

Best Availability – Change-over Valves LESER vs. Competitor valves and systems



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Objectives of this Presentation.

1. [Objectives](#) | 2. [Requirements](#) | 3. [Comparison](#)

The aim of this presentation is to compare **the LESER Change-over Valves** with competing valves and systems according to the customer requirements.



Requirements. Spare relief valve installations.

1. [Objectives](#) | 2. [Requirements](#) | 3. [Comparison](#)

	Customer requirement
General use	<ul style="list-style-type: none">■ Continuous overpressure protection■ Solution to switch between two safety valves during normal operation■ Prevent isolation of both safety valves at the same time
Product design	<ul style="list-style-type: none">■ Durable design■ Easy and error free solution to switch between the safety valves■ Easy combination
Sizing	<ul style="list-style-type: none">■ Flow optimization: Max. 3 % pressure drop in the inlet pipe of the safety valve according to international standards■ Reliable pressure loss coefficients for correct selection
Commercials	<ul style="list-style-type: none">■ Short and reliable delivery times■ Precise dimensions

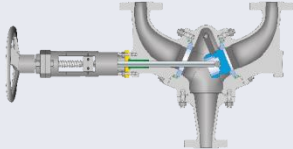
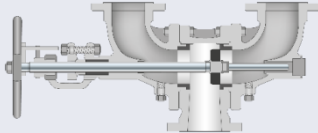
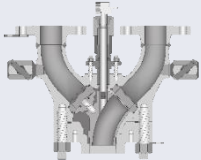

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Comparison. General use.

1. Objectives | 2. Requirements | 3. Comparison

Various manufacturers and systems offer devices to ensure a continuous overpressure protection. These solutions can be switched between two safety valves during normal operation and prevent isolation of both safety valves at the same time.

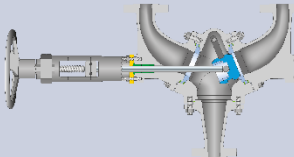
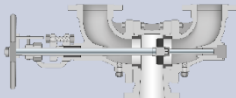
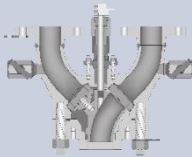

	LESER	Shuttle type
System	Change-over Valve	Change-over Valve
		
	Rotor type	Alternative systems
System	Change-over Valve	Isolation valves with/without interlocking system
		

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Comparison. Product design.

1. Objectives | 2. Requirements | 3. Comparison


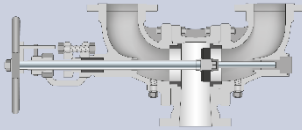
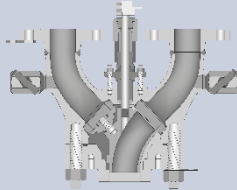
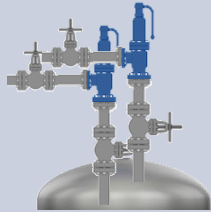
	LESER	Shuttle type	Rotor type	Alternative systems
				
Durable design	<ul style="list-style-type: none"> ■ Metal-to-metal sealing ■ Linear movement of spindle; movement of disc on circle line 	<ul style="list-style-type: none"> ■ Linear movement 	<ul style="list-style-type: none"> ■ Rotatory movement 	<ul style="list-style-type: none"> ■ Easy construction with simple isolation valves
Conclusion	<ul style="list-style-type: none"> ➢ Robust and simple design ➢ Low risk of blocked parts 	<ul style="list-style-type: none"> ➢ Robust and simple design 	<ul style="list-style-type: none"> ➢ Complex design 	<ul style="list-style-type: none"> ➢ Robust and simple design
Easy and error free solution to switch	<ul style="list-style-type: none"> ■ Mechanical position indicator ■ Switching by turning hand wheel ■ Failsafe 	<ul style="list-style-type: none"> ■ Switching by turning hand wheel ■ Failsafe 	<ul style="list-style-type: none"> ■ Tool is necessary ■ Three step process 	<ul style="list-style-type: none"> ■ Not failsafe unless equipped with interlock systems e.g. mechanical or keys
Conclusion	<ul style="list-style-type: none"> ➢ Easy handling 	<ul style="list-style-type: none"> ➢ Easy handling 	<ul style="list-style-type: none"> ➢ Complex ➢ Error-prone 	<ul style="list-style-type: none"> ➢ Error-prone

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Comparison. Product design – Lockable combination.

