

# LESER at a glance



**LESER**

[The-Safety-Valve.com](http://The-Safety-Valve.com)

## The Company

### LESER GmbH & Co. KG and LESER US

With more than 800 employees, LESER is the largest manufacturer of safety valves in Europe and a leader in its market worldwide.

LESER safety valves are used by leading companies in industries such as chemical, petrochemical, industrial gases, oil and gas production, and machine building, as well as the food and pharmaceutical industry. LESER offers spring-loaded and pilot-operated safety valves for all industrial applications according to PED and ASME VIII as well as application-based solutions for special requirements.

LESER safety valves are developed for the international market at our headquarters in Hamburg/Germany and manufactured at our modern factory in Hohenwestedt/Germany. In addition, LESER India produces safety valves for the local market. Eight subsidiaries in Europe, America, the Middle East, and Asia, as well as authorized and trained representatives in over 80 countries guarantee competent consulting and quick, reliable delivery.

After supporting the North American market for over 15 years, LESER opened its operations in Charlotte, North Carolina in 2007. LESER US has a fully established sales, distribution, and service network which includes its own stocking, setting, testing, and assembling facility. LESER can supply high quality ASME code-stamped valves from North America into South America for a full range of applications.

Since its opening, LESER US has enjoyed significant growth due to a combination of its broad product range, unique design features and commitment to customer service. This growth has enabled the expansion of its representative network and LESER Authorized Repair Centers (LARC)s to support local customer requirements. In addition, LESER US has added to its infrastructure including inside sales personnel to support day-to-day and project business, as well as outside sales expertise through its Sales Market Development staff.

**Product Range**

Safety valves for every industrial application:

- API
- High Efficiency
- Compact Performance
- Critical Service
- Clean Service
- High Performance
- Modulate Action
- Best Availability

ASME UV CE TS

## Timeline

**1885**

Complete range of steam fittings, incl. safety valves

**1957**

First test lab for safety valves

**1980s**

Leading supplier for safety valves in Europe

**1994**

Test lab receives ASME certification (first and only outside of the US)

**2003**

Launch of the API Series

**2015**

Pilot Operated Safety Valve assembly at LESER US



**1818**

Founded as a brass foundry in Hamburg, Germany

**1943**

Destruction of the plant, relocation and founding of new factory in Hohenwestedt, Germany

**1970s**

Specialization in safety valves

**1990**

First ASME approval

**1998**

First subsidiary founded

**2010**

Launch of the Pilot Operated Safety Valve

## Spotlight

### LESER US in Charlotte, North Carolina

#### “High Performance” Staff

All LESER US employees have a high level of expertise and are dedicated to LESER’s corporate values of providing precise, committed, and efficient support to its customers. From sales consulting to technical support, LESER employees strive to provide the highest level of customer service in the industry.

#### Complete Coverage

LESER US is responsible for geographical territories that include all of North America, Central America, and the northern part of South America including Peru, Ecuador, Colombia and Venezuela. Throughout these 16 countries, LESER sells its products through an extensive network of 32 highly-trained Representative organizations, operating from over 90 different offices.

