




GeoGuard high-performance deepwater safety valves

Subsurface safety valves (SSVs) with superior reliability at extremely deep setting depths

-  **Tubing sizes:**
4½ and 5½ in
-  **Pressure rating:**
up to 20,000 psi [137 MPa]
-  **Working temperature:**
up to 149 degC [300 degF]

Applications

Deepwater and ultra-deepwater wells

How it improves wells

GeoGuard* high-performance deepwater safety valves improve reliability as compared with conventional SSVs, with patented seal technology and qualification methods that enable extremely deep setting to avoid deposition of precipitants such as hydrates, paraffins, and scales in the safety valve.

Flexible engineering design enables delivery with a choice of actuator types to ideally match the well's subsea infrastructure requirements and completion design.

The safety valves' low hydraulic operating pressure also simplifies deepwater control system requirements.

How it works

When requested to actuate from surface—either by manual actuation or through an automated control system—GeoGuard safety valves slam shut to secure the well.

GeoGuard safety valves are available with a choice of actuator types:

- Nitrogen dome technology is ideal for ultra-deep setting depths (>3,048 m [>10,000 ft]) and includes fully redundant hydraulic actuation systems.
- Balance line technology delivers high performance for setting depths up to 3,048 m without redundancy.

What it replaces

Legacy tubing-retrievable, charged surface-controlled subsurface safety valves (SCSSVs) without upgraded sealing capabilities.

Additional information

GeoGuard safety valves are validated to API Spec 14A V1 and V1-H.

Because of the customized nature of the GeoGuard safety valves and the extreme setting depths at which these safety valves can be used, Schlumberger recommends contacting your local representatives for specific lockout procedures for each application, when needed.

GeoGuard Safety Valve Specifications

Nominal Tubing Size, [†] in	Actuator Type	Pressure Rating, [†] psi [MPa]	OD, in [mm]	Bore Size, in [mm]
4½	B,N [‡]	10,000 [69]	7.262–8.072 [184.4–205.0]	3.812 [96.8]
	N	15,000 [103]	7.860 [199.6]	3.500 [88.9]
	N	20,000 [137]	8.160 [207.3]	3.500 [88.9]
5½	B,N	10,000 [69]	8.316–9.335 [211.2–237.1]	4.562 [115.9]
	N	15,000 [103]	8.577 [217.8]	4.313 [109.6]

All specifications are subject to change without notice.

[†] Additional sizes and pressure ratings are available upon request.

[‡] B = Balance line technology; N = Nitrogen dome technology



GeoGuard high-performance deepwater safety valve with nitrogen dome actuator.