



## Spring Check Valves



### Application

Get control with the Bradford™ B45MP series spring check valve. Full precision machined body, plunger, and flow plate are constructed of 316L stainless steel. Our valve meets 3A requirements and is designed for use in food, pharmaceutical and other industries with sanitary requirements.

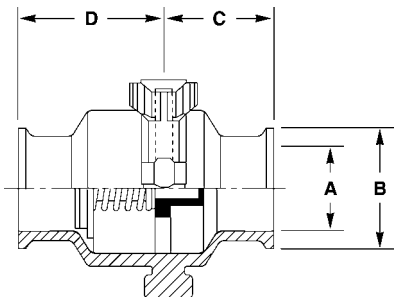
### Working Principle

Spring check valves, also described as non-return valves, are designed to allow flow in one direction while preventing flow in the opposite direction. This valve is fully automatic. The pressure of the fluid flowing through the valve holds the plunger in the open position. When the pressure drop across the valve approaches zero, the spring will close the valve. Any reverse flow will firmly seat the plunger. The special angled plunger design and precision open/close operation prevent leaking through the valve in low pressure systems.

### Features and Benefits

- lower resistance to flow
- full size flow plate
- long stem bushing for increased cycle life
- suitable for low and medium viscosity fluids
- space saving, lightweight
- field serviceable (no special tools required)
- special design prevents low pressure leak-through
- various end connections available
- all wetted surfaces are sanitary finished to  $\leq 32 R_a$
- sizes from 1/2" thru 4"
- maximum operating temperature: **145°F**

### Technical Data, Specifications and Dimensions



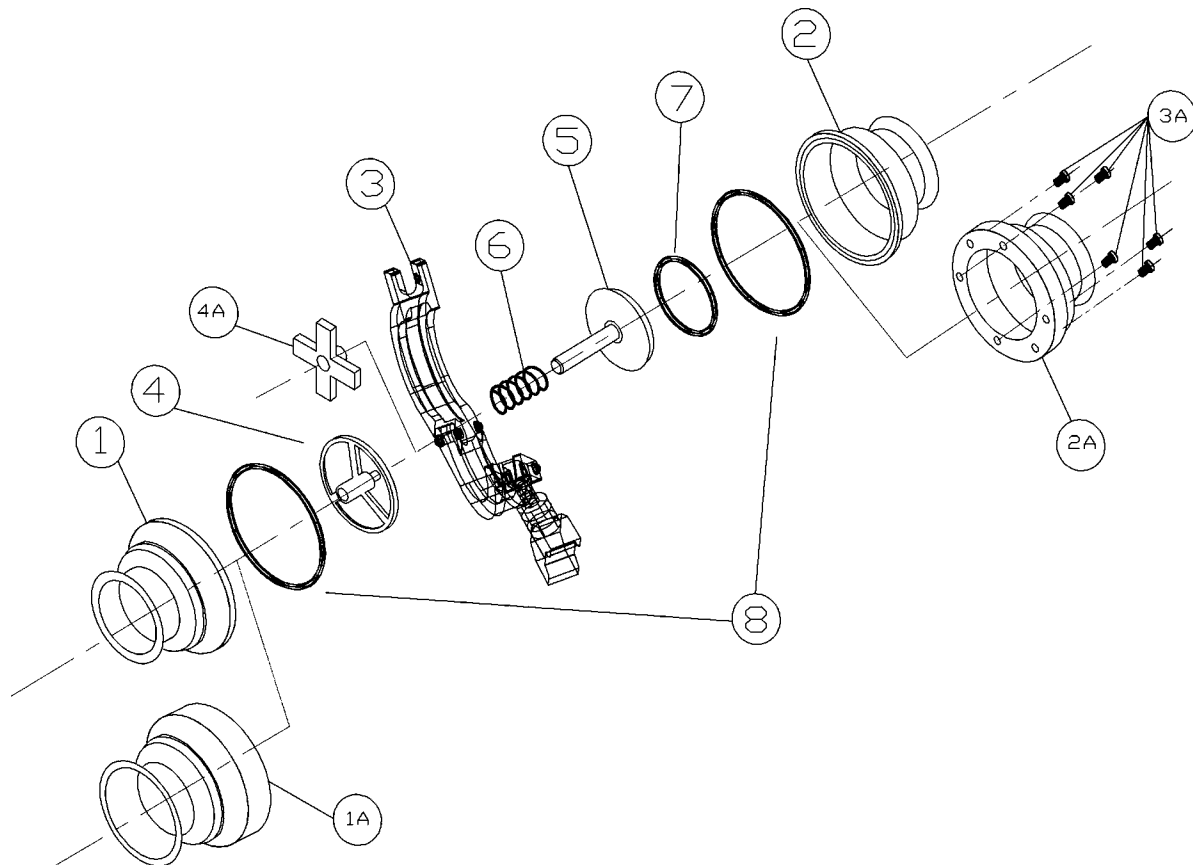
Size	Dimensions (in)			
	A	B	C	D
1/2"	0.370	0.992	1.1	1.6
3/4"	0.620	0.992	1.1	1.6
1"	0.870	1.988	1.7	2.3
1 1/2"	1.370	1.988	1.7	2.3
2"	1.870	2.519	1.7	2.3
2 1/2"	2.370	3.051	1.7	2.3
3"	2.870	3.582	1.7	2.3
4" *	3.834	4.682	1.7	2.7

