

# FRICITION LOSS IN COMMON PIPE FITTINGS

By using the pipe fitting type and size, select the friction loss value to add to your pipe friction loss calculations in order to calculate the 'Total Friction Loss' for your application. To calculate pipe friction loss, use the tables on the previous pages. If you have any difficulty, contact Ascento Group on 1800 807 604 to be put in touch with a technician.

NOTE: Fittings are standard with full openings.

Fitting Type	Nominal Pipe Size (mm)									
	15	20	25	32	40	50	65 & 80	100	125	150
Gate Valve	0.22	0.2	0.18	0.18	0.17	0.15	0.14	0.14	0.13	0.12
90 Degree Elbow	0.81	0.75	0.69	0.66	0.63	0.57	0.54	0.51	0.48	0.45
45 Degree Elbow	0.43	0.4	0.37	0.35	0.34	0.3	0.29	0.27	0.26	0.24
Swing Check Valve	1.35	1.25	1.15	1.1	1.05	0.95	0.9	0.85	0.8	0.75

## ! REMEMBER

### SUCTION PIPE SIZE IS IMPORTANT

Having the suction pipe from the tank to the pump too small will lead to cavitation due to the NPSH being too high for the pump. The result is then Cavitation = noise & vibration = premature pump failure and/or problems with air locks and priming. A rule of thumb is that the suction pipe ID (Internal Diameter) should not be less than the thread size of the pump INLET - so a pump with a 25mm FBSP inlet should have suction pipe with 25mm ID suction. The recommended pipe is flexible suction hose as this reduces the possibility of damage to the pump due to introduced stresses from rigid pipework.

### DELIVERY PIPE SIZE DOES AFFECT PERFORMANCE

Pressure of the water at the discharge (taps, showers, irrigation etc) is affected by the pipe size. The SMALLER your pipes, the LOWER the pressure will be at discharge. Example: 15mm (1/2") Copper (ID 10.81mm) pipe over 20 metres at 15Lpm will reduce pressure at discharge by 170kPa (1.7bar) - whereas if 25mm ID pipe is used for 20 metres at 30Lpm it only reduces pressure by an insignificant 6kPa. Another comparison, 30Lpm over 20m of 20mm Copper with an ID of 16.9mm reduces pressure at the discharge by about 70kPa. Smaller pipe also means that more power will be used as the pump has to work harder to overcome the extra back-pressure from small pipes. A small short-term saving - in the cost of the pipes - becomes a long-term liability in extra electricity costs.

DISCLAIMER: The information and data provided is estimated and is a guide only, and it is the sole and entire responsibility of the user to ensure that it is accurate and suitable for their application.