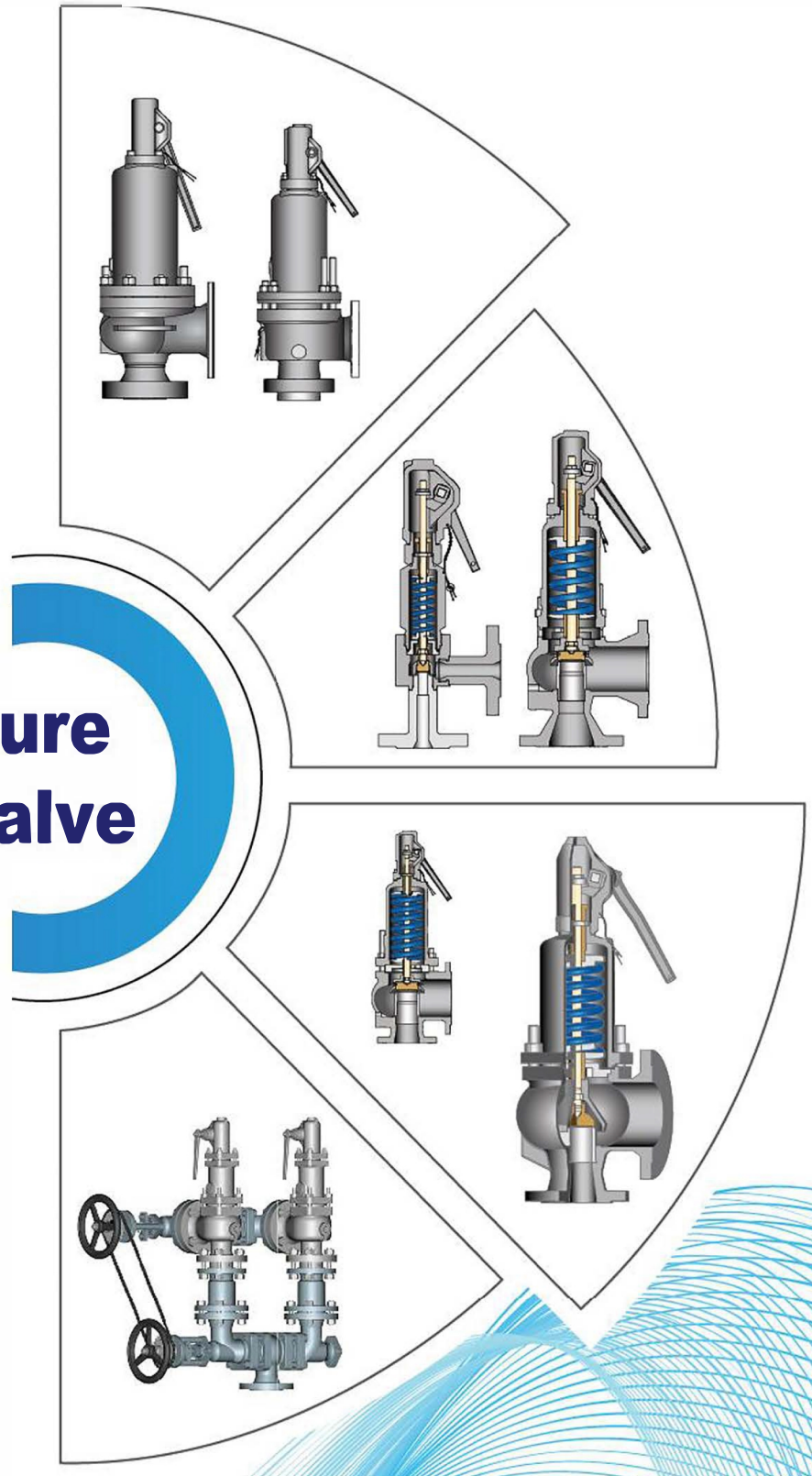
Elite
FLOW CONTROL
WE CONTROL THE FLOW.

ELITE FLOW CONTROL USA LLC

"WE CONTROL THE FLOW"



Pressure Safety Valve

Elite
FLOW CONTROL
WE CONTROL THE FLOW.

About Company

Elite Flow Control holds the state of art manufacturing facilities equipped with ultra-modern production equipment and exporting the finest quality Pressure Relief Valves / Pressure Safety Valves for Steam, Gases, Vapours and Liquids.

We operate on philosophy to provide Immediate Response, Excellent Quality, Quick Delivery and Customer Satisfaction followed by commitment as "What we commit, We deliver" based on this we are having satisfied customers in more than 25 countries throughout the world.

We have stringent Quality Management and Control System to ensure the superior quality of products. All of our products are strictly inspected at each stage of the production process from the Inspection of Raw Material to the finish products. Each order is carried out as per Inspection / Test Plan, Required Specifications and Applicable Manufacturing / Quality Standards.

Our Valves are widely used in following process industry:

- **Chemicals**
- **Petrochemicals**
- **Fertilizers**
- **Polymer**
- **Oil and Gas**
- **Power Generation**
- **Process Steam Systems**
- **Water Supply Systems**



MISSION

Elite Flow Control focused to provide the superior quality products at competitive prices to its customers around the world by utilizing the company's human resources and advanced technology equipment with the strong commitment to R&D, Health, Safety, Environment and company's core values.

VISION

To make our brand "the first choice of customers.

CORE VALUES

The core values of our company guide and drive our business to achieve our mission and a step ahead towards our vision.

Quality: It is our primary focus to produce and deliver superior quality products. Commitment: What we commit, we deliver.

Team Work: We believe on team work which is the most important element to accomplish the set objective.

Customer Satisfaction: To achieve customer satisfaction with our Quality, Commitment and Teamwork

About SRV (Safety Relief Valve)

General Definition of Safety Relief Valve (SRV)

A pressure relief device is any device that can purge a system from an overpressure condition. More particularly, an SRV is a pressure relief device that is self-actuated, and whose primary purpose is the protection of life and equipment. Through a controlled discharge of a required (rated) amount of fluid at a predetermined pressure, an SRV must prevent overpressure in pressurized vessels and systems, and it operates within limits which are determined by international codes. An SRV is often the final control device in the prevention of accidents or explosions caused by overpressure.

The SRV must close at a predetermined pressure when the system pressure has returned to a safe lever at values determined by the codes.

SRVs must be designed with materials compatible with many process fluids, from simple air and water to the most corrosive and toxic media. They must also be designed to operate in a consistently smooth manner on a variety of fluids and fluid phases. These design parameters lead to a wide array of SRV products available in the market today, with the on constant being that they all must comply with the internationally recognized codes.

Where do SRVs fit in the process?

Every industrial process system is designed to work against a certain maximum pressure and temperature called its rating or design pressure. It is in the economic interest of the users to work as close as possible towards the maximum limits of this design pressure in order to optimize the process output, hence increase the profitability of the system.

Nowadays, pressures and flow in the process industry are controlled by electronic process systems and highly sophisticated instrumentation devices. Almost all control systems are powered by an outside power source(electric, pneumatic, hydraulic). The law requires that when everything fails regardless of the built-in redundancies, there is still an independent working device powered only by the medium it protects. This is the function of the SRV, which, when everything else works correctly in the system, should never have to work. However, practice proves the contrary, and there are a variety of incidents which will allow the system pressure to exceed the design pressure.

Although many pressure relief devices are called SRVs, not every SRV has the same characteristics of or operational precision. Only the choice of the correct pressure safety device for the right application will assure the safety of the system and allow the user to maximize process output and minimize down-time for maintenance purposes. Making the correct choice also means avoiding interference between the process instrumentation set points in the control loop and the pressure relief device limits selected. There SRV operation al limits can vary greatly even when all are complying with the codes.



