

**Continental Disc  
Corporation**

*Performance Under Pressure®*

## Tite-Seal and Screw Type Assemblies

2-2206-2

Continental Disc Corporation's Tite-Seal and Screw Type assemblies are complete rupture disc and holder units specifically designed for use on various types of pressurized "mini systems" such as:

- Air conditioning systems
- Refrigeration units
- Hydraulic accumulators
- Gas cylinders
- Portable compressed air systems
- Laboratory equipment

Tite-Seal and Screw Type assemblies provide dependable, instantaneous overpressure relief for protecting systems, equipment and vessels from potentially damaging excess pressure conditions.



TITE-SEAL ASSEMBLY

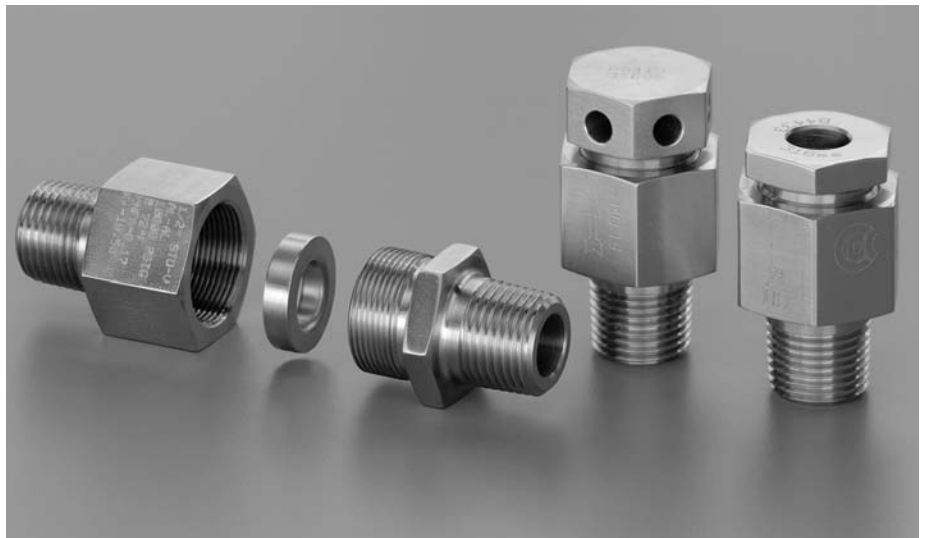
### Tite-Seal Assembly

The Tite-Seal Assembly is a sealed, disposable unit for use in systems where pressures do not exceed 3,000 psig (207 barg). The Tite-Seal Assembly features a rupture disc sealed between brass fittings. After relieving an overpressure condition, changeout is easily performed by replacing the entire assembly. Continental's Tite-Seal Assembly can be supplied with a Standard or Composite rupture disc to accommodate various application requirements.

### Screw Type Assembly

Continental's Screw Type Assembly is a reusable unit for use in systems with pressures up to 20,000 psig (1379 barg). A Standard or Composite rupture disc is supplied separately from the Screw Type Holder. After an overpressure condition occurs, changeout is accomplished by disassembling the Screw Type Holder and replacing only the burst rupture disc.

Various pressure ratings, materials and holder configurations are available to customize the Screw Type Assembly to your specific application.



SCREW TYPE ASSEMBLY

# STANDARD RUPTURE DISC

## Standard (STD) Rupture Disc for Tite-Seal or Screw Type Holders

The Standard Rupture Disc is a differential pressure relief device which provides instantaneous overpressure protection. For Tite-Seal and Screw Type holders, this Standard Rupture Disc, designated STD, is a 1/2" preformed, solid metal design.

