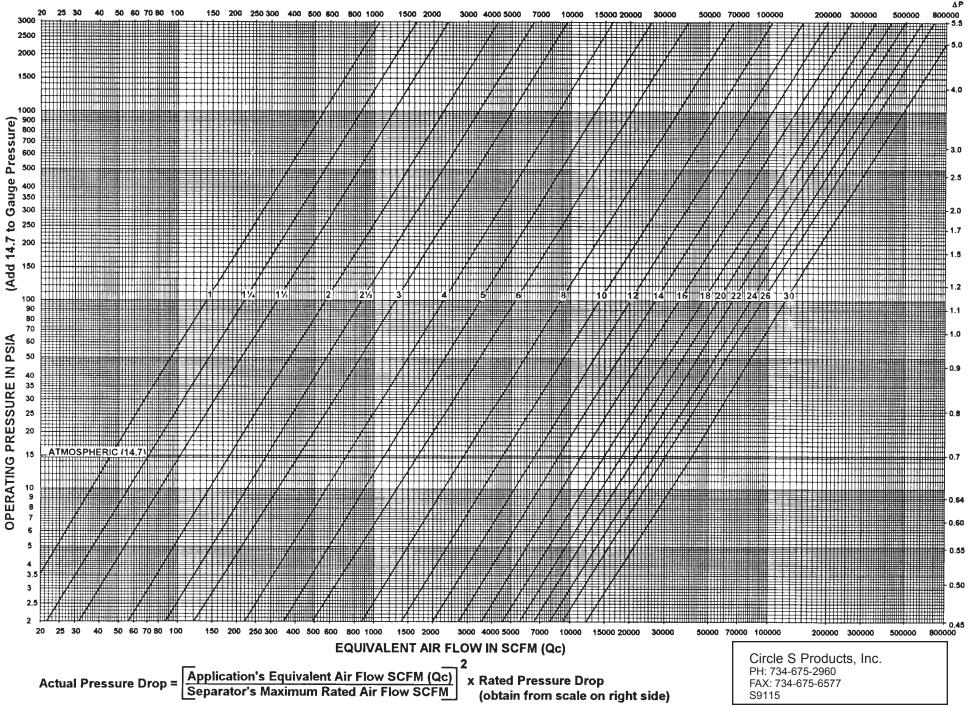
CIRCLE S PRODUCTS AIR FLOW CHART



The Circle S Products air flow chart on the reverse side is based on SCFM (cubic feet per minute of air measured at standard conditions of 14.7 psia and 60°F). If any of the operating conditions are varied from the above, then correction factors must be applied.

To use the air flow chart for applications involving other gases or other than standard conditions the following equation must be solved for Q_{C} :

$$Q_c = C_{sg} \times F_g \times F_t$$

In the event that Q_{SG} is not provided in the proper form, any of the following equations my be used to arrive at the correct flow rate to insert in the above equation.

$$Q_{sg} = \frac{6.3 \times W}{MW}$$
$$Q_{sg} = \frac{35.37 \times Qa \times PA}{460 + T_a}$$
$$Q_{sg} \text{ (air only)} = .218 \times W$$

$$Q_{sg} = \frac{MMSCFD}{1440.}$$

W = (Pound mols/hour) x MW

EXPLANATION OF SYMBOLS

- Fg = Correction factor for specific gravity (see table at right)
- Ft = Correction factor for temperature (see table at far right)

G = Specific gravity

MMSCFD = Million standard cubic feet per day

- MW = Molecular weight
- Pa = Pressure (psia) at which volume is measured
- Qa = Rate of flow-measured cubic feet per minute (ACFM)
- Q_C = Rate of flow-standard cubic feet per minute of equivalent air
- Q_{sg} = Rate of flow-standard cubic feet per minute
- T = Operating temperature (°F)
- T_a = Temperature (°F) at which volume is measured
- W = Rate of flow-pounds per hour

GAS		M.W.	G	FG
Hydrogen	H ₂	2.0	0.069	0.344
Helium	He	4.0	0.138	0.452
Synthesis	75%H ₂ 25%N ₂	8.5	0.295	0.611
Coke Oven		11.0	0.379	0.679
*Methane	CH ₄	16.0	0.551	0.788
Ammonia	NH ₃	17.0	0.586	0.808
Steam (Water Vapor)	H ₂ O	18.0	0.621	0.826
*Natural Gas	75%CH ₄ 25%N ₂	19.0	0.655	0.844
A / 1			0.007	
Acetylene	C_2H_2	26.0	0.897	0.957
Nitrogen	N ₂	28.0	0.95	0.986
Oarthan Manavida			0.05	0.000
Carbon Monoxide	Co	28.0	0.95	0.986
Air		29.0	1.00	1.000
Flue Gas	81%N ₂ 19%CO ₂	31.0	1.08	1.027
Oxygen	O ₂	32.0	1.10	1.039
Oxygen		02.0	1.10	1.000
Argon	A	39.9	1.38	1.136
Propane	C ₂ H ₈	44.1	1.52	1.182
ŀ				
*Carbon Dioxide	CO ₂	44.0	1.52	1.181
Nitrous Oxide	N ₂ O	44.0	1.52	1.181
Butadiene	C ₄ H ₆	54.1	1.86	1.284
Sulphur Dioxide	SO ₂	64.1	2.21	1.374
Chlorine	C1 ₂	70.9	2.45	1.431
Freon 12	CC_2F_2	120.9	4.17	1.770
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1 psi = 2.03	6" Н _д			
1" H _g = .49	12 psi			

TEMPERATURE
CORRECTION FACTORS

Т	FT		
- 20°F	0.904		
- 10	0.917		
0	0.929		
10	0.941		
20	0.953		
30	0.965		
40	0.977		
50	0.989		
60	1.000		
70	1.012		
80	1.023		
90	1.034		
95	1.040		
100	1.046		
105	1.051		
110	1.057		
120	1.068		
130	1.079		
140	1.090		
150	1.101		
160	1.112		
170	1.121		
180	1.133		
190	1.143		
200	1.154		
250	1.206		
300	1.256		
400	1.353		
500	1.445		
550	1.490		
600	1.533		
700	1.618		
800	1.701		
900	1.780		
1000	1.858		

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NOTE

1 psi

1" H₂O =

* For applications involving gases (above 500 PSI & 200°F) so marked, contact the home office to determine whether there is an additional correction factor for compressibility.

= 27.71" H₂O

.03613 psi