



# NSK Series

## 6MO NORSOK

Catalog 02-9322BE

September 2016

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



ENGINEERING YOUR SUCCESS.

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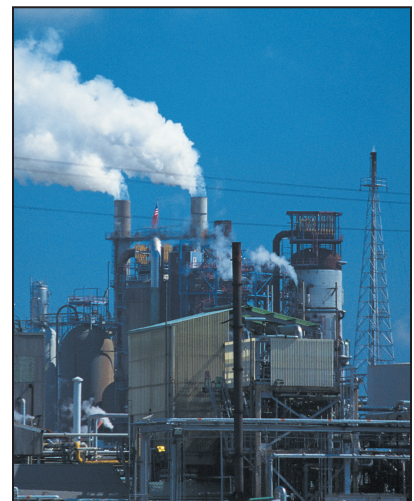
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## Introduction

Parker Autoclave Engineers NORSOK M650 compliant 6Mo (6 moly) high pressure valves, fittings, and tubing meet the stringent requirements of the Norwegian Technology Standards Institution that are designed to improve the safety of equipment used in offshore applications. As an industry leader, Parker has initiated and modified manufacturing processes, test methods, and quality management systems used to produce our Medium and High Pressure Autoclave Engineers products to now meet and surpass these guidelines.

Parker Autoclave Engineers standard Medium Pressure product pressure ratings cannot be met with NORSOK M650 compliant 6Mo material but our engineers have designed our product offering enclosed to maximize the material limitations and are able to bring you the equipment listed within this catalog, capable of meeting a 15,000 psi (1035 bar) working pressure.

By using NORSOK M650 compliant 6Mo instrumentation products, you gain the added reassurance that the quality of material used in their manufacture has not been compromised by any manufacturing processes. From mill to final shipped product, it provides the best guarantee yet of long-term corrosion-resistance performance.



## NEEDLE VALVES

Pressures to 15,000 psi (1034 bar)

Since 1945 Parker Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Parker Autoclave Engineers a reputation for reliable efficient product performance.

Parker Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, waterblast, research, and oil and gas industries.

### NSK Needle Valve Features:

- Wetted and pressure containing parts are constructed from 254SMO NORSOK material.
- Temperature Rating: -100°F (-75°C) to 750°F (399°C)
- Largest-port valves available for medium pressure applications.
- Tubing sizes available from 1/4" to 9/16".
- Rising stem/barstock body design.
- Non-rotating stem prevents stem/seat galling.
- New one piece stem design permits ease of assembly and packing replacement.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem/seat life in abrasive flow, greater durability for repeated on/off cycles and excellent corrosion resistance.
- PTFE encapsulated packing provides dependable stem and body sealing.
- Stem sleeve and packing gland materials have been selected to achieve extended thread cycle life and reduced handle torque.
- Choice of Vee or Regulating stem tip.
- Available in four body patterns.

Parker Autoclave Engineers valves are complemented by a complete line of fittings and tubing. The NSK Series uses Parker Autoclave Engineers' Medium pressure connection. The coned-and-threaded connection features orifice sizes to match the high flow characteristics of this series.

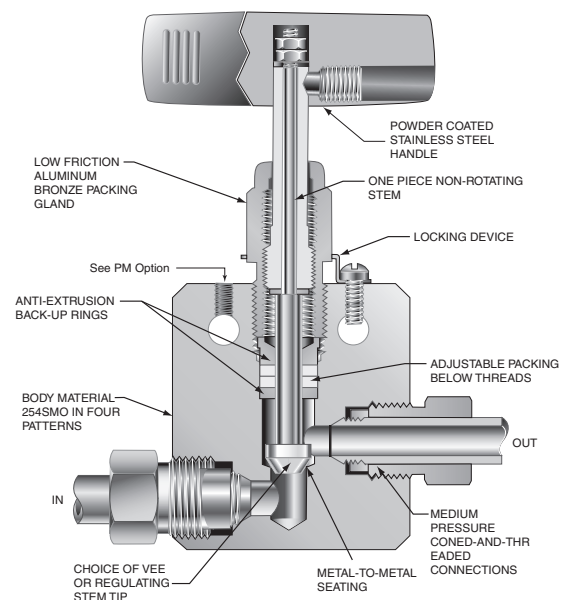


Tube Outside Diameter Size inches	Connection Type	Orifice Size Inches (mm)	Rated Cv*	Pressure Rating psi (bar) @ Room Temp.**
1/4	SF250CX20	0.125 (3.18)	0.31	15,000 (1034)
3/8	SF375CX20	0.219 (5.56)	0.75	15,000 (1034)
9/16	SF562CX20	0.312 (7.92)	1.30	15,000 (1034)

**Notes:**

\* Cv values shown are for 2-way straight valve pattern. For 2-way angle patterns, increase Cv value 50%. (Based on water)

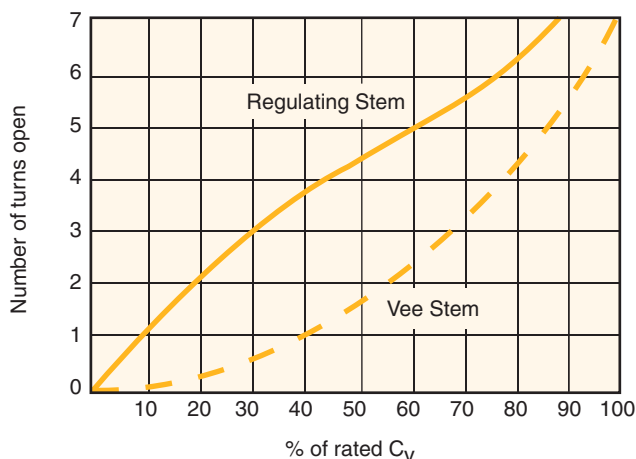
\*\* For complete temperature ratings see pressure/temperature rating guide in Technical Information section.



To ensure proper fit use Parker Autoclave tubing



Generalized Flow Coefficient Curves (C<sub>v</sub>)



### Ordering Procedure

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative. NSK Series valves are furnished complete with connection components, unless otherwise specified.

Typical catalog number example: **15NSK4071** (catalog number is created based on customer selection of product parameters, see below for example)

15NSK	4	07	1	-	XX
Valve Series	Outside Diameter tube Size	Stem/Seat Type	Body Pattern		Options
15NSK	4 - 1/4" 6 - 3/8" 9 - 9/16"	07 - non-rotating Vee stem (on-off service) 08 - non-rotating regulating stem (tapered tip for regulating and shutoff) 87 - Vee stem with replaceable seat 88 - Regulating stem with replaceable seat	1 - Two-way Straight 2 - Two-way Angle 3 - Three-way, Two on Pressure 4 - Three-way, One on Pressure		For extreme temperature and other options, see Valve Options. PM - Panel Mount, additional screw is supplied. K - Anti-Vibe

### Valve Options

#### Extreme Temperatures

Standard Parker Autoclave Engineers valves with PTFE packing may be operated from 0°F (-17.8°C) to 450°F (232°C). High temperature packing and/or extended stuffing box are available for service from -423°F (-252°C) to 1200°F (649°C) by adding the following suffixes to catalog order number:

- TG** Standard valve with PTFE glass packing to 600°F (316°C).
- GY** Standard valve with graphite braided yarn packing to 800°F (427°C).
- HT** Extended stuffing box valve with graphite braided yarn packing to 1200°F (649°C).
- B** Standard valve with cryogenic trim materials and PTFE packing to -100°F (-73°C).
- LT** Extended stuffing box valve with PTFE packing and cryogenic trim materials to -423°F (-252°C).

### Repair Kits

Contact factory for repair kits and spare parts. Consult your Parker Autoclave Engineers representative for other kit numbers, body part numbers, and pricing. Visit [www.autoclave.com](http://www.autoclave.com) for product operation manuals.

Catalog Number	Stem Type	Outside Dia. Tube	Orifice Dia.	Dimensions - inches (mm)												Block Thickness
				A	B	C	D	D1	E	F	G	G1	H*	M	N	
<b>2-Way Straight - See Figure 1</b>																
15NSK4071 15NSK4081	VEE REG	1/4 (6.35)	0.125 (3.18)	2.00 (50.80)	1.00 (25.40)	0.38 (9.65)	1.62 (41.15)	1.19 (30.23)	2.00 (50.80)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.69 (119.13)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK6071 15NSK6081	VEE REG	3/8 (9.53)	0.219 (5.56)	2.00 (50.80)	1.00 (25.40)	0.47 (11.94)	1.62 (41.15)	1.19 (30.23)	2.00 (50.80)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.63 (117.48)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK9071 15NSK9081	VEE REG	9/16 (14.29)	0.312 (7.92)	2.50 (63.50)	1.25 (31.75)	0.53 (13.46)	2.38 (60.45)	1.75 (44.45)	2.88 (73.15)	4.00 (101.60)	1.00 (25.40)	0.34 (8.64)	5.93 (150.86)	0.69 (17.53)	0.50 (12.70)	1.19 (30.23)
<b>2-Way Angle - See Figure 2</b>																
15NSK4072 15NSK4082	VEE REG	1/4 (6.35)	0.125 (3.18)	2.00 (50.80)	1.00 (25.40)	0.38 (9.65)	1.19 (30.23)		2.44 (61.90)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.81 (122.25)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK6072 15NSK6082	VEE REG	3/8 (9.53)	0.219 (5.56)	2.00 (50.80)	1.00 (25.40)	0.47 (11.94)	1.19 (30.23)		2.44 (61.90)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.81 (122.25)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK9072 15NSK9082	VEE REG	9/16 (14.29)	0.312 (7.92)	2.50 (63.50)	1.25 (31.75)	0.53 (13.46)	1.75 (44.45)		3.38 (85.85)	4.00 (101.60)	1.00 (25.40)	0.34 (8.64)	6.43 (163.56)	0.69 (17.53)	0.50 (12.70)	1.19 (30.23)
<b>3-Way / 2 on Pressure - See Figure 3</b>																
15NSK4073 15NSK4083	VEE REG	1/4 (6.35)	0.125 (3.18)	2.00 (50.80)	1.00 (25.40)	0.38 (9.65)	1.63 (41.28)	1.19 (30.23)	2.63 (66.68)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	5.00 (127.00)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK6073 15NSK6083	VEE REG	3/8 (9.53)	0.219 (5.56)	2.00 (50.80)	1.00 (25.40)	0.47 (11.94)	1.63 (41.28)	1.19 (30.23)	2.63 (66.68)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	5.00 (127.00)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK9073 15NSK9083	VEE REG	9/16 (14.29)	0.312 (7.92)	2.50 (63.50)	1.25 (31.75)	0.53 (13.46)	2.38 (60.45)	1.75 (44.45)	3.63 (92.08)	4.00 (101.60)	1.00 (25.40)	0.34 (8.64)	6.51 (165.59)	0.69 (17.53)	0.50 (12.70)	1.19 (30.23)

G - Packing gland mounting hole drill size

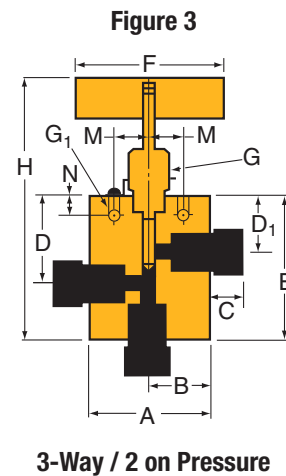
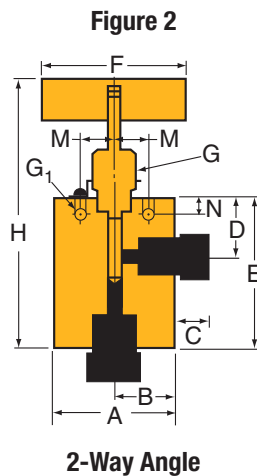
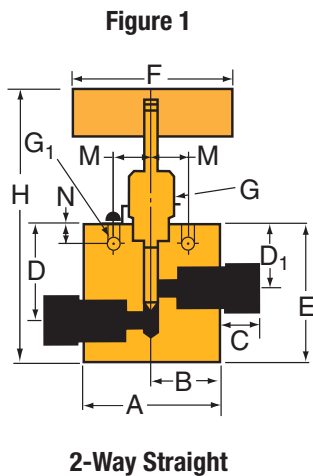
G<sub>1</sub> - Bracket mounting hole size

\* H Dimension is with stem in closed position.

