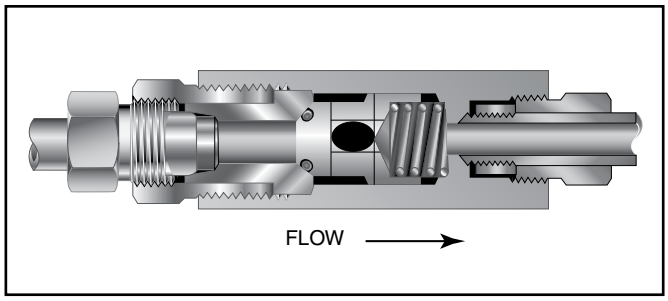
High Pressure Check Valves

Pressures to 60,000 psi (4137 bar)

O-Ring Check Valves



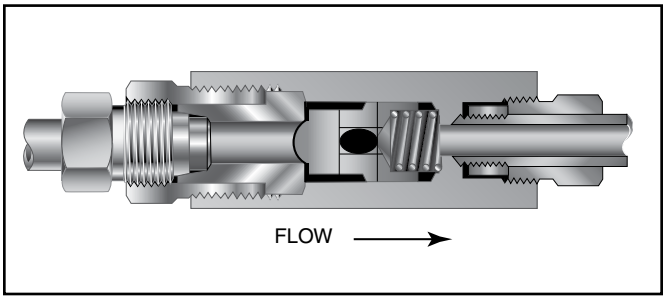
Minimum operating temperature for standard o-ring check valves 0°F (-17.8°C).
For low temperature option to -423°F (-252°C) add suffix LTTO (Low temperature spring & PTFE o-ring).

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: 316 Stainless Steel: body, cover, poppet, cover gland. 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.

Ball Check Valves



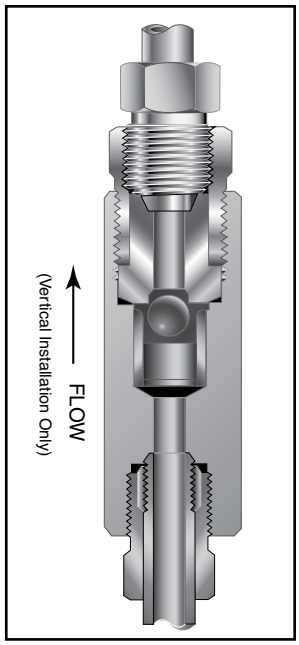
Minimum operating temperature for standard ball check valves -110°F (-79°C).
For low temperature option to -423°F (-252°C) add suffix LT (Low temperature spring).

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 1200°F (649°C). See Technical Information section for connection temperature limitations. **(Not for use as a relief valve.)**

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: 316 Stainless Steel: body, cover, ball poppet, cover gland. 300 Series Stainless Steel: spring.

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: 316 Stainless Steel: body, cover, sleeve, cover gland. 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.*

