

TYPE XT[™] Rupture Disk



Advanced Rupture Disk Performance
from a Forward Acting, Tension Loaded Design

Type XT™ Advanced Rupture Disk

Performance from a Forward Acting, Tension Loaded Design

Features

- Sizes 1-10 inches (25-250mm)
- Seven standard materials; wide range of corrosion resistance - Refer to the material temperature table
- ‘X’ shaped score pattern; designed for non-fragmentation; excellent for relief valve isolation.
- Smooth surface on process side; resistant to product accumulation
- Operates up to 80% of marked burst pressure or 85% of minimum burst pressure
- Designed for gas service or liquid service
- High flow capacity / low flow resistance: certified for gas and liquid service
- Fail safe: design safety ratio < 1
- 1 piece solid metal construction; excellent leak tightness
- Withstands full vacuum without support
- Available “CE” marked or ASME stamped (UD)

A 90% operating pressure ratio may apply under static operating conditions; consult factory



| Material | Maximum recommended temperature | |
|----------------------------------|---------------------------------|-------|
| Nickel alloy 200 | 750°F | 399°C |
| Monel® alloy 400 | 900°F | 482°C |
| Inconel® alloy 600 | 1100°F | 593°C |
| Stainless steel 316 | 900°F | 482°C |
| Hastelloy® (alloy C-276 or C-22) | 900°F | 482°C |
| Aluminum | 250°F | 121°C |
| Tantalum | 500°F | 260°C |

Burst Pressure Capabilities for gas and liquid applications at 72°F (22°C)

| Nominal size | | Aluminum | | | | Nickel alloy 200 & tantalum | | | | Inconel® alloy 600 & Monel® alloy 400 | | | | 316ss | | | | Hastelloy® alloy C-276, C-22 | | | |
|--------------|-----|----------|------|------|-----|-----------------------------|------|------|-----|---------------------------------------|------|------|-----|-------|------|------|-----|------------------------------|------|------|-----|
| in | mm | psig | | barg | | psig | | barg | | psig | | barg | | psig | | barg | | psig | | barg | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 1 | 25 | 80 | 1450 | 6 | 100 | 165 | 1450 | 11 | 100 | 165 | 1450 | 11 | 100 | 175 | 1450 | 12 | 100 | 240 | 1450 | 17 | 100 |
| 1.5 | 40 | 55 | 1450 | 4 | 100 | 115 | 1450 | 8 | 100 | 115 | 1450 | 8 | 100 | 125 | 1450 | 9 | 100 | 176 | 1450 | 12 | 100 |
| 2 | 50 | 45 | 1450 | 3 | 100 | 105 | 1450 | 7 | 100 | 105 | 1450 | 7 | 100 | 115 | 1450 | 8 | 100 | 160 | 1450 | 11 | 100 |
| 3 | 80 | 45 | 1300 | 3 | 100 | 90 | 1300 | 6 | 90 | 90 | 1300 | 6 | 90 | 100 | 1300 | 7 | 90 | 140 | 1300 | 10 | 90 |
| 4 | 100 | 40 | 1150 | 3 | 79 | 90 | 1150 | 6 | 79 | 90 | 1150 | 6 | 79 | 95 | 1150 | 7 | 79 | 140 | 1150 | 10 | 79 |
| 6 | 150 | 40 | 1040 | 3 | 72 | 90 | 1040 | 6 | 72 | 90 | 1040 | 6 | 71 | 90 | 1040 | 6 | 72 | 130 | 1040 | 9 | 72 |
| 8 | 200 | 40 | 960 | 3 | 66 | 85 | 960 | 6 | 66 | 85 | 960 | 6 | 66 | 90 | 960 | 6 | 66 | 130 | 960 | 9 | 66 |
| 10 | 250 | - | - | - | - | 85 | 840 | 6 | 58 | 85 | 840 | 6 | 58 | 90 | 840 | 6 | 58 | 125 | 840 | 9 | 58 |

Optional liner: A fluorochemical film liner is available as an option on the process side of the XT disk.

