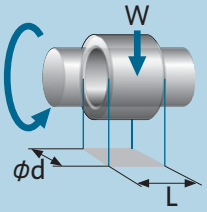
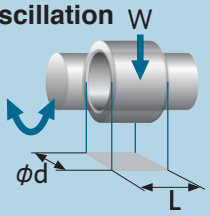
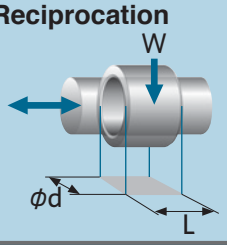
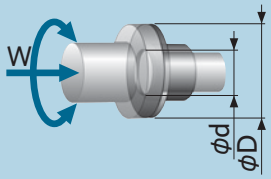
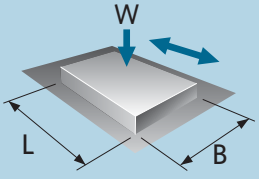
Calculation of P / V / PV value

Bushing	P N/mm²[kgf/cm²]	V m/s[m/mim]	PV N/mm²·m/s[kgf/cm²·m/mim]
Radial journal oneway rotation 	$P=\frac{W}{\phi d\times L}$, $\left\{\frac{10^2 W}{\phi d\times L}\right\}$ Load W : N {kgf} I.D. ϕd : mm Length L : mm Case:1 I.D. 20mm, length 10mm at 1000N journal load. $\frac{1000}{20\times 10}=5$ (N/mm²)	$V=\frac{\pi\ \phi d\ n}{10^3}$, $\left\{\frac{\pi\ \phi d\ n}{10^3}\right\}$ Rotating speed n : s^{-1} {rpm} I.D. ϕd : mm Case:2 I.D. 20mm, rotating speed 120rpm. $\frac{\pi\times 20\times 2}{10^3}=0.126$ (m/s)	$PV=\frac{\pi\ W\ n}{10^3\times L}$, $\left\{\frac{\pi\ W\ n}{10\times L}\right\}$ Load W : N {kgf} Rotating speed n : s^{-1} {rpm} Length L : mm I.D. ϕd : mm Case:3 I.D. 20mm, length 10mm, rotating speed 120rpm, 1000N journal load. $\frac{\pi\times 20\times 1000\times 2}{10^3\times 20\times 100}=0.63$ (N/mm²·m/s)
Oscillation 	$P=\frac{W}{\phi d\times L}$, $\left\{\frac{10^2 W}{\phi d\times L}\right\}$ Load W : N {kgf} I.D. ϕd : mm Length L : mm	$V=\frac{\phi d\ c\ \theta}{10^3}$, $\left\{\frac{\pi\ \phi d\ c\ \theta}{180\times 10^3}\right\}$ Oscillating cycle speed c : s^{-1} {cpm} Oscillating angle θ : rad {°} I.D. ϕd : mm	$PV=\frac{W\ \phi d\ c\ \theta}{10^3\times \phi d\times L}$, $\left\{\frac{\pi\ W\ \phi d\ c\ \theta}{18\times 10^2\times \phi d\times L}\right\}$ Load W : N {kgf} Cycle speed c : s^{-1} {cpm} Oscillating angle θ : rad {°} Length L : mm I.D. ϕd : mm
Reciprocation 	$P=\frac{W}{\phi d\times L}$, $\left\{\frac{10^2 W}{\phi d\times L}\right\}$ Load W : N {kgf} I.D. ϕd : mm Length L : mm	$V=\frac{2\ c\ S}{10^3}$, $\left\{\frac{2\ c\ S}{10^3}\right\}$ Reciprocation cycle speed c : s^{-1} {cpm} Stroke distance S : mm	$PV=\frac{2\ W\ c\ S}{10^3\times \phi d\times L}$, $\left\{\frac{W\ c\ S}{5\times \phi d\times L}\right\}$ Load W : N {kgf} Cycle speed c : s^{-1} {cpm} Stroke distance S : mm I.D. ϕd : mm Length L : mm
Washer	**P N/mm²[kgf/cm²]**	**V m/sec[m/mim]**	**PV N/mm²·m/s[kgf/cm²·m/mim]**
Thrust motion 	Rotation $P=\frac{4W}{\pi\times(\phi D^2-\phi d^2)}$, $\left\{\frac{400W}{\pi\times(\phi D^2-\phi d^2)}\right\}$ Oscillation $P=\frac{4W}{\pi\times(\phi D^2-\phi d^2)}$, $\left\{\frac{400W}{\pi\times(\phi D^2-\phi d^2)}\right\}$ Load W : N {kgf} I.D. ϕd : mm O.D. ϕD : mm	Rotation $V=\frac{\pi\ \phi D\ n}{10^3}$, $\left\{\frac{\pi\ \phi D\ n}{10^3}\right\}$ Oscillation $V=\frac{\phi D\ c\ \theta}{10^3}$, $\left\{\frac{\pi\ \phi D\ c\ \theta}{180\times 10^3}\right\}$ Rotating speed n : s^{-1} {rpm} Cycle speed c : s^{-1} {cpm} Oscillating angle θ : rad {°} O.D. D : mm	Rotation $PV=\frac{4\ W\ \phi D\ n}{10^3\times(\phi D^2-\phi d^2)}$, $\left\{\frac{400\ W\ \phi D\ n}{10^3\times(\phi D^2-\phi d^2)}\right\}$ Oscillation $PV=\frac{4\ W\ \phi D\ c\ \theta}{10^3\times(\phi D^2-\phi d^2)\pi}$, $\left\{\frac{400\ W\ \phi D\ c\ \theta}{180\times 10^3\times(\phi D^2-\phi d^2)}\right\}$ Load W : N {kgf} Rotating speed n : s^{-1} {rpm} Cycle speed c : s^{-1} {cpm} Oscillating angle θ : rad {°} I.D. ϕd : mm O.D. ϕD : mm
Plate	**P N/mm²[kgf/cm²]**	**V m/sec[m/mim]**	**PV N/mm²·m/s[kgf/cm²·m/mim]**
Reciprocation 	$P=\frac{W}{B\times L}$, $\left\{\frac{10^2 W}{B\times L}\right\}$ Load W : N {kgf} Length L : mm Width B : mm	$V=\frac{2\ c\ S}{10^3}$, $\left\{\frac{2\ c\ S}{10^3}\right\}$ Cycle speed c : s^{-1} {cpm} Stroke distance S : mm	$PV=\frac{2\ W\ c\ S}{10^3\times B\times L}$, $\left\{\frac{W\ c\ S}{5\times B\times L}\right\}$ Load W : N {kgf} Cycle speed c : s^{-1} {cpm} Stroke distance S : mm Length L : mm Width B : mm