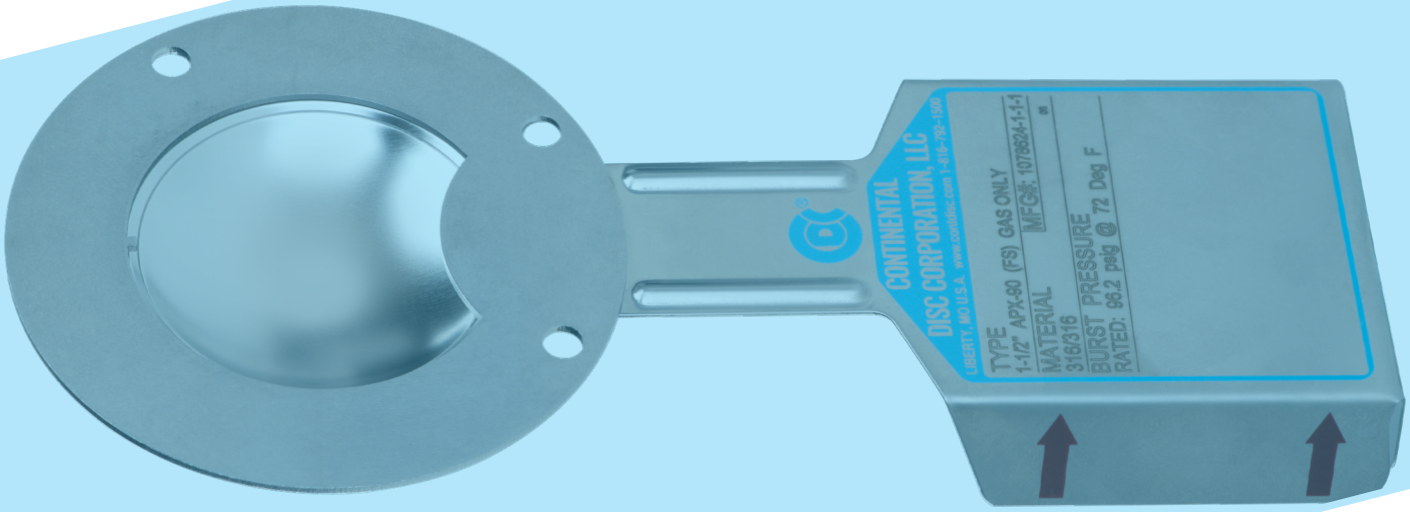
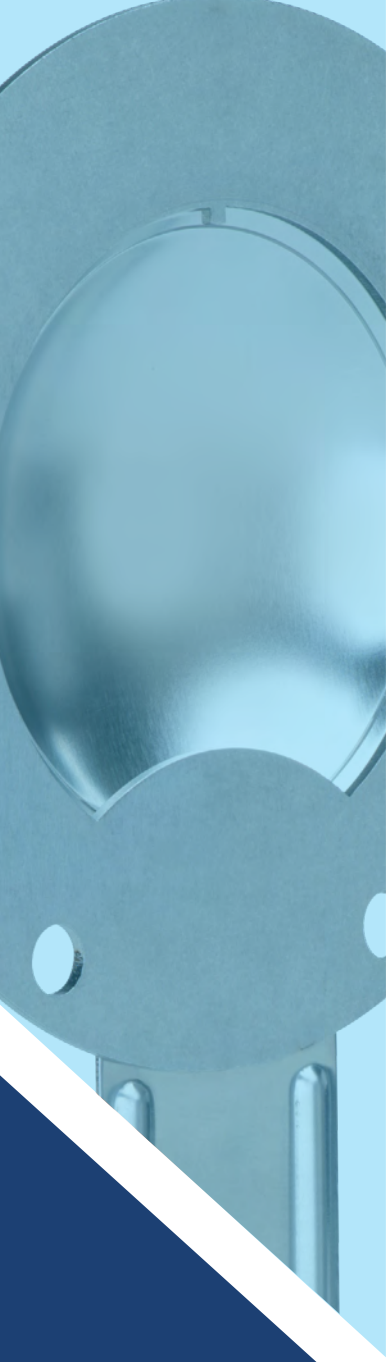
Continental Disc®
Corporation

