# Design requirements EN 806-2

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Pt. 15.2.2 pressure reduction

„A pressure reducing valve shall be installed if the service pressure or the operating pressure at the delivery pressure side of a pressure booster may rise above the maximum design pressure (PMA) of appliances, valves and other components."
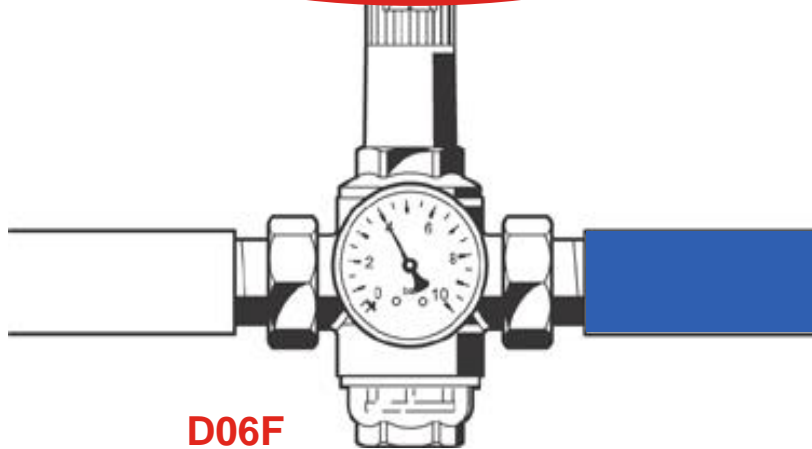
P_e

P_a

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High water pressure from the main

> 6 bar
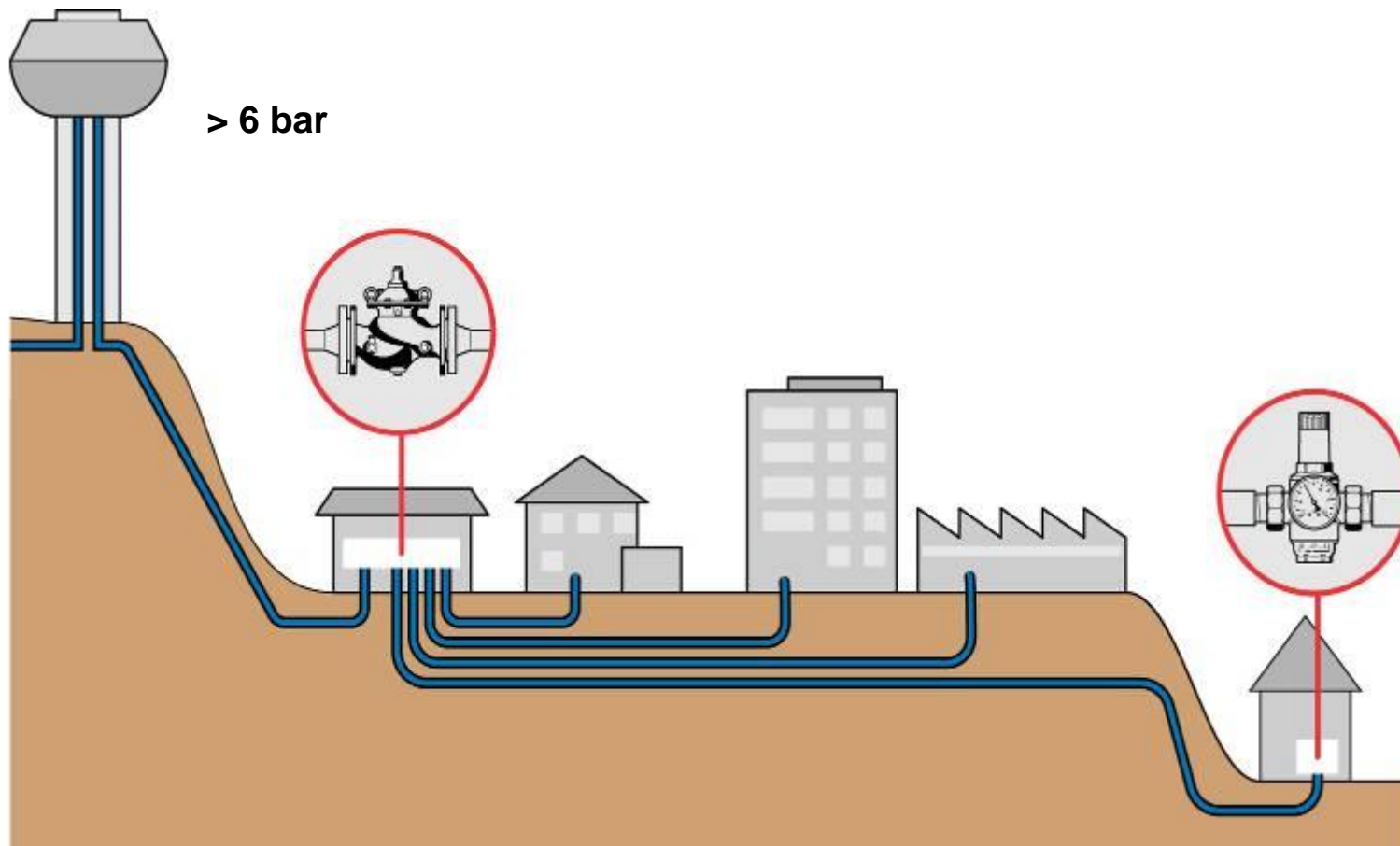
Prevents noise caused by water flow