Safety valves overview

Safety valves have the function of preventing inadmissible overpressure in pipe systems, pressure vessels and boilers, in order to avoid danger to people, plant and the environment. They are set to a higher pressure than the operating pressure of the protected system. Safety valves …

… open once the set pressure is reached.
… discharge the required mass flow in a controlled manner.
… close after the pressure has dropped.



Regular flow safety valves for pressure relief in accordance to PED, DIN/EN and ASME

Safety valves for pressure systems with low mass flow or where the mass flow is of marginal importance, e.g. with thermal expansion, are grouped in the application category Regular Flow.



High flow process and steam safety valves to PED and DIN/EN standards

In the application category High Flow, the required capacity is usually the most important criteria for selecting a size. The size of the outlet is always larger than the inlet, in order to provide the space for supercritical relief of the fluid in the discharge area.



High flow safety relief valves according to API Standard 526, ASME Sec. I, Sec. III, Sec. VIII and PED

High flow safety relief valves according to API Standard 526, ASME Sec. I, Sec. III, Sec. VIII and PED



Special valves

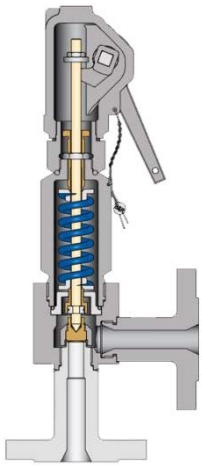
This category includes Controlled Safety Valves, Control Unit, Pressure Reducing Valves and Change Over Valves.

Elite Flow Control designs, manufactures and supplies safety valves in compliance with International applicable manufacturing standards, which can be found in the detailed product description.

Regular Flow

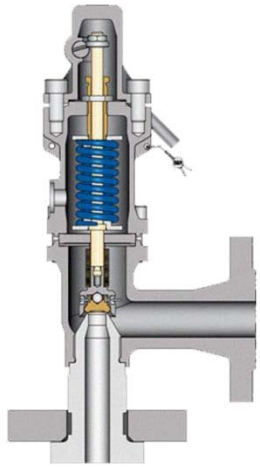
The Regular Flow programme Offers a great number and sizes, material designs and an extensive range of connections. Flange, weld- end, threaded and clamp-type connections can be selected to suit the pressure system. Special connections are easy to provide, if requested by the customer.

EPV 01



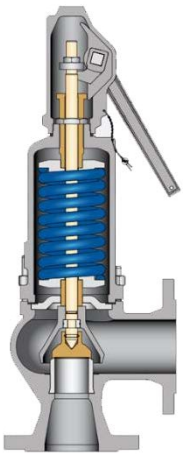
The main applications for this Compact Safety Valve is high pressure in the chemical industry. The block body design in 1.4571 stainless steel provides an excellent chemical resistance.

EPV C01 (ASME VIII Certified)



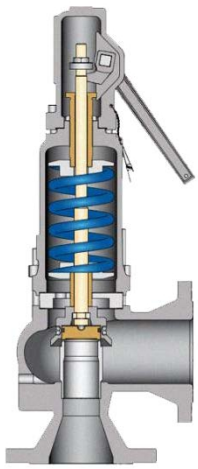
The Compact Safety Valve is installed in compressors and where ever medium must be relieved as effect of thermal exposure.
The valve is available with EN and ASME flanges.

EPV 2x21 with seat bushing
EPV 2x23/24/25 with full nozzle



The Low & High Pressure Valve finds its operating conditions prevalently in water supply and for protection of system components at high pressure and feed water supply. Smooth and stable behavior thanks to comparatively low lift.

EPV 4x22



The state-of-the-art Safety Valve for Liquids has a cost-effective body design with seat bushing. Stable function at low lift and built up back pressure up to 20% for conventional design enables use in many applications.

High Pressure Compact Safety Valve - EPV 01

The basic version of the EPV 01 High Pressure Compact Safety Valve is delivered with male screwed inlet and female screwed outlet, gastight bonnet and cap.

Size	DN 15 to 25	NPS ½" to 1"
Set Pressure	0.40 bar g up to 400 bar g	6.6 psig to 5800 psig
Material	1.4571	Stainless Steel

EPV 0321 compact safety valve with flange connection



Benefits and features

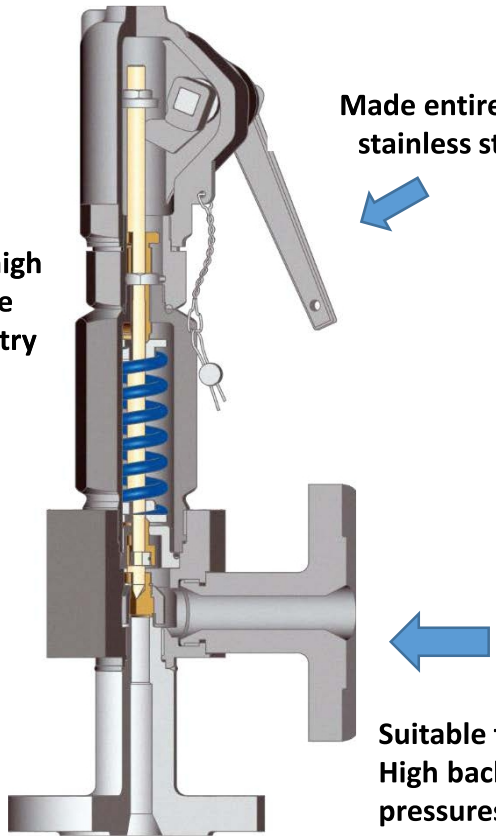
The compact spring-loaded safety valve is made of stainless steel (1.4571) for high chemical resistance. It is also available with bellows to balance back pressure and for high tightness to the outside, even at higher back pressures.

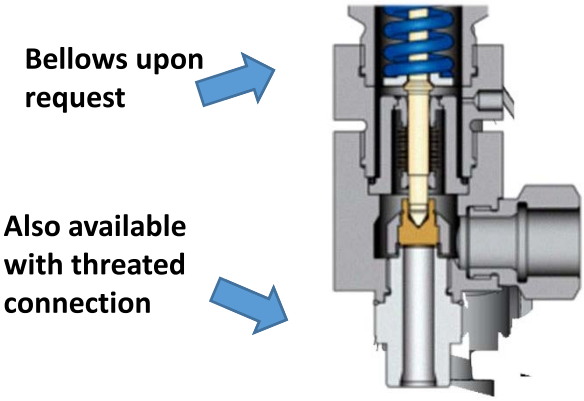
The safety valve has a variety of connections and is wear resistant with hard-faced seat.

The valve EPV 0329 for pressure protection (vapours, gases and liquids) is used in the chemical and petrochemical industry, for industrial gases, cooling and oxygen applications, equipment engineering and chemical reactors, also suitable for mobile pressure vessels and for back pressures above 60 bar g.

