

Installation of orifice plate flowmeters

Almost all flowmeters need certain lengths of straight, uninterrupted pipe upstream and downstream of the flowmeter itself, and orifice plates are no exception. As the performance of orifice plates is based on theoretical predictions, the installation is very important and is described in detail in national standards BS 1042 and ISO 5167. The recommended minimum lengths are shown here.

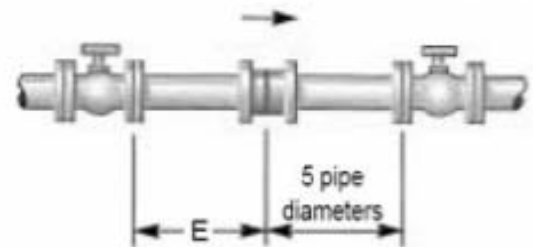
Minimum number of pipeline diameters required upstream of M410 orifice plate.

$$\beta = \frac{d \text{ (orifice diameter mm)}}{D \text{ (pipe diameter mm)}}$$

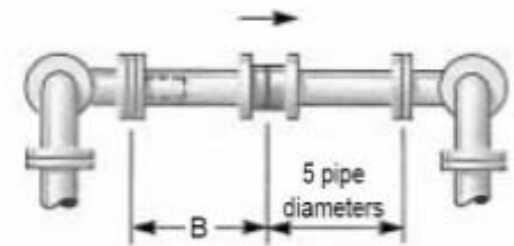
For guidance a β ratio of 0.7 should be used

β	<0.32	0.45	0.55	0.63	0.70	0.77	0.84
A	12	12	13	16	20	27	38
B	15	18	22	28	36	46	57
C	35	38	44	52	63	76	89
E	18	20	23	27	32	40	49
F	10	13	16	22	29	44	56

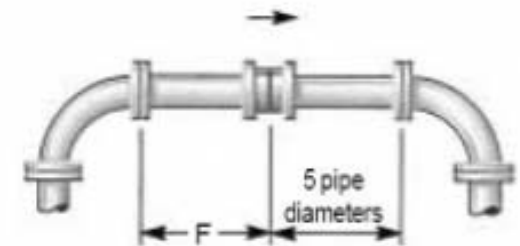
Correct installation is the key to accurate metering !



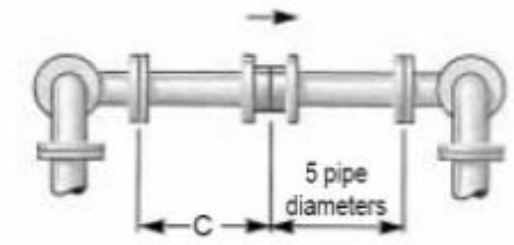
Fully open globe valves



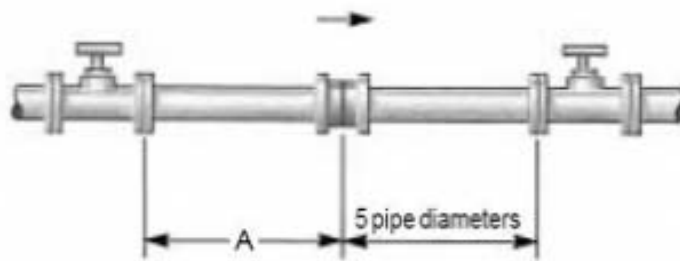
Two bends at right angles with straightening veins



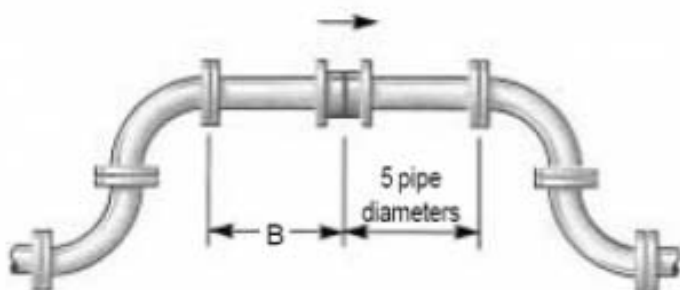
Right angle bends



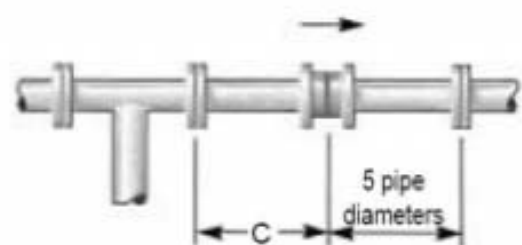
Two bends at right angles



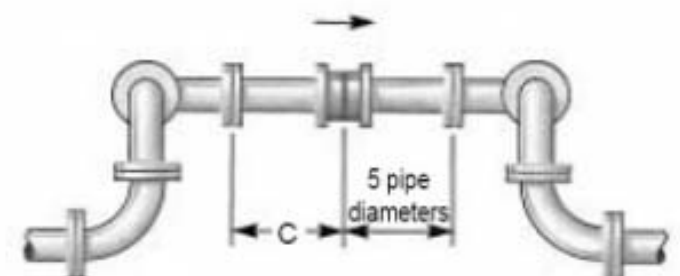
Fully open fullway valve



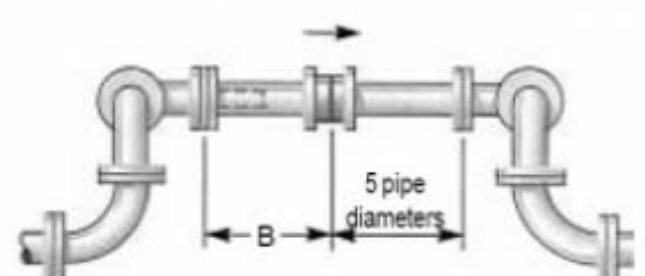
Two right angle bends in same plane



Branches



Three bends at right angles



Three bends at right angles with straightening veins