Spool valve :
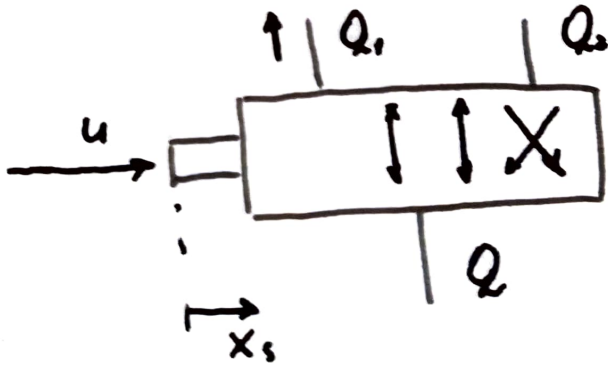

$$\frac{d^2 x_s(t)}{dt^2} + 2\omega_m \beta \frac{dx_s(t)}{dt} + \omega_n^2 = \omega_n^2 u(t)$$

$$\omega \approx 300 \sim 500 \quad m/s$$

$$\beta \approx 0.7 \sim 1.0 \quad [-]$$