# **FLUENT - Flow Past a Cylinder - Step 4**

Problem Specification.

- 1. Create Geometry in GAMBIT.
- 2. Mesh Geometry in GAMBIT.
- 3. Specify Boundary Types in GAMBIT.
- 4. Set Up Problem in FLUENT.
- 5. Solve.

6. Analyze Results.

7. Change the Domain Size. 8. Unsteady Flow.

Problem Set.

Citations.

## Set Up Problem in FLUENT

#### Launch FLUENT

Start > Programs > Fluent Inc > FLUENT 6.3.26

Select 2ddp from the list of options and click Run.

#### Import File

Main Menu > File > Read > Case...

Navigate to your working directory and select the cylinder.msh file. Click OK.

#### Analyze Grid

Grid > Info > Size

Check how many cells and nodes the mesh has.

#### Display > Grid

Display the grid information.

#### **Define Properties**

Define > Models > Solver...

Under the Solver box, select Pressure Based.

Click OK.

Define > Models > Viscous

Select Laminar under Model

Click OK.

Define > Models > Energy

Do not select Energy Equation.

Define > Materials

Make sure air is selected under Fluent Fluid Materials. Set Density to constant and equal to 1 kg/m<sup>3</sup> and Viscosity to 0.025 kg/m-s. We choose these numbers so that Re = 40.

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### Click Change/Create.

Define > Operating Conditions

We'll work in terms of gauge pressures in this example. So set Operating Pressure to the ambient value of 101,325 Pa.

Click OK.

Define > Boundary Conditions

Set inlet, click Set... and set the Velocity Magnitude to 1 m/s. Click OK.

Set outlet, click Set... and set the Gauge Pressure at this boundary to 0. Click OK.

Go to Step 5: Solve.

See and rate the complete learning module.

Go to all FLUENT Learning Modules