

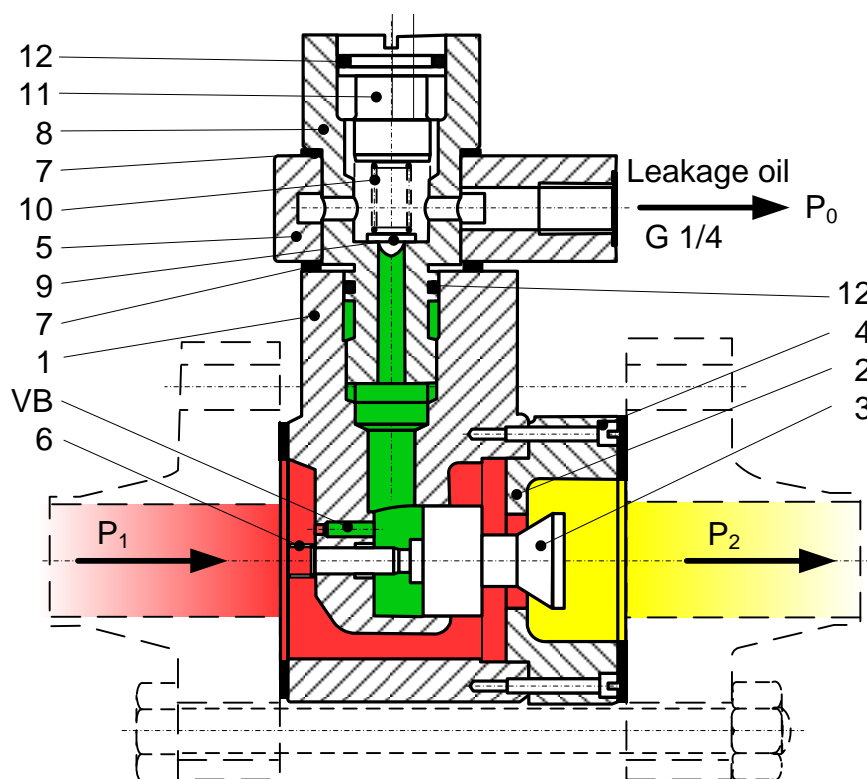
Pressure Reducing Valve Type: KALB – DM

reduces the pressure behind the valve

control range 1 - 6 bar

Mounting in upright position only!





Red: input pressure

Yellow: outlet pressure

Green: cylinder space

1 Housing

2 Valve seat

3 Valve piston

4 Cylinder screw

5 Connection piece

6 Travel stop

7 Sealing ring

8 Sleeve

9 Pilot cone

10 Set point spring

11 Set point adj. screw

12 O-ring

PCB Pilot control bore

Functional description:

The valve piston **3** rests in the valve casing. If pressure is admitted in flow direction, the pressure medium will flow through the pilot control bore **PCB** of the valve casing into the cylinder chamber behind the valve piston **3**.

The pressure in the cylinder space is controlled by a spring-loaded pilot valve by spilling pressure medium through the return pipe **P₀** to the pressureless tank. The position of the pilot cone **9** is determined by the equilibrium of forces between the pressure force of the cylinder acting on it and the force of the set point spring **10**.

