Fittings and Tubing

Ultra High Pressure Cone & Thread

Pressures to 150,000 psi (10350 bar)
Includes Check Valves & Couplings

Principle of Operation:

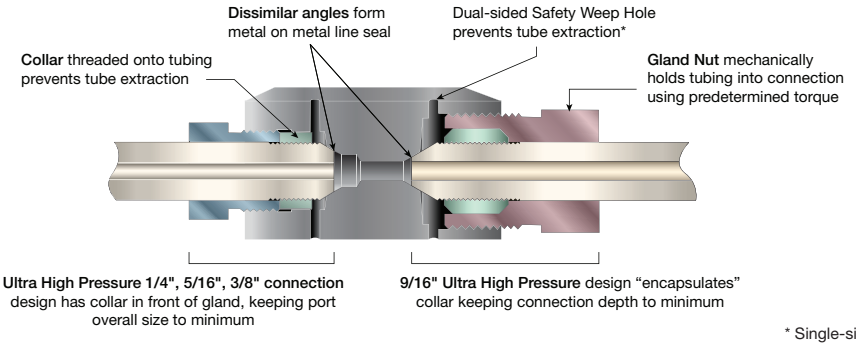
Parker Autoclave Engineers High & Ultra High Pressure connections are a refinement of the original cone & thread joint which has been the standard connection in high pressure technology since its development by an agency of the US Government over 90 years ago. This design set precedence of quality and reliability found in all Parker Autoclave Engineers products to this day.

The pressure handling capabilities of this connection design have been applied successfully to control pressures up to 150,000 psi. All-metal sealing and working temperatures from 0° to 600°F (-18° to 315°C), along with a variety of different material options make this connection one of the most versatile ever. Fittings and tubing found in this section are designed using ASME B31.3 Chapter IX standards to be compatible with all of our Ultra High Pressure Valve and Fitting configurations.

Ultra High Pressure Fittings and Tubing Features:

- Utilize "C100 and C150" Style Ultra High Pressure Coned-and-Threaded connections (see Tools & Installation for port dimensions)
- Available sizes are 1/4, 3/8, 5/16, and 9/16 inch nominal outside diameter tubing
- Fittings manufactured using UNS S31600, 316 Stainless Steel or UNS S15500 15-5PH (as required) stainless steel material, cold worked to Parker Autoclave proprietary standards.
- Operating Temperatures from 0°F to 600°F (-18° to 315°C)
- Tubing Material for 100,000 psi service is HP160 SS (Autofrettage is standard), 150,000 psi Tubing material is UNS S31600/S31603 Cold Worked 316/316L Stainless Steel
- Anti-vibration connection components available, see pages 11 & 12

All Parker Autoclave Engineers fittings are marked with manufacturers name, part number, material, heat code and maximum pressure for complete traceability.



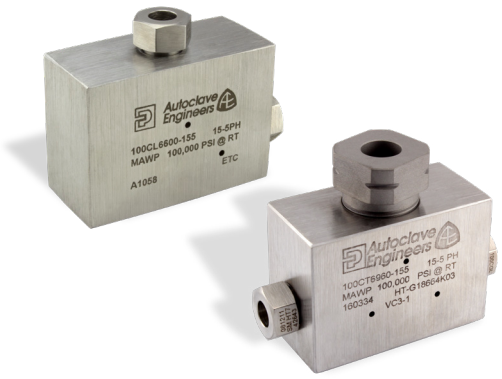
* Single-sided on Round or Hex parts

Parker Autoclave Engineers

ENGINEERING YOUR SUCCESS.

Fittings

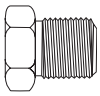
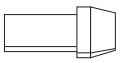
Ultra High Pressure Tubing - Pressures to 150,000 psi (10350 bar)

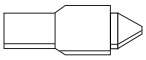


Parker Autoclave Engineers Ultra High Pressure Cone & Thread Fittings, Couplings, Check Valves and 100VM and 150V Valves utilize the F Style (with C100 or C150 designations) Cone & Thread Connection Detail (see Tools & Installation brochure for dimensions).

Ultra High Pressure Connection Components:

All valves and fittings are supplied complete with appropriate gland and tubing collar. To order these components separately, use part numbers listed below. When using plug, collar is not required. Tubing Pressure Caps can be found in Adapter brochure.

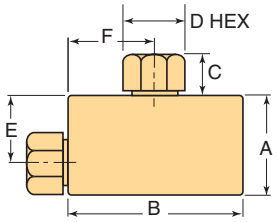
Connection Type	Gland	Collar	Plug	Connection Components (industry Standard)
				
F250C100 (1/4" 100K) F375C100 (3/8" 100K) F312C150 (5/16" 150K)	100CGL40 100CGL60 CGL50	100CCL40 100CCL60 CCL50	100CP40 100CP60 CP50	The F250C100 & F375C100 connections are for use in valves and fittings up to 100,000 psi (6900 bar). The F312C150 5/16" connection is used in both 100,000 psi and 150,000 psi (10350 bar) fittings. This design has the collar out in from of the gland nut similar to Medium Pressure Fittings but with longer threads.