### 1/2" STD Rupture Disc Features:

- Operation to 70% of the rupture disc's rated burst pressure
- Availability of a wide range of corrosion resistant materials
- Instantaneous full opening
- Compatible in systems with operating temperatures up to 1,000°F (542°C). (See Table III)
- Applicable in liquid or gas media with static, cyclic or pulsating pressure conditions
- Burst pressures ranging from 65 to 20,000 psig (4,48 to 1379 barg), depending upon rupture disc material and holder type (See Table IV)

The Standard Rupture Disc is available in Aluminum, Silver, Nickel, 316 Stainless Steel, Monel<sup>\*\*</sup>, Inconel<sup>\*\*</sup> and Hastelloy C<sup>\*\*\*</sup> materials. Other materials are available upon request.

**OPTIONS:** Various options including Teflon<sup>\*\*\*\*</sup> coating, a gasket, a protective ring, or a vacuum support can be added to customize the Standard Rupture Disc to fit your specific application.

**Teflon coating**, applied to the process or vent side of the rupture disc, helps shield the rupture disc from atmospheric or process media corrosives (Aluminum 1/2" STD rupture discs are Teflon coated on each side, as a standard). A **gasket** of TFE, PFA, or FEP Teflon may be added to the inlet side of the rupture disc to enhance sealing.

A **protective ring** added to the inlet or outlet side of the rupture disc provides additional seating area protection to thinner material rupture discs. Unless otherwise specified, the protective ring is supplied in the same material as specified for the rupture disc. Also, some low pressure 1/2" Standard Rupture Discs require support for backpressure or vacuum conditions, therefore, depending upon specific operating conditions, a **vacuum support** may be supplied. Available vacuum support materials include 316SS, Monel, Nickel or Inconel.

Please consult your C.D.C. representative or the factory when vacuum or back-pressure conditions are present.

### For Tite-Seal Holders

For the Tite-Seal Holder, the Standard Rupture Disc is a flat seat design with burst pressures ranging from 65 to 3,000 psig (4,48 to 207 barg). Refer to Table IV for the minimum and maximum burst pressures for 1/2" STD Rupture Discs.

### For Screw Type Holders

For Screw Type Holders, the Standard Rupture Disc is:

- a 30° angular "Light Lip" seat design for pressures up to 3,000 psig (207 barg)
- a flat seat design for burst pressures up to 10,000 psig (689 barg)
- a high pressure flat seat design for burst pressures up to 20,000 psig (1379 barg)



\* Monel and Inconel are registered trademarks of the Inco family of companies.

\*\* Hastelloy is a registered trademark of Haynes International.

\*\*\* Teflon is a registered trademark of E.I. du Pont de Nemours and Company used under license.

## Composite (CDCV-G) Rupture Disc for Tite-Seal or Screw Type Holders

Continental's Composite Rupture Disc is a differential pressure relief device that provides instantaneous, full opening overpressure protection. For Tite-Seal and Screw Type holders, this Composite Rupture Disc, designated CDCV-G, is an 11/16", preformed, flat seat rupture disc.

### 11/16" CDCV-G Rupture Disc Features:

- Operation to 80% of the rupture disc's rated burst pressure
- Support for full vacuum conditions, -14.7 psig (-1,01 barg)

- Compatible in systems with operating temperatures up to 400°F (204°C). (See Table III)
- Applicable in liquid or gas media with static, cyclic or pulsating pressure conditions
- Burst pressures ranging from 30 to 1,000 psig (2,07 to 68,9 barg) depending upon rupture disc material. (See Table IV)

The 11/16" Composite Rupture Disc consists of a metallic top section, an integral seal, metal vacuum support, and CHEMFILM\*\* gasket. The metallic top section is available in Nickel, 316SS, Monel, Inconel and Hastelloy C materials. Other materials are available upon request. Depending upon the rupture disc's top section material, the vacuum

support will be constructed from either 316SS or Hastelloy C. (See Table I)

The rupture disc's seal material is available in either Teflon or Silver to accommodate various operating conditions. Teflon is supplied unless otherwise specified.

### For Tite-Seal and Screw Type Holders

The 11/16" Composite Rupture Disc may be used in either Tite-Seal or flat seat Screw Type holders. It is recommended for applications where the maximum burst pressure does not exceed 1,000 psig (68,9 barg).