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Certified noise level

D06F

dB		
100	disco club	🔊
70	heavy traffic	🔊
50	office	🔊
40	living area	🔊
30	reading room	
20	**whisper**	
10	recording studio	
0	deep cave	

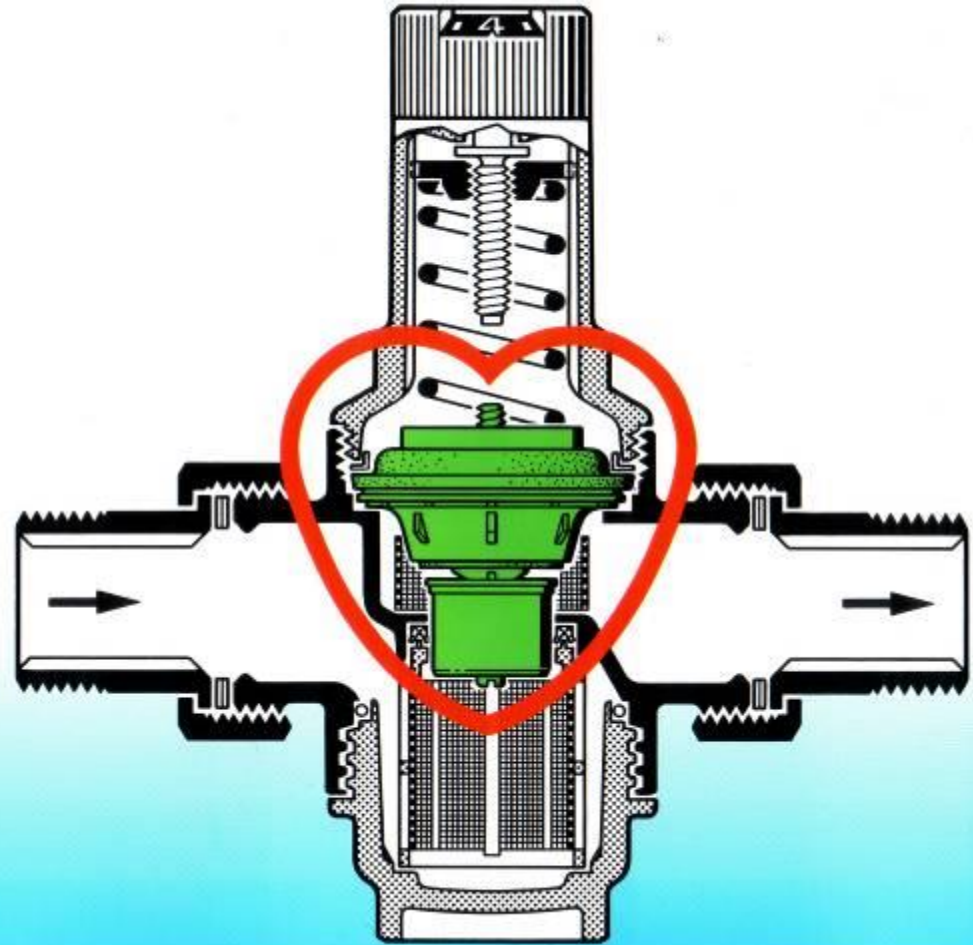**Honeywell**

Balanced Pressure Reducing Valves

- The inlet pressure simultaneously acts on the valve cone surface and on the balancing piston surface
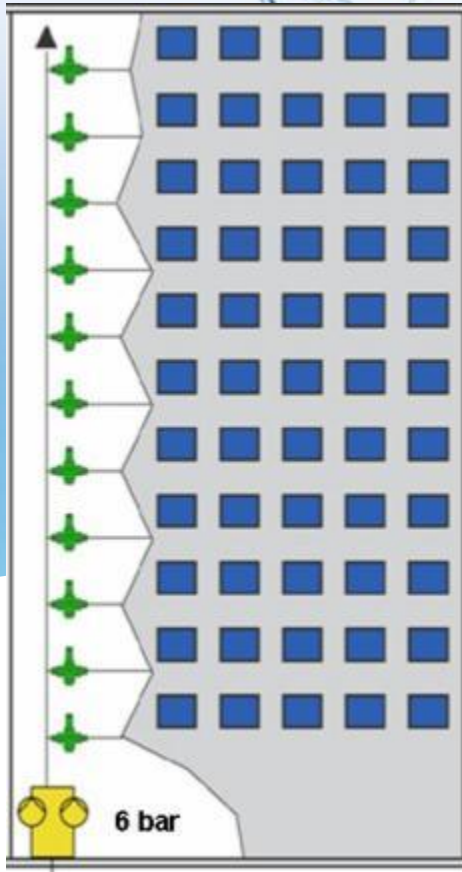- So the inlet pressure has no effect on the outlet pressure

