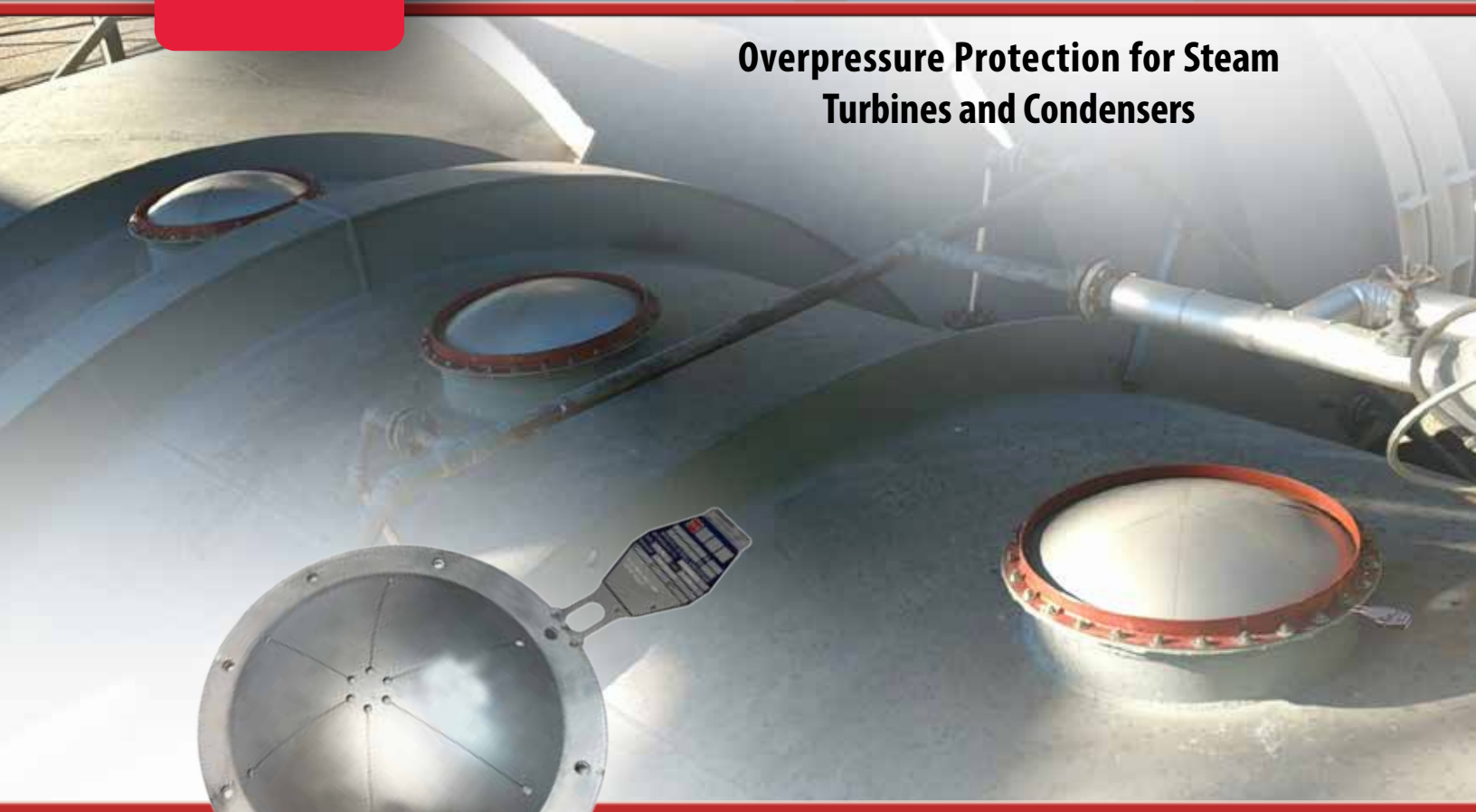


BS&B[®]

