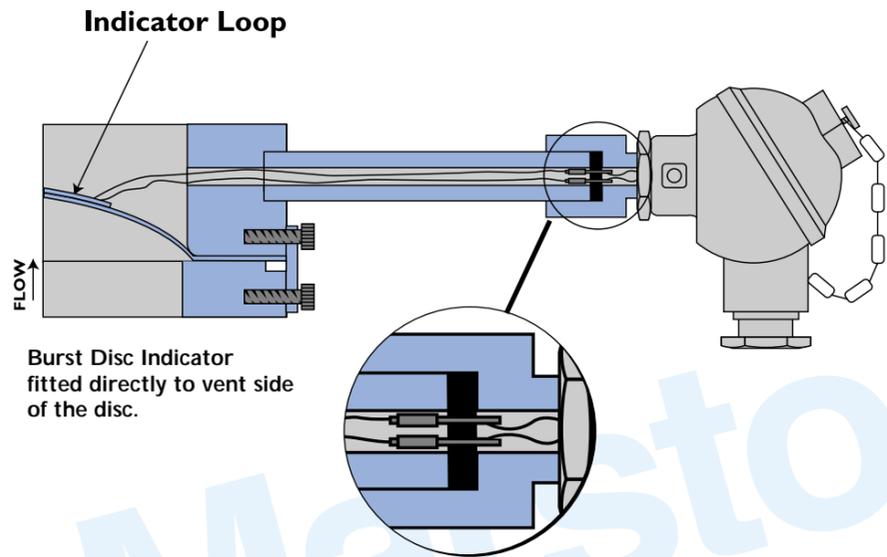


BURST DISC INDICATORS

Once a bursting disc has ruptured, it is often beneficial to shut down relevant plant equipment as quickly as possible. One common method of achieving this is to fit a Burst Disc Indicator. A Burst Disc Indicator is a simple circuit, usually fitted downstream of the bursting disc, which is broken upon disc rupture. The signal is usually received in the plant control room. This then instigates the shutdown of the relevant equipment.



Burst Disc Indicator fitted directly to vent side of the disc.

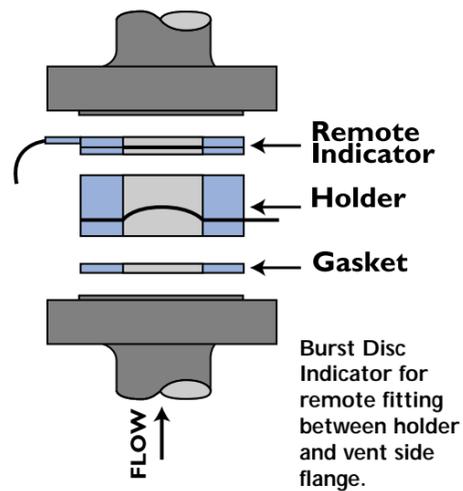
Marston manufacture two basic types of Burst Disc Indicator, one which is fitted directly to the disc, and one which is fitted between the holder and the downstream pipe flange. This can be fitted to existing disc assemblies or safety relief valves.

All Marston Burst Disc Indicators have been approved by BASEEFA to EEx ia IIC T6 ($T_{amb} = 75^{\circ}\text{C}$); i.e. they do not induce or release sufficient electrical energy when they function to cause an explosion even in the most hazardous environment, Zone 0.

The system requires a 100mA maximum supply feed from an appropriate isolator barrier.
Note: when a Zener barrier is used, the holder must be earthed to inhibit high circulating currents.

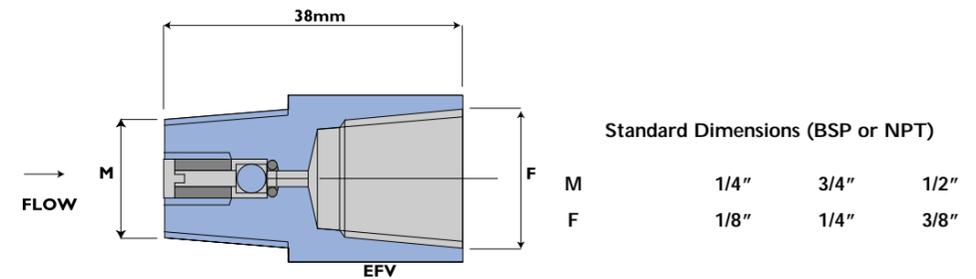
When the indicator is fitted directly to the bursting disc, it is normal to run the electrical lead wires through a suitable connection head. For the remote indicator, the lead wires are routed through the gasket to an armoured, shielded, supply lead.

Burst Disc Indicators are components which have been considered NOT to require EMC testing on their own. It is the users responsibility to ensure compliance with the EMC Directive in relation to their particular system.



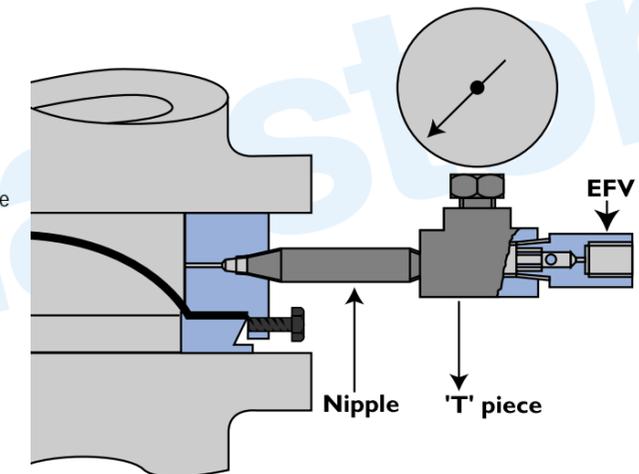
EXCESS FLOW VALVES

Excess flow valves (EFV) may be fitted to prevent back pressure developing between a bursting disc and, for example, a safety relief valve during normal plant operation. The excess flow valves should be fitted in a horizontal mode. In the event of the disc rupturing, the excess flow valve will seal the vent system under the influence of the pressure pulse.



Pressure Gauges

Pressure gauges are normally supplied by the user, although Marston is able to supply them on request.

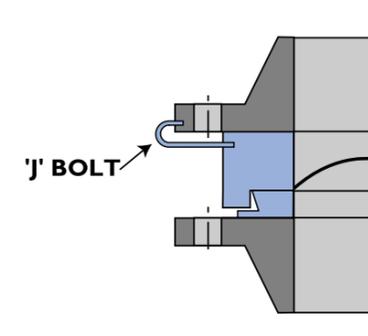


Jack Screws

To help users to separate the bursting disc holder from the system flanges during overhaul, or following an incident, jack-screws may be required. These are normally incorporated into pipe-flange drillings, although Marston can supply suitable screws if requested.

'J' Bolt

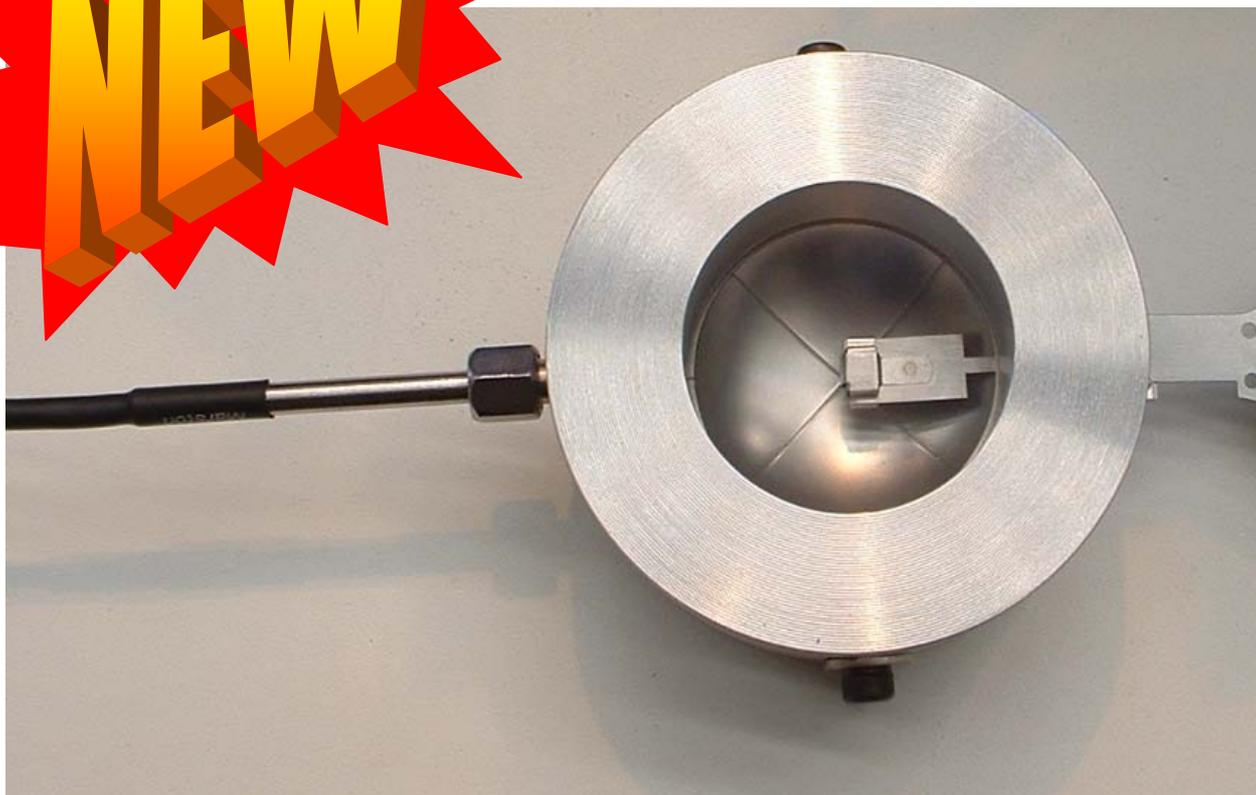
It is important that bursting disc assemblies are mounted in the correct orientation relative to the flow direction. Although the holder is stamped with a flow arrow, and the vent-side is also shown on the holder and disc labels, it is often a requirement that the installation is 'foolproofed'. One such example is a 'J' bolt (as shown) which is welded to the holder and locates in a corresponding hole in one of the flanges. Other methods are also available.



Marston

A Division of Safety Systems UK Ltd

NEW



M.A.S.
MAGNETIC ALARM SYSTEM

**THE LATEST BURST DISC INDICATOR
SYSTEM FROM MARSTON**

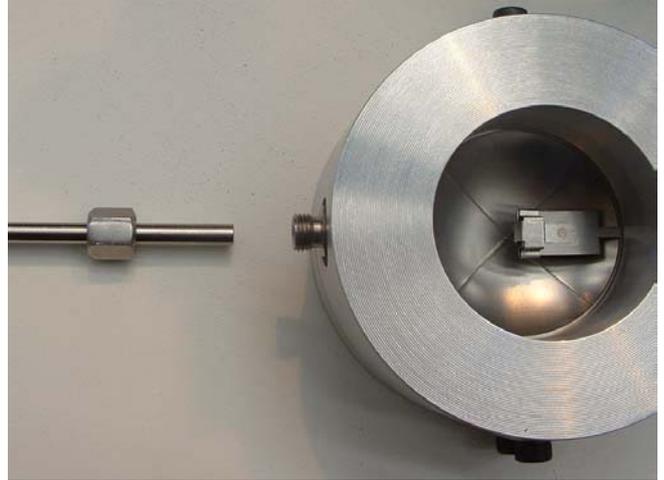
Marston

The **NEW** Marston **M**agnetic **A**larm **S**ystem!

Burst Disc detection has become an almost integral part of rupture disc technology. Recognising industries need to minimise maintenance time, Marston now introduce the latest design in Burst Disc Indication.

The **Marston 'MAS'** eliminates the need to disconnect the electrical supply to the rupture disc assembly, reducing changeover time.

A 'sensor' is located in the vent side of the assembly, retained by a screwed compression fitting. The hole into which the sensor fits does not pass through to the holder bore, therefore the sensor does not come into contact with the product contained in the vent line. Attached to the vent side of the disc is a small but powerful magnet. The magnetic field that it generates is detected by the sensor. When the disc ruptures, the magnetic field moves away and activates the sensor. This simple switching effect can be used to initiate an alarm or a programmed shutdown procedure.



The lead wires on the sensor are connected to the customers alarm circuit via a suitable switch barrier. The switch barrier is used to ensure that the input current to the sensor is limited to a maximum of 100mA from a stable 24V-dc supply.

The **Marston 'MAS'** provides an integral, leak tight detector. The sensor, once fitted, does not need to be renewed when replacing the rupture disc. It can be unscrewed from the holder and replaced when the new disc is fitted. When the disc is replaced, the new disc includes a magnet already fitted which ensures that it will be installed in the correct position.