				
F562C100 (9/16" 100K)	AGL90-155	ACL90-155	AP90-155	The F562C100 Connection is similar to te 9/16" High Pressure where the collar is surrounding by the gland nut but all materials used need to be made with 15-5PH material or similar strength.

Notes:
To ensure proper fit use Parker Autoclave Engineers tubing.
For gland nut hex sizes and torque values, see "Tools and Installation" brochure.
All Cone and Thread ports MUST utilize weep holes for safety.

Elbow

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)*	Orifice Size	Dimensions - inches (mm)						Block Thickness
					A	B	C	D Typical	E	F	
100CL4400	F250C100	1/4 (6.35)	100,000 (6900)	.094 (2.39)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10	1.38 (35.05)
100CL6600-155	F375C100	3/8 (9.53)	100,000 (6900)	.125 (3.18)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10	1.38 (35.05)
100CL9900-155AP	F562C100	9/16 (7.94)	100,000 (6900)	.188 (4.78)	.188 (4.78)	2.62 (66.55)	0.81 (20.57)	1.19 (30.23)	1.12 (28.45)	1.88 (47.75	1.50 (38.10)
CL5500	F312C150	5/16 (7.94)	150,000 (10350)	.094 (2.39)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10	1.38 (35.05)

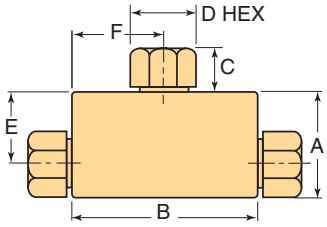


Note: Fittings such as 45° elbows, reducer elbows, and reducer 45° elbows are available upon request. For mounting hole option add suffix - **PM** to catalog number, consult factory for mounting hole dimensions.

*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Tee

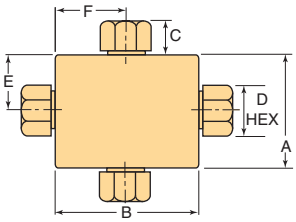
Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)*	Orifice Size	Dimensions - inches (mm)						Block Thickness
					A	B	C	D Typical	E	F	
100CT4440	F250C100	1/4 (6.35)	100,000 (6900)	.094 (2.39)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10)	1.38 (35.05)
100CT6660-155	F375C100	3/8 (9.53)	100,000 (6900)	.125 (3.18)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10)	1.38 (35.05)
100CT9990-155AP	F562C100	9/16 (7.94)	100,000 (6900)	.188 (4.78)	2.12 (53.85)	2.62 (66.55)	0.81 (20.57)	1.19 (30.23)	1.38 (35.05)	1.31 (33.27)	1.50 (38.10)
CT5550	F312C150	5/16 (7.94)	150,000 (10350)	.094 (2.39)	2.12 (53.85)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10	1.38 (35.05)



*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Cross

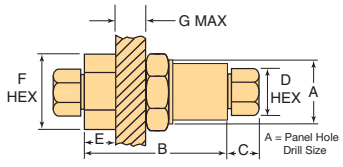
Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)*	Orifice Size	Dimensions - inches (mm)						Block Thickness
					A	B	C	D Typical	E	F	
100CX4444	F250C100	1/4 (6.35)	100,000 (6900)	.094 (2.39)	3.00 (76.20)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10)	1.38 (35.05)
100CX6666-155	F312C150	3/8 (9.53)	100,000 (6900)	.125 (3.18)	3.00 (76.20)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10)	1.38 (35.05)
100CX9999-155AP	F562C100	9/16 (7.94)	100,000 (6900)	.188 (4.78)	2.75 (69.85)	2.62 (66.55)	0.81 (20.57)	1.19 (30.23)	1.38 (35.05)	1.31 (33.27)	1.50 (38.10)
CX5555	F312C150	5/16 (7.94)	150,000 (10350)	.094 (2.39)	3.00 (76.20)	3.00 (76.20)	0.52 (13.21)	0.75 (19.05)	1.50 (38.10)	1.50 (38.10	1.38 (35.05)



