

# ***Marston***



## **BURSTING DISCS**

**RBH / LRBH**

Reverse Acting Discs



# Marston

Marston, a Division of Safety Systems UK Limited, has over 50 years experience of the design manufacture and application of bursting disc equipment.

The applications for bursting discs are as diverse as the Industries that use them. Chemical, Oil, Gas and food as well as cryogenic and transportation are typical examples. The selection of the most suitable bursting disc can be critical. The range of designs is extensive, and the optimum choice can be provided.

## RBH / LRBH Bursting Discs

A reverse buckling disc that incorporates a precise scoring adjacent to the dome. When the disc is subjected to excessive pressure the dome inverts, bursts and opens along the scored groove without fragmentation making it an ideal disc for the upstream protection of safety relief valves.

The RBH / LRBH disc has a smooth process side surface which minimises the likelihood of product deposition and build-up.

The RBH disc is suitable for steam and gas applications whilst the LRBH is suitable for these and liquid applications. The LRBH design can be manufactured to provide thermal expansion relief. Both disc types are suitable for operating ratios of up to 95% of minimum bursting pressure. They also offer excellent resistance under cycling conditions.

## Quality

Marston is fully committed to an ongoing Total Quality Improvement programme. This was recognised with Marston audited and approved to design and manufacture bursting discs with its Quality Control procedures registered to the highest standards required by BS EN ISO 9001 Certification.

Quality is an integral part of all processes to provide customer satisfaction and confidence.

RBH / LRBH bursting discs are manufactured and tested in accordance with the requirements of the relevant standard, including BS2915, AD Merkblatt A1, ISPEL, ASME VIII, ISO 6718 and EN ISO 4126. All of Marston standard disc designs have been approved for use in accordance with the requirements of the P.E.D., 97/23/EC.



## Corrosion Resistance

RBH / LRBH bursting discs can be manufactured from all commonly used disc materials, including Tantalum, Nickel alloys and Stainless Steel. Fluorocarbon lining or coating can also be considered when selecting for a corrosive duty.

## The Effect of Temperature

Changes in temperature affect all bursting disc materials. Typically, as the temperature rises, the material strength reduces and the bursting pressure falls.

Reverse buckling discs depend on dome profile as well as the material thickness to determine the bursting pressure. The temperature effect varies with dome profile. It is therefore not possible to give typical temperature effects for reverse buckling bursting discs.

The effect is established at the time of ordering and is stated on the bursting disc test certification.

### Allowable Temperature Ranges

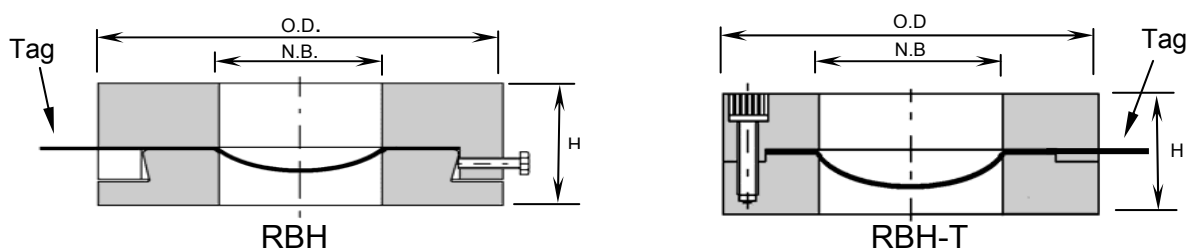
Maximum Temp. °C	Disc Material	Minimum Temp. °C
400	Nickel 200	-200
500	Monel 400	-200
550	Inconel 600	-200
450	St. St. 316	-200
500	Hastelloy C	-200
300	Tantalum	-200

## Features

Feature	RBH Performance	LRBH Performance
Fragmentation	<b>None</b>	<b>None</b>
Operating Ratio	Up to <b>95%</b>	Up to <b>95%</b>
Vacuum Duty	Generally <b>Full Vacuum</b>	Generally <b>Full Vacuum</b>
Pressure Cycling Duties	<b>Excellent</b>	<b>Excellent</b>
Leak Tightness (To Vent)	<b>&lt;1 x 10<sup>-6</sup> mbar.l.sec<sup>-1</sup></b>	<b>&lt;1 x 10<sup>-6</sup> mbar.l.sec<sup>-1</sup></b>
Leak Tightness (To Atmosphere)	<b>&lt;1 x 10<sup>-5</sup> mbar.l.sec<sup>-1</sup></b>	<b>&lt;1 x 10<sup>-5</sup> mbar.l.sec<sup>-1</sup></b>
K <sub>R</sub> Value	<b>K<sub>RG</sub> 0.5</b>	<b>K<sub>RL</sub> 0.6</b>

## Holders

The standard holder is a two-piece unit designed to fit inside the flange bolts of a system. When necessary, a full-face assembly having through boltholes can be supplied. Special designs are always available, providing specific facings, foolproofing devices or pressure tappings, for example. The bursting disc dome is fully protected during installation. Pre-torqued holder designs 'RBH-T' are also available. Marston standard holders are not sensitive to the flange bolt torque loading.