NOTE: *For optional material see Needle Valve Options section.*

High Pressure Check Valves

Catalog Number	Fits Connection Type	Pressure Rating psi (bar)*	Orifice inches (mm)	Rated C_V	Dimensions - inches (mm)				
					A	B	C	D Typical	Hex
O-Ring Check Valves									
CKO4400	F250C	60,000 **(4136.79)**	0.094 **(2.39)**	0.15	3.38 **(85.85)**	2.50 **(63.50)**	0.50 **(12.70)**	0.63 **(16.00)**	1.18 **(29.97)**
CKO6600	F375C	60,000 **(4136.79)**	0.125 **(3.18)**	0.28	3.75 **(95.25)**	2.62 **(66.55)**	0.53 **(13.46)**	0.75 **(19.05)**	1.18 **(29.97)**
CKO9900	F562C	60,000 **(4136.79)**	0.187 **(4.75)**	0.63	4.62 **(117.35)**	3.38 **(85.85)**	0.81 **(20.57)**	1.12 **(28.45)**	1.50 **(38.10)**
40CKO9900	F562C40	40,000 **(2757.85)**	0.250 **(6.35)**	0.78	4.64 **(117.86)**	3.38 **(85.73)**	0.72 **(18.29)**	1.19 **(30.23)**	1.50 **(38.10)**
43CKO16	F1000C43	43,000 **(2964.70)**	0.438 **(11.13)**	4.3	6.54 **(166.11)**	5.63 **(143.00)**	.72 **(18.29)**	1.38 **(35.05)**	1.88† **(47.76)**
Ball Check Valves									
CB4401	F250C	60,000 **(4136.79)**	0.094 **(2.39)**	0.15	3.38 **(85.85)**	2.50 **(63.50)**	0.50 **(12.70)**	0.63 **(16.00)**	1.18 **(29.97)**
100CB4401+	F312C150	100,000 **(6894.65)**	0.0094 **(2.39)**	0.11	4.61 **(117.09)**	3.50 **(88.9)**	0.52 **(13.21)**	1.75† **(44.50)**	.75 **(19.05)**
100CB5501+	F312C150	100,000 **(6894.65)**	0.0094 **(2.39)**	0.11	4.61 **(117.09)**	3.50 **(88.9)**	.52 **(13.21)**	1.75† **(44.50)**	.75 **(19.05)**
CB6601	F375C	60,000 **(4136.79)**	0.125 **(3.18)**	0.28	3.75 **(95.25)**	2.62 **(66.55)**	0.53 **(13.46)**	0.75 **(19.05)**	1.18 **(29.97)**
100CB6601+	F312C150	100,000 **(6894.65)**	0.0094 **(2.39)**	0.11	4.61 **(117.09)**	3.50 **(88.9)**	.52 **(13.21)**	1.75† **(44.50)**	.75 **(19.05)**
CB9901	F562C	60,000 **(4136.79)**	0.187 **(4.75)**	0.63	4.62 **(117.35)**	3.38 **(85.85)**	0.81 **(20.57)**	1.12 **(28.45)**	1.50 **(38.10)**
43CB16	F1000C43	43,000 **(2964.70)**	0.438 **(11.13)**	4.3	6.54 **(166.11)**	5.63 **(143.00)**	.72 **(18.29)**	1.38 **(35.05)**	1.88† **(47.76)**
Ball Type Excess Flow Valves									
CK4402	F250C	60,000 **(4136.79)**	0.094 **(2.39)**		3.38 **(85.85)**	2.50 **(63.50)**	0.50 **(12.70)**	0.63 **(16.00)**	1.18 **(29.97)**
CK6602	F375C	60,000 **(4136.79)**	0.125 **(3.18)**		3.75 **(95.25)**	2.62 **(66.55)**	0.53 **(13.46)**	0.75 **(19.05)**	1.18 **(29.97)**
CK9902	F562C	60,000 **(4136.79)**	0.187 **(4.75)**		4.62 **(117.35)**	3.38 **(85.85)**	0.81 **(20.57)**	1.12 **(28.45)**	1.50 **(38.10)**

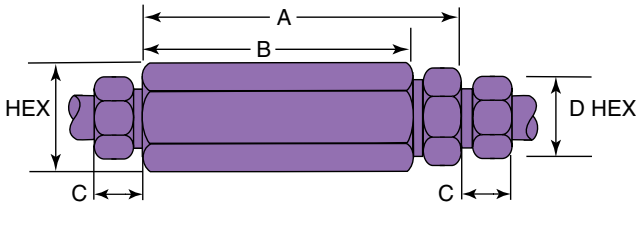
+Body material is 15-5PH

*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

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

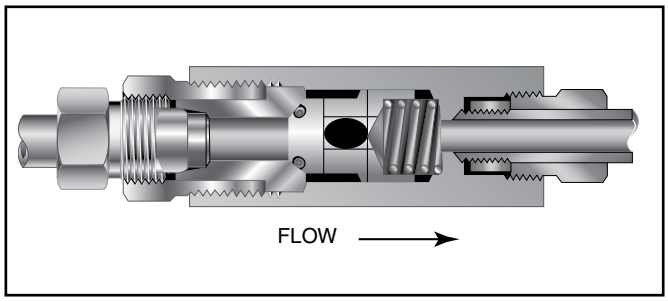
Figure 1



Medium Pressure Check Valves

Pressures to 20,000 (1379 bar)