Panel mounting drill size: 0.22" all valves.

All dimensions for reference only and subject to change.

**For prompt service, Parker Autoclave Engineers stock select products. Consult factory.**



Catalog Number	Stem Type	Outside Dia. Tube	Orifice Dia.	Dimensions - inches (mm)												Block Thickness
				A	B	C	D	D1	E	F	G	G1	H*	M	N	
<b>3-Way / 1 on Pressure - See Figure 3</b>																
15NSK4074 15NSK4084	VEE REG	1/4 (6.35)	0.125 (3.18)	2.00 (50.80)	1.00 (25.40)	0.38 (9.65)	1.19 (30.23)		2.44 (61.90)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.81 (122.25)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK6074 15NSK6084	VEE REG	3/8 (9.53)	0.219 (5.56)	2.00 (50.80)	1.00 (25.40)	0.47 (11.94)	1.19 (30.23)		2.44 (61.90)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	4.81 (122.25)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK9074 15NSK9084	VEE REG	9/16 (14.29)	0.312 (7.92)	2.50 (63.50)	1.25 (31.75)	0.53 (13.46)	1.75 (44.45)		3.38 (85.85)	4.00 (101.60)	1.00 (25.40)	0.34 (8.64)	6.31 (160.56)	0.69 (17.53)	0.50 (12.70)	1.19 (30.23)
<b>2-Way Angle / Replaceable Seat - See Figure 4</b>																
15NSK4872 15NSK4882	VEE REG	1/4 (6.35)	0.125 (3.18)	2.00 (50.80)	1.00 (25.40)	0.38 (9.65)	1.19 (30.23)	2.13 (53.98)	2.25 (57.15)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	5.75 (146.05)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK6872 15NSK6882	VEE REG	3/8 (9.53)	0.219 (5.56)	2.00 (50.80)	1.00 (25.40)	0.47 (11.94)	1.19 (30.23)	2.13 (53.98)	2.25 (57.15)	3.00 (76.20)	0.75 (19.05)	0.22 (5.59)	5.75 (146.05)	0.62 (15.75)	0.38 (9.65)	0.94 (23.88)
15NSK9872 15NSK9882	VEE REG	9/16 (14.29)	0.312 (7.92)	2.50 (63.50)	1.25 (31.75)	0.53 (13.46)	1.75 (44.45)	2.50 (63.50)	3.13 (79.38)	4.00 (101.60)	1.00 (25.40)	0.34 (8.64)	7.34 (186.68)	0.69 (17.53)	0.50 (12.70)	1.19 (30.23)

G - Packing gland mounting hole drill size

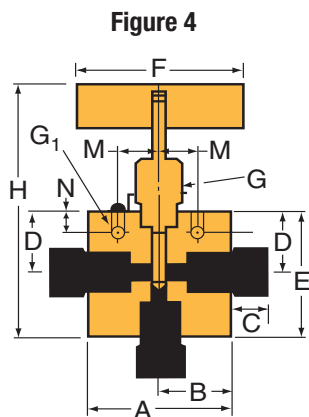
G<sub>1</sub> - Bracket mounting hole size

\* H Dimension is with stem in closed position.

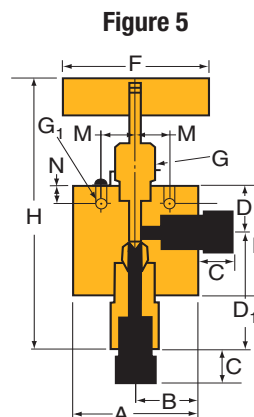
Panel mounting drill size: 0.22" all valves.

All dimensions for reference only and subject to change.

**For prompt service, Parker Autoclave Engineers stock select products. Consult factory.**



**3-Way / 1 on Pressure**



**2-Way Angle / Replaceable Seat**

## WELLHEAD GAUGE and BLEED VALVE

Pressures to 15,000 psi (1034 bar)

Parker Autoclave Engineers' Wellhead Gauge valves are designed for reliable shut-off service at a maximum working pressure of 15,000 psi (1034 bar). The Wellhead Gauge and Bleed Valves are manufactured from 254SMO NORSOK material.

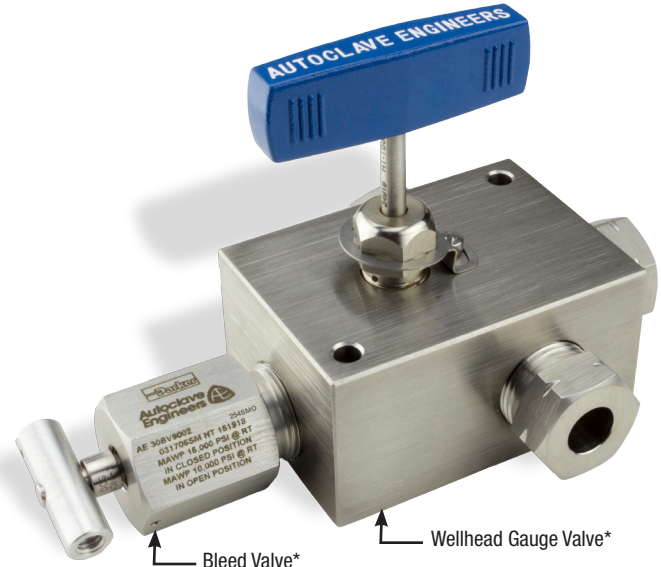
### Applications:

#### Wellhead Gauge Valve

- Sample Lines
- Instrument calibration

#### Bleed Valve

- Pressure bleed



\*Ordered individually

### Wellhead Gauge Features:

- One inlet, three outlet ports
- Metal-to-metal bubble tight shut-off
- Packing below stem threads
- Two piece non-rotating stem on standard valves

### Bleed Valve Features:

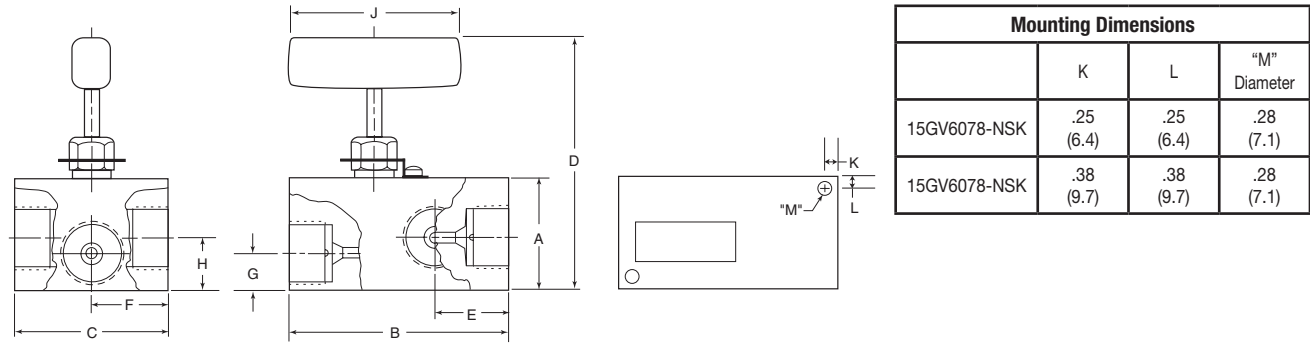
- One piece hex construction allows easy installation
- Vent port tapped for plumbing to safe area
- Tee handle for easy operation
- Positive blow out prevention on stem
- 1/8" NPT outlet connection
- O-ring Viton

Series	Tube Outside Diameter Size inches	Connection Type	Orifice Size Inches (mm)	Rated Cv*	Pressure Rating psi (bar) @ Room Temp.**
<b>Wellhead Gauge Valve</b>					
20GV	3/8	SF375CX	0.125 (3.18)	0.23	15,000 (1034)
20GV	9/16	SF562CX	0.125 (3.18)	0.23	15,000 (1034)
<b>Bleed Valve</b>					
20BV	3/8	SM375CX	0.093 (2.36)	-	20,000 (1379)
20BV	9/16	SM562CX	0.093 (2.36)	-	20,000 (1379)
Notes:					
* Rating shown is in closed position.					
Rating @ 15,000 psi (1034 bar) in open position. Glands and collars included					

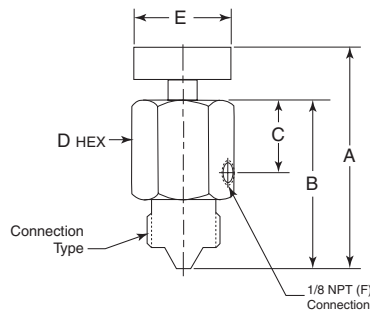
### Ordering Procedure

<b>Wellhead Gauge Valve</b> (ordered individually)					
Typical catalog number example: <b>15GV9078-NSK</b> (catalog number is created based on customer selection of product parameters, see below for example)					
<b>15GV</b>	<b>9</b>	<b>07</b>	<b>8</b>	<b>-</b>	<b>NSK</b>
Valve Series	Outside Diameter tube Size	Stem/Seat Type	Body Pattern		Material Type
15GV	6 - 3/8" 9 - 9/16"	00 - One piece Vee Stem 07 - Non-Rotating Vee Stem	8 - 4 Ports, 1 Inlet, 3 Outlets		NSK - 254SMO NORSOK
<b>Bleed Valve</b> (ordered individually)					
Typical catalog number example: <b>15BV9002-NSK</b> (catalog number is created based on customer selection of product parameters, see below for example)					
<b>15BV</b>	<b>9</b>	<b>00</b>	<b>2</b>	<b>-</b>	<b>NSK</b>
Valve Series	Outside Diameter tube Size	Stem/Seat Type	Body Pattern		Material Type
15BV	6 - 3/8" 9 - 9/16"	00 - One piece Vee Stem	2 - Angle		NSK - 254SMO NORSOK

Catalog Number	Connection Type	Connection Size	Pressure Rating psi (bar)	Dimensions - inches (mm)								
				A	B	C	D	E	F	G	H	J
<b>Wellhead Gauge Valve - See Figure 1</b>												
15GV6078-NSK	SF375CX	3/8	15,000 (1034)	2.00 (50.80)	3.12 (79.25)	2.00 (50.80)	4.52 (114.80)	1.13 (25.40)	1.00 (76.20)	0.50 (12.70)	0.94 (23.83)	3.00 (76.20)
15GV9078-NSK	SF562CX	9/16	15,000 (1034)	2.00 (50.80)	3.88 (98.55)	2.57 (69.85)	4.52 (114.80)	1.31 (33.27)	1.38 (34.93)	0.66 (16.76)	0.94 (23.83)	3.00 (76.20)

**Figure 1 - Wellhead Gauge Valve**

**Bleed Valve - See Figure 2**

Catalog Number	Connection Type	Connection Size	Pressure Rating psi (bar)	Dimensions - inches (mm)								
				A	B	C	D	E	F	G	H	J
15BV6002-NSK	SM375CX	3/8	15,000 (1034)	3.23 (82.04)	2.42 (61.47)	1.12 (28.45)	1.38 (38.10)	1.50 (38.10)	-	-	-	-
15BV9002-NSK	SM562CX	9/16	15,000 (1034)	3.68 (93.47)	2.86 (76.64)	1.12 (28.45)	1.38 (38.10)	1.50 (38.10)	-	-	-	-

**Figure 2 - Bleed Valve**




## FITTINGS, TUBING and NIPPLES

Pressures to 15,000 psi (1034 bar)

Since 1945 Parker Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This to engineering and manufacturing excellence has earned Parker Autoclave Engineers a reputation for reliable efficient product performance.