#### Fast & Reliable Delivery from Local Stock

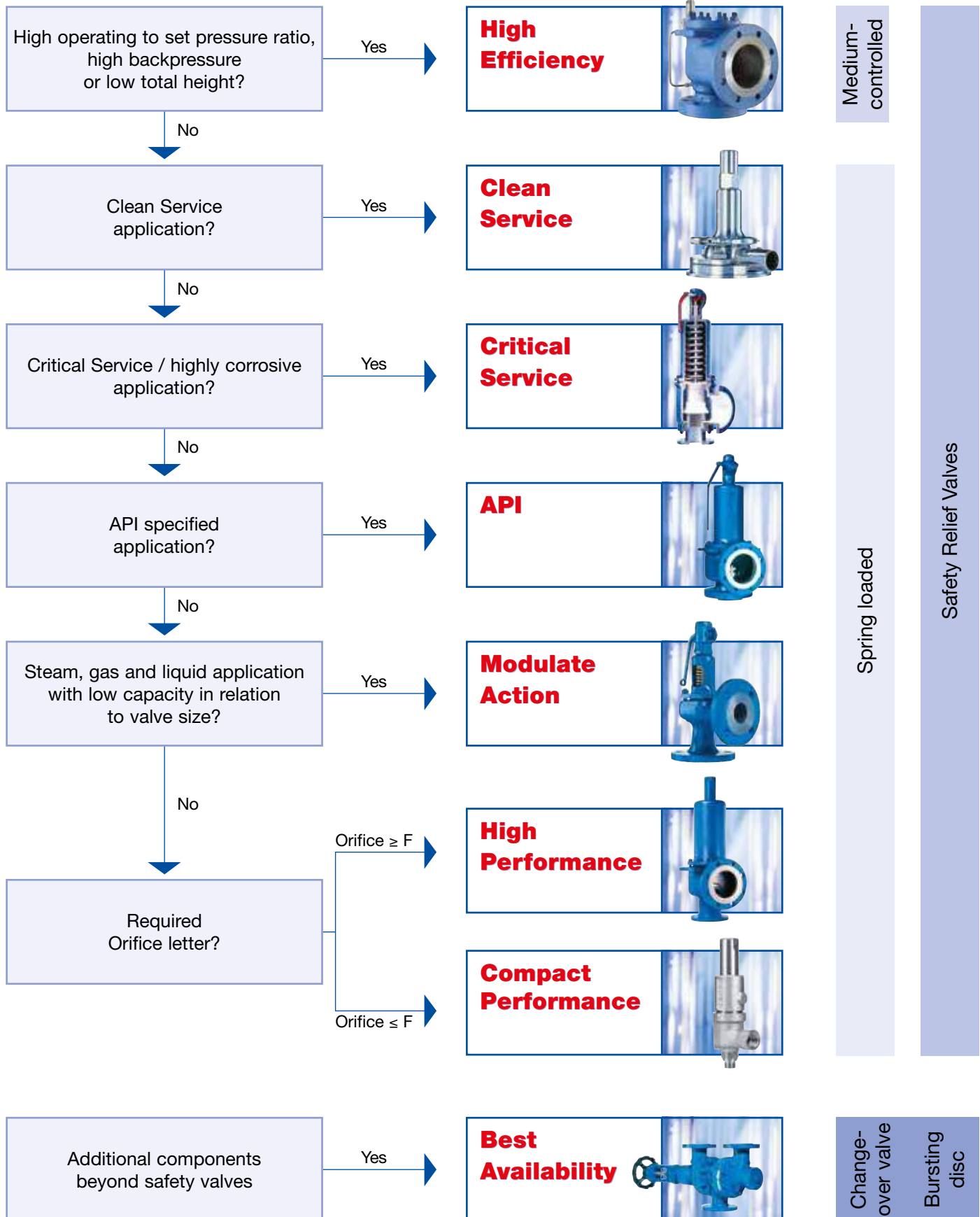
LESER US carries over \$7 Million in inventory of valves and parts at its Charlotte, North Carolina facility. This stock enables LESER to supply safety relief valves in one week or less with same-day service for spare parts. The after-hours service provides 24-hour accessibility in support of plant emergencies, ensuring same-day shipment of valves or parts as needed.

#### Growth

LESER US recently expanded its facility by 40% to over 17,000 square feet. The additional space allows for expanded inventory capabilities, a new location for incoming goods receipt and processing, and additional testing capability to support Pilot Operated Safety Valve (POSV) assembly from local stock.



## Valve finder Product Group



## Safety Valves

### Process and General Industrial Safety Valves



Type 526

### API Series 526

Flanged safety valves that meet all the requirements of API 526 such as standardized orifices and center-to-face dimensions. Their robust construction makes them especially suitable for high pressures and materials like Duplex, Monel or Hastelloy.

