FIGURE 5-16

Stamped (Smooth) 5-piece 4-piece 3-piece Mitered

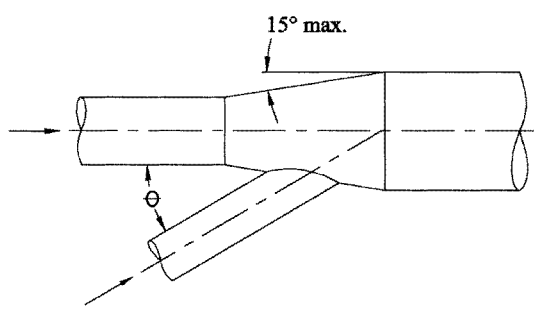|	R / D					
	0.5	0.75	1.00	1.50	2.00	2.50
Stamped	0.71	0.33	0.22	0.15	0.13	0.12
5-piece	-	0.46	0.33	0.24	0.19	0.17*
4-piece	-	0.50	0.37	0.27	0.24	0.23*
3-piece	0.90	0.54	0.42	0.34	0.33	0.33*

* extrapolated from published data

For 60° elbows - 0.67 x loss for 90°
45° elbows - 0.50 x loss for 90°
30° elbows - 0.33 x loss for 90°

Note: Loss factors are assumed to be for elbows of "zero length." Friction losses should be included to the intersection of centerlines.

ROUND ELBOW LOSS COEFFICIENTS

(Ref. 5.13)

FIGURE 5-17

15° max.

Angle Θ Degrees	Loss Fraction of VP in Branch
10	0.06
15	0.09
20	0.12
25	0.15
30	0.18
35	0.21
40	0.25
45	0.28
50	0.32
60	0.44
90	1.00

Note: Branch entry loss assumed to occur in branch and is so calculated.

Do not include a regain calculation for branch entry enlargements.

BRANCH ENTRY LOSSES