One of our smallest compact safety valves EPV 01







Compact Safety Valve - EPV C1

The compact safety valve series is the ideal solution for protection against excess pressure in all industrial applications in the low-to-medium capacity range involving steam, gases and liquids. This universal compact safety valve is certified **according to PED and ASME VIII.**

Size	DN 15 to 25	NPS ½" to 1"
Set Pressure	0.25 bar g up to 200 bar g	8 psig to 2900 psig
Material	1.0619	WCB
	1.4408	CF8M

EPV C1329, the standard compact safety valve with threated connection

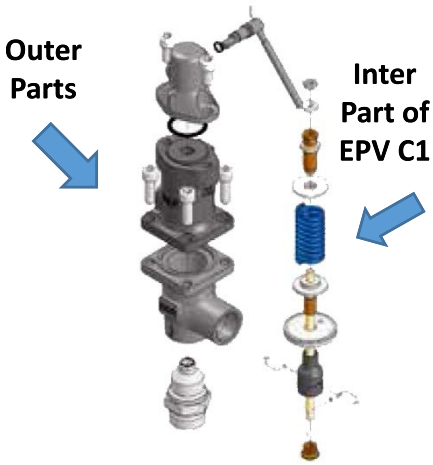


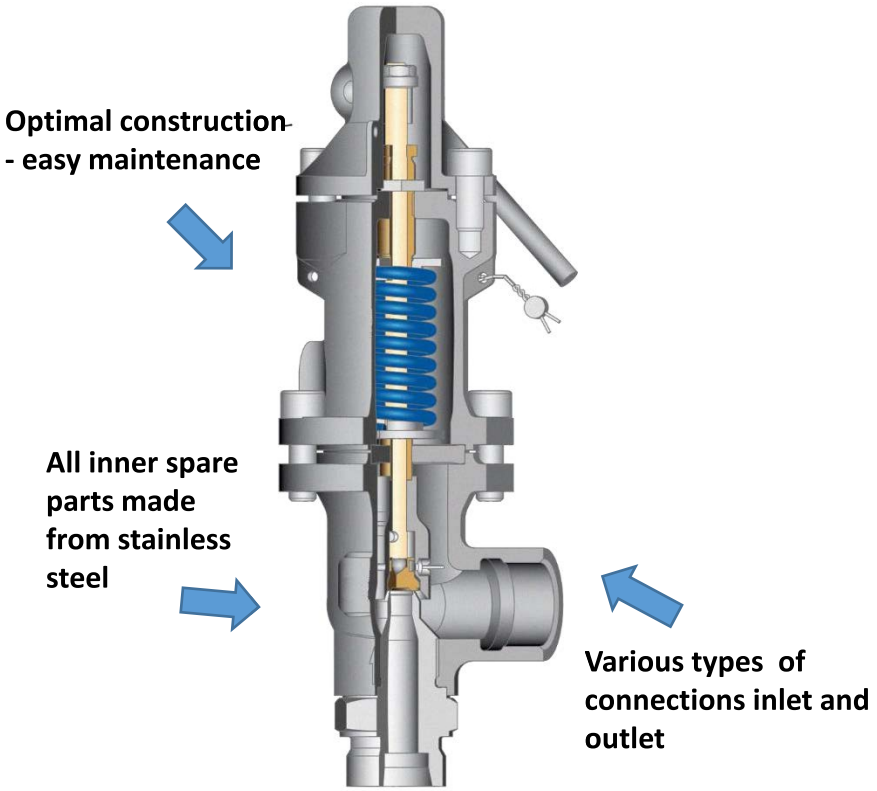
Benefits and features

EPV C1 valve is available with multiple options, which includes balanced bellows for body seat sizes 12.2 mm and 17 mm.

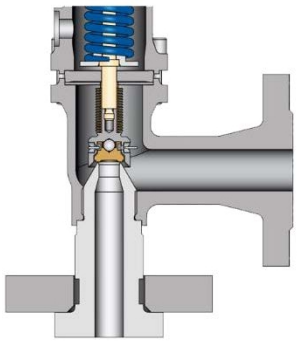
This series has an excellent return on investment and due to the simple design, it is available at very short notice, providing various types of connection. Thanks to a ball-bearing disc there is increased sealing performance.

The compact design covers a broad range of applications: the major purpose is thermal expansion, protection of pipelines, chemical and petrochemical industry, technical gases, cooling and oxygen applications, OEM applications (e.g. pumps and compressors) and also for steam, gases or liquids.





Sizes DN 20 and DN 25 (¾" and 1") with balanced bellows possible



Low Cost Regular Safety Valve - EPV 2x21 / EPV 2x23/24/25

EPV 2x21 is a low cost regular Safety Valve especially built for low pressure. Built for high pressure the EPV 2x23/24/25 is full nozzle design with a solid inlet nozzle.

	EPV 2x21	EPV 2x23/24/25
Size	DN 20 to 150	DN 15 to 50
Set Pressure	0.45 bar g up to 16 bar g	0.45 bar g to 400 bar g
Material	0.6025 / GG 25	1.0619
		1.4408

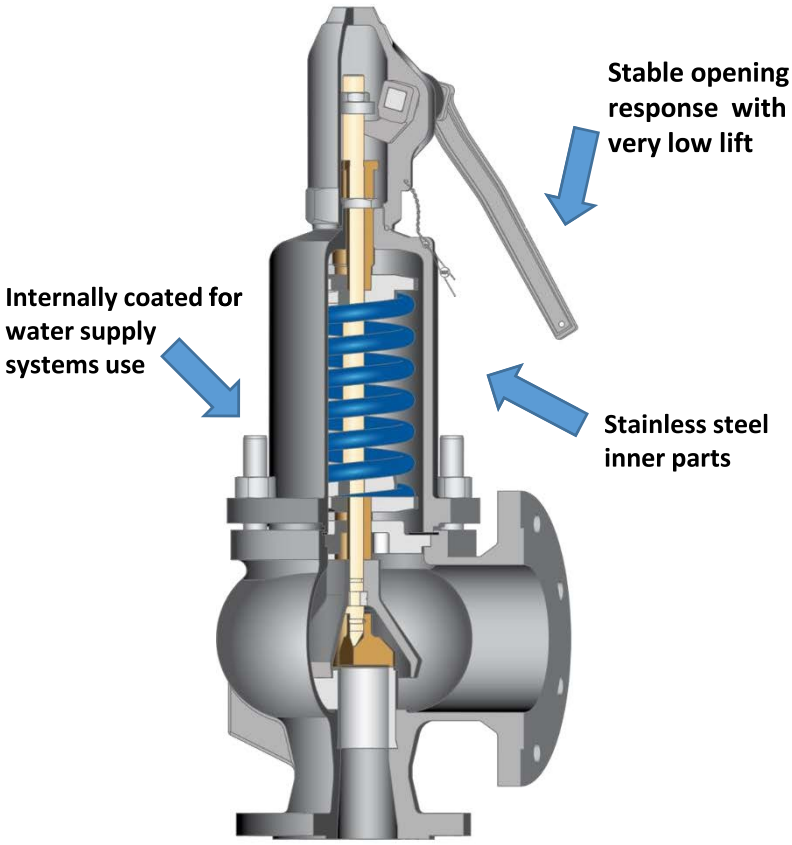
Benefits and features

There functional behavior smooth and stable.
Easy maintenance because of special design features, e.g. one part spindle.
Dismantling of the valve for lapping of seat and disc without change of set-pressure is possible.

This product is used for the following applications: vapours, gases or liquids; protection of systems downstream of control valves, water supply up to PN 16 and EPV 2x23/24/25 up to PN 400. Internally luberpox coated the EPV 2x21 is suitable for drinking water service.

EPV 2321, our cast iron safety valve for basic applications





Spare parts for all safety valves upon request and supported for many years.