#### Applications

- Refineries
- Chemical industry
- Petrochemical industry
- Oil and gas – Onshore and Offshore

#### Product features

- Valve sizes 1" through 8", Orifice D through T
- Materials: WCB, CF8M, WC6, LCB and in API Alloy Concept materials like Duplex, Super Duplex, Monel, Hastelloy and Inconel with short delivery times
- Design according to API 526
- Great variety of options and flanged connections available
- Standard metal sealing, soft seat as option
- Single trim for steam, gas and liquid

### Compact Performance Series 437, 459

Threaded and flanged safety valves with compact dimensions for economical protection of small and mid-sized capacities. Many orifice diameters, seals and connections offer a very wide area of application.

#### Applications

- Thermal relief
- Air /gas compressors and pumps
- Technical gases and CO<sub>2</sub> plants
- LPG/LNG terminals, carriers etc.
- Chemical equipment and piping
- Cryogenic systems and oxygen applications

#### Product features

- Great variety of threaded or flanged connections
- Valve sizes from 3/8" through 1 1/2"
- Broad set pressure range up to 850 bar / 12328 psig
- Wide range of materials and options to fit any application
- Stellite metal sealing for longer product life
- Soft seat for superior tightness
- Single trim for steam, gas and liquid



Type 459

Type 437

## Safety Valves

### Process and General Industrial Safety Valves



Type 441

#### High Performance

#### Series 441, XXL, 444, 441 Full Nozzle, 458

Flanged safety valves with especially high capacity for their size. With a large quantity of valve sizes, pressure ranges and product options, they have proven themselves as a universal safety valve for many applications.

Applications	Product features
<ul style="list-style-type: none"> <li>• Heat exchanger</li> <li>• Chemical equipment and piping</li> <li>• General steam installations</li> <li>• All industrial applications independent from the medium</li> <li>• Air/gas compressors and pumps</li> </ul>	<ul style="list-style-type: none"> <li>• Great variety of types, materials and options to fit any application</li> <li>• Valve sizes from DN 20 through DN 400, 1" through 16"</li> <li>• Flange connections according to DIN EN, ANSI /ASME and other</li> <li>• High capacity compared to the API requirements</li> <li>• Standard metal sealing</li> <li>• Single trim for steam, gas and liquid</li> </ul>






## Specialties



Type 483



Type 485



Type 484

#### Clean Service

#### Series 48x

Safety valves for the food, beverage and pharmaceutical industries that meet all the relevant standards and regulations such as DIN 11866 or ASME BPE.

Applications	Product features
<ul style="list-style-type: none"> <li>• Pharmaceutical industry</li> <li>• Breweries</li> <li>• Food and beverage industry</li> <li>• Cosmetic industry</li> </ul>	<ul style="list-style-type: none"> <li>• Valve sizes DN 25 through DN 100, 1" through 4"</li> <li>• Great variety of aseptic connections (e. g. clamps, flanges) and option to fit any application</li> <li>• Materials: Stainless steel 1.4404 / 316L, 1.4435 / 316L and special</li> <li>• Minimum dead space design and flush-mounting capability</li> <li>• Soft seat (FDA compliant elastomers) for superior tightness</li> <li>• Gap and crevice free design of internals</li> <li>• Elastomer bellows for protection of the hard to clean parts</li> <li>• Surface grades according to ASME BPE-2002 and DIN 11866</li> <li>• Single trim for steam, gas and liquid</li> </ul>

## Safety Valves Specialties

### Critical Service

Series 447, **PTFE-lined** 546, 449

PTFE-lined flanged safety valves for corrosive media such as chlorine, acids, and lyes. With their highly resistant lining they offer a safe solution for corrosive media.

Applications	Product features
<ul style="list-style-type: none"> <li>• Corrosive or aggressive chemicals</li> <li>• Chemical equipment and piping</li> <li>• Chlorine manufacture and processing</li> <li>• Reducing acids (e. g. hydrochloric acid, acetic acid)</li> <li>• Alkalis or caustic service</li> <li>• MDI systems</li> </ul>	<ul style="list-style-type: none"> <li>• Valve sizes DN 25 through DN 100, 1" through 4"</li> <li>• Flange connections according to DIN EN, ANSI /ASME and other</li> <li>• Body is resistant against most chemicals by special coating</li> <li>• PTFE lining or special metals</li> <li>• A PTFE or metal bellows protects the bonnet area against product influences</li> <li>• Smooth inside surface avoid adherence of corrosive matters</li> <li>• Single trim for gas and liquid</li> </ul>



Type 447



Type 429

### Modulate Action Series 429, 433

Flanged safety valves with a standard or proportional opening characteristic. They minimize medium loss when opening and are used for thermal relief applications, liquid service and protection from pressure peaks.

