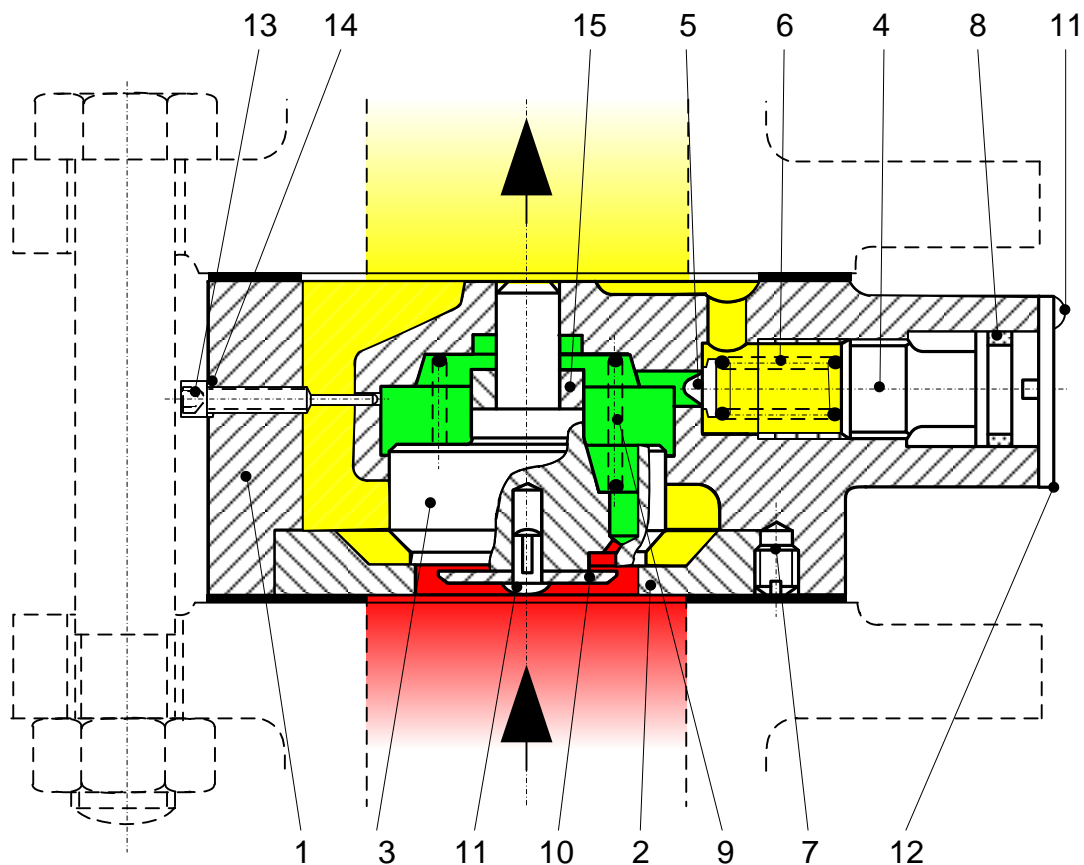


## Relief Valve Type: KALB - S



**Red:** input pressure

**Yellow:** outlet pressure

**Green:** cylinder space

- 1 Housing
- 2 Valve seat
- 3 Valve piston
- 4 Set point screw
- 5 Pilot cone

- 6 Set point spring
- 7 Headless screw
- 8 O-ring
- 9 Pressure spring
- 10 Dirt trap

- 11 Fixing pin
- 12 Guard plate
- 13 Test screw
- 14 Washer
- 15 Stroke limiting ring

