

Drop Leg Sizing and Characteristics

As an ideal target the drop leg diameter should be sized for a velocity of approximately ¼ Ft. per second at the system design flow rate. Using Stoke's settling laws it can be calculated that about ¼ foot per second is about the optimum velocity for the drop leg flow in order to allow entrained bubbles to rise at a higher rate than the downward liquid velocity, preventing the bubbles from entering the pump suction.

The drop leg mouth should contain a crossed vortex eliminator and/or horizontal baffle plate. In addition, the absolute minimum submergence of the drop leg opening below the vessel minimum liquid level should be 12 inches.

Finally, the drop leg should extend below the pump leg entrance. This assumes the conventional horizontal pump leg connected to a vertical drop leg. Where the drop leg is omitted in favor of a pump leg with a long radius elbow connected directly to the vessel, the pump leg should be connected off the vessel vertical centerline so oil can be collected from a tap off the bottom vertical centerline of the vessel.