-20	.69	7/8
10BLP10	1010-P	5/8	7/8-20	.69	1
12BLP12	1210-P	3/4	1-20	.69	1-1/8
14BLP14	1410-P	7/8	1-1/8-20	.69	1-1/4
16BLP16	1610-P	1	1-5/16-20	.81	1-1/2
20BLP20	2010-P	1-1/4	1-5/8-20	1.35	1-7/8
24BLP24	2410-P	1-1/2	1-15/16-20	1.72	2-1/4
32BPL32	3210-P	2	2-5/8-20	2.27	3

Dimensions for reference only, subject to change.

HOW TO ASSEMBLE
Wrench tighten only 1/4 turn from finger tight position. Assembly includes machined ferrule with lock ring.

BLPM
Plug
For metric tube

For plugging open ended A-LOK® fitting ends



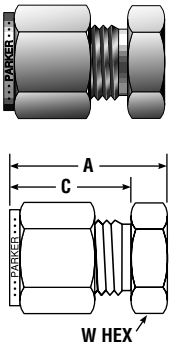
PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS			
		TUBE O.D.	THREAD	A	W HEX
BLPM2	2MO-P	2	5/16-20	11,9	12,0
BLPM3	3MO-P	3	5/16-20	11,9	12,0
BLPM4	4MO-P	4	3/8-20	11,9	12,0
BLPM6	6MO-P	6	7/16-20	12,7	14,0
BLPM8	8MO-P	8	1/2-20	13,5	16,0
BLPM10	10MO-P	10	5/8-20	15,1	19,0
BLPM12	12MO-P	12	3/4-20	17,5	22,0
BLPM14	14MO-P	14	7/8-20	17,5	25,0
BLPM15	15MO-P	15	7/8-20	17,5	25,0
BLPM16	16MO-P	16	7/8-20	17,5	25,0
BLPM18	18MO-P	18	1-20	17,5	30,0
BLPM20	20MO-P	20	1-1/8-20	17,5	32,0
BLPM22	22MO-P	22	1-1/8-20	17,5	32,0
BLPM25	25MO-P	25	1-5/16-20	20,6	38,0

Dimensions for reference only, subject to change.

HOW TO ASSEMBLE
Wrench tighten only 1/4 turn from finger tight position. Assembly includes machined ferrule with lock ring.

BLEN
Cap
For fractional tube

For capping open ended tubing



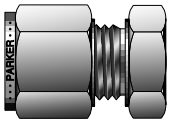
PARKER PART NO.	INTER-CHANGES WITH	INCHES			
		TUBE O.D.	A	C	W HEX
1BLEN1	100-C	1/16	.56	.43	5/16
2BLEN2	200-C	1/8	.79	.60	7/16
3BLEN3	300-C	3/16	.84	.64	7/16
4BLEN4	400-C	1/4	.92	.70	1/2
5BLEN5	500-C	5/16	.96	.73	9/16
6BLEN6	600-C	3/8	1.01	.76	5/8
8BLEN8	810-C	1/2	1.15	.87	13/16
10BLEN10	1010-C	5/8	1.18	.87	15/16
12BLEN12	1210-C	3/4	1.25	.87	1-1/16
14BLEN14	1410-C	7/8	1.31	.87	1-3/16
16BLEN16	1610-C	1	1.52	1.05	1-3/8
20BLEN20	2010-C	1-1/4	2.09	1.52	1-3/4
24BLEN24	2410-C	1-1/2	2.53	1.77	2-1/8
32BLEN32	3210-C	2	3.41	2.47	2-3/4

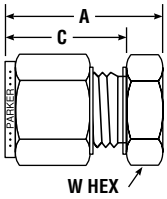
Dimensions for reference only, subject to change.

NOTE: For body only specify PNZ
A and C dimensions are typical finger-tight.

BLENM
Cap
For metric tube

For capping open ended tubing

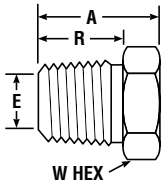




PARKER PART NO.	INTER-CHANGES WITH	MILLIMETERS			
		TUBE O.D.	A	C	W HEX
BLENM2	2MO-C	2	13,5	15,3	12,0
BLENM3	3MO-C	3	13,5	15,3	12,0
BLENM4	4MO-C	4	14,3	16,1	12,0
BLENM6	6MO-C	6	15,9	17,7	14,0
BLENM8	8MO-C	8	17,1	18,6	15,0
BLENM10	10MO-C	10	19,1	19,5	18,0
BLENM12	12MO-C	12	19,1	22,0	22,0
BLENM14	14MO-C	14	19,8	22,0	24,0
BLENM15	15MO-C	15	19,8	22,0	24,0
BLENM16	16MO-C	16	19,8	22,0	24,0
BLENM18	18MO-C	18	21,3	22,0	27,0
BLENM20	20MO-C	20	23,9	22,0	30,0
BLENM22	22MO-C	22	23,9	22,0	30,0
BLENM25	25MO-C	25	26,2	26,5	35,0

NOTE: For body only specify PNZ. Dimensions for reference only, subject to change.
A and C dimensions are typical finger-tight.

