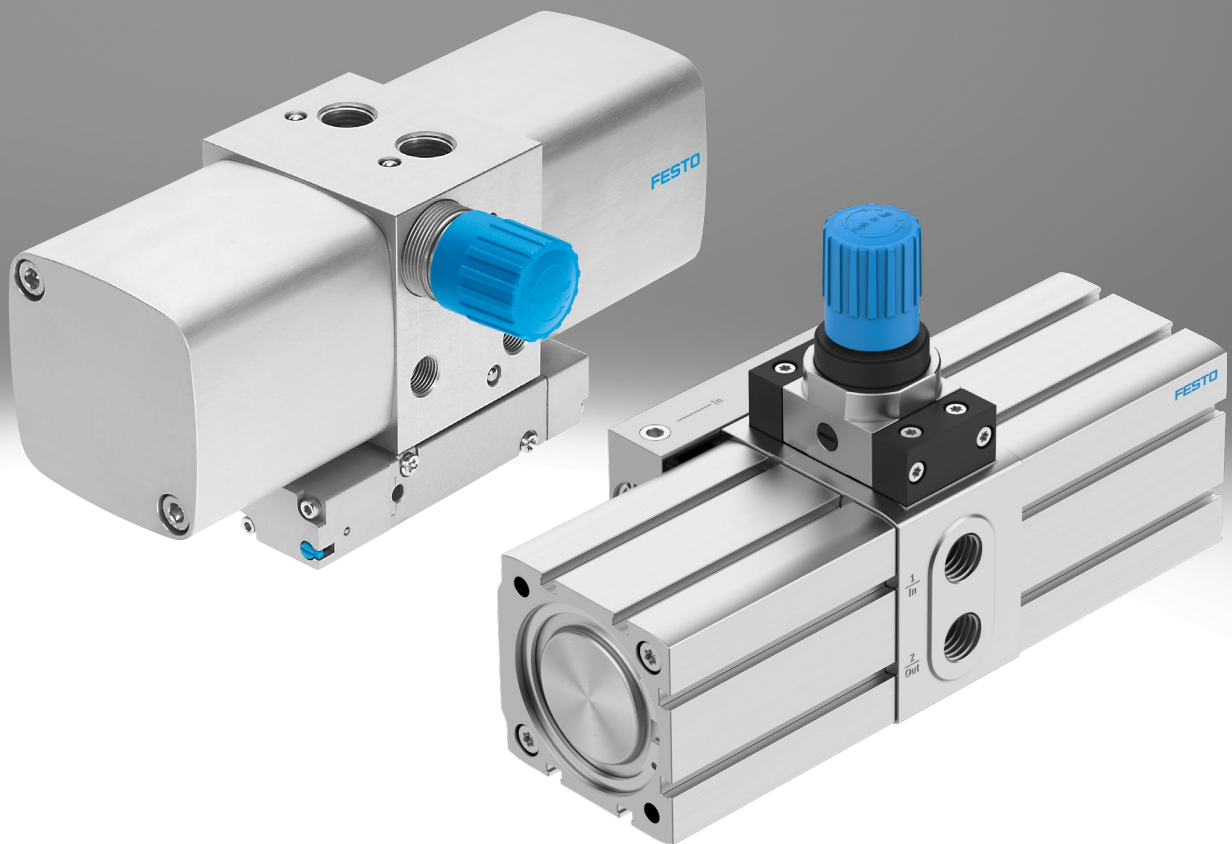


## Application notes pressure booster

**FESTO**



### Function

The pressure booster is a twin-piston pressure intensifier used only for compressing air. If the pressure booster is pressurized with compressed air, integrated check valves automatically build up pressure on the secondary side. The outlet pressure  $p_2$  can rise to twice the value of the inlet pressure  $p_1$ . In the case of pressure boosters with regulators, the desired output

pressure can be reduced depending on the setting. In the case of pressure boosters without pressure regulators, the output pressure is always 2 times the inlet pressure. The air supply to the two drive pistons is provided by a pneumatic directional control valve, which is switched automatically when the switching positions are reached. If the inlet pressure is switched on and

the desired output pressure has not yet been reached, the pressure booster starts up automatically. When the set output pressure is reached, the pressure booster stops operating in an energy-saving manner, but automatically starts up again if the output pressure drops due to application operation.