Parker Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, waterblast, research, and oil and gas industries.

### NSK Medium Pressure Fittings, Tubing and Nipples Features:

- Coned-and-Threaded Connection.
- Available sizes are 1/4", 3/8" and 9/16"
- Fittings manufactured from 254SMO NORSOK material
- Tubing manufactured from 254SMO NORSOK material
- Operating Temperatures from -100°F (-73°C) to 750°F (399°C).
- Anti-vibration connection components available.



Fittings, Tubing, Nipples

The medium pressure series uses Parker Autoclave Engineers medium pressure connection. This coned-and-threaded connection features orifice sizes to match the high flow characteristics of this series.

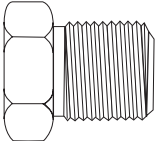
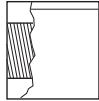
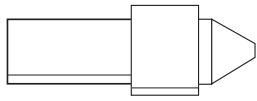
### NSK Medium Pressure Fittings

Parker Autoclave Engineers medium pressure fittings, Series NSK, are designed for use with Series 15NSK medium pressure valves and Parker Autoclave Engineers' medium pressure tubing. They incorporate medium pressure coned-and-threaded connections with orifices sized to match the high-flow Series 15NSK valves.



### Connection Components

All Parker Autoclave valves and fittings are supplied complete with appropriate glands and collars. To order these components separately, use order numbers listed. When using plug, collar is not required.

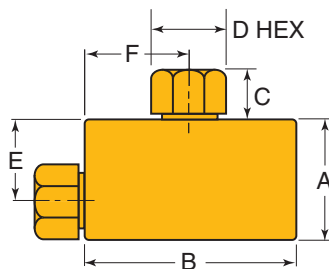
<b>Gland</b> CGLX (-)-NSK	<b>Collar</b> CCLX (-)-NSK	<b>Plug</b> CPX (-)-NSK
		
Add tube size ( ) 1/4" - 40 3/8" - 60 9/16" - 90	Example: 1/4" Gland = CGLX40-NSK	To ensure proper fit use Parker Autoclave Engineers tubing.

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)	Minimum Opening	Dimensions - inches (mm)							Block Thickness
					A	B	C	D Typical	E	F	G Thickness	
<b>Elbow - See Figure 1</b>												
CLX4400-NSK	SF250CX	1/4 (6.35)	15,000 (1034)	0.125 (3.18)	1.12 (28.45)	1.50 (38.10)	0.38 (9.65)	0.50 (12.70)	0.75 (19.05)	0.75 (19.05)	-	0.62 (15.75)
CLX6600-NSK	SF375CX	3/8 (9.53)	15,000 (1034)	0.219 (5.56)	1.38 (35.05)	2.00 (50.80)	0.44 (11.10)	0.62 (15.75)	1.00 (25.40)	1.00 (25.40)	-	0.75 (19.05)
CLX9900-NSK	SF562CX	9/16 (14.29)	15,000 (1034)	0.359 (9.12)	1.75 (44.45)	2.50 (63.50)	0.53 (13.46)	0.94 (23.88)	1.25 (31.75)	1.25 (31.75)	-	1.00 (25.40)
<b>Tee - See Figure 2</b>												
CTX4440-NSK	SF250CX	1/4 (6.35)	15,000 (1034)	0.125 (3.18)	1.12 (28.45)	1.50 (38.10)	0.38 (9.65)	0.50 (12.70)	0.75 (19.05)	0.75 (19.05)	-	0.62 (15.75)
CTX6660-NSK	SF375CX	3/8 (9.53)	15,000 (1034)	0.219 (5.56)	1.38 (35.05)	2.00 (50.80)	0.44 (11.10)	0.62 (15.75)	1.00 (25.40)	1.00 (25.40)	-	0.75 (19.05)
CTX9990-NSK	SF562CX	9/16 (14.29)	15,000 (1034)	0.359 (9.12)	1.75 (44.45)	2.50 (63.50)	0.53 (13.46)	0.94 (23.88)	1.25 (31.75)	1.25 (31.75)	-	1.00 (25.40)
<b>Cross - See Figure 3</b>												
CXX4444-NSK	SF250CX	1/4 (6.35)	15,000 (1034)	0.125 (3.18)	1.50 (38.10)	1.50 (38.10)	0.38 (9.65)	0.50 (12.70)	0.75 (19.05)	0.75 (19.05)	-	0.62 (15.75)
CXX6666-NSK	SF375CX	3/8 (9.53)	15,000 (1034)	0.219 (5.56)	2.00 (50.80)	2.00 (50.80)	0.44 (11.10)	0.62 (15.75)	1.00 (25.40)	1.00 (25.40)	-	0.75 (19.05)
CXX9999-NSK	SF562CX	9/16 (14.29)	15,000 (1034)	0.359 (9.12)	2.50 (63.50)	2.50 (63.50)	0.53 (13.46)	0.94 (23.88)	1.25 (31.75)	1.25 (31.75)	-	1.00 (25.40)

\* Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. For mounting hole option add suffix PM to catalog number. Consult factory for mounting hole dimensions.

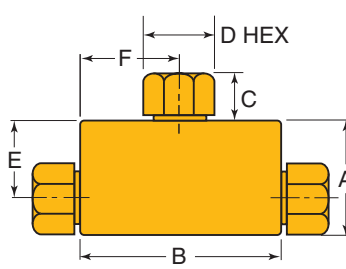
All dimensions for reference only and subject to change.  
**For prompt service, Parker Autoclave Engineers stock select products. Consult factory.**

**Figure 1**



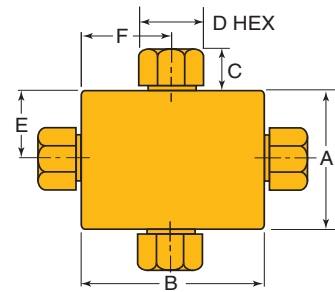
**Elbow**

**Figure 2**



**Tee**

**Figure 3**



**Cross**

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi (bar)	Minimum Opening	Dimensions - inches (mm)							Block Thickness
					A	B	C	D Typical	E	F	G Thickness	
<b>Straight Coupling / Union Coupling - See Figure 5</b>												
15FX4466-NSK 15UFX4466-NSK	SF250CX	1/4 (6.35)	15,000 (1034)	0.125 (3.18)	0.62 (15.75)	1.62 (41.15)	0.38 (9.65)	0.50 (12.70)	Straight Union			
15FX6666-NSK 15UFX6666-NSK	SF375CX	3/8 (9.53)	15,000 (1034)	0.219 (5.56)	0.75 (19.05)	1.75 (44.45)	0.44 (11.10)	0.62 (15.75)	Straight Union			
15FX9966-NSK 15UFX9966-NSK	SF562CX	9/16 (14.29)	15,000 (1034)	0.359 (9.12)	1.00 (25.40)	2.12 (53.85)	0.53 (13.46)	0.94 (23.88)	Straight Union			
<b>Bulkhead Coupling - See Figure 6</b>												
15BFX4466-NSK	SF250CX	1/4 (6.35)	15,000 (1034)	0.125 (3.18)	0.81 (20.57)	1.188 (47.75)	0.38 (9.65)	0.50 (12.70)	0.53 (13.46)	1.00 (25.40)	0.38 (9.65)	-
15BFX6666-NSK	SF375CX	3/8 (9.53)	15,000 (1034)	0.219 (5.56)	0.94 (23.88)	2.00 (50.80)	0.44 (11.10)	0.62 (15.75)	0.62 (15.75)	1.00 (25.40)	0.38 (9.65)	-
15BFX9966-NSK	SF562CX	9/16 (14.29)	15,000 (1034)	0.359 (9.12)	1.12 (28.45)	2.38 (60.45)	0.53 (13.46)	0.94 (23.88)	0.78 (19.81)	1.38 (35.05)	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.

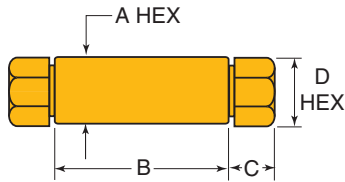
+ Distance across flats

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

All dimensions for reference only and subject to change.

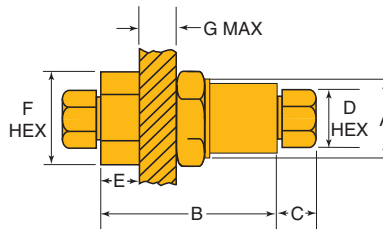
**For prompt service, Parker Autoclave Engineers stock select products. Consult factory.**

**Figure 4**



**Straight Coupling / Union Coupling**

**Figure 5**



**Bulkhead Coupling**

### NSK Medium Pressure Tubing

Parker Autoclave Engineers offers a complete selection of 254SMO NORSOK tubing designed to match the performance standards of Parker Autoclave valves and fittings. Parker Autoclave Engineers medium pressure tubing is manufactured 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).

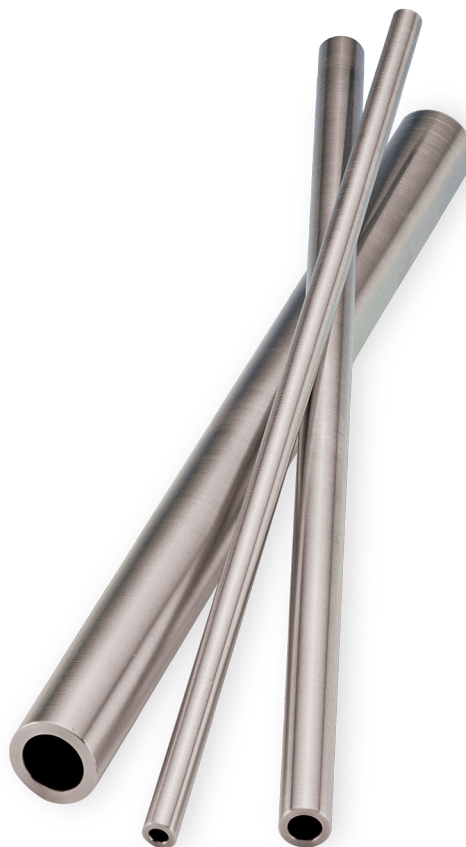
### Inspection and Testing

Parker Autoclave Engineers' medium 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 subject to special inspection and are controlled within close tolerances to assure proper fit. Sample pieces of tube 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 at additional cost if desired.

