

Long-Dome, 1-in. Conventional Gas Lift Valve

Provides additional stem travel with less overburden pressure

Applications

- Continuous gas-lift injection
- Production-performance enhancement

Features and Benefits

- Increases N2 dome volume 100%
- Allows gas-lift injection rate to be increased by up to 32%
- Lowers load rate by 38%
- Allows additional stem travel with less overburden pressure to open gas lift valve
- Reduces multi-pointing prevalent in 1-in. gas lift valves due to high load rate
- Larger dome volume allows for more controlled and prolonged single-point injections that can help reduce slugging
- Low-cost method of enhancing flow performance of gas lift valve
- Compressor efficiency decreases CO₂ emissions

Tool Description

The Weatherford Long-Dome, Gas Lift Valve is an advanced version of the standard conventional 1-in. valve, designed to improve performance in gas lift applications. By extending the dome volume of the 1-in. valve, load rates are proven to be significantly reduced, thereby improving pressure management, which helps stabilize gas injections and reduces valve sensitivity to pressure fluctuations. The long-dome, one-inch conventional valve helps eliminate multi-pointing issues and improves production efficiency by allowing lower pressure differentials deeper in the well—all without having to reduce tubing size.

Compared to the 1.5-in. conventional valve, a proven better performing valve, the load rate of the 1-in. valve is much higher. Higher load rates increase risks with multi pointing and causes limitations with the valve fully opening. The goal of the long-dome, 1-in. conventional valve is to reduce load rates while performing similarly to the 1.5-in. valve and with the option to maintain larger tubing size while fitting inside smaller casing sizes.



Standard C-1 gas lift valve (left) and C1-LD 1-in. Conventional Long-Dome gas lift valve (right).



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C-1 and C-1LD Load Rate and Stem-Travel Testing*

Valve Model	800 psi TRO		1,200 psi TRO		2,000 psi TRO	
	Load Rate	Stem Travel	Load Rate	Stem Travel	Load Rate	Stem Travel
C-1	1,453	0.125	1,503	0.129	2,149	0.137
C-1LD	894	0.137	1,005	0.143	1,850	0.150
Reduction	38%		33%		14%	

*API 1962, Second Edition, 7 valves tested.

C-1 and C-1LD Load-Rate and Stem-Travel Test Comparison