Temperature Range for Standard Liner Materials:

FEP -40°F to 400°F (-40°C to 205°C); PTFE -40°F to 500°F (-40°C to 260°C)

Operating Pressure Ratio

Type XT rupture disks can be operated up to 90% of their minimum burst pressure. For highly cyclic service conditions, especially when combined with a 90% operating ratio, reverse buckling disks are recommended. For example, type Sigma EXL™ (see catalog 77-4011) is designed for operation up to 100% of minimum burst pressure. Consult BS&B for guidance.

Vacuum and Back Pressure

All type XT rupture disks are designed to resist vacuum or a back pressure of 1 atmosphere. Should a combination of vacuum and back pressure exist, this must not exceed 14.5 psig (1barg), consult BS&B for guidance.

Differential Pressure

Rupture disks respond to differential pressure. Service conditions at the inlet and outlet of a rupture disk device must be taken into account when completing specifications.

NX-7R™ Safety Head Specifications

| Nominal size | | Safety head flange rating | | | | Outside diameter | | Overall height | |
|--------------|-----|---------------------------|---------------|-------------|-------|------------------|-------|----------------|----|
| in | mm | ANSI / BS 1560 | BS 4504 / DIN | JIS | BS 10 | in | mm | in | mm |
| 1 | 25 | 150 | | | | 2.5 | 63.5 | 1.38 | 35 |
| | | 300/600 | 10/16/25/40 | 10/16/20/30 | F | 2.75 | 69.85 | 1.38 | 35 |
| 1.5 | 40 | 150 | | | | 3.25 | 82.55 | 1.38 | 35 |
| | | 300/600 | 10/16/25/40 | | | 3.62 | 91.95 | 1.38 | 35 |
| 2 | 50 | 150 | | | | 4 | 102 | 1.38 | 35 |
| | | 300/600 | 10/16/25/40 | | | 4.21 | 107 | 1.38 | 35 |
| 3 | 80 | 150 | | 10 | | 5.25 | 134 | 1.38 | 35 |
| | | 300 | 10/16/25/40 | | F | 5.69 | 144 | 1.38 | 35 |
| | | | | | D-E | 5.03 | 128 | 1.38 | 35 |
| 4 | 100 | 150 | | | | 6.75 | 171.5 | 1.38 | 35 |
| | | | 25/40 | 30 | F | 6.69 | 170 | 1.38 | 35 |
| | | 300 | | | | 7 | 178 | 1.38 | 35 |
| | | | | 10 | | 6.25 | 159 | 1.38 | 35 |
| | | | | 40 | | 7.19 | 183 | 1.38 | 35 |
| 6 | 150 | | 10/16 | 16/20 | D-E | 6.38 | 162 | 1.38 | 35 |
| | | 150 | | | | 8.62 | 219 | 1.38 | 35 |
| | | 300 | 63 | 30 | | 9.75 | 248 | 1.38 | 35 |
| 8 | 200 | | 25/40 | | | 8.81 | 224 | 1.38 | 35 |
| | | 150 | 10/16 | | D-E | 10.78 | 274 | 1.62 | 41 |
| | | 300 | | | | 12 | 304.8 | 1.62 | 41 |
| | | | 25 | | | 11.19 | 284 | 1.62 | 41 |
| | | | 40 | | | 11.41 | 290 | 1.62 | 41 |
| 10 | 250 | | | | F | 11.88 | 302 | 1.62 | 41 |
| | | 150 | | | D-E | 13.25 | 336.5 | 2.4 | 60 |
| | | 300 | | 30 | | 14.1 | 359 | 1.81 | 46 |
| | | | 10/16 | 10 | | 12.9 | 328 | 1.81 | 46 |
| | | | 25 | | | 13.4 | 340 | 2.2 | 55 |
| | | | 40 | 16/20 | F | 13.9 | 352 | 2.4 | 60 |
| | | 40 | | | 14.8 | 377 | 1.81 | 46 | |

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Safety Heads for XT Rupture Disk

The XT rupture disk is designed for use in the following safety head types:

