



Bolted Joints Formulas

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List of 10 Bolted Joints Formulas

Bolted Joints

1) Axial Length of Sleeve of Muff Coupling



Open Calculator

 $67 ext{mm} = 2 \cdot 27 ext{mm} + 0.013$

2) Diameter of Driving Shaft of Clamp Coupling given Length of Sleeve

fx
$$d=rac{L_{
m sh}}{3.5}$$

Open Calculator

$$27.14286 \mathrm{mm} = \frac{95 \mathrm{mm}}{3.5}$$

3) Diameter of Driving Shaft of Clamp Coupling given Outer diameter of Sleeve Halves

$$\mathrm{d}=rac{\mathrm{D_{so}}}{2.5}$$

Open Calculator

$$27.2 \text{mm} = \frac{68 \text{mm}}{2.5}$$



4) Diameter of Driving Shaft of Muff Coupling given Axial Length of Sleeve

fx $d = \frac{L - 0.013}{2}$

Open Calculator 🚰

 $27\mathrm{mm} = \frac{67\mathrm{mm} - 0.013}{2}$

5) Diameter of Driving Shaft of Muff Coupling given Outer Diameter of Sleeve

fx $d=rac{\mathrm{D_{so}}-0.013}{2}$

Open Calculator

 $27.5 \mathrm{mm} = rac{68 \mathrm{mm} - 0.013}{2}$

6) Length of Sleeve Halves of Clamp Coupling

fx $m [L_{sh} = 3.5 \cdot d]$

Open Calculator 🚰

 $\texttt{ex} \ 94.5 \text{mm} = 3.5 \cdot 27 \text{mm}$

7) Outer Diameter of Sleeve Halves of Clamp Coupling

fx $m D_{so} = 2.5 \cdot d$

Open Calculator

 $\boxed{67.5 \mathrm{mm} = 2.5 \cdot 27 \mathrm{mm} }$

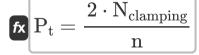


8) Outer Diameter of Sleeve of Muff Coupling

fx $\mathrm{D_{so}} = 2 \cdot \mathrm{d} + 0.013$

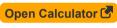
Open Calculator 🗗

- $\texttt{ex} \ 67 \text{mm} = 2 \cdot 27 \text{mm} + 0.013$
- 9) Tensile Force on Each Bolt of Clamp Coupling



Open Calculator

- $= 12000 N = \frac{2 \cdot 48000 N}{8}$
- 10) Tensile Force on Each Bolt of Clamp Coupling given Torque
- $\left| \mathbf{R} \right| \mathbf{P}_{\mathrm{t}} = rac{2 \cdot \mathbf{M}_{\mathrm{t}}}{\mu \cdot \mathbf{d} \cdot \mathbf{n}}$



 $= 12268.52 N = \frac{2 \cdot 397500 N^* mm}{0.3 \cdot 27 mm \cdot 8}$



Variables Used

- d Diameter of Driving Shaft for Coupling (Millimeter)
- D_{SO} Outer Diameter of Sleeve of Coupling (Millimeter)
- L Axial Length of Sleeve of Muff Coupling (Millimeter)
- L_{sh} Length of Sleeve Halves of Coupling (Millimeter)
- M_t Torque Transmitted by Coupling (Newton Millimeter)
- n Number of Bolts in Clamp Coupling
- N_{clamping} Clamping Force on Shaft for Clamp Coupling (Newton)
- Pt Tensile Force on Clamp Coupling Bolt (Newton)
- µ Coefficient of Friction for Clamp Coupling





Constants, Functions, Measurements used

- Measurement: Length in Millimeter (mm)
 Length Unit Conversion
- Measurement: Force in Newton (N)

 Force Unit Conversion
- Measurement: Torque in Newton Millimeter (N*mm)
 Torque Unit Conversion





Check other formula lists

Bolted Joints Formulas

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