Size	Part Number	Pressure Rating (PSI)	Cracking Pressure (PSI)		Flow Coefficient (CV)
			Spring #1	Spring #2	
1/2"	B45MP-R50	145	10	0.6	5
3/4"	B45MP-R75	145	4	2	8
1"	B45MP-R100	145	0.8	N/A	12
1 1/2"	B45MP-R150	145	1.6	N/A	20
2"	B45MP-R200	145	1.4	N/A	40
2 1/2"	B45MP-R250	145	0.9	N/A	60
3"	B45MP-R300	145	0.5	N/A	100
4" *	B45MP-R400	145	0.5	N/A	210

- \* 4" uses bolted construction in place of clamp
- see our Actuation catalog for more technical information
- Note: all dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

# Spring Check Valves

## Material List



Item	Description	Material	Quantity		
			1/2" - 3/4"	1" - 3"	4"
1	upper body housing	316L stainless	1	1	NA
1a	upper body housing	316L stainless	NA	NA	1
2	lower body housing	316L stainless	1	1	NA
2a	lower body housing	316L stainless	NA	NA	1
3	single pin clamp	CF8	1	1	NA
3a	body bolt	304 stainless	NA	NA	6
4	flow plate	CF8M	NA	1	1
4a	flow plate	CF8M	1	NA	NA
5	plunger	316L stainless	1	1	1
6	spring	316L stainless	1	1	1
7	stem O-ring	Viton®	1	1	1
8	body O-ring	NBR (Buna)	1	2	1

### Repair Kits

Size	Part #
1/2"	B45MP-RK050
3/4"	B45MP-RK075
1"	B45MP-RK100
1 1/2"	B45MP-RK150
2"	B45MP-RK200
2 1/2"	B45MP-RK250
3"	B45MP-RK300
4"	B45MP-RK400

Repair Kit contains:

- (1) 316L stainless spring
- (1) Viton® plunger O-ring
- (see above for quantity) NBR (Buna) body O-ring

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## Y-Ball Check Valve




### Application

Get control with Bradford™ Y-ball check valves. These valves are designed to prevent reverse flow in systems moving liquid products.

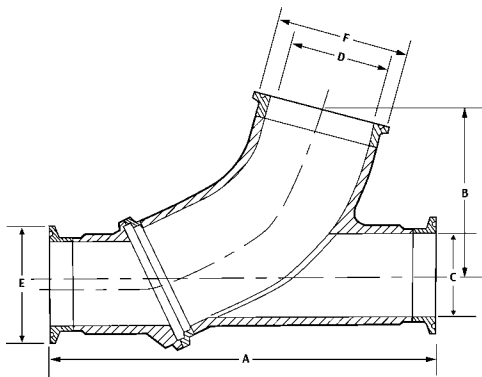
### Working Principle

When the liquid flows into the inlet, the PTFE ball rolls up into the branch of the valve allowing full fluid flow. When the flow stops, equalizing the pressure, the ball drops back into the seat, preventing backflow. Should reverse flow occur, the opposing pressure will cause the ball to seat firmly against the gasket preventing backflow.

