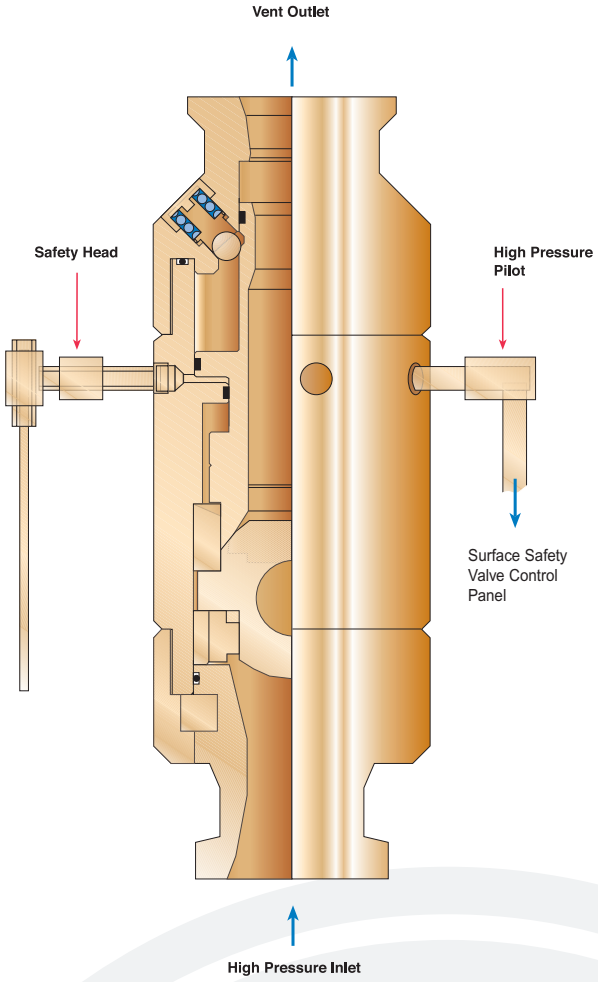
Multi sensor relief valve

The Multi Sensor Relief Valve (MSRV) has been designed to provide a total safety solution for venting hydrocarbons in process systems. In an over pressure situation the MSRV will respond through utilisation of its safety logic to protect the whole process system.

The MSRV is a hydraulically operated ball valve actuated by well pressure from primary sensor points. Protection of a vessel or system is achieved through constant monitoring of the process pressure at the respective sensor point.

When the process pressure exceeds a predetermined value a disc ruptures and the respective impulse line is energised and the valve is opened. Once actuated, the MSRV will remain open until pressure is applied to the respective closure port.



Features & Benefits:

- High relief capacity
- Insensitive to system back pressure
- Positive acting with no chattering
- Accurate setpoint pressure
- Multi sensor facility
- Multi operable capability
- Emergency shutdown control
- High flow rate discharge
- Unaffected by back pressure. Allows the use of smaller diameter pipework
- Valve opening is impulsive, operation responsive to the process pressure
- Calibrated rupture disc ensures accurate opening at the predetermined setting
- Each valve has four impulse ports giving the ability to monitor the process pressure and protect a plurality of specification breaks
- Can be safely and reliably reset onsite. Resetting of system requires only closure of valve and replacement of rupture disc. System integrity confirmed by onsite pressure testing
- During actuation a repeat impulse can be sent to SDV resulting in isolation of the well

EXPRO
WELL TESTING & COMMISSIONING

Multi sensor relief valve

Technical Specifications:	
Maximum working pressure	10,000 psi (690 bar)
Operating temperature	-25° to 300°F (-32° to 149°C)
Service conditions	NACE Specification, MR-01-75, CO_2
Outer diameter	7.7”
Internal diameter	Ball - 2”
Overall length	24”
Effective flow area	3.14 in^2 (standard) sized to required specification
Inlet/Outlet connections	To required specification

Relief Valve Comparison

Relief Valve Style	Set Pressure (psig)	Maximum Back Pressure (psig)	Line Size (In)	Calculated Flow Rate	
Conventional	1400	144	8.0	85.0	(2.4E6 m^3/D)
			4.0	16.0	(0.45E6 m^3/D)
	4500	450	8.0	265.0	(7.5E6 m^3/D)
			4.0	50.0	(1.4E6 m^3/D)
MSRV	1440	700	8.0	140.0	(3.9E6 m^3/D)
			4.0	89.0	(2.5E6 m^3/D)
	4500	2250	8.0	430.0	(12.1E6 m^3/D)
			4.0	245.0	(6.9E6 m^3/D)

Notes (reference to technical specification table)
Flowrates calculated on 200 ft (63 m) of Schedule 80 pipework with 12 elbows, 1 branch tee and 1 three-way diverter valve. Flow calculation is for steady state conditions.

Certification:

Bureau Veritas Design Approval: SI 289, API 6A