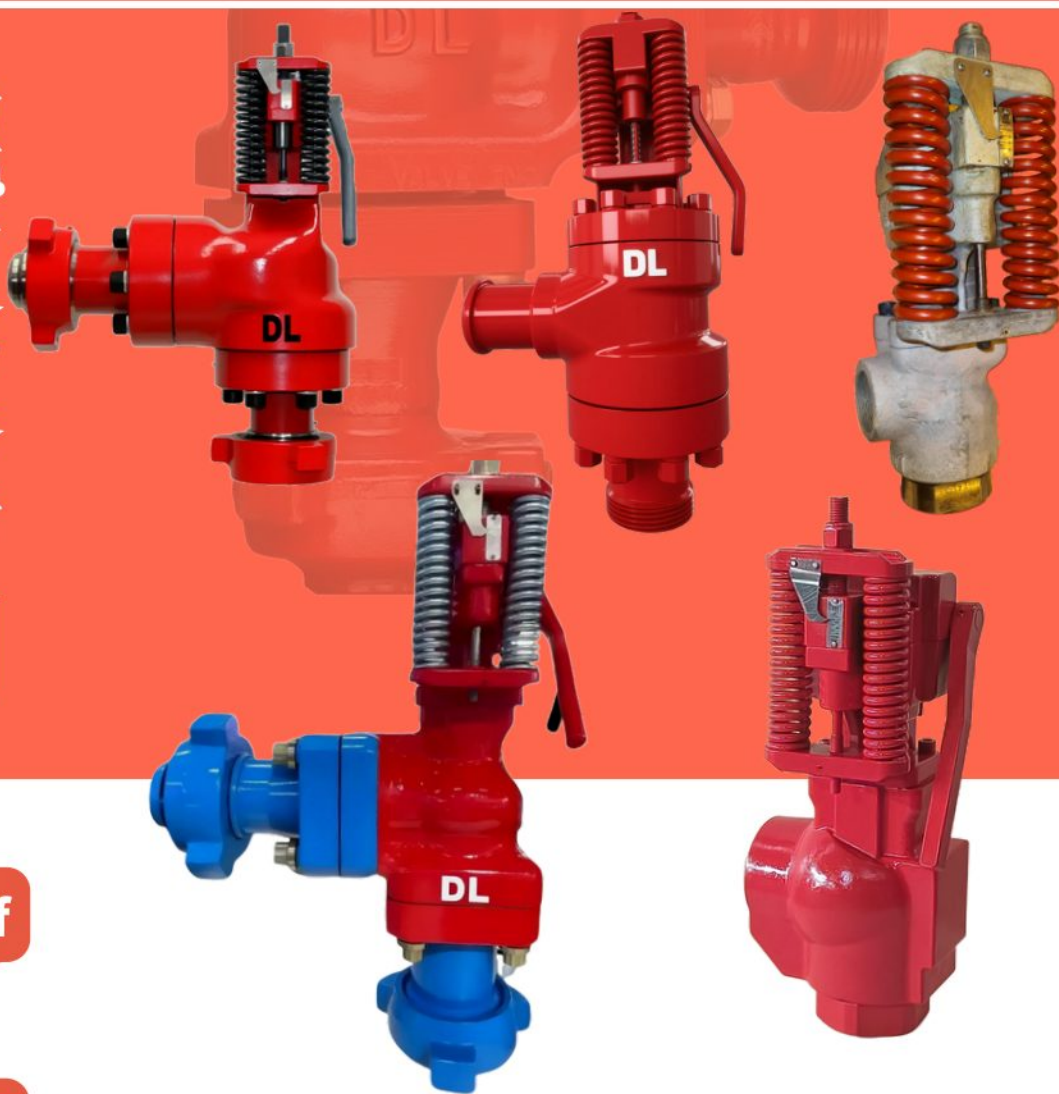


石家庄冬利石油机械有限公司

Shijiazhuang Dongli Petroleum Machinery Co., Ltd.