Modern Safety Valve - EPV 4x22

The modern Safety Valve for all regular capacity applications in all process industries sectors

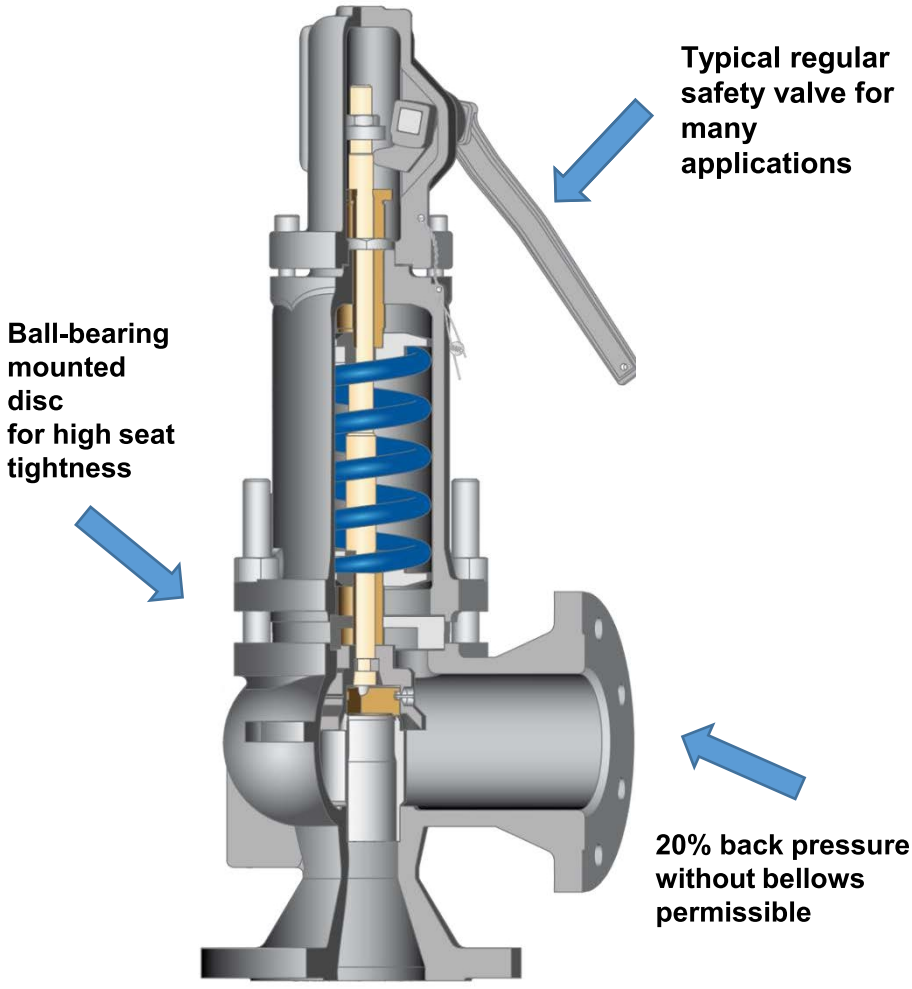
Size	DN 25 to 100	NPS 1" to 4"
Set Pressure	0.1 bar g up to 40 bar g	1.5 psig to 600 psig
Material	1.0619	WCB
	1.4408	CF8M

Benefits and features

This valve series has a cost-effective body design with seat bushing developed with the modular principle with other series and a smooth and stable behavior thanks to comparatively low lift.

The inner parts are made of stainless steel.

For applications in thermal expansion, protection of pipelines, protection of heat exchangers, chemical industry, petro chemicals, industrial gases, cooling and oxygen applications and for other process applications up to PP 40.



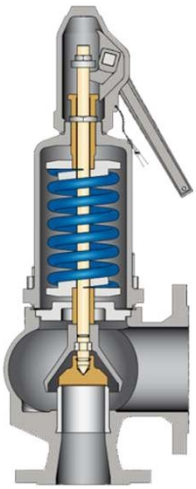
ESV 4322, our standard process safety valve for regular capacities



High Flow Safety Valves according to PED, DIN/EN

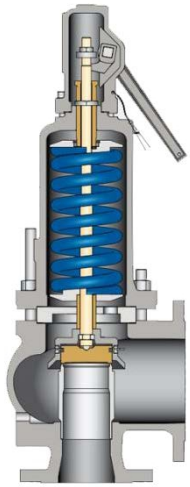
The required capacity is usually the most important criteria for selecting a size in this category. With reference to the inlet size, high flow valves can discharge the highest capacity and in particular on gas/vapour service open rapidly for instant pressure relief. The size of the outlet is always larger than that of the inlet, in order to provide the fluid room for supercritical relief in the discharge. The variety of pressure ratings, temperature classes and sizes provides a flexible choice for all industrial requirements.

EPV 6x01



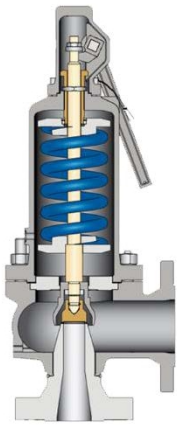
The Low Pressure Safety Valve for Steam Applications has a cast iron body with stainless steel inner parts (except for spring and spring washer).
It is cost-efficient due to its semi-nozzle design.

EPV 4x02



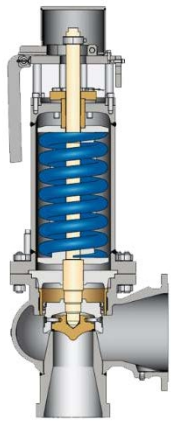
The state-of-the-art High Capacity Process Safety Valve for medium pressure has a cost-effective semi nozzle body-design with seat bushing. It is developed in modular design with other series & others a reliable function with ideal capacity.

EPV 6x03-05



The proven quality high-pressure safety valve has a reliable design with solid inlet nozzle, screwed in and welded. It offers various sizes and options and is available in material designs for high as well as low temperatures.

EPV 6106



The High Pressure Steam Safety valve with materials suitable for high temperature application. Ideal for combination with the pneumatic actuator AK and PC 50/53 control unit for “controlling” the discharge process.

Low Pressure Safety Valve - EPV 6x01

This low pressure safety valve is often used in steam applications and protection of heat generation units. It has a cast iron body with stainless steel inner parts (except for spring and spring washer).

Size	DN 20 to 150
Set Pressure	up to 16 bar g
Material	0.6025 / GG 25

EPV 6301, standard version of our cost-efficient low pressure valve

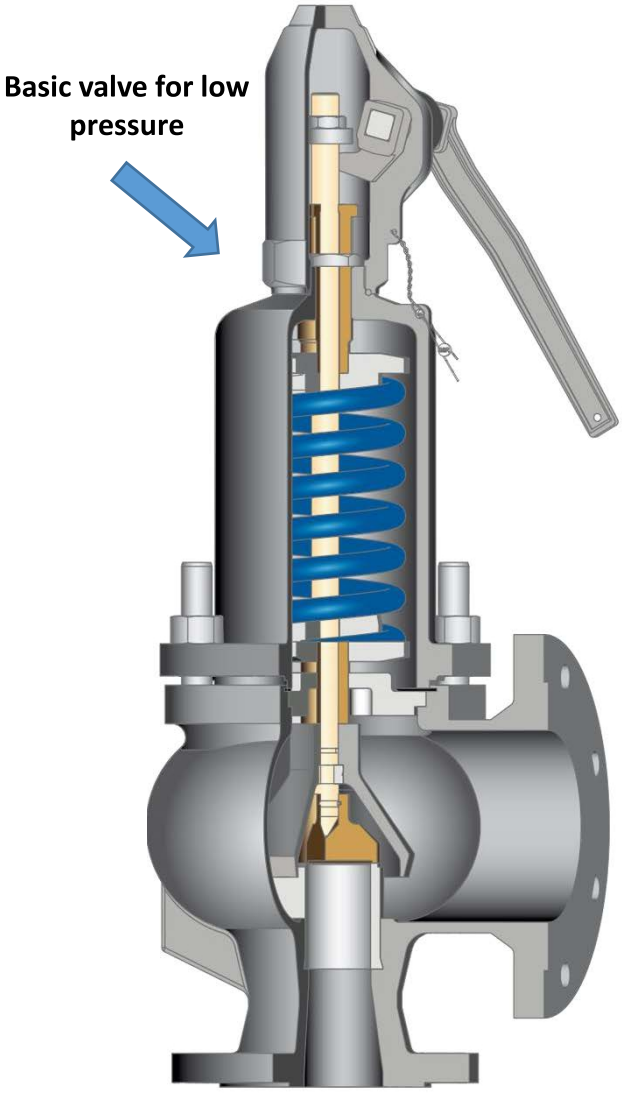


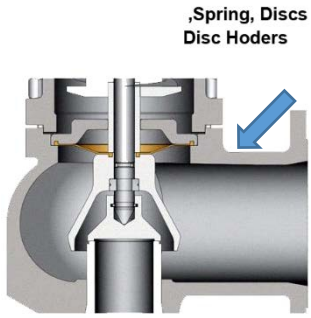
Benefits and features

The semi nozzle body design makes the valve cost-effective. It is suitable for vapours, gases and liquids.