O-Ring Check Valves



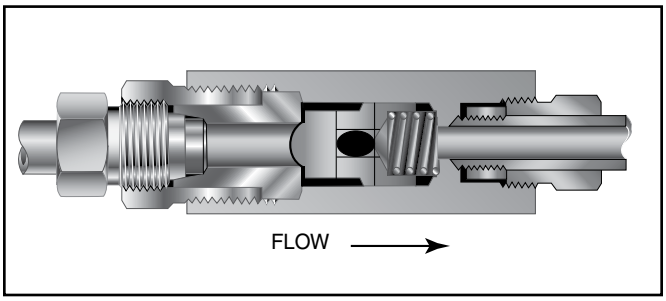
Minimum operating temperature for standard o-ring check valves 0°F (-17.8°C).
For low temperature option to -423°F (-252°C) add suffix LTTO (Low temperature spring & PTFE o-ring).

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: 316 Stainless Steel: body, cover, poppet, cover gland. 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.

Ball Check Valves



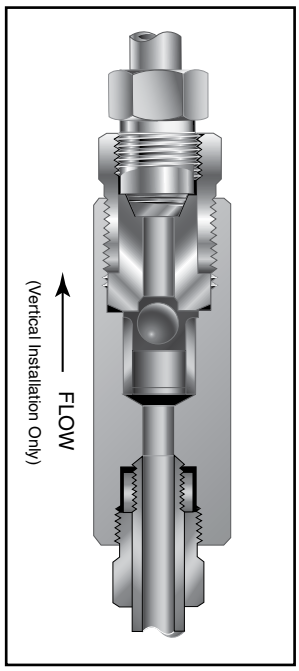
Minimum operating temperature for standard ball check valves -110°F (-79°C).
For low temperature option to -423°F (-252°C) add suffix LT (Low temperature spring).

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 1200°F (649°C). See Technical Information section for connection temperature limitations. (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: 316 Stainless Steel: body, cover, ball poppet, cover gland. 300 Series Stainless Steel: ball, spring.

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: 316 Stainless Steel: body, cover, sleeve, cover gland. 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: *For optional material see Needle Valve Options section.*

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

Medium Pressure Check Valves

Catalog Number	Fits Connection Type	Pressure Rating psi (bar)*	Orifice inches (mm)	Rated C_V	Dimensions - inches (mm)				
					A	B	C	D Typical	Hex

O-Ring Check Valves

CXO4400	SF250CX	20,000 **(1378.93)**	0.125 **(3.18)**	0.28	2.94 **(74.68)**	2.50 **(63.50)**	0.38 **(9.53)**	0.50 **(12.70)**	0.81 **(20.57)**
CXO6600	SF375CX	20,000 **(1378.93)**	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)**
CXO9900	SF562CX	20,000 **(1378.93)**	0.359 **(9.12)**	2.30	4.18 **(106.17)**	3.50 **(88.90)**	0.53 **(13.46)**	0.94 **(23.88)**	1.38 **(35.05)**
CXO12	SF750CX	20,000 **(1378.93)**	0.516 **(13.11)**	4.70	5.50 **(139.70)**	4.75 **(120.65)**	0.62 **(15.75)**	1.19 **(30.23)**	1.75 **(44.45)**
CXO16	SF1000CX	20,000 **(1378.93)**	0.688 **(17.48)**	7.40	6.63 **(168.40)**	5.75 **(146.05)**	0.72 **(18.29)**	1.38 **(35.05)**	1.88† **(47.75)**
CXO24	SF1500CX	15,000 **(1034.20)**	0.94 **(23.80)**	14.00	9.01 **(228.85)**	7.25 **(184.15)**	1.12 **(28.45)**	1.88 **(47.75)**	3.00† **(76.20)**