Balancing Piston

Valve Cone
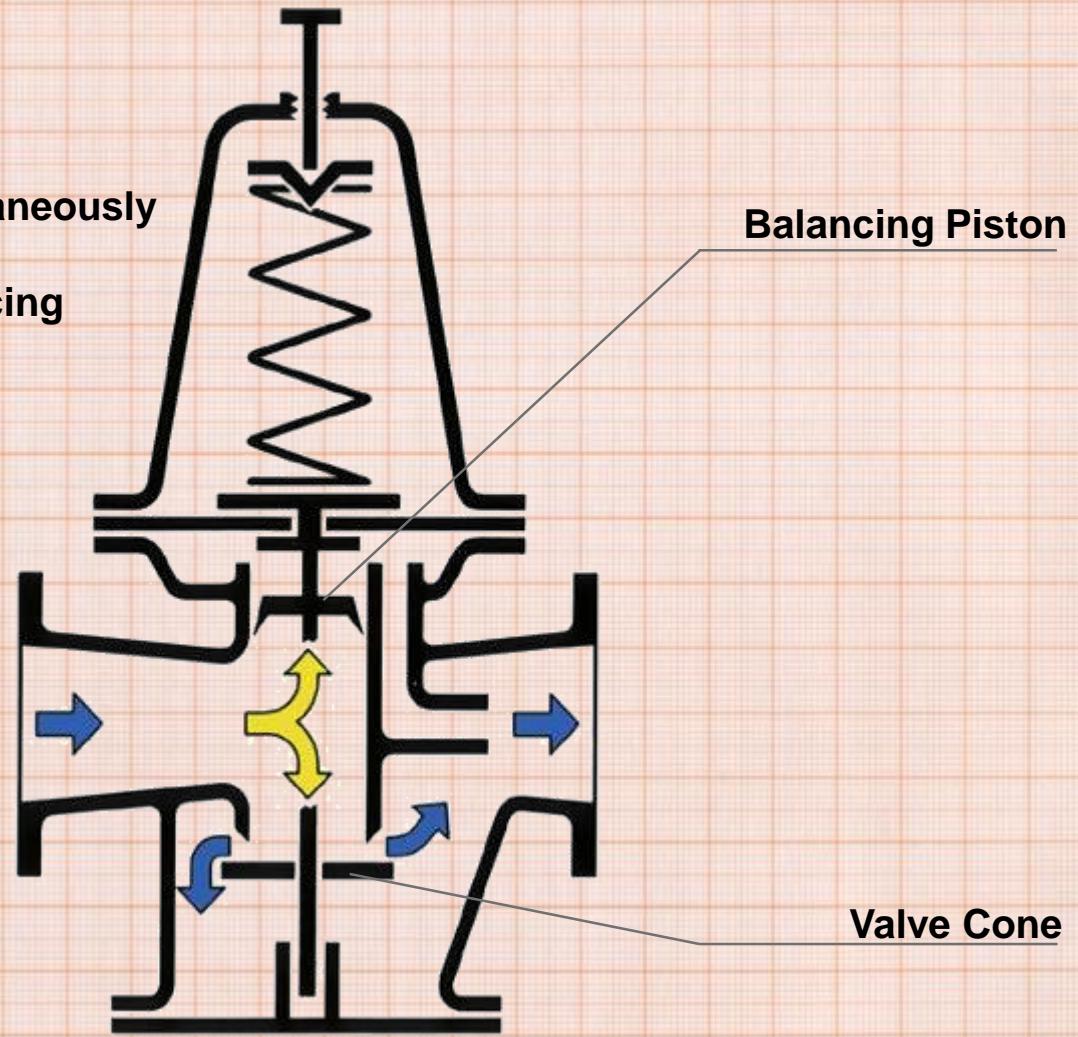
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