DETERMINATION OF FLOW RATE BY A VENTURI NOZZLE

$$Q = \alpha \in \frac{\pi d^2}{4} \sqrt{\frac{2\Delta p}{\rho_u}}$$

α, $\in$ is a function of β and r_{pd} pressure ratio of flow measuring device and can be found from graph as below:

$$r_{pd} = 1 - \frac{\Delta p}{p_u}$$

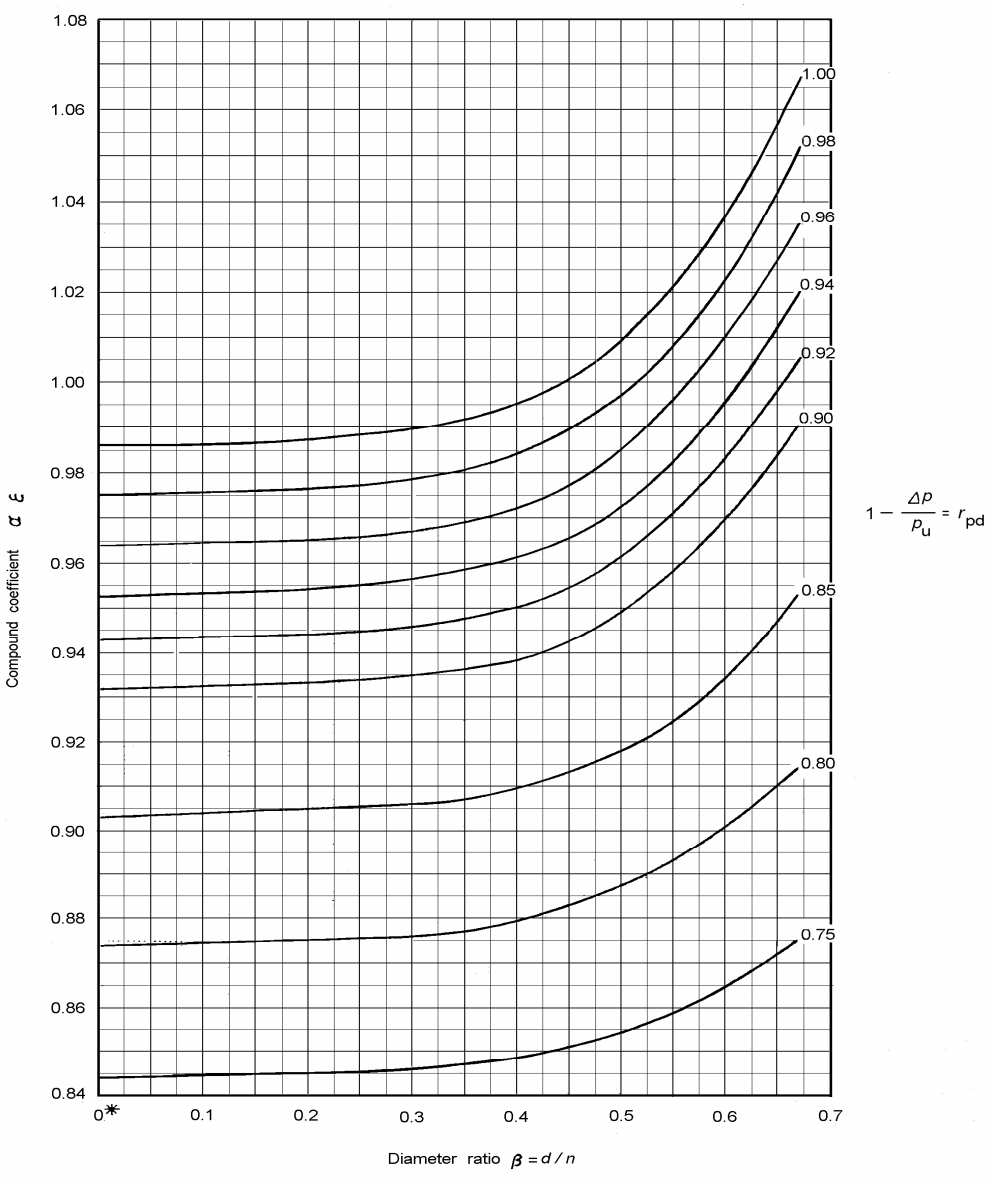
Where: Δp = Manometer pressure difference.

p_u = Upstream pressure. (= Room pressure)

$\beta = \frac{d}{D}$

$D = \infty$ (Free entry)

$\beta = 0$



*For a free entry venturi nozzle β should be taken as zero.

Figure 14. Compound flow coefficients of venturi nozzles