FLUID POWER DATA

PRESSURE DROPS THROUGH ORIFICES

CV FACTORS & ORIFICES

FLOW THRU ORIFICES

TO DETERMINE DESIRED ORIFICE SIZE USE THE FOLLOWING FORMULA:

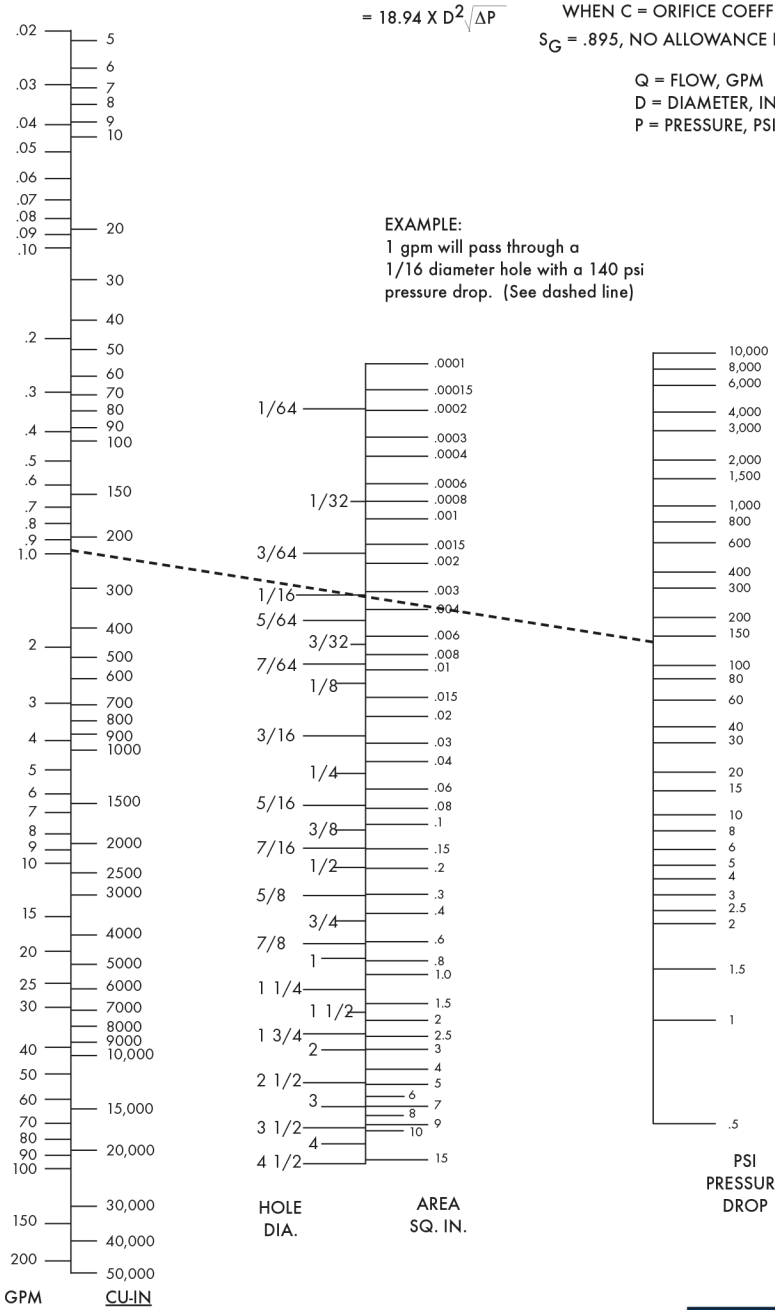
$$Q = KA\sqrt{\Delta P}$$

$$= 18.94 \times D^2\sqrt{\Delta P}$$

WHEN C = ORIFICE COEFFICIENT .6 AND
S_G = .895, NO ALLOWANCE FOR VISCOSITY CHANGE

Q = FLOW, GPM
D = DIAMETER, IN
P = PRESSURE, PSI

EXAMPLE:
1 gpm will pass through a
1/16 diameter hole with a 140 psi
pressure drop. (See dashed line)



LIQUID FLOW THRU VALVE

$$Q = Cv\sqrt{\Delta P / S_G}$$

SHARP EDGE ORIFICE

$$Q = 29.81\ (C)\ (I.D.)^2\sqrt{\Delta P / S_G}$$
$$= 18.9\ D^2$$

WHEN S_G IS .895
NO ALLOWANCE FOR VISCOSITY CHANGE

C = .6 FOR SHARP EDGE
WALL THICKNESS IS LESS THAN
HOLE DIAMETER
C_V = GIVEN FACTOR
I.D. = INSIDE DIA, IN
Δ P = CHANGE IN PRESS, (PSI)
SG = SPECIFIC GAVITY
Q = FLOW, GPM, OR SCFM

C_V FACTORS FOR SHARP EDGE ORIFICES

DIA	CV	DIA	CV	DIA	CV	DIA	CV
.020	009	.125	.35	.395	3.50	.750	12.50
.025	.014	.163	.60	.423	4.00	.875	17.30
.030	.02	.200	.90	.448	4.50	1.00	22.80
.044	.04	.212	1.00	.472	5.00	1.25	36.30
.052	.06	.250	1.50	.515	6.00	1.50	51.20
.060	.08	.300	2.00	.539	6.50	1.75	71.00
.067	.10	.333	2.50	.578	7.00	2.00	90.00
.095	.20	.375	3.13	.625	8.80	2.10	100.00