MDF
Vent Protector
NPT Male Pipe Thread
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES				
		THREAD SIZE	A	R	E MINIMUM OPENING	W HEX FLAT
4 MDF-SS	MS-MD-4M	1/4-18	.81	.56	.28	9/16
6 MDF-SS	MS-MD-6M	3/8-18	.81	.56	.41	11/16
8 MDF-SS	MS-MD-8M	1/2-14	1.06	.75	.50	7/8
12 MDF-SS	MS-MD-12M	3/4-14	1.13	.75	.63	1-1/16
16 MDF-SS	MS-MD-16M	1-11-1/2	1.31	.95	.94	1-3/8

Dimensions for reference only, subject to change.

Parker Instrumentation vent protectors (mud dauber fittings) protect open ends of instruments, tubing, outlet vents, etc.

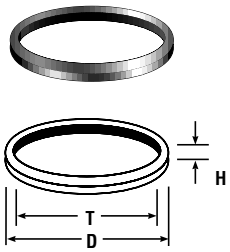
The mesh wire screen prevents foreign bodies such as insects or debris from entering and clogging various systems and causing damage.

- pipe plug, bored-thru design
- 40 x 40 mesh, .010 diameter wire screen
- designed to vent female pipe, straights, elbows or tees.

SEALING WASHERS

Bonded Seals

Consists of an outer stainless steel ring with a Viton® inner ring used to seal a male ISO parallel thread.



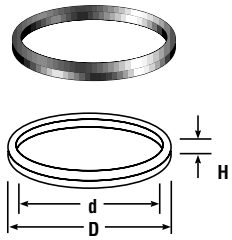
PART NO.	"T" BSPP THREAD	D	H
M30201-SS	1/8	.63	.08
M30202-SS	1/4	.81	.08
M30203-SS	3/8	.94	.08
M30204-SS	1/2	1.12	.10
M30206-SS	3/4	1.38	.10
M30208-SS	1	1.69	.10

PRESSURE RATINGS FOR SEALING WASHERS		
THREAD SIZE	PSI	BAR
1/8	5300	370
1/4	5500	380
3/8	4400	300
1/2	4000	280
3/4	3700	260
1	2800	190

These seals are also available in steel with a Nitrile inner ring.
Simply replace Suffix SS with S

Dimensions for reference only, subject to change.

Copper Washers



For BSPP male thread sealing

PART NO.	THREAD	D	d	H
M28329	1/8	.71	.39	.09
M28330	1/4	.87	.55	.09
M28331	3/8	.94	.67	.09
M28332	1/2	1.18	.87	.10
M28334	3/4	1.38	1.06	.09
M28336	1	1.65	1.34	.09

For BSPP female thread sealing

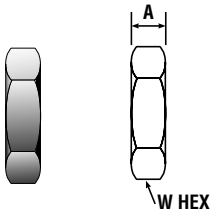
PART NO.	THREAD	D	d	H
M25179	1/8	.322	.218	.062
M25180	1/4	.436	.312	.062
M25181	3/8	.574	.437	.062
M25182	1/2	.719	.562	.062
M25184	3/4	.935	.812	.062
M25186	1	1.178	1	.093

Used to provide a seal with male or female parallel ISO threads.

Dimensions for reference only, subject to change.

Please note the pressure ratings are based on taper threaded ends. The pressure rating for the BSPP ends are dependent on the type of sealing washer used.

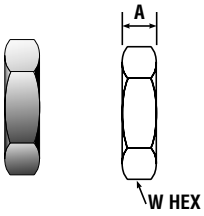
WLZ
Bulkhead Locknut
For fractional tube



PARKER PART NO.	INTER-CHANGES WITH	INCHES			
		A-LOK® THREAD	TUBE O.D.	A	W HEX
1 WLZ	102-61	10-32	1/16	.13	5/16
2 WLZ	202-61	5/16-20	1/8	.19	1/2
3 WLZ	302-61	3/8-20	3/16	.22	9/16
4 WLZ	402-61	7/16-20	1/4	.22	5/8
5 WLZ	502-61	1/2-20	5/16	.23	11/16
6 WLZ	602-61	9/16-20	3/8	.25	3/4
8 WLZ	812-61	3/4-20	1/2	.28	15/16
10 WLZ	1012-61	7/8-20	5/8	.31	1-1/16
12 WLZ	1212-61	1"-20	3/4	.34	1-3/16
14 WLZ	1412-61	1-1/8-20	7/8	.38	1-3/8
16 WLZ	1612-61	1-5/16-20	1	.38	1-5/8

Dimensions for reference only, subject to change.

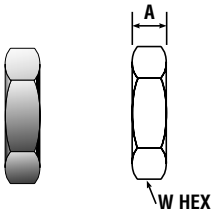
WLN
Bulkhead Locknut
For fractional tube



PARKER PART NO.	INCHES			
	SAE ADJ. STR. THREAD	TUBE O.D.	A	W HEX
4 WLN	7/16-20	1/4	.28	11/16
6 WLN	9/16-18	3/8	.27	13/16
8 WLN	3/4-16	1/2	.31	1
12 WLN	1-1/16-12	3/4	.41	1-3/8
16 WLN	1-5/16-12	1	.41	1-5/8

Dimensions for reference only, subject to change.

