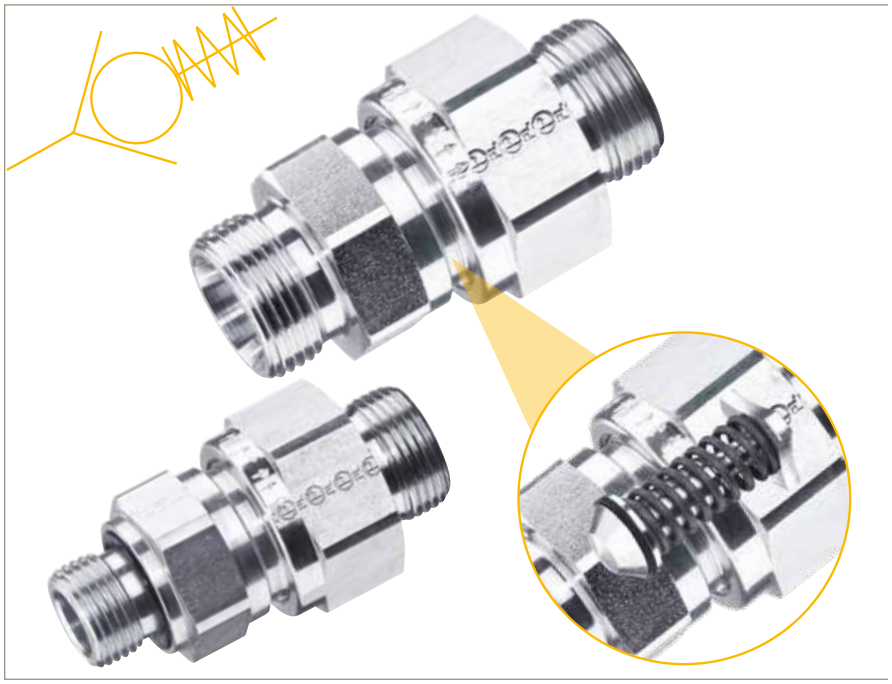
Non return and special valves

Flexible use and high reliability

Non return valves from Parker High Pressure Connectors Europe (HPCE) have proven their worth millions of times over and offer a wide range of applications for in-line and block installation.

The HPCE portfolio includes valves (RHD, RHV, RHZ) with DIN 24° connection as well as the SAE variants with Triple-Lok® and O-Lok® in a variety of male threads and opening pressures. The integrated spring-loaded soft seal at the cone ensures excellent sealing and reliable opening and closing characteristics.

The design with cone and passage disc is designed for optimum flow with low pressure drops. The stroke limitation and shock absorption on the inside ensures a very low-wear and low-noise application.



Technical Data:

- Available in Cr(VI)-free steel and stainless steel
- Available in tube sizes from OD 06 to 42 / Nominal size DN = 3.5 to 29 mm
- Male thread according to UNF (ISO 11926) and BSPP/ED (ISO 1179 or 9974)
- Available opening pressures: 0.2; 0.5; 1; 2; 3; 4; 5 and 6 bar
- Max. Flow velocity 8m/s
- Max. Operating pressure 420 bar

Applications:

- Prevent the medium from flowing back after the pump has been switched off
- Preload valve to ensure a minimum pressure for the connected part
- Overflow valve in low pressure level (By-pass)
- By-pass valve for filter change
- Switching off a flow direction

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Overview

RHD - Non return valve with DIN 24° cone end

RHV / RHZ - Non return valves with DIN 24° cone end and male thread

RHDI - Valve with female BSPP thread

RVP - Valve cartridge for direct mounting in a valve block

ITL - Internal part of non return valve

SAE Valves O-Lok® and Triple-Lok®

WV - Alternating valve: These valves permit the passage of flowfrom either inlet 1 or 2 to the outlet port whilst shutting of the inlet port not in use. The shutting off, of an inlet is achieved by a floating ball bearing which moves by the pressure of the flow.

ELA/ELAE - Air-bleed valves
Hydraulic systems can effectively be bled with ELA air-bleed valves. Cost saving, as non-productive de-aeration time is saved.