**Overpressure Protection for Steam
Turbines and Condensers**



**DV(F)[™] Series
Rupture Disks**

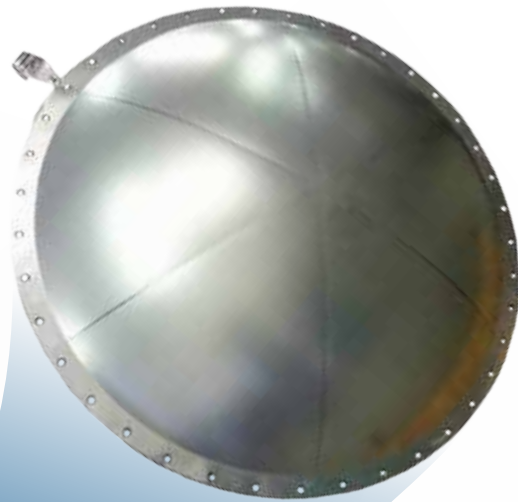


Reliable Burst Performance

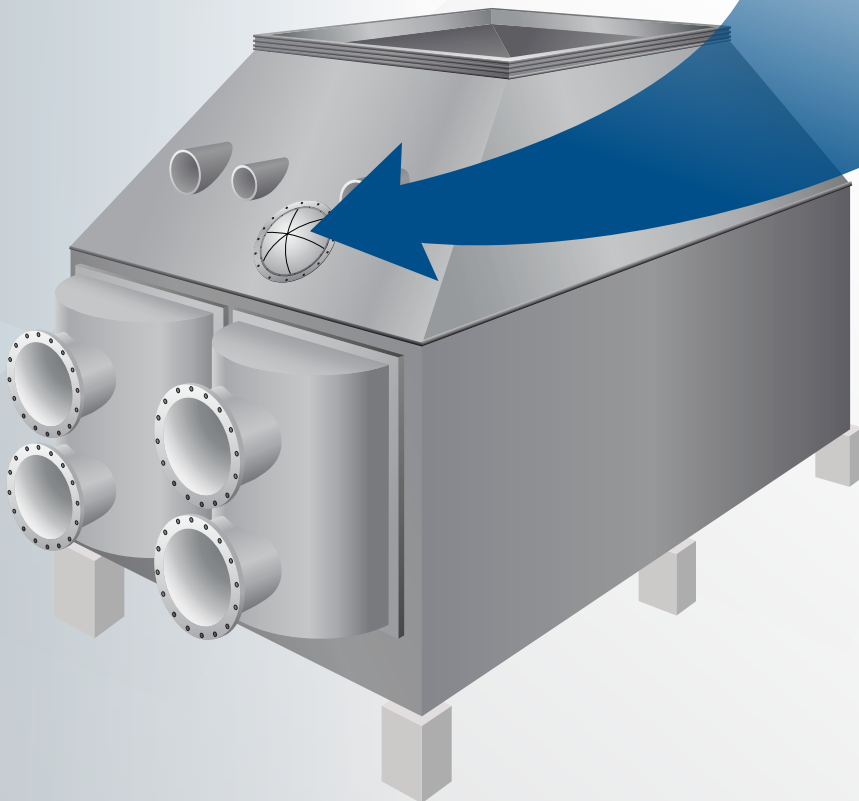
for overpressure protection in Steam Turbines and Condensers

The BS&B DV(F)[™] Series Rupture Disk is designed to protect low pressure steam turbines and condensers from the dangers of excessive steam pressure. If an overpressure event occurs the DV(F)[™] Series Rupture Disk will provide a rapid and unrestricted opening at a precise activation of pressure and temperature allowing steam to flow through the disk opening.

Rupture disks have been used successfully for decades to protect surface and air-cooled condensers thus providing a proven and reliable method for protecting low pressure steam turbines. Rupture disks are highly accurate, low maintenance devices manufactured to meet the specific requirements of full vacuum resistance, positive burst control, and temperature conditions found in today's steam turbine operating environment.



DV(F)-FB-G Rupture Disk installed in a Steam Surface Condenser



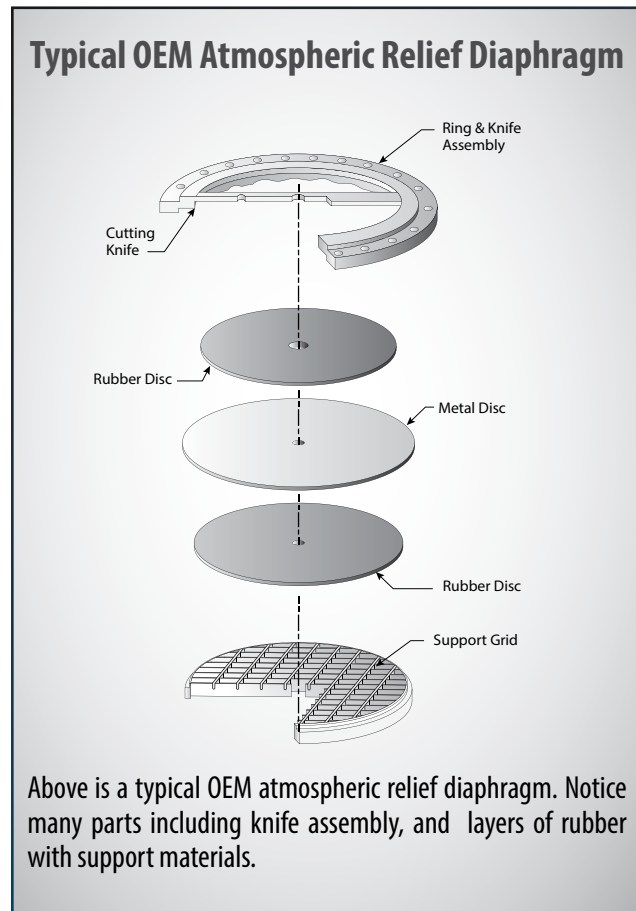
Features

- Nominal sizes: 8" - 44" (203mm - 1118mm)
- Standard materials: 316SS / fluoropolymer seal
- Low maintenance
- Full vacuum support
- Economic design