DL Sentinel™ Reset Relief Valves

泥浆泵专用
安全阀系列



Instant Relief
(瞬时泄压)

Manual Reset
(手动复位)

High Pressure
(高压适用)

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Republic of China

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DL Sentinel™ Type C Reset Safety Valve

3"



- Precision Triggering (精确触发): Utilizes a purely mechanical "Balance Beam" design for reliable, instant pressure relief without shear pins. 采用纯机械“平衡梁”设计，无需剪切销即可实现可靠、瞬时的压力释放。
- Extended Service Life (超长寿命): Patented Hydraulic Cushioning technology absorbs shock, protecting seals and internal components from impact damage. 专利液压缓冲技术可吸收冲击，保护密封件和内部组件免受撞击损坏。
- Superior Materials (卓越材质): Features a Forged Body and Inconel 718 Body Inserts for maximum corrosion resistance and durability in harsh environments (H2S/CO2). 采用锻造阀体和Inconel 718（718镍基合金）阀体镶件，在恶劣环境（H2S/CO2）下具有极佳的耐腐蚀性和耐用性。
- Safe & Easy Operation (安全易用): Manual reset handle with "Trip-Free" safety design. Visual position indicator shows valve status at a glance. 配备“无干扰”安全设计的手动复位手柄。可视化位置指示器让阀门状态一目了然。
- Direct Interchangeability (直接互换): Fully interchangeable with standard 3" Type C valves (Cameron/Retsco) for easy upgrades. 可与标准的3英寸C型阀门（Cameron/Retsco）完全互换，升级便捷。

Feature (特性)	Specification (规格)	Part Name (English)	Description (描述)
Bore Size (通径)	3" (3英寸)	Seal Kit / Repair Kit	Includes all essential HNBR seals and O-rings for a complete rebuild.
		Piston Assembly	Critical moving part, includes piston body and cap.
Pressure Range (压力范围)	Titan C: 400 - 5,000 psi Titan CH: 2,500 - 6,200	Body Insert / Seat	Inconel 718 insert. The primary wear point for fluid erosion.
		Piston Seals (Upper/Lower)	HNBR seals specifically designed for high pressure and chemical resistance.
Temperature (工作温度)	-20 ° F to 225 ° F (-29 ° C to 107 ° C)	Stem Bushing	Guides the piston movement; subject to friction wear.
		Cushioning Seals	Ensures the hydraulic damping function works
Service (适用工况)	Standard & Sour Gas (NACE MR0175) 标准及酸性气体工况	Reset Crank & Links	Internal mechanical linkage parts (replace if damaged).
Connections (连接方式)	Flanged, Hammer Union (Fig 1502/1002/602) 法兰，由壬连接		

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DL Sentinel™ Type B Reset Safety Valve

2" & 3"



Key Advantages (核心优势)

1. Zero NPT (零非生产时间)

Reset in Seconds: No shear pins to replace. Simply pull the handle to reset. 秒级复位: 无需更换剪切销。只需拉动手柄即可复位。

Continuous Operation: No need to shut down the pump or drain the line completely. 连续作业: 无需停泵或完全排空管线。

2. Superior Durability (卓越耐用性)

Forged Body: Made from AISI 4130 forged low-alloy steel for maximum strength. 锻造阀体: 采用 AISI 4130 锻造低合金钢, 强度极高。

Corrosion Resistance: 17-4 PH Stainless Steel Piston and special coating for harsh environments. 耐腐蚀: 核心部件采用 17-4 PH 不锈钢活塞, 适应恶劣环境。

Extended Seal Life: Seals are positioned out of the direct flow path to minimize erosion. 密封寿命长: 密封件设计在主流道之外, 最大限度减少流体冲刷。

3. Safety & Accuracy (安全与精准)

Full Enclosure: All moving parts are enclosed to prevent injury and contamination. 全封闭设计: 所有运动部件全封闭, 防止人员受伤及异物污染。

NACE Compliant: Available for Standard and Sour Gas (H₂S) service (NACE MR0175). 符合 NACE 标准: 提供标准型及抗硫 (H₂S) 型, 符合 NACE MR0175 标准。

