



# Creating a Fluid Domain Inside a Solid Structure

## *Introduction*

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The majority of 3D CAD files include only the geometry of the product to be manufactured. For finite element analysis, however, you find yourself often in a situation where additional geometry is needed, for example, to analyze the flow inside or outside a device. This tutorial, involving the geometry for an exhaust manifold, demonstrates how to create an extra domain for flow analysis after importing and defeaturing a CAD assembly. The following steps are covered:

- Importing a Parasolid® file,
- Deleting a larger detail from the geometry,
- Creating the union of all imported objects needed to generate a domain inside the objects,
- Moving the imported objects using the rigid transform operation to eliminate a gap,
- Using the cap faces operation to create the additional domain,
- Controlling where an operation is inserted in the geometry sequence,
- Finding and removing fillets and holes from the geometry.

For the step-by-step instructions of this tutorial, see the book *Introduction to CAD Import Module*.

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**Application Library path:** CAD\_Import\_Module/Tutorial\_Examples/  
exhaust\_manifold\_create\_fluid\_domain

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