The tables below list the sizes of holders, for typical flat faced pipe flange ratings.

### Holder Dimensions (mm)

N.B.	Height	Outside Diameter			
		ASA 150	ASA 300	PN10	PN16
25	26	66	73	73	73
40	26	85	95	94	94
50	28	104	111	109	109
65	29	123	130	129	129
80	30	136	149	144	144
100	32	174	181	164	164
150	42	222	251	220	220
200	52	279	308	275	275
250	70	339	362	330	331
300	80	409	422	380	386
350	90	450	485	440	446
400	105	514	539	491	498
500	130	606	654	596	620

### RBH Minimum Bursting Pressures (Barg @ 20° C)

N.B.(mm)	25	40	50	65	80	100	150	200	250	300	350	400	500
Nickel 200	2.0	1.8	1.6	1.4	1.25	1.25	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Monel 400	2.25	2.0	1.8	1.6	1.4	1.4	1.2	1.2	1.0	1.0	1.0	1.0	1.0
Inconel 600	3.5	3.25	2.75	2.5	2.25	1.75	1.5	1.15	1.15	1.0	1.0	1.0	1.0
St. St. 316	3.5	3.25	2.75	2.5	2.25	1.75	1.5	1.15	1.15	1.0	1.0	1.0	1.0
Hastelloy C	5.0	4.0	3.4	3.1	2.8	2.5	2.25	2.0	1.75	1.5	1.5	1.5	1.5

### LRBH Minimum Bursting Pressures (Barg @ 20°C)

N.B.(mm)	25	40	50	65	80	100	150	200	250	300	350	400	500
Nickel 200	6.0	5.0	3.5	3.0	2.75	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Monel 400	6.75	5.5	3.8	3.3	3.1	2.8	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Inconel 600	7.5	6.0	4.5	4.15	3.75	3.25	2.75	2.75	2.75	2.75	2.75	2.75	2.75
St. St. 316	7.5	6.0	4.5	4.15	3.75	3.25	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Hastelloy C	10.0	9.0	7.0	6.0	5.25	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

- Lower Bursting Pressures may be available. Please consult Marston for further assistance.

## Tolerances

Standard tolerances on all RBH / LRBH bursting discs are +/-5%. Improved tolerances may be available. Please consult Marston for further assistance.

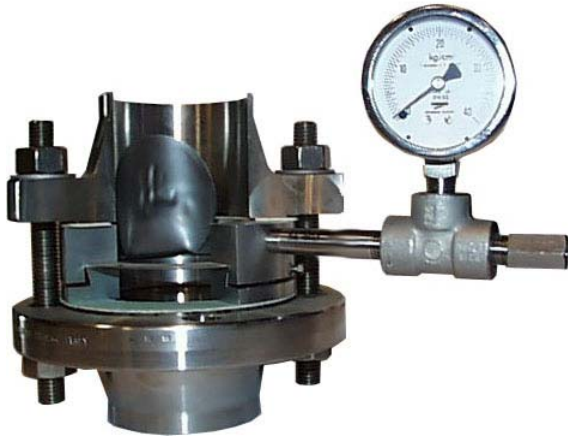
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## Accessories:

### EFV, Nipple, Tee and Pressure Gauge

An Excess Flow Valve (EFV) is a device to prevent the build up of any back pressure between a disc and any other equipment located downstream. This is recommended particularly when a disc is used upstream of a Safety Relief Valve. It is often used in conjunction with a Pressure Gauge which provides simple visual indication of disc failure.



### Burst Disc Indicator



A Burst Disc Indicator is a simple circuit, usually fitted downstream of the bursting disc, which is broken on rupture. Marston manufacture burst indicators which are fitted directly to the disc as shown and to fit between the holder and the downstream pipe flange

BS EN ISO 9001  
ASME  
TÜV  
Chinese SQL



### Worldwide Regional Offices

As part of Marston's commitment to serving its customers, several regional offices have been established across the world.

Local representatives are also available for consultation throughout the world. Contact details can be supplied on request or obtained directly from our Web Site.

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