
Proportioning pressure regulator with straight characteristic curve 975 001



Application

For trailers that require adapting to different brake pad wear on different axles.

Purpose

To reduce the braking force of the axle to be adapted during partial brake applications and rapid exhausting of brake actuators.

Trailers being operated in mountainous regions and frequently covering downhill journeys always show increased wear on the brake linings of the front wheels because the arrangement of the larger front-wheel brake actuators required for stopping will cause excess braking on the front axle. By using this adapter valve, the brake force on the front axle is reduced on the front axle to the extent that both axles are braked evenly; this does not, however, in any way impair the brake force in emergency braking.

Maintenance

Special maintenance that extends beyond the legally specified inspections is not required.

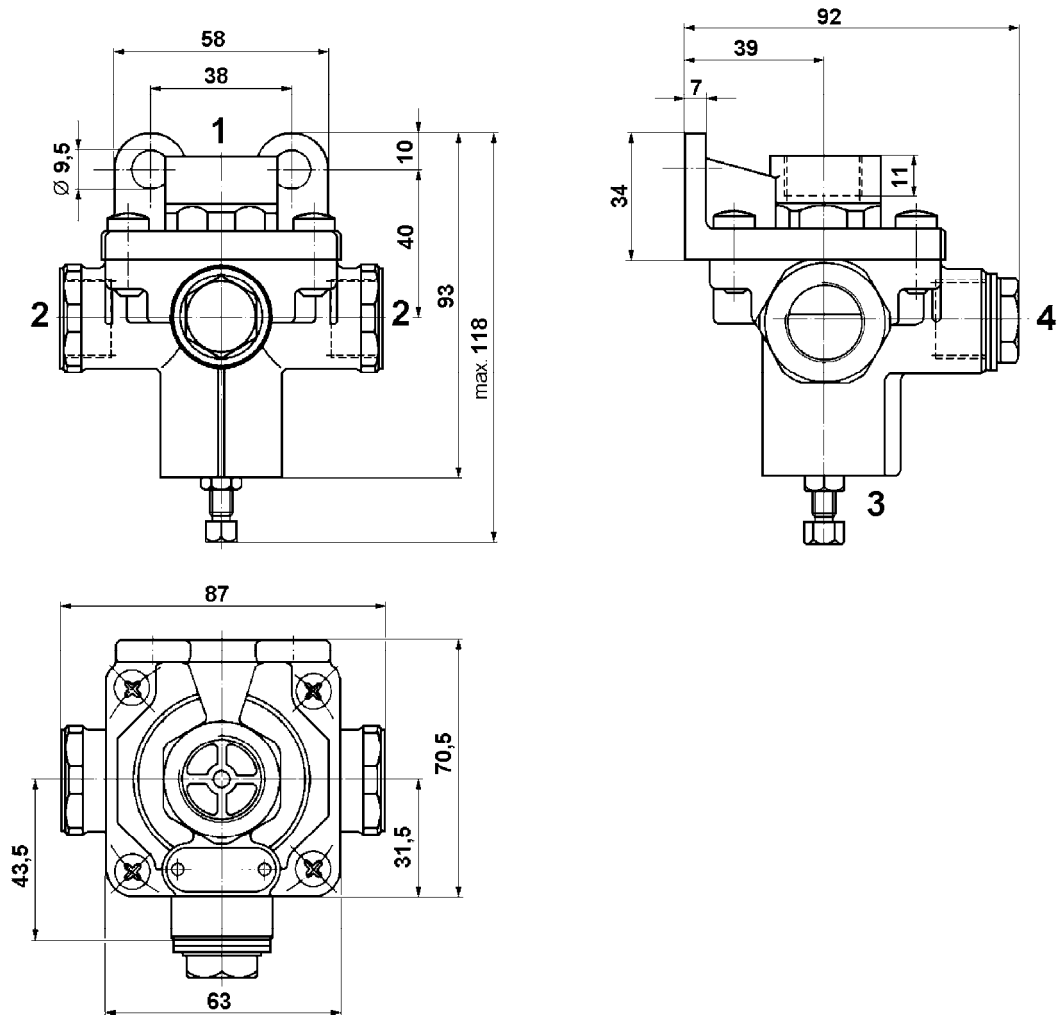
Installation recommendation

- Mount the adapter valve half way between the two brake cylinders of the axle to be adapted.
- Install the proportioning pressure regulator so that vent 3 points downward.
- Fasten the proportioning pressure regulator valve with two M8 bolts.