RUPTURE DISC

APX™



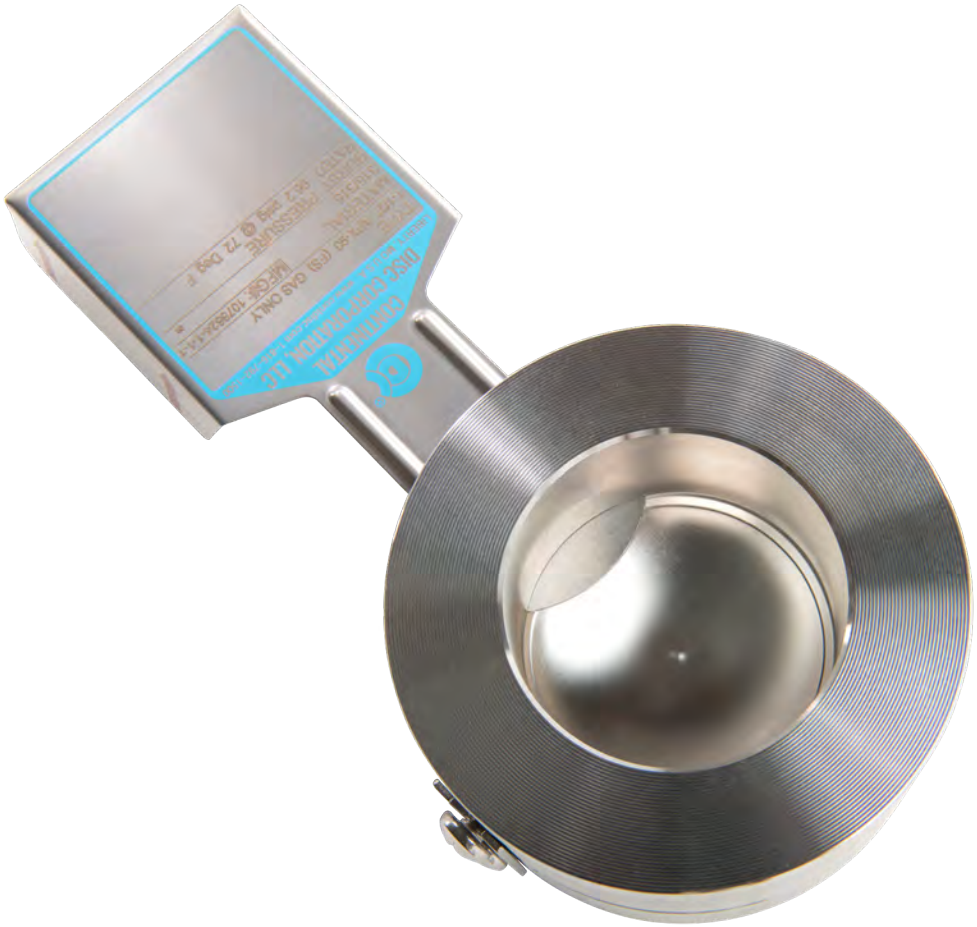


APX™

The Continental Disc APX™ rupture disc is a semicircular scored reverse acting rupture disc that is ideal for liquid or gas/vapor applications. In terms of performance, precision, and durability, the APX rupture disc outperforms the competition. One of several benefits of the APX is the flexibility to tailor it to the demands of the customer, particularly regarding flexibility in holder materials of construction.

Designed for use in toxic and corrosive environments, the APX rupture disc combines Continental Disc's rupture disc performance with materials that stand up to the most challenging process media. The APX continues the legacy of the flagship HPX® product with low K_r factors, high cycling, and quality certifications that you've come to expect from Continental Disc Corporation.

Optimum material thickness and manufacturing tooling design provide not only the full opening and accurate burst rating you expect, but also longer service life at higher operating-to-burst pressure ratios demanded by today's process industries.



APX™

Technical Details

- Size Range: 1" to 4" (25mm – 100mm)
- Rupture Disc Materials: Nickel, Alloy 400, 316 SS, 316L SS, Alloy C276, Alloy 600
- Burst Pressure Range: 20 psig - 600 psig (1.38 barg - 41.37 barg)
- Maximum Recommended Operating Ratio: 90 or 95% of the rupture disc's rated (stamped) burst pressure
- Seating Configuration: Flat seat
- Service: Liquid or gas*
- BDI Alarm System Compatible: Yes (Universal B.D.I. or BDI-FLX)
- ASME Code Symbol Stamp Available: Yes
- CRN Available: Yes
- CE Marking Available: Yes
- ATEX Assessment Available: Yes
- Holder Materials: Duplex, Super Duplex, Super Austenitic, 304/304L SS, Alloy C22, Alloy 625, Titanium, and other materials upon request.