### 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 (14.27)	.557/.552 (14.15/14.02)

Note:  
 Tubing outside diameter dimensions are not standard commercial sizes.  
 Tubing outside sizes are specific to Parker Autoclave Engineers design requirements.  
 Parker Autoclave Engineers components will not be compatible with other manufactured tubing.



Fittings, Tubing, Nipples

Catalog Number	Tube Material	Fits Connection Type	Tube Size Inches (mm)			Flow Area inches <sup>2</sup> (mm <sup>2</sup> )	Working Pressure psi (bar)*				
			Outside Diameter	Inside Diameter	Wall Thickness		-423 to 100°F -252 to 37.8°C	200°F 93°C	400°F 204°C	600°F 316°C	750°F 399°C
MS25-401-NSK	254SMO NORSOK	SF250CX	1/4 (6.35)	0.109 (2.77)	0.070 (1.78)	0.009 (5.81)	15,000 (1034)	12,300 (848.05)	10,200 (703.26)	9,150 (630.86)	8,850 (610.18)
MS25-402-NSK	254SMO NORSOK	SF375CX	3/8 (9.53)	0.203 (5.16)	0.086 (2.18)	0.032 (20.65)	15,000 (1034)	12,300 (848.05)	10,200 (703.26)	9,150 (630.86)	8,850 (610.18)
MS25-403-NSK	254SMO NORSOK	SF562CX	9/16 (14.29)	0.312 (7.92)	0.125 (3.18)	0.076 (49.03)	15,000 (1034)	12,300 (848.05)	10,200 (703.26)	9,150 (630.86)	8,850 (610.18)

\* 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 stock select products. Consult factory.**

## NSK Medium Pressure Cone & Threaded Nipples

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.



Fittings, Tubing, Nipples

Catalog Number							Fits Connection Type	Tube Size: Inches (mm)		Working Pressure at 100°F psi (bar)
Nipple Length: Inches (mm)								O.D.	I.D.	
2.75" (69.85)	3.00" (76.20)	4.00" (101.60)	6.00" (152.40)	8.00" (203.20)	10.00 (254.008)	12.00" (304.80)				
CNX4402-NSK	CNX4403-NSK	CNX4404-NSK	CNX4406-NSK	CNX4408-NSK	CNX44010-NSK	CNX44012-NSK	SF250CX	1/4 (6.35)	0.109 (2.77)	15,000 (1034)
	CNX6603-NSK	CNX6604-NSK	CNX6606-NSK	CNX6608-NSK	CNX66010-NSK	CNX66012-NSK	SF375CX	3/8 (9.53)	0.203 (5.16)	15,000 (1034)
		CNX9904-NSK	CNX9906-NSK	CNX9908-NSK	CNX99010-NSK	CNX99012-NSK	SF562CX	9/16 (14.29)	0.312 (7.92)	15,000 (1034)

\* 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 stock select products. Consult factory.

## NSK Medium Pressure Check Valves

### O-Ring Check Valves

Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure\*, valve shuts off. **(Not for use as relief valve.)**

#### Materials:

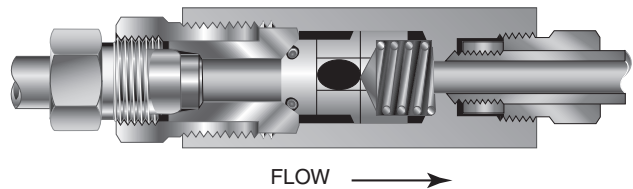
254SMO NORSOK: body, cover, cover gland.

316 Stainless Steel: poppet

300 Series Stainless Steel: spring

Standard O-ring: Viton, for operation to 400° F (204°C). Buna-N or PTFE available for 250°F (121°C) or 400°F (204°C) respectively; specify when ordering.

\***Cracking Pressure:** 20 psi (1.38 bar) ±30%. Springs for higher cracking pressures (up to 100 psi (6.89 bar)) available on special order for O-ring style check valves only.



### O-Ring Check Valves

Minimum operating temperature for standard o-ring check valves 0°F (-17.8°C), -100°F (-73°C), for -110°F (-73°C) with PTFE o-ring add suffix -T0.

## NSK Medium Pressure Check Valves

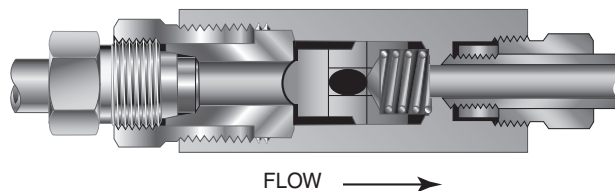
### Ball Check Valves

Prevents 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 750°F (399°C). **(Not for use as a relief valve.)**

The **ball and poppet are an integral design** to assure positive, in-line seating without “chatter”. Poppet is designed essentially for axial flow with minimum pressure drop.

#### Materials:

254SMO NORSOK: body, cover, and cover gland  
 316 Stainless Steel: ball poppet  
 300 Series Stainless Steel: ball, spring.



**Ball Check Valves**

Minimum operating temperature for standard ball check valves  
 -110°F (-79°C).

### Ball Type Excess Flow Valves

Protects pressure gauges and pressure instrumentation from surges in flow or sudden venting in the event of line failure.

#### Materials:

254SMO NORSOK: body, cover, and cover gland  
 316 Stainless Steel: sleeve  
 300 Series Stainless Steel: ball

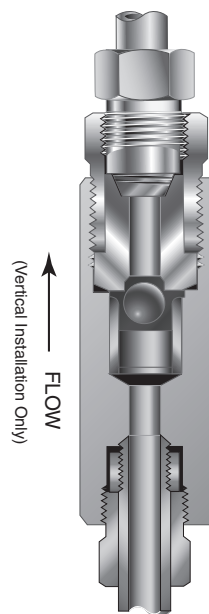
**Vertical Installation:** Since this type of check valve employs a non-spring loaded ball, valve **MUST** be installed in **VERTICAL** position with arrow on valve body pointing **UP**. (cover gland up).

**Resetting Valve:** Equalize the pressure across the ball. The ball will drop and reset automatically.

**CAUTION:** While testing has shown O-Rings to provide satisfactory service life, both cyclic and shelf life may vary widely with differing service conditions, properties of reactants, pressure and temperature cycling and age of the O-ring. **FREQUENT INSPECTIONS SHOULD BE MADE** to detect any deterioration, and O-rings replaced as required.

**CAUTION:** See Tubing section for proper selection of tubing.

**NOTE:** Special material check valves may be supplied with four flats in place of standard hex.



**Ball Type Excess Flow Valves**

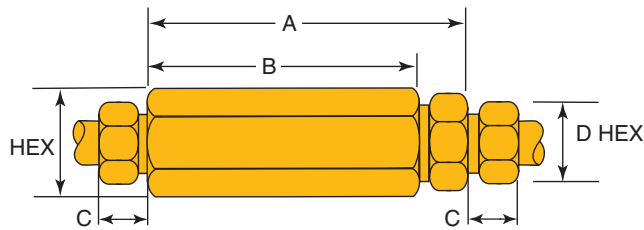
Catalog Number	Fits Connection Type	Pressure Rating psi (bar)*	Orifice inches (mm)	Rated Cv	Dimensions - inches (mm)				
					A	B	C	D Typical	Hex
<b>O-Ring Check Valves</b>									
15CXO4400-NSK	SF250CX	15,000 (1034)	0.125 (3.18)	0.28	2.94 (74.68)	2.50 (63.50)	0.38 (9.53)	0.50 (12.70)	1.00 (25.40)
15CXO6600-NSK	SF375CX	15,000 (1034)	0.218 (5.54)	0.84	3.12 (79.25)	2.62 (66.55)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)
15CXO9900-NSK	SF562CX	15,000 (1034)	0.359 (9.12)	2.30	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.50 (38.10)
<b>Ball Check Valves</b>									
15CXB4400-NSK	SF250CX	15,000 (1034)	0.125 (3.18)	0.28	2.94 (74.68)	2.50 (63.50)	0.38 (9.53)	0.50 (12.70)	1.00 (25.40)
15CXB6600-NSK	SF375CX	15,000 (1034)	0.218 (5.54)	0.84	3.12 (79.25)	2.62 (66.55)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)
15CXB9900-NSK	SF562CX	15,000 (1034)	0.359 (9.12)	2.30	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.50 (38.10)
<b>Ball Type Excess Flow Valves</b>									
15CXK4400-NSK	SF250CX	15,000 (1034)	0.125 (3.18)	0.37 <sup>+</sup>	2.94 (74.68)	2.50 (63.50)	0.38 (9.53)	0.50 (12.70)	1.00 (25.40)
15CXK6600-NSK	SF375CX	15,000 (1034)	0.218 (5.54)	0.066 <sup>+</sup>	3.12 (79.25)	2.62 (66.55)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)
15CXK9900-NSK	SF562CX	15,000 (1034)	0.359 (9.12)	.212 <sup>+</sup>	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.50 (38.10)

\* 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 stock select products. Consult factory.**

+ Check Flow - water, GPM  
For flow rates using alternate fluids, consult Parker Autoclave Engineers.



**Check Valves**

## NSK Medium Pressure Line Filters

### Dual-Disc Line Filters

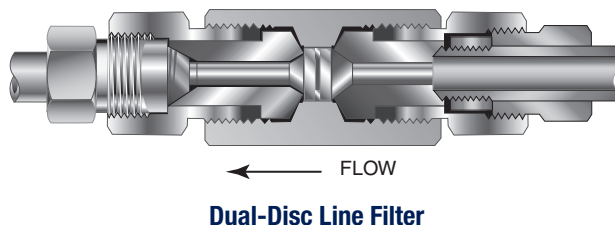
Parker Autoclave Engineers Dual-Disc Line Filters are utilized in numerous industrial, chemical processing, aerospace, nuclear and other applications. With the dual-disc design, large contaminant particles are trapped by the upstream filter element before they can reach and clog the smaller micron-size downstream element. Filter elements can be easily replaced.

**Materials:**

254SMO NORSOK: body, cover, and cover gland.

300 Series Stainless Steel: filter elements

**Filter Elements:** Downstream/upstream micron size 35/65 is standard. 5/10 or 10/35 also available when specified. Other element combinations available on special order.



Dual-Disc Line Filter

### Cup-Type Line Filters

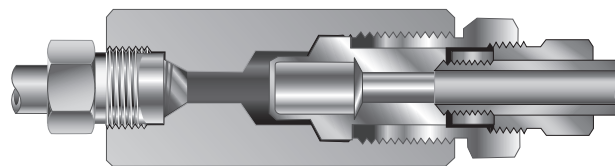
Parker Autoclave Engineers High Flow Cup-Type Line Filters are recommended in high pressure systems requiring both high flow rates and maximum filter surface area. Widely used in the industrial and chemical processing fields, the cup design offers as much as six times the effective filter area as compared to disc-type units. In addition, the filter elements can be quickly and easily replaced.