Ball Check Valves

CXB4400	SF250CX	20,000 **(1378.93)**	0.125 **(3.18)**	0.28	2.94 **(74.68)**	2.50 **(63.50)**	0.38 **(9.53)**	0.50 **(12.70)**	0.81 **(20.57)**
CXB6600	SF375CX	20,000 **(1378.93)**	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)**
CXB9900	SF562CX	20,000 **(1378.93)**	0.359 **(9.12)**	2.30	4.18 **(106.17)**	3.50 **(88.90)**	0.53 **(13.46)**	0.94 **(23.88)**	1.38 **(35.05)**
CXB12	SF750CX	20,000 **(1378.93)**	0.516 **(13.11)**	4.70	5.50 **(139.70)**	4.75 **(120.65)**	0.62 **(15.75)**	1.19 **(30.23)**	1.75 **(44.45)**
CXB16	SF1000CX	20,000 **(1378.93)**	0.688 **(17.48)**	7.40	6.63 **(168.40)**	5.75 **(146.05)**	0.72 **(18.29)**	1.38 **(35.05)**	1.88† **(47.75)**
CXB24	SF1500CX	15,000 **(1034.20)**	0.94 **(23.80)**	14.00	9.01 **(228.85)**	7.25 **(184.15)**	1.12 **(28.45)**	1.88 **(47.75)**	3.00† **(76.20)**

Ball Type Excess Flow Valves

CXK4402	SF250CX	20,000 **(1378.93)**	0.125 **(3.18)**	0.037+	2.94 **(74.68)**	2.50 **(63.50)**	0.38 **(9.65)**	0.50 **(12.70)**	0.81 **(20.57)**
CXK6602	SF375CX	20,000 **(1378.93)**	0.218 **(5.54)**	0.066+	3.12 **(79.25)**	2.62 **(66.55)**	0.47 **(11.94)**	0.62 **(15.75)**	1.00 **(25.40)**
CXK9902	SF562CX	20,000 **(1378.93)**	0.359 **(9.12)**	.212+	4.18 **(106.17)**	3.50 **(88.90)**	0.53 **(13.46)**	0.94 **(23.88)**	1.38 **(35.05)**
CXK1202	SF750CX	20,000 **(1378.93)**	0.516 **(13.11)**	.368+	5.12 **(130.05)**	4.38 **(111.25)**	0.62 **(15.75)**	1.19 **(30.23)**	1.75 **(44.45)**
CXK1602	SF1000CX	20,000 **(1378.93)**	0.688 **(17.48)**	.864+	6.50 **(165.10)**	5.62 **(142.75)**	0.72 **(18.29)**	1.38 **(35.05)**	1.88† **(47.75)**

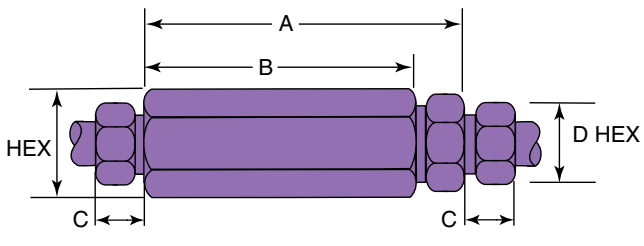
Note:
+ Check Flow - water, GPM
For flow rates using alternate fluids, consult Parker Autoclave Engineers.

