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Bundle Diameter in Heat Exchanger Formulas

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List of 12 Bundle Diameter in Heat Exchanger Formulas

Bundle Diameter in Heat Exchanger

1) Bundle Diameter for Eight Tube Pass Square Pitch in Heat Exchanger



$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.0331} \right)^{\frac{1}{2.643}}$$

[Open Calculator !\[\]\(de95854c7ee024cfadc48187bbb781b2_img.jpg\)](#)

$$\text{ex } 621.9093\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.0331} \right)^{\frac{1}{2.643}}$$

2) Bundle Diameter for Eight Tube Pass Triangular Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.0365} \right)^{\frac{1}{2.675}}$$

[Open Calculator !\[\]\(6a9b39b98eb945faa14c645ec99e4eaa_img.jpg\)](#)

$$\text{ex } 575.1534\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.0365} \right)^{\frac{1}{2.675}}$$



3) Bundle Diameter for Four Tube Pass Square Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.158} \right)^{\frac{1}{2.263}}$$

[Open Calculator !\[\]\(cbe80b694ebd74fcfe136a095b608235_img.jpg\)](#)

$$\text{ex } 558.9682\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.158} \right)^{\frac{1}{2.263}}$$

4) Bundle Diameter for Four Tube Pass Triangular Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.175} \right)^{\frac{1}{2.285}}$$

[Open Calculator !\[\]\(3e2231b1ad3ca8da8658228c00dd08e0_img.jpg\)](#)

$$\text{ex } 517.4497\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.175} \right)^{\frac{1}{2.285}}$$

5) Bundle Diameter for One Tube Pass Square Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.215} \right)^{\frac{1}{2.207}}$$

[Open Calculator !\[\]\(0d5ec72f61334709c3fc9450209b754f_img.jpg\)](#)

$$\text{ex } 529.5655\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.215} \right)^{\frac{1}{2.207}}$$



6) Bundle Diameter for One Tube Pass Triangular Pitch in Heat Exchanger



$$fx \quad D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.319} \right)^{\frac{1}{2.142}}$$

Open Calculator

$$ex \quad 487.124\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.319} \right)^{\frac{1}{2.142}}$$

7) Bundle Diameter for Six Tube Pass Square Pitch in Heat Exchanger

$$fx \quad D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.0402} \right)^{\frac{1}{2.617}}$$

Open Calculator

$$ex \quad 597.7\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.0402} \right)^{\frac{1}{2.617}}$$

8) Bundle Diameter for Six Tube Pass Triangular Pitch in Heat Exchanger



$$fx \quad D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.0743} \right)^{\frac{1}{2.499}}$$

Open Calculator

$$ex \quad 549.847\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.0743} \right)^{\frac{1}{2.499}}$$



9) Bundle Diameter for Two Tube Pass Square Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.156} \right)^{\frac{1}{2.291}}$$

[Open Calculator !\[\]\(e2376d476d06eb31946dc01a69a4403a_img.jpg\)](#)

$$\text{ex } 539.3967\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.156} \right)^{\frac{1}{2.291}}$$

10) Bundle Diameter for Two Tube Pass Triangular Pitch in Heat Exchanger

$$\text{fx } D_{\text{Bundle}} = \text{Dia}_O \cdot \left(\frac{N_T}{0.249} \right)^{\frac{1}{2.207}}$$

[Open Calculator !\[\]\(0b5e7e25e8775f7e7e80906ada4f0021_img.jpg\)](#)

$$\text{ex } 495.4837\text{mm} = 19.2\text{mm} \cdot \left(\frac{325}{0.249} \right)^{\frac{1}{2.207}}$$

11) Bundle Diameter given Number of Tubes in Centre Row and Pitch

$$\text{fx } D_{\text{Bundle}} = N_r \cdot P_{\text{Tube}}$$

[Open Calculator !\[\]\(bd3b31712ad9bab5a241210fa6925cdd_img.jpg\)](#)

$$\text{ex } 552\text{mm} = 24 \cdot 23\text{mm}$$

12) Bundle Diameter given Shell Diameter and Shell Clearance

$$\text{fx } D_{\text{Bundle}} = D_s - \text{Shell}_{\text{clearance}}$$

[Open Calculator !\[\]\(7bc43b319a082987e20f7bf78f4bab80_img.jpg\)](#)

$$\text{ex } 495\text{mm} = 510\text{mm} - 15\text{mm}$$




Variables Used

- D_{Bundle} Bundle Diameter (Millimeter)
- D_{S} Shell Diameter (Millimeter)
- Dia_O Pipe Outer Diameter in Bundle Diameter (Millimeter)
- N_r Number of Tubes in Vertical Tube Row
- N_T Number of Tubes in Bundle Diameter
- P_{Tube} Tube Pitch (Millimeter)
- $\text{Shell}_{\text{clearance}}$ Shell Clearance (Millimeter)



Constants, Functions, Measurements used

- **Measurement: Length** in Millimeter (mm)
Length Unit Conversion 



Check other formula lists

- [Basic Formulas of Heat Exchanger Designs](#) 
- [Bundle Diameter in Heat Exchanger Formulas](#) 
- [Heat Transfer Coefficient in Heat Exchangers Formulas](#) 

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