**Materials:**

254SMO NORSOK: body, cover, and cover gland.

300 Series Stainless Steel: filter elements

**Filter Elements:** Sintered cup elements available in choice of 5, 35 or 65 micron sizes. **Note:** Filter ratings are nominal.



Cup-Type Line Filter

**NOTE 1:** All filters furnished complete with connection components unless otherwise specified. All dimensions for reference only and subject to change.

**NOTE 2:** Parker Autoclave Engineers disc and cup type filters are designed to filter small amounts of process particles. It is recommended that all fluids are thoroughly cleaned prior to entering the higher pressure system.

**NOTE 3:** Special material filters may be supplied with four flats in place of standard hex.

**NOTE 4:** Pressure differential not to exceed 1,000 psi (69 bar) in a flowing condition.

**NOTE 5:** Larger micron size filter element is installed on the upstream (inlet) side.

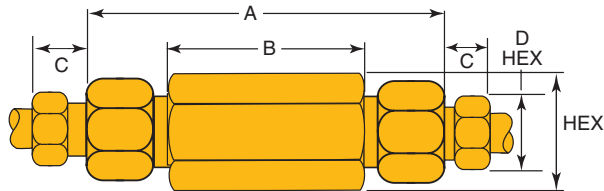


Catalog Number	Pressure Rating psi (bar)*	Orifice inches (mm)	Micron Size**	Connection Size and Type	Effective Filter Element Area in. <sup>2</sup> (mm <sup>2</sup> )	Dimensions - inches (mm)				
						A	B	C	D Typical	Hex
<b>Dual-Disc Line Filters</b>										
15CLFX9900-NSK	15,000 (1034)	0.312 (7.92)	35/65	SF562CX	0.25 (161.29)	4.94 (125.48)	2.68 (68.07)	0.53 (13.46)	.94 (23.88)	1.50 (38.10)
15CLFX6600-5/10-NSK	15,000 (1034)	0.312 (7.92)	5/10							
15CLFX9900-10/35-NSK	15,000 (1034)	0.312 (7.92)	10/35							
<b>Cup-Type Line Filters</b>										
15CXF4-5-NSK	15,000 (1034)	0.125 (3.18)	5	SF250CX	0.81 (522.57)	2.94 (74.68)	2.50 (63.50)	0.38 (9.53)	0.50 (12.70)	1.00 (25.40)
15CXF4-35-NSK			35							
15CXF4-65-NSK			65							
15CXF6-5-NSK	15,000 (1034)	0.218 (5.54)	5	SF375CX	0.81 (522.57)	3.12 (79.25)	2.62 (66.55)	0.47 (11.99)	0.62 (15.75)	1.00 (25.40)
15CXF6-35-NSK			35							
15CXF6-65-NSK			65							
15CXF9-5-NSK	15,000 (1034)	0.359 (9.12)	5	SF562CX	1.53 (987.09)	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.50 (38.10)
15CXF9-35-NSK			35							
15CXF9-65-NSK			65							

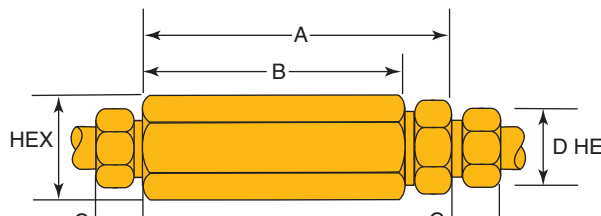
\* Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower.

All dimensions for reference only and subject to change.  
**For prompt service, Parker Autoclave Engineers stock select products. Consult factory.**

\*\* Other micron sizes available on special order. Change last digits of the catalog number accordingly. For optional materials, see Needle Valve Options section.



**Dual-Disc Line Filters**



**Cup-Type Line Filters**



## NSK Medium Anti-Vibration Collet Gland Assembly

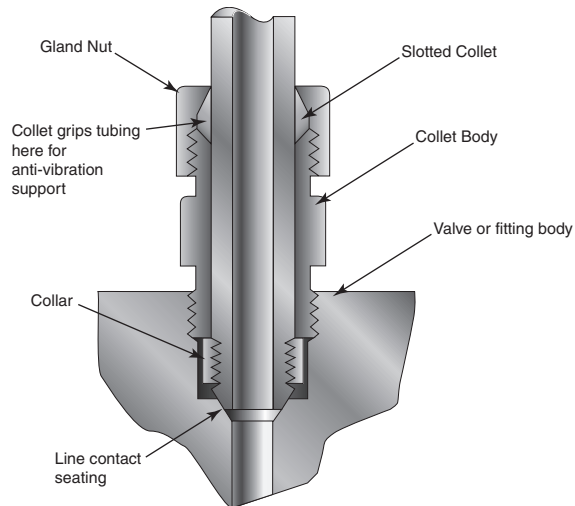
**Series KCBGLX:** Sizes to 9/16" (35.81 mm)

For extreme conditions of vibration and/or shock in tubing systems, such as an unsupported line near a compressor, coned-and-threaded connections are offered with the Parker Autoclave anti-vibration collet gland assembly. Completely interchangeable with standard Parker Autoclave Engineers medium pressure connections, the collet gland assembly provides 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 virtually unlimited 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 medium pressure connections. Series KCBGLX extends the gland nut to provide room for the tapered slotted collet. 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.



### Series KCBGLX

Pressures to 15,000 psi (1034 bar)

#### Materials:

254SMO NORSOK with bonded dry film moly lubricant.

**NOTE 1:** To order components with anti-vibration assemblies add -K to catalog numbers.

**NOTE 2:** Special material assemblies may be supplied with four flats in place of standard hex.

Catalog Number	Part	Outside Diameter Tubing Size in. (mm)	Dimensions - inches (mm)		
			A	B	Hex
KCBGLX40-NSKMC	Complete Assembly	1/4 (6.35)	0.94 (23.88)	1.19 (30.23)	0.62 (15.75)
KCBLX40-NSKMC	Collet Body				
KCCLX40-NSKMC	Slotted Collet				
KGLX40-NSKMC	Gland Nut				
KCBGLX60-NSKMC	Complete Assembly	3/8 (9.53)	1.19 (30.23)	1.50 (38.10)	0.81 (20.63)
KCBLX60-NSKMC	Collet Body				
KCCLX60-NSKMC	Slotted Collet				
KGLX60-NSKMC	Gland Nut				
KCBGLX90-NSKMC	Complete Assembly	9/16 (14.29)	1.41 (35.81)	1.78 (45.21)	0.94 (23.883)
KCBLX90-NSKMC	Collet Body				
KCCLX90-NSKMC	Slotted Collet				
KGLX90-NSKMC	Gland Nut				

**Series KCBGLX**  
15,000 psi (1034 bar)

Standard Parker Autoclave Engineers collar not included in complete assembly

## BALL VALVES: 2 Way Series

Pressures to 15,000 psi (1034 bar)

Parker Autoclave Engineers high-pressure ball valves have been designed to provide superior quality for maximum performance within a variety of valve styles, sizes, and process connections. Some of the more unique design innovations include an integral one-piece trunnion mounted style ball and stem that eliminates the shear failure common in two piece designs, re-torqueable seat glands that result in longer seat life, and a low friction stem seal that reduces actuation torque and enhances cycle life.

These ball valves can also be modified to incorporate the use of special materials, seals for high temperature applications, subsea models, and valve actuators.

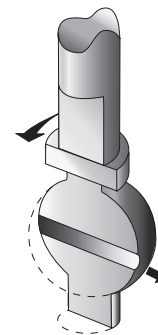
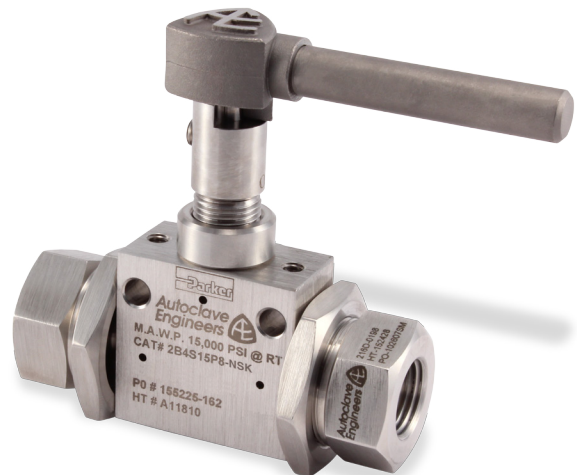
When it comes to high-pressure applications, these ball valves with the associated high-pressure components, provide the critical performance demanded by the high pressure market.

### NSK 2-Way Ball Valve Features:

- One-piece, trunnion mounted style, stem design eliminates shear failure and reduces the effects of side loading found in two piece designs.
- Re-torqueable seat glands for longer seat life.
- PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- Full-port flow path minimizes pressure drop.
- 254SMO NORSOK material construction.
- Low friction pressure assisted graphite filled PTFE stem seal increases cycle life and reduces operating torque.
- Quarter turn from open to close with positive stop.
- Viton o-rings for operation from 0°F (-17.8°C) to 400°F (204°C).
- Optional o-rings available for high-temperature applications.
- Pressure containing and wetted materials are 254SMO NORSOK material
- Wide selection of tube and pipe end fittings available.
- Electric and pneumatic actuator options.

### NSK 2-Way Ball Valve Applications:

- Laboratories
- Test Stands
- Control Panels
- Chemical Research
- Pilot Plants
- Water Blast Pumping Units
- High volume chemical injection skids



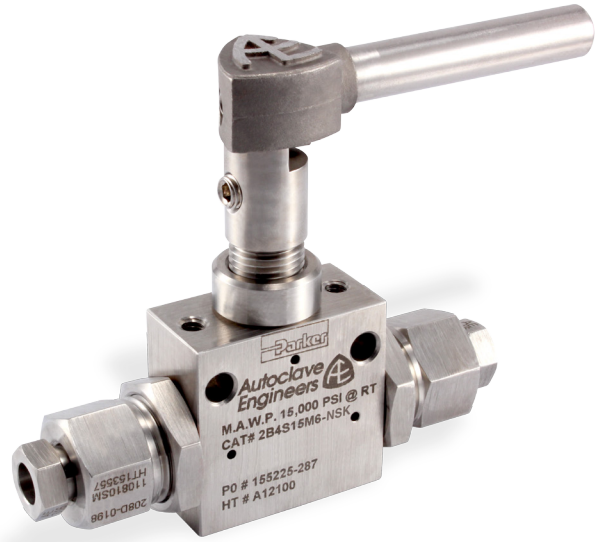
**Two-Way  
Shut-Off**  
Flow Configuration

## BALL VALVES: 2 Way Series (1/4" Orifice)

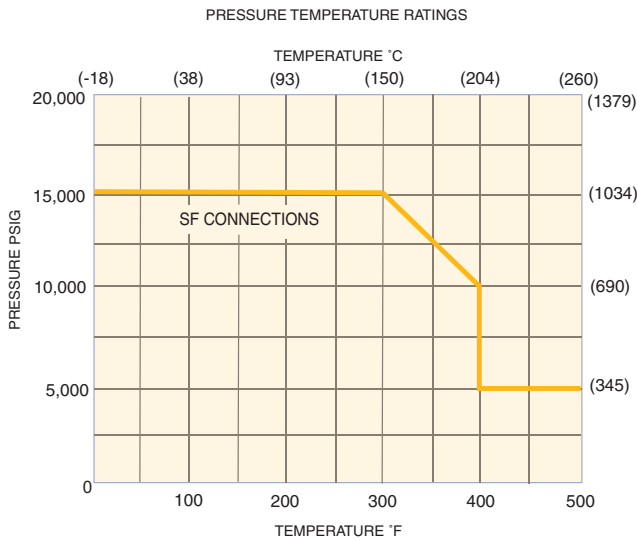
Pressures to 15,000 psi (1034 bar) • .250" (6.35mm)