The **Marston 'MAS'** can be fitted to most of the Marston rupture disc range and in some instances, with slight holder modification, can be fitted to existing devices.

The **Marston 'MAS'** is ATEX approved, Certificate No: Baseefa03 ATEX0196X

Specifications:

Minimum Pressure:	Minimum Burst Pressure of Rupture Disc
Maximum Pressure:	Maximum Burst Pressure of Rupture Disc
Maximum Temperature:	200°C (Higher temperatures may be available using insulators).
Maximum Supply:	100mA 24V-dc (Through a suitable barrier).

- **REDUCED CHANGEOVER TIME**
- **FULLY LEAK TIGHT**
- **CORROSION RESISTANT**
- **ATEX CERTIFIED**
- **REUSABLE**
- **MAINTENANCE FREE**

Marston

"SENSING YOUR NEEDS"

A Division of Safety Systems UK Ltd

Wobaston Road, Fordhouses
Wolverhampton, WV10 6QJ, UK.
Tel: +44 (0)1902 623550
Fax: +44 (0) 1902 623555
e.mail: marston@safetysystemsuk.com
Web Site: www.safetysystemsuk.com

Worldwide Regional Offices

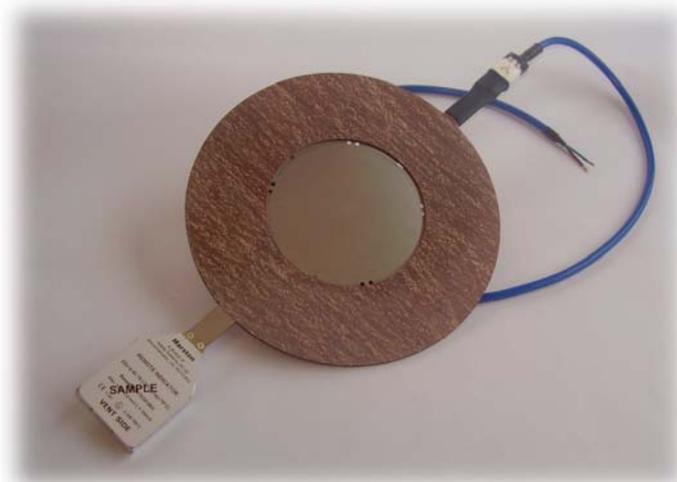
As part of Marston's commitment to serving its customers, several regional offices have been established across the world. Local representatives are also available for consultation throughout the world. Contact details can be supplied on request or obtained directly from our Web Site.

MDI—Metal burst Disc Indicator

The Marston 'MDI' is a robust metallic burst indicator whose temperature capabilities are only limited by its gasket materials. Though typically available in StSt 316 other materials are also available such as Nickel or even Tantalum, offering burst indication solutions in applications where it was previously impossible.

A major benefit of the 'MDI' is the quick release connector. Each 'MDI' is fitted with a female connector firmly attached to its periphery. The mating male connector is fitted and held in place by a secure clip to prevent it from becoming detached, whilst a simple press of the clip quickly allows the two parts to be separated without force.

This enables the male connector to remain permanently wired to the control system (subject to regulations and interrupting its feed) making changeover quick and simple.



Materials of Construction:

Standard Materials:

	Material	Max Temp
Membrane:	StSt316	300°C
Gasket:	AFM34	250°C

The Following Materials are available to Special Order: *

	Material	Max Temp
Membrane:	Inconel	450°C
	Tantalum	250°C
Gasket:	Garfite Ti	450°C
	PTFE	250°C

ATEX Certification Number: Baseefa03ATEX0196X

Conforms to:

Ex ia IIC T6. (-35°C ≤ T_a ≤ + 75°C) - Modules ATEX 94/9/EC : **EX** II 1 GD 85°C

Nominal Bore *	(mm)	25	40	50	80	100	150	200
	(inch)	1.0	1.5	2.0	3.0	4.0	6.0	8.0
Minimum BP	(barg)	1.5	1.0	0.75	0.5	0.25	0.25	0.25
	(psig)	22	14	11	7.5	4.0	4.0	4.0
Outside Diameter	(mm)	66	85	104	136	164	220	275
	(inch)	2.60	3.34	4.10	5.35	6.45	8.66	10.82

* Additional sizes / materials may be available upon request.