Table I - 11/16" Composite Rupture Disc (CDCV-G) Material Selection Information

TOP SECTION	VACUUM SUPPORT	SEAL	GASKET
HASTELLOY C	HASTELLOY C		
MONEL	316SS	TEFLON	
NICKEL	316SS	OR	CHEMFILM
INCONEL	316SS	SILVER	
316SS	316SS		



\* CHEMFILM is a registered trademark of Saint-Gobain Performance Plastics.

# SPECIFICATIONS

## Manufacturing Range

The manufacturing range of a rupture disc is defined as the allowable pressure range within which a rupture disc is rated. The manufacturing range is based upon the customer's specified burst pressure. The rated (stamped) burst pressure is established by burst testing a minimum of two rupture discs per lot and averaging the pressures at which the rupture discs burst. This becomes the stamped rating of the rupture disc. The manufacturing ranges for the 1/2" Standard and 11/16" Composite Rupture Discs appear in Table II.

## Burst Tolerance

The burst tolerance of a rupture disc is the maximum expected burst pressure variation from the rupture disc's rated (stamped) burst pressure. Per ASME Code the burst tolerance for 1/2"

Standard and 11/16" Composite rupture discs is  $\pm 2$  psig for pressures up to and including 40 psig and  $\pm 5\%$  for pressures above 40 psig. Burst tolerance is applied to the stamped rating of the rupture disc.


## Temperature

In general, as temperature increases, burst pressure decreases. Refer to Table III for the recommended maximum temperature for common rupture disc and seal materials.

## Code Compliance

C.D.C. will provide Tite-Seal and Screw Type assemblies to national or international code requirements when specified by the customer. C.D.C. will manufacture, temperature test, and mark rupture discs in compliance with the requested code. Product may be sup-

plied to ASME Section III or VIII, ISO, DIN, EN, BSI, JIS, or other codes as requested.

Continental Disc Corporation has been accredited and is authorized by the ASME Code to utilize the  Code Symbol Stamp for product built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

The certified flow resistance value ( $K_R$ ) and minimum net flow area value of the Tite-Seal Assembly and the Screw Type Assembly are available from Continental Disc Corporation or The National Board of Boiler and Pressure Vessel Inspectors.

C.D.C. maintains an ASME accepted flow laboratory to conduct flow testing for rupture discs, relief valves, and rupture disc/valve combinations.

**Table II - Manufacturing Range for 1/2" Standard and 11/16" Composite Rupture Discs**

SPECIFIED BURST PRESSURE		MANUFACTURING RANGE: %	
psig	barg	UNDER	OVER
MIN - 50	MIN - 3,45	-4	14
51 - 100	3,52 - 6,89	-4	10
101 - 500	6,96 - 34,5	-4	7
ABOVE 500	ABOVE 34,5	-3	6

**Table III - Maximum Recommended Temperature for Common Rupture Disc and Seal Materials**

RUPTURE DISC TYPE	MATERIAL	°F	°C
1/2" STD	Aluminum / Silver	260	127
	Nickel / Monel	800	427
	316SS / Hastelloy	900	482
	Inconel	1,000	542
11/16" CDCV-G SEAL	Teflon / Silver	400	204

**Table IV - Minimum / Maximum Burst Pressures for 11/16" Composite (CDCV-G) and 1/2" Standard (STD) Rupture Discs**

RUPTURE DISC TYPE	RUPTURE DISC MATERIAL	BURST PRESSURE MINIMUM / MAXIMUM psig @ 72°F / barg @ 22°C			
		MINIMUM		MAXIMUM	
		psig	barg	psig	barg
11/16" CDCV-G with Teflon Seal	Nickel	30	2,07	490	33,8
	Monel	30	2,07	615	42,4
	316SS	40	2,76	740	51,0
	Inconel	40	2,76	760	52,4
	Hastelloy C	100	6,89	1,000	68,9
11/16" CDCV-G with Silver Seal	Nickel	375	25,9	715	49,3
	Monel	375	25,9	845	58,3
	316SS	375	25,9	1,000	68,9
	Inconel	375	25,9	1,000	68,9
	Hastelloy C	475	32,8	1,000	68,9
1/2" STD	Aluminum	65	4,48	1,500	103
	Silver	220	15,2	1,500	103
	Nickel	300	20,7	6,000	414
	Monel	350	24,1	6,000	414
	316SS	760	52,4	20,000	1379
	Inconel	560	38,6	20,000	1379