### **Functional description:**

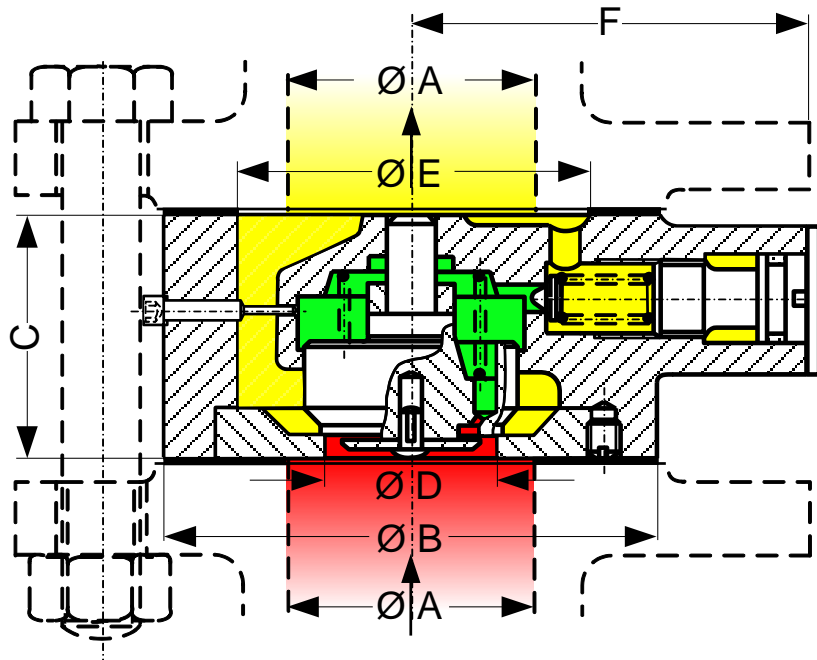
In closed position, the spring **9** presses the valve piston **3** against the valve seat **2**.

When pressure is applied to the valve piston **3**, the pressure oil flows via the gap between the dirt trap **10** and the valve piston through a small hole in the valve piston into the cylinder chamber behind the valve piston. As long as the added forces (spring **9** + cylinder pressure on the large active piston surface) are higher than the opening forces exerted by the inlet pressure on the small active piston surface, the valve piston is pressed against the valve seat **2**.

The cylinder pressure is adjustable via the pilot valve, which consists of the adjusting screw **4**, pilot valve cone **5** and the set point adjuster spring. By turning the adjusting screw **4** clockwise, the set point adjuster spring becomes more tensioned and the cylinder pressure rises. By turning the adjuster screw **4** counter clockwise, the cylinder pressure is reduced.

If the inlet pressure exceeds the corresponding set cylinder pressure, the valve piston **3** is lifted from the valve seat **2** and the pressure oil will flow to the pressures outlet side of the valve. Therefore, the valve piston **3** takes the very position at which the precise amount of pressure oil will flow through the open area so that the opening and closing forces are equal.

The pressure reducing valve shows a proportional characteristic.



### Dimensions, weight and technical data

Valve size		15	25		50		80		
Connecting diameter A	mm	25	25	32	40	50	63	80	100
Maximum allowable flow	m <sup>3</sup> /h	4	6	8	12	20	30	48	75
B	mm	65	70		100		138		
C	mm	40	40		50		70		
D	mm	9	22		35		56		
E	mm	34	48		70		108		
F	mm	70	72		80		95		
Kvs with stroke limiting ring 12	m <sup>3</sup> /h	---	5,2		12		35		
Kvs no stroke limiting ring 12	m <sup>3</sup> /h	1,5	11,5		25		60		
Kvs min (for stable control)	m <sup>3</sup> /h	0,3	0,8		1,3		2,3		
Weight	kg	1,0	1,1		2,3		5,5		

Subject to modification

### **Application information:**

- Not suitable for incompressible media (Gas, air, steam etc).
- The casing is designed for a pressure up to 40 bar.
- The installation position is arbitrary.
- No special micro filtering of the pressure oil is required.
- The gasket at the outlet should not cover sections of the bore.  
The inner diameter should correspond to the dimension E (view page 3).
- Since all moving parts are floating in oil, the valves are practically maintenance free. There are no wear parts.
- There will be a small seepage flow through the valve even if it is closed.
- A minimum flow is required to ensure a good control quality.
- When reinstalling the set point spring, care shall be taken that it is free from runout. The set point adjustment screw **11** with plugged on set point spring **10** and plugged on pilot cone **9** shall be subjected to a common runout check.
- The valves are equipped with a stroke limiting ring **12**, so that the maximum oil flow  $Q_{max}$  is reached at approximately 6 barg. If this quantity is to be attained at a lower pressure, the lift limiting ring **12** has to be removed or shortened accordingly.

### **Set point adjustment:**

The pressure set point can be adjusted by slowly turning the set point screw **4**.

- The pressure set point will be **increased** if screw **4** is turned in **clockwise** direction.
- The pressure set point will be **lowered** if screw **4** is turned in **counter clockwise** direction.

While adjusting the pressure set point, the pressure to be controlled must be measured by means of a pressure gauge and be observed. If the pressure to be controlled no longer responds to a set point variation immediately, this means that either the minimum or the maximum values of the valve have been reached or that mechanical jamming has occurred.

**In order to avoid leakages, care shall be taken that the set point adjusting screw 4 is not turned out any further during operation than up to a flush position with housing 1.**

**Operating ranges of the valves:**