Connection	MAWP @ Room Temperature	Minimum Orifice inches(mm)	Valve Cv
SF250CX20	15,000 psi (1034 bar)	.109 (2.77)	0.17
SF375CX20	15,000 psi (1034 bar)	.203 (5.16)	0.85
SF562CX20	15,000 psi (1034 bar)	.250 (6.35)	1.51

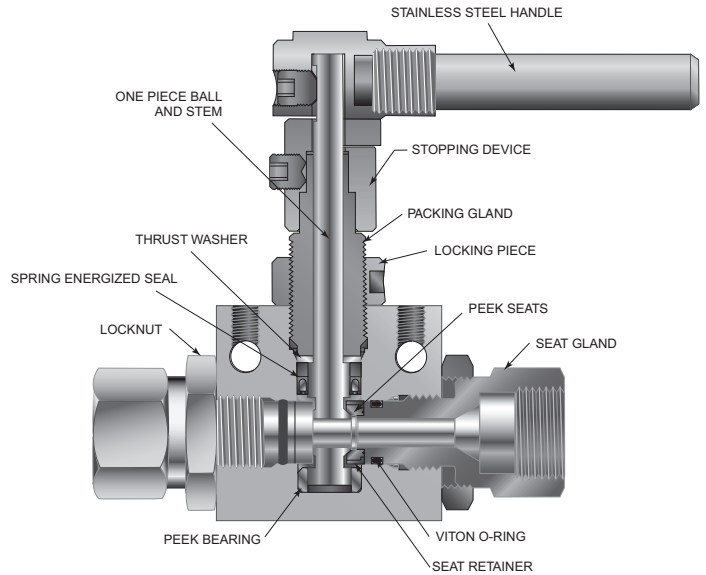
MAWP: Maximum Allowable Working Pressure



Ball Valves



Pressure ratings are determined by the end connections chosen, see chart. Maximum Temperature rating is determined by the o-ring material (see description below)



**NOTE:** Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.

### Ordering Procedure

For complete information on available end connections and material options, see next page. 2-way ball valves are furnished complete with tube or pipe connections. Standard valve has Viton o-rings 400°F (204°C) maximum.

Typical catalog number example: **2B4NSK15M9**

2B	4	NSK	15	M9	-	XXX
Valve Series	Ball Orifice Diameter	Material	Pressure (X 1000)	End Connection		Options
2B: 2-Way	4 - 1/4" (6.35 mm)	NSK - 254SMO NORSOK (For material options contact factory)		M9 -SF562CX20 (See chart on next page)		HT - Perfluoroelastomer 500°F (260°C) max. EPR - Ethylene Propylene 250°F (121°C) max. BO - Buna-N 250°F (121°C) max.

## End Connection Options

Catalog Number	End Connection Number	Connection	MAWP @ Room Temperature	Hex Inches(mm)
2B4NSK15M4	M4	SF250CX20	15,000 psi (1034 bar)	1 (25.40)
2B4NSK15M6	M6	SF375CX20	15,000 psi (1034 bar)	1 (25.40)
2B4NSK15M9	M9	SF562CX20	15,000 psi (1034 bar)	1 (25.40)

MAWP: Maximum Allowable Working Pressure

See ball valve option/details section for end connection details, material, and high temperature options.

## Ball Valve Options

### Pneumatic Actuator

- AO - Air-to-open/spring to close
- AC - Air-to-close/spring to open
- AOC - Air-to-open-and-close (double action)

### Electric Actuator

- E01 - 120 volt AC 50/60 Hz
- E02 - 220 volt AC 50/60 Hz
- E03 - 24 VDC

### Actuator Operating Temperature:

- Pneumatic: -10°F to 176°F (-23°C to 80°C)
- Electric: 0°F to 160°F (-17°C to 71°C)

### High Temperature Option:

- HT - for media temperature up to 500°F (260°C)

See ball valve actuator section for full description, additional information, and options.

## Valve Maintenance

**Repair Kits:** add “R” to the front of valve catalog first 4 numbers for proper repair kit.  
(Example: R2B4NSK)

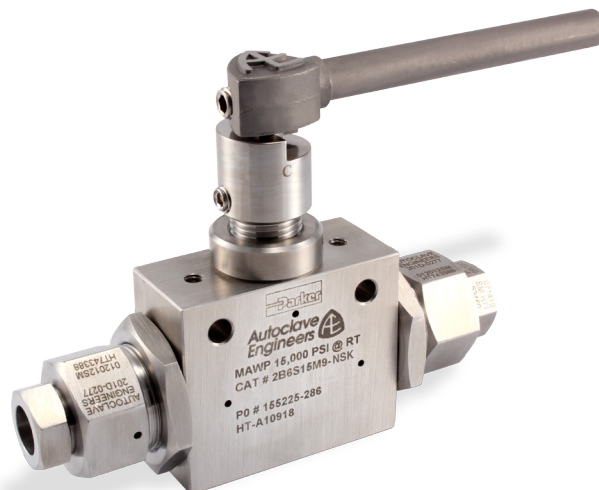
Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

## BALL VALVES: 2 Way Series (3/8" Orifice)

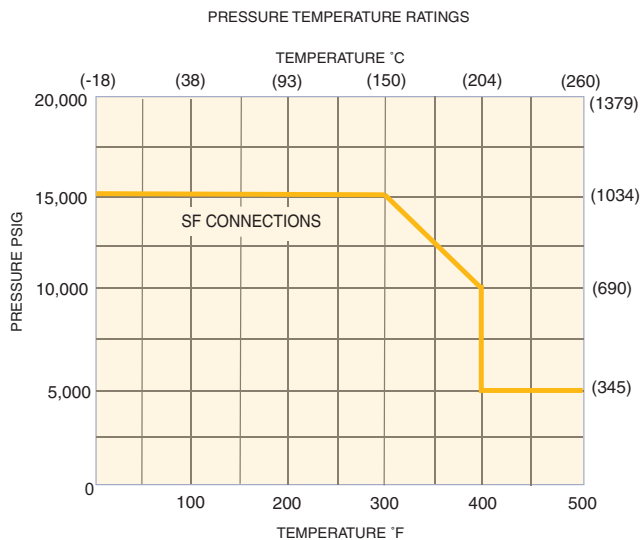
Pressures to 15,000 psi (1034 bar) • .375" (9.52mm)

Connection	MAWP @ Room Temperature	Minimum Orifice inches(mm)	Valve Cv
SF375CX20	15,000 psi (1034 bar)	.203 (5.16)	0.9
SF562CX20	15,000 psi (1034 bar)	.312 (7.92)	3.9

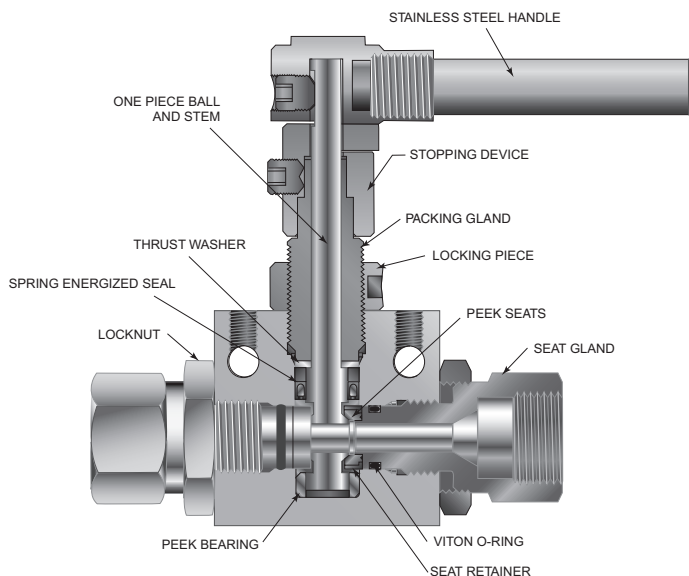
MAWP: Maximum Allowable Working Pressure



Ball Valves



Pressure ratings are determined by the end connections chosen, see chart. Maximum Temperature rating is determined by the o-ring material (see description below)



**NOTE:** Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.

### Ordering Procedure

For complete information on available end connections and material options, see next page. 2-way ball valves are furnished complete with tube or pipe connections. Standard valve has Vitron o-rings 400°F (204°C) maximum.

Typical catalog number example: **2B6NSK15M9**

2B	6	NSK	15	M9	-	XXX
Valve Series	Ball Orifice Diameter	Material	Pressure (X 1000)	End Connection		Options
2B: 2-Way	6 - 3/8" (9.52 mm)	NSK - 254SMO NORSOK (For material options contact factory)		M9 -SF562CX20 (See chart on next page)		HT - Perfluoroelastomer 500°F (260°C) max. EPR - Ethylene Propylene 250°F (121°C) max. BO - Buna-N 250°F (121°C) max.

## End Connection Options

Catalog Number	End Connection Number	Connection	MAWP @ Room Temperature	Hex Inches(mm)
2B6NSK15M6	M6	SF375CX20	15,000 psi (1034 bar)	1.38 (35.05)
2B6NSK15M9	M9	SF562CX20	15,000 psi (1034 bar)	1.38 (35.05)

MAWP: Maximum Allowable Working Pressure  
See ball valve option/details section for end connection details, material, and high temperature options.

## Ball Valve Options

### Pneumatic Actuator

- AO - Air-to-open/spring to close
- AC - Air-to-close/spring to open
- AOC - Air-to-open-and-close (double action)

### Electric Actuator

- E01 - 120 volt AC 50/60 Hz
- E02 - 220 volt AC 50/60 Hz
- E03 - 24 VDC

### Actuator Operating Temperature:

- Pneumatic: -10°F to 176°F (-23°C to 80°C)
- Electric: 0°F to 160°F (-17°C to 71°C)

### High Temperature Option:

- HT - for media temperature up to 500°F (260°C)

See ball valve actuator section for full description, additional information, and options.

