

## Tube Cleaning

Tubing is used in a variety of mechanical applications. Tubes need to be cleaned and installed in automobiles, refrigeration units, cooling applications, and other areas. Tube benders experience more challenges when it comes to cleaning their product than most other metal formers. Tubes present a challenge for cleaning, due to the viscosity of the lubricant used to protect the metal during the bends as well as the variations in shapes, tube diameters and orifice orientation.

There are three methods used to clean tubes. The first, and least effective, is a fixture system. In a fixture system, the tubes are cleaned by a direct spray. These cleaning systems are inefficient, as the fixture can only be used for one type of tube. If there are multiple tube designs, then the fixture will need to be adapted for every design. Changing the fixture takes time, costs money, and slows production.

Full immersion is another method to clean tubes. In a full immersion system, the tube is dipped into a bath and agitated with an ultrasonic washer. In these systems, the challenges are drying the part and finding a chemistry that can reliably break the surface tension present in the tubes. The results are often scattered and unreliable for a full time production run.

The Firbimatic, sealed solvent cleaning system offers a third method. Using percolthehyne, the Firbimatic unit delivers reliable results and a high quality cleaning. Many companies are skeptical of using perc in their cleaning process, but the stigma around solvent cleaning is unnecessary. Solvent cleaning, when applied properly, is not harmful to the environment. A sealed solvent cleaning system is able to control the cleaning solution and prevent damage to the environment.

In a recent test, the Firbimatic vastly out-performed a dip tank full immersion process that employed a strong alkaline cleaning solution.