Features

- Developed for highly toxic and / or corrosive service
- Operating ratio capabilities of up to 95% burst pressure to meet industry standards
- Broad range of burst ratings from 20 – 600 psi to meet a wide pressure range of toxic service applications
- Standard height, reduced height, and custom height holders available to adapt to piping restrictions
- Double disc and pre-torqued holders are available to expand toxic service over-pressure protection applications
- Rupture disc can be operated to full vacuum.

Options

- Fluoropolymer coating available for corrosion protection on process and/or vent side of rupture disc
- Available cleaning for Oxygen or Chlorine Service

* To optimize service life and rupture disc performance, Continental Disc Corporation manufactures and tests each APX rupture disc order for compressible or incompressible relief conditions as required by your application. APX rupture discs manufactured and tested only for compressible (gas/vapor) relief conditions may not function properly in an incompressible (liquid) application. Please state in your specifications and orders if a scenario exists for relief of incompressible media or if relief conditions exist only for compressible media.

SPECIFICATIONS

APX SINGLE RUPTURE DISC DESIGN			
Size Inches	Burst Pressure		MNFA
	Min	Max	
1	25	600	0.86
1.5	20	515	2.04
2	20	475	3.36
3	20	475	7.39
4	20	300	12.7

APX DOUBLE RUPTURE DISC DESIGN			
Size Inches	Burst Pressure		MNFA
	Min	Max	
1	30	600	0.86
1.5	25	515	2.04
2	25	475	3.36
3	25	475	7.39
4	25	300	12.7

Rupture Disc Min/Max Pressure						
Size Inches	Nickel / Alloy 400		316 SS / Alloy 600		Alloy C276 / C22	
	Min	Max	Min	Max	Min	Max
1	25	450	25	525	40	600
1.5	20	345	20	515	30	485
2	20	300	20	390	25	475
3	20	300	20	365	25	475
4	20	300	20	350	25	300

Continental Disc®
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APX™ INSERT HOLDER

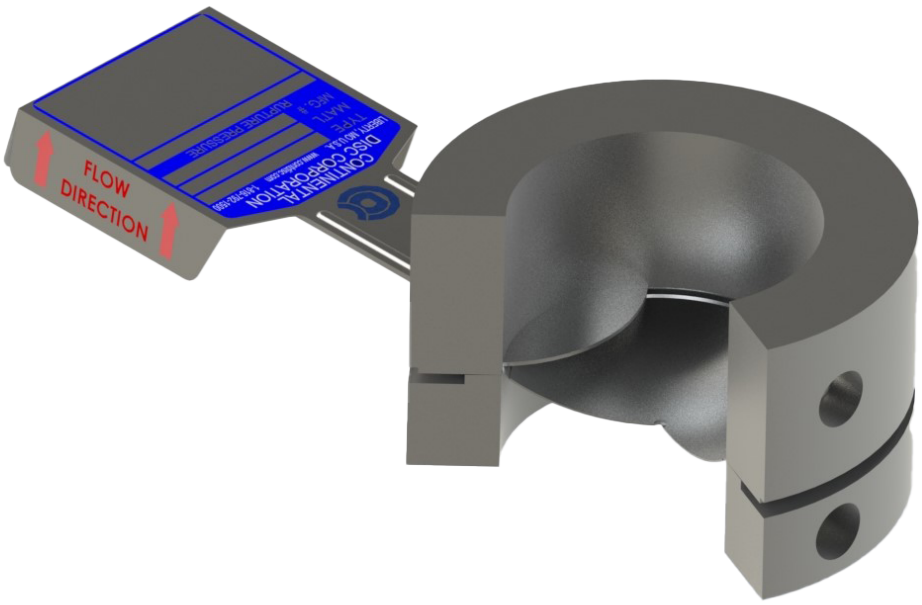
The Continental Disc APX™ Insert Holders are designed to optimize flow, assure proper orientation of the APX rupture disc in your piping system, provide a tight seal, and prevent fragmentation of the rupture disc.