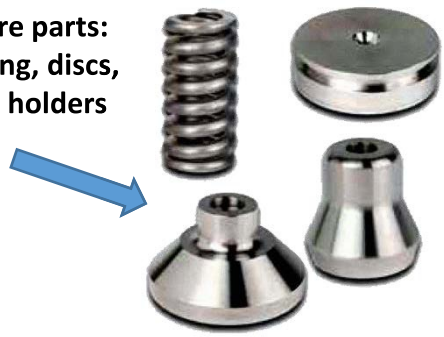
With limited options and variations the EPV 6x01 is standardized for ease of use also for non-industrial sectors.

The special design with diaphragm seal (option .58) serves to tightly seal the spring chamber and guides





Spare parts for all safety valves upon request and always on call



High Capacity Process Safety Valve - EPV 4X02

The state-of-the-art High Capacity Process Safety Valve for medium pressure has a cost-effective semi nozzle body design with seat bushing.

Size	DN 20 to 200	NPS 1" to 8"
Set Pressure	0.1 bar g up to 40 bar g	1.5 psig to 600 psig
Material	1.0619	WCB
	1.4408	CF8M

Benefits and features

Developed as a modular design with other series, it provides a reliable function with ideal capacity.

The inner parts are made of stainless steel (except for spring and spring washer).

Easy maintenance because of dismantling of the valve for lapping of seat and disc without change of set-pressure is possible and the bellows is in a safe location because it is outside the flow path for ensuring extended lifetime.

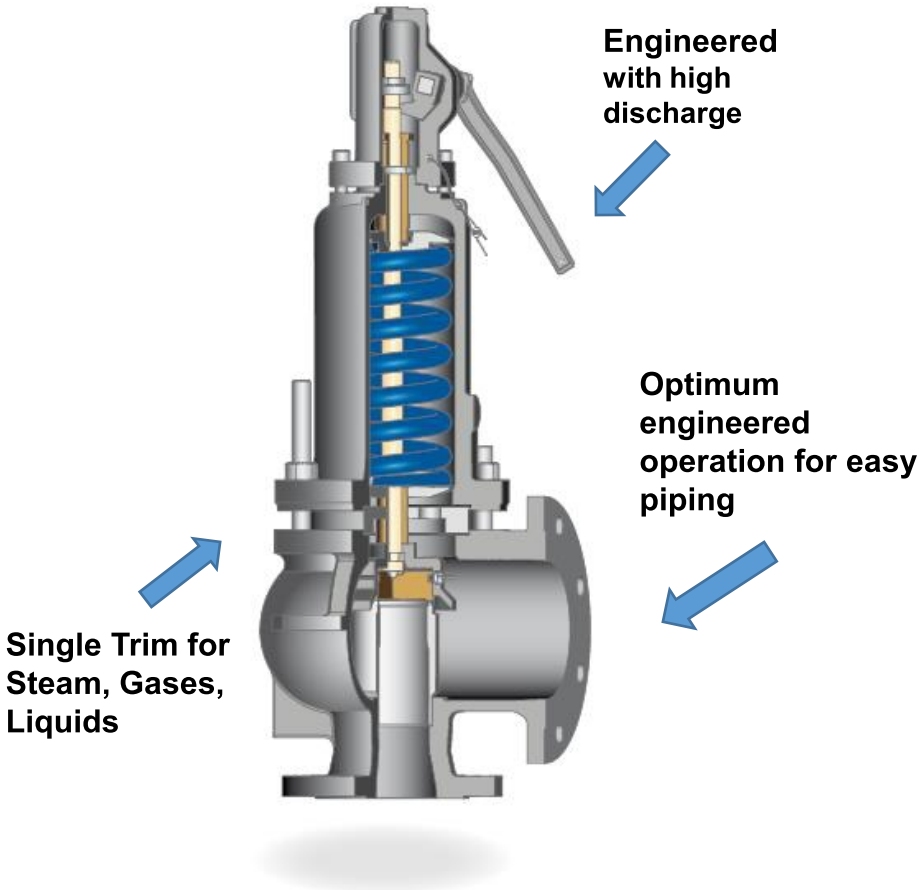
For vapours, gases and liquids, typical applications are protection of pressure vessels, heat exchangers, system components. Suitable for all industrial applications such as chemical and petrochemical industry, technical gases, cooling and oxygen applications, power generation and power supply and steam boilers up to PN 40.

EPV 4302, state-of-the-art high capacity process safety valve for medium pressure



EPV 4302 as cutaway model





High Pressure Safety Valve - EPV 6x03 / EPV 6x04 / EPV 6x05

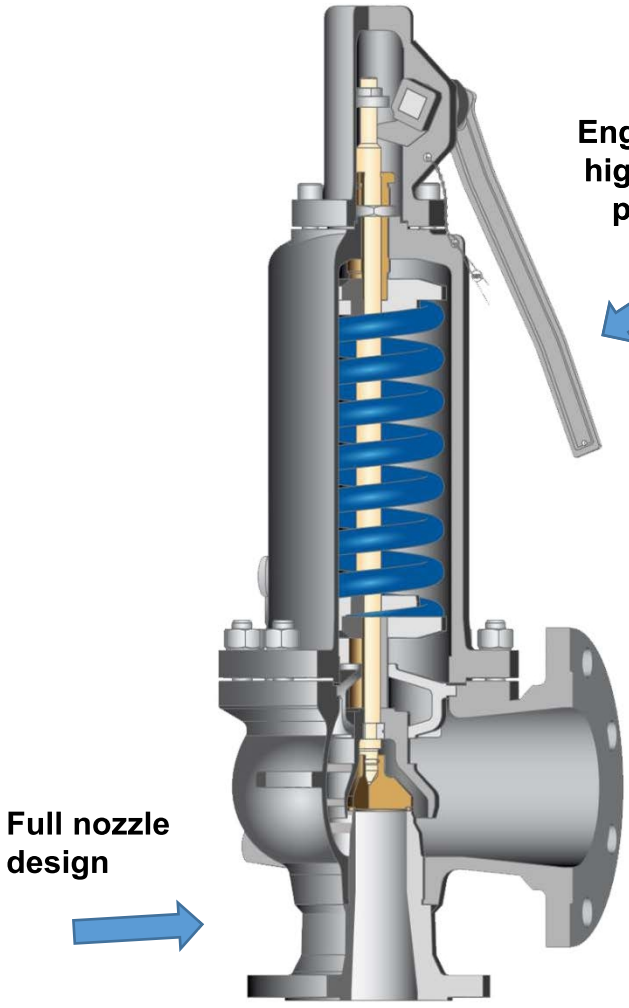
The proven high-pressure safety valve has a reliable high quality design with solid inlet nozzle, screwed in and welded, available with various sizes and options.

