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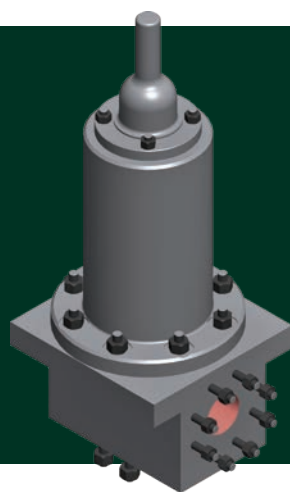
a Baker Hughes business

HP 1900 DM & 3900 TM Block Body Spring-loaded & Pilot Operated Safety Relief Valves

Meeting New High-Pressure Challenges

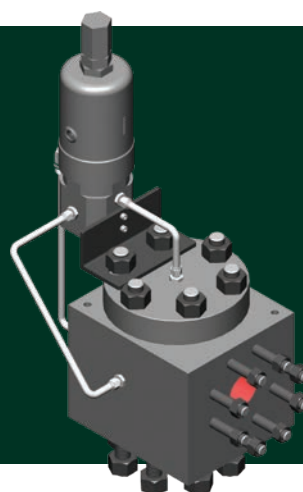
The offshore market is rapidly growing as worldwide demand for fuel continues to increase. Greater well depths are being explored presenting new challenges for oil and gas equipment, including safety relief valves (SRVs). The biggest challenge for SRVs in Floating Production offshore applications is the greater water depths that generate increased well pressures (up to 15,000 psig/1,034 barg) created by geological formations supporting the overburden weight above.

To meet these challenges the 1900 DM Series Spring-Loaded SRV and 3900 TM Series POSRV pressure ranges have been extended beyond the maximum pressure limits of API Standard 526. The 1900 DM 10/15K High Pressure Series is the first and only dual-media certified block body Spring-Loaded SRV to reach set pressures up to 10,000 psig, and the 3900 TM 10/15K High Pressure Series is the first and only multi-media certified block body POSRV to publish reaching set pressures above 10,000 psig. Both valves feature a forged block body designed to withstand the high-pressure stresses prevalent in FPSO, FLNG, and other high pressure offshore applications.



1900 DM Block Body

Pressure Ratings:	Up to 10,000 psig (689.5 barg)
Temperature Range:	-50°F to 400°F (-45°C to 204°C)
Sizes:	1-13/16" x 3", 3" x 4"
Pilot Spring Material:	Inconel X-750



3900 TM Block Body

Pressure Ratings:	Up to 13500 psig (930.79 barg)
Temperature Range:	-20°F to 400°F (-28°C to 204°C)
Sizes:	1-13/16" x 2", 2-1/16" x 3"
Pilot Spring Material:	Chrome Silicon Steel

Both the 1900 DM Block Body and 3900 TM Block Body Feature:

Orifice Sizes:	D through J
Inlet Connection:	Studded API 6A 10/15K with ring joint nozzle, Grayloc™ and Techlok™ hubs available
Outlet Connection:	Studded ASME Class 300
Body:	Duplex (F51, F53, F55), F65 (non-code) alloy, SA182 F316 SS, SA105 CS, SA350 LF2 CS
Trim:	Nozzle/Disc – Inconel 718 Standard, F51/55 duplex materials; Stellite hardfacing (optional)
Seat Design:	Metal seat design only

Block Body Design

The 1900 DM Series and 3900 TM Series High Pressure use a forged block body instead of a cast body as it is better suited to reach higher set pressures. The process to make a forged block body involves compressing molten metal into a block shaped form until it cools into a solid. Forgings typically have less surface porosity and finer grain structure exhibiting higher tensile, fatigue, and yield strength than castings. These characteristics make forgings ideal for high pressure applications above 6,250 psig (430.92 barg) where castings are usually limited by most SRV manufacturers.

In addition to the strength advantage, forged block bodies are easily adaptable to varying flange requirements for the high-pressure offshore market. The 1900 DM Series and 3900 TM Series come standard with studded connections; however, hub connections can be selected and added with minimal design effort.

Valve Performance

The 1900 DM Series and 3900 TM Series High Pressure SRVs provide the same exceptional set pressure performance, stable opening, closing, and blowdown performance as our standard product lines; ensuring the system is efficiently protected from an overpressure event with gas, liquid, steam, or a two-phase mixture as the relieving media.

Applications

The 1900 DM Series and 3900 TM Series High Pressure SRVs were designed to meet the severe overpressure requirements for applications in the Floating Production market. However, this market is not the only high-pressure application where block bodies are installed.

- Projects: FPSO, FLNG, and FSRU vessels employed in the Gulf of Mexico, Brazil, North Sea, West Africa, Southeast Asia, and Australia
- Offshore drilling and production platforms in deep well applications
- Any onshore production application with pressure exceeding 6,250 psig (430.92 barg)
- MRO opportunities where the end-user's block body SRV is experiencing chatter or lift performance issues on multi-phase fluids or multiple fluid relief scenarios

