

OMEGASONICS ON THE JOB

OMEGASONICS



OXYGEN GENERATION

In 1984, Pacific Consolidated Industries began manufacturing cryogenic air separation devices for extreme and remote environments. The company relocated from Anaheim, CA to a larger, expanded facility six (6) years ago and has significantly increased their product line to include ruggedized onsite liquid and gaseous oxygen and nitrogen generators as well as water treatment systems used in military, medical and the oil & gas markets. PCI has also expanded its technology platforms to include membrane and adsorption (PSA/VSA) for air separation, reverse osmosis, ozone and microfiltration for water purification. Since its inception, Pacific Consolidated Industries has manufactured thousands of nitrogen, oxygen and water treatment systems for operation in the most demanding and remote locations on earth.



Mobile Oxygen Transportation Systems must be cleaned and serviced every five (5) years per federal regulations.

PACIFIC CONSOLIDATED INDUSTRIES

BUSINESS TYPE:

- Oxygen/nitrogen generation, storage and delivery systems

PART/PRODUCT CLEANED:

- Brass, stainless steel and aluminum machined components
- Valves and fittings
- Plastic hoses
- Regulators

SUBSTANCE(S) REMOVED:

- Cutting oils
- Scale
- Dirt and grime
- Carbon

OMEGASONICS SYSTEM USED:

- Omega® Super Pro X2

MONEY/TIME SAVED:

- 3-1/2 hours per system

CRITICAL CARE

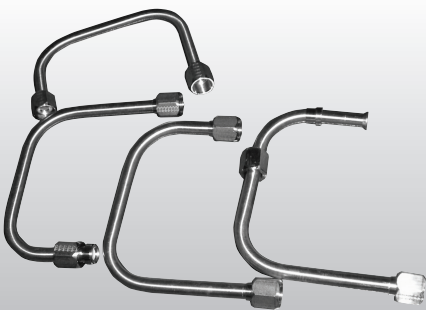
As PCI expanded its product line, their manufacturing requirements were being pushed to meet increased demands. Hal Weatherly who previously worked as a consultant for one of PCI's oxygen tank vendors was brought in to help streamline production. While initially utilizing some of the same approaches, Hal developed and implemented new and more effective ways to improve the overall cleanliness of their critical components. "Since we are dealing with critical care oxygen requirements, especially in hospital applications and military combat zones, our assembled components must be their absolute cleanest. Contamination is unacceptable", Hal explains. "Internal parts must be pristine."



Brass and stainless steel regulators must be absolutely clean.

IMPROVING PRODUCTIVITY

Since inception, PCI had always cleaned regulators, machined components, hoses and other parts by hand scrubbing either with solvents or in a soap and water solution. This process was quite labor intensive and required all the parts to go through a final isopropyl alcohol (IPA) rinse to ensure no contamination or soap residue was left over. Though the process met the requirements, it was neither cost nor time effective. There had to be a better solution.



Ultrasound cleans internal passages where hand scrubbing isn't consistent.



ENTER THE OMEGA® SUPER PRO X2

After extensive research, Hal found the only way to efficiently clean oxygen cylinder liners, whose narrow openings made this task difficult, was to use an ultrasonic cleaning process consisting of water and Omega DeScaler.

Ultrasonic cleaning creates millions of high frequency, cavitation vacuum bubbles that search out and implode on surfaces, gently but effectively removing dirt, scale, calcium, grime, oil and other residue from virtually any surface. Ultrasound is outstanding for precision, critical cleaning applications.

Hal once again contacted Omegasonics to help solve his cleaning needs. After testing a variety of parts, PCI determined the Super Pro X2 design would be ideal.

The Omega® X2 chosen has dual, heated, filtered, ultrasonic baths in one (1) self-contained portable frame to clean machined metal valves, fittings, brass regulators and plastic hoses used in a number of PCI's finished units including the Deployable Oxygen Concentration System (DOCS), the Self Generating Nitrogen Servicing Cart (SGNSC) and their Liquid Nitrogen Generators (LIN) to name a few. In fact, the Mobile Oxygen Transportation System (MOST) used in combat zones must by federal regulations be completely torn down, