



# Sizing Formulas for Spirax Sarco Strainers for Water, Steam, Air, and Other Gases

## Steam formulas

$$\text{Steam Flow \#/h} = 3.2 \times C_v \times \sqrt{(P_1 - P_2) \times P_2}$$

Non-critical

$$P_2 > \frac{1}{2} P_1$$

$$\text{Required } C_v \quad C_v = \frac{\text{\#/h}}{3.2 \times \sqrt{(P_1 - P_2) \times P_2}}$$

Non-critical

$$P_2 > \frac{1}{2} P_1$$

$$\text{Pressure Drop} = P_1 - P_2$$

(Any kind of steam)

$$\frac{P_1 - P_2 + \sqrt{P_1^2 - 4K}}{2}$$

$$K = \left( \frac{\text{\#/h}}{3.2 \times C_v} \right)^2$$

**Note:** All Pressures are absolute.

## Air and gas formulas

$$\text{Pressure Drop} = P_1 - P_2$$

Any flow

$$\frac{P_1 = P_2 + \sqrt{P_1^2 - K}}{2}$$

$$K = \left( \frac{\text{SCFH} \times \sqrt{460 + ^\circ\text{F}} \times \sqrt{\text{Specific Gravity}}}{(695 \times C_v)} \right)^2$$

$P_1$  = Inlet Pressure

$P_2$  = Outlet Pressure

Non-critical flow

$$\text{SCFH} = \frac{1391 \times C_v \times \sqrt{(P_1 - P_2) \times P_2}}{\sqrt{460 + ^\circ\text{F}} \times \sqrt{\text{Specific Gravity}}}$$

**Note:** All Pressures are absolute.

## Water formulas

$$\text{GPM} = C_v \times \sqrt{\text{Pressure Drop PSI}}$$

$$C_v = \frac{\text{GPM}}{\sqrt{\text{Pressure Drop PSI}}}$$

$$\text{Pressure Drop PSI} = \frac{\text{GPM}^2}{C_v^2}$$

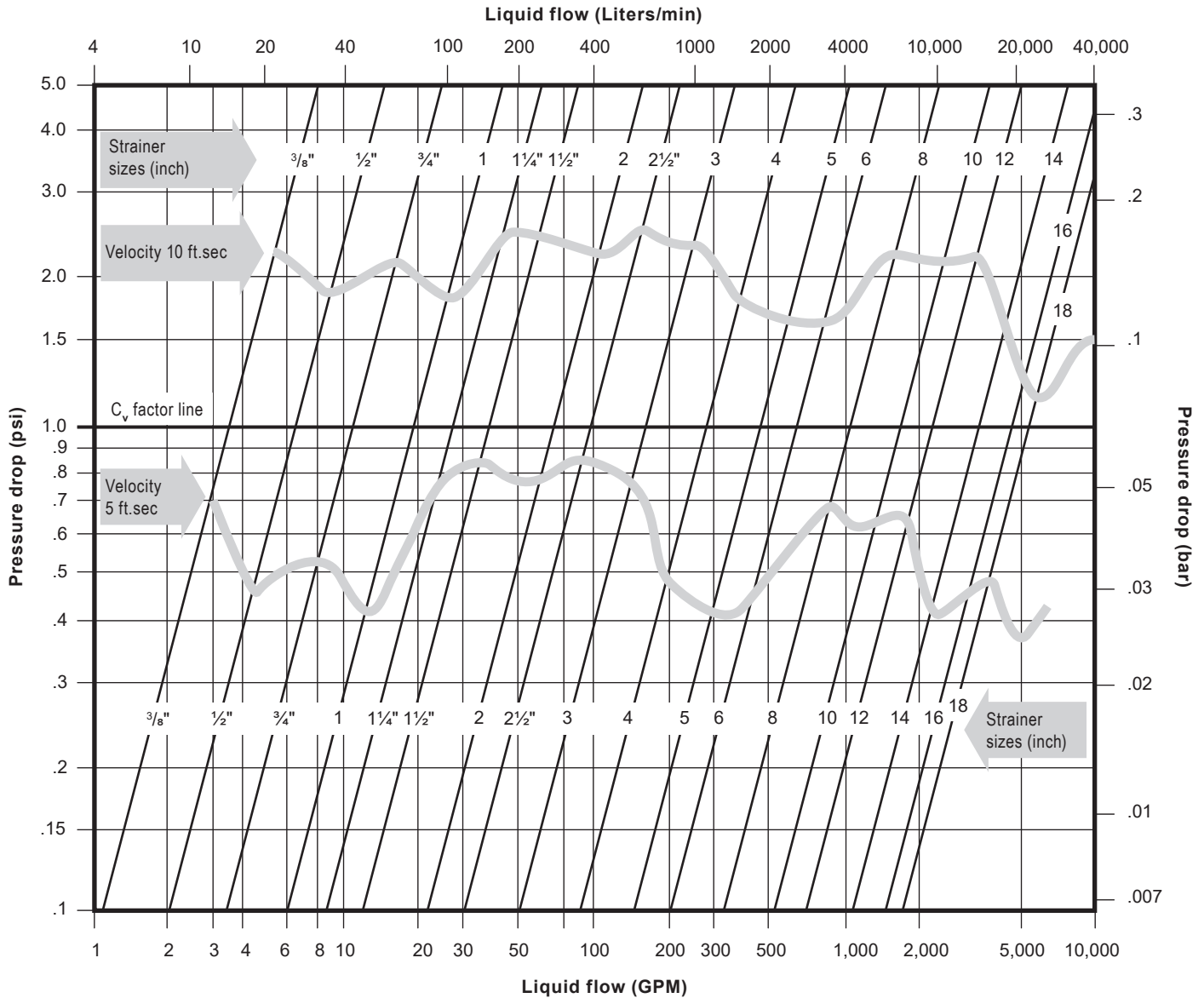
Consult factory for other Liquid Specific Gravities and Viscosities.

### Y type pipeline and basket strainers

Size	Screwed strainers IT, BT, CT	Flanged strainers		Flanged strainers CI, CSS
		Fig. 36	SLF	
3/8"	3.5			
1/2"	6.5	5.4	4	
3/4"	11.5	9.6	10	
1"	20	15.6	13	
1 1/4"	28	25.2		
1 1/2"	38	34	31	
2"	70	54	49	70
2 1/2"	100		74	110
3"	160		160	165
4"			330	280
5"			-	450
6"			600	650
8"			1226	1,100
10"			1850	1,650
12"			2780	2,400

# Water Capacities of Spirax Sarco Strainers

## Strainer types IT, BT, CT, CI, capacity chart



CLEAN WATER — STANDARD SCREENS

\*Note: Cv Factor is Flow in GPM at 1 psi pressure drop

Fluid velocities shown are based on ASHRAE Fundamentals Handbook, Fluid Flow Recommendations.