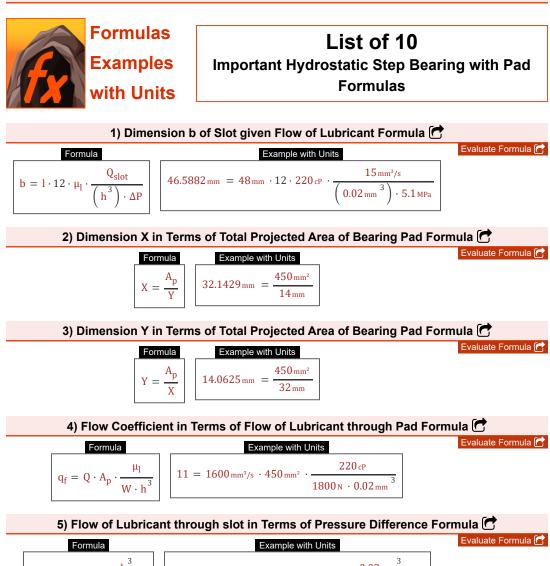
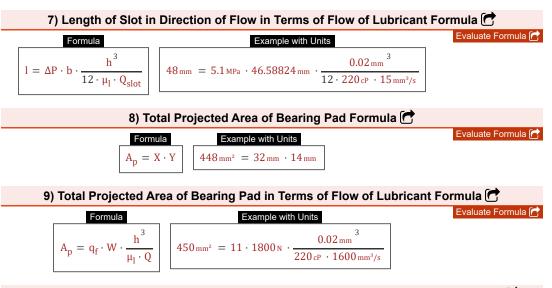
Important Hydrostatic Step Bearing with Pad Formulas PDF



$$Q_{slot} = \Delta P \cdot b \cdot \frac{h^{3}}{12 \cdot \mu_{l} \cdot l} \left[15 \, \text{mm}^{3}/\text{s} = 5.1 \, \text{MPa} \cdot 46.58824 \, \text{mm} \cdot \frac{0.02 \, \text{mm}^{3}}{12 \cdot 220 \, \text{cP} \cdot 48 \, \text{mm}} \right]$$

6) Flow of Lubricating Oil Passing through Pad in Terms of Flow Coefficient Formula 🕝				
	Formula	Example with Units	Evaluate Formula 🕝	
	$Q = q_f \cdot W \cdot \frac{h^3}{A_p \cdot \mu_l}$	$1600 \mathrm{mm^3/s} = 11 \cdot 1800 \mathrm{N} \cdot \frac{0.02 \mathrm{mm^3}}{450 \mathrm{mm^2} \cdot 220 \mathrm{cP}}$		



10) Total Projected Area of Bearing Pad in Terms of Load acting on Bearing Formula 🕝

Formula	Example with Units	
W	$450.1125 \mathrm{mm^2} = \frac{1800 \mathrm{N}}{1000 \mathrm{N}}$	
$A_p = \frac{p_r \cdot a_f}{p_r \cdot a_f}$	$430.1125 \text{ mm}^2 = \frac{4.3 \text{ MPa} \cdot 0.93}{4.3 \text{ MPa} \cdot 0.93}$	

Evaluate Formula (

Variables used in list of Hydrostatic Step Bearing with Pad Formulas above

- af Load Coefficient for Bearing
- A_p Total Projected Area of Bearing Pad (Square Millimeter)
- **b** Breadth of Slot for Oil Flow (Millimeter)
- h Oil Film thickness (Millimeter)
- I Length of Slot in Direction of Flow (Millimeter)
- **p**_r Pressure of Lubricating Oil (Megapascal)
- **Q** Flow of Lubricant (Cubic Millimeter per Second)
- **q**f Flow Coefficient
- **Q**_{slot} Flow of Lubricant from Slot (*Cubic Millimeter per Second*)
- W Load Acting on Sliding Bearing (Newton)
- X Dimension X of Bearing Pad (Millimeter)
- Y Dimension Y of Bearing Pad (Millimeter)
- ΔP Pressure Difference between Slot Sides (Megapascal)
- **µ** Dynamic Viscosity of Lubricant (Centipoise)

Constants, Functions, Measurements used in list of Hydrostatic Step Bearing with Pad Formulas above

- Measurement: Length in Millimeter (mm) Length Unit Conversion
- Measurement: Area in Square Millimeter (mm²) Area Unit Conversion
- Measurement: Pressure in Megapascal (MPa) Pressure Unit Conversion
- Measurement: Force in Newton (N)
 Force Unit Conversion
- Measurement: Volumetric Flow Rate in Cubic Millimeter per Second (mm³/s) Volumetric Flow Rate Unit Conversion
- Measurement: Dynamic Viscosity in Centipoise
 (cP)

Dynamic Viscosity Unit Conversion 🕝



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