It is possible to record individual strokes of the drive piston with the help of an external sensor and an addition counter.

#### Note

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

#### Note (DPA)

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.

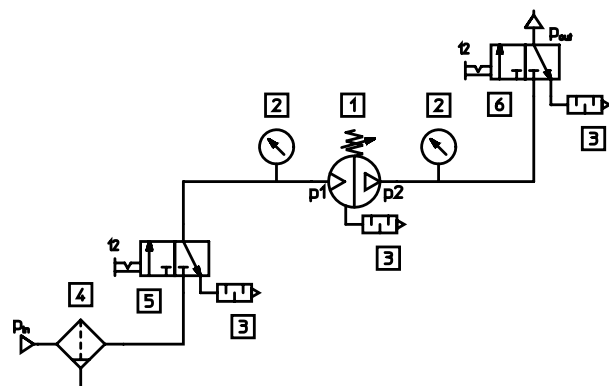
### Connection to the compressed air network

#### 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.

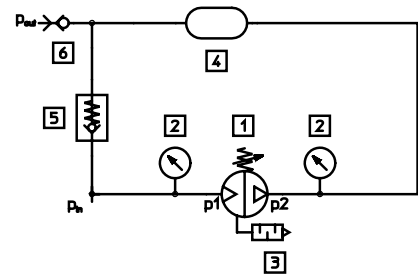
- [1] Pressure booster
- [2] Pressure gauge
- [3] Silencer
- [4] Filter

- [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

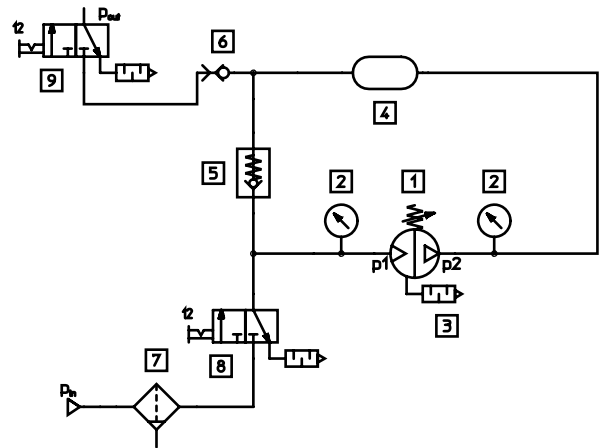
An air reservoir should always be used on the output pressure side to compensate for pressure fluctuations. The air reservoir smooths the pulsation of the pressure booster. It is sensible to fill the volume of the air reservoir with the input pressure  $p_1$  via a connecting line.

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.



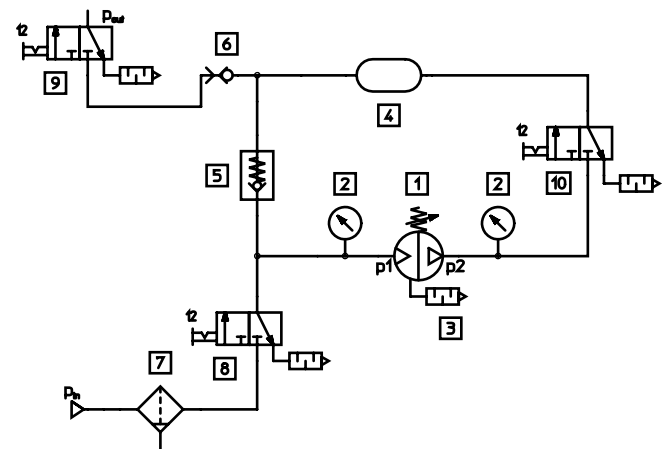
### Circuit with 2 on/off valves

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