1. Objectives | 2. Requirements | 3. Comparison

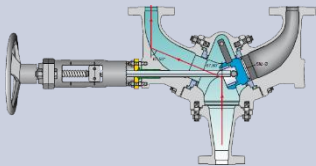
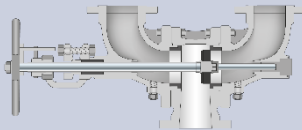
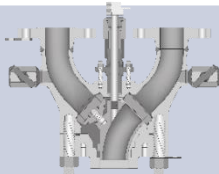

	LESER	Shuttle type	Rotor type	Alternative systems
				
Easy combination	<ul style="list-style-type: none"> Smart Coupling: CoV size acc. to inlet or outlet flange sizes of SV 	<ul style="list-style-type: none"> Outlet sided CoV same size as inlet sided 	<ul style="list-style-type: none"> CoV size acc. to inlet or outlet flange sizes of SV 	<ul style="list-style-type: none"> Always an individual solution
Conclusion	<ul style="list-style-type: none"> Straight coupling avoids additional piping or reducers Clear pressure loss coefficients and dimensions for all configurations 	<ul style="list-style-type: none"> Bigger size for CoV needed at inlet of SV Complicated pressure drop and dimension calculation due to reducers. 	<ul style="list-style-type: none"> Complicated switch-over 	<ul style="list-style-type: none"> High planning efforts Unclear influence on the overall dimensions

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Comparison. Sizing.

1. Objectives | 2. Requirements | 3. Comparison

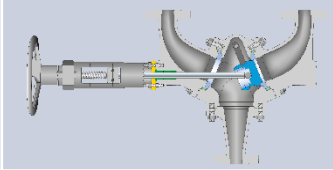
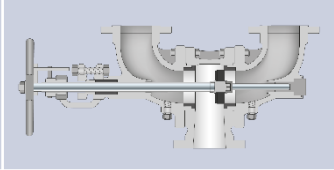
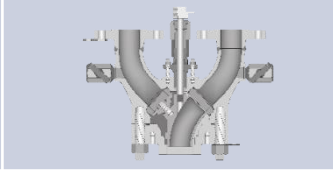

	LESER	Shuttle type	Rotor type	Alternative systems
				
Flow optimization	<ul style="list-style-type: none"> Optimized flow path and low pressure loss Modular design for various applications 	<ul style="list-style-type: none"> Unfavorable flow path 	<ul style="list-style-type: none"> Optimized flow path and low pressure loss 	<ul style="list-style-type: none"> No consideration of flow optimisation
Conclusion	<ul style="list-style-type: none"> Selection of CoV same size as SV inlet possible Acc. to application different designs possible 	<ul style="list-style-type: none"> Often CoV must be one nominal size bigger than SV inlet to ensure a press. loss of max. 3% 	<ul style="list-style-type: none"> Selection of CoV same size as SV inlet possible 	<ul style="list-style-type: none"> High pressure losses through long pipings, elbows or T-pieces possible
Reliable pressure loss coefficient	<ul style="list-style-type: none"> Clear pressure loss coefficients for all configurations 	<ul style="list-style-type: none"> Only one pressure loss coefficient is defined per nominal size. Influences of reducers or pressure ratings not stated 	<ul style="list-style-type: none"> Only one pressure loss coefficient is defined per nominal size. Influences of reducers or pressure ratings not stated 	<ul style="list-style-type: none"> Complete piping, elbows and isolation valves need to be considered
Conclusion	<ul style="list-style-type: none"> Easy and reliable pressure loss calculation 	<ul style="list-style-type: none"> Pressure loss calculation contains uncertainties. 	<ul style="list-style-type: none"> Pressure loss calculation contains uncertainties. 	<ul style="list-style-type: none"> Complex inlet pressure loss calculation

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Comparison. Commercials.

1. Objectives | 2. Requirements | 3. Comparison

	LESER	Shuttle type	Rotor type	Alternative systems
				
Short and reliable delivery times	<ul style="list-style-type: none"> ■ One package supplier: aligned with safety valves 	<ul style="list-style-type: none"> ■ Order related manufacturing 	<ul style="list-style-type: none"> ■ Order related manufacturing 	<ul style="list-style-type: none"> ■ Individual design and manufacturing
Conclusion	<ul style="list-style-type: none"> ➢ Delivery times as short as 4-6 weeks 	<ul style="list-style-type: none"> ➢ Delivery times by 20 weeks 	<ul style="list-style-type: none"> ➢ Delivery times by 20 weeks 	<ul style="list-style-type: none"> ➢ Delivery times up to 10 weeks
Precise dimensions	<ul style="list-style-type: none"> ■ Clearly defined sizes for each version: inlet sided and lockable combination 	<ul style="list-style-type: none"> ■ Reducers or different flange classes are not considered 	<ul style="list-style-type: none"> ■ Reducers or different flange classes are not considered 	<ul style="list-style-type: none"> ■ Dimensions depend on used piping system
Conclusion	<ul style="list-style-type: none"> ➢ Easy planning 	<ul style="list-style-type: none"> ➢ Calculation of dimensions complicated 	<ul style="list-style-type: none"> ➢ Calculation of dimensions complicated 	<ul style="list-style-type: none"> ➢ Calculation of dimensions complicated

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Thank you for your attention.