Size	DN 25 to 400
Set Pressure	up to 250 bar g
Material	1.0619
	1.7357
	1.4408

Benefits and features

Different material designs are available for high as well as low temperatures.

For vapours, gases and liquids. Typical applications are the protection of system components, steam boiler, air separator, power plants and industrial steam generation. It is also used in high-pressure chemical processes and paper factories.



EPV 6303 high-pressure safety valve also for low temperatures



Seal welds with the highest accuracy between nozzle and body



High Pressure Steam Safety Valve - EPV 6106

The High Pressure Steam Safety valve is designed to manage high forces.

Size	DN 80 to 300
Set Pressure	15 bar g up to 200 bar g
Material	1.0619 GS
	1.7357 CrMo
	1.4408 CrMo 9-10

Benefits and features

The benefits of this High Pressure Safety Valve is a solid inlet nozzle, screwed in and welded. The material design is for high temperatures with the option to select the material at the inlet in accordance with customer specifications.

It is ideal for combination with the pneumatic actuator AK and to be operated with the PC 50/53 control unit. This installation provides for “controlling” the discharge process. Open bonnet design with the resulting ventilation of the bonnet chamber permits a standard steel spring to be used in fluid temperatures up to 400°C.

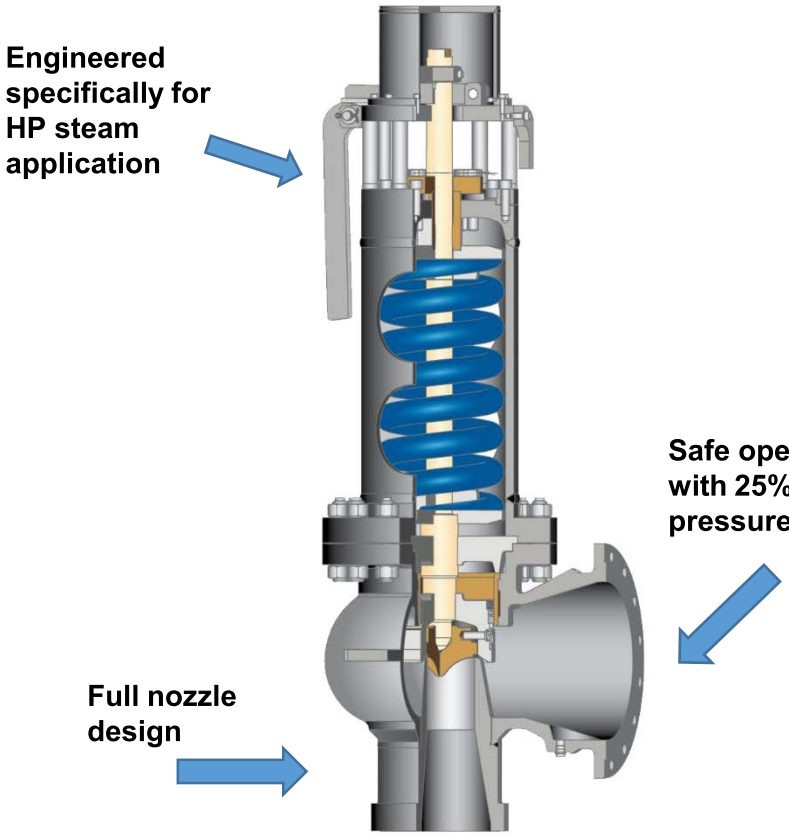
Suitable for applications such as steam boilers, superheaters, power plants and industrial steam generators, for steam temperatures above 500 °C and large flow diameter with high pressures.

EPV 6106, high pressure steam safety valve with piston AK.



Elite does possess the technology to perform high quality body seat repair.





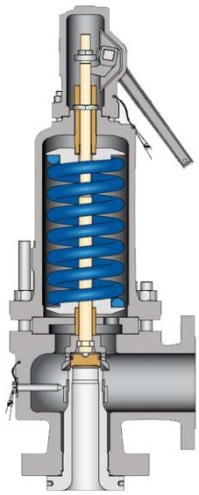
Safety Valves according to ASME, API

This application category includes safety valves, which belong to global industry standards, e.g. API 526. The valves are manufactured in accordance with ASME Sec. I or VIII.

The applications for EPV 8 type valves can be found in the chemical industry, petro-chemicals, oil/gas – onshore and offshore, refineries, tank farms and closed systems.

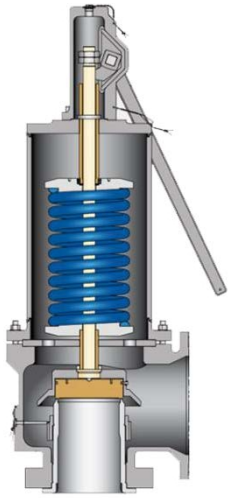
Series EPV 9 is built for high performance applications on fired vessels as per ASME Sec. I.

EPV 8 D-T



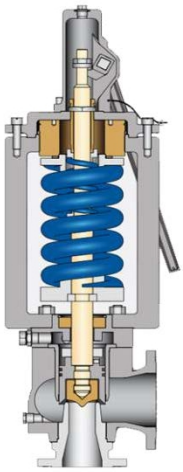
The API Safety Valve is manufactured in accordance with API 526, ASME Code Sec. VIII. The National Board of Boiler (NB) and Pressure Vessel Inspectors certified capacities for air, steam and water.

EPV 8V, W



Exceeding the API 526 standard the additional orifices V and W meet very large capacity requirements.

EPV 9



The High Performance Steam Safety Valve EPV 9 is designed according to ASME Sec. I requirements. A large scale of orifice sizes ensure optimum selection.

EPV 8 Size D-T according to API 526

The EPV 8 Safety Valve type fully meets the specification of API 526 and is manufactured in accordance with ASME Code Sec. VIII.

Size	NPS 1” & 8”	
Set Pressure	Up to 414 bar g	Up to 6000 psig
Material	1.0619 GS	WCB
	1.7357	WC6
	1.4408	CF8M

Benefits and features

The EPV 8 series is also approved by EC type examination and can be CE marked.
The one-trim design makes the valve suitable for gas, vapour and liquids.
The valve has a positive lift stop at full capacity. The disc bearing has been optimized for high seat tightness.

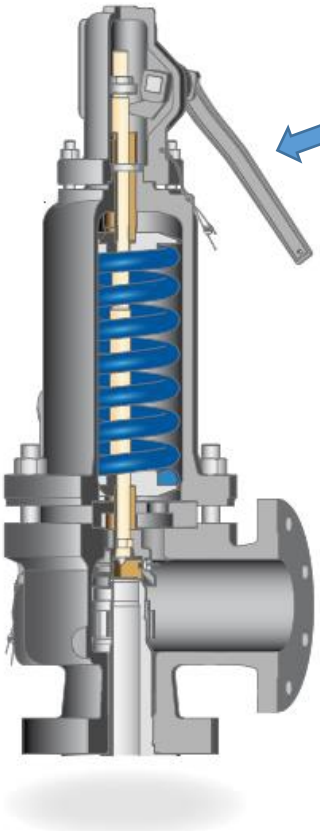
The nozzle ring is always set to lowest position because the valve is designed to operate at optimum without ring adjustment.
Maintenance is easy due to a one-part spindle, a simplified disc retention clip and the rugged guide design.

