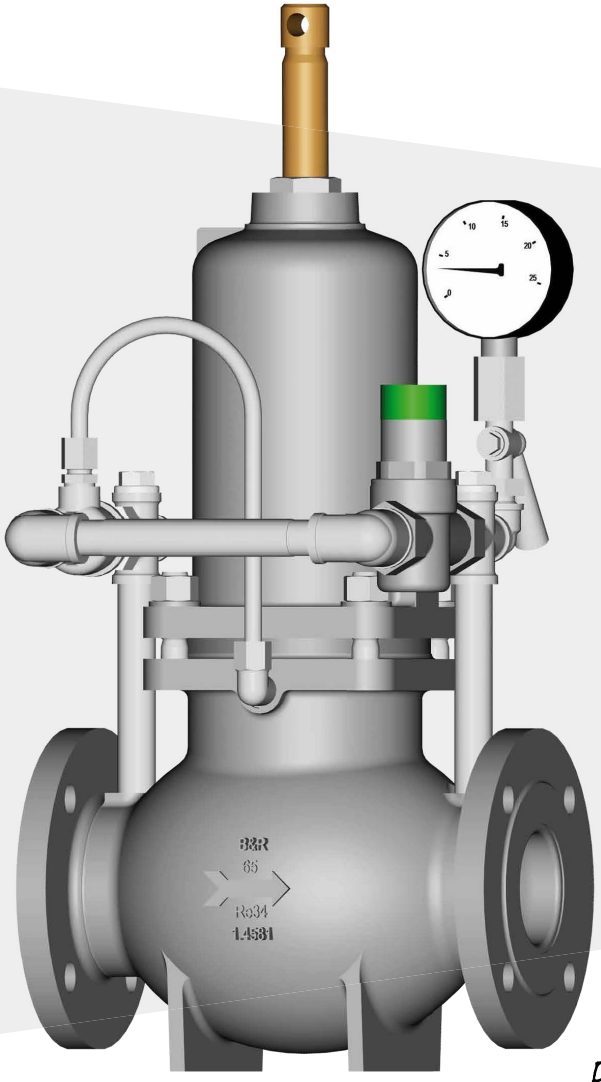
IMI BOPP & REUTHER

Re 34



Engineering
GREAT Solutions

Pressure control valve for water with spring loading and balance pistons

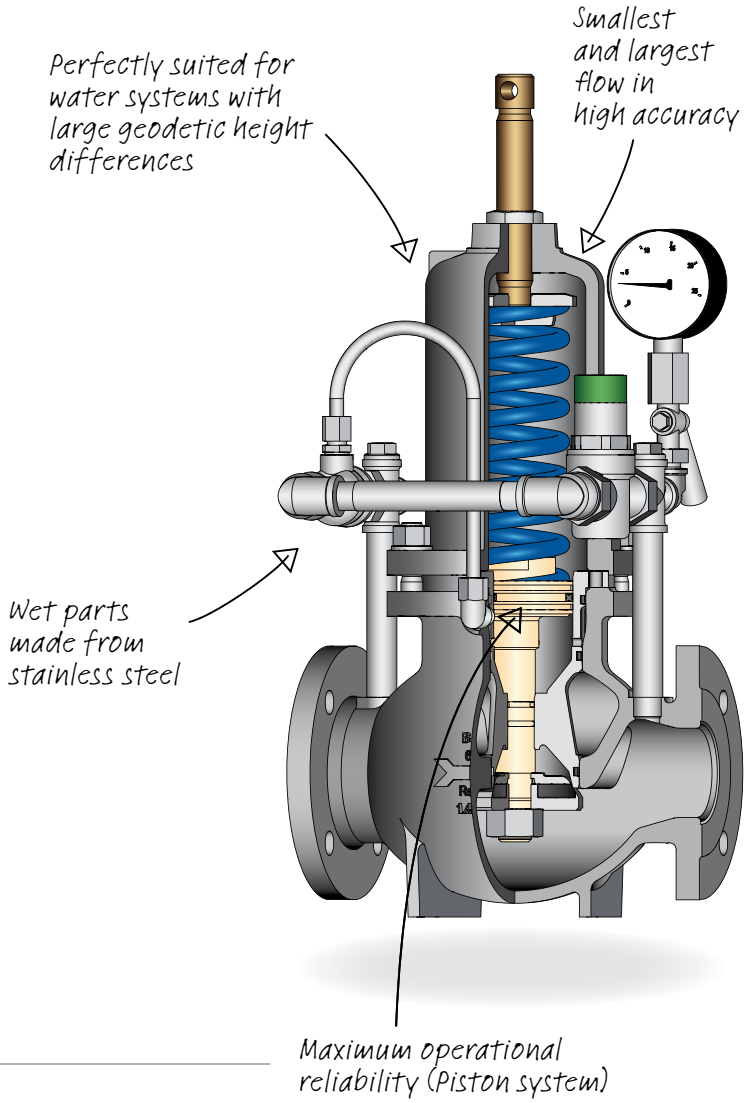
IMI Critical Engineering

Re 34

Properties

After decades of continuous development, the IMI Bopp & Reuther pressure control valves in the Re 34 series are among the most robust valves in this area. They are known for their smooth control behaviour and their long life cycles, even under demanding conditions. With these valves, the inlet pressure is balanced by a proven and tested piston system, in which the seals can be quickly and easily replaced. The outlet pressure is largely independent of the flow rate and almost entirely independent of the inlet pressure.

Thanks to their high continuous output, smaller sizes are frequently possible, which leads to cost savings in the pipeline network.



- Constant low pressure is maintained even in the event of high output and a small difference between high and low pressure.