Proportioning pressure regulator 975 001 / 975 002

Installation dimensions

975 001 000 0



Connections

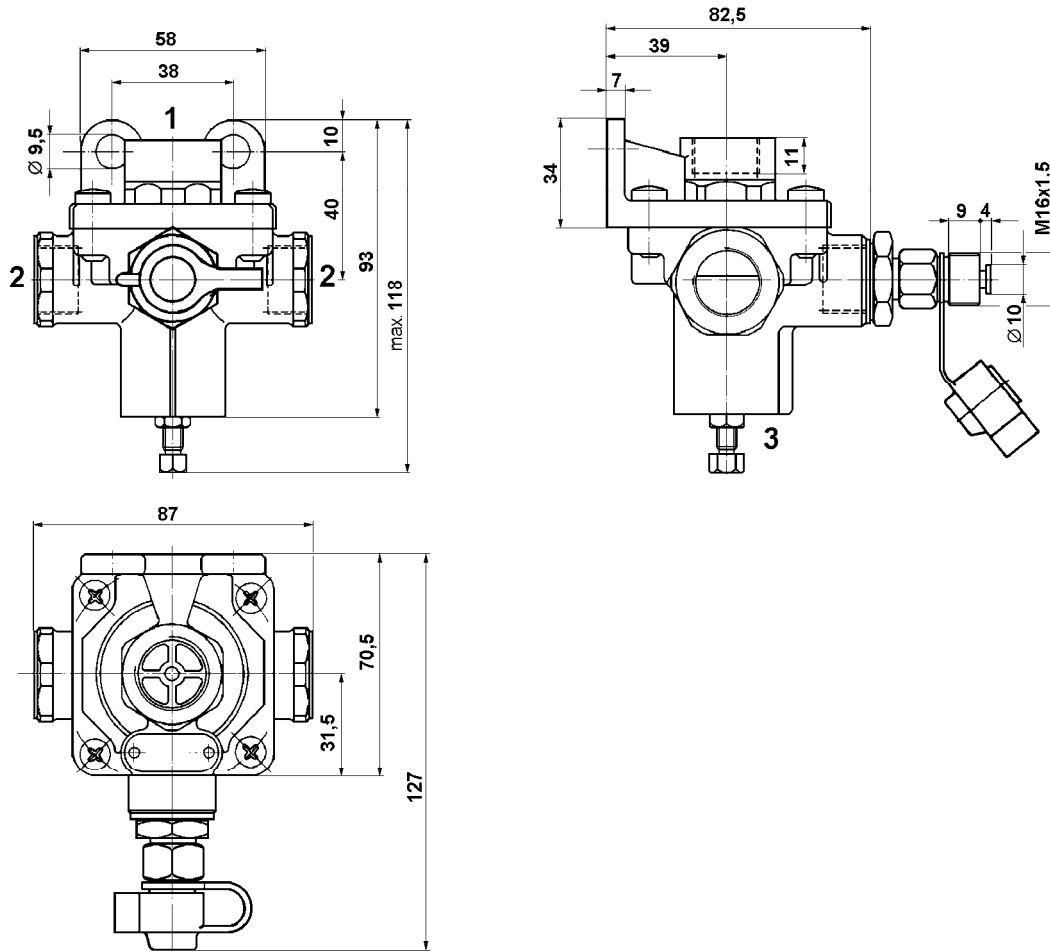
Port threads

1	Energy supply	2	Energy delivery	3	Exhaust	M 22x1.5 - 15 deep
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Proportioning pressure regulator 975 001 / 975 002

Installation dimensions

975 001 500 0: Combination proportioning pressure regulator 975 001 ... 0 with test valve 463 703 ... 0