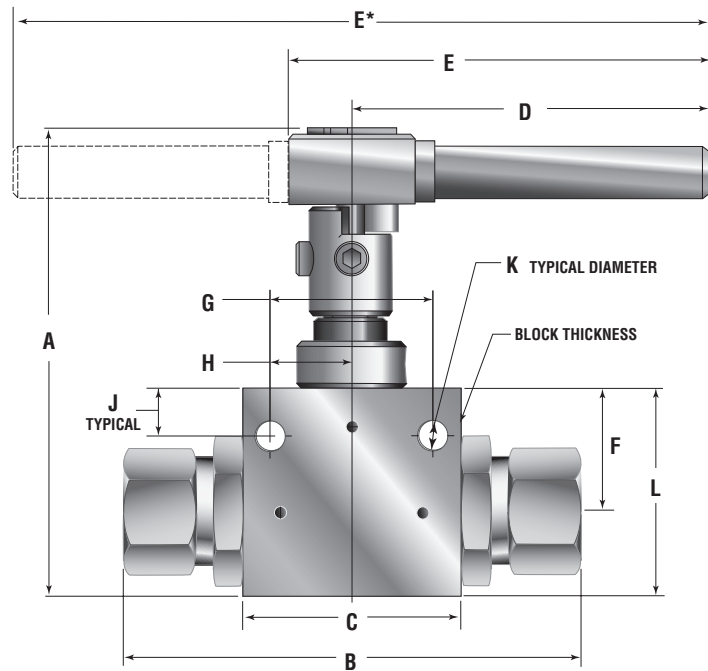
## Valve Maintenance

**Repair Kits:** add “R” to the front of valve catalog first 4 numbers for proper repair kit.  
(Example: R2B6NSK)

Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

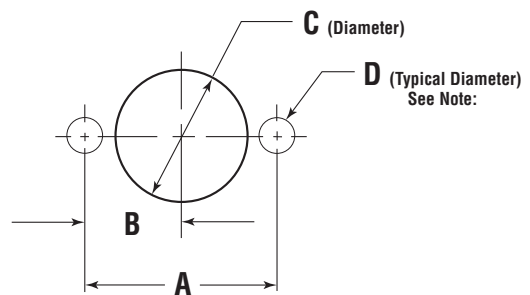
## Ball Valve Dimensions: Inches (mm)

	Valve Models	
	2B4NSK	2B6NSK
<b>A</b>	4.33 (109.99)	4.99 (126.75)
<b>B</b>	4.19 (106.49)	5.53 (140.41)
<b>C</b>	2.00 (50.80)	3.00 (76.20)
<b>D</b>	3.37 (85.55)	4.99 (126.75)
<b>E</b>	3.83 (97.28)	5.45 (138.43)
<b>F</b>	1.13 (28.58)	1.38 (34.92)
<b>G</b>	1.50 (38.10)	2.00 (50.80)
<b>H</b>	0.75 (19.05)	1.00 (25.40)
<b>J</b>	0.44 (11.18)	0.41 (10.31)
<b>K</b>	0.28 (7.11)	0.28 (7.11)
<b>L</b>	1.91 (48.41)	2.50 (63.50)
<b>Block Thickness</b>	1.13 (28.57)	1.38 (34.92)



## Ball Valve Panel Mounting Dimensions: Inches (mm)

	Valve Models	
	2B4NSK	2B6NSK
<b>A</b>	1.50 (38.10)	2.00 (50.80)
<b>B</b>	0.75 (19.05)	1.00 (25.40)
<b>C</b>	1.06 (26.92)	1.50 (38.10)
<b>D</b>	0.28 (7.11)	0.28 (7.11)



All dimensions are for reference only and are subject to change without notice.

Note: Body mounting 1/4" - 20 thread



## BALL VALVES: 3 Way Series

Pressures to 15,000 psi (1034 bar)

Parker Autoclave Engineers high-pressure ball valves have been designed to provide superior quality for maximum performance within a variety of valve styles, sizes, and process connections. Some of the more unique design innovations include an integral one-piece trunnion mounted style ball and stem that eliminates the shear failure common in two piece designs, re-torqueable seat glands that result in longer seat life, and a low friction stem seal that reduces actuation torque and enhances cycle life.

These ball valves can also be modified to incorporate the use of special materials, seals for high temperature applications, subsea models, and valve actuators.

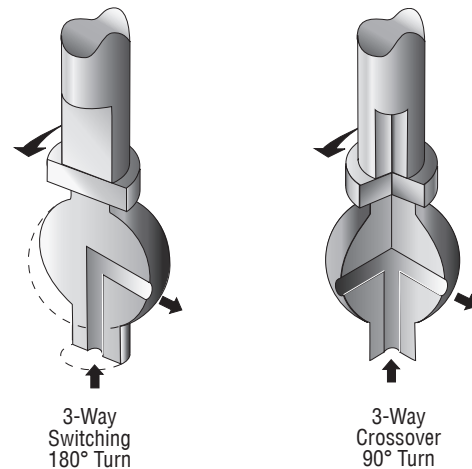
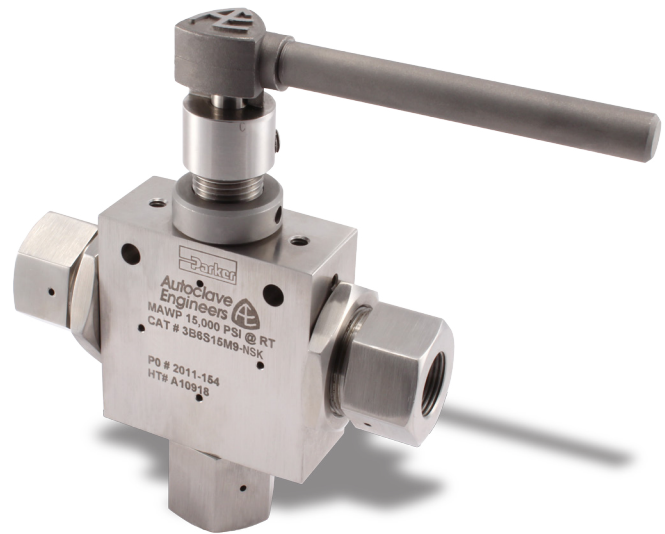
When it comes to high-pressure applications, these ball valves with the associated high-pressure components, provide the critical performance demanded by the high pressure market.

### NSK 3-Way Ball Valve Features:

- One-piece, trunnion mounted style, stem design eliminates shear failure found in two piece designs and reduces the effects of side loading.
- Re-torqueable seat glands for longer seat life.
- Carbon filled PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- Full-port flow path minimizes pressure drop.
- 254SMO NORSOK material construction.
- Low friction pressure assisted graphite filled PTFE stem seal increases cycle life and reduces operating torque.
- Available in 90° turn diverter and 180° turn switching models.
- Viton o-rings for operation from 0°F (-17.8°C) to 400°F (204°C).
- Optional o-rings available for high-temperature applications.
- Pressure containing and wetted materials are 254SMO NORSOK material
- Wide selection of tube and pipe end fittings available.
- Electric and pneumatic actuator options.

### NSK 3-Way Ball Valve Applications:

- Laboratories
- Test Stands
- Control Panels
- Chemical Research
- Pilot Plants
- Water Blast Pumping Units
- High volume chemical injection skids



Flow Configuration



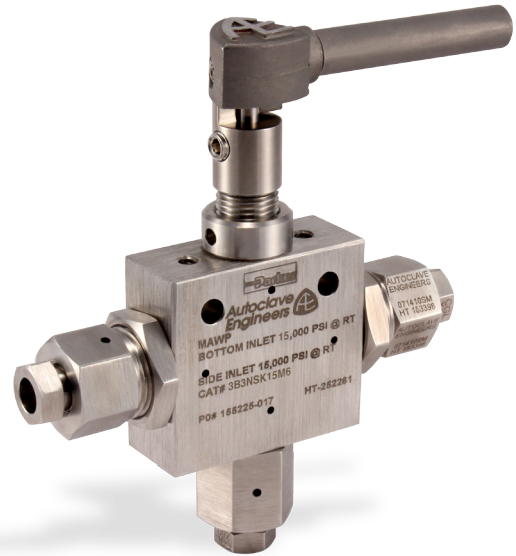
# NSK Series - 6MO NORSOK Products

## BALL VALVES: 3 Way Series (3/16" Orifice)

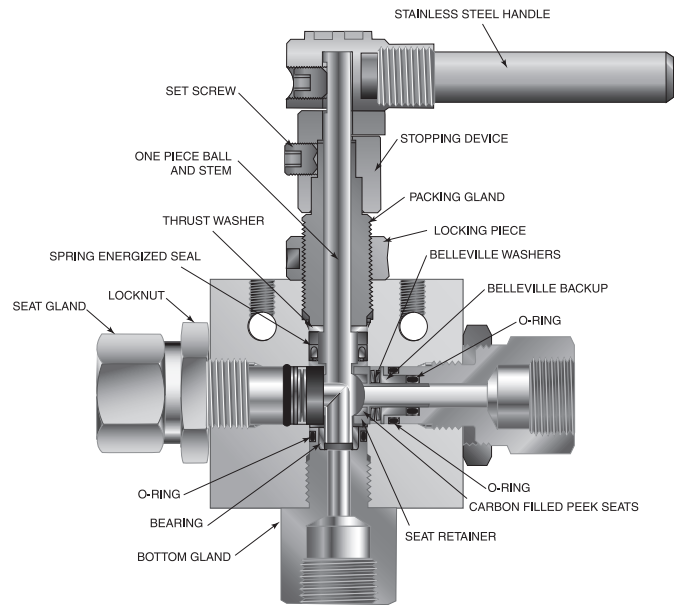
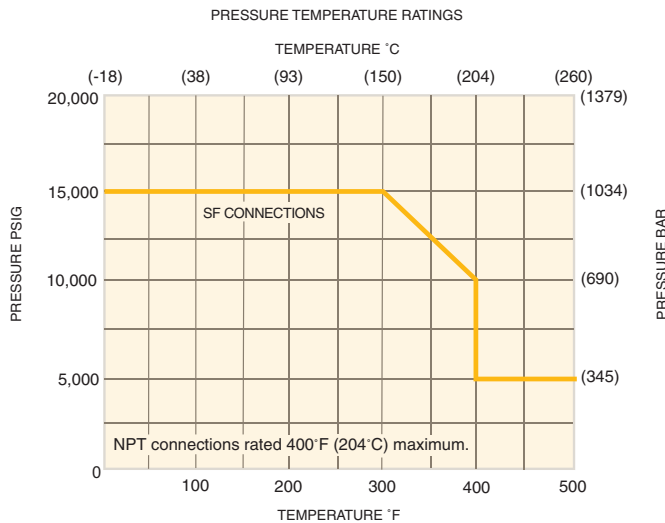
Pressures to 15,000 psi (1034 bar) • .188" (4.77mm)

Connection	MAWP @ Room Temperature	Minimum Orifice inches(mm)	Valve Cv
SF250CX20	15,000 psi (1034 bar)	.109 (2.77)	0.26
SF375CX20	15,000 psi (1034 bar)	.188 (4.77)	0.5
SF562CX20	15,000 psi (1034 bar)	.188 (4.77)	0.5

MAWP: Maximum Allowable Working Pressure



Ball Valves



**NOTE: Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.**

### Ordering Procedure

For complete information on available end connections and material options, see next page. 3-way ball valves are furnished complete with tube or pipe connections. Standard valve has Vitron o-rings 400°F (204°C) maximum.

Typical catalog number example: **3B3NSK15M9**

3B	3	NSK	15	M9	-	XXX
Valve Series	Ball Orifice Diameter	Material	Pressure (X 1000)	End Connection		Options
3B: 3-Way 3BD: 3-Way Diverter	3 - 3/16" (4.77 mm)	NSK - 254SMO NORSOK (For material options contact factory)		M9 - SF562CX20 (See chart on next page)		HT - Perfluoroelastomer 500°F (260°C) max. EPR - Ethylene Propylene 250°F (121°C) max. BO - Buna-N 250°F (121°C) max.

