

PETROLEUM TECHNOLOGY COMPANY

The Artificial Lift Company

SAFELIFT-S

1.5", 1.75" - Shear out version
Orifice gas lift valve

www.ptc.as

SAFELIFT-S

The PTC SafeLift-S is a orifice type gas lift valve with a shear-out function that can be run with completion allowing for a high pressure in the annulus compared with the tubing. At a preset point the valve is activated and the valve will start acting as a regular orifice gas lift valve.

Among several advantages the SafeLift-S has to offer, is the ability to prevent u-tubing before it is sheared and to pressure test the production packer from the annulus side prior to activating the gas lift function.

The Shear Out orifice valve is in the SafeLift™ gas lift valve family, which introduces a completely new era for injection pressure operated (IPO) gas lift valves. A combination of streamlined design and few moving parts, together with an optimized material composition - gives a very robust valve ideal for long life service in a harsh environment.

Seal faces are specially designed to be protected from flow erosion, where a combination of optimized flow across the seal area and use of a special hard surface coating are key elements.

SafeLift™ gas lift valves are designed to be retrofit to all side pocket mandrel on the market according to ISO 17078 part 1 & 2 (E1, Q1, V1, F1) and ISO 14310-V1/V0, and is also qualified as a well barrier.



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For further information contact PTC at: post@ptc.as
+47 51 95 08 00 or +1 281 378 4776 or +44 (0)1224 57 93 50

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Design Specifications

Description	SafeLift-S 1.5"
Service	CO ₂ , H ₂ S Unique Service (pp H ₂ S ₀ = 20 bar)
Valve Body Material	Inconel 718
Extension Material	17-4 PH
Spring Material	MP35N
Elastomer Material	Endura/Reinforced PTFE
Seat Protection	Hard surface coating
Maximum OD	1.5"
Length	21.4"
Orifice Size	1/8" to 1/2"
Stealth Orifice Available (venturi type)	Yes
Operating Pressure	5 000 PSI (Standard) 7 500 PSI (P1) 10 000 PSI (P2)
Shear Pressure	110, 140, 170, 205, 245, 290, 345 BAR
Shear Pressure Precision	± 5 %
Max Test Pressure	70 % of Shear Pressure
Temperature Rating	55 °C to 121 °C (Standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)
Leak Criteria for FAT test	V1 (V0 available upon request)
Thread Connectin	1-1/16" - 18 UNEF - 2
Certification/Qualification	ISO 17078-1 & 2 ISO 14310-V1/V0 ISO 15156

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Design Specifications

Description	SafeLift-S 1.75"
Service	CO ₂ , H ₂ S Unique Service (pp H ₂ S ₀ = 20 bar)
Valve Body Material	Inconel 718
Extension Material	17-4 PH
Spring Material	MP35N
Elastomer Material	Endura/Reinforced PTFE
Seat Protection	Hard surface coating
Maximum OD	1.7"
Length	25.6"
Orifice Size	1/8" to 0.7"
Stealth Orifice Available (venturi type)	Yes
Operating Pressure	5 000 PSI (Standard) 7 500 PSI (P1) 10 000 PSI (P2)
Shear Pressure	110, 140, 170, 205, 245, 290, 345 BAR
Shear Pressure Precision	± 5 %
Max Test Pressure	70 % of Shear Pressure
Temperature Rating	55 °C to 121 °C (Standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)
Leak Criteria for FAT test	V1 (V0 available upon request)
Thread Connectin	1-1/16" - 18 UNEF - 2
Certification/Qualification	ISO 17078-1 & 2 ISO 14310-V1/V0 ISO 15156

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Gas Lift Valves with Shear Out Option

SafeLift - S			ISOLift - S	
	1.5"	1.75"	1.5"	1.75"
Assembly Number	723ISHR150100	723SHR175100	723ISO150100	723ISO175100
Service	CO2, H2S unique service	CO2, H2S unique service	CO2, H2S unique service	CO2, H2S unique service
Valve Body Material	Inconel 718 * *other materials available upon request	Inconel 718 * *other materials available upon request	Inconel 718 * *other materials available upon request	Inconel 718 * *other materials available upon request
Extension Material	17-4 PH	17-4 PH	17-4 PH	17-4 PH
Spring Material	MP35N	MP35N	MP35N	MP35N
Elastomer Material	Endura/H-NBR/reinforced PTFE	Endura/H-NBR/reinforced PTFE	Endura/H-NBR/reinforced PTFE	Endura/H-NBR/reinforced PTFE
Seat Protection	TFF hard surface coating	TFF hard surface coating	N/A	N/A
Maximum OD	1.5"	1.7"	1.5"	1.7"
Length	21.4"	25.6"	21.4"	25.6"
Orifice Size	1/8" to 1/2"	1/8" to 0.7"	1/8" to 1/2"	1/8" to 0.7"
Pressure Rating	5 000 PSI (standard) 7 500 PSI (P1) 10 000 PSI (P2)	5 000 PSI (standard) 7 500 PSI (P1) 10 000 PSI (P2)	5 000 PSI (standard) 7 500 PSI (P1) 10 000 PSI (P2)	5 000 PSI (standard) 7 500 PSI (P1) 10 000 PSI (P2)
Shear Pressure	110,140,170, 205, 245, 290, 345 BAR	110,140,170, 205, 245, 290, 345 BAR	110,140,170, 205, 245, 290, 345 BAR	110,140,170, 205, 245, 290, 345 BAR
Shear Pressure Precision	± 5 %	± 5 %	± 5 %	± 5 %
Max Test Pressure	70 % of Shear Pressure	70 % of Shear Pressure	70 % of Shear Pressure	70 % of Shear Pressure
Temperature Rating	55 °C to 121 °C (standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)	55 °C to 121 °C (standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)	55 °C to 121 °C (standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)	55 °C to 121 °C (standard) 4 °C to 121 °C (T0) 55 °C to 149 °C (T1) 55 °C to 185 °C (T2) 55 °C to 200 °C (T3)
Leak Criteria for FAT Test	V1* *V0 available upon request	V1* *V0 available upon request	3.5 scf/d (10 times better than API/ ISO criteria)	3.5 scf/d (10 times better than API/ ISO criteria)
Thread Connection	1-1/16" - 18 UNEF-2	1-1/16" - 18 UNEF-2	1-1/16" - 18 UNEF-2	1-1/16" - 18 UNEF-2
Certification/Qualification	ISO 17078-1 & 2 ISO 14310-V0 ISO 15156	ISO 17078-1 & 2 ISO 14310-V0 ISO 15156	ISO 17078-1 & 2 ISO 15156	ISO 17078-1 & 2 ISO 15156
Warranty	2 years* *PTC standard warranty conditions	2 years* *PTC standard warranty conditions	N/A	N/A