*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Bulkhead Coupling

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)*	Orifice Size	Dimensions - inches (mm)						
					A	B	C	D Typical	E	F Hex	G Thickness
100BF44UU	F250C100	1/4 (6.35)	100,000 (6900)	.094 (2.39)	2.12 (53.85)	3.25 (82.55)	0.52 (13.21)	0.75 (19.05)	1.38 (35.05)	2.00 (50.80)	0.38 (9.65)
100BF66UU-155	F375C100	3/8 (9.53)	100,000 (6900)	.125 (3.18)	2.12 (53.85)	3.25 (82.55)	0.52 (13.21)	0.75 (19.05)	1.38 (35.05)	2.00 (50.80)	0.38 (9.65)
100BF99UU-155AP	F562C100	9/16 (7.94)	100,000 (6900)	.188 (4.78)	1.69 (42.93)	2.75 (69.85)	0.81 (20.57)	1.19 (31)	1.00 (25.40)	1.88 (47.75)	0.38 (9.65)
150BF55UU	F312C150	5/16 (7.94)	150,000 (10350)	.094 (2.39)	2.12 (53.85)	3.25 (82.55)	0.52 (13.21)	0.75 (19.05)	1.38 (35.05)	2.00 (50.80)	0.38 (9.65)

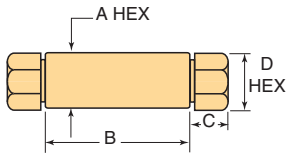


*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Panel Hole Tolerance : ± .031

Straight Coupling / Union Coupling (see assembly drawing below)

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)*	Orifice Size	Dimensions - inches (mm) A	B	C	D Typical	Coupling Type
100F44UU 100UF44UU	F250C100	1/4 (6.35)	100,000 (6900)	.094 (2.39)	1.12 (28.45)	2.62 (66.55)	0.52 (13.21)	0.75 (19.05)	Straight Union
100F66UU-155 100UF66UU-155	F375C100	3/8 (9.53)	100,000 (6900)	.125 (3.18)	1.12 (28.45)	2.62 (66.55)	0.52 (13.21)	0.75 (19.05)	Straight Union
100F99UU-155AP 100UF99UU-155AP	F562C100	9/16 (7.94)	100,000 (6900)	.188 (4.78)	1.38 (35.05)	2.19 (55.63)	0.81 (20.57)	1.19 (30.23)	Straight Union
150F55UU 150UF55UU	F312C150	5/16 (7.94)	150,000 (10350)	.094 (2.39)	1.12 (28.45)	2.62 (66.55)	0.52 (13.21)	0.75 (19.05)	Straight Union



Note: Union Couplings are designed with a removable seat insert allowing disassembly and tubing removal without the necessity of loosening other items in a line.

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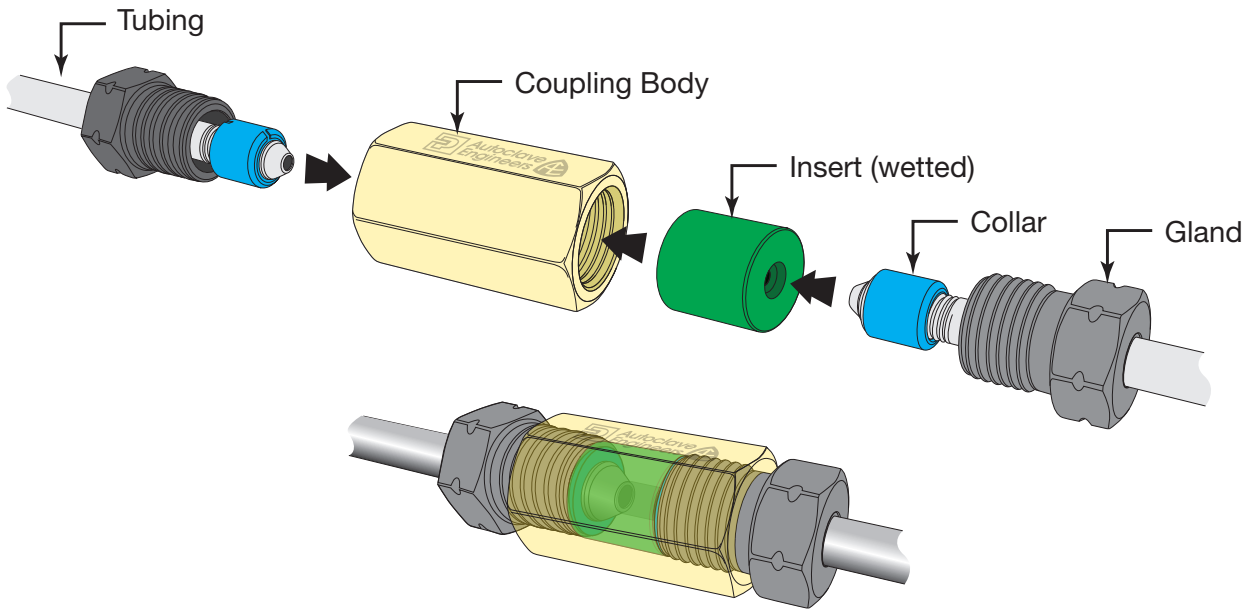
Union Coupling Assembly



Assembled Union Coupling

Union vs. Straight Coupling Comparison

In much the same as with a traditional Pipe Union, the PAE Union Coupling is used to easily disassemble tubing runs when valves or fittings need to be replaced after original installation. The Body and Insert are two different pieces in the same assembly. The body can slide down tubing leaving only the insert and the tubing tips engaged. Then with only minimal tube shift, the insert drops out allowing the tubing to be removed avoiding the need to disassemble multiple tubing sections from closest elbow.

