

NLB Tote Cleaning System with 3-D Nozzle

NLB was contacted by Nalco Chemical Company for help in cleaning their reusable Porta Feed® liquid shipping containers. The system of using the stainless steel Porta Feed units, in 200 and 400-gallon (757 and 1514 liters) capacities, to bulk ship the multitude of products that Nalco manufactures had become extremely successful. However, they needed a fast, efficient method of cleaning the Porta Feed units to insure a quick turnaround. Products of primary concern were latex polymers, which are difficult to remove manually.

NLB designed, engineered, and built a complete turnkey system to completely wash the Porta Feed units, inside and out. High-pressure water is supplied to the enclosure by two NLB Model 6100E-H pump units. Each of these 100 horsepower (75 kw) pump units supplies the high-pressure water at 165-degrees Fahrenheit (73-degrees Celsius).

In operating, the Porta Feeds are inverted and loaded onto the conveyor where they are then cycled into the cleaning station and deposited on a turntable. Once on the turntable, a nozzle extends to clean the Porta Feed drain, which may

be at any one of four different heights. The size of the container is detected by a limit switch encoder that is triggered while the tote enters the cleaning enclosure.

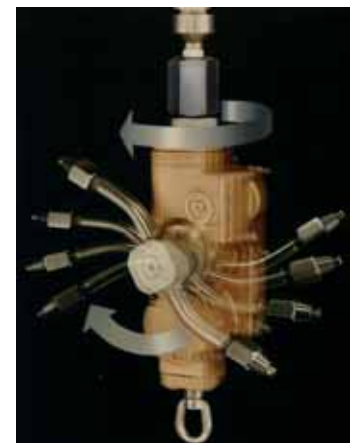
In the next sequence, the cleaning cycle for the inside of the Porta Feed uses an NLB 3750 3-D tank cleaning head, which extends up into the container while the Porta Feed unit begins to rotate. During the rotation and internal cleaning cycle, the outside of the Porta Feed unit is cleaned using a plate mounted NLB SPIN JET® spray unit. The SPIN JET traverses vertically at four different levels to insure complete external cleaning regardless of the height of the Porta Feed unit. Upon completion of this sequence, the Porta Feed unit is conveyed out of the enclosure passing over a high-pressure spray bar, which cleans the top of the container.

Manual cleaning methods took 15-20 minutes per unit and required workers to physically enter the containers. The NLB automated tote cleaning system provides thorough and efficient cleaning in a fraction of the time of manual cleaning. Cleaning production improved from 55 containers per day with manual cleaning to over 110 per day with the NLB system.



Left: NLB custom built turnkey system to wash totes inside and out.

Right: NLB 3750-40-20K 3-D tank cleaning head.



The Leader in High-Pressure Water Jet Technology