- Main valve with throttle cone, counter pistons and spring loading.
- The valve insert can be removed as a complete module.
- Not much space is required for removal
- All seals can be replaced without removing the housing from the pipe.
- Control in the parallel connection pipe, consisting of: Venturi nozzle, control valve, low-pressure manometer with manometer valve.
- Arrangement of the parallel connection pipe with the direction of flow to the right. (On request: left arrangement)

Inlet sizes
DN 65 to DN 400

Pressure stages
PN 10 to PN 40

Outlet pressure range
0.8 bar up to 15 bar possible

Applications

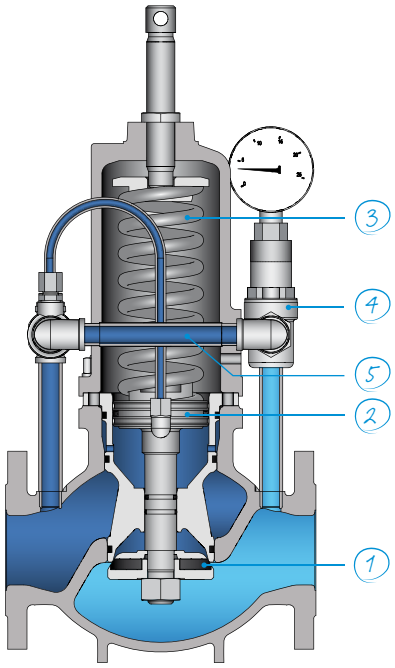
- For cold water, drinking water, fluctuating flow and largest volume mass flow

Re 34

Mode of operation

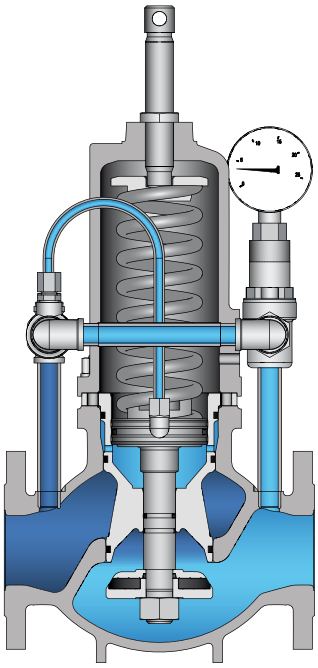
No flow

In the initial condition, the outlet pressure is equal to the target pressure. There is no use. The active surface ABOVE the seat (1) and BELOW the piston (2) is the same. The inlet pressure (dark blue) is thus balanced. The outlet pressure UNDER the seat is compensated for by the spring (3).

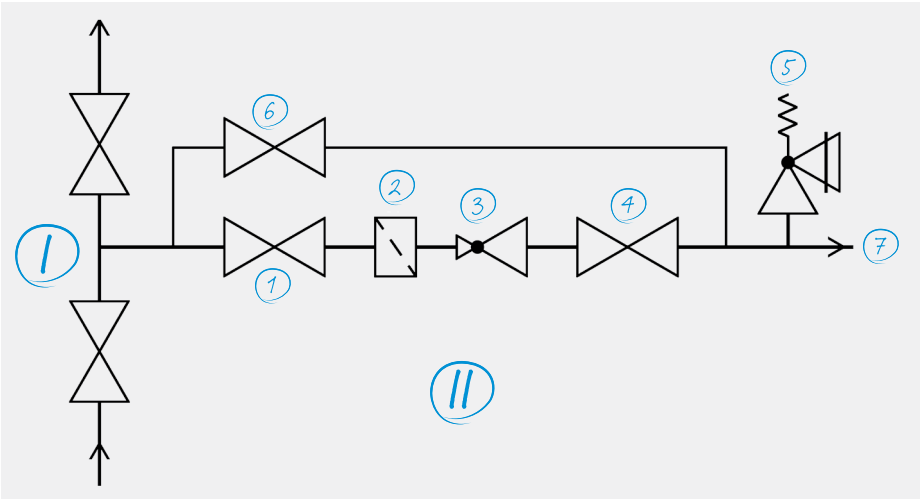


Flow

If the outlet pressure falls to below the target value (displayed in slightly lighter blue), the pilot (4) opens the bypass (5) pipe and pressure medium flows through the bypass from the inlet to the outlet side. The flowing medium in the nozzle generates lower pressure UNDER the piston (2) and the inlet pressure is no longer balanced. The inlet pressure pushes the seat (1) down and opens the main valve. Pressure medium flows over the seat from the inlet pressure to the outlet pressure side. Once the outlet pressure reaches the target value, the pilot (4) closes the bypass (5). This causes the pressure UNDER the piston to increase to the same level as the inlet pressure ABOVE the seat; the inlet pressure is balanced. The outlet pressure UNDER the seat closes the main valve.



Pressure control valve: Example



Part	Name
1	Gate valve
2	Dirt trap
3	Pressure reducing valve of type Re 34
4	Gate valve
5	Safety valve of type Si 2321
6	Gate valve
7	Local network pipeline

