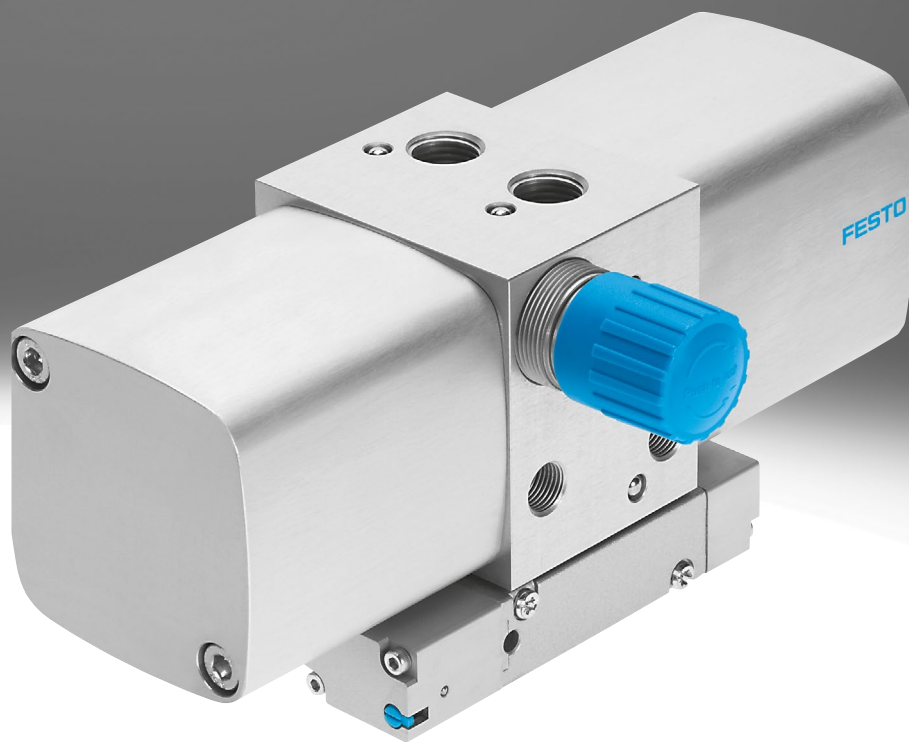


Application notes pressure booster DPA

FESTO



Function

The pressure booster is a twin-piston pressure intensifier used only for compressing air.

When the DPA is pressurised with compressed air, integrated check valves automatically ensure the pressure on the secondary side is built up. The output pressure p_2 can increase to up to twice the value of the input pressure p_1 . The required output pressure is set

using a manually operated pressure regulator. In the case of pressure boosters without a pressure regulator, the output pressure is always double the input pressure.

The air supply to both drive pistons is controlled by a pneumatic directional control valve that reverses automatically when the stroke end position has been reached.

The pressure booster starts up automatically when the input pressure is applied and the desired output pressure has not yet been reached.

When the set output pressure is reached, the pressure booster stops operating to save energy, but restarts automatically when the output pressure drops again.

The version of the DPA with proximity sensing provides the option of sensing individual strokes of the drive piston with the help of an external sensor and adding counter.

Note

Pressure boosters are used for the occasional drawing-off of pressurised compressed air. Pressure boosters are not suitable as replacement compressors, as wear on the seals and drive piston increases significantly when used continuously without breaks.

Note

The pressure regulator is supplied with no tension on the regulator spring (DPA-...-10/16 only). After applying the input pressure, the regulator spring is pretensioned by turning the regulator knob until the required output pressure p_2 is reached. A pressure gauge is strongly recommended for monitoring the output pressure p_2 . The regulator setting of the DPA-63/100 can be secured against unauthorised adjustment using the regulator lock LRVS.

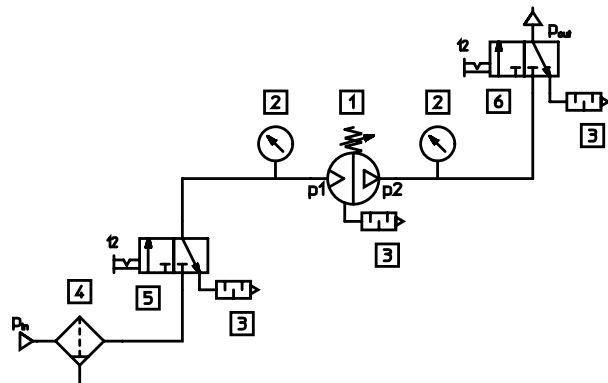
Connection to the compressed air network

Input pressure side

The use of a 3/2-way on/off valve (e.g. HE-...-D, HEE-...-D or a comparable type) is recommended in the compressed air line to the pressure booster. The 3/2-way on/off valve must not be opened until the input pressure p_{in} has been built up.