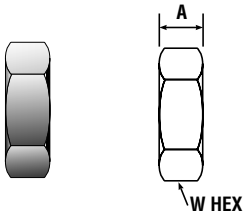
BN
Bulkhead Locknut
For metric tube



PARKER PART NO.	MILLIMETERS			
	SAE ADJ. STR. THREAD	TUBE O.D.	A	W HEX
2BN2	5/16-20	2 & 3	4,8	13,0
3BN3	3/8-20	4	5,6	14,0
4BN4	7/16-20	6	5,6	16,0
5BN5	1/2-20	8	5,6	17,0
BNM10	5/8-20	10	6,4	21,0
8BN8	3/4-20	12	7,1	24,0
10BN10	7/8-20	14, 15 & 16	7,9	27,0
12BN12	1-20	18	8,6	30,0
14BN14	1-1/8-20	20 & 22	9,7	33,0
16BN16	1-5/16-20	25	9,7	41,0

Dimensions for reference only, subject to change.

L5N
Accessory Locknut
For fractional tube

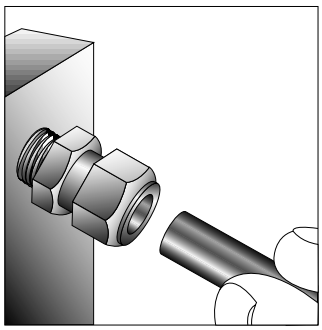


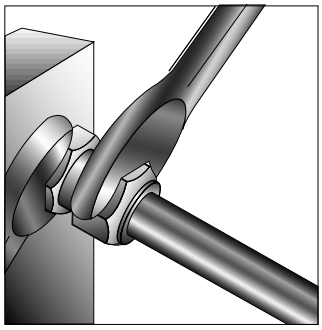
PARKER PART NO.	INCHES		
	STRAIGHT THREAD	A	W HEX
2 L5N	5/16-24	.22	7/16
3 L5N	3/8-24	.22	1/2
4 L5N	7/16-20	.28	9/16
5 L5N	1/2-20	.28	5/8
6 L5N	9/16-18	.28	11/16
8 L5N	3/4-16	.31	7/8
10 L5N	7/8-14	.36	1
12 L5N	1-1/16-12	.41	1-1/4
14 L5N	1-3/16-12	.41	1-3/8
16 L5N	1-5/16-12	.41	1-1/2

Dimensions for reference only, subject to change.

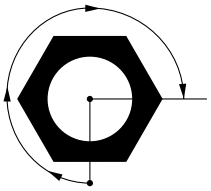
NOTE: For use with M2SC and M2TU fittings on pages 54 and 55.

Assembly and Remake Instructions



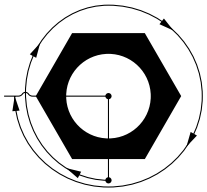


INCH SIZE 1 thru 3
(1/16" - 3/16")
METRIC SIZE 2 thru 4
(2-4mm)



Only 3/4 turn from finger tight is necessary to seal and will result in additional remakes of the fitting

INCH SIZE 4 thru 16
(1/4" - 1")
METRIC SIZE 6 thru 25
(6-25mm)



1-1/4 Turns from Finger Tight

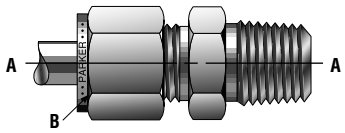
1. Parker instrument tube fittings are sold completely assembled and ready for immediate use. Simply insert the tube as illustrated until it bottoms in the fitting body. (If the fitting is disassembled, note that the small tapered end of the ferrule(s) go into the fitting body.)

2. Tighten nut finger tight. Then tighten nut with wrench an additional 1-1/4 turns indicated below. Hold fitting body with a second wrench to prevent body from turning. It is helpful to mark the nut to facilitate counting the number of turns.

For maximum number of remakes, mark the fitting and nut before disassembly. Before retightening, make sure the assembly has been inserted into the fitting until the ferrule seats in the fitting. Retighten the nut by hand. Rotate the nut with a wrench to the original position as indicated by the previous marks lining up. (A noticeable increase in mechanical resistance will be felt indicating the ferrule is being re-sprung into sealing position.)

Only after several remakes will it become necessary to advance the nut slightly past the original position. This advance (indicated by B) need only be 10°-20° (less than 1/3 of a hex flat).

For Sizes above 16 (1"), the Parker ICD Hydraulic Presetting Tool or Rotary Wrench Tool should be used. Cat. 4290-INST.



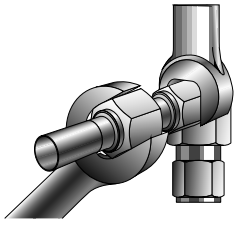
Parker A-LOK® Tube Fitting part numbers use symbols to identify the size, style, and material. Tube and pipe thread sizes begin with a number indicating their size in sixteenths of an inch. For example, 4=4/16” or 1/4”; 16=16/16” or 1.