## Tite-Seal Assembly

The Tite-Seal Holder, used with a Standard or Composite rupture disc, consists of three brass components:

- 1) an inlet, 2) an outlet, 3) a holddown ring.

The inlet component is available in 1/4", 3/8" and 1/2" male pipe threading (MPT). The outlet component is available in five configurations to match the requirement of your application. (See Table V)

After the rupture disc is installed in the Tite-Seal Holder, the inlet and outlet components are permanently affixed to provide a SEALED ASSEMBLY. Each assembly is then inspected by a Beta

Backscanner device to verify compliance to the proper rupture disc material thickness. When an overpressure condition occurs, THE ENTIRE ASSEMBLY CAN BE QUICKLY REMOVED and replaced with a new assembly.

## Tite-Seal Holder Specifications

Maximum Pressure:.....3,000 psig  
(207 barg)

Maximum Temp.:.....400°F  
(204°C)

Materials: .....All brass components

Two Tite-Seal Holder configurations are available. The 1,000 psig design is compatible with either a Standard or Composite rupture disc, up to a maximum 1,000 psig (68,9 barg) burst pressure. A 3,000 psig (207 barg) unit is available for applications where burst pressures exceed 1,000 psig. This unit is compatible with a Standard Rupture Disc. Refer to Table V for Tite-Seal Assembly configurations, weights and dimensions.

The maximum temperature limits of the Tite-Seal Holder are dependent upon the limitations of either the rupture disc or the holder. In the case of the maximum allowable temperature, use the lesser limit of the two.

