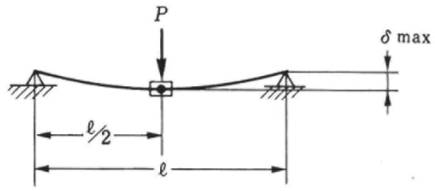
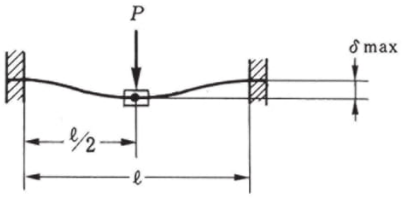
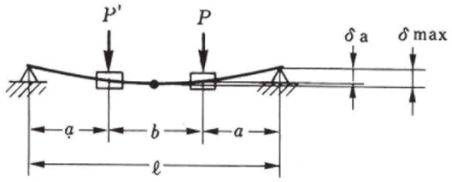
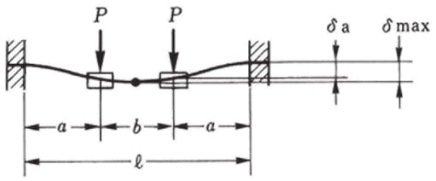
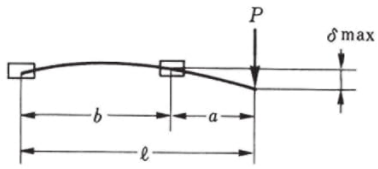
## ■軸のたわみ量計算式

| 仕　様　状　態 | 軸のたわみ量（mm） |
|---|---|
|  | $\delta_{max}=\frac{P\cdot\ell^3}{48\cdot E\cdot I}=2.2021\times10^{-5}\frac{P\cdot\ell^3}{d^4}$ |
|  | $\delta_{max}=\frac{P\cdot\ell^3}{192\cdot E\cdot I}=5.053\times10^{-6}\frac{P\cdot\ell^3}{d^4}$ |
|  | $\delta_a=\frac{P\cdot a^2}{6\cdot E\cdot I}(2a+3b)=1.617\times10^{-4}\frac{P\cdot a^2\cdot(2a+3b)}{d^4}$<br>$\delta_{max}=\frac{P\cdot a}{24\cdot E\cdot I}(3\ell^2-4a^2)=4.042\times10^{-5}\frac{P\cdot a\cdot(3\ell^2-4a^2)}{d^4}$ |
|  | $\delta_a=\frac{P\cdot a^3}{6\cdot E\cdot I}\left(2-\frac{3a}{\ell}\right)=1.617\times10^{-4}\frac{P\cdot a^3}{d^4}\left(2-\frac{3a}{\ell}\right)$<br>$\delta_{max}=\frac{P\cdot a^2}{24\cdot E\cdot I}(2a+3b)=4.042\times10^{-5}\frac{P\cdot a^2\cdot(2a+3b)}{d^4}$ |
|  | $\delta_{max}=\frac{Pa^2\ell}{3EI}=3.234\times10^{-4}\frac{Pa^2\ell}{d^4}$ |

$d$：軸径(mm)　$E$：縦弾性係数 $2.1\times10^4$(kgf/mm²)　$P$：作用荷重(kgf)

断面二次モーメント　$I$(中実軸)$=\frac{\pi d^4}{64}$，$I$(パイプ軸)$=\frac{\pi(d^4-do^4)}{64}$(mm⁴)　$do$：パイプ内径(mm)