NOTE: **Lubrication of the nut is REQUIRED for proper assembly on all LARGER size fittings in both inch and metric sizes. This requirement applies to:**

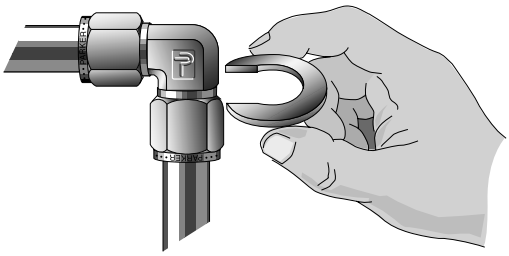
- **inch sizes of 20 and higher**
- **metric sizes of 25 and higher**

For additional information please contact your local authorized Parker Instrumentation distributor or call Parker Instrumentation Connectors Division and ask for Bulletin 4230-B10.

Gaugeability Instructions



1. From “finger tight” position, wrench 1-1/4 turns for 1/4" to 1" size fittings (6mm to 25mm) (1/16", 1/8", 3/16", 2mm 3mm and 4mm size tube fittings only wrench 3/4 turn from finger tight position). Hold fitting body hex with second wrench to prevent body from turning as you tighten. It is a good idea to mark the nut (scribe or ink) to help you count the turns.



2. Now select the proper size inspection gauge and try to place it, as shown, between the nut and the body hex. If gauge DOES NOT FIT AT ANY POINT between them, you have correctly tightened the nut. If you can slip the gauge into the space, the fitting is not properly made up, and you must repeat the assembly procedure.

For additional information please contact your local authorized Parker Instrumentation distributor or call Parker Instrumentation Connectors Division and ask for Bulletin 4230-B15.2.

Instrument Tubing Selection Guide

Parker's instrument tube fittings have been designed to work in a wide variety of applications that demand the utmost in product performance.

Although Parker's Instrument tube fittings have been engineered and manufactured to consistently provide this level of reliability, no systems in-tegrity is complete without considering the critical link, tubing.

This booklet is intended to assist the designer to properly select and order quality tubing.

Proper tube selection and installation, we believe, are key ingredients in building leak-free reliable tubing systems.

General Selection Criteria

The most important consideration in the selection of suitable tubing for any application is the compatibility of the tubing material with the media to be contained. Table 1 lists common materials and their associated general application. Table 1 also lists the maximum and minimum operating temperature for the various tubing materials.

In addition, Parker instrument fittings are designed to work on like materials. Stainless steel fittings should be used only with stainless steel tubing, aluminum fittings with aluminum tubing, etc. The practice of mixing materials is strongly discouraged. The only exception is brass fittings with copper tubing.

Dissimilar materials in contact may be susceptible to galvanic corrosion. Further, different materials have different levels of hardness, and can adversely affect the fittings ability to seal on the tubing.

TUBING MATERIAL	GENERAL APPLICATION	RECOMMENDED TEMPERATURE RANGE
Stainless Steel	High Pressure, High Temperature, Generally Corrosive Media	-425°F to 1200°F1 (255°C to 650°C)
Carbon Steel	High Pressure, High Temperature Oil, Air, Some Specialty Chemicals	-65°F to 800°F2 (-55°C to 425°C)
Copper	Low Temperature, Low Pressure Water, Oil, Air	-40°F to 400°F (-40°C to 205°C)
Aluminum	Low Temperature, Low Pressure Water, Oil, Air, Some Specialty Chemicals	-40°F to 400°F (-40°C to 205°C)
Monel 400™	Recommended for Sour Gas Applications. Well Suited for Marine and General Chemical Processing Applications	-400°F to 800°F (-240°C to 425°C)
Alloy C276	Excellent Corrosion Resistance to Both Oxidizing And Reducing Media and Excellent Resistance to Localized Corrosion Attack	-320°F to 1000°F (-195°C to 535°C)
Carpenter 20™	Applications Requiring Resistance to Stress Corrosion Cracking in Extreme Conditions	-400°F to 800°F (-240°C to 425°C)
Alloy 600	Recommended for High Temperature Applications With Generally Corrosive Media	-205°F to 1200°F (-130°C to 650°C)
Titanium	Resistant To Many Natural Environments Such as Sea Water, Body Fluids and Salt Solutions	-320°F to 600°F (-195°C to 315°C)

Carpenter 20 is a trademark of Carpenter Technology Corporation. Monel 400 is a trademark of International Nickel.

1 For operating temperatures above 800°F(425°C), consideration should be given to media. 300 Series Stainless Steels are susceptible to carbide precipitation which may lead to intergranular corrosion at elevated temperatures.

2 Consideration should be given to maximum temperature ratings if fittings and/or tubing are coated or plated.

All temperature ratings based on maximum temperatures per ASME/ANSI B31.3 Chemical Plant And Refinery Piping Code, 1999 Edition.

The information listed in Table 1 is general in scope. For specific applications, please contact Parker's Instrumentation Connectors Division, Product Engineering Department (256) 881-2040.

Gas Service

Special care must be taken when selecting tubing for gas service. In order to achieve a gas-tight seal, ferrules in instrument fittings must seal any surface imperfections. This is accomplished by the ferrules penetrating the surface of the tubing. Penetration can only be achieved if the tubing provides radial resistance and if the tubing material is softer than the ferrules.

Thick walled tubing helps to provide resistance. Tables 2-7 indicate the minimum acceptable wall thickness for various materials in gas service. The ratings in white indicate combination of diameter and wall thickness which are suitable for gas service.