Feature (特性)	Specification (规格)	Part Name (English)	Description (描述)
Bore Sizes (通径)	2" (50mm) / 3" (80mm)	Piston	17-4 PH Stainless Steel. The main pressure-holding component.
		Piston Seal	HNBR/NBR seal. Critical for pressure containment (Item often wears).
Pressure Rating (压力等级)	400 PSI - 5,000 PSI (2.7 - 34.5 MPa)	Cushion Ring	Absorbs impact shock during valve opening.
		Sub Gasket	Seals the connection between the valve body and the sub.
End Connections (连接方式)	Line Pipe (螺纹), Flanged (法兰), Hammer Union (由壬)	Bonnet Assembly	Complete upper mechanism (includes crank, spring, handle).
		Reset Crank	Part of the linkage mechanism that locks the piston.
Service Media (适用介质)	Drilling Mud, Slurry, Oil, Gas, Water (钻井泥浆, 浆液, 油, 气, 水)	Load Spring	Determines the pressure setting accuracy.
Temp. Rating (温度等级)	-20 ° F to 250 ° F (-29 ° C to 121 ° C)		

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DL Sentinel™ Type RX Reset Safety Valve

3"



Core Technology: Patented Hydraulic Cushioning 核心技术：专利液压缓冲

●Snap-Acting Release (“瞬时全开” 机制):
Instantly snaps to full open position when pressure limits are reached, providing immediate relief for pumps and manifolds.

当压力达到设定值时瞬间全开，为泵和管汇提供即时泄压保护。
●Hydraulic Cushioning System (液压缓冲系统):
A unique balance chamber throttles fluid to cushion the piston's opening stroke. This prevents metal-to-metal slam, extends valve life, and protects the system from shock.
独特的平衡腔设计通过节流流体来缓冲活塞开启行程。有效防止金属撞击，延长阀门寿命，并保护系统免受冲击。

Key Features & Specs 关键特性与参数

●Forged Body (锻造阀体): Closed-Die Forged AISI 4130 Alloy Steel for maximum strength.

闭式模锻 AISI 4130 合金钢，强度极高。

●Superior Corrosion Resistance (卓越耐腐蚀): Inconel 718 (Nickel Alloy) Seat Insert ensures durability against erosion and washing.

Inconel 718 (镍基合金) 阀座嵌件，确保耐冲刷和耐腐蚀。

●Inline Maintenance (在线维护): Top-loaded design allows inspection and repair without removing the valve from the line.

上装式设计，无需拆卸管线即可进行检查和维修。

Technical Data	技术参数	Part Name (English)	Function / Description (功能描述)
		Seal Kit (Major)	Contains all critical HNBR/Viton seals for a complete overhaul.
Pressure Rating (压力等级)	2,000 – 8,000 psi (138 – 552 bar)	Piston Assembly	The main moving component, hydraulically balanced.
		Valve Seat Insert	Made of Inconel 718. Critical contact point for sealing.
Temp Rating (温度等级)	-20 ° F to 225 ° F (-29 ° C to 107 ° C)	Inner/Outer Seals	Seals the piston movement within the body.
		Bonnet Seal	Seals the top cover connection.
Connections (连接方式)	3-1/2 " Flange (法兰) / 3 " Fig 1502 Union (由壬)	Lower Piston Cap	Part of the cushioning mechanism, subject to flow erosion.
		Load Spring	Determines the pressure setting accuracy.
Service (适用介质)	Standard & Sour Gas (标准及含硫工况 - NACE MR0175)		

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DL Sentinel™ Type RRV Reset Safety Valve

3"



Key Advantages (核心优势)

- Instant "Pop Action" Relief (瞬发式泄压)
Unlike gradual opening valves, the RRV snaps to a full open position instantly, relieving dangerous pressure spikes in milliseconds.
与渐开式阀门不同, RRV能瞬间全开, 在毫秒级内释放危险的压力峰值。
- Hydraulic Balance Piston (液压平衡活塞)
The piston is hydraulically balanced to eliminate the effects of pressure surges and vibration, ensuring the valve only opens at the true set pressure.
活塞采用液压平衡设计, 消除压力波动和振动的影响, 确保阀门仅在达到真实设定压力时开启。
- Vibration Resistant Setting (抗振压力设定)
The setting mechanism is isolated from drilling vibrations, maintaining accuracy within +/- 5% even on rough drilling floors.
设定机构与钻井振动隔离, 即使在剧烈震动的钻台上也能保持 +/- 5% 的设定精度。
- Extended Service Life (超长使用寿命)
Equipped with a Single-Piece Sub and enclosed bonnet to protect moving parts from mud and debris.
配备一体化阀座和全封闭阀盖, 保护运动部件免受泥浆和杂物侵害。