Applications	Product features
<ul style="list-style-type: none"> <li>• Thermal expansion</li> <li>• Reciprocating compressors and plants with pulsating operating pressure</li> <li>• Heat transfer oil systems</li> <li>• Protection of liquids</li> <li>• Overflow operation</li> <li>• Mechanical engineering (OEM)</li> </ul>	<ul style="list-style-type: none"> <li>• Great variety of materials and options to fit any application</li> <li>• Valve sizes DN 15 through DN 150, 1/2" through 6"</li> <li>• Flange connections according to DIN EN, ANSI /ASME and other</li> <li>• Low overall height and low weight</li> <li>• One connection size for inlet and outlets</li> <li>• Single trim for gas and liquid</li> </ul>

## Safety Valves

### Medium controlled

Increase the efficiency of your plant by using

- Higher operating pressure than is possible with regular spring-loaded safety valves, as High Efficiency safety valves guarantee tightness right until set pressure.
- Lower media loss during blow-off because High Efficiency safety valves have low opening and reseating pressure differences.
- Safe operation irrespective of back pressure due to the fact that back pressure has no influence on the opening characteristics of High Efficiency safety valves

### High Efficiency

#### Series 800 – Pilot Operated Safety Valve

Pilot Operated Safety Valves are employed especially for conditions where the difference between set pressure and closing pressure is very small and in cases of high back pressure.



Type 810

#### Applications

- Oil and gas production, onshore, offshore
- Refinery (Oil and gas processing)
- Gas distribution

#### Product features

- Valve sizes DN 25 through DN 200, 1" through 8", Orifice D through T
- Materials: 1.0619, 1.4408, WCB, LCB, CF8M
- Full bore for higher capacity based on nominal size.
- Integrated tubing reduces danger of freezing, damage or leakage.
- Integrated backflow preventer improves versatility of standard model.

## Additional products and components

Change-over valves are used to connect two safety valves to a pressure system. One safety valve is in operation and the other one is on standby. The safety valve on standby can be dismantled and serviced during ongoing operation of the system – the protection of the system against excessive pressure remains guaranteed.

### Best Availability

#### Type 310 XXL – Change-over Valve

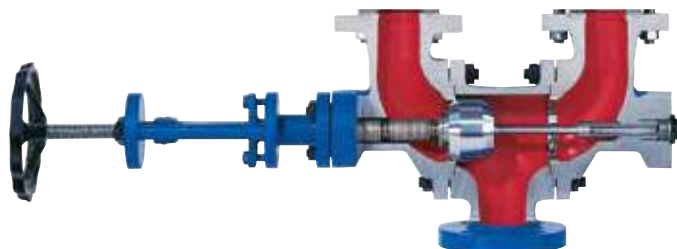
Change-over valves allow uninterrupted plant availability which increases plant productivity.

#### Applications

- Change-over Valves are used in plants which cannot or should not be switched off such as:
- Storage tanks for industrial gas
  - Bitumen plants
  - Oil fields
  - Ethylene plants
  - Refineries

#### Product features

- Uninterrupted operation
- Simple handling
- Heavy-duty design



Type 310





## VALVESTAR®

### The sizing software for safety valves



VALVESTAR®, the sizing program for safety valves developed by LESER, supports all leading worldwide codes and standards. In addition to calculations and sizing the program provides user designed and configurable individual reports for technical documentation and archiving.