Acceptable tubing hardness for general application is listed in Table 9. These values are the maximum allowed by ASTM. For gas service, better results can be obtained by using tubing well below this maximum hardness. For example, a desirable hardness of 80 Rb is suitable for stainless steel. The maximum allowed by ASTM is 90 Rb.

System Pressure

The system operating pressure is another important factor in determining the type, and more importantly, the size of tubing to be used. In general, high pressure installations require strong materials such as steel or stainless steel. Heavy walled softer tubing such as copper may be used if chemical compatibility exists with the media. However, the higher strength of steel or stainless steel permits the use of thinner tubes without reducing the ultimate rating of the system. In any event, tube fitting assemblies should never be pressurized beyond the recommended working pressure.

The following tables (2-7) list by material the maximum suggested working pressure of various tubing sizes. Acceptable tubing diameters and wall thicknesses are those for which a rating is listed. Combinations, which do not have a pressure rating, are not recommended for use with instrument fittings.

MAXIMUM ALLOWABLE WORKING PRESSURE TABLES

Table 2 — 316 or 304 STAINLESS STEEL (Seamless)

Tube O.D. Size	WALL THICKNESS															
	.010	.012	.014	.016	.020	.028	.035	.049	.065	.083	.095	.109	.120	.134	.156	.188
1/16	5600	6900	8200	9500	12100	16800										
1/8						8600	10900									
3/16						5500	7000	10300								
1/4						4000	5100	7500	10300							
5/16							4100	5900	8100							
3/8							3300	4800	6600							
1/2							2500	3500	4800	6300						
5/8								3000	4000	5200	6100					
3/4								2400	3300	4300	5000	5800				
7/8								2100	2800	3600	4200	4900				
1									2400	3200	3700	4200	4700			
1-1/4										2500	2900	3300	3700	4100	4900	
1-1/2											2400	2700	3000	3400	4000	4500
2												2000	2200	2500	2900	3200

Table 3 — 316 or 304 STAINLESS STEEL (Welded)

Tube O.D. Size	WALL THICKNESS															
	.010	.012	.014	.016	.020	.028	.035	.049	.065	.083	.095	.109	.120	.134	.156	.188
1/16	4800	5900	7000	8100	10300	14300										
1/8						7300	9300									
3/16						4700	6000	8700								
1/4						3400	4400	6400	8700							
5/16							3400	5000	6900							
3/8							2800	4100	5600							
1/2							2100	3000	4100	5300						
5/8								2500	3400	4500	5200					
3/4								2100	2800	3700	4200	4900				
7/8								1800	2400	3100	3600	4200				
1									2100	2700	3100	3600	4000			
1-1/4										2100	2400	2800	3100	3500	4200	
1-1/2											2000	2300	2600	2900	3400	4200
2												1700	1900	2100	2500	3000

Table 4 — CARBON STEEL (Seamless)

Tube O.D. Size	WALL THICKNESS .028	.035	.049	.065	.083	.095	.109	.120	.134	.148	.165	.180
1/8	8100	10300										
3/16	5200	6700	9700									
1/4	3800	4900	7100	9700								
5/16		3800	5500	7700								
3/8		3100	4500	6200								
1/2		2300	3300	4500	6000							
5/8		1800	2600	3500	4600	5400						
3/4			2200	2900	3800	4400	5100					
7/8			1800	2500	3200	3700	4300					
1			1600	2100	2800	3200	3700	4100				
1-1/4				1700	2200	2500	2900	3200	3700	4100	4600	5100

Table 5 — COPPER (Seamless)

Tube O.D. Size	WALL THICKNESS .010	.020	.028	.035	.049	.065	.083	.095	.109	.120
1/16	1700	3800	5400	6000						
1/8			2800	3600						
3/16			1800	2300	3500					
1/4				1700	2600	3500				
5/16				1300	2000	2800				
3/8				1100	1600	2300				
1/2				800	1200	1600	2200			
5/8					900	1300	1700	2000		
3/4					800	1000	1400	1600	1900	
7/8					600	900	1100	1300	1600	
1					600	800	1000	1200	1400	1500

Table 6 — ALUMINUM (Seamless)

Tube O.D. Size	WALL THICKNESS .035	.049	.065	.083	.095
1/8	8700				
3/16	5600	8100			
1/4	4100	5900			
15/16	3200	4600			
3/8	2600	3800			
1/2	1900	2800	3800		
5/8	1500	2200	2900		
3/4		1800	2400	3200	
7/8		1500	2100	2700	
1		1300	1800	2300	2700

Table 7 — MONEL 400 (Seamless)

Tube O.D. Size	WALL THICKNESS .010	.020	.028	.035	.049	.065	.083	.095	.109	.120
1/16	5900	12600	17000							
1/8			8600	11000						
3/16			5500	7100	10300					
1/4			4000	5100	7500	10300				
5/16				4000	5900	8100				
3/8				3300	4800	6600				
1/2				2300	3300	4500	5900			
5/8					2800	3700	4900	5700		
3/4					2300	3100	4000	4600	5400	
1						2300	2900	3400	3900	4400

Note:
- All working pressures have been calculated using the maximum allowable stress levels in accordance with ANSI B31.3, Chemical Plant and Petroleum Refinery Piping Code, 1999 Edition.
- All calculations are based on maximum outside diameter and minimum wall thickness.
- All working pressures are ambient (72°F or 22°C) temperature.