Output pressure side

It is recommended that a 3/2-way on/off valve is connected to the output pressure side of the pressure booster to ensure safe exhausting of the output pressure p_{out} . If a 3/2-way valve is not used, the output pressure can only be exhausted by completely relaxing the regulator spring (turning the regulator knob all the way to the left).



Note

If the system includes a soft-start valve, it is essential to position a 3/2-way on/off valve between the soft-start valve and the pressure booster.

Note

For pressure boosters without pressure regulator, the air must be exhausted externally via a 3/2-way on/off valve.

- [1] Pressure booster
- [2] Pressure gauge
- [3] Silencer
- [4] Filter

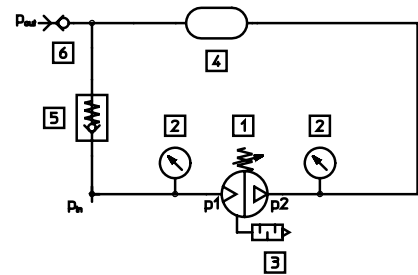
- [5] 3/2-way on/off valve on the input pressure side
- [6] 3/2-way on/off valve on the output pressure side

Installation with air reservoir

An air reservoir (e.g. CRVZS) should always be used on the output pressure side to compensate for pressure fluctuations. The air reservoir smooths the pulsation of the pressure booster. It is sensible to fill the volume of the air reservoir with the input pressure p_1 via a connecting line.

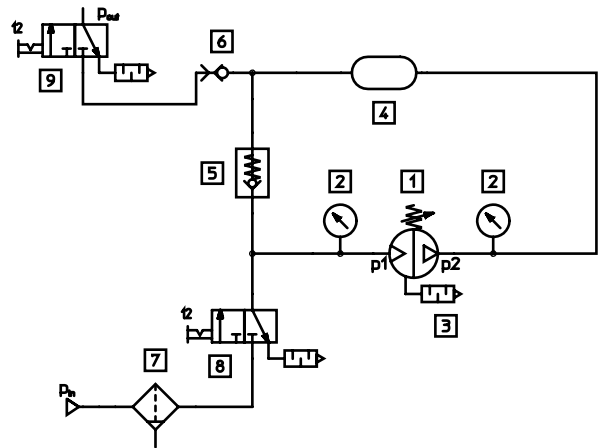
The pressure booster only has to make up the difference between the input and the output pressure. Filling the air reservoir takes less time. A check valve prevents the air from flowing back out of the reservoir.

This arrangement corresponds to the scope of delivery of the pressure booster/air reservoir combination available to order (→ page 18).



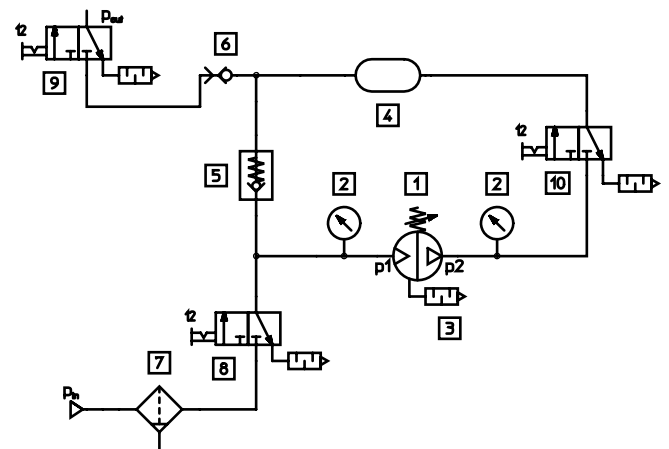
Circuit with 2 on/off valves

The air reservoir is exhausted via the regulator knob of the pressure booster.



Circuit with 3 on/off valves

The air reservoir is exhausted via the additional on/off valve.



- [1] Pressure booster
- [2] Pressure gauge
- [3] Silencer
- [4] Air reservoir
- [5] Check valve
- [6] Coupling socket
- [7] Filter
- [8] 3/2-way on/off valve on the input pressure side
- [9] 3/2-way on/off valve on the output pressure side
- [10] 3/2-way on/off valve for exhausting the air reservoir