### Features and Benefits

- two-piece construction for easier alignment
  - replace seat instead of entire valve
  - PTFE ball
    - > better heat and abrasion resistance
    - > lasts longer between maintenance cycles
  - easy cleaning, no tools required
- polished ID and OD to  standards
  - all metal product surfaces are 316L stainless steel construction
  - air blow check valve can be added (see air blow check valve for sizing)
  - maximum temperature rating: **250°F**

## Technical Data, Specifications and Dimensions



Size	Dimensions (in)					
	A	B	C	D	E	F
1½"	7.5	3.3	1.365	1.875	1.984	2.516
2"	8.5	3.9	1.865	2.335	2.516	3.047
2½"	10.0	4.5	2.370	2.870	3.047	3.579
3"	11.5	5.3	2.870	3.834	3.579	4.682

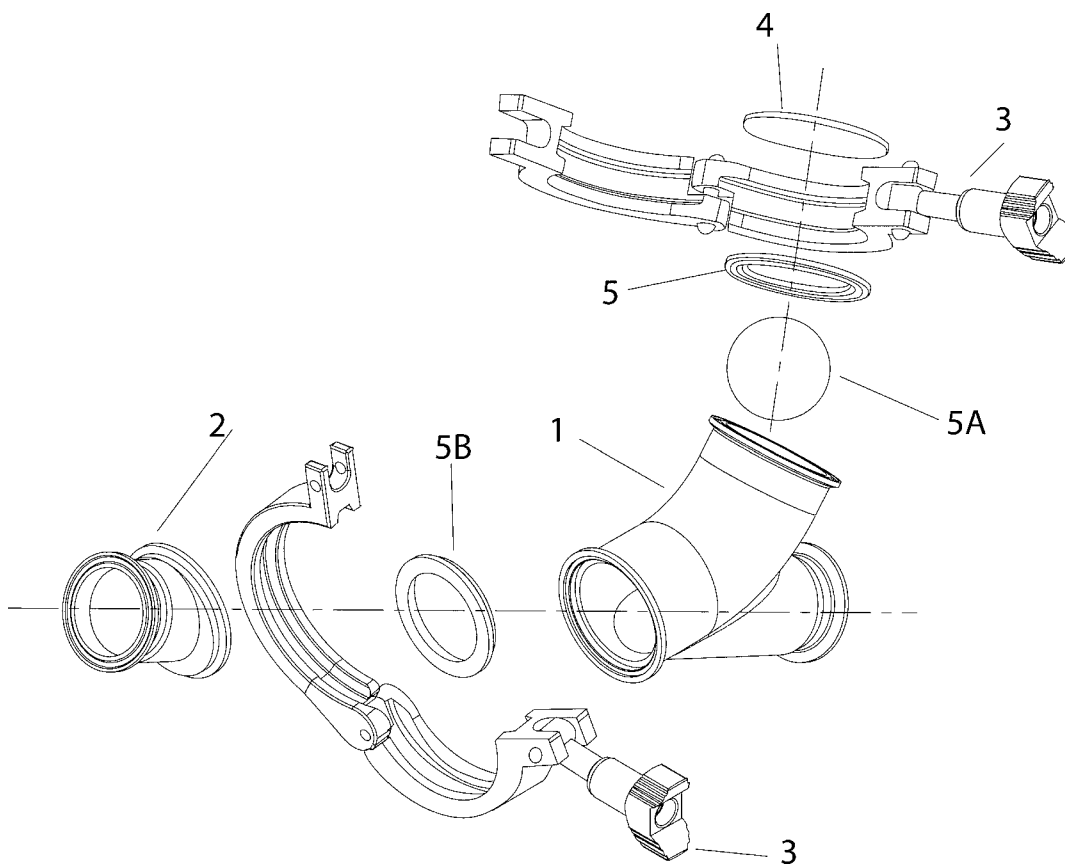
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Part Number	Valve Size (in)	Weight (lbs)	Cap Size	Clamp Size	Cap Gasket	Ball Diameter (in)
B45BY-R150	1½	4.9	2	2	2	1.6
B45BY-R200	2	6.6	2½	2½	2½	2.1
B45BY-R250	2½	10.5	3	3	3	2.7
B45BY-R300	3	17.5	4	4	4	3.6

- see our Actuation catalog for more technical information.
- Note: all dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

# Ball Check Valve

## Materials List



Item	Description	Material	Qty
1	angle body	316L stainless	1
2	inlet body	316L stainless	1
3	single pin clamp	CF8	2
4	clamp end cap	316L stainless	1
5	cap gasket	EPDM	1
5a	ball	PTFE	1
5b	seat	EPDM/CF-8M	1

## Repair Kits

Repair kit contains:

- (1) EPDM cap gasket
- (1) PTFE ball
- (1) EPDM/CF-8M seat

Size	Part #
1½"	B45BY-RK150
2"	B45BY-RK200
2½"	B45BY-RK250
3"	B45BY-RK300

Seal kit contains:

- (1) EPDM cap gasket
- (1) EPDM/CF-8M seat

Size	Part #
1½"	B45BY-SK150
2"	B45BY-SK200
2½"	B45BY-SK250
3"	B45BY-SK300

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### **3** Air Blow Check Valve



**Application**

Get control with Bradford™ air blow check valves. They are designed to evacuate lines of product or CIP solutions.