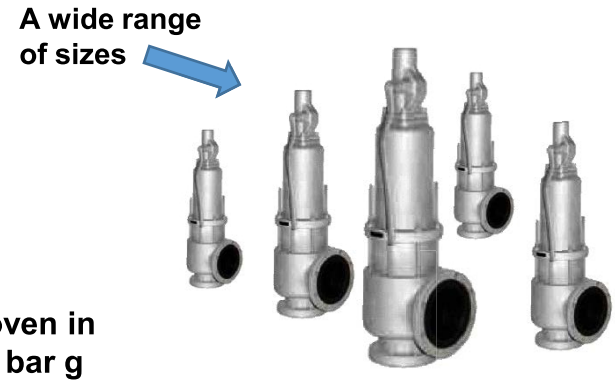
Suitable for applications in the chemical and petrochemical industries, closed systems, oil/gas – onshore and offshore, refineries and tank farms as well as nuclear facilities according to ASME Sec. III.
Upon request the fulfillment of NACE MR 0175 and NACE MR 0103 requirement is available.

Explosion view of API valve shows inner and outer parts.



API valve group with different sizes individually adjusted to specification.





EPV 8 Large Sizes V, W – API 526

The additional orifice sizes V and W allow for selection of one or smaller quantity of valves where the API 526 standard would require a multiple installation for large capacity. Based on the general API range V, W orifices are designed for high capacities.

Size	NPS 10” & 12”	
Set Pressure	Up to 20.7 bar g	Up to 300 psig
Material	1.0619	WCB
	1.7357	WC6
	1.4408	CF8M

Benefits and features

The additional orifice sizes V and W are made for very large flow applications. These capacities are also certified by the National Board of Boiler and Pressure Vessel Inspectors.

Using similar design the orifice D-T - valve benefits also apply to sizes V and W.

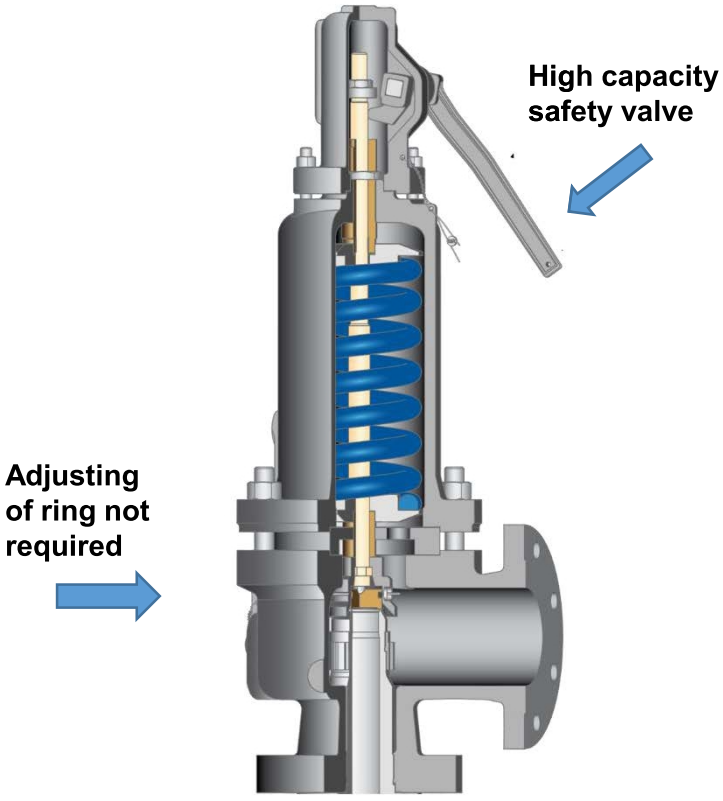
Suitable for applications in the chemical and petrochemical industries, closed systems, oil/gas – onshore and offshore, refineries and tank farms as well as nuclear facilities according to ASME Sec. III.

Orifice W-safety valve for high capacity applications



EPV 84 with balanced bellows





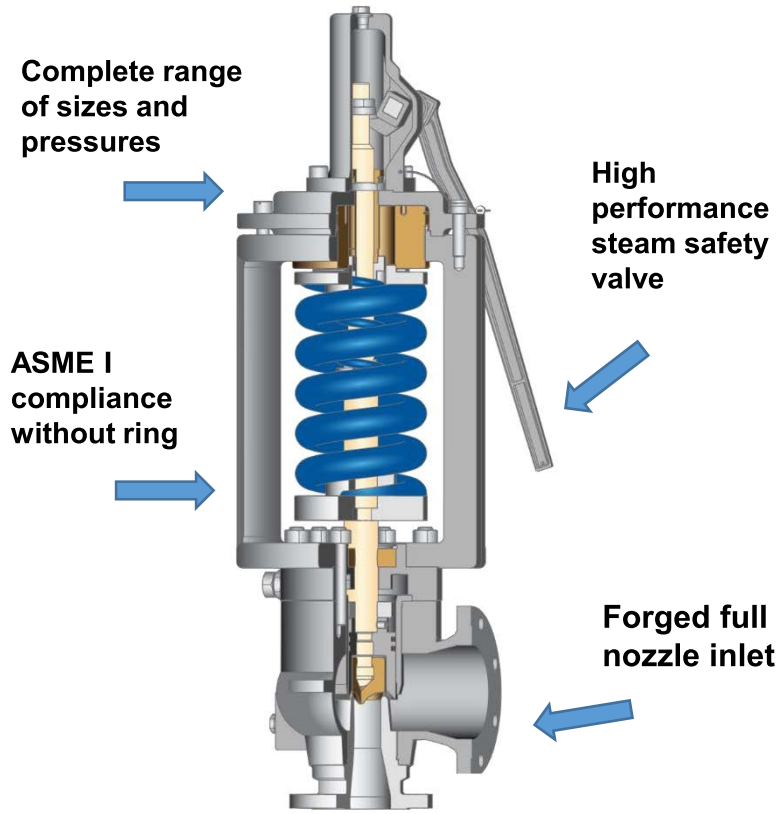
High Performance Steam Safety Valve - EPV 9

The high performance Steam Safety Valve EPV 9 is designed according to ASME Sec.I in requirements. A large scale of orifice sizes ensures optimum selection.

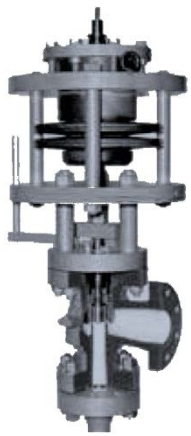
Size	NPS 1½" to 12"	
Set Pressure	3 bar g to 330 bar g	44 psig to 4.786 psig
Material	1.0619 GS	WCB
	1.7357	WC6
	1.4408	C12A

Benefits and features

Fixed overpressure and blow-down according ASME Sec. I with no rings hence no requirement for adjustment.
It guarantees a stable position of the disc by mechanical lift stop at full lift. The optimized disc spindle connection o,ers high seat tightness. The forged inlet nozzle is available with welding connection or flanged connection. Special disk spring design for high pressures and large orifice diameters is proven.
The EPV 9 is full nozzle design and the inlet pressure contained by a forged solid part. The cast outlet body is charged by the relieved pressure only. The valve function is stable up to 25% built up to backpressure.
This product is used for the following applications: power plants and industrial steam generation; steam applications in the petrochemical industry; steam boilers; super heaters and process steam systems.



ASME safety valve EPV 910x.83b with disc spring for high pressure steam application



Elite operates 2 steam test benches for hot setting of steam safety valves



Pressure Reducing Valve - EPV Re34

This pressure reducing valve with sizes DN 65 to DN 400 for water is suitable for variable downstream consumption and large pressure differences. This valve balances the inlet pressure by a proven and tested piston system, in which the seals can be replaced quickly and easily.