Note: When Special Materials are requested, the only material that is changed is the Insert (wetted).

Tubing

Ultra High Pressure Tubing - Pressures to 150,000 psi (10350 bar)

Parker Autoclave Engineers offers a selection of austenitic cold drawn stainless steel tubing designed to match the performance standards of Parker Autoclave valves and fittings. Parker Autoclave ultra high pressure tubing is manufactured of 316/316L (UNS S31600/S31603) or HP160 (100Ksi only) specifically for high pressure applications requiring both strength and corrosion resistance. The tubing is furnished in random lengths between 20 feet (6 meters) and 26.5 feet (8.0 meters). The average is 24 feet (7.3 meters). Our HP160 tubing was designed by Parker Autoclave Engineers specifically for High Cyclic use such as Waterjet cutting machines. Special longer lengths are available. Consult factory.

Inspection and Testing:

Parker Autoclave Engineer's ultra high pressure tubing is inspected to assure freedom from seams, laps, fissures or other flaws, as well as carburization or intergranular carbide precipitation. The outside and inside diameters of the tubing are controlled within close tolerances including runout. Sample pieces of tubing for each lot are tested to confirm mechanical properties. Hydrostatic testing is also performed on a statistical basis and is conducted at the working pressure of the tube. Parker Autoclave will perform 100% hydrostatic testing up to 1.5 times working pressure at additional cost if desired.

Special Material:

In addition to the type 316/316L and HP160 High Cycle tubing listed in this section, Parker Autoclave Engineers has a limited stock of hard-to-obtain non-standard lengths of exotic material tubing.

Temperature Capability:

Ultra High Pressure Tubing is capable of temperatures from -0° to 600°F. Please reference Technical Brochure for material, temperature, and bending data. Consult Factory for assistance with tubing applications below 0°F or above 600°F (-18° or 315°C)

Tubing Tolerance:

Nominal Tubing Size inches (mm)	Tolerance/Outside Diameter inches (mm)
1/4 (6.35)	.248/.243 (6.30/6.17)
3/8 (9.53)	.370/.365 (9.40/9.27)
9/16 (14.29)	.557/.552 (14.15/14.02)
5/16 (7.94)	.310/.306 (7.87/7.77)

Note:
Standard Tubing is manufactured in accordance with ASME B31.3 Chapter IX standards using UNS S31600/S31603, 316/316L or HP160 Stainless material, cold worked to Parker Autoclave proprietary standards.

Tubing outside diameter dimensions do not meet standard commercial tubing tolerances. Tubing outside dimensions are specifically chosen to meet tube threading die requirements.

Parker Autoclave Engineers components and tubing are designed as a "complete system" for safety and our fittings will not be compatible with standard "commercial" tubing.

Autofrettage for High Pressure High Cycle (HPHC) applications:

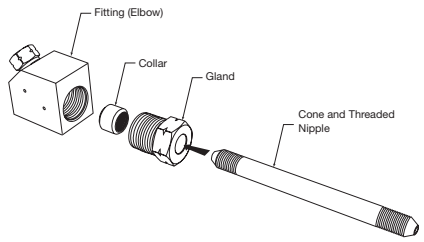
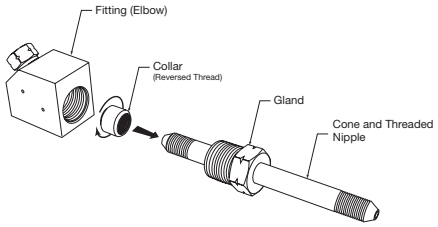
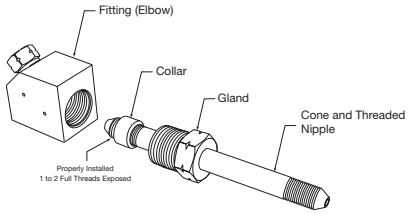
If high cycle fatigue life is a concern, Parker Autoclave Engineers can supply tubing which has been autofrettaged for improved fatigue resistance. For internally pressurized tubing, **autofrettage** is a method by which the inner wall of the tube is precompressed to reduce the tube operating bore stresses, thereby increasing cycle life and increasing the life span of the tubing. (every application is different and while life span increases of 40% have been reported, we cannot guarantee any specific increase in tubing life.)