**Working Principle**

The valve is designed to pressurize lines with air to clean out product or cleaning solutions. It is fail-safe because the simple air-to-open spring-to-close mechanism prevents backflow. Use it with Bradford™ Y-ball check valves. The valves are available with three different end configurations to allow quick assembly and disassembly when replacing filter media, cleaning or inspecting.

**Features and Benefits**

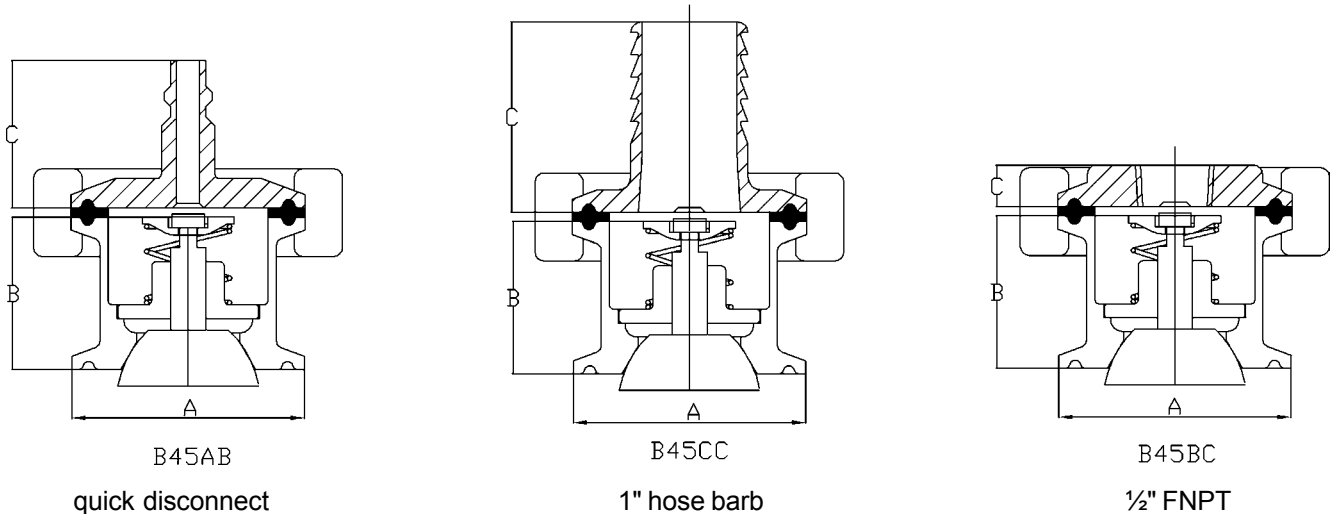
- 316L stainless steel offered with EPDM stem seat and gasket
- sizes from 1½" - 4"
- Conforms to 3A Accepted Practice 604-05 for supplying air under pressure in contact with milk products and product contact surfaces with optional filter disc.

When using air blow check valves with ball check valves, refer to the sizing chart below.

**Sizing Chart**

Ball Check Valve size	Air Blow Check Valve size
1½"	2"
2"	2½"
2½"	3"
3"	4"