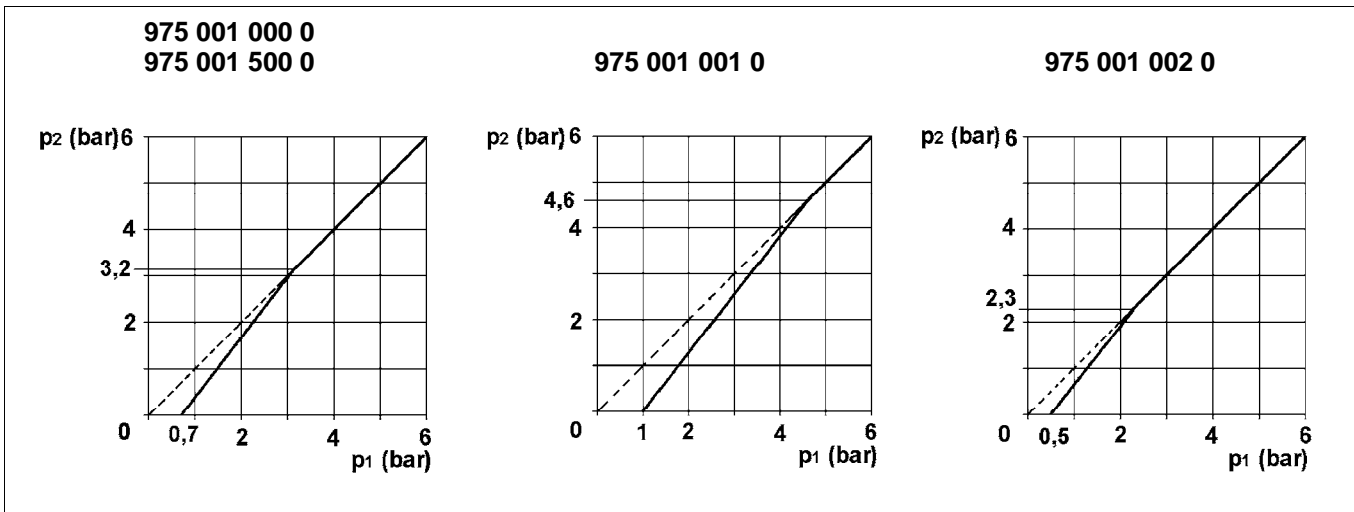
Connections			Port threads			
1	Energy supply	2	Energy delivery	3	Exhaust	M 22x1.5 - 15 deep

Technical data

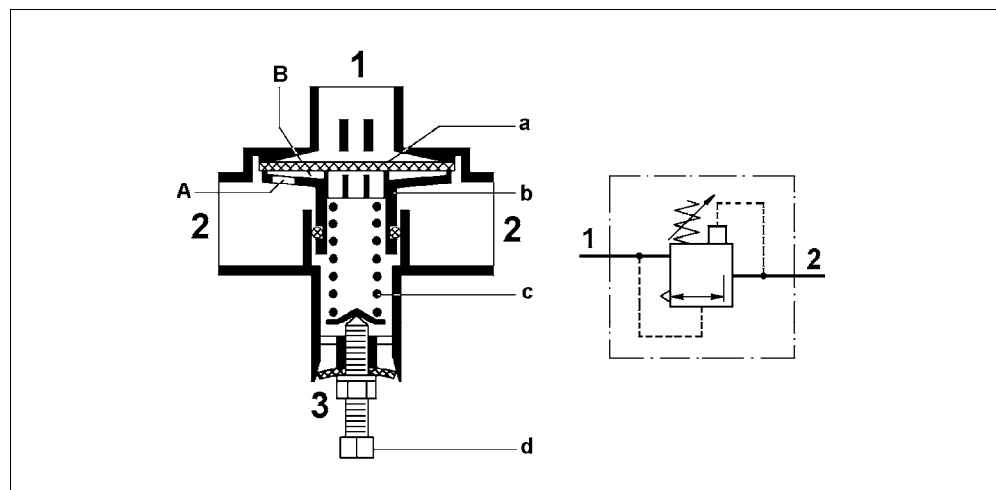
Order number	975 001 000 0	975 001 001 0	975 001 002 0	975 001 500 0
Max. operating pressure	10 bar			
Range of adjustment	0.3 to 1.1 bar			
To be set at	0.7 \pm 0.1 bar	1 \pm 0.1 bar	0.5 \pm 0.1 bar	0.7 \pm 0.1 bar
Nominal diameter	12 mm			
Permissible medium	Air			
Operating temperature range	-40 °C to +80 °C			
Weight	0.55 kg			0.65 kg

Proportioning pressure regulator 975 001 / 975 002

Pressure diagrams



Operation



Piston (b) is held at the top of its stroke by the load in pressure spring (c). Diaphragm (a) closes the passage from port 1 to ports 2. When the brakes are applied, the air flows via port 1 to the upper side of diaphragm (a) builds force up there. As soon as this force exceeds the force of pressure spring (c) set by screw (d), piston (b) is forced down. The air now flows past the outer edge of diaphragm (a) and via ports 2 to the downstream brake actuators.

The pressure building up at ports 2 also acts on the underside of diaphragm (a), thus supporting the force of pressure spring (c). As soon as this force is greater than the pressure acting on the upper side of diaphragm (a), piston (b) is returned to the top of its stroke. The end position has now been reached.