Pressure drop charts for non-return valves

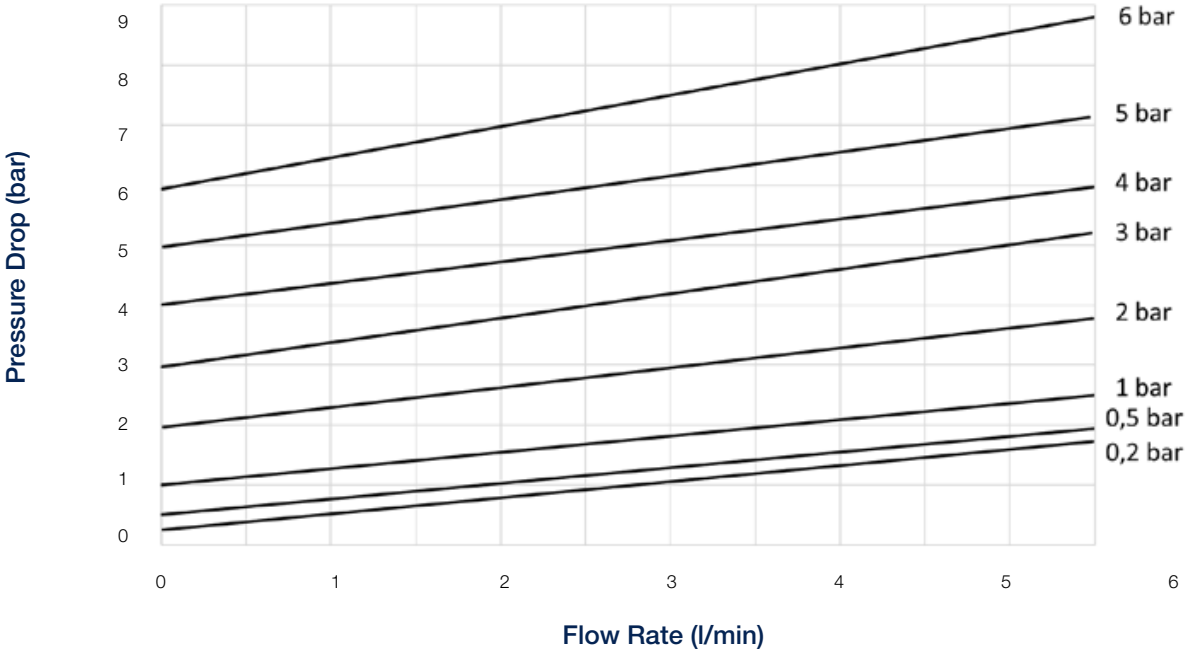
One of the most important figures which has to be taken into consideration in hydraulic applications is pressure loss. In check valves the pressure loss is the difference between inlet and outlet pressures and represents loss of energy – and therefore should be kept to a minimum. Pressure loss is mainly caused by the frictional resistance of the walls, changes in the magnitude or direction of the fluid velocity or the valve's spring itself. Possible theoretical analysis of pressure drop may not be exact because of the interrelation of factors such as fluid density, velocity, flow area and frictional coefficients. Pressure drop curves for 1 bar cracking pressure are available in Parker catalogue CAT-4100-11 chapter P.

As part of continuous improvement process and providing excellent service to our customers, Parker has tested all sizes and standard opening pressures to determine the maximum pressure drop. The following pressure drop charts were derived from actual test data and may be used as a guide to determine pressure drops at various flow rates through fittings for fluid. In all diagrams the peak value of the flow rate is shown in l/min. relating to the maximum permissible flow velocity of 8 m/sec.

Test parameters:

- Medium: hydraulic oil type HM
- Viscosity: 46mm²/s with 40°C
- Test temperature: 44°C
- Density 877kg/m³

