PRESSURE DROP DATA
BASKET STRAINERS

COLTON INDUSTRIES

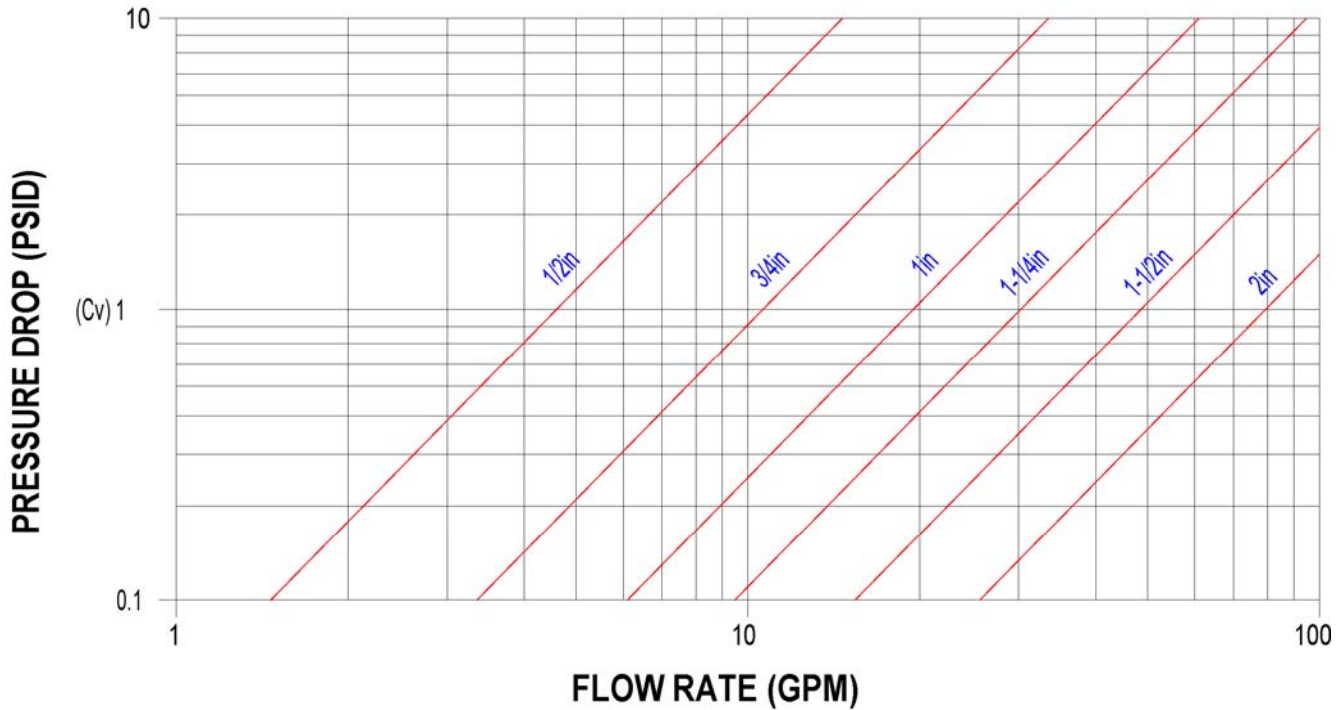## THREADED BASKET STRAINER PRESSURE DROP – LIQUIDS (Sizes 1/2" to 2")

FIGURE 1

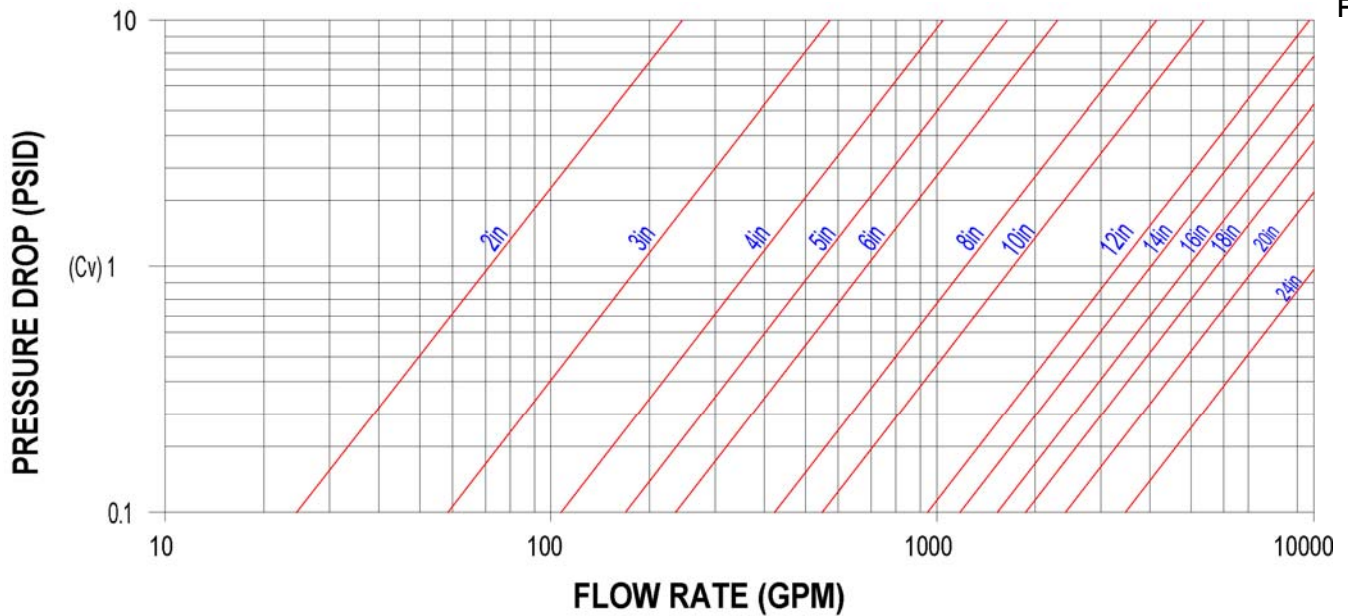## FLANGED BASKET STRAINER PRESSURE DROP – LIQUIDS (Sizes 2" to 24")