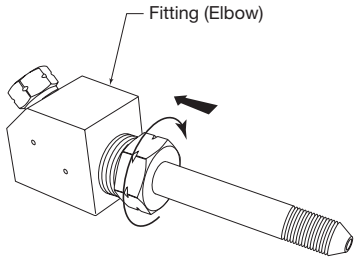
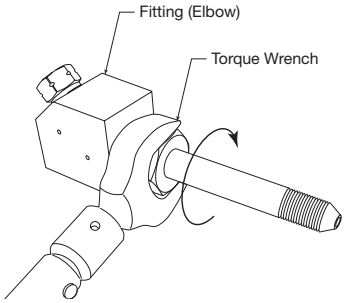
Ultra High Pressure Tubing Details:

Catalog Number	Tube Material	Fits Connection Type	Tube Size inches (mm)			Flow Area in^2 (mm^2)	Working Pressure psi (bar)*			
			Outside Diameter	Inside Diameter	Wall Thickness		-100 to 100°F (-73 to 38°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)
MS15-202	HP160	F250C100	1/4 (6.35)	0.083 (2.11)	0.083 (2.11)	0.005 (3.23)	100,000 (6900)	83,000 (5727)	72,000 (4965)	65,000 (4480)
MS15-201	HP160	F375C100	3/8 (9.63)	0.125 (3.18)	0.125 (3.18)	0.012 (7.74)	100,000 (6900)	83,000 (5727)	72,000 (4965)	65,000 (4480)
MS15-210	HP160	F562C100	9/16 (14.29)	0.188 (4.78)	0.187 (4.75)	0.028 (18.06)	100,000 (6900)	83,000 (5727)	72,000 (4965)	65,000 (4480)
MS15-082	316SS	F312C150	5/16 (7.94)	0.062 (1.57)	.125 (3.18)	.003 (1.94)	150,000 (10350)	150,000 (10350)	144,400 (9956)	136,350 (9401)

Note:
100,000 psi HP160 tubing is Autofrettaged as standard. (see Technical section: Pressure Cycling for explanation of "Autofrettage".
*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower.
All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Ultra High Pressure Connection: Step by Step Assembly Instructions

Step 1	Step 2	Step 3
		
Insert Coned and Threaded Nipple through Gland (Typical Tee Fitting Assembly consisting of Fitting Body, Collar, Gland, and Coned and Threaded Nipple or Tube End.)	Thread Collar turning (Reverse Threaded to prevent rotation during torque process) onto Coned and Threaded Nipple end.	For proper Collar placement, thread Collar onto Nipple leaving 1 to 2 full threads exposed on Fitting side of Collar. Lubricate Gland Threads and Collar Contact Area with anti-seize compound and tube tip with process compatible lubricant (do not use metal-flake type)

Step 4	Step 5	Ultra High Pressure Gland Torque
		For 316/316L SS, and HP160 Tubing and Adapters
Insert Tube/Gland assembly into Fitting body, turning clockwise approximately 4-5 threads (if unable to turn full distance by hand, look for misalignment issues with tubing and correct for proper seal).	Use Torque Wrench to properly set (see chart in next frame) Cone & Thread Connections. (Available with wrench adapters in Tools and Installation brochure)	

Fitting Size	Required Torque ft-lb (N.m)
1/4" UHP	50 (68)
3/8" UHP	105 (143)
9/16" UHP	125 (170)
5/16" UHP	70 (95)

For torques or optional materials (lower pressures), see Tools and Installation Catalog 02-0149SE

*9/16" Connection will have collar inside Gland Nut but assembles using same process as shown.

Coned-and-Threaded Nipples

Ultra High Pressure - Pressures to 150,000 psi (10350 bar)

For rapid system make-up, Parker Autoclave Engineers supplies pre-cut, coned-and-threaded nipples in various sizes and lengths for Parker Autoclave Engineers medium pressure valves and fittings.

Special Lengths:

In addition to the standard lengths listed in the table below, nipples are available in any custom length. Consult factory.

Material:**

Catalog numbers in table with "**-HP**" suffix refer to HP160 material (100,000 psi max) and with "**-316**" suffix refer to 316/316L Stainless Steel UNS S31600/S31603 cold worked material.

Nipple Details:

