

ANSI Class Seat Leakage Comparison

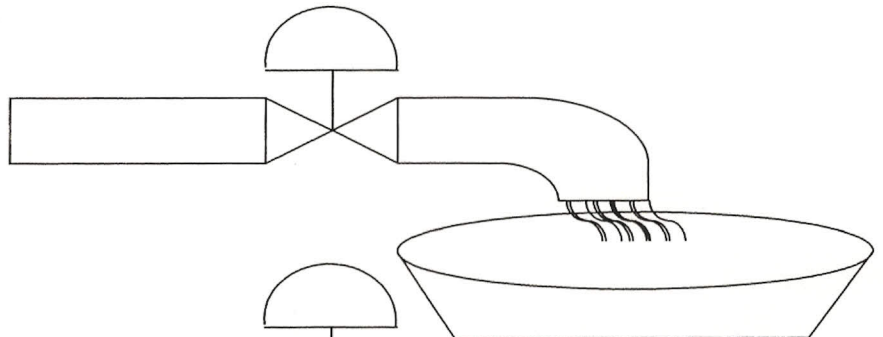
Task: Calculate actual seat leakage of a typical 3-inch globe valve at all ANSI seat leakage.

1. Seat leakage classes define maximum allowable leakage as a percent of the valve's rated capacity, so maximum flow under test conditions must be known.
2. Maximum flow = maximum $C_v \sqrt{\Delta P}$
 - a. Maximum $C_v = 140$ (from manufacturers literature)
 - b. $\Delta P = 50$ psid (test condition for Classes II, III, and IV)
3. Flow = $140 \times \sqrt{50}$
Flow = 1,000 gallons per minute (approximate)

Class I – Not specified by ANSI. Leakage mutually agreed upon by user and supplier.

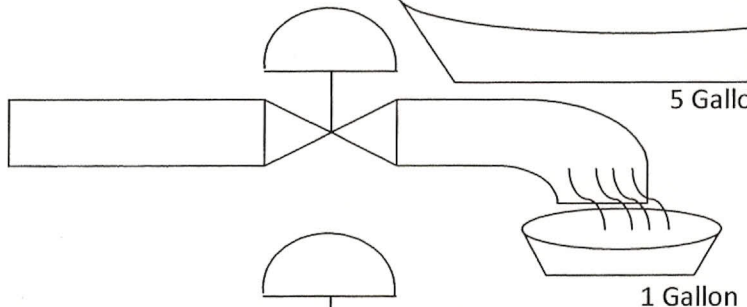
Class II - 0.5% Rated Capacity

$$\begin{array}{r} 1.000 \\ \times 0.005 \\ \hline 5 \text{ gallons per minute} \end{array}$$



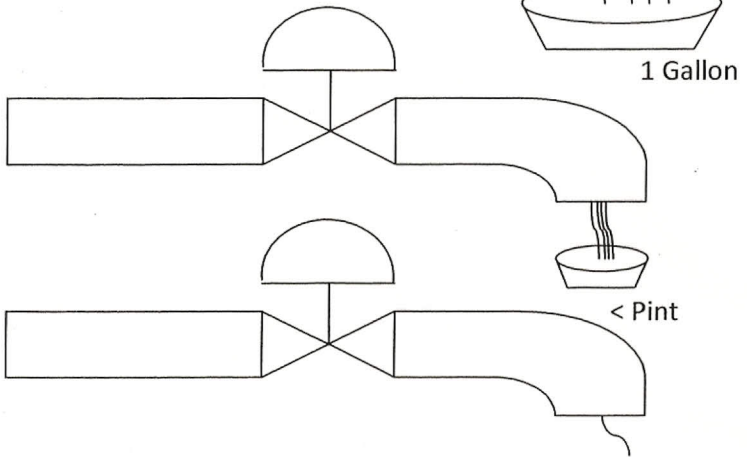
Class III – 0.1% Rated Capacity

$$\begin{array}{r} 1.000 \\ \times 0.001 \\ \hline 1 \text{ gallon per minute} \end{array}$$



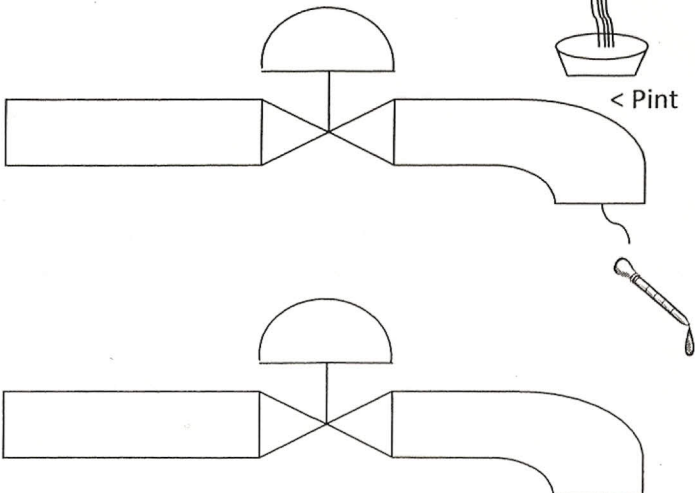
Class IV – 0.01% Rated Capacity

$$\begin{array}{r} 1.000 \\ \times 0.0001 \\ \hline 0.1 \text{ gallons per minute} \\ \text{(less than 1 pint)} \end{array}$$

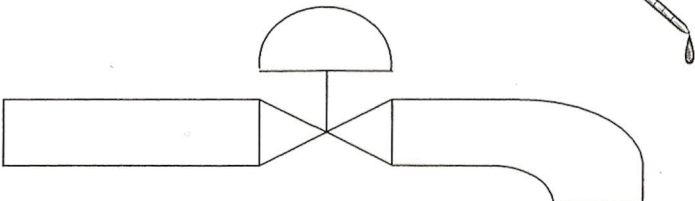


Class V

$$\begin{array}{r} 3 \\ \times 0.0005 \\ \hline 0.0015 \\ \times 100 \\ \hline 0.15 \text{ mL per minute} \\ \text{Or } 0.00004 \text{ gallons per minute} \end{array}$$



Class VI – .09mL per minute
Or .000024 gallons per minute
6 visible bubbles per minute



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