System Temperature

Operating temperature is another factor in determining the proper tubing material. Copper and aluminum tubing are suitable for low temperature media. Stainless steel and carbon steel tubing are suitable for higher temperature media. Special alloys such as Alloy 600 are recommended for extremely high temperatures (see Table 1). Table 8 lists derating factors which should be applied to the working pressures listed in Tables 2-7 for elevated temperature conditions. Simply locate the correct factor in Table 8 and multiply this by the appropriate value in Tables 2-7 for elevated temperature working pressure.

Table 8 — Temperature Derating Factors

Temperature °F	(°C)	Copper	Aluminum	316 SS	304 SS	Steel	Monel 400
100	(38)	1.00	1.00	1.00	1.00	1.00	1.00
200	(93)	.80	1.00	1.00	1.00	.96	.88
300	(149)	.78	.81	1.00	1.00	.90	.82
400	(204)	.50	.40	.97	.94	.86	.79
500	(260)			.90	.88	.82	.79
600	(316)			.85	.82	.77	.79
700	(371)			.82	.80	.73	.79
800	(427)			.80	.76	.59	.76
900	(486)			.78	.73		
1000	(538)			.77	.69		
1100	(593)			.62	.49		
1200	(649)			.37	.30		

EXAMPLE: 1/2 inch x .49 wall seamless 316 stainless steel tubing has a working pressure of 3500psi @ room temperature. If the system were to operate @ 800°F (425°C), a factor of 80% or (.80) would apply (see Table 8 above) and the "at temperature" system pressure would be 3500 PSI x .80 = 2800 PSI.

Tubing Ordering Suggestions

Tubing for use with Parker instrument fittings must be carefully ordered to insure adequate quality for good performance. Each purchase order must specify the material nominal outside diameter, and wall thickness. Ordering to ASTM specifications insures that the tubing will be dimensionally, physically, and chemically within strict limits. Also, more stringent requirements may be added by the user. All tubing should be ordered free of scratches and suitable for bending.

A purchase order meeting the above criteria would read as follows:

> "1/2 x .049 316 stainless steel, seamless, or welded and redrawn per ASTM A-249. Fully annealed, 80 Rb or less. Must be suitable for bending; surface scratches, and imperfections (incomplete weld seams) are not permissible."

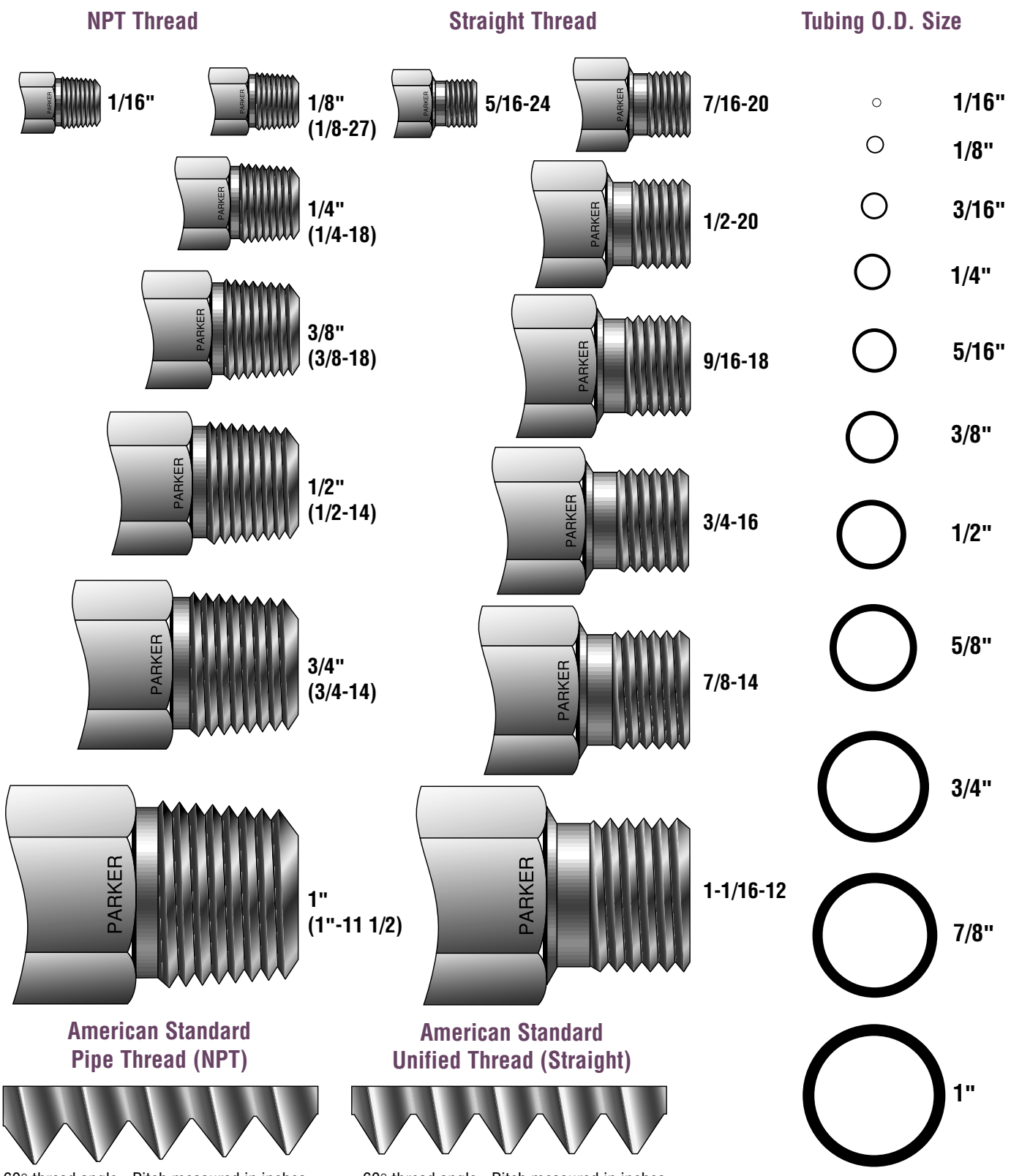
Table 9 lists specific ordering information for each material.