Catalog Number *(316 Stainless Steel)*				
Tube Size inches (mm)	Fits Connection Type			
	F312C150	**F312C150**	**F562C**	**F312C150**
Outside Diameter	1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	5/16 (7.94)
Inside Diameter	.083 (2.11)	.125 (3.18)	.188 (4.78)	.062 (1.57)
Working Pressure at 100°F (38°C) psi (bar)*	100,000 (6900)	100,000 (6900)	100,000 (6900))	150,000 (10350)
Nipple Length inches (mm)				
4.00" (101.60)	100CN4404-HP	100CN6604-HP	100CN9904-HP	CN5504-316
6.00" (152.40)	100CN4406-HP	100CN6606-HP	100CN9906-HP	CN5506-316
8.00" (203.20)	100CN4408-HP	100CN6608-HP	100CN9908-HP	CN5508-316
10.00" (254.00)	100CN44010-HP	100CN66010-HP	100CN99010-HP	CN55010-316
12.00" (304.80)	100CN44012-HP	100CN66012-HP	100CN99012-HP	CN55012-316
14.00" (355.60)	100CN44014-HP	100CN66014-HP	100CN99014-HP	CN55014-316
16.00" (406.40)	100CN44016-HP	100CN66016-HP	100CN99016-HP	CN55016-316
18.00" (457.20)	100CN44018-HP	100CN66018-HP	100CN99018-HP	CN55018-316
20.00" (508.00)	100CN44020-HP	100CN66020-HP	100CN99020-HP	CN55020-316
22.00" (558.80)	100CN44022-HP	100CN66022-HP	100CN99022-HP	CN55022-316
24.00" (609.60)	100CN44024-HP	100CN66024-HP	100CN99024-HP	CN55024-316

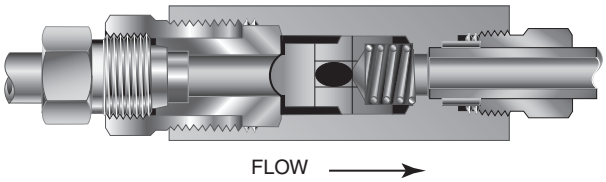
Notes:
See High Pressure Tubing section of this brochure or Technical Brochure for pressure ratings at various temperatures.

* Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower.

All dimensions for reference only and subject to change. For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

Check Valves

Ultra High Pressure - Pressures to 150,000 psi (10350 bar)



CB Series Ball Check Valve

Ordering part numbers can be found on page 11

Prevent reverse flow **where leak-tight shut-off is not mandatory**. When differential drops below cracking pressure, valve closes. With all-metal components, valve can be used up to 600°F (315°C). See Technical Information section for connection temperature limitations. (**Not for use as relief valve.**)

Ball and poppet assure positive, in-line seating without "chatter". Poppet is designed essentially for axial flow with minimum pressure drop.

Cracking Pressure*: 20 psi (1.38 bar) +/- 30% No optional cracking pressures available.

Temperature Range: With All-Metal components, valve can be used to 600°F (315°C). Minimum standard operating temperature is 0°F (-18°C).

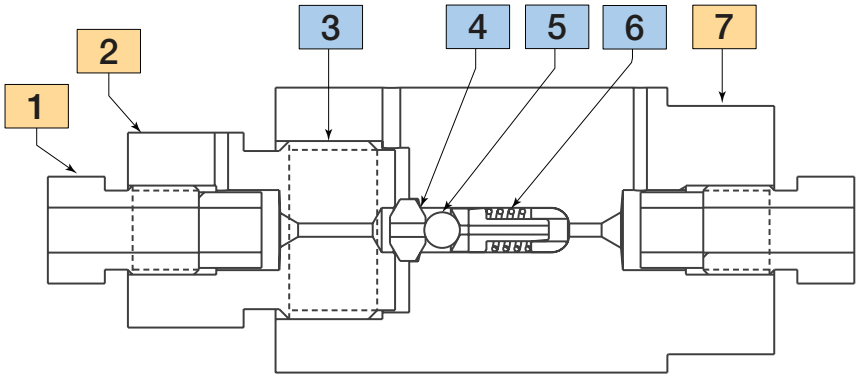
Installation:
Vertical or Horizontal as required. Flow Direction arrow on valve body.

NOTE: For optional material see Technical Brochure. Special material check valves are normally supplied with four flats in place of standard hex.

Material of Construction:

Item #	Description	Material
1	Gland	316 SS
2	Gland Nut	15-5PH
3	Cover	15-5PH
4	Cone Ring	316 SS
5	Ball	Tungsten Carbide
6	Spring	302 SS
7	Check Valve Body	15-5PH

Typical spare parts found in Repair Kits



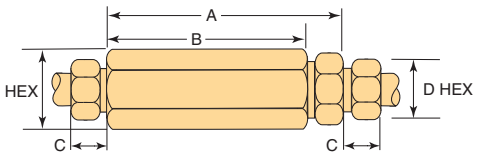
Basic Ball Check Valve Repair Kits:

Check Valves are easily repaired. Add "**R**" to front of valve catalog number for proper repair kit (example: RCB9901) See "Cover Torque" on page 12 for re-assembly.

Include any catalog number suffix marked on original part when ordering repair kit.