### Technical Data, Specifications and Dimensions



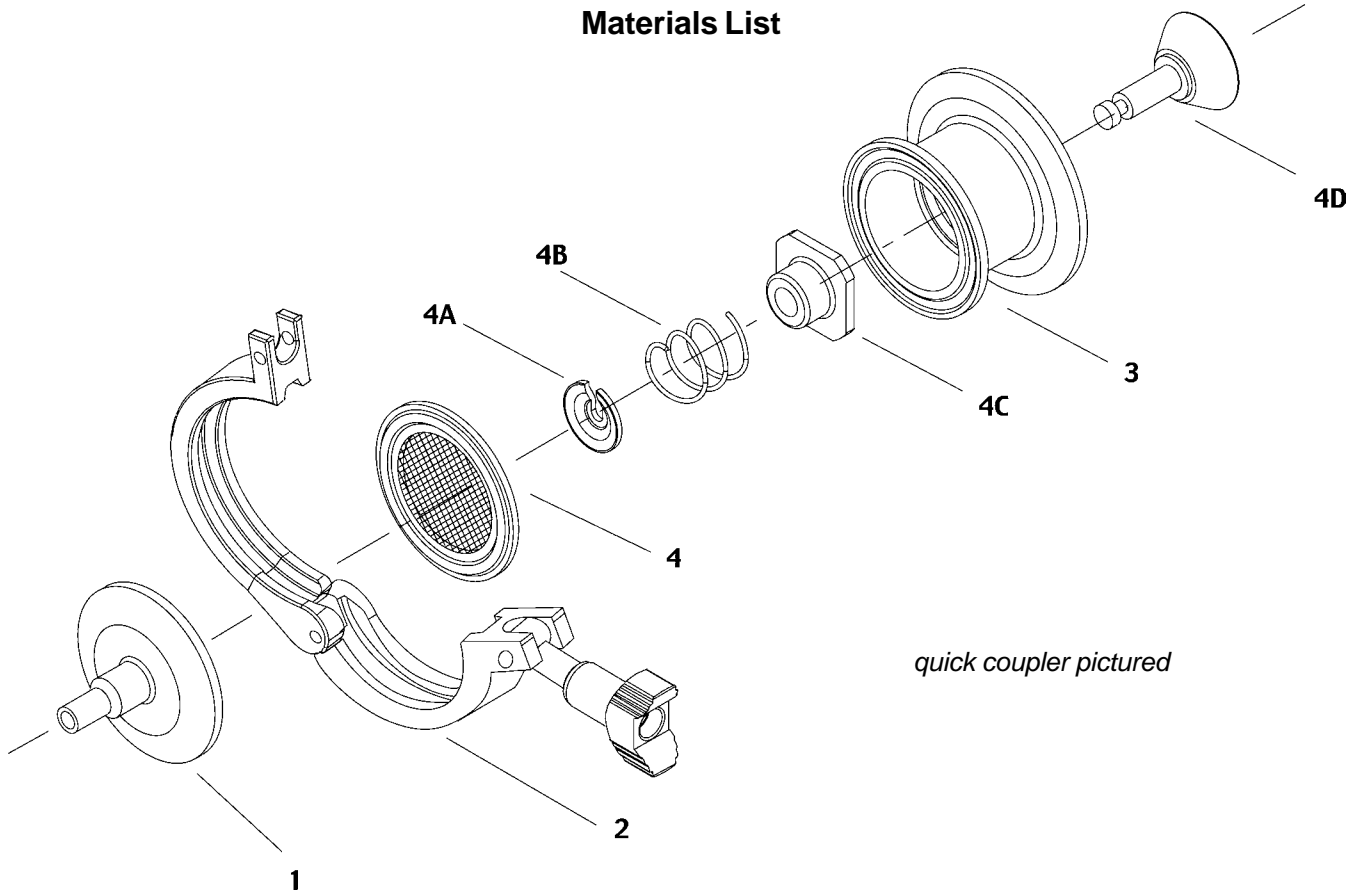
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Size	Dimensions (in)							
	A	B	Part Number	C (AB)	Part Number	C (BC)	Part Number	C (CC)
1 - 1½"	1.984	2.55	B45AB-R100150	1.3	B45BC-R100150	1.7	B45CC-R100150	0.6
2"	2.516	2.55	B45AB-R200	1.3	B45BC-R200	1.7	B45CC-R200	0.6
2½"	3.047	2.55	B45AB-R250	1.3	B45BC-R250	1.7	B45CC-R250	0.6
3"	3.579	2.55	B45AB-R300	1.3	B45BC-R300	1.7	B45CC-R300	0.6
4"	4.682	2.55	B45AB-R400	1.3	B45BC-R400	1.7	B45CC-R400	0.6

- See our Actuation catalog for more technical information.
- Note: all dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

# Air Blow Check Valve

## Materials List



Item	Description	Material	Qty
1	air line quick coupler	316L stainless	1
	hose barb	316L stainless	1
	½" NPT cap	316L stainless	1
2	single pin clamp	CF8	1
3	valve body	316L stainless	1
4	perforated disc	EPDM/316L	1
4a	spring retainer	304 stainless	1
4b	spring	304 stainless	1
4c	stem guide	nylon	1
4d	stem and plug	EPDM/316L stainless	1
B45ABFD150 *	filter disc pack	1 micron filter	50

\* filter discs (optional) must be used when installed in Accepted Practice 3A 604-05

## Repair Kit

Part #
B45AB-RK

### Repair Kit contains:

- (1) EPDM / 316L stainless perforated disc
- (1) 304 stainless spring retainer
- (1) 304 stainless spring
- (1) nylon stem guide
- (1) EPDM / 316L stem and plug