Operating principle D06F (D04FM)
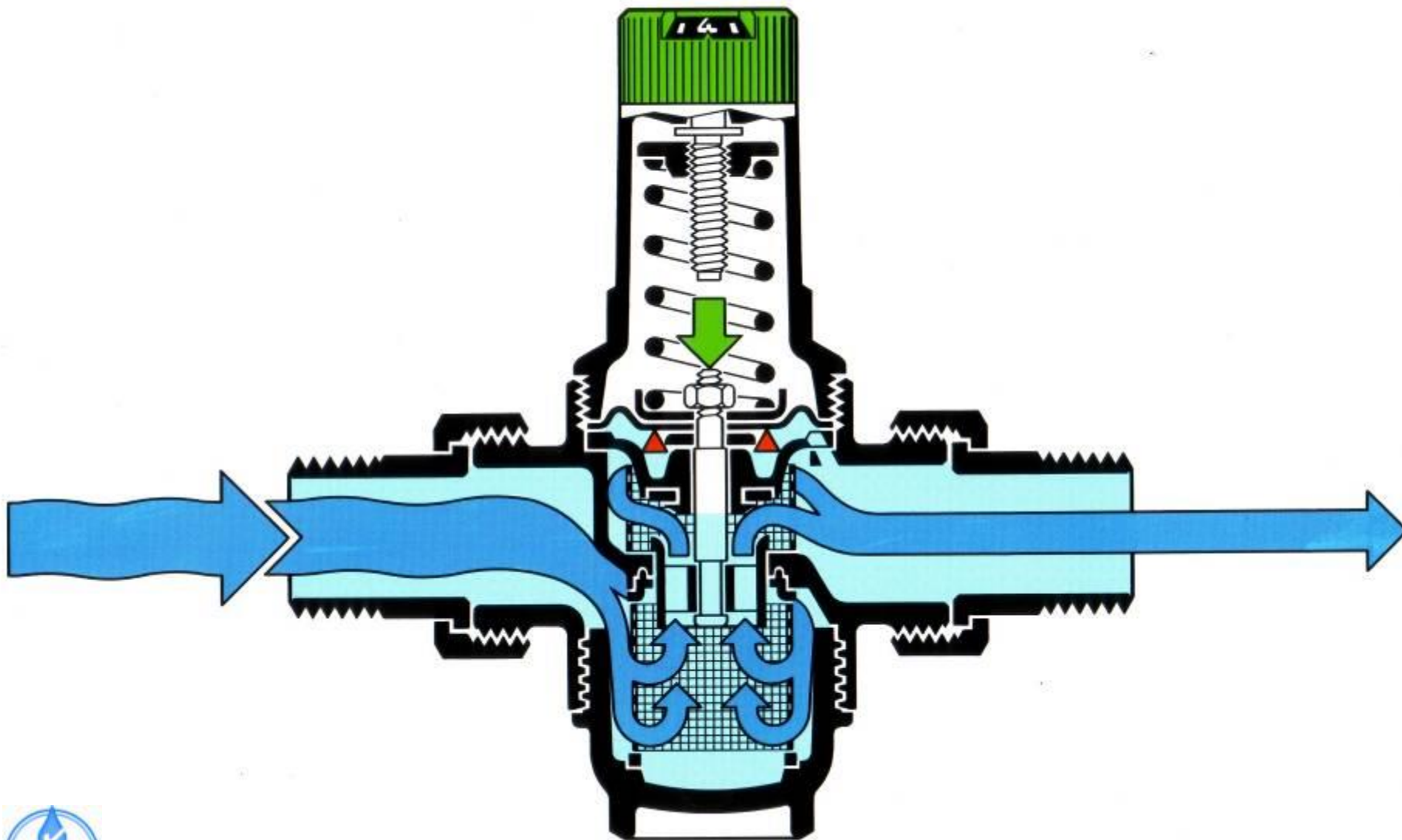
Operating principle D06F/D04FM