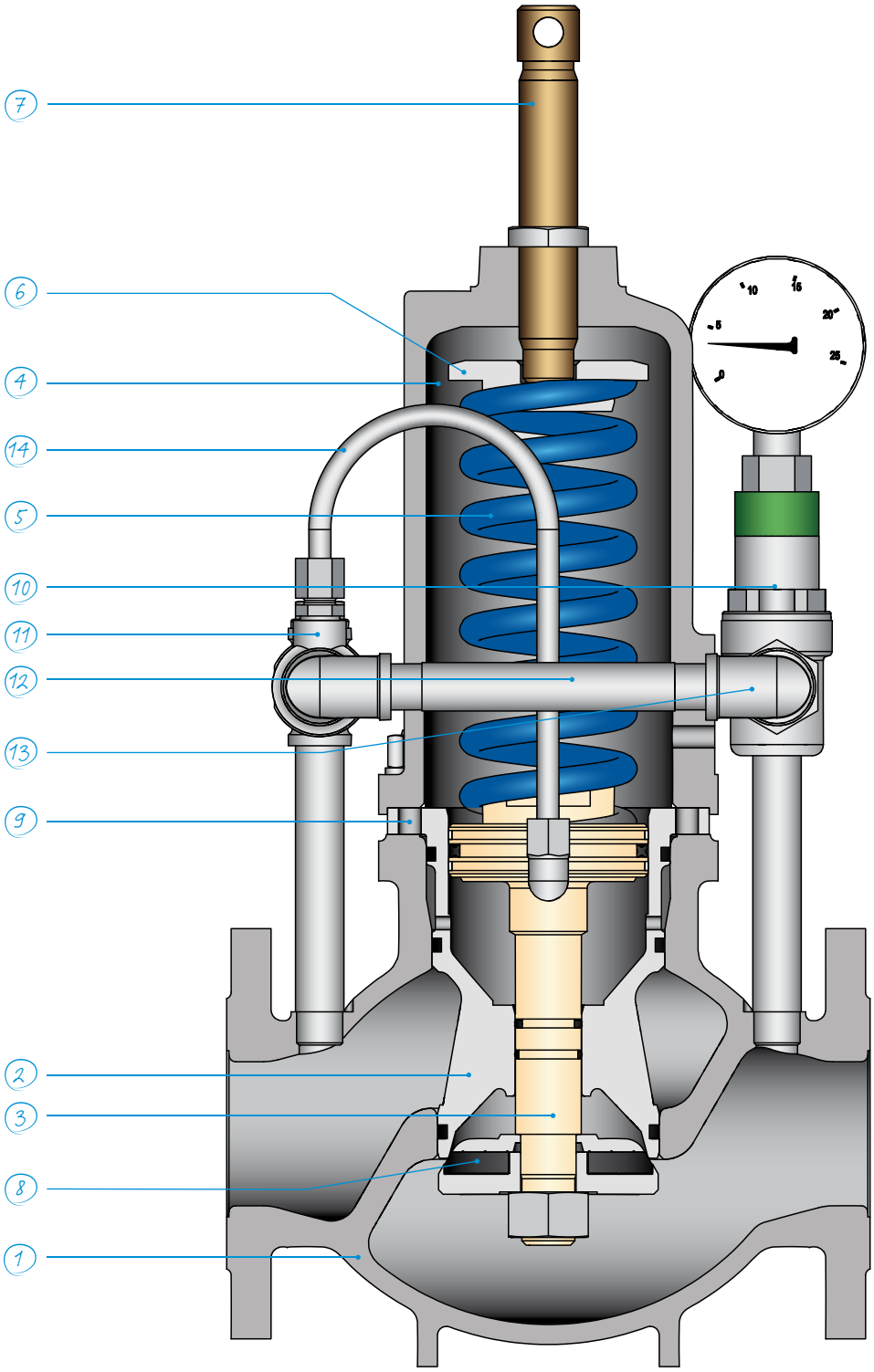
We recommend installing removable parts at suitable locations.

Example of a branch

I Long-distance pipeline
II Branch

Re 34

Material code



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Material code

Part	Name	Spare part	Material
1	Body		GX5CrNiMo19-11-2/1.4408
2	Insert holder		GX5CrNiMoNb19-11-2/1.4581
3	Piston rod	*2	GX5CrNiMoNb19-11-2/1. 581
4	Bonnet		EN-GJS-400-15/0.7040
5	Compression spring	*2	51CrV4/1.2241
6	Spring washer		S235JRH/1.0039
7	Pressure screw		X6CrNiMoTi17-12-2/1.4571
8	Seals	*1	NBR
9	Bolts/nuts		A4
10	Control valve		Stainless steel/brass
11	Venturi nozzle	*2	Stainless steel/brass
12	Connecting pipe		X5CrNi18-10/1.4301
13	Fittings		A4-70
14	Control line	*2	PA

Control line:
*1 At each maintenance
*2 After several years of operation

IMI Bopp & Reuther reserve the right to make technical changes or use higher quality materials without prior notice. The material design can be tailored to customer specifications at any time upon request.

Setting and installation

Main and control valves are preset at the factory unless special agreements are made.

Instructions for setting, installation and operation can be found in the operation and maintenance manual (0-37-11000).

The pressure test corresponds to the technical delivery conditions for large and steam valves in accordance with DIN 3230.