*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

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

Figure 1



Catalog Number	Tube Materials	Fits Connection Type	Tube Size Inches (mm) Outside Diameter	Inside Diameter	Wall Thickness	Flow Area in.² (mm²)	Working Pressure psi (bar)* 0 - 100°F -17.8 to - 37.8°C	200°F 93°C	400°F 204°C	600°F 316°C	650°F 343°C
MS15-062	316SS	W375 or SW375	3/8 **(9.53)**	0.250 **(6.35)**	0.062 **(1.57)**	0.049 **(31.61)**	7,500 **(517.10)**	7,500 **(517.10)**	7,200 **(496.41)**	6,800 **(468.84)**	6,300 **(434.36)**
MS15-162†	304SS			0.305 **(7.75)**	0.035 **(0.89)**	0.073 **(47.10)**	3,800 **(262.00)**	3,550 **(244.76)**	3,250 **(224.08)**	3,200 **(220.63)**	3,050 **(210.29)**
MS15-205	316SS	W500 or SW500	1/2 **(12.70)**	0.270 **(6.86)**	0.118 **(3.00)**	0.055 **(35.48)**	10,000 **(689.46)**	10,000 **(689.46)**	9,650 **(665.33)**	9,000 **(620.52)**	8,400 **(579.15)**
MS15-208†	304SS			0.270 **(6.86)**	0.118 **(3.00)**	0.055 **(35.48)**	10,000 **(689.46)**	9,400 **(648.10)**	8,600 **(592.94)**	8,500 **(586.05)**	8,450 **(582.60**
MS15-065	316SS			0.375 **(9.53)**	0.062 **(1.57)**	0.110 **(70.97)**	5,500 **(379.21)**	5,500 **(379.21)**	5,250 **(361.97)**	4,950 **(341.29)**	4,600 **(317.15)**
MS15-165†	304SS			0.402 **(10.21)**	0.048 **(1.22)**	0.127 **(81.94)**	4,000 **(275.79)**	3,750 **(258.55)**	3,400 **(234.42)**	3,400 **(234.42)**	3,200 **(220.63)**

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

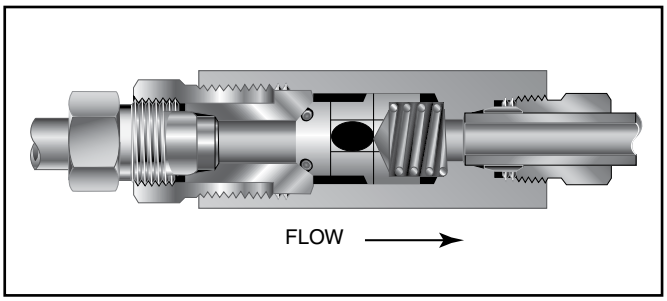
†Items are being discontinued. Contact the factory for available stock

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

Fittings and Tubing - Low Pressure Check Valves

Pressures to 15,000 psi (1034 bar)

O-Ring Check Valves



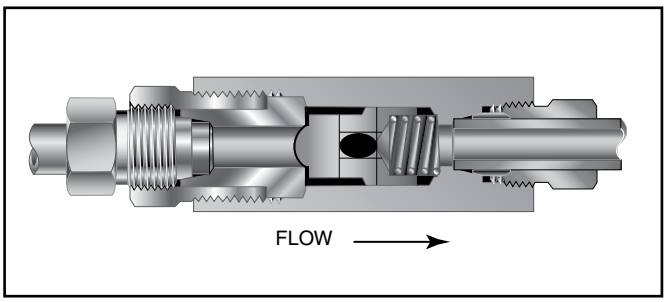
Minimum operating temperature for standard o-ring check valves 0°F (-17.8°C).
For low temperature option to -100°F (-73°C) add suffix LTTO (Low temperature spring & PTFE o-ring).

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

Materials: 316 Stainless Steel: body, cover, poppet and cover gland. 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 (6.89bar)) available on special order for O-ring style check valves only.

Ball Check Valves



Minimum operating temperature for standard ball check valves 0°F (-17.8°C).
For low temperature option to -100°F (-73°C) add suffix LT (Low temperature spring).

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 650°F (343°C). See Technical Information section for connection temperature limitations. **(Not for use as a relief valve.)**

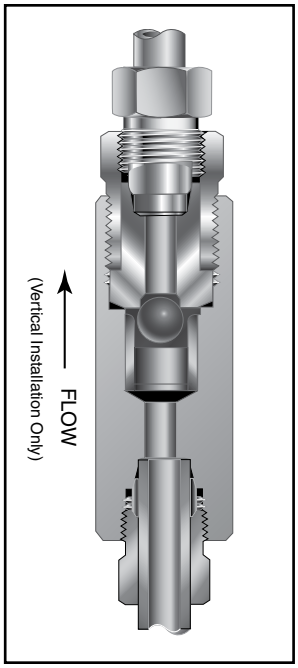
Ball and poppet are an integral design to assure positive, in-line seating without "chatter". Poppet is designed essentially for axial flow with minimum pressure drop.