If the pressure at port 1 is increased further, the load in pressure spring (c) is gradually overcome and the air finally reaches the brake actuators at a 1:1 ratio. After a reduction in brake pressure at port 1, pressure spring (c) forces piston (b) up to the top of its stroke. The pressure in chamber (B) forces diaphragm (a) to arch upward. Depending on the reduction in pressure at port 1, the brake actuators are exhausted partially or completely via chamber A and exhaust 3.

Proportioning pressure regulator with drop characteristic curve 975 002



Application

For trailers, the brake force distribution of which must be adapted on one axle.

Purpose

To reduce the braking force of the axle to be adapted during partial brake applications and rapid exhausting of brake actuators.

Maintenance

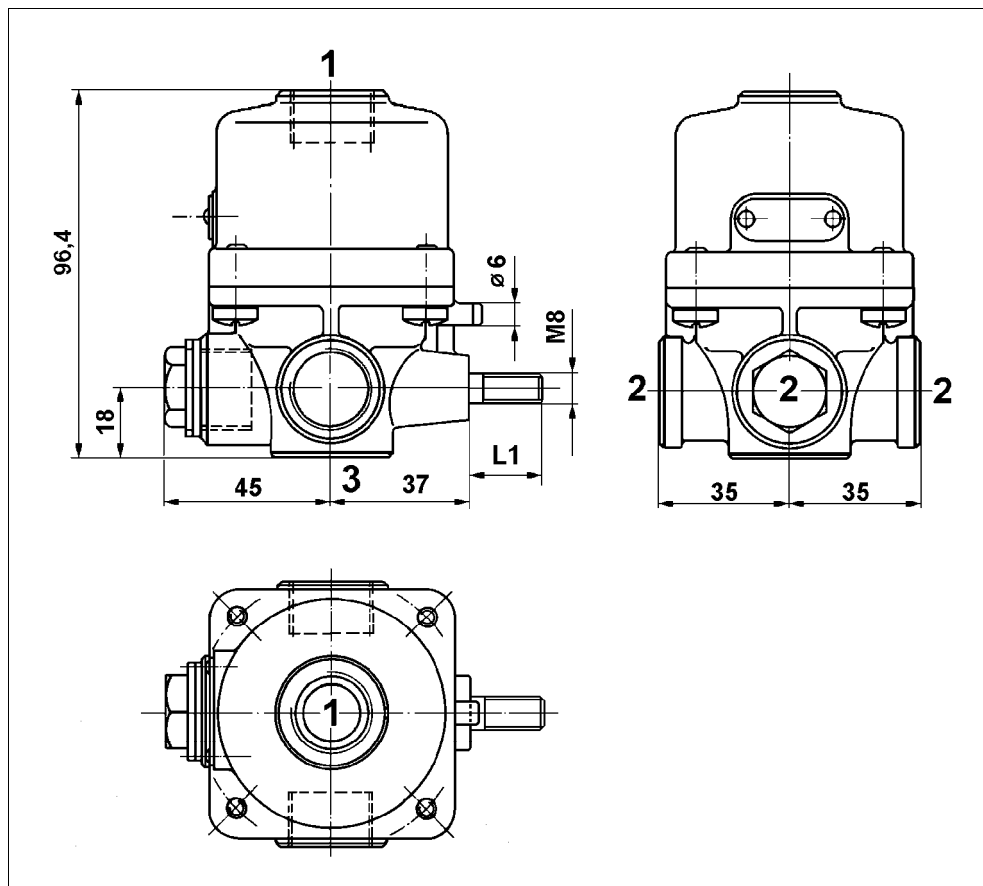
Special maintenance that extends beyond the legally specified inspections is not required.

Installation recommendation

- Mount the adapter valve half way between the two brake cylinders of the axle to be adapted.
- Install the proportioning pressure regulator so that vent 3 points downward.
- Fasten the proportioning pressure regulator with the set screw on the side and an M8 nut.

