

AIR PRESSURE DROP

Excessive pressure drop is the most common cause of complaints involving "loss of power" in portable air tools. When such a complaint arises, be sure that someone takes a pressure reading at the tool while the tool is turned on ... governed tools while under load.

The most common causes of excessive pressure drop are restrictions to air flow in long lengths of small diameter pipes and hoses, in hose fittings, filters, lubricators, and especially in quick disconnect couplings. For large volumes of air, large lines and fittings are required.

Note: For longer or shorter lengths, the pressure loss is proportional. (ie: For 50ft, half the values below.)

CFM of Free Air	Air Pressure Loss (PSI) in 100ft of Steel Pipe - Based on 100 PSI at pipe entrance.							
	Nominal Pipe Diameter							
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
10	0.40	0.10	0.03	0.007				
20	1.40	0.35	0.10	0.026	0.012			
30	3.15	0.70	0.25	0.056	0.026			
40	5.50	1.30	0.40	0.096	0.044			
50	8.60	2.00	0.60	0.146	0.067	0.200	0.008	
60		2.80	0.85	0.210	0.095	0.027	0.011	
70		3.80	1.10	0.280	0.130	0.036	0.015	
80		5.00	1.40	0.360	0.160	0.046	0.019	
90		6.40	1.85	0.450	0.200	0.058	0.024	
100		7.80	2.20	0.550	0.250	0.069	0.029	0.010
125		12.50	3.40	0.850	0.380	0.107	0.043	0.015
150		18.00	4.90	1.200	0.540	0.150	0.061	0.021
175			6.80	1.640	.0730	0.200	0.081	0.028
200			8.80	2.120	0.950	0.260	0.105	0.036
250				3.300	1.480	0.400	0.160	0.054
300				4.710	2.100	0.570	0.230	0.075
350				6.450	2.860	0.770	0.310	0.101
400				8.300	3.700	0.990	0.400	0.131
450					4.650	1.270	0.500	0.165
500					5.790	1.560	0.620	0.200
600						2.230	0.890	0.290
700						3.000	1.180	0.390
800						4.000	2.540	0.500
900						5.050	1.950	0.630
1000						6.200	2.370	0.780
1200						9.050	3.450	1.120
1500						14.500	5.390	1.730
2000							9.660	3.090
2500								4.850
3000								6.980