3 Dimensional Hg Jet Simulation Using Implicit LES Method

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Schematics of Target System_ V GRAVES

Plate thickness: 0.25”
Simplification Of The 3D Hg Jet

Thickes normal to page = 1.375”
Nozzle diameter = 1 cm

dimensional model (unit: inch)

Non-dimensional model (normalized by $D_{jet \text{ exit}}$)

Simplified model
Boundary Conditions

X axis is in the short (2 unit) direction
Y axis is in the long (3.9 unit) direction
Z axis is in the very long (50 unit direction = direction of jet
No gravity in the model.
Axial Velocity Contour At The Jet Inlet (without weld bead)

\[ u = U + \sqrt{\frac{2k}{3}} \]

\[ k = \frac{1}{2} (u')^2 + (v')^2 + (w')^2 \]

pipe simulation

The x and y axes on this slide are rotated by 90 deg compared to those on slide 4.