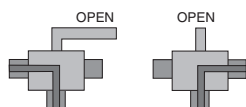
## End Connection Options

Catalog Number	End Connection Number	Connection	MAWP @ Room Temperature	Seat Gland Hex Inches(mm)
3B3NSK15M4 3BD3NSK15M4	M4	SF250CX20	15,000 psi (1034 bar)	1 (25.40)
3B3NSK15M6 3BD3NSK15M6	M6	SF375CX20	15,000 psi (1034 bar)	1 (25.40)
3B3NSK15M9 3BD3NSK15M9	M9	SF562CX20	15,000 psi (1034 bar)	1 (25.40)

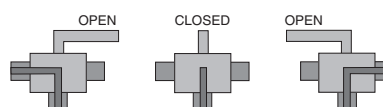
MAWP: Maximum Allowable Working Pressure

See ball valve option/details section for end connection details, material, and high temperature options.

See ball valve option/details section for end connection details, material, and high temperature options.



\*3-Way Diverter Valve  
90° Turn



3-Way Ball Valve  
180° Turn

\*The Diverter Valve design permits inlet flow through the bottom port. Outlet flow may be diverted to either valve side port.

## Ball Valve Options

### Pneumatic Actuator

- AO - Air-to-open/spring to close
- AC - Air-to-close/spring to open
- AOC - Air-to-open-and-close (double action)

### Electric Actuator

- E01 - 120 volt AC 50/60 Hz
- E02 - 220 volt AC 50/60 Hz
- E03 - 24 VDC (diverter style only)

### Actuator Operating Temperature:

- Pneumatic: -10°F to 176°F (-23°C to 80°C)
- Electric: 0°F to 160°F (-17°C to 71°C)

### High Temperature Option:

- HT - for media temperature up to 500°F (260°C)

See ball valve actuator section for full description, additional information, and options.

## Valve Maintenance

**Repair Kits:** add "R" to the front of valve catalog first 4 numbers for proper repair kit.  
(Example: R3B3NSK)

Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

See ball valve actuator section for full description, additional information and options.

## BALL VALVES: 3 Way Series (3/8" Orifice)

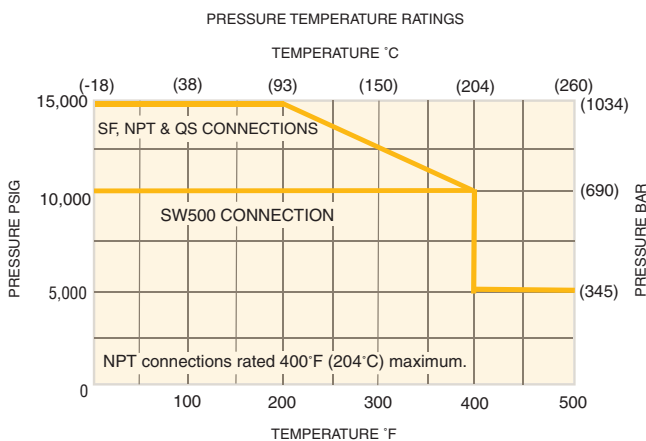
Pressures to 15,000 psi (1034 bar) • .326" (8.28mm)

Connection	MAWP @ Room Temperature	Minimum Orifice inches(mm)	Valve Cv
SF375CX20	15,000 psi (1034 bar)	.203 (2.77)	1.1
SF562CX20	15,000 psi (1034 bar)	.312 (4.77)	2.0

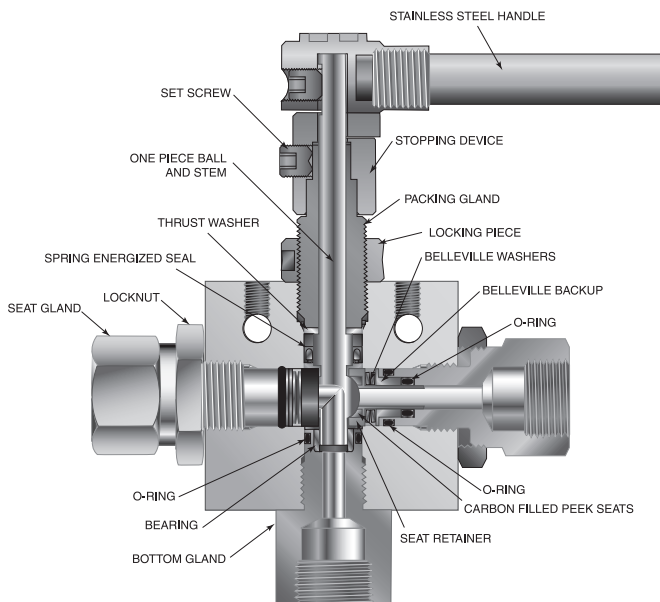
MAWP: Maximum Allowable Working Pressure



Ball Valves



Pressure ratings are determined by the end connections chosen, see chart. Maximum Temperature rating is determined by the o-ring material (see description below)  
**Note: Side connection pressure not recommended**



**NOTE: Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.**

### Ordering Procedure

For complete information on available end connections and material options, see next page. 3-way ball valves are furnished complete with tube or pipe connections. Standard valve has Vitron o-rings 400°F (204°C) maximum.

Typical catalog number example: **3B6NSK15M9**

3B	6	NSK	15	M9	-	XXX
Valve Series	Ball Orifice Diameter	Material	Pressure (X 1000)	End Connection		Options
3B: 3-Way 3BD: 3-Way Diverter	6 - 3/8" (9.52 mm)	NSK - 254SMO NORSOK (For material options contact factory)		M9 - SF562CX20 (See chart on next page)		HT - Perfluoroelastomer 500°F (260°C) max. EPR - Ethylene Propylene 250°F (121°C) max. BO - Buna-N 250°F (121°C) max.

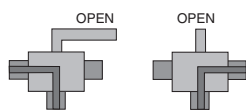
## End Connection Options

Catalog Number	End Connection Number	Connection	MAWP @ Room Temperature	Seat Gland Hex Inches(mm)
3B6NSK15M6 3BD6NSK15M6	M6	SF375CX20	15,000 psi (1034 bar)	1.38 (35.05)
3B6NSK15M9 3BD6NSK15M9	M9	SF562CX20	15,000 psi (1034 bar)	1.38 (35.05)

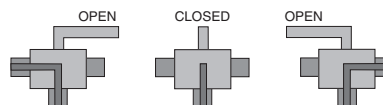
MAWP: Maximum Allowable Working Pressure

See ball valve option/details section for end connection details, material, and high temperature options.

See ball valve option/details section for end connection details, material, and high temperature options.



\*3-Way Diverter Valve  
90° Turn



3-Way Ball Valve  
180° Turn

\*The Diverter Valve design permits inlet flow through the bottom port. Outlet flow may be diverted to either valve side port.

## Ball Valve Options

### Pneumatic Actuator

- AO - Air-to-open/spring to close
- AC - Air-to-close/spring to open
- AOC - Air-to-open-and-close (double action)

### Electric Actuator

- E01 - 120 volt AC 50/60 Hz
- E02 - 220 volt AC 50/60 Hz
- E03 - 24 VDC (diverter style only)

### Actuator Operating Temperature:

- Pneumatic: -10°F to 176°F (-23°C to 80°C)
- Electric: 0°F to 160°F (-17°C to 71°C)

### High Temperature Option:

- HT - for media temperature up to 500°F (260°C)

See ball valve actuator section for full description, additional information, and options.

## Valve Maintenance

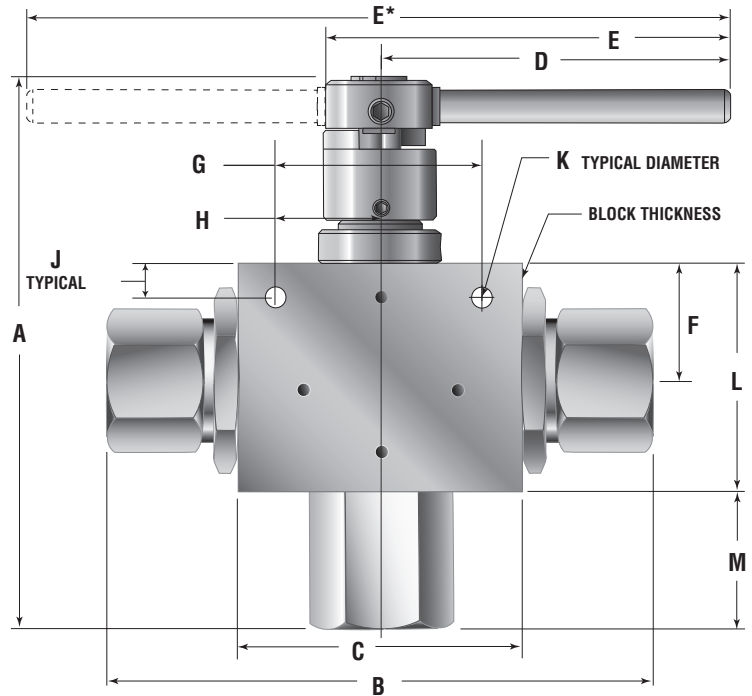
**Repair Kits:** add "R" to the front of valve catalog first 4 numbers for proper repair kit.  
(Example: R3B6NSK)

Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

See ball valve actuator section for full description, additional information and options.

## Ball Valve Dimensions: Inches (mm)

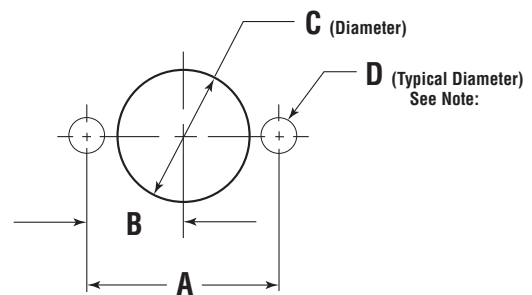
	Valve Models	
	3B3NSK / 3BD3NSK	3B6NSK / 3BD6NSK
<b>A</b>	5.66 (143.76)	6.55 (166.37)
<b>B</b>	4.72 (119.94)	5.74 (145.79)
<b>C</b>	2.50 (63.50)	3.00 (76.20)
<b>D</b>	3.37 (85.55)	4.99 (126.75)
<b>E</b>	3.90 (99.02)	5.52 (140.32)
<b>F</b>	1.13 (28.58)	1.38 (34.92)
<b>G</b>	1.50 (38.10)	2.00 (50.80)
<b>H</b>	0.75 (19.05)	1.00 (25.40)
<b>J</b>	0.43 (10.92)	0.41 (10.31)
<b>K</b>	0.28 (7.11)	0.28 (7.11)
<b>L</b>	2.26 (57.40)	2.88 (73.03)
<b>M</b>	0.97 (24.64)	1.19 (30.22)
<b>Block Thickness</b>	1.13 (28.57)	1.50 (38.10)



Ball Valves

## Ball Valve Panel Mounting Dimensions: Inches (mm)

	Valve Models	
	3B3NSK / 3BD3NSK	3B6NSK / 3BD6NSK
<b>A</b>	1.50 (38.10)	2.00 (50.80)
<b>B</b>	0.75 (19.05)	1.00 (25.40)
<b>C</b>	1.06 (26.92)	1.50 (38.10)
<b>D</b>	0.28 (7.11)	0.28 (7.11)



All dimensions are for reference only and are subject to change without notice.

Note: Body mounting 1/4" - 20 thread



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