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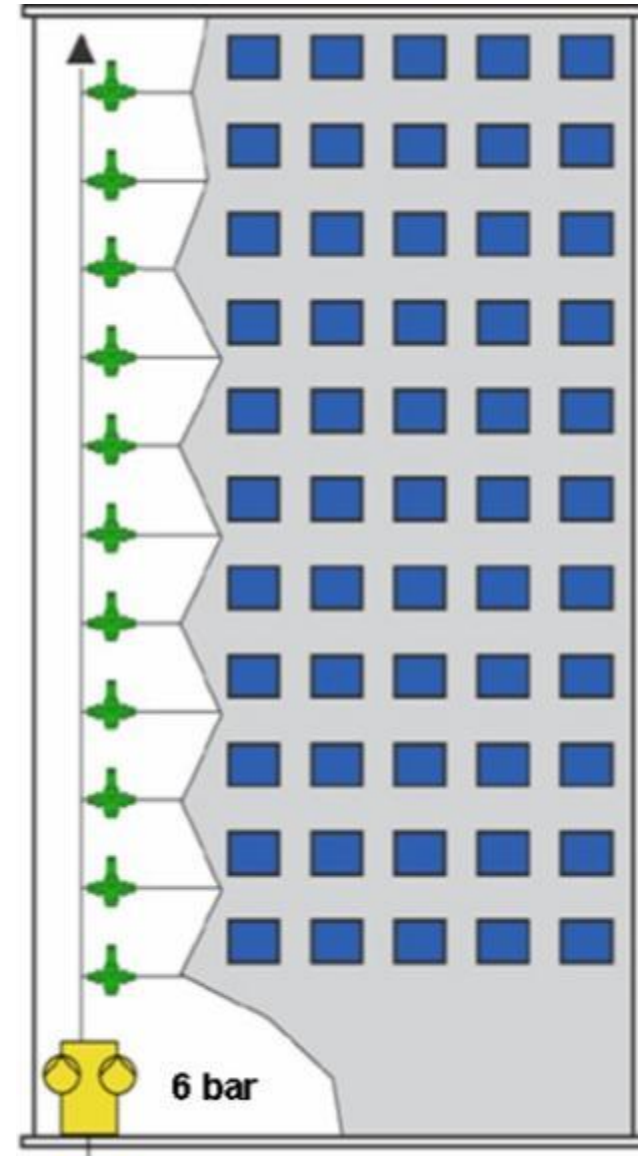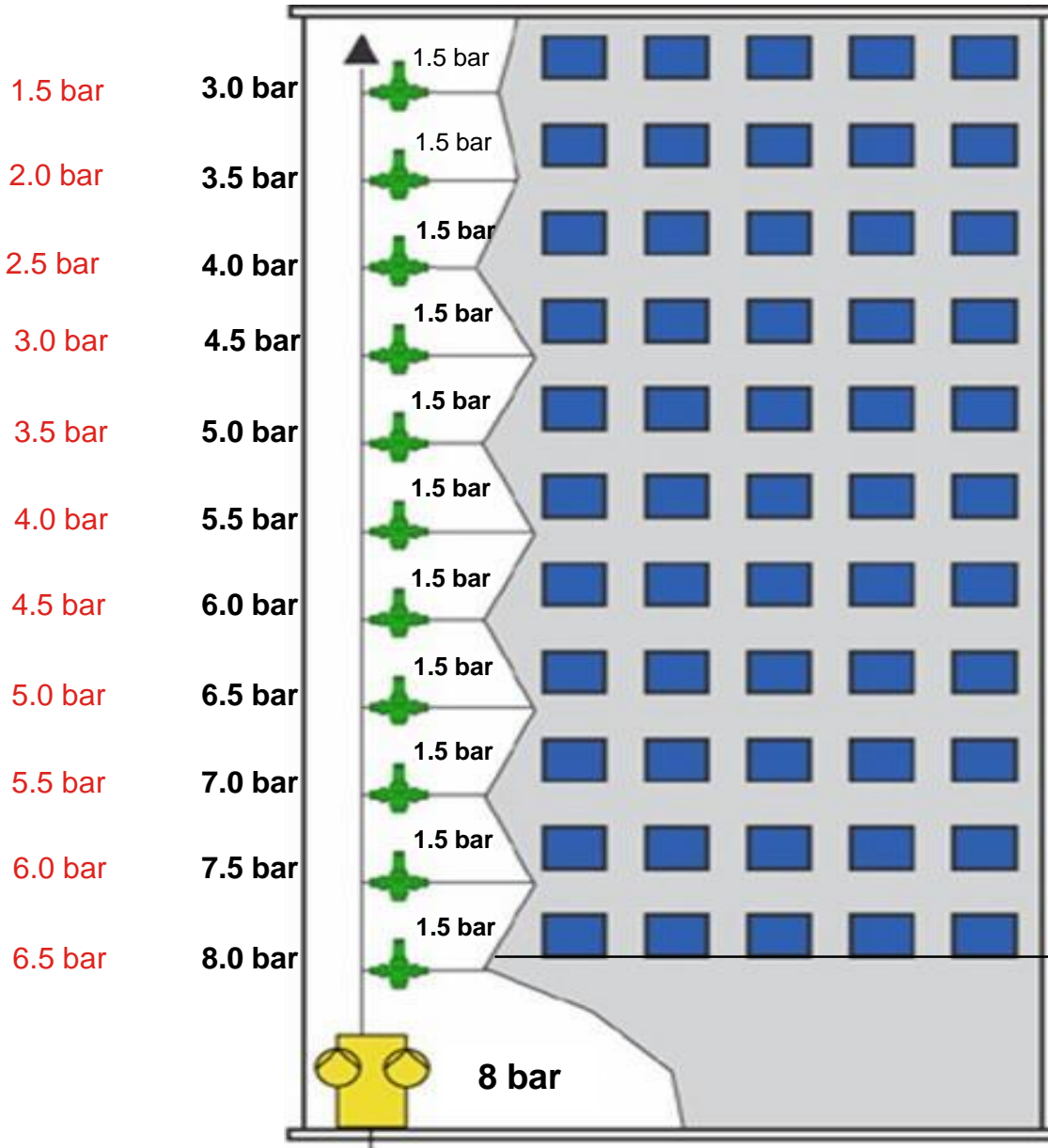# Pressure reduction in tall building installation

