DUTA 的安全技术——卓越的紧急泄爆系统

DUTA Safety Technology--Excellent Emergency Explosion Relief System

DUTA 系列特种爆破片装置具有一系列的优异性能

- 动态响应特性优异，适应急速相变超压、气相化学燃爆超压及粉尘燃爆超压工况。
- 抗压力循环能力强，反拱形特种爆破片疲劳寿命高达十万次以上，且爆破压力无变化。
- 爆破时无碎片，不会引起撞击火花而导致二次爆炸。
- 可与安全阀有效地组合成隔离式安全装置，防止安全阀的泄漏。
- DUTA系列特种爆破片装置泄压口径范围宽(5～1600mm)，压力级别齐全(0.001～500MPa)。

DUTA special rupture disk devices possess of a series of excellent performance

- Excellent dynamic response, and suitable for overpressure conditions caused by abrupt phase change, gas chemical explosion or dust explosion.
- Superior fatigue resistance in pressure pulsating conditions, and the cycle life of reverse domed rupture disk is up to 100,000 times or more, with burst pressure does not change.
- Non-fragmenting design, no secondary explosion.
- Suitable for safety valve isolation to prevent the leakage of safety valve.
- Wide range of vent diameter (5 ~ 1600 mm), and complete pressure level (0.001 ~ 500 MPa).

DUTA系列特种爆破片装置适用标准

ISO4126-2	《爆破片安全装置》
GB567	《爆破片与爆破片装置》
GB150	《钢制压力容器》
质检总局	《压力容器安全技术监察规程》

DUTA Applied standard

ISO4126-2	"Bursting Disc Safety Devices"
GB567	"Bursting Disc and Bursting Disc Devices"
GB150	"Steel Pressure Vessels"
AQSIQ	"Supervision Regulation On Safety Technical For Pressure Vessels"

大连理工安全装备有限公司
DALIAN LIGONG SAFETY EQUIPMENT CO., LTD.

正拱普通型爆破片（LP）

CONVENTIONAL SIMPLE DOMED RUPTURE DISK (LP TYPE)

正拱普通型爆破片的爆破压力主要由爆破片材料的抗拉强度决定。工作时，系统压力作用在爆破片拱壳的凹面，当被保护系统超压时，爆破元件双向被拉伸，发生塑性变形，壁厚减薄，最终破裂，泄放压力，从而起到保护系统的作用。

The burst pressure of Conventional Simple Domed Rupture Disk is determined by the tensile strength of the material employed. System pressure is subjected to the concave side of rupture disk on normal operating condition. When excessive pressure occurs on the protected system, the dome begins to thin out and the disk bursts, providing a full relief opening.

正拱普通型爆破片（LP）
Conventional Simple Domed Rupture Disk

主要型式

- **普通型爆破片（LP）**：与夹持器配合使用，适用于自身可承受背压或无背压、真空的场合。
- **整体型爆破片（LPZ）**：适用于超高压的场合。
- **焊接型爆破片（LPH）**：适用于高压、超高压的场合。
- **带托架的爆破片（LPT）**：适用于需承受真空或背压的场合。

Types

- Simple Rupture Disk (LP): withstand backpressure, non-backpressure or vacuum conditions with disk holders.
- Integrated Rupture Disk (LPZ): suitable for super-high pressure conditions.
- Welded Rupture Disk (LPH): suitable for high and super-high pressure conditions.
- Rupture Disk with Vacuum Support (LPT): suitable for vacuum or backpressure conditions.

技术特性

- 适用范围广，可根据不同的爆破压力和泄放口径选用相应的装配结构。
- 压力加工范围受材料强度限制较大。
- 适用于气、液两种介质。
- 适用于高温高压环境。
- 最大工作压力不宜超过最小爆破压力的70%，不适合于压力脉动的场合。
- 爆破后有碎片。
- 使用寿命较短，工作时爆破片应力水平较高，易发生蠕变变形和疲劳破坏。
- 温度效应明显。温度升高，爆破压力会明显下降，温度波动，爆破压力随之波动。

Features

- Broad range of application, and can choose the corresponding assembly according to different burst pressure and vent area.
- Manufacturing ranges depend much on material strength.
- Designed for gas, liquid service.
- Suitable for high temperature and pressure conditions.
- Maximum operating pressure equal to or less than 70% of the minimum burst pressure, and not suitable for pressure pulsating conditions.
- Fragments on burst.
- Short service life and easily cause creep deformation and fatigue damage.
- Obvious temperature effect may cause burst pressure fluctuation. The temperature goes up while burst pressure declines.

