

Important Bundle Diameter in Heat Exchanger Formulas PDF



Formulas
Examples
with Units

List of 12 Important Bundle Diameter in Heat Exchanger Formulas

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

Formula

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

Example with Units

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

Evaluate Formula

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

Formula

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

Example with Units

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

Evaluate Formula

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

Formula

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

Example with Units

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

Evaluate Formula

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

Formula

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

Example with Units

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

Evaluate Formula

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

Formula

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

Example with Units

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

Evaluate Formula



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

Formula

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

Example with Units

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

Evaluate Formula 

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

Formula

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

Example with Units

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

Evaluate Formula 

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

Formula

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

Example with Units

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

Evaluate Formula 

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

Formula

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

Example with Units

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

Evaluate Formula 

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

Formula

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

Example with Units

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

Evaluate Formula 

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

Formula

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

Example with Units

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

Evaluate Formula 

12) Bundle Diameter given Shell Diameter and Shell Clearance Formula

Formula

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

Example with Units

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


Evaluate Formula 



Variables used in list of Bundle Diameter in Heat Exchanger Formulas above

- 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 in list of Bundle Diameter in Heat Exchanger Formulas above

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



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