



sTEm-at-Work (Puzzle #17): Pressure Relief Valve Performance Test

A “We-Make-it-All” quality control technician is checking the operation of two identical pressure relief valves, PRV-078 and PRV-321. Each valve is attached to identical fixed volume closed container batch reactors. The valve is supposed to open if the pressure in the container goes above a set value, and close when the pressure drops below that set value. When identical, equal amounts of the same valve test liquid reactants A and B are mixed in each tank, a volatile liquid, molecule C, is created. The reaction is extremely exothermic (gives off a lot of heat). The two valves should behave exactly the same way but they don’t. The technician sends the malfunctioning valve back to manufacturing to be reassembled.

PRV-321 is not working properly. (yes or no) Please submit your answers [www.fl-ate.org](http://www.fl-ate.org)