

Pipe Sizing

Flow
Flow rate: 001 Gal./Min.
Pressure Drop: 1.4 ft. fluid
Velocity: 1.1 ft./sec. Transition

Fluid
Type: Water @ 60°F
Density: 62.4 lb./ft.³
Dynamic Viscosity: 0.0000235 lb.*sec./ft.²

Pipe
Type: Schedule 40 Steel
Size: 1/2 I.D.: 0.622 in.
Length: 100 Ft.

Buttons: PD to Clip, Exit, About

Documentation for PIPESIZE.EXE

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When you run the program by double clicking the icon, the dialog box will appear. By moving the sliders you can select the fluid flow rate and pipe size. As you move the sliders, the pressure drop and velocity are continuously updated. Adjust the sliders until the pressure drop and velocity are within reasonable limits (your job to determine limits). The button labeled "PD TO CLIP" will copy the Pressure drop to the clipboard so you could manually paste to a spreadsheet for summing up pressure drop for multiple sections of pipe.

Fluids and pipes available are those commonly use for HVAC systems. By default, pressure drop is calculated per 100 feet. You can alternately enter the actual pipe length. Pressure drop is calculated using the Darcey formula. Friction factor is calculated for one of three flow conditions: Laminar, Transition and Turbulent. The correct friction factor is selected and used automatically. The flow condition selected is displayed on the screen near the flow rate slider. The friction factor formulas are based on the work of L.F. Moody, and J.W. Murdock's approximation for the first iteration (which makes the program much faster). I got these formulas from the book "Applied Fluid Mechanics" by Mott.

As of February 1995, this program is freeware. I will be producing a shareware version in the near future. Some of the planned enhancements are:

- * User customizable fluids
- * User customizable pipe types and sizes
- * More flexible units
- * Grid of pipe sections to tally up a pump head.

[Click to Run](#)