Feature (特性)	Specification (规格)	Part Name (English)	Description / Function (描述/功能)
Sizes (尺寸)	3" (80mm) Standard / 3英寸标准	Piston	Stainless Steel (17-4 PH). The heart of the balance mechanism.
		Cushion Ring	Absorbs the impact shock when the valve snaps open.
Pressure Range (压力范围)	400 PSI - 8,000 PSI (2.7 - 55.2 MPa)	Outer Seal	Primary seal for the piston (Polyethylene/Viton/NBR).
End Connections (连接方式)	Flanged (法兰), Hammer Union (Fig 1502 由壬)	Inner Seal	Secondary seal protecting internal components.
Service Media (适用介质)	Standard Mud, Oil, Gas & Sour Gas (H ₂ S) / 标准泥浆、油气及酸性气体	Outer/Inner Retainer	Secures the seals in place under high pressure.
		Stem Bushing	Guides the piston stem movement.
Temp. Rating (温度等级)	-20 °F to 250 °F (-29 °C to 121 °C)	Copper Gasket	Seals the connection between body and sub.

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DL Sentinel™ Type RR Reset Safety Valve

3"



Key Advantages (核心优势)

- Zero Downtime Reset (零停机复位)
No Shear Pins: Resets in seconds by simply pulling the handle. No need to stop the pump or disassemble the valve.
无剪销设计：仅需拉动受柄即可在数秒内复位。无需停泵，无需拆卸阀门。
- Instant "Snap-Acting" Protection (瞬发式保护)
Full Opening: Unlike gradual opening valves, it snaps to a full open position in milliseconds to relieve pressure spikes immediately.
全通路开启：与渐开式阀门不同，它能在毫秒级内瞬间全开，立即释放压力峰值。
- Unmatched Durability with PEEK (PEEK 材料带来的卓越耐用性)
Advanced Sealing: Standard PEEK seals offer superior resistance to chemicals, heat, and extrusion, significantly extending service life in harsh mud conditions.
先进密封：标配 PEEK（聚醚醚酮）密封件，具有卓越的耐化学腐蚀、耐高温及抗挤出性能，显著延长恶劣泥浆工况下的使用寿命。
- 100% Interchangeability (100% 互换性)
Upgrade Path: The bonnet assembly is fully interchangeable with Cameron Type "B" valves, allowing for easy retrofitting.
升级便捷：阀盖总成与 Cameron Type "B" 阀门完全互换，可直接替换升级。

Feature (特性)	Specification (规格)	Part Name (English)	Part Name (Chinese)	Description / Function (描述/功能)
Model (型号)	Sentinel™ Type RR	Piston	活塞	Stainless Steel (17-4 PH). The heart of the balance mechanism.
Size (尺寸)	3" (80mm)	Outer Seal	外密封圈	PEEK material. Primary seal for the piston, resistant to extrusion.
Pressure Rating (额定压力)	5,000 PSI (350 Bar)	Inner Seal	内密封圈	PEEK material. Secondary seal protecting internal components.
Pressure Range (调节范围)	400 - 5,000 PSI (28 - 350 Bar)	Cushion Ring	缓冲环	Absorbs the impact shock when the valve snaps open.
Material (材质)	Forged AISI 4130 Body (锻造 AISI 4130 阀体)	Stem Bushing	阀杆衬套	Guides the piston stem movement for precision alignment.
Service (适用工况)	Standard & Sour Gas (H ₂ S) / 标准及酸性气体	Bonnet Seal / Gasket	阀盖密封/垫圈	Seals the connection between the bonnet and body.
Certifications (认证)	Designed to DNV & ABS Standards			

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DL Sentinel™ Reset Relief Valves



No Shear Pins Required

100% Interchangeable Parts

Sour Gas Service Available



- Type B: 400 - 5,000 PSI | 2" & 3"
- Type C: 400 - 5,000 PSI | 3"
- Type RX: 2,000 - 8,000 PSI | 3" (液压缓冲技术)
- Type RRV: 400 - 8,000 PSI | 3" (瞬发式泄压)

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