Technical Details

- Size Range: 1" – 4" (25mm – 100mm)
- Materials: Duplex, Super Duplex, Super Austenitic, 304/304L/304H, Alloy C22, Alloy 625, Titanium, and other materials available on request
- Class Flanges: ASME, JIS or DIN
- K_R Factors: 0.37 gas/vapor relief, 0.41 liquid relief

Features

- Proper orientation of the rupture disc in the holder is assured by the three alignment pins in the holder inlet that properly align and orient the rupture disc in the holder
- An optional J-Hook can be used to orient the holder in its mating flanges
- The flow arrows on the holder and rupture disc tags confirm proper flow direction
- A durable tapered sealing surface on the holder inlet that, along with proper installation and handling, provides a bubble-tight (no air bubbles detected with leak detection fluid) metal-to-metal seal between the holder inlet and rupture disc
- 1"-4" APX holders can be directly coupled with a safety relief valve.
- The holder inlet protects the rupture disc dome during installation of the assembly into the piping system
- As a standard, the holder will come with spiral groove facing per ASME BI6.5, which will provide a surface finish between 125 and 250 microinches (3,2 to 6,3 micrometers)
- Streamlined weld-free holder design



SPECIFICATIONS

Size Inches (mm)	ASME		DIN		JIS		APX™ Insert Holder Height In (mm)	APX™-RH Holder Height In (mm)
	Class	Outside Diameter In (mm)	Class	Outside Diameter (mm)	Class	Outside Diameter (mm)		
1 (25)	150	2.50 (63,5)					1.80 (45,7)	1.47 (37,3)
	300/600	2.75 (69,9)	10/40	(69,9)	10/20	(69,9)	1.80 (45,7)	1.47 (37,3)
					30/40	(76,0)	1.80 (45,7)	1.47 (37,3)
	900/1500	3.00 (76,2)					2.40 (61,0)	
			63/160	(82,0)			2.40 (61,0)	
1½ (40)	150	3.25 (82,6)					2.04 (51,8)	1.67 (42,4)
					10/20	(86,0)	2.04 (51,8)	1.67 (42,4)
	300/600	3.63 (92,2)	10/40	(92,2)			2.04 (51,8)	1.67 (42,4)
	900/1500	3.75 (95,3)					2.57 (65,3)	
					30/40	(97,0)	2.04 (51,8)	1.67 (42,4)
			63/160	(102,0)			2.57 (65,3)	
2 (50)	150	4.0 (101,6)			10/20	(101,6)	2.36 (59,9)	1.80 (45,7)
	300/600	4.25 (108,0)	10/40	(108,0)			2.36 (59,9)	1.80 (45,7)
					30/40	(111,0)	2.36 (59,9)	1.80 (45,7)
			63	(113,0)			2.36 (59,9)	1.80 (45,7)
	900/1500	5.50 (139,7)					3.06 (77,7)	
3 (80)					10	(132,0)	3.21 (81,5)	2.19 (55,6)
	150	5.25 (133,4)					3.21 (81,5)	2.19 (55,6)
					16/20	(137,0)	3.21 (81,5)	2.19 (55,6)
			10/40	(142,0)			3.21 (81,5)	2.19 (55,6)
	300/600	5.75 (146,1)	63	(146,1)	30/40	(146,1)	3.21 (81,5)	2.19 (55,6)
4 (100)					10	(156,0)	3.97 (100,8)	2.90 (73,6)
			10/16	(162,0)	16/20	(162,0)	3.97 (100,8)	2.90 (73,6)
			25/40	(168,0)	30	(168,0)	3.97 (100,8)	2.90 (73,6)
	150	6.75 (171,5)					3.97 (100,8)	2.90 (73,6)
			63	(173,0)			4.09 (103,9)	
	300	7.00 (177,8)					3.97 (100,8)	2.90 (73,6)
					40	(180,1)	3.97 (100,8)	
	600	7.50 (190,5)					4.09 (103,9)	2.52 (64,0)

APX™-PT PRE-TORQUED HOLDER

The Continental Disc APX™-PT Pre-Torqued Holders incorporate high strength steel socket head cap screws to ensure accurate loading and sealing of the APX™ Rupture Disc. The APX-PT holder allows the disc and holder to be correctly fitted together using precise torque levels, prior to installation of the complete assembly in the process system relief stream.