### Program highlights

#### Sizing:

- Sizing of safety valves according to leading worldwide codes and standards such as: API 520, ASME VIII, ISO 4126, AD 2000-Merkblatt A2
- Calculation of two-phase flow in accordance with API 520 Appendix D ( $\Omega$ -method) and fire case in accordance with API 521
- Evaluation of inlet pressure drop, back pressure in pipework, reaction forces as well as noise levels

#### Reports:

- Selectable report types, e.g. project report, single page report
- Customisable design of report layouts (company logo, address etc.)
- Range of data export formats, e.g. XLS, RTF, PDF, etc.
- Integrated material part lists and sectional drawings for all LESER safety valves

#### Design and handling:

- A user friendly Wizard function leads step-by-step through the calculations
- Microsoft .Net based architecture offers latest graphical user interface for easy handling and enhanced performance

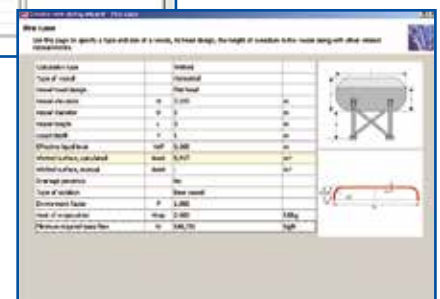
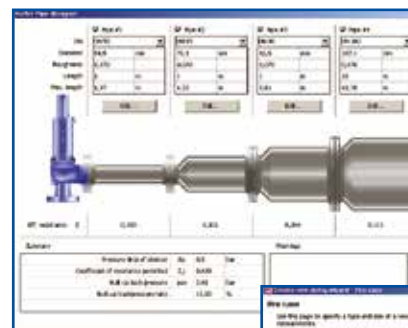
#### Settings:

Customisable user interface:

- User specified profile settings with preselection of units, calculation methods etc.
- More than 15 languages selectable

#### VALVESTAR® Web:

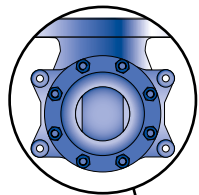
- Online-calculation for safety valves and projects at [www.valvestar.com](http://www.valvestar.com) without any software installation



## Proven Technology Flanged Safety Valves

LESER safety valves have been engineered and steadily developed, in close cooperation with plant engineers and service specialists, simplifying design with fewer components for less down time, fewer spare parts and lower maintenance costs.

**Integral cast support brackets** for safe handling of the valves (API and heavy safety valves).



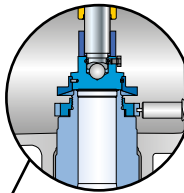
**One piece spindle** allows better alignment.

**Guiding:** Upper and lower guiding with small surface areas help reduce friction, a major cause of galling.

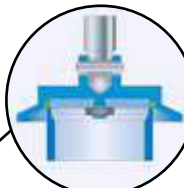
**Long spring** allows large pressure range for each spring thus drastically reducing the overall number of different springs.

**Single trim for steam, gas and liquids** for fewer spare valves in your stock and therefore lower storage costs.

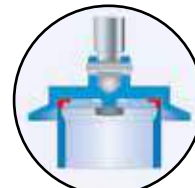
Stellited or hardened metal sealing for longer product life.



**Soft seat solutions for superior tightness**  
O-ring or sealing plate design



O-ring



Sealing plate

LESER defines the set pressure as "**initial audible discharge**" (not "pop"). This avoids damage to valve seats during set pressure testing and allows for higher shut-off closer to set point.

