

Case Study: Pharmaceutical Surge Tank Application

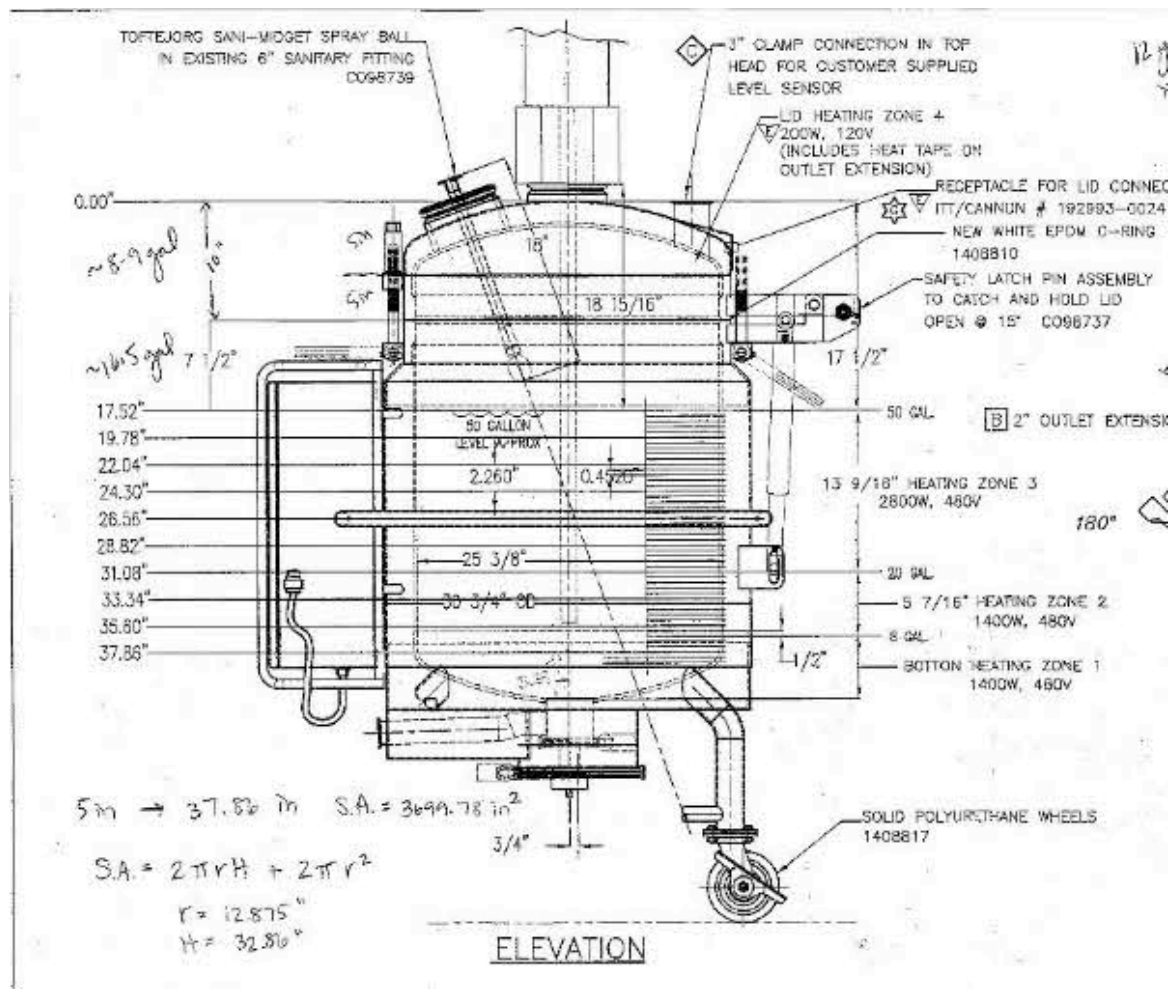
A pharmaceutical company in Pennsylvania called Gamajet with a unique application. This company was updating a bottling line for a liquid children's cold medicine. The update included the addition of a filling/surge tank used in the bottling line.

The customer had an existing portable tank that they wanted to use rather than purchase a new vessel. Pharmaceutical vessels of any size are very expensive. The existing vessel had a competitors rotary spray ball installed. While the vessel was rather small at 25" dia x 30" tall, it did have several challenges. The vessel had numerous existing nozzles, an agitator and a liquid level sensor existed as internal obstructions. The rotary spray ball was not passing the riboflavin tests nor was it providing adequate cleaning in the trials. Besides the riboflavin test, the trials were a worst-case scenario of having product fill the vessel including the existing nozzles at the top of the vessel. The product was allowed to dry to a hardened state.

A riboflavin test is a common test performed in pharmaceutical and personal care applications. It is a test that proves whether all internal areas of a vessel are being contacted by the wash liquid. A solution of B2 vitamin is diluted in water and sprayed on all internal surfaces of a vessel. This liquid illuminates when exposed to ultraviolet light. While it does not indicate whether the contents of a vessel will actually be cleaned, it does indicate if all internal surfaces are wetted. Just because a spray ball passes a riboflavin test, it does not guarantee that the spray ball will actually clean a vessel.

The customer did not want to install a pump and wanted to use the existing source of 170-degree potable water to drive the Gamajet Aseptic 6 unit. The Aseptic 6 unit was chosen because the customer wanted to leave the unit in the tank permanently. Due to the sanitary design and lack of any internal lubricant, the Aseptic 6 was the logical choice. The unit was inserted roughly 8" into the vessel to maximize the cleaning of the existing nozzles on the top of the tank. The 8" insertion was also above the normal liquid level line of the tank so the Aseptic 6 unit would not be submerged in the liquid product. The Aseptic 6 was set up to run at 12 gpm at 50 psi.

The first test was to clean the worst-case scenario of dried on syrup residue. Once inserted, the unit ran for a full cycle of 8 minutes maximizing the coverage inside the vessel. Once a full cleaning cycle was completed, the tank was visually checked and passed the inspection. After cleaning the worst-case scenario of hardened product, the tank was sprayed with the B2 riboflavin product. Another full cleaning cycle was performed. The vessel was checked with an ultraviolet light and passed the riboflavin test. Gamajet had a purchase order for the unit the next day.



Written by Andrew Delaney (Gamajet Cleaning Systems)