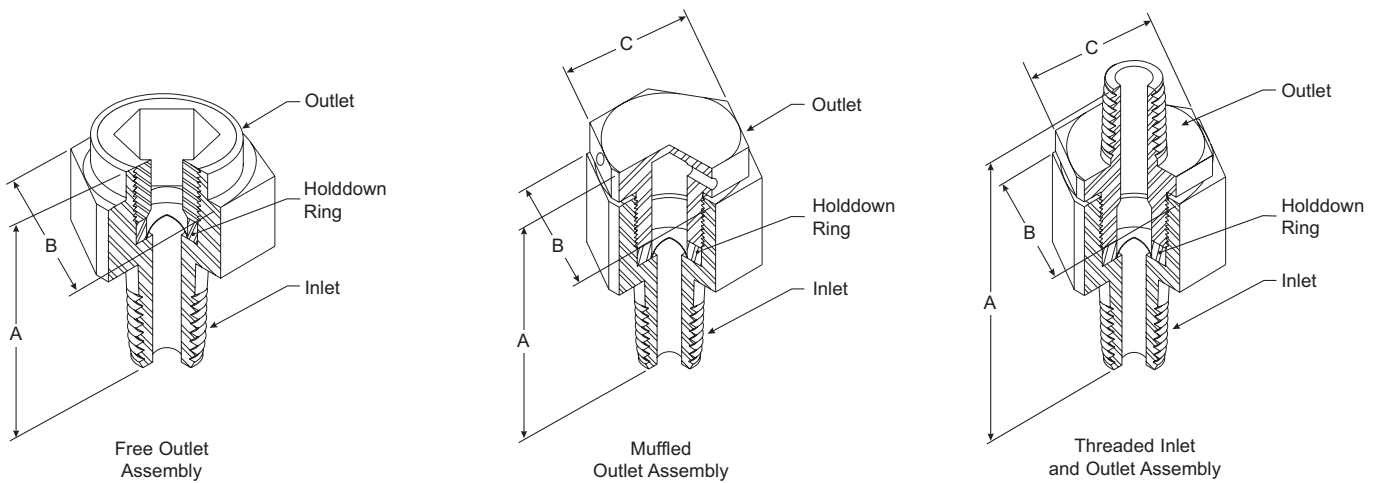


Table V - Tite-Seal Assembly Specifications, Weights and Dimensions

ASSEMBLY NUMBER WITH:		HOLDER CONNECTIONS		UNIT WEIGHT				OVERALL HEIGHT (A)				DIMENSIONS ACROSS HEX FLATS							
				1000# Assembly		3000# Assembly		1000# Assembly		3000# Assembly		INLET (B)				OUTLET (C)			
1/2" STD	11/16" CDCV-G	INLET	OUTLET	lbs.	kgs.	lbs.	kgs.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.
T01	T51	1/4" MPT	1/4" MPT	0.27	0,12	0.32	0,15	2.12	54	2.27	58								
T02	T52	"	3/8" MPT	0.28	0,13	0.33	0,15	2.16	55	2.31	59								
T03	T53	"	1/2" MPT	0.30	0,14	0.35	0,16	2.31	59	2.45	62	1-1/8	28,6	1-1/4	31,8	1	25,4	1	25,4
T04	T54	"	MUFFLED	0.25	0,11	0.30	0,14	1.81	46	1.95	50								
T05	T55	"	FREE	0.20	0,09	0.25	0,11	1.34	34	1.49	38								
T07	T57	3/8" MPT	3/8" MPT	0.29	0,13	0.34	0,15	2.19	56	2.34	59								
T08	T58	"	1/2" MPT	0.31	0,14	0.36	0,16	2.34	60	2.49	63	1-1/8	28,6	1-1/4	31,8	1	25,4	1	25,4
T09	T59	"	MUFFLED	0.26	0,12	0.31	0,14	1.84	47	1.99	51								
T10	T60	"	FREE	0.21	0,10	0.26	0,12	1.37	35	1.53	39								
T13	T63	1/2" MPT	1/2" MPT	0.34	0,15	0.39	0,18	2.50	63	2.50	64								
T14	T64	"	MUFFLED	0.29	0,13	0.34	0,15	2.00	51	2.01	51	1-1/8	28,6	1-1/4	31,8	1	25,4	1	25,4
T15	T65	"	FREE	0.24	0,11	0.29	0,13	1.53	39	1.54	39								



# SCREW TYPE HOLDER

## Screw Type Holder

The Screw Type Holder used with the Standard or Composite rupture disc consists of three components: 1) an inlet, 2) an outlet, 3) a holddown ring.

The inlet component is available in 1/4" or 1/2" MPT. Outlet components are offered in 1/2" MPT, muffled, or free venting configurations.

The Screw Type Holder is available with the inlet, outlet, and holddown ring constructed from 316 Stainless Steel or with a 316 Stainless Steel inlet and Carbon Steel outlet and holddown ring. When ordering, please specify the combination of materials required for your application.

The Screw Type Holder is a reusable unit; after an overpressure condition occurs, the unit may be replaced by disassembling the holder components and replacing only the burst rupture disc.

## Screw Type Holder Specifications

Maximum Pressure: .....20,000 psig  
(1379 barg)

Maximum Temp.: .....1,000°F  
(538°C)

Materials:

Inlet: .....316 Stainless Steel

Outlet: .....316 Stainless Steel  
or Carbon Steel

Ring: .....316 Stainless Steel  
or Carbon Steel

The maximum temperature limits of the Screw Type Holder are dependent upon the limitations of either the rupture disc or the holder. In the case of the maximum allowable temperature, use the lesser limit of the two.

**Note:** The 11/16" CDCV-G rupture disc with its matching holddown ring and the 1/2" STD rupture disc with its matching holddown ring utilize the same 10,000 psig holder inlet and outlet. These rupture discs, together with their respective holddown rings, are interchangeable in the 10,000 psig Screw Type Holder.