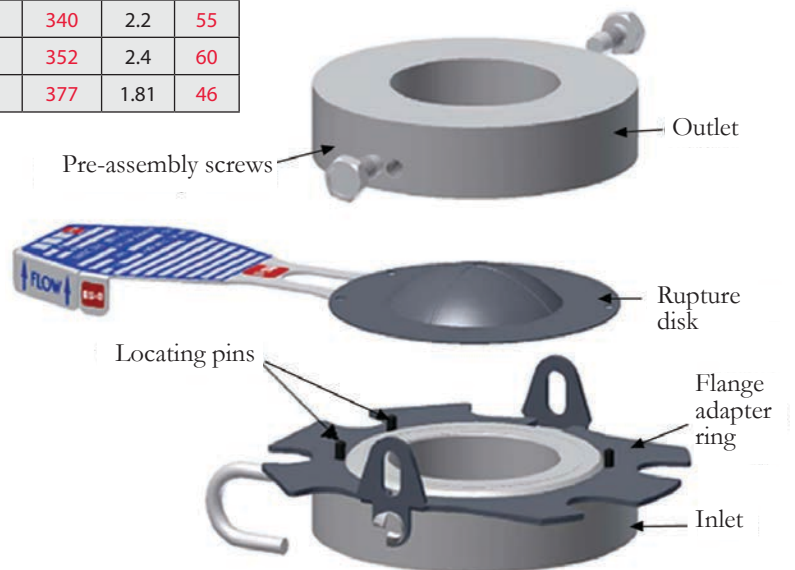
- NF-7R
 - NX-7R*
 - TL-7R
 - NF-7RS (pre-torqued)
- *For ASME compliance, the NX-7R holder is required

Material Choices

The XT rupture disk is available in a choice of seven materials to provide a wide range of options for the user to achieve compatibility with the application process conditions. Selection of the correct rupture disk material is important: corrosion of disk material will affect performance.

It is important that each material be applied within its recommended service limit. The thermal stability of alloy 600 exhibits the least variation in burst pressure relative to temperature for the XT rupture disk. Consult BS&B for details.

Type XT rupture disk with type TL-7R safety head



Edmonton, AB Canada
T +1 780 955 2888
F +1 780 955 3975
E contacts@bsbprocess.com

Tulsa, OK USA
T +1 918 622 5950
F +1 918 665 3904
E sales@bsbsystems.com

Monterrey, Mexico
T +011 52 81 1958 0560
F +011 52 81 1958 0560 138
E sales@bsbsystems.com

Minneapolis, MN USA
T +1 952 941 0146
F +1 952 941 0646
E sales@bsbipd.com

Houston, TX USA
T +1 713 682 4515
F +1 713 682 5992
E sales@bsbsystems.com

Sao Paulo, Brazil
T +55 11 2084 4800
F +55 11 2021 3801
E sales@bsbbrasil.com



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BSB.ie

Limerick, Ireland
T +353 61 484700
F +353 61 227987
E sales@bsb.ie

Manchester, UK
T +44 0 161 955 4202
F +44 0 161 870 1086
E sales@bsb-systems.co.uk

Yokohama, Japan
T +81 45 450 1271
F +81 45 451 3061
E information@bsb-systems.co.jp

Moscow, Russia
T +7 495 747 5916
F +7 499 133 4394
E sales@bsbsystems.ru

Frankfurt, Germany
T +49 6022 26 2310
F +49 6022 26 2311
E info@bsbsystems.de

The Netherlands
T +31 70 362 2136
F +31 70 360 4724
E info@bsbsystems.nl

United Arab Emirates
T +971 2406 9603
F +971 2406 9810
E sales@bsbsystems.ae

Shanghai, China
T +86 21 6391 2299
F +86 21 6391 2117
E sales@bsbsystems.cn

Chennai, India
T +91 44 2812 8900
F +91 44 2811 1902
E sales@bsbsystems.com

Singapore
T +65 6513 9780
F +65 6484 3711
E sales@bsb.com.sg



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