6 bar

Main pipes PRV vs. each floor PRV system

- **stable water pressure on each floor**

- **less flow noise in pipe system**

- **small size for space saving**

- **isolation valves in small dimensions**

- **easy for maintenance on each flat**

- **no water harmer, protecting the installation**

6 bar

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each floor PRV system

6 bar = 60m static height

1.5 bar	3.0 bar	1.5 bar
2.0 bar	3.5 bar	1.5 bar
2.5 bar	4.0 bar	1.5 bar
3.0 bar	4.5 bar	1.5 bar
3.5 bar	5.0 bar	1.5 bar
4.0 bar	5.5 bar	1.5 bar
4.5 bar	6.0 bar	1.5 bar
5.0 bar	6.5 bar	1.5 bar
5.5 bar	7.0 bar	1.5 bar
6.0 bar	7.5 bar	1.5 bar
6.5 bar	8.0 bar	1.5 bar

8 bar

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Pressure reducing valves

## Sizing, selection and installation requirements

Pressure reducing valves - sizing

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**Sizing of direct operated pressure reducing valves
medium water - for household applications**

- Use our grid table in the technical catalogue
- To avoid flow noise normal flow velocity range between one and two meters per second - shaded in dark grey
- It is normal to assume a flow velocity of 1.5 meters per second, what leaves adequate reserves for subsequent higher loading
- to avoid cavitations prv are always selected according to the flow
- For commercial or industrial applications a higher flow velocity can be calculated

