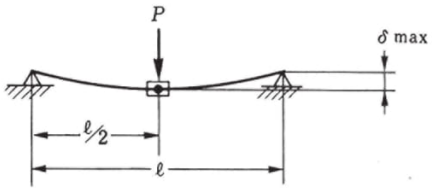
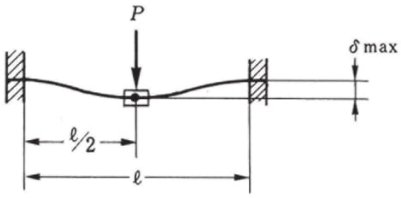
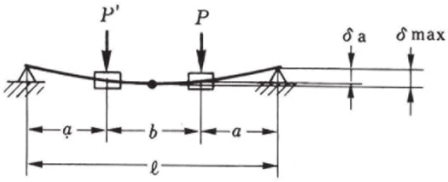
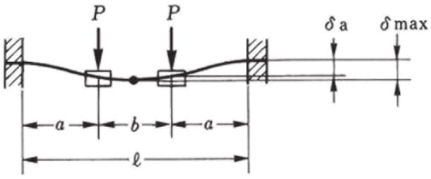
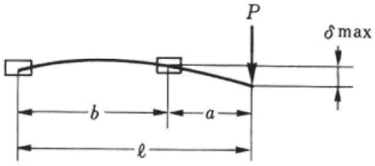
■軸のたわみ量計算式

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

d：軸径(mm)　E：縦弾性係数 2.1×10^4(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)