Table 9

Material	Type	ASTM Tubing Spec.	Condition	Max. Recommended Hardness
Stainless Steel	304, 316, 316L	ASTM-A-269, A-249, A-213, A632	Fully Annealed	90 Rb
Copper	K or L	ASTM-B75 B68, B88 (K or L)*	Soft Annealed Temper 0	60 Max. Rockwell 15T
Carbon Steel	1010	SAE-J524b, J525b ASTM-A-179	Fully Annealed	72 Rb
Aluminum	Alloy 6061	ASTM B-210	T6 Temper	56 Rb
Monel™	400	ASTM B-165	Fully Annealed	75 Rb
Alloy C-276	C-276	ASTM-B-622, B-626	Fully Annealed	90 Rb
Alloy 600	600	ASTM B-167	Fully Annealed	90 Rb
Carpenter 20™	20CB-3	ASTM B-468	Fully Annealed	90 Rb
Titanium	Commercially Pure Grade 2	ASTM B-338	Fully Annealed	99 Rb 200 Brinell Typical

* Note: B88 Copper Tube to be ordered non-engraved

Thread and Tube End Size Chart (U.S.A.)



American Standard Pipe Thread (NPT)

60° thread angle • Pitch measured in inches
• Truncation of root and crest are flat
• Taper angle 1°47'

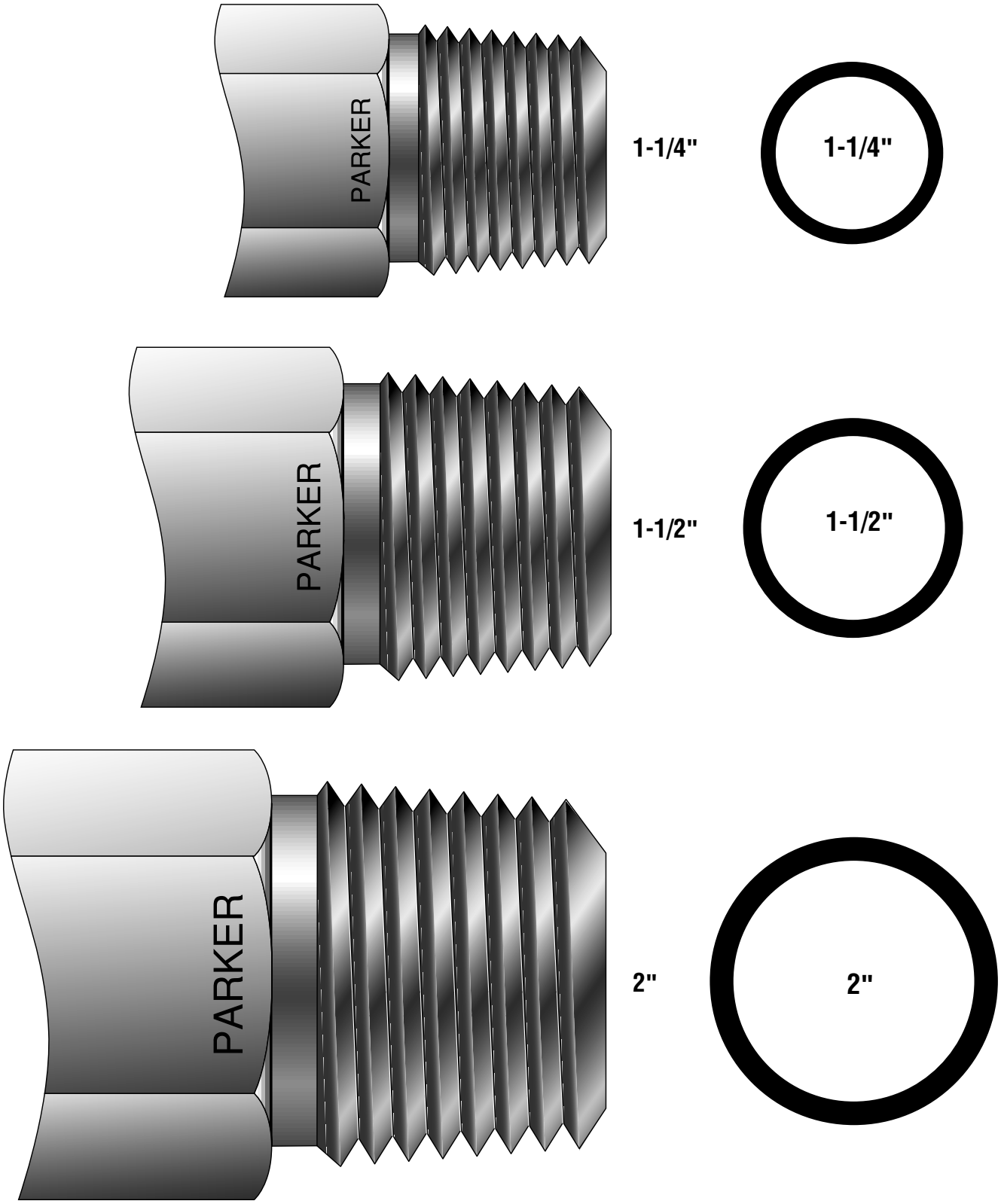
American Standard Unified Thread (Straight)