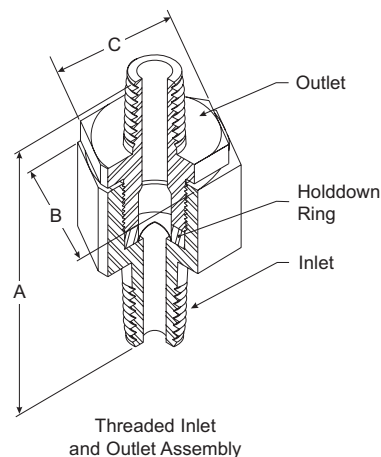
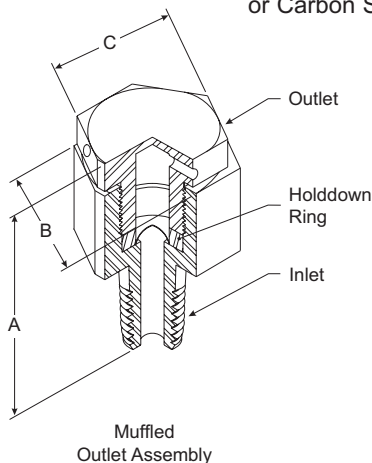
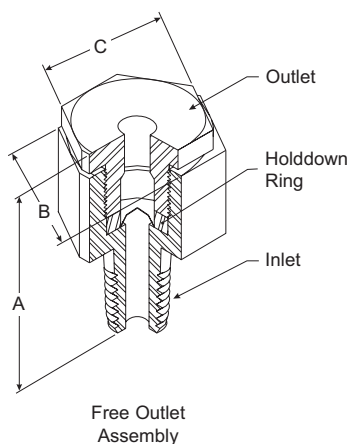


Table VI - Screw Type Holder Specifications, Weights and Dimensions

MAXIMUM PRESSURE @ 72°F (22°C)	HOLDER ASSEMBLY NUMBER FOR:		SEAT STYLE	HOLDER CONNECTION		UNIT WEIGHT		OVERALL HEIGHT (A)		DIMENSIONS ACROSS HEX FLATS			
	1/2" STD	11/16" CDCV-G		INLET	OUTLET	lbs.	kgs	in.	mm	INLET (B)		OUTLET (C)	
										in.	mm	in.	mm
3,000 psig 207 barg	S01	--	30° LIGHT LIP	1/4 MPT	FREE	0.47	0,21	2.20	56	1-1/4	31,8	1-1/8	28,6
	S02	--	"	1/2 MPT	FREE	0.47	0,21	2.26	57				
	S03	--	"	1/4 MPT	1/2 MPT	0.53	0,24	2.98	76				
	S04	--	"	1/2 MPT	1/2 MPT	0.53	0,24	3.04	77				
	S05	--	"	1/4 MPT	MUFFLED	0.48	0,22	2.45	62				
	S06	--	"	1/2 MPT	MUFFLED	0.48	0,22	2.51	64				
10,000 psig 689 barg	S11	S51	FLAT SEAT	1/4 MPT	FREE	0.41	0,19	2.03	52	1-1/4	31,8	1-1/8	28,6
	S12	S52	"	1/2 MPT	FREE	0.44	0,20	2.03	52				
	S13	S53	"	1/4 MPT	1/2 MPT	0.47	0,21	2.81	71				
	S14	S54	"	1/2 MPT	1/2 MPT	0.50	0,23	2.81	71				
	S15	S55	"	1/4 MPT	MUFFLED	0.45	0,20	2.28	58				
	S16	S56	"	1/2 MPT	MUFFLED	0.48	0,22	2.28	58				
15,000 psig 1034 barg	S23	--	FLAT SEAT	1/4 MPT	1/2 MPT	0.47	0,21	2.81	71	1-1/4	31,8	1-1/8	28,6
	S24	--	"	1/2 MPT	1/2 MPT	0.50	0,23	2.81	71				
	S25	--	"	1/4 MPT	MUFFLED	0.47	0,21	2.34	60				
	S26	--	"	1/2 MPT	MUFFLED	0.50	0,23	2.34	60				
20,000 psig 1379 barg	S35	--	FLAT SEAT	1/4 MPT	MUFFLED	0.69	0,31	2.97	75	1-1/4	31,8	1-1/8	28,6

Please provide the following information when ordering. Order holder and rupture disc separately.

