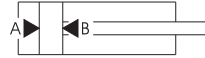


空氣消耗量 compressed air consumption



單位：l/min

Bore (mm)		12	16	20	25	32	40	50	63	80	100	125	150
Rod (mm)		6	6	8	10	12	16	20	20	25	25	35	40
Area (mm ²)	A	113	201	314	491	804	1257	1963	3117	5027	7854	12271	17671
	B	85	173	264	412	691	1056	1649	2803	4536	7363	11309	16415
操作壓力 (MPa)	0.1	0.040	0.075	0.116	0.181	0.299	0.462	0.722	1.183	1.912	3.042	4.714	6.814
	0.2	0.059	0.112	0.173	0.271	0.448	0.693	1.083	1.775	2.867	4.563	7.071	10.221
	0.3	0.079	0.150	0.231	0.361	0.598	0.924	1.444	2.367	3.823	6.084	9.428	13.628
	0.4	0.099	0.187	0.289	0.451	0.747	1.156	1.805	2.959	4.779	7.605	11.785	17.035
	0.5	0.119	0.224	0.347	0.542	0.897	1.387	2.167	3.550	5.734	9.126	14.142	20.441
	0.6	0.138	0.262	0.405	0.632	1.046	1.618	2.528	4.142	6.690	10.647	16.499	23.848
	0.7	0.158	0.299	0.463	0.722	1.196	1.849	2.889	4.734	7.646	12.168	18.856	27.255
	0.8	0.178	0.336	0.520	0.812	1.345	2.080	3.250	5.325	8.602	13.689	21.213	30.662
	0.9	0.198	0.374	0.578	0.903	1.495	2.311	3.611	5.917	9.557	15.209	23.570	34.069
	1.0	0.218	0.411	0.636	0.993	1.644	2.542	3.972	6.509	10.513	16.927	25.927	37.476

● 上表數值係氣缸在行程100mm往返一個來回之空氣消耗量

空氣消耗量計算方式

$$Qn = (Aa + Ab) \times L \times \frac{P + 0.101}{0.101} \times n \times 10^{-6}$$

Qn: 氣缸空氣消耗量 (l/min)

Aa: A方向之截面積 (mm²)

Ab: B方向之截面積 (mm²)

L: 氣缸行程 (mm)

P: 操作壓力 (MPa)

n: 操作頻率 (次 / 分鐘)

流量互算表 varied flow rate interchange chart

	m ³ /s	l/s	cm ³ /s	m ³ /h	m ³ /min	l/h	l/min	ft ³ /min (scfm)	gallon min UK	gallon min USA
m ³ /s	1	10 ³	10 ⁶	3.6 × 10 ⁶	60	3.6 × 10 ⁶	60 × 10 ³	2.12 × 10 ³	13.2 × 10 ³	15.85 × 10 ³
l/s	10 ⁻³	1	10 ³	3.6	60 × 10 ⁻³	3.6 × 10 ³	60	2.12	13.2	15.85
cm ³ /s	10 ⁻⁶	10 ⁻³	1	3.6 × 10 ⁻³	60 × 10 ⁻⁶	3.6	60 × 10 ⁻³	2.12 × 10 ⁻³	13.2 × 10 ⁻³	15.85 × 10 ⁻³
m ³ /h	0.28 × 10 ⁻³	0.28	0.28 × 10 ³	1	16.67 × 10 ⁻³	10 ³	16.67	0.59	3.67	4.4
m ³ /min	16.67 × 10 ⁻³	16.67	16.67 × 10 ³	60	1	60 × 10 ³	10 ³	35.31	219.97	264.17
l/h	0.28 × 10 ⁻⁶	0.28 × 10 ⁻³	0.28	10 ⁻³	16.67 × 10 ⁻⁶	1	16.67 × 10 ⁻³	0.59 × 10 ⁻³	3.67 × 10 ⁻³	4.4 × 10 ⁻³
l/min	16.67 × 10 ⁻⁶	16.67 × 10 ⁻³	16.67	60 × 10 ⁻³	10 ⁻³	60	1	35.31 × 10 ⁻³	219.97 × 10 ⁻³	264 × 10 ⁻³
ft ³ /min (scfm)	0.47 × 10 ⁻³	0.47	0.47 × 10 ³	1.699	28.32 × 10 ⁻³	1.699 × 10 ³	28.32	1	6.23	7.48
gallon min UK	75.79 × 10 ⁻⁶	75.77 × 10 ⁻³	75.77	0.273	4.55 × 10 ⁻³	0.273 × 10 ³	4.55	0.16	1	1.2
gallon min USA	63.09 × 10 ⁻⁶	63.09 × 10 ⁻³	63.09	0.227	3.79 × 10 ⁻³	0.227 × 10 ³	3.79	0.13	0.83	1