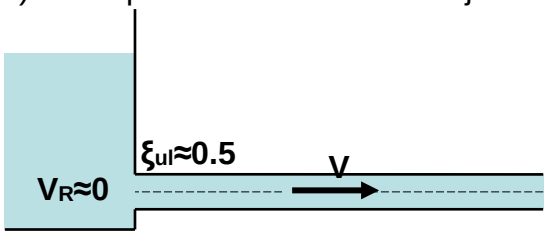
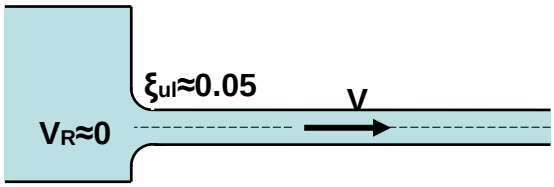
# Lokalni gubici energije

### *1. Ulaz iz rezervoara u cijev*

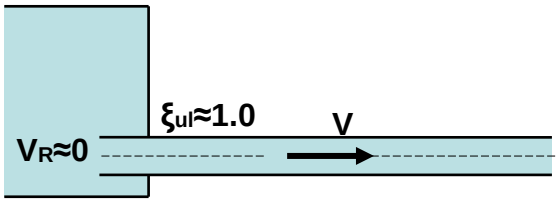
a) Oštar prelaz iz rezervoara u cijev



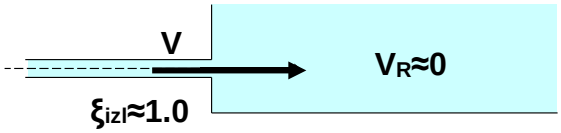

b) Zaobljen prelaz iz rezervoara u cijev



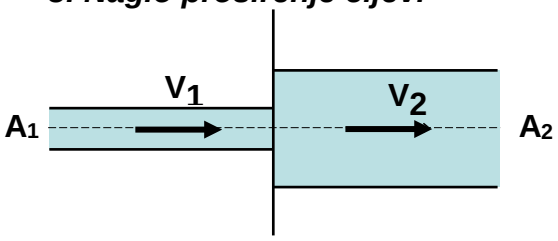

c) Prelaz iz rezervoara u cijev sa upuštenom cijevi




### *2. Izlaz toka iz cijevi u rezervoar*

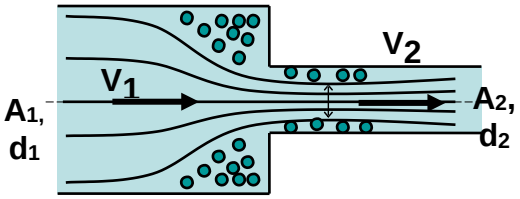



### *3. Naglo proširenje cijevi*



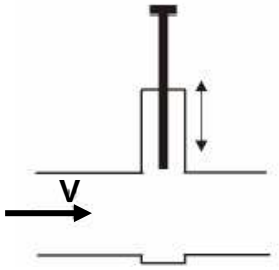

$\xi_{pr}=(A_2/A_1 -1)^2$

### *4. Naglo suženje cijevi*



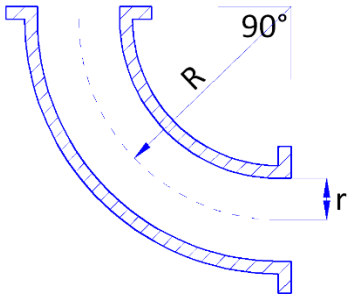

| Veličina $A_2/A_1=(d_2/d_1)^2$ | 0.01 | 0.10 | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 |
|---|---|---|---|---|---|---|---|
| $\xi_{suž}$ | 0.50 | 0.50 | 0.42 | 0.34 | 0.25 | 0.15 | 0.00 |

### *5. Zatvarač*



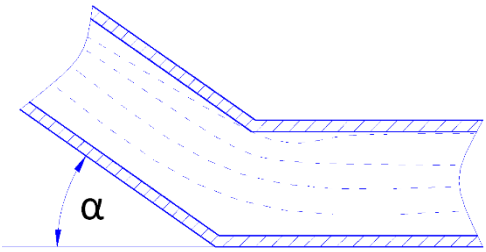

| Stepen otvorenosti zatvarača | 100% | 75% | 50% | 25% |
|---|---|---|---|---|
| $\xi_z$ | 0.2 | 1.2 | 5.6 | 24 |

### *6. Kružna krivina (koljeno sa zavojem)*



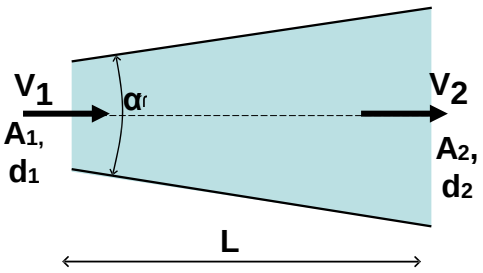

| Veličina (r/R) | 0.1 | 0.3 | 0.5 | 0.7 | 1.0 |
|---|---|---|---|---|---|
| $\xi_{kr}$ | 0.131 | 0.158 | 0.294 | 0.661 | 1.978 |

### *7. Oštro skretanje cijevi (oštro koljeno)*




$$\xi_k = 0.946 \cdot \sin^2(\alpha/2) + 2.05 \cdot \sin^4(\alpha/2)$$

### *8. Difuzori (konusne cijevi koje se postepeno proširuju u smjeru tečenja)*




$$\xi_d = k \cdot (A_2/A_1 - 1)^2$$

| Vrijednosti koeficijenta k za $\xi_d$ u difuzoru | | | |
|---|---|---|---|
| α° | k | α° | k |
| 5 | 0.13 | 60 | 1.12 |
| 10 | 0.17 | 70 | 1.13 |
| 15 | 0.26 | 80 | 1.10 |
| 20 | 0.41 | 90 | 1.07 |
| 30 | 0.71 | 100 | 1.06 |
| 40 | 0.90 | 120 | 1.05 |
| 45 | 0.98 | 140 | 1.04 |
| 50 | 1.03 | 160 | 1.02 |