正拱普通型爆破片（LP）
CONVENTIONAL SIMPLE DOMED RUPTURE DISK (LP TYPE)

技术特性表 Specifications

产品类型 TYPE	正拱普通型爆破片 LP
结构与受载示意 BURST DIRECTION	
受力状态 LOAD TYPE	拉伸 TENSION
泄放口径范围 mm SIZE	5~900
常温爆破压力范围 MPa BURST PRESSURE RANGES	0.01~500
背压托架 BACKPRESSURE (VACUUM) SUPPORT	可加 AVAILABLE
配用夹持器类型 DISK HOLDER TYPE	LJ、LJB
动态响应特性 秒 DYNAMIC RESPONSE (sec)	> 1/1000
是否适用易燃易爆介质 INFLAMMABLE MEDIA USAGE	不适用 NOT SUITABLE
疲劳寿命 次 CYCLE LIFE	> 12,000［操作压力比≤70%］ > 12,000 [OPERATING RATIOS≤70%]
抗压力疲劳能力 CYCLE RESISTANCE CAPABILITY	一般 ORDINARY
可否引起撞击火花 SPARK POSSIBILITY	可能 POSSIBLE
可否与安全阀串联使用 SAFETY VALVE ISOLATION	否 NOT AVAILABLE
选用时应注意 NOTE	对有真空工况需特别提出 VACUUM CONDITION SHOULD BE SPECIFIED

正拱普通焊接型爆破片（LPH）
Welded Conventional Domed Rupture Disk

整体型爆破片(LPZ)
Integrated Rupture Disk

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正拱普通型爆破片（LP）
CONVENTIONAL SIMPLE DOMED RUPTURE DISK (LP TYPE)

制造压力范围 Manufacturing Pressure Ranges

常用LP型爆破片的爆破压力范围（22℃）
Standard LP Type Burst Pressure Ranges (22 ℃)

单位: MPa
Unit:

泄放口径 SIZE		爆破片材料 MATERIAL					
		不锈钢 STAINLESS STEEL		镍 NICKEL		铝 ALUMINUM	
mm	in	minPB	maxPB	minPB	maxPB	minPB	maxPB
5	3/16	15.0	400.0	7.0	350.0	4.0	50.0
10	3/8	10.0	380.0	3.5	300.0	2.0	30.0
15	1/2	6.0	350.0	2.5	200.0	1.5	20.0
20	3/4	5.0	350.0	2.0	200.0	1.0	20.0
25	1	4.0	300.0	1.5	150.0	1.0	15.0
32	1¼	3.0	250.0	1.0	150.0	0.7	15.0
40	1½	2.5	250.0	1.0	100.0	0.5	15.0
50	2	2.0	200.0	0.6	80.0	0.4	12.0
65	2½	1.5	50.0	0.5	50.0	0.3	12.0
80	3	1.0	50.0	0.5	50.0	0.25	10.0
100	4	0.9	50.0	0.4	50.0	0.2	6.0
125	5	0.8	50.0	0.35	45.0	0.15	6.0
150	6	0.7	40.0	0.3	40.0	0.15	6.0
200	8	0.5	25.0	0.25	25.0	0.1	5.0
250	10	0.4	10.0	0.2	10.0	0.08	4.5
300	12	0.35	10.0	0.15	10.0	0.06	4.0
350	14	0.3	10.0	0.13	10.0	0.05	3.5
400	16	0.25	10.0	0.12	10.0	0.045	3.0
450	18	0.2	8.0	0.1	8.0	0.04	2.5
500	20	0.2	8.0	0.08	8.0	0.035	2.0

注意事项

- 上述数据仅供参考，由于受材料的限制，实际加工值可能与表中有差异，请与我们公司联系。
- 用于制造LP型爆破片的材料为不锈钢、镍、铝。若为其它材质，可参考该参数表。需用特殊材质的客户须与本公司提前协商，以保证产品交货期。

Notice

- Data above are only for reference, and due to the material constraints, the actual processing value may differ, please contact us.
- Standard materials for LP type rupture disk are stainless steel, nickel and aluminum. Please contact us for special requirements.

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