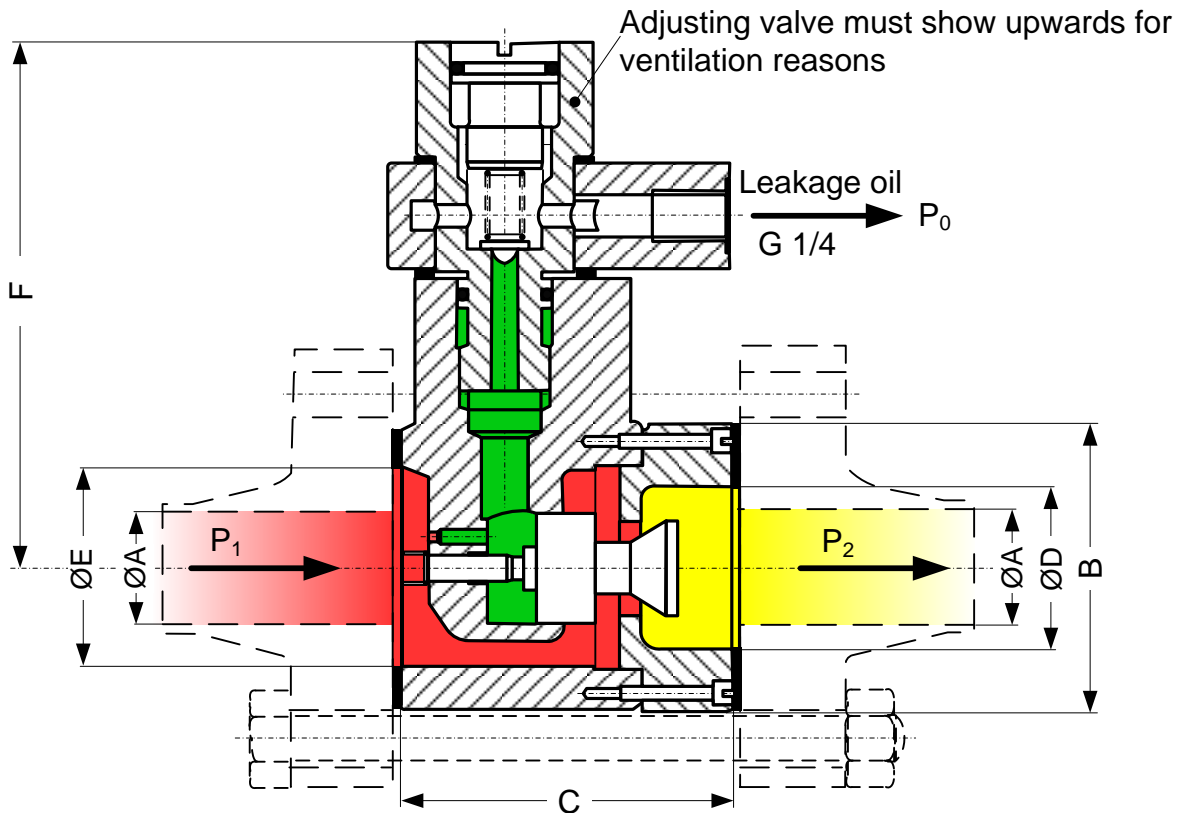
The cylinder pressure is adjustable by means of the pilot valve, which consists of the set point screw **11**, the pilot cone **9**, and the set point spring **10**. By turning the set point screw **11** clockwise, the set point spring is tightened further and the pressure in the cylinder space – i.e. the set point value, - increases. Turning counter-clockwise will lower the pressure in the cylinder space – and, hence, reduce the set point value.

As long as the pressure in the cylinder space (set point) is lower than the output pressure **P₂**, the valve piston **3** will be pushed in closing direction, the open area between valve piston **3** and valve seat **2** diminishes and the flow is reduced. Therefore, the valve piston **3** takes the very position at which the precise amount of pressure medium will flow through the open area so that the opening and closing forces are equal.

The pressure reducing valve shows a proportional characteristic.

Application information:

- The casing is designed for a pressure up to 40 bar.
- Position of installation:
Care must be taken that the valve is installed in accordance to the flow direction in a horizontal pipe. The set point adjusting valve (sleeve 8) has to point upwards to ensure proper ventilation.
The return pipe (connection **P₀**) must be run pressureless to the tank or to some other large pressureless collector.
- No special micro filtering of the pressure medium is required.
- The gasket at the outlet should not cover sections of the bore.
The inner diameter of the sealing ring should not be smaller than dimension **E** on the inlet guide and not smaller than dimension **D** on the outlet side.
- Since all moving parts are floating in oil, the valves are practically maintenance free. There are no wear parts.
- A minimum flow is required to ensure a good control quality.
- There will be a small seepage flow through the valve even if it is closed.
- 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.



Dimensions, weight and flow characteristics:

Valve size		25			50		80	
		mm	mm	mm	mm	mm	mm	mm
Conn. diameter A	mm	25	32	40	50	63	80	100
Max. allowable Flow	m ³ /h	6	8	12	18	30	45	72
B	mm	70			100		138	
C	mm	58			65		95	
D	mm	40			54		85	
E	mm	49			70		108	
F	mm	133			142		157	
Weight	kg	1,8			3,4		8	
K _{vs}	m ³ /h	6			15		48	
K _{vs} min (for stable control)	m ³ /h	0,5			0,6		2,4	
K _{vs} leak (leak flow)	m ³ /h	0,45			0,5		2	

All technical data are subject to change without notice

Set point adjustment:

The pressure set point can be adjusted by slowly turning the set point screw **11**.

- The pressure set point will be **increased** if screw **11** is turned in **clockwise** direction (to the right).
- The pressure set point will be **lowered** if screw **11** is turned in **counter clockwise** direction (to the left).

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 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 11 is not turned out any further during operation than up to a flush position with sleeve 8.

Operating ranges of the valves:

