

Series SC600 Check Valve Pressure Drop – Liquid (Sizes 1/4" - 4")

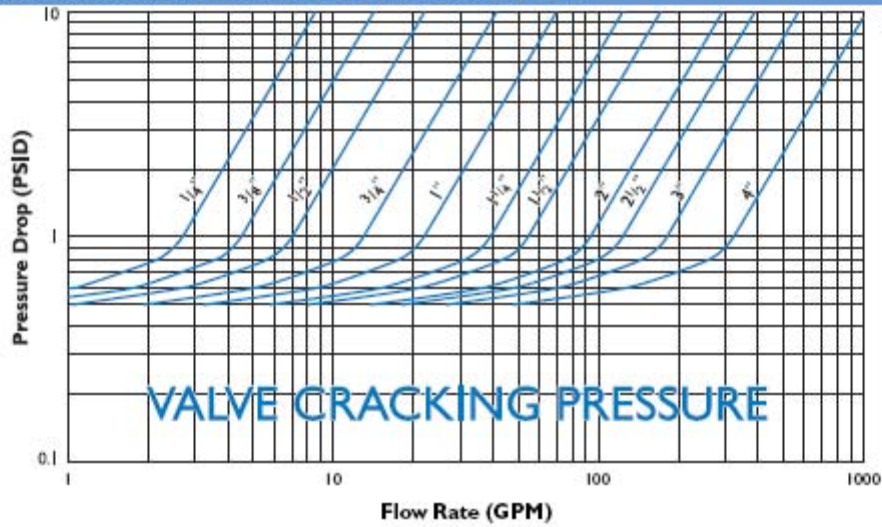


FIGURE 11

Wafer Silent Check Valve Pressure Drop – Liquids (Sizes 2" - 12")

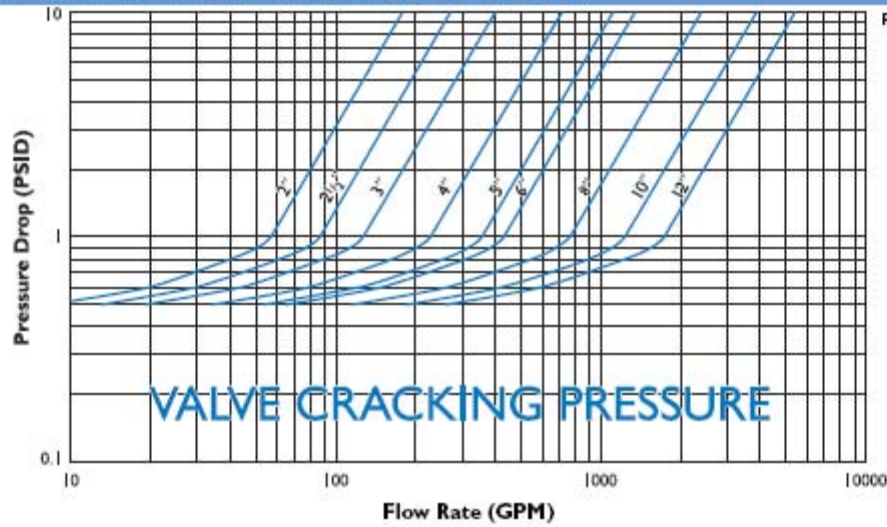


FIGURE 12

Flanged Silent Check Valve Pressure Drop – Liquids (Sizes 2" - 16")

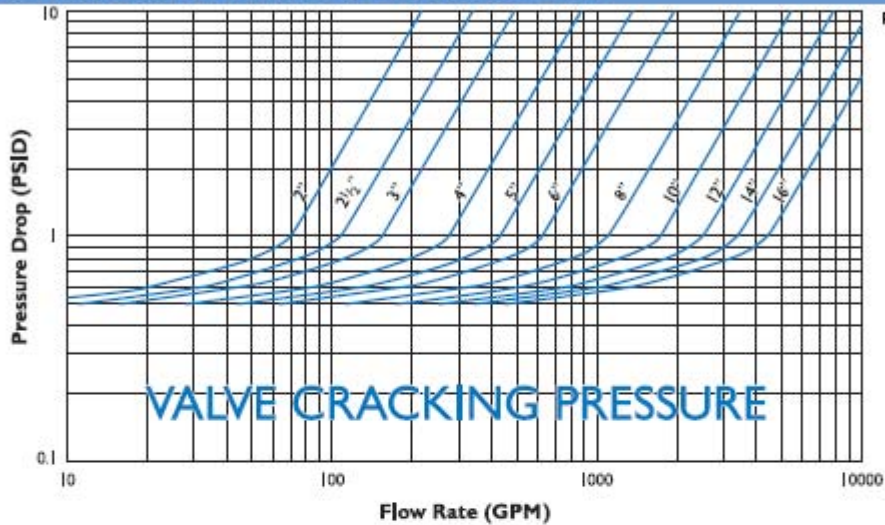


FIGURE 13

- Notes:
1. Pressure drop curves are based on water flow.
 2. Valve cracking pressure is equal to or less than 0.5 psid.
 3. Valve cracking pressure increases to between 0.75 and 1.25 psid when installed vertically with flow upwards.

Method of Calculating Flow

Liquid Flow

$$C_v = Q \sqrt{\frac{G}{\Delta P}} \quad Q = C_v \sqrt{\frac{\Delta P}{G}} \quad \Delta P = G \left(\frac{Q}{C_v}\right)^2$$

Gas Flow

$$C_v = \frac{Q}{963} \sqrt{\frac{GT}{\Delta P(P_1 + P_2)}} \quad Q = 963 C_v \sqrt{\frac{\Delta P(P_1 + P_2)}{GT}}$$

Saturated Vapour

$$C_v = \frac{W}{K} \sqrt{\frac{1}{\Delta P(P_1 + P_2)}} \quad W = C_v K \sqrt{\Delta P(P_1 + P_2)}$$

Superheated Vapour

$$C_v = \frac{W(1+0.0007T_{SH})}{K} \sqrt{\frac{1}{\Delta P(P_1 + P_2)}} \quad C_v = \frac{C_v K}{(1+0.0007T_{SH})} \sqrt{\Delta P(P_1 + P_2)}$$

Variables

C_v = Valve Coefficient
ΔP = (P₁ - P₂) Pressure Drop
P₁ = Inlet Pressure (PSIA)
P₂ = Outlet Pressure (PSIA)
G = Specific Gravity
Water = 1.0 at 60°F and 1 ATM
Air = 1.0 at 60°F and 1 ATM

Q = Flow
Liquid = USGPM
Gas = SCFH
T = Absolute Temperature (°F + 460)
T_{SH} = Superheat (°F)
 Total Temperature Minus Saturation Temperature
W = lbs. Per Hour (LB/H)
K = Constant For Vapours