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Pressure reducing valves - sizing

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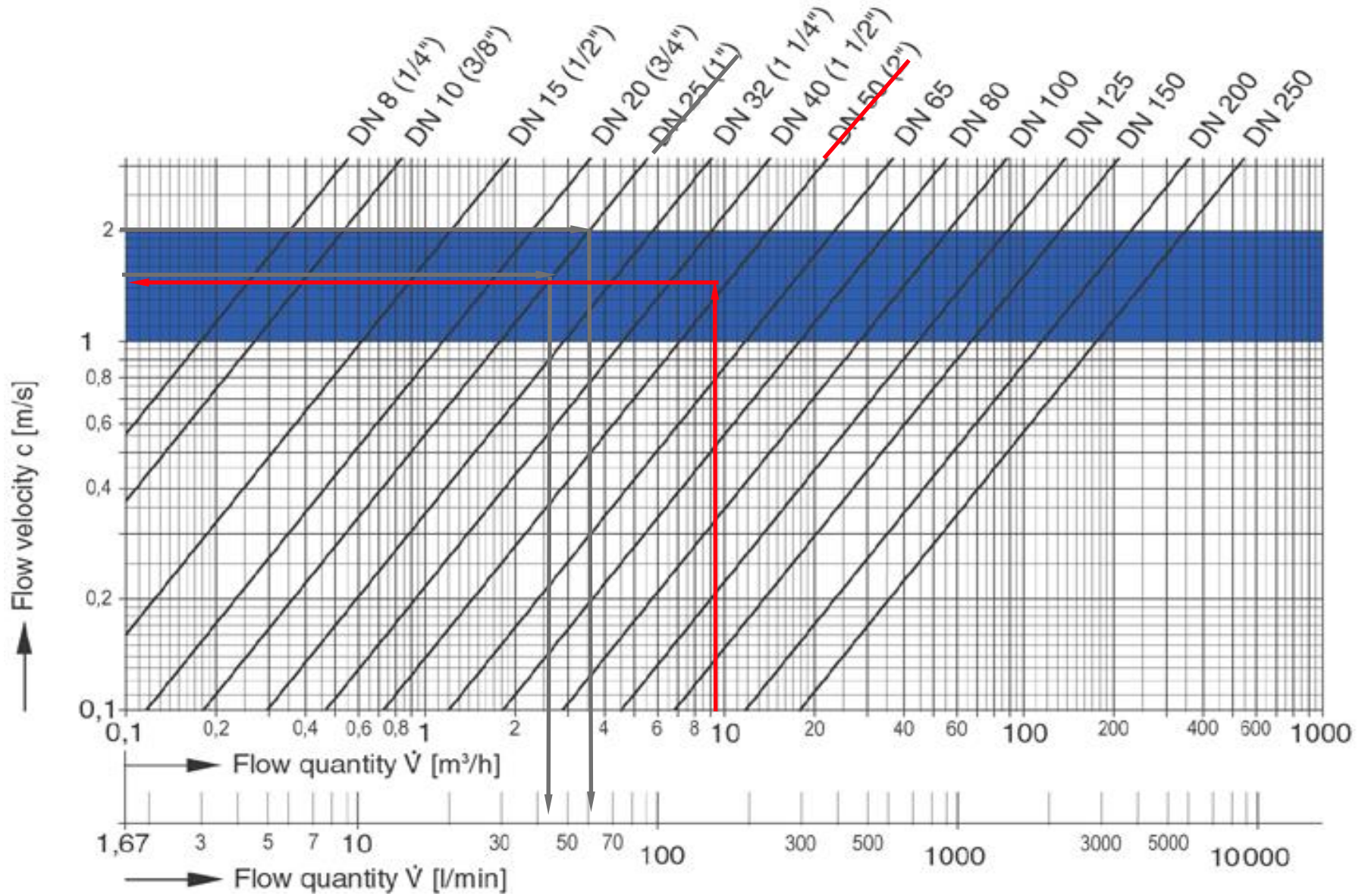
Cavitation at Pressure Reducing Valves and Pressure Regulators

- Too large differential pressure and a low downstream pressure may result in damage to the valve by cavitation.
- To avoid it, refer to the cavitation curve.
- If necessary take the differential pressure in two or more stages by connecting two or more prv`s in tandem.

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Cavitation at PRV and Pressure Regulators