## Rupture Disc<sup>1</sup>

### Standard (STD) Rupture Disc

Quantity: \_\_\_\_\_ Description: **1/2" STD Continental Rupture Disc**

Material: \_\_\_\_\_ (See Table IV or consult C.D.C.)

Rated Burst Pressure: \_\_\_\_\_ psig or barg @ \_\_\_\_\_ °F or °C

Manufacturing Range: \_\_\_\_\_

Manufacturing Number: \_\_\_\_\_ (if replacing previously supplied Continental Rupture Disc)

Options: • Coating

- Gasket
- Protective rings
- Vacuum support

### Composite (CDCV-G) Rupture Disc

Quantity: \_\_\_\_\_ Description: **11/16" CDCV-G Continental Rupture Disc**

Material: \_\_\_\_\_ Top Section (See Table IV or consult C.D.C.)

\_\_\_\_\_ Seal (Specify Teflon or Silver. Teflon is standard.)

\_\_\_\_\_ Vacuum Support<sup>2</sup> (Specify 316SS or Hastelloy C)

Chemfilm Gasket

Rated Burst Pressure: \_\_\_\_\_ psig or barg @ \_\_\_\_\_ °F or °C

Manufacturing Range: \_\_\_\_\_

Manufacturing Number: \_\_\_\_\_ (if replacing previously supplied Continental Rupture Disc)

## Holder

### Tite-Seal Holder

Quantity: \_\_\_\_\_ Description: **Tite-Seal<sup>3</sup> \_\_\_\_\_ Continental Rupture Disc Holder**

Maximum System Operation Pressure @ 72°F: \_\_\_\_\_

Material: Brass Inlet, Holddown Ring, and Outlet

### Screw Type Holder

Quantity: \_\_\_\_\_ Description: **Screw Type<sup>4</sup> \_\_\_\_\_ Continental Rupture Disc Holder**

Maximum System Operation Pressure @ 72°F: \_\_\_\_\_

Material: Inlet: 316 Stainless Steel

Holddown Ring: \_\_\_\_\_ <sup>5</sup> (Specify 316 Stainless Steel or Carbon Steel)

Outlet: \_\_\_\_\_ <sup>5</sup> (Specify 316 Stainless Steel or Carbon Steel)

Notes: <sup>1</sup> When ordering a rupture disc without a holder:

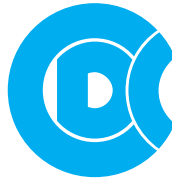
- a. provide the previous rupture disc manufacturing number or;
- b. order the matching holddown ring for the ordered rupture disc.

<sup>2</sup> Vacuum support material: Specify Hastelloy C when top section is Hastelloy C, otherwise specify 316SS.

<sup>3</sup> Please specify holder assembly number corresponding to inlet and outlet connection required. Refer to Table V for Tite-Seal Assemblies.

<sup>4</sup> Please specify holder assembly number corresponding to inlet and outlet connection required. Refer to Table VI for Screw Type Holders.

<sup>5</sup> Specify same material for holddown ring and holder outlet: 316 Stainless Steel or Carbon Steel.



**Continental Disc<sup>®</sup>  
Corporation**

*Performance Under Pressure<sup>®</sup>*

A Siegel-Robert Company



Certified Quality System  
First Certified In 1992



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Available When Specified



China Manufacture License  
Available When Specified



Pressure Equipment Directive  
Available When Specified

Continental Disc Corporation has representatives located throughout the world.  
Contact the C.D.C. office nearest you for the authorized representative in your area.

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