Pressure Drop Tube O.D. 06L/06+08S; size 4; female BSPP 1/8, 1/4; RVP 13; DN 3.5



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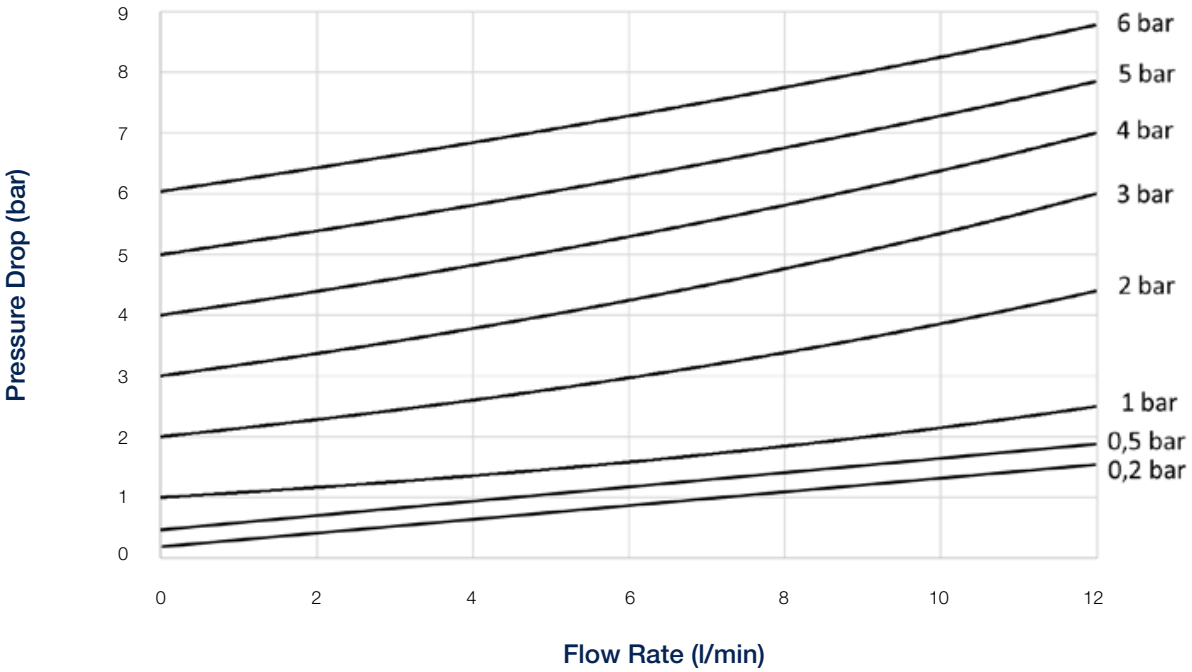
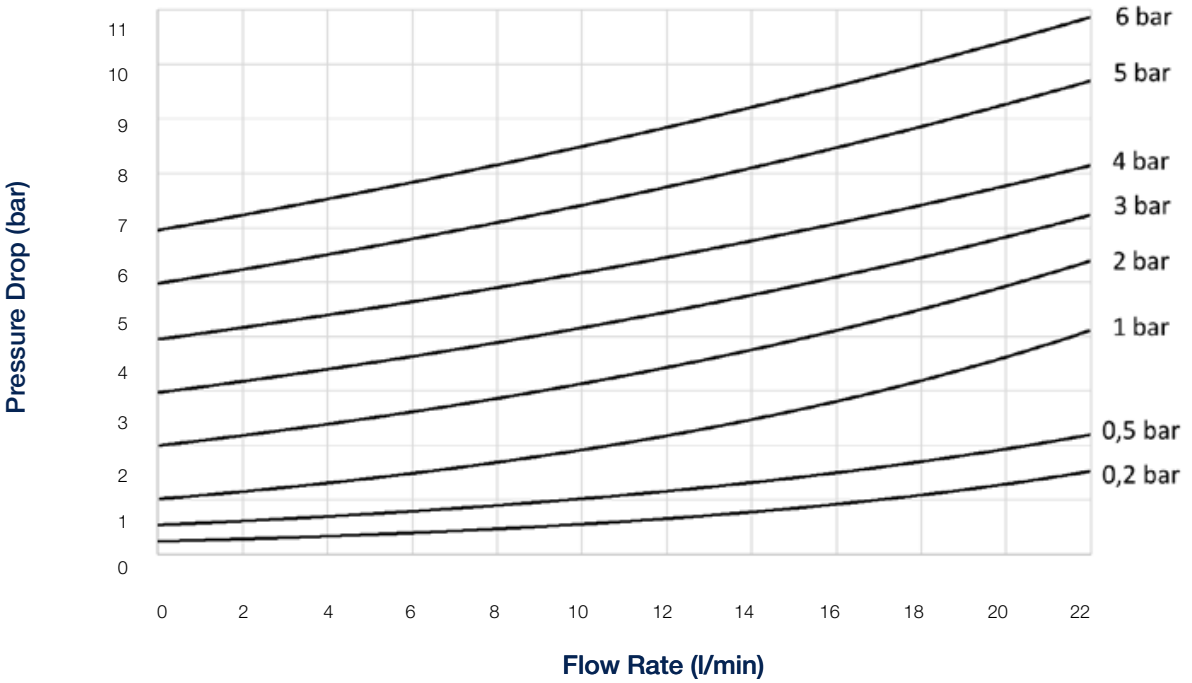
Pressure Drop Tube O.D. 08L/10S; size 5; RVP 16; DN 5.5