Proportioning pressure regulator 975 001 / 975 002

Installation dimensions

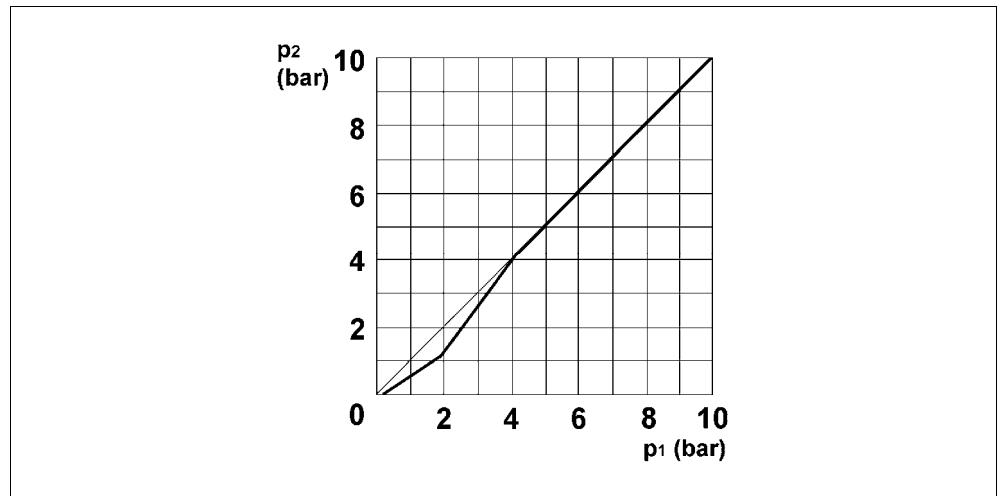


Technical data

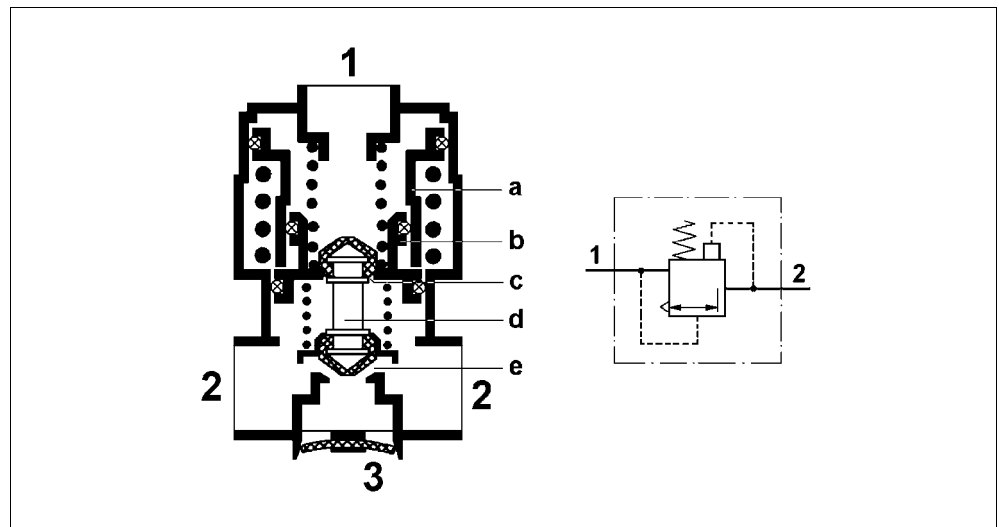
Order number	975 002 017 0
Max. operating pressure	10 bar
Nominal diameter	7,5 mm
L1 (see Fig. "Installation Dimensions")	25 mm
Permissible medium	Air
Operating temperature range	-40 °C to +80 °C
Weight	0.60 kg

Proportioning pressure regulator 975 001 / 975 002

Diagram



Operation



When braking, the compressed air actuated by the trailer brake valve flows through connection on the top of the piston (b) and pushes it down until the following double valve (d) makes contact and closes the outlet (e). The further downward moving piston (b) then opens the inlet (c), so that the compressed air that is fed in can flow into the brake cylinder connection 2. As a result of the new present counter-pressure on the underside of the piston (b), which now has a greater surface area than the top side, the direction of movement of the piston (b) reverses. The inlet (c) closes if the ratio of the incoming and outgoing pressures corresponds with a surface ration (1.75:1) for the piston (b). This reduction in pressure occurs up to an applied pressure of 2.8 bar.

If the applied pressure exceeds this value, the force applied on the top of the piston (c) is increased, since the piston (a) is set on piston (b). The pressure reduction ratio decreases with increasing pressure and achieves the value 1:1 at 5.6 bar.

If the control pressure in connection 1 drops, pistons (a and b) and the double valve (d) are raised again by the now higher brake cylinder pressure. The outlet valve (e) opens and depending on the control pressure, either a partial or a complete quick venting occurs on the brake cylinder through the vent 3.