Pipe Flow: Q = πνDRe/4

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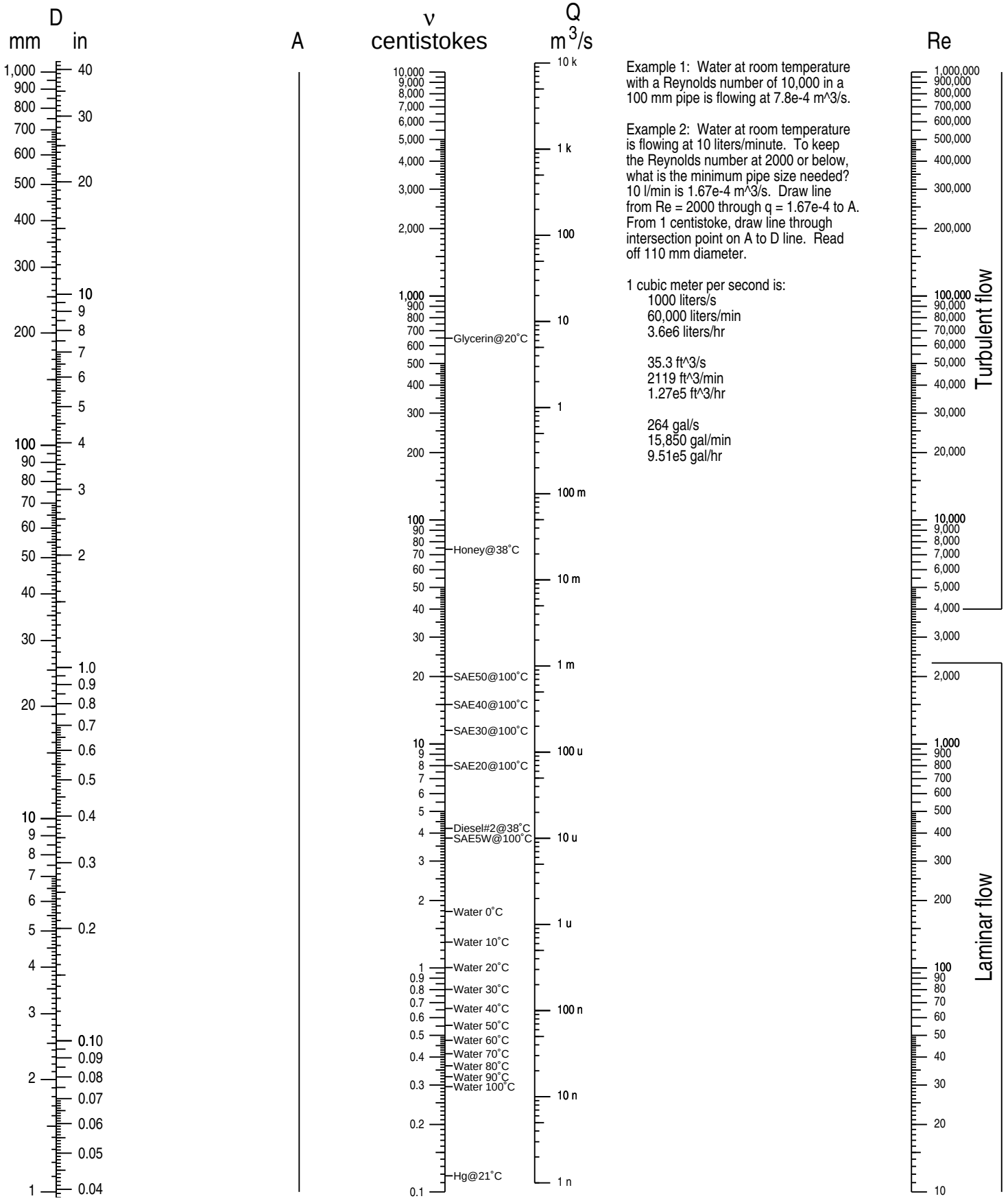

Example 1: Water at room temperature with a Reynolds number of 10,000 in a 100 mm pipe is flowing at 7.8e-4 m^3/s.

Example 2: Water at room temperature is flowing at 10 liters/minute. To keep the Reynolds number at 2000 or below, what is the minimum pipe size needed? 10 l/min is 1.67e-4 m^3/s. Draw line from Re = 2000 through q = 1.67e-4 to A. From 1 centistoke, draw line through intersection point on A to D line. Read off 110 mm diameter.

1 cubic meter per second is:
- 1000 liters/s
- 60,000 liters/min
- 3.6e6 liters/hr

- 35.3 ft^3/s
- 2119 ft^3/min
- 1.27e5 ft^3/hr

- 264 gal/s
- 15,850 gal/min
- 9.51e5 gal/hr

Key: D-ν and Q-Re meet on A 1 centistoke = 10^{-6} m^2/s