**Self-draining body** avoids residue build-up and reduces corrosion.

**API: Full nozzle design**

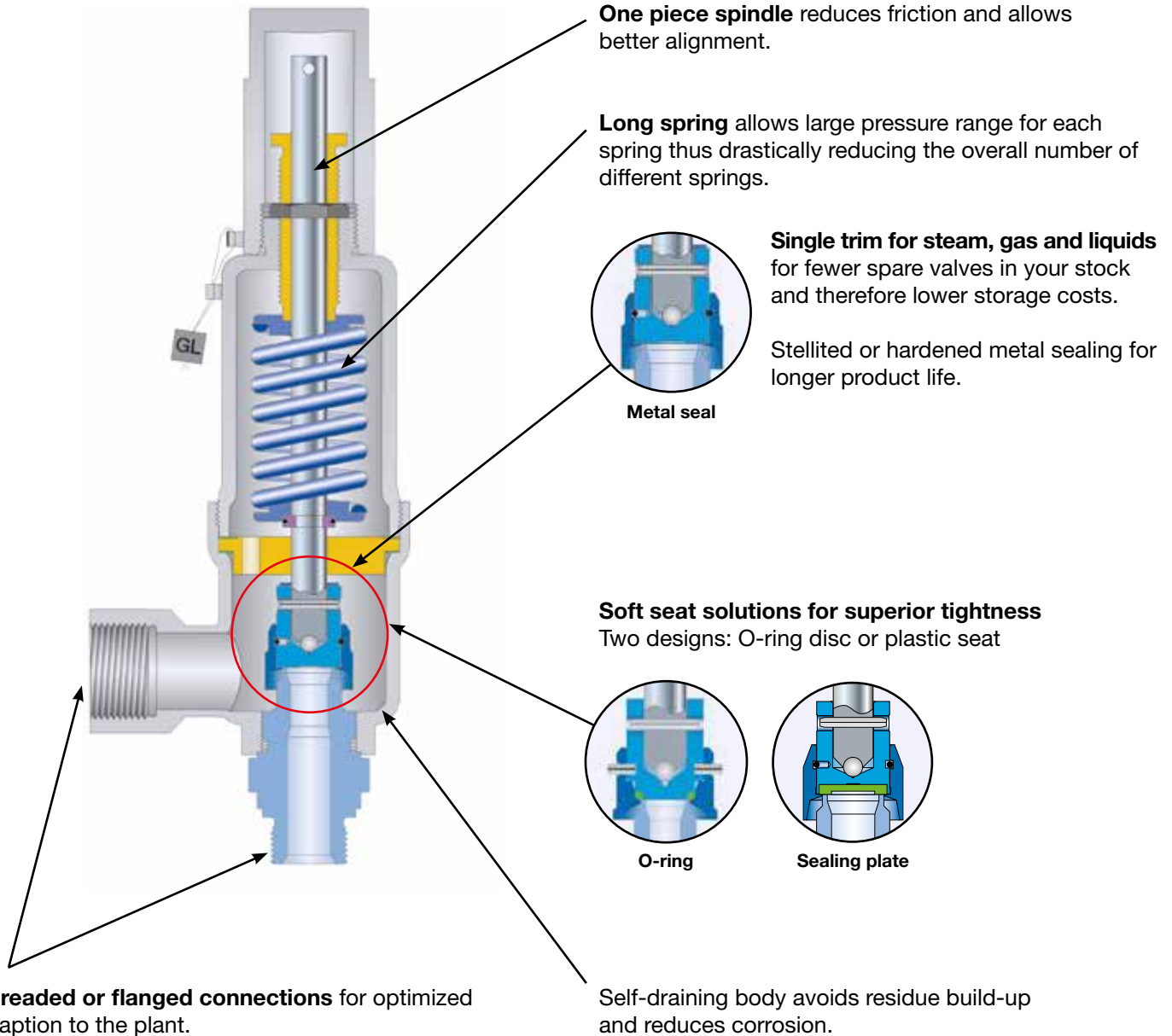


**High Performance:**  
Semi nozzle – full bore – design

### Options

LESER's safety valves can be customized with a great variety of options. For further information please refer to "Available options" of each Type.

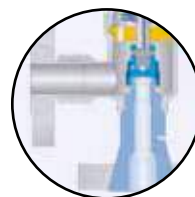
**Proven Technology**  
**Compact Performance Safety Valves**



