

Selection of Hose Diameter from Flow Rate and Velocity

The Fluid Velocity Nomogram gives the velocity of a liquid or gas as a function of flow rate and inside diameter of the fluid line. The commonly recommended maximum velocities for hydraulic oil systems at 200°F or less are indicated for guidance.

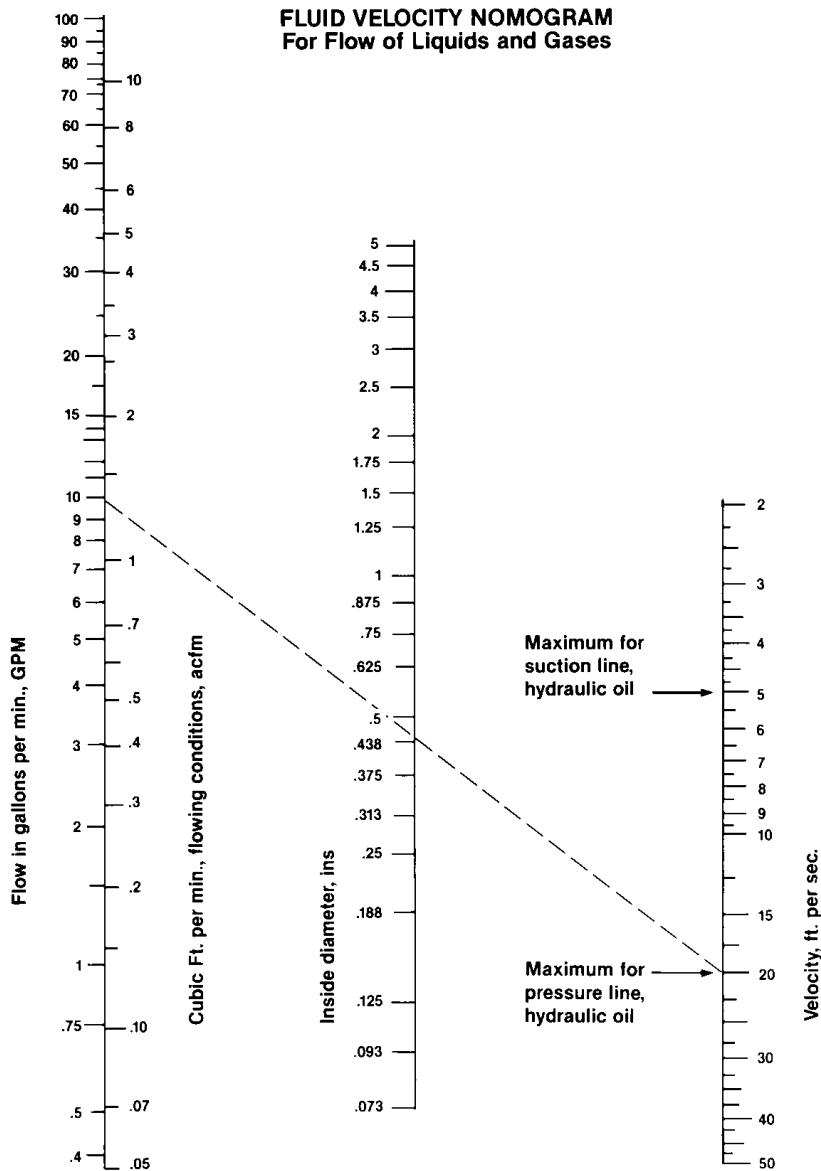
Example: At 10 gpm, what is the minimum size within the recommended velocity range for a hydraulic pressure line?

The dashed line drawn from the 10 gpm mark on the left hand line to the maximum velocity of 20 fps intersects the middle line at .438 " (7/16" I. D. hose or tubing). For a hose application, use 1/2" I. D., the nearest common standard size.

This chart is based on the following formulas: $v_{fps} = \frac{.321Q}{bd^2}$, Q = gal per min
d = hose or tube I. D. (inch)

cu. ft./min. = .1337 Q

The cu. ft. per min. value is the actual volume flow rate under flowing conditions. For air, standard cfm of free air = 7.81 actual cfm when the inlet air is at 100 PSig, 68°F.



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