FIGURE 2

Notes: Pressure drop curves are based on water flow with standard screens
See next page for correction factors to be used with other fluids and/or screen openings

PRESSURE DROP DATA
BASKET STRAINERS

SCREEN CORRECTION FACTORS

FOR NON-STANDARD AND MESH LINED SCREENS

Multiply values obtained from Figure 1 and 2 by the appropriate values shown below

CHART 1

SIZE RANGE	SCREEN OPENINGS							
	Perforated Plate % Screen Material Open Area					Mesh Lined Standard Screens % Screen Material Open Area		
	60%	50%	40%	30%	20%	50%	40%	30%
1/4" to 1-1/2"	0.45	0.55	0.7	1	1.15	1.05	1.05	1.2
2" to 16"	0.65	0.8	1	1.4	2.15	1.05	1.05	1.2

Notes: See our Replacement Screen data sheet for % open area's of perforated plate
Standard screens for sizes 1/4" to 1-1/2" is approximately a 30% open area screen media
Standard screens for sizes 2" to 16" is approximately a 40% open area screen media

EXAMPLE:

Strainer Size:	3"	a) Using FIGURE 1 the pressure drop is determined to be 0.4 psid using the standard screen
Filtration:	100 mesh lined 1/8" perf.	b) Looking at the replacement screen data sheet, we find that the % open area of 100 mesh is 30%
Flow Rate:	100 gpm	c) Using CHART 1 we read the correction factor to be 1.2 for 100 mesh lined screen
Service:	Water	d) Total pressure drop equals 0.4 x 1.2 = 0.48 psid clean.

VISCOSITY AND DENSITY CORRECTION FACTOR CHART

For use see instructions below:

CHART 2

SIZE RANGE	COMPONENT FACTOR (CF)
1/4" to 1-1/2"	0.25
2" to 16"	0.35

CHART 3

VISCOSITY Cp	BODY LOSS FACTOR (BF)	SCREEN LOSS FACTOR			
		Perf Alone (PF)	20 mesh lined (MF)	30, 40 mesh lined (MF)	60 to 300 mesh lined (MF)
10	1	1.15	1.3	1.4	1.5
25	1.2	1.25	2	2.2	2.5
100	1.6	1.4	3	4	6.5
200	2.2	1.5	4.5	7	11.5
500	4.4	1.6	10	15	25
1000	8	1.7	15	30	50
2000	15.2	1.9	30	60	100

HOW TO USE:

Step 1 Using FIGURE 1 or 2 determine the pressure drop through the strainer with water flow and standard screens = (P1)
Step 2 If non-standard screens (i.e. 40 mesh, 60 mesh , etc..) are being used, apply factors in CHART 1 to determine corrected pressure drop = (P2)
Step 3 Multiply P1 or P2 by the specific gravity of the fluid flowing through the strainer = (P1 or P2 x specific gravity = P3)
Step 4 Using CHART 2 mutiply P3 by the appropriate Component Factor (CF) = (P3 x CF = P4)
Step 5 (P3 - P4 = P5)
Step 6 Multiply P4 by the appropriate Body Loss Factor (BF) in CHART 3 to get P6 = (P4 x BF = P6)
Step 7 Multiply P5 by the appropriate Screen Loss Factor (PF or MF) in CHART 3 to get P7 = (P5 x PF or MF = P7)
Step 8 P6 + P7 = Total Pressure Drop

EXAMPLE:

Strainer Size:	3"	a) As shown in the above example, the corrected pressure drop (P2) = 0.48 psid
Filtration:	100 mesh lined 1/32" perf.	b) Specific Gravity x P2 = P3 (1 x 0.48 = 0.48) P3 = 0.48
Flow Rate:	100 gpm	c) P3 x CF (from chart 2) = P4 (0.48 x 0.35 = 0.168) P4 = 0.168
Specific Gravity:	1	d) P3 – P4 = P5 (0.48 – 0.168 = 0.312) P5 = 0.312
Viscosity	100 cP	e) P4 x BF (from chart 3) = P6 (0.168 x 1.6 = 0.269) P6 = 0.269
		f) P5 x MF (from chart 3) = P7 (0.312 x 6.5 = 2.208) P7 = 2.208
		g) P6 + P7 = Total Pressure Drop (0.269 + 2.208 = 2.477) Total Pressure Drop = 2.477 psid