Ball Check Valves

Catalog Number	Fits Connection Type	Pressure Rating psi (bar)**	Orifice inches (mm)	Rated Cv	Dimensions - inches (mm)				
					A	B	C	Body Hex	D
100CB4401*	F250C100	100,000 (6900)	.094 (2.39)	.11	4.53 (114.7)	3.50 (88.90)	0.52 (13.21)	1.75† (44.50)	.75 (19.05)
100CB6601*	F375C100	100,000 (6900)	.094 (2.39)	.11	4.53 (114.7)	3.50 (88.90)	0.52 (13.21)	1.75† (44.50)	.75 (19.05)
100CB9901-155AP*	F562C100	100,000 (6900)	.187 (4.75)	.63	4.62 (117.35)	3.38 (85.85)	0.81 (20.57)	1.12 (28.45)	1.50 (38.10)
100CB5501*	F312C150	100,000 (6900)	.094 (2.39)	.11	4.53 (114.7)	3.50 (88.90)	0.52 (13.21)	1.75† (44.50)	.75 (19.05)
CB5501	F312C150	150,000 (10350)	.094 (2.39)	.11	5.50 (137.7)	4.50 (114.3)	0.52 (13.21)	1.75 (44.50)	.75 (19.05)



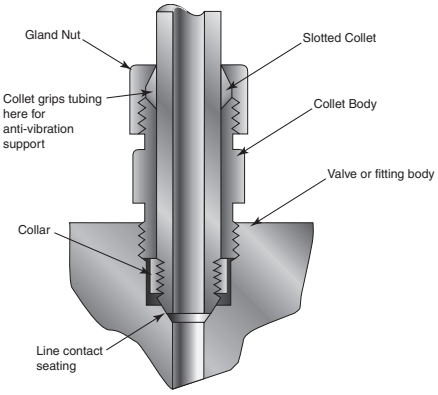
Check Valves

Note:
* Body material is 15-5PH
† Distance across flats

** Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. For prompt service, Parker Autoclave stocks select products. Consult your local representative.

Anti-Vibration Collet Gland Assembly

Series KCBGL Ultra High Pressure - Pressure to 150,000 psi (10342 bar)



Series KCBGL
Pressures to 150,000 psi (10350 bar)

Series KCBGL: Sizes to 1/4" (6.35 mm), 5/16" (7.94 mm), 3/8" (9.53 mm)

For extreme conditions of vibration and/or shock in tubing systems, such as locating a valve or fitting on an unsupported line near a compressor, Autoclave coned-and-threaded connections are offered with the Anti-Vibration Collet Gland Assemblies. A less complex and more economical design than other vibration-resistant connections, the collet gland assembly utilizes the same coned-and-threaded features of Autoclave high pressure connections.

Series KCBGL extends the gland nut to provide room for the tapered, slotted collet and collet nut. The design provides a slight difference in angles between the collet and the corresponding taper of the gland nut. As the nut is tightened, it acts to wedge the tapered end of the collet into a gripping engagement with the tubing.

Material

316 SS with bonded dry film molybdenum disulfide to help prevent galling. Additional thread lubricant not needed.

Note:

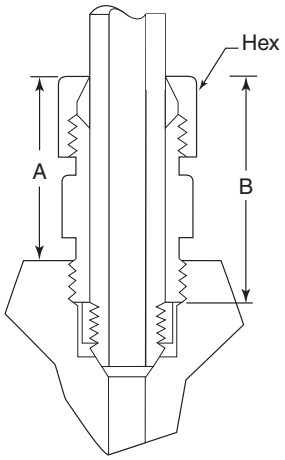
1) To order valve and fitting components with anti-vibration assemblies add **-K** to catalog numbers.
2) Special material assemblies are normally supplied with four flats in place of standard hex.
3) See Tools and Installation Catalog for Installation Instructions including Torque Specifcations.

Anti-Vibration Collet Gland Assembly Details:

Catalog Number	Part	Outside Diameter Tubing Size Inches (mm)	Dimensions: Inches (mm)		
			A	B	Hex
KCBGL40-316MC†	Complete Assembly	.250 (6.35)	1.06 (26.92)	1.65 (41.91)	5/8"
KCBGL50-316MC†	Complete Assembly	.312 (7.94)	1.38 (34.92)	1.88 (47.62)	3/4"
KCBGL60-316MC†	Complete Assembly	.375 (9.53)	1.39 (35.30)	1.84 (46.73)	13/16"

Note: KCBGL anti-vibes are not for use with 9/16" 100,000 psi fittings and valves

All dimensions for reference only and subject to change.
For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

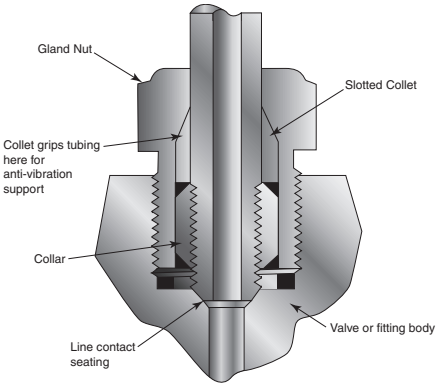


Series KCBGL
Pressures to 150,000 psi (10350 bar)

Standard Parker Autocalve Engineers collar not included in complete assembly if ordered separately.