Benefits

- Fits a wide range of applications
- Corrosion resistant materials
- No water seals to maintain or periodic testing required
- No knife blades or cutting edge to maintain
- Lower cost to install and operate

DV(F) Series Rupture Disk Offers Superior Overpressure Protection Over Atmospheric Relief Diaphragms (ARD)



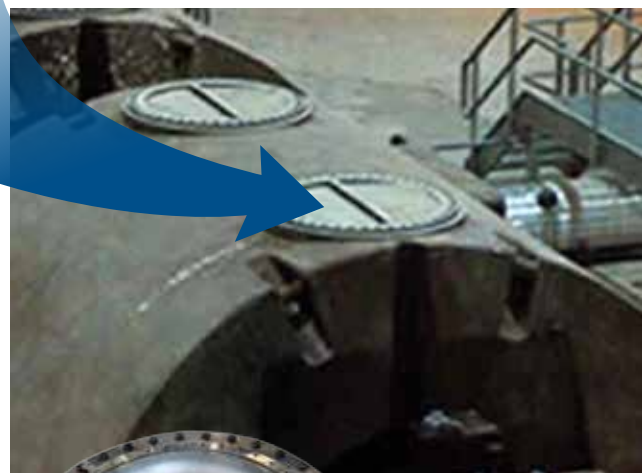
Steam turbine manufacturers include overpressure protection devices, known as atmospheric relief diaphragms (ARD), as part of the outer casing exhaust hood. ARD's are typically flat copper, lead, or aluminum discs arranged over a support grid to prevent implosion from vacuum pressure, and a cutting edge to slice open the disc in the event of overpressure. Problems with ARD's include inconsistent burst performance test data, complex maintenance and installation requirements, and leakage due to disc fatigue or corrosion; the latter of which can cause loss of vacuum resulting in inefficient turbine performance and a safety hazard from dangerous overpressure. In addition, lead and copper disc materials can introduce undesirable oxides into the steam cycle. These problems have prompted power plant owners and steam turbine operators to consider alternative ways to protect expensive steam turbines and condensers.

A Better Choice

The DV(F) Series Rupture Disk is a rounded dome non-fragmenting disk of composite construction. DV(F) Series Rupture Disks can replace most ARD designs on low pressure steam turbines. BS&B capabilities include adapter and clamping rings, and bolting hardware to match most turbine ARD openings and sizes. BS&B DV(F) Series Rupture Disks meet the requirements of HEI and include a burst test certificate assuring superior performance and burst accuracy.



DV(F)-FB-G Rupture Disk providing overpressure relief for a steam surface condenser



DV (F)-FB-G Rupture Disk with adapter ring and hold down ring

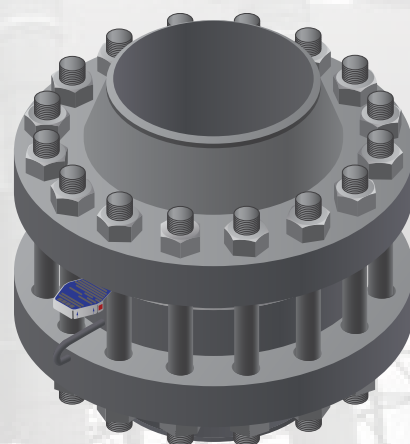
DV (F) Series Specifications

Nominal size		Net relief area		Flow Rate			
				Air		Steam (Dry Saturated)	
in	mm	in ²	mm ²	lb/hr	kg/hr	lb/hr	kg/hr
8	203	47	30,387	44,473	20,173	30,379	13780
10	254	74	48,129	70,438	31,950	48,115	21825
12	305	106	68,387	100,087	45,399	68,369	31012
16	406	176	113,548	166,182	75,379	113,517	51490
18	457	223	143,871	210,560	95,508	143,831	65241
20	508	277	178,709	261,547	118,636	178,661	81039
24	610	397	256,129	374,853	170,030	256,059	116146
30	762	661	426,451	624,125	283,098	426,335	193382
32	813	743	479,354	701,551	318,218	479,224	217372
36	915	907	585,160	856,402	388,457	585,002	265352
40	1,016	1120	722,579	1,057,519	479,683	722,384	327668
44	1,118	1355	874,192	1,279,410	580,331	873,956	396420

Flow rates based on 5 psig (0.35 barg) burst pressure. Contact BS&B for flow rates for other burst pressures. DV(F) Series Rupture Disk conforms to Heat Exchange Institute Standards for steam surface and air cooled condensers.

DV (F) Series Rupture Disk

Rupture Disk Type	Description	Application
DV(F)	Flat seat DV disk	<i>Used with FF-7R holder</i> <ul style="list-style-type: none"> Protect disk Ease of installation between flanges
DV(F)-FB-G	Flat seat, full-bolted DV disk with process side gasket	<i>No holder required</i> <ul style="list-style-type: none"> Matches condenser bolt circle Adapter ring available for customized openings



Type DV(F) Rupture Disk with FF-7R Holder

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