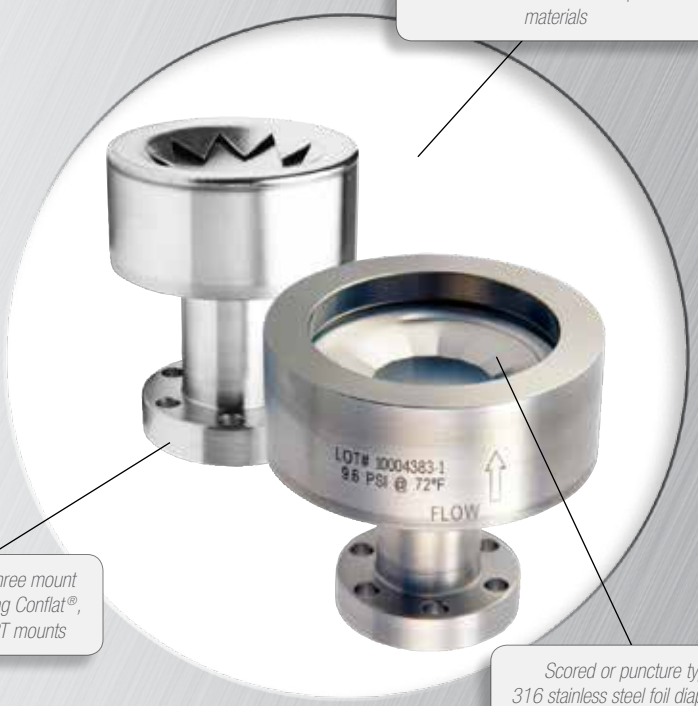
Over-Pressure Burst Discs

Note that once ruptured, over-pressure burst discs must be replaced.



Over-Pressure Burst Discs

Vacuum systems are engineered to operate under external (atmospheric) pressure loads, and were never intended for internal pressurization. Accu-Glass burst discs are important and preventative safety devices designed to protect vacuum systems against accidental over-pressurization. Failure of internal gas or cryogenic fluid supply lines can lead to rapid pressurization inside a vacuum vessel — well above its internal load limits. Besides protecting delicate system instruments and equipment — such as vacuum viewports — burst discs minimize the risks of injury to system operators and personnel.

How do they work? Simple — pressure buildup inside a vacuum vessel deforms a concave thin metal-foil diaphragm, pushing it against radial spikes built into a burst disc's housing. The diaphragm ultimately ruptures providing an instant pressure relief path for a vessel's internal volume. In the case of our low-pressure devices, a unique stress-pattern is scored right onto the metal diaphragm, effectively pre-stressing it for precise pressure and rupture control.

Accu-Glass burst discs are available and certified for two pressure ranges. Low-pressure units (scored diaphragm) have a large 1.93 square-inch deflection area and rupture between 9 and 11.5 psi. High-pressure units (puncture type) rupture between 15 and 25 psi and have a smaller 1.2 square-inch deflection area. Note that a ruptured burst disc cannot be repaired! Once a unit fails, it must be replaced in order to make a vacuum system operational again.

Features

- Low Pressure, Scored Burst Disc
- High Pressure, Puncture Burst Disc
- High and Ultrahigh vacuum models
- Conflat®, ISO and NPT compatible mounts
- All stainless steel construction

Specifications

Material

Body, Stainless Steel	304
Diaphragm, Stainless Steel	316

Burst Pressure [1]

Puncture Type	15 ~ 25 PSIG
Scored Diaphragm Type	9 ~ 11.5 PSIG

Vacuum Range [2]