Technical Details

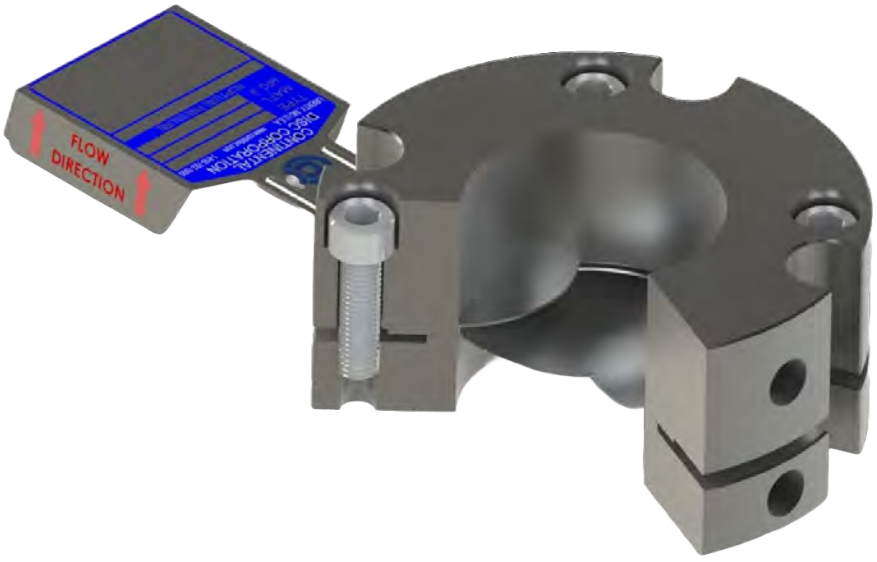
- Size Range: 1" to 4" (25mm – 100mm)
- Materials: Duplex, Super Duplex, Super Austenitic, 304/304L/304H, Alloy C22, Alloy 625, and other materials upon request
- Class Flanges: ASME, JIS, or DIN
- K_R Factors: 0.37 for gas/vapor and 0.41 for liquid relief
- Seating Configuration: Flat Seat
- Service: Liquid or Gas
- BDI Alarm System Compatible: Yes (Universal B.D.I. or BDI-FLX)
- ASME Code Symbol Stamp Available: Yes

Features

- Maintains precise loading of the rupture disc where poor flange alignment and gasket cold flow may be an issue
- Pre-torqued holder screws are protected with coating to prevent wear, sticking and galling of the screws, and provides corrosion resistance
- Streamlined weld-free holder design

Options

- Alternate heights
- Flange studs & nuts, alloy steel, or 316 SS
- Gauge taps in holder outlet
- J-Hook on holder inlet
- Corrosion resistance enhancement by adding a fluoropolymer coating or TANTALINE® treatment



SPECIFICATIONS

Size Inches (mm)	ASME		DIN		JIS			Outside Diameter In (mm)	APX™-PT Height In (mm)	APX™-PT-RH Height In (mm)
1 (25)	150	300/600		10/40	10/20		30/40	3.63 (92,2)	1.80 (45,7)	1.47 (37,3)
1½ (40)	150	300/600		10/40	10/20		30/40	4.63 (117,6)	2.04 (51,8)	1.67 (42,4)
2 (50)	150	300/600		10/40	10	16/20	30/40	5.25 (133,4)	2.36 (59,9)	1.80 (45,7)
3 (80)	150	300/600		10/40	10	16/20	30/40	7.00 (177,8)	3.21 (81.5)	2.19 (55,6)
4 (100)	150	300	10/16	25/40	10	16/20	30/40	8.10 (205,7)	3.97 (100,8)	2.90 (73,6)

APX™ DOUBLE DISC HOLDER

The Continental Disc APX™ Double Disc Assembly consists of three holder components: an inlet, a mid-flange, and an outlet piece, along with two rupture discs. The first of the two APX Rupture Discs is located between the inlet and the mid-flange, and the second APX Rupture Disc is between the mid-flange and outlet. This assembly arrangement provides the solution to multiple applications without the need of a more complicated piping arrangement. Due to the second rupture disc's ability to withstand back pressure, it isolates the first rupture disc and prevents any pressure differential change induced by back pressure on the first rupture disc. The first rupture disc will rupture at its rated burst pressure. To compensate for the maximum back pressure that may coincide with a burst condition, a second rupture disc may be rated at a lower burst pressure.