Anti-Vibration Collet Gland Assembly

Series KCGL Ultra High Pressure - Pressures to 100,000 psi (6895 bar)



Series KCGL
100,000 psi (6900 bar)

Note:

1) To order valve and fitting components with anti-vibration assemblies add **-K** to catalog numbers.

2) Special material assemblies are normally supplied with four flats in place of standard hex.

3) See Tools and Installation Catalog for Installation Instructions including Torque Specifcations.

Series KCGL (9/16")

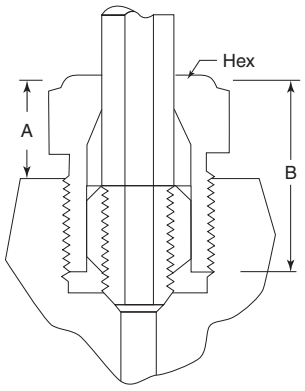
For extreme conditions of vibration and/or shock in tubing systems, such as locating valve or fitting on an unsupported line near a compressor, Parker Autoclave Engineers coned-and-threaded connections are offered with the Anti-Vibration Collet Gland Assemblies. Completely interchangeable with standard Parker Autoclave Engineers high pressure connections, the Collet Gland Assemblies provide equally effective pressure handling capability.

In standard connection systems, the bending stresses on the threaded area of the tubing imposed by excessive vibration or movement may cause premature fatigue failure of the tubing at the back of the thread. By moving the stress concentration back to the unthreaded part of the tubing and providing a wedge-type gripping action, the Parker Autoclave Engineers anti-vibration collet gland assembly strengthens the entire structure. With stress concentration reduced and overall stress level maintained well below the endurance limit of the material, the result is extended vibrational fatigue life.

A less complex and more economical design than other vibration-resistant connections, the Collet Gland Assembly utilizes the same coned-and-threaded features of Parker Autoclave Engineers high pressure connections. In Series KCGL the gland nut is recessed to accommodate a tapered, slotted collet that grips the tubing at a point behind the threaded area of the tubing.The design provides a slight difference in angles between the collet and the corresponding taper of the gland nut. As the nut is tightened, it acts to wedge the tapered end of the collet into a gripping engagement with the tubing and, at the same time, forces the collar and tubing assembly into line contact with the connection seat.

Anti-Vibration Collet Gland Assembly Details:

Catalog Number	Part	Outside Diameter Tubing Size Inches (mm)	Dimensions: Inches (mm)		
			A	B	Hex
KCGL90-155	Complete Assembly	9/16 (14.29)	1.00 (25.40)	1.50 (38.10)	1-3/16 (30)



Series KCGL
100,000 psi (6895 bar)

Standard Parker Autocalve Engineers collar not included in Antivibration Gland assembly (chart) if AV Gland ordered separately.

Always use back-up wrench on collet body when tightening collet nut to prevent over-torquing connection.

Note: KCGL Antivibe Gland Assemblies are not for use with 5/16" 150,000 psi or 1/4", 3/8" 100,000 psi fittings or valve
All dimensions for reference only and subject to change.
For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

NOTES:

NOTES:

High Pressure
Valves • Fittings • Tubing
to 150,000 psi.

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Instrumentation

Air Driven, High Flow,
High Pressure Liquid Pumps

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 **CLIMATE CONTROL**	Agriculture Food, Beverage and Dairy Precision Cooling Transportation	Air Conditioning Life Sciences & Medical Processing	Co2 Controls Electronic Controllers Filter Driers Hand Shut-Off Valves Hose & Fittings	Pressure Regulating Valves Refrigerant Distributors Safety Relief Valves Solenoid Valves Thermostatic Expansion Valves
 **ELECTRO-MECHANICAL**	Aerospace Life Science & Medical Packaging Machinery Plastics Machinery & Converting Semiconductor & Electronics Factory Automation	Machine Tools Paper Machinery Primary Metals Textile Wire & Cable	AC/DC Drives & Systems Electric Actuators, Gantry Robots & Slides Electrohydrostatic Actuation Systems Electromechanical Actuation Systems Human Machine Interface	Linear Motors Stepper Motors, Servo Motors Drives & Controls Structural Extrusions
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 **PNEUMATICS**	Aerospace Conveyor & Material Handling Factory Automation Life Science & Medical	Machine Tools Packaging Machinery Transportation & Automotive	Air Preparation Brass Fittings & Valves Manifolds Pneumatic Accessories Pneumatic Actuators & Grippers Pneumatic Valves & Controls	Quick Disconnects Rotary Actuators Rubber & Thermoplastic Hose & Couplings Structural Extrusions Thermoplastic Tubing & Fittings Vacuum Generators, Cups & Sensors
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! CAUTION !

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Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

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