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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

Open Calculator

fx $$D_{Bundle} = Dia_{O} \cdot \left(\frac{N_{T}}{0.0331} \right)^{\frac{1}{2.643}}$$

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

Open Calculator

fx $$D_{Bundle} = Dia_{O} \cdot \left(\frac{N_{T}}{0.0365} \right)^{\frac{1}{2.675}}$$

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

Open Calculator

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

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

Open Calculator

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

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

Open Calculator

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

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

Open Calculator

fx $$D_{Bundle} = Dia_O \cdot \left(\frac{N_T}{0.319} \right)^{\frac{1}{2.142}}$$

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

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

Open Calculator

fx $$D_{Bundle} = Dia_O \cdot \left(\frac{N_T}{0.0402} \right)^{\frac{1}{2.617}}$$

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

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

Open Calculator

fx $$D_{Bundle} = Dia_O \cdot \left(\frac{N_T}{0.0743} \right)^{\frac{1}{2.499}}$$

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

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

Open Calculator

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

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

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

Open Calculator

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

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

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

Open Calculator

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

ex $$552mm = 24 \cdot 23mm$$

12) Bundle Diameter given Shell Diameter and Shell Clearance

Open Calculator

fx $$D_{Bundle} = D_s - Shell_{clearance}$$

ex $$495mm = 510mm - 15mm$$

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)*
- $Shell_{clearance}$ 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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