**Male thread**



**Female Thread**

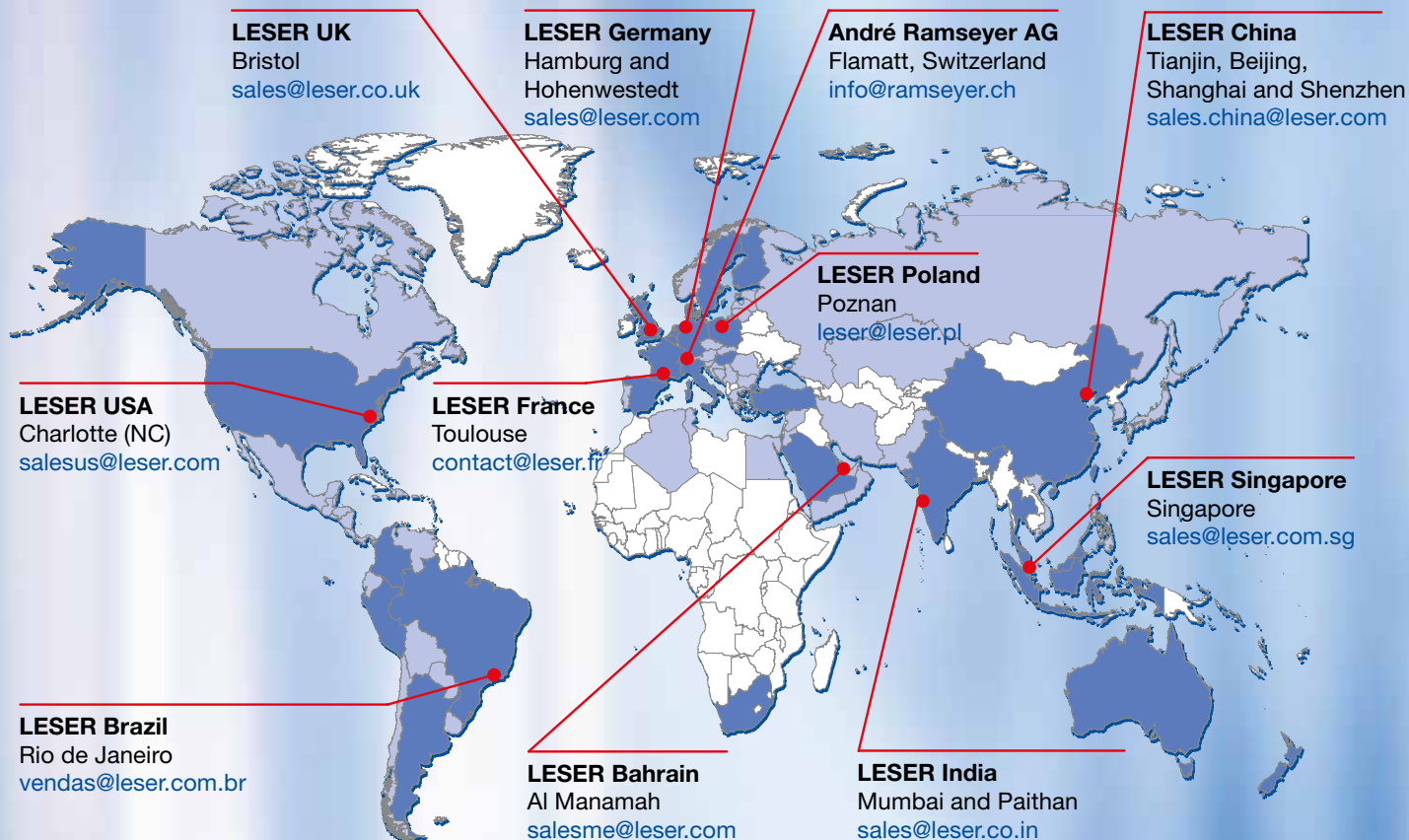


**Flanged version**

Threaded connections male or female acc. to NPT ANSI/ASME B1.20.1. Threads according to other standards, e.g. ISO, DIN, BSP are also available.

Flanged connections acc. to ANSI/ASME B16.5 Flanges acc. to other standards, e.g. ISO, DIN, JIS are also available.

# LESER worldwide



- LESER stock and local assembly
- LESER representative

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# LESER

The-Safety-Valve.com

LESER LLC

10615 Texland Boulevard, Suite 100  
Charlotte, NC 28273, USA

Fon: +1 704-587-3670  
Fax: +1 704-587-3672

E-mail: [salesus@leser.com](mailto:salesus@leser.com)  
[www.leser.com](http://www.leser.com)