



# Wheel Centre Rates for Independent Suspension Formulas

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## List of 12 Wheel Centre Rates for Independent Suspension Formulas

## Wheel Centre Rates for Independent Suspension C

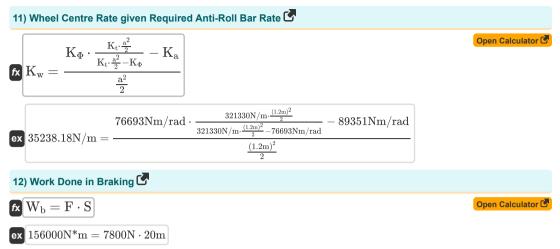
1) Area of Brake Lining 
$$\mathbf{C}$$
  
2)  $A_1 = \frac{w \cdot r_b \cdot a \cdot \pi}{180}$  (Oper Catculator (2)  
3)  $0.002778m^2 = \frac{0.19m \cdot 0.4m \cdot 120^* \cdot \pi}{180}$   
2) Assumed Initial Roll Rate given Required Anti-Roll Bar Rate  $\mathbf{C}$   
3) Assumed Initial Roll Rate given Required Anti-Roll Bar Rate  $\mathbf{C}$   
3)  $K_{\Phi} = \left(K_a + K_w \cdot \frac{a^2}{2}\right) \cdot \frac{K_i \cdot \frac{a^2}{2}}{K_i \cdot \frac{s^2}{2} + K_a + K_w \cdot \frac{\pi^2}{2}}$   
3)  $Fake Fluid Pressure \mathbf{C}$   
3) Brake Fluid Pressure  $\mathbf{C}$   
3) Brake Fluid Pressure  $\mathbf{C}$   
4) Braking Efficiency  $\mathbf{C}$   
5)  $106666.67N/m^2 = \frac{500N}{0.03m^2}$   
4) Braking Efficiency  $\mathbf{C}$   
5) Power Absorbed by Disc Brake  $\mathbf{C}$   
5) Power Absorbed by Disc Brake  $\mathbf{C}$   
5) Power Absorbed by Disc Brake  $\mathbf{C}$   
5)  $P_{\Phi} = 2 \cdot p \cdot A_p \cdot \mu_p \cdot R_m \cdot n \cdot 2 \cdot n \cdot \frac{N}{60}$   
5)  $0.006105W = 2 \cdot 8N/m^2 \cdot 0.01m^2 \cdot 0.34 \cdot 0.25m \cdot 2.01 \cdot 2 \cdot 2.01 \cdot \frac{200/min}{60}$ 

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## Variables Used

- a Track Width of Vehicle (Meter)
- A Area of Master Cylinder Piston (Square Meter)
- Al Area of Brake Lining (Square Meter)
- An Area of One Piston Per Caliper (Square Meter)
- F Braking Force on Brake Drum (Newton)
- Fcl Force Produced By Master Cylinder (Newton)
- Ka Required Anti Roll Bar Rate (Newton Meter per Radian)
- K<sub>r</sub> Ride Rate (Newton per Meter)
- Kt Tyre Vertical Rate (Newton per Meter)
- Kw Wheel Centre Rate (Newton per Meter)
- K<sub>o</sub> Assumed Initial Roll Rate (Newton Meter per Radian)
- **n** Number of Caliper Units
- N Revolution of Discs Per Minute (1 Per Minute)
- p Line Pressure (Newton per Square Meter)
- P Brake Fluid Pressure (Newton per Square Meter)
- Pd Power Absorbed By Disc Brake (Watt)
- rb Brake Drum Radius (Meter)
- Rm Mean Radius of Caliper Unit to Disc Axis (Meter)
- S Stopping Distance During Braking in Meters (Meter)
- W Brake Lining Width (Meter)
- W Weight of Vehicle (Newton)
- W<sub>b</sub> Work Done in Braking (Newton Meter)
- α Angle Between Linings of Brake Shoes (Degree)
- n Braking Efficiency
- µp Coefficient of Friction of Pad Material

#### **Constants, Functions, Measurements used**

- Constant: pi, 3.14159265358979323846264338327950288
   Archimedes' constant
- Measurement: Length in Meter (m) Length Unit Conversion
- Measurement: Area in Square Meter (m<sup>2</sup>) Area Unit Conversion
- Measurement: Pressure in Newton per Square Meter (N/m<sup>2</sup>) Pressure Unit Conversion
- Measurement: Power in Watt (W) Power Unit Conversion
- Measurement: Force in Newton (N) Force Unit Conversion
- Measurement: Angle in Degree (°) Angle Unit Conversion
- Measurement: Surface Tension in Newton per Meter (N/m) Surface Tension Unit Conversion
- Measurement: Torque in Newton Meter (N\*m) Torque Unit Conversion
- Measurement: Torsion Constant in Newton Meter per Radian (Nm/rad) Torsion Constant Unit Conversion
- Measurement: Time Inverse in 1 Per Minute (1/min) Time Inverse Unit Conversion



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### Check other formula lists

- Rates for Axle Suspension in Race Car Formulas 
   Wheel Centre Rates for Independent Suspension
   Ride Rate and Ride Frequency for Race Cars
   Formulas
- Formulas

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