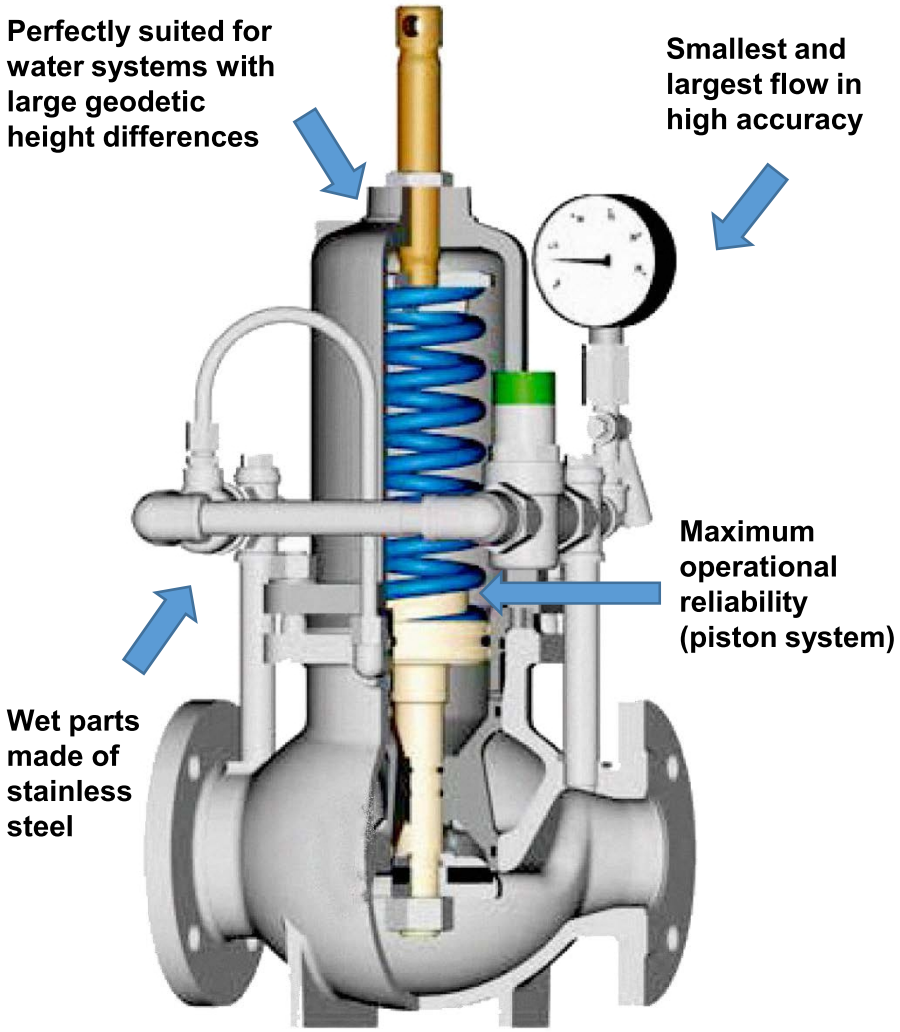
Benefits and features

The valve works independently from external energy. Also it provides constant, but adjustable low downstream pressure, even at variable upstream pressure and fluctuating volume flow. At no flow conditions the valve is completely tight.

A well proven piston-venturi nozzle system provides high endurance and long service life. The stainless steel insert is easy to dissemble and requires only little space for maintenance.

Another benefit is the low mounting height which allows changing the sealing elements without removing the body from the line.

Applications are cold water, potable water, fluctuating flow and largest volume mass flow.



EPV - Re 34 piston as spare part upon request



EPV - Re 34 produced for usage in sewage plants



Change Over Valve

Change Over Valves with the sizes DN 20 to DN 300 for all industrial facilities that require 100 % plant availability – even during maintenance and testing of safety valves.

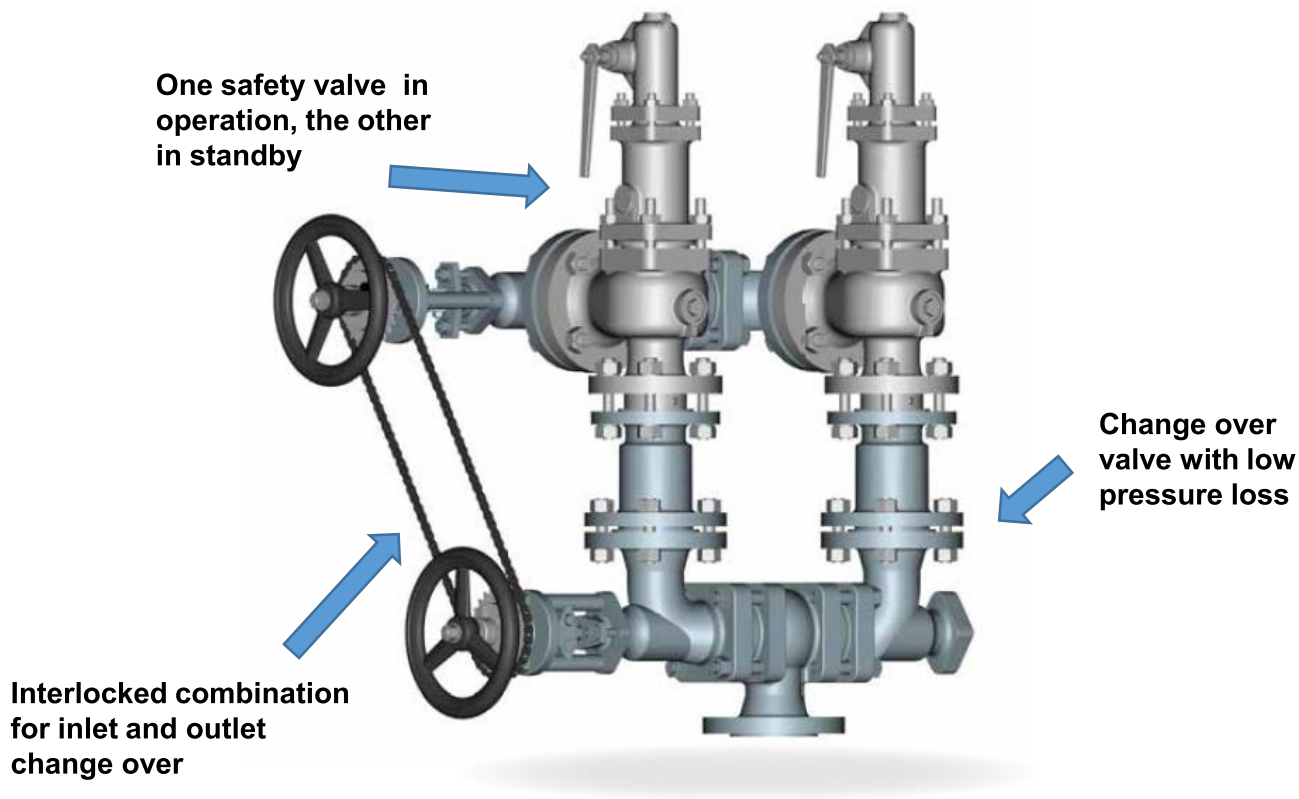
Benefits and features

Elite Change Over Valves Assemblies increase process performance and plant availability by providing the opportunity to switch from one safety valve to another without process interruption or shutdown, whenever maintenance of the safety valve in operation is needed.
Our Change Over Valves are designed and selected for best flow efficiency with superior zeta-value in order to fulfill the maximum inlet pressure loss requirements of 3% according to AD 2000 and API 520.
heir high efficiency design often allows smaller nominal diameters, which saves pipe network operation costs.
Change Over Valves can be used in two ways:

1. **As stand alone valve at the inlet inside of two safety valves, in case of blow-down to atmosphere.**

2. **As interlockable Change Over Valve combination on the inlet and outlet side of two safety valves in case of blow-down to discharge piping.**

Change Over Valves are used for steam, gases or liquids in these applications: chemical and petrochemical industries, process industries and plant construction.



Elite
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