Materials: 316 Stainless Steel: body, cover, cover gland, ball poppet. 300 Series Stainless Steel: spring

***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:** For optional material see Needle Valve Options section.*

Ball Type Excess Flow Valves



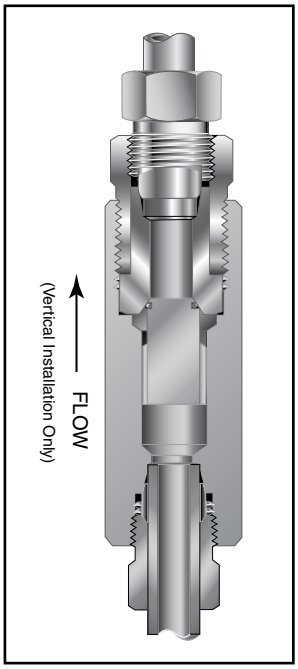
Protects pressure gauges and pressure instrumentation from sudden surges in flow or venting in the event of line failure.

Materials: 316 Stainless Steel: body, cover, gland nut and 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.

O-Ring Type Excess Flow Valves



Protects pressure gauges and other pressure instrumentation from sudden surges in flow due to operator error or line failure. This valve provides dependable, tight shut-off.

Materials: 316 Stainless Steel: body, cover and sleeve. 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.

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

Resetting Valve: Equalize the pressure across the poppet. The poppet 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: *For optional material see Needle Valve Options section.*

Low Pressure Check Valves

Catalog Number	Fits Connection Type	Pressure Rating psi (bar)*	Orifice inches (mm)	Rated C_V	Dimensions - inches (mm)				
					A	B	C	D Typical	Hex
O-Ring Check Valves									
SW02200	W125	15,000 (1034.19)	0.094 (2.39)	0.15	2.25 (57.15)	1.88 (47.75)	0.31 (7.87)	0.50 (12.70)	0.63 (15.88)
SW04400	SW250	15,000 (1034.19)	0.188 (4.78)	0.63	3.18 (80.77)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)
SW06600	SW375	15,000 (1034.19)	0.250 (6.35)	1.70	3.56 (90.42)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)
SW08800	SW500	10,000 (689.46)	0.375 (9.53)	3.40	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)
Ball Check Valves									
SWB2200	W125	15,000 (1034.19)	0.094 (2.39)	0.15	2.25 (57.15)	1.88 (47.75)	0.31 (7.87)	0.50 (12.70)	0.63 (15.88)
SWB4400	SW250	15,000 (1034.19)	0.188 (4.78)	0.63	3.18 (80.77)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)
SWB6600	SW375	15,000 (1034.19)	0.250 (6.35)	1.70	3.56 (90.42)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)
SWB8800	SW500	10,000 (689.46)	0.375 (9.53)	3.40	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)
Ball Type Excess Flow Valves									
SWK2202	W125	15,000 (1034.19)	0.094 (2.39)	0.012†	2.25 (57.15)	1.88 (47.75)	0.31 (7.87)	0.50 (12.70)	0.63 (15.88)
SWK4402	SW250	15,000 (1034.19)	0.188 (4.78)	0.037†	3.18 (80.77)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)
SWK6602	SW375	15,000 (1034.19)	0.250 (6.35)	0.104†	3.56 (90.42)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)
SWK8802	SW500	10,000 (689.46)	0.375 (9.53)	0.212†	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)
O-Ring Type Excess Flow Valves									
SWK04400	SW-250	15,000 (1034.19)	0.188 (4.78)	3††	3.12 (79.25)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)
SWK06600	SW-375	15,000 (1034.19)	0.250 (6.35)	5††	3.50 (88.90)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)
SWK08800	SW-500	10,000 (689.46)	0.375 (9.53)	10††	4.31 (109.47)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)

Note:
All check valves are furnished complete with connection components unless otherwise specified.
The 1/16" Tubing System is a complete system for use with all 1/8" components for pressure to 15,000 psi (1034 bar). Consult factory.
† - Check Flow** - water, GPM
†† - Check Flow** - CFM, nitrogen @ 500 psi (34.47 bar), RT
** - For flow using alternate fluids, consult Parker Autoclave Engineers.

*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.

Figure 1