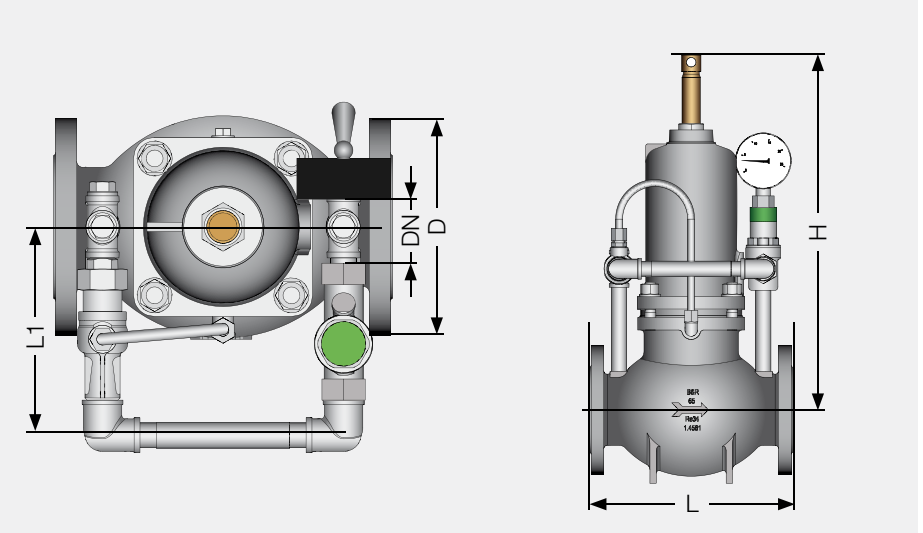
Setting range of the springs

Valve	Nominal diameters	Maximum inlet pressure	Outlet pressure			
			I	II	III	IV
Re 3421	DN 65 to DN 400	16 bar	0.8 - 2 bar	2 - 5 bar	5 - 10 bar	10 - 15 bar
Re 3422	DN 65 to DN 400	25 bar	0.8 - 2 bar	2 - 5 bar	5 - 10 bar	10 - 15 bar
Re 3423	DN 65 to DN 150	40 bar	0.8 - 2 bar	2 - 5 bar	5 - 10 bar	10 - 15 bar
Factory presetting			0.8 bar	2 bar	5 bar	10 bar

Re 34

Sizes, pressure ranges and dimensions

	Re 3430 — PN10								
Size DN	65	80	100	125	150	200	250	300	400
Length L [mm]	290	310	350	400	480	600	730	850	1100
Projection L1 [mm]	172	172	172	172	210	260	290	310	310
Height H_{max} [mm]	570	570	685	685	915	1015	1220	1275	1275
Weight M [kg]	44	47	78	86	155	235	390	510	650
	Re 3431 — PN16								
Size DN	65	80	100	125	150	200	250	300	400
Length L [mm]	290	310	350	400	480	600	730	850	1100
Projection L1 [mm]	172	172	172	172	210	260	290	310	310
Height H_{max} [mm]	570	570	685	685	915	1015	1220	1275	1275
Weight M [kg]	44	47	78	86	155	235	390	510	650
	Re 3432 — PN25								
Size DN	65	80	100	125	150	200	250	300	400
Length L [mm]	290	310	350	400	480	600	730	850	1100
Projection L1 [mm]	172	172	172	172	210	260	290	310	310
Height H_{max} [mm]	570	570	685	685	915	1015	1220	1275	1275
Weight M [kg]	48	53	86	100	170	260	430	530	685
	Re 3433 — PN40								
Size DN	65	80	100	125	150				
Length L [mm]	290	310	350	400	480				
Projection L1 [mm]	172	172	172	172	210				
Height H_{max} [mm]	570	570	685	685	915				
Weight M [kg]	48	53	86	100	170				