60° thread angle • Pitch measured in inches
• Truncation of root and crest are flat
• Diameter measured in inches

Pipe and Tube End Size Chart (U.S.A.)

NPT Thread

Tubing O.D. Size



Thread and Tube End Size Chart (International)

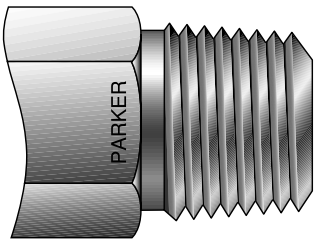
BSPT
Tapered Thread

1/8"
(1/8-28)

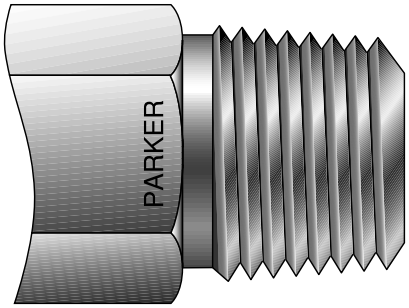
1/4"
(1/4-19)

3/8"
(3/8-19)

1/2"
(1/2-14)



3/4"
(3/4-14)

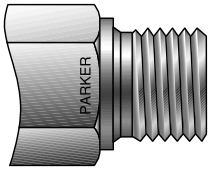


1"
(1"-11)

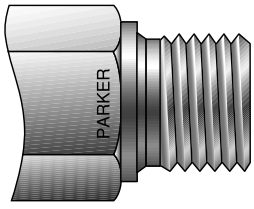
BSPP
Parallel Thread

1/8"
(1/8-28)

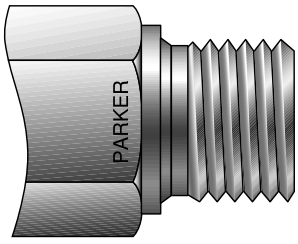
1/4"
(1/4-19)



3/8"
(3/8-19)



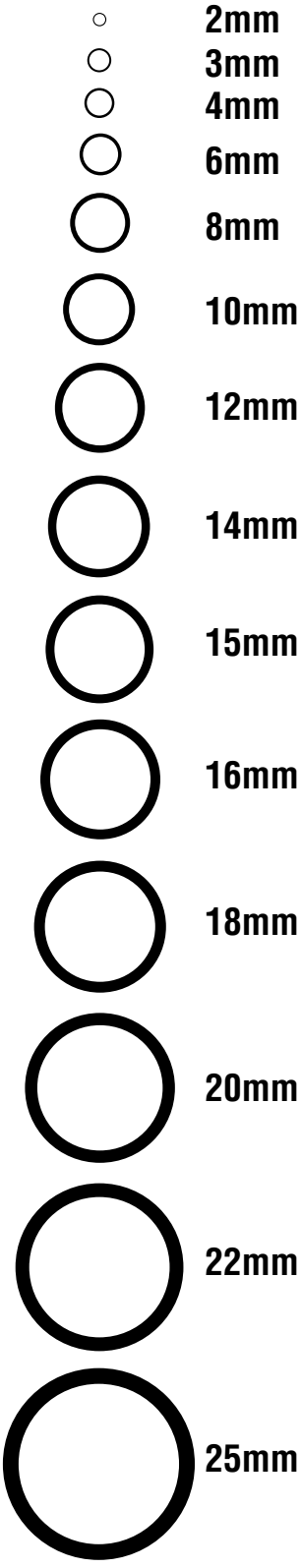
1/2"
(1/2-14)



3/4"
(3/4-14)

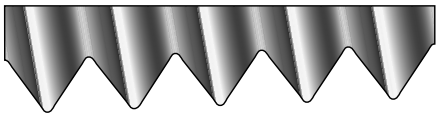
1"
(1"-11)

Tubing O.D. Size



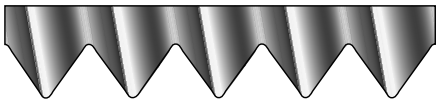
International Organization for Standards

(ISO 7/1)



55° thread angle • Pitch measured in inches
• Truncation of root and crest are round
• Taper angle 1°47'

(ISO 228/1)



55° thread angle • Pitch measured in inches
• Truncation of root and crest are round
• Diameter measured in inches

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and not withstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

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Parker Hannifin Corporation

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