

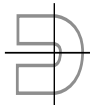
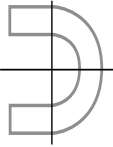



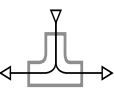
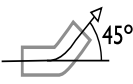




# Pressure drop in hoses

The flexible lay flat hose will swell in diameter when pressureized, causing a lower pressure drop than compared to a rigid hose. The data is based on internal hose diameter, and the actual pressure drop is therefore some lower. Variables such as fittings and bends increase the frictional losses and an estimate of their effect may be determined by adding an "equivalent length" to the hose length. Values of the equivalent length ( $L_e$ ) may be determined using the internal diameter ( $D$ ) of the hose in the following relationship:

 $R/D = 0,5 \quad 1,0 \quad 2,0 \quad 4,0 \quad 8,0$ $L_e/D = 36 \quad 16,5 \quad 10 \quad 10 \quad 14,5$	 $R/D = 0,5 \quad 1,0 \quad 2,0 \quad 4,0 \quad 8,0$ $L_e/D = 50 \quad 23 \quad 20 \quad 26 \quad 35$	Small radius  $L_e/D = 75$	Large radius  $L_e/D = 50$			
 $L_e/D = 20$	 $L_e/D = 60$	 $L_e/D = 70$	 $L_e/D = 46$	 $L_e/D = 15$	 $L_e/D = 32$	 $L_e/D = 60$

## Pressure drop (Bar/100m) water at 20°C through hose

Flow rate Q [l/min]	Hose Internal Diameter, D											
	1" 25mm	1 1/2" 38mm	2" 51mm	2 1/2" 65mm	3" 76mm	3 1/2" 90mm	4" 102mm	5" 127mm	6" 152mm	8" 203mm	10" 254mm	12" 305mm
50	1,15	0,14										
100	4,61	0,56	0,12									
150	10,37	1,26	0,27	0,08								
200		2,23	0,48	0,13	0,06							
300		5,03	1,08	0,30	0,13	0,06						
400		8,94	1,92	0,54	0,24	0,10	0,05	0,05				
500			3,00	0,84	0,37	0,15	0,08	0,08				
1 000				3,37	1,49	0,62	0,32	0,10	0,04			
2 000					5,97	2,47	1,28	0,41	0,16	0,04		
3 000						5,55	2,89	0,92	0,36	0,08		
4 000							5,14	1,64	0,64	0,14		
5 000								2,56	1,00	0,22		
8 000								6,56	2,57	0,57	0,18	
10 000									4,02	0,89	0,28	0,11
15 000										2,01	0,63	0,24
20 000											1,11	0,43

Notes: (1) Pressure drop is directly proportional to the length of hose.

(2) Pressure drop is dependent on inlet pressure (i.e. actual diameter, D) and Flow Rate given by proportional factor ( $Q^2/D^5$ ).

## Pressure drop of air through rubber hose

Hose int. Dia.	Flow rate Q [l/min] of free air											
	500	1 000	1 250	2 000	2 750	3 500	4 250	15 000	20 000	30 000	50 000	90 000
3/4" 20mm		2,15	3,50	8,95	17,25	27,45						
1" 25mm				2,00	4,65	7,55	11,00					
1 1/2" 38mm					0,45	0,75	1,35					
2" 51mm								3,85	6,80	15,30	42,30	
2 1/2" 65mm								1,60	2,70	5,65	16,30	52,70
3" 76mm										2,15	5,20	16,75

To obtain frictional pressure loss in (Bar/100m) devide above values by the Ratio of Compression listed here:

(Bar) W.P	4,0	5,0	6,0	7,0	8,0	9,0	10,0
Ratio of Compression	3,90	4,90	5,90	6,90	7,85	8,85	9,85