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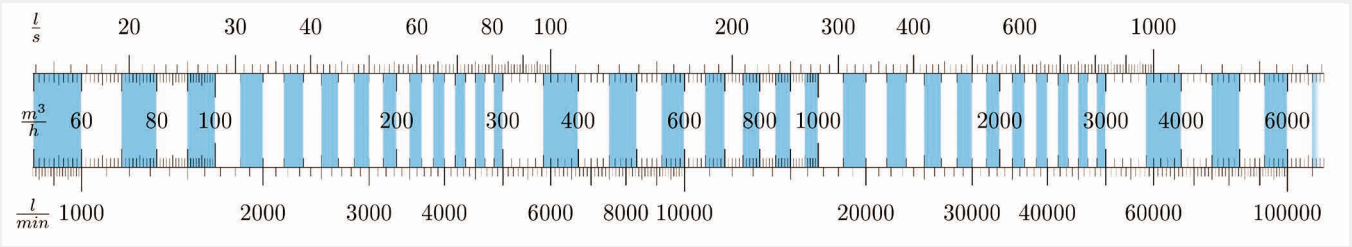
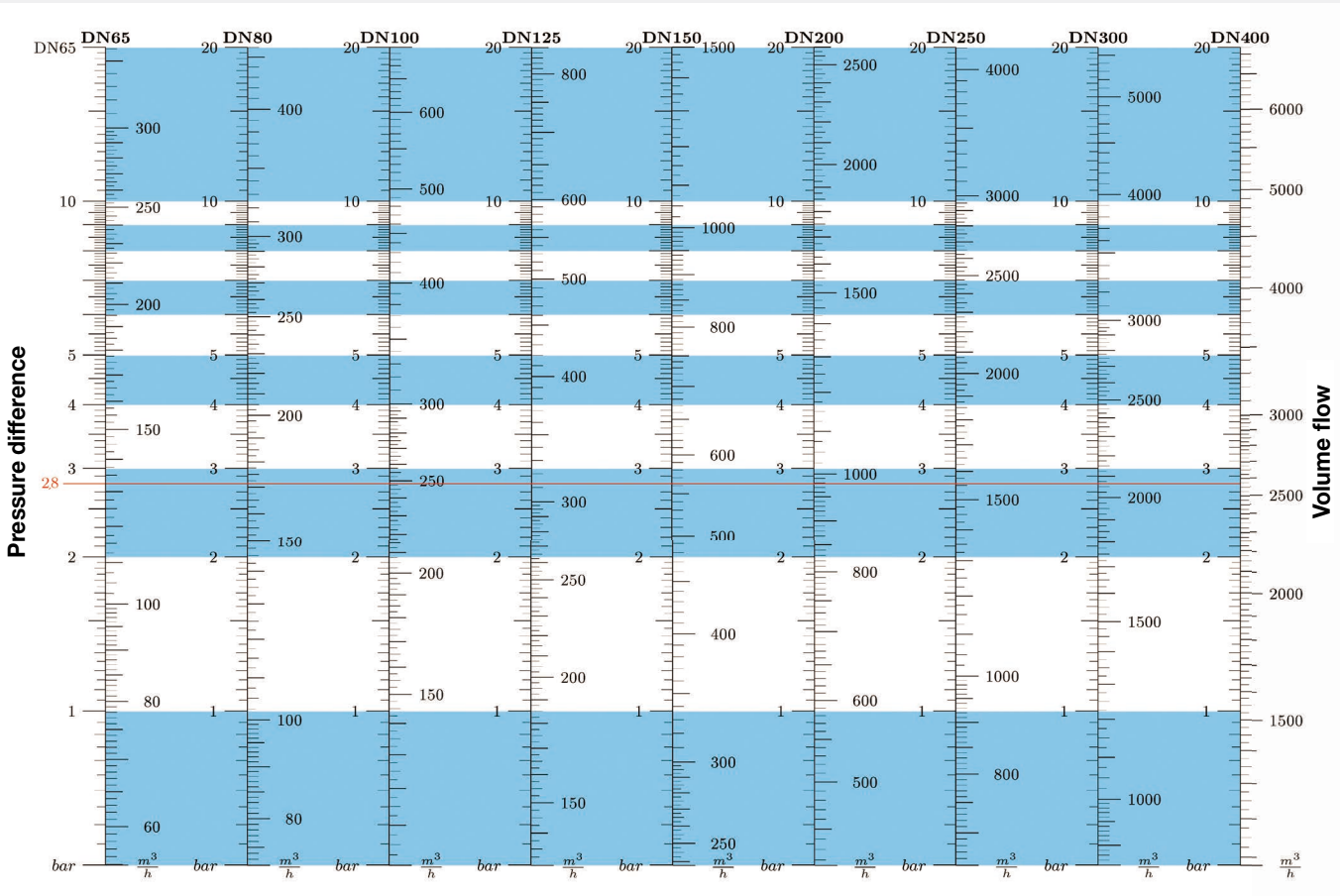
Unit conversion



Layout diagram



Example	
The upper scale is used to convert units l/s and l/min to m^3/h. How much goes through a valve at a pressure difference of 2.8 bar?	The red line is 2.8 bar

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