UHV, Ultrahigh vacuum	$1x10^{-10}$ Torr
HV, High vacuum	$1x10^{-8}$ Torr

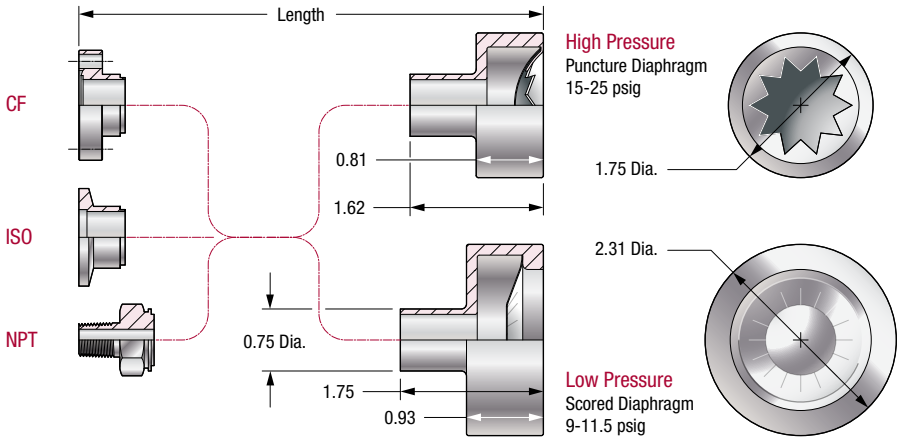
Temperature Range [1, 3]

Burst Disc Diaphragm	150°C
Conflat® CF Flange	450°C
ISO KF Flange	150°C
NPT Pipe Thread Fitting	150°C

Notes

1. Specified burst pressure ratings are for devices at room temperature (22.2°C or 72°F). Actual burst pressure is dependent on the ultimate application temperature — burst pressure will increase at lower temperatures and decrease at higher temperatures.
2. Leak tested to $5x10^{-10}$ Standard cc/sec of He.
3. Overall assembly ratings must be adjusted to that of its lowest rated component.

§ Unless specified otherwise, dimensional units in all sections of this catalog are expressed in inches.



CF Flange[1] — 150°C / UHV to 1x10^{-10} Torr

Mount Type	Flange OD	Housing OD	Length	Burst Pressure PSIG	Model Number	**Part Number**	Unit Price $
Low Pressure — 9 ~11.5 PSIG / Scored Diaphragm Type							
133 CF	1.33	2.31	2.21	9~11.5	PBD12-133	**112729**	595
275 CF	2.73	2.31	3.01	9~11.5	PBD12-275	**112730**	610
High Pressure — 15 ~ 25 PSIG / Puncture Type							
133 CF	1.33	1.75	2.12	15~25	PBD-133	**112070**	250
275 CF	2.73	1.75	1.67	15~25	PBD-275	**112071**	270

1. Compatible with Conflat® flanges

ISO KF Flange[1] — 150°C / HV to 1x10^{-8} Torr

Mount Type	Flange OD	Housing OD	Lenght	Burst Pressure PSIG	Model Number	**Part Number**	Unit Price $
Low Pressure — 9 ~11.5 PSIG / Scored Diaphragm Type							
NW16 KF	1.18	2.31	2.17	9~11.5	PBD12-K16	**112731**	595
NW40 KF	2.16	2.31	1.75	9~11.5	PBD12-K40	**112732**	610
High Pressure — 15 ~ 25 PSIG / Puncture Type							
NW16 KF	1.18	1.75	2.11	15~25	PBD-K16	**112072**	250
NW40 KF	2.16	1.75	1.61	15~25	PBD-K40	**112073**	270

1. Compatible with ISO 2861/1 flange specifications

NPT Fitting[1] — 1/8-27 Pipe Thread / 150°C / HV to 1x10^{-3} Torr

Mount Type	Hex Across Flats	Housing OD	Length	Burst Pressure PSIG	Model Number	**Part Number**	Unit Price $
Low Pressure — 9 ~11.5 PSIG / Scored Diaphragm Type							
1/8 NPT	.75	2.31	2.63	9~11.5	PBD12-1/8NPT	**112733**	610
High Pressure — 15 ~ 25 PSIG / Puncture Type							
1/8 NPT	.75	1.75	2.50	15~25	PBD-1/8NPT	**112728**	250

1. Compatible with ANSI NPT fitting specifications

112729 / UHV Low Pressure Burst Disc mounted on 1.33 CF Flange

112071 / High Pressure Burst disc mounted on 2.75 CF Flange

112731 / HV Low Pressure Burst Disc mounted on NW16 ISO Flange

112073 / High Pressure Burst disc mounted on NW40 ISO Flange

112733 / HV Low Pressure Burst Disc mounted on 1/8 NPT threaded mount