Pressure Drop Tube O.D. 10L/12S; size 6; female BSPP 3/8; RVP 20; DN 7.5



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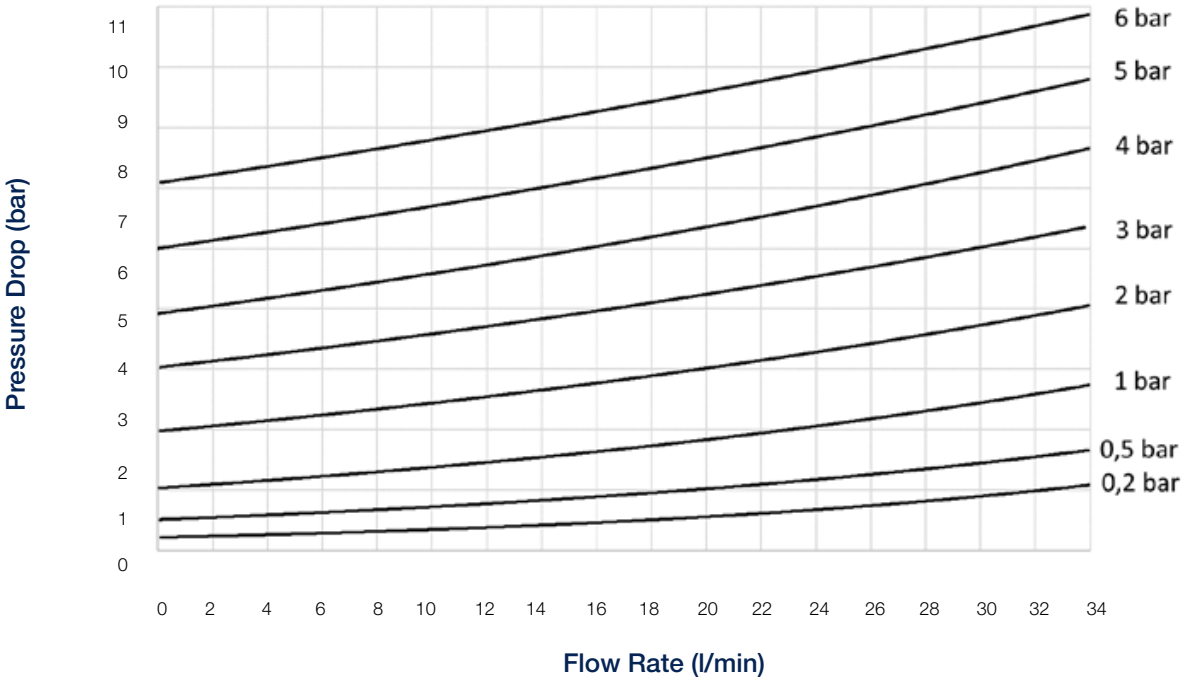
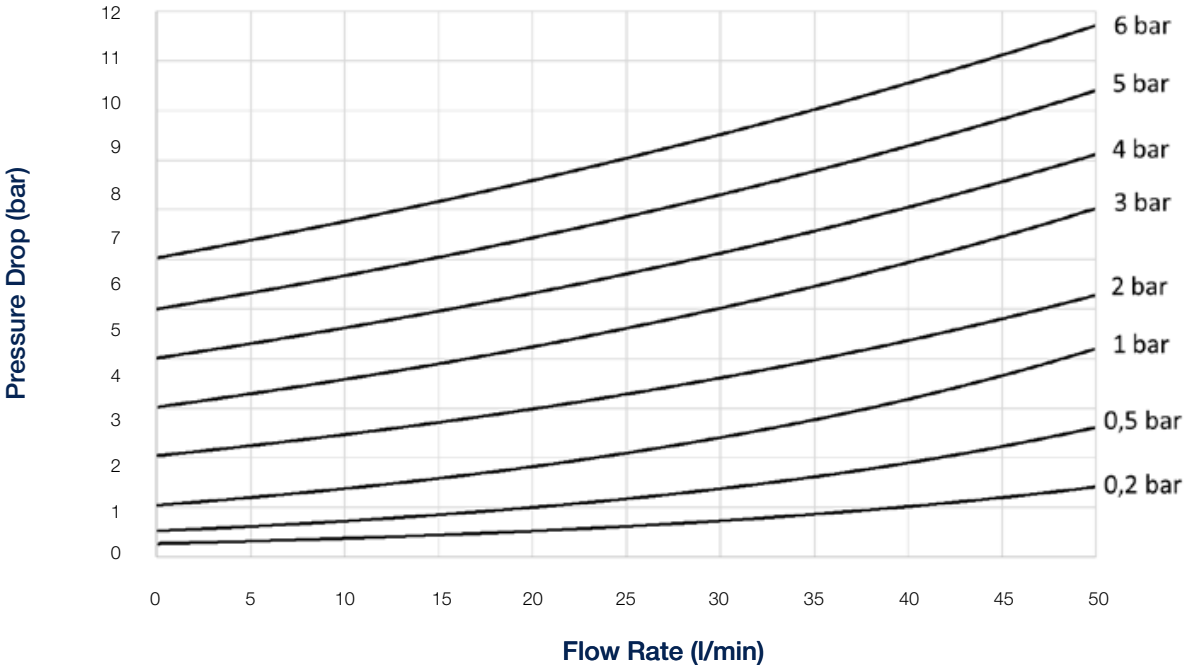
Pressure Drop Tube O.D. 12L/14S; size 8; RVP 24; DN 9.5