Technical Details

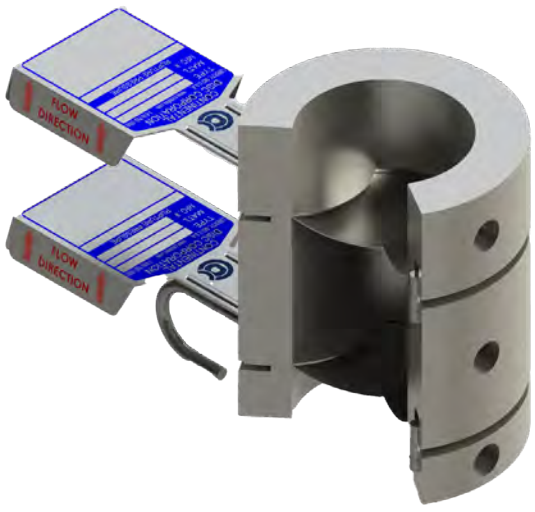
- Size Range: 1" – 4" (25mm – 100mm)
- Materials: Duplex, Super Duplex, Super Austenitic, 304/304L SS, Alloy C22, Alloy 625, Titanium, and other materials available on request
- Class Flanges: ASME, JIS, or DIN
- K_R Factors: 0.44 gas/vapor relief, 0.54 liquid relief
- Seating Confirguration: Flat Seat
- Service: Liquid or Gas
- BDI Alarm System Compatible: Yes (Universal B.D.I. or BDI-FLX)
- ASME Code Symbol Stamp Available: Yes

Features

- A pressure gauge in the mid-flange would indicate the leak, while a second rupture disc keeps the system leak-free. The first rupture disc could then be changed out at an opportune time.
- One can obtain a quick opening device by pressuring the space between the two rupture discs in an APX Double Disc Assembly.
- Upon dumping the pressure between the two rupture discs, the entire opening area is obtained within a few milliseconds.
- APX Double Disc Assembly can be used for activating pressure systems and testing systems for sudden pressure changes as a quick opening device.
- Streamlined weld-free holder design

Options

- A gauge tap is provided in the holder mid-flange. Gauge taps in the holder inlet and outlet can be specified



SPECIFICATIONS

Size Inches (mm)	ASME		DIN		JIS		APX™ Insert Holder Height In (mm)
	Class	Outside Diameter In (mm)	Class	Outside Diameter (mm)	Class	Outside Diameter (mm)	
1 (25)	150	2.50 (63,5)					3.92 (99,5)
	300/600	2.75 (69,9)	10/40	(69,9)	10/20	(69,9)	3.92 (99,5)
					30/40	(76,0)	3.92 (99,5)
	900/1500	3.00 (76,2)					4.52 (114,8)
			63/160	(82,0)			4.52 (114,8)
1½ (40)	150	3.25 (82,6)					3.96 (100,6)
					10/20	(86,0)	3.96 (100,6)
	300/600	3.63 (92,2)	10/40	(92,2)			3.96 (100,6)
	900/1500	3.75 (95,3)					4.49 (114,1)
					30/40	(97,0)	3.96 (100,6)
			63/160	(102,0)			4.49 (114,1)
2 (50)	150	4.0 (101,6)			10/20	(101,6)	4.84 (122,9)
	300/600	4.25 (108,0)	10/40	(108,0)			4.84 (122,9)
					30/40	(111,0)	4.84 (122,9)
			63	(113,0)			4.84 (122,9)
	900/1500	5.50 (139,7)					5.54 (140.7)
3 (80)					10	(132,0)	6.16 (156,4)
	150	5.25 (133,4)					6.16 (156,4)
					16/20	(137,0)	6.16 (156,4)
			10/40	(142,0)			6.16 (156,4)
	300/600	5.75 (146,1)	63	(146,1)	30/40	(146,1)	6.16 (156,4)
4 (100)					10	(156,0)	7.42 (188,4)
			10/16	(162,0)	16/20	(162,0)	7.42 (188,4)
			25/40	(168,0)	30	(168,0)	7.42 (188,4)
	150	6.75 (171,5)					7.42 (188,4)
			63	(173,0)			7.54 (191,5)
	300	7.00 (177,8)					7.42 (188,4)
					40	(180,1)	7.42 (188,4)
	600	7.50 (190,5)					7.54 (191,5)

HOLDER ACCESSORIES

STUDS AND NUTS of the appropriate length to engage the reverse acting rupture disc insert holder with an inlet and outlet flange are available in alloy steel[1] or 316 SS[2] materials

JACKSCREWS, case hardened steel: 3/set

EYEBOLTS, carbon steel

CLEANING FOR OXYGEN or CHLORINE SERVICE

TELL-TALE INDICATOR components between any two inline pressure relief devices can include the following:

- Gauge taps in the holder outlet: 1/4", 3/8" & 1/2" threaded

  (tap size, location & type may impact holder height)
- Pipe nipples and tees, CS or SS: 1/4" or 1/2"
- Excess Flow Valve, 316 SS: 1/4" or 1/2"
- Gauges

[1] ASME SA-193-B7 studs, SA-194-2H nuts

[2] ASME SA-193-B8M Class 2 studs, SA-194-8M nuts

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