Pressure Drop Tube O.D. 15L/16S; size 10; female BSPP 1/2; RVP 27; DN 11.5



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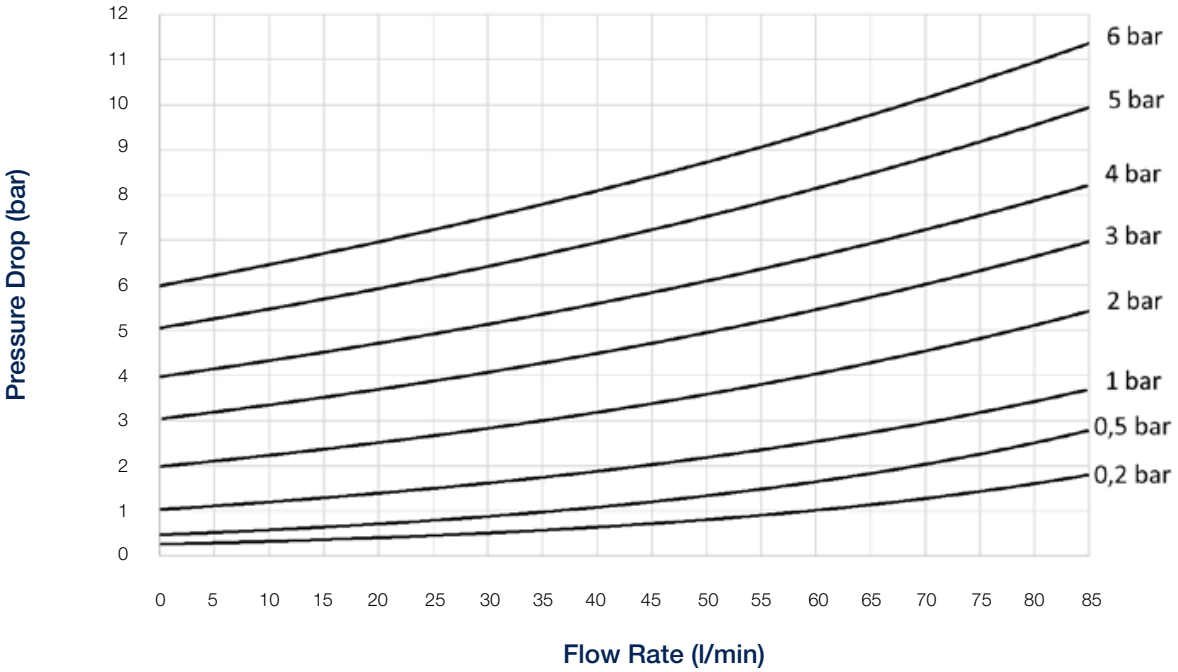
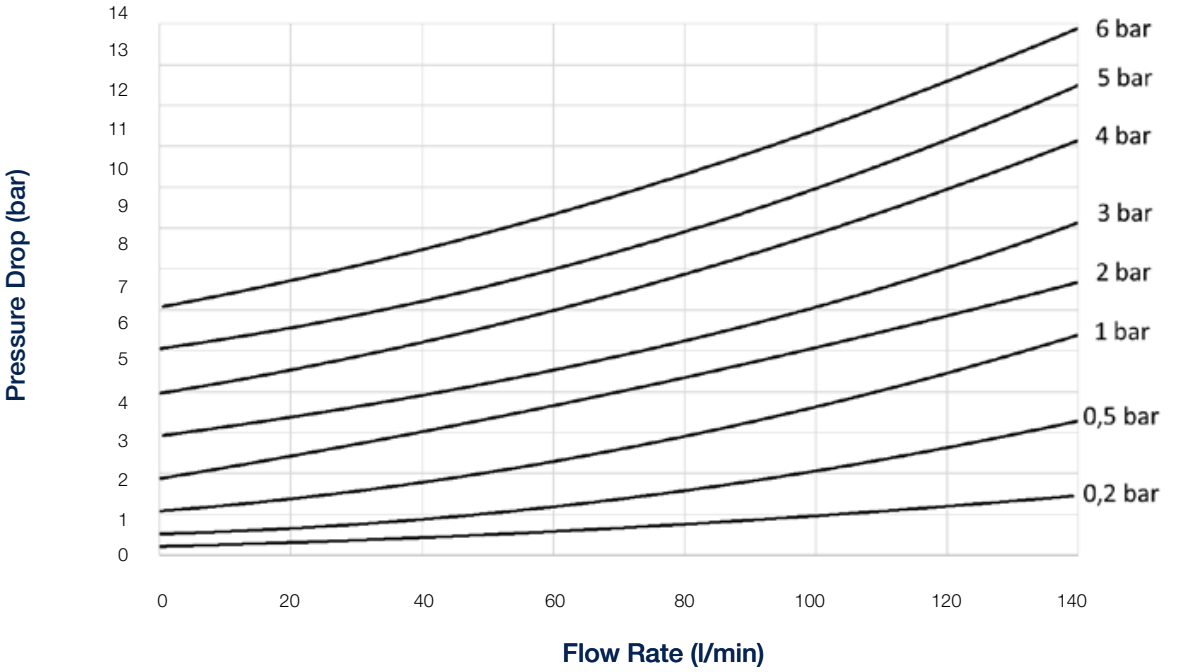
Pressure Drop Tube O.D. 18L/20S; size 12; female BSPP 3/4; RVP 35; DN 15.0



Pressure Drop Tube O.D. 22L/25S; size 16; female BSPP 1; RVP 40; DN 19



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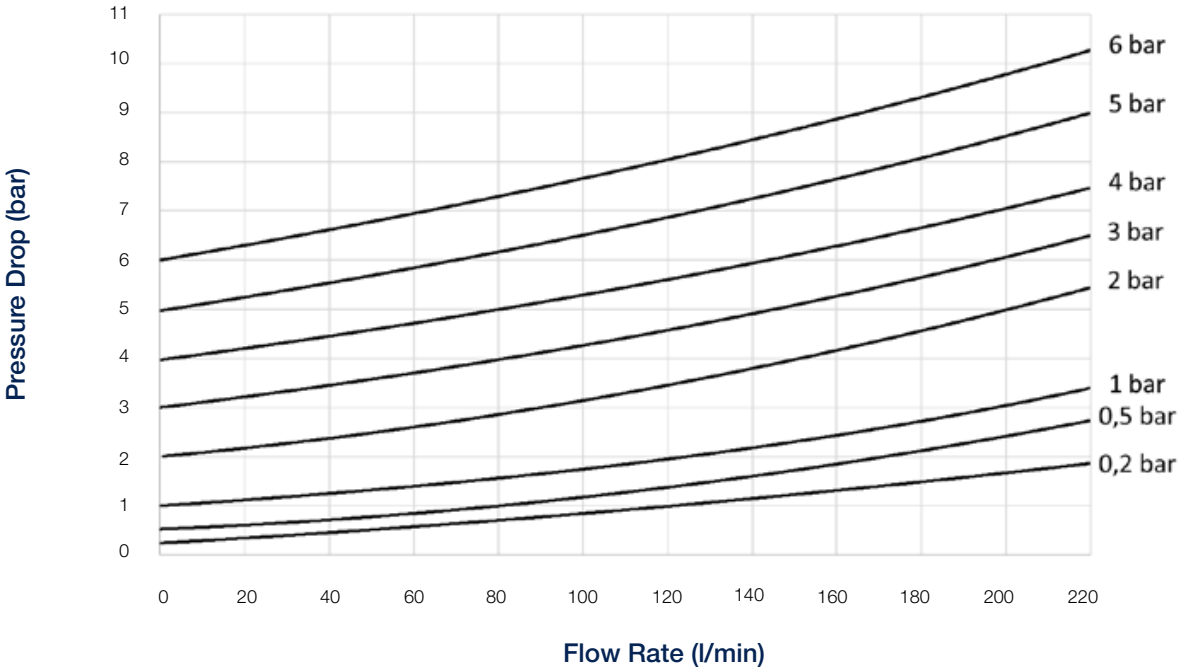
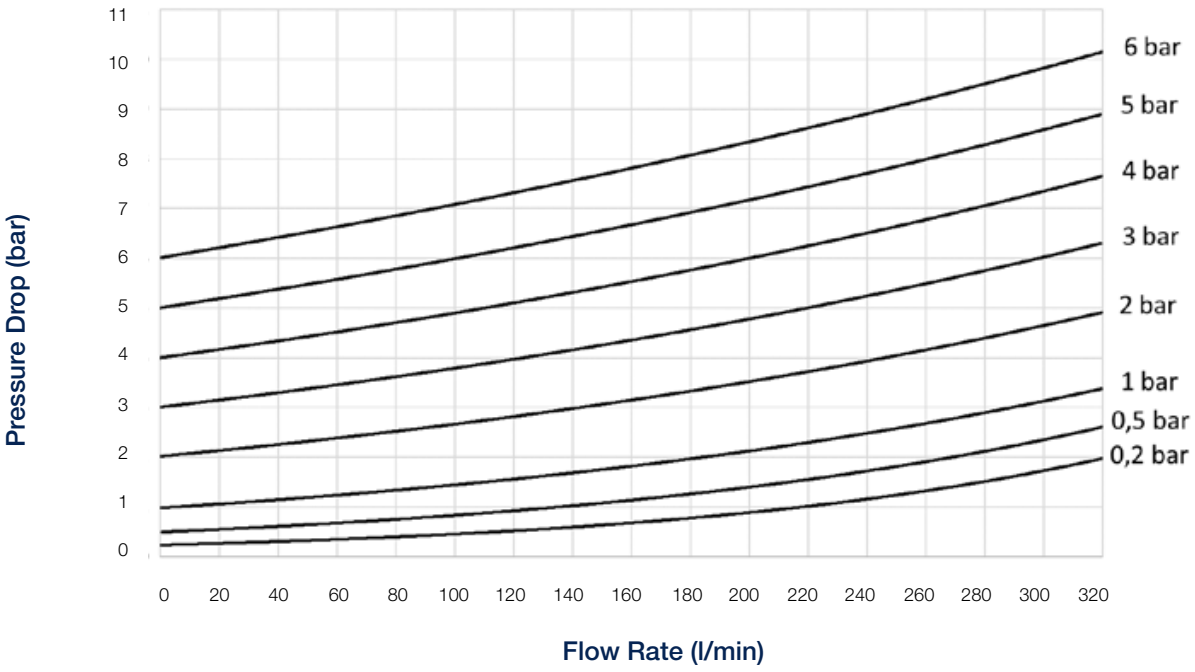
Pressure Drop Tube O.D. 28L/30S; size 20; female BSPP 11/4; RVP 47; DN 24



Pressure Drop Tube O.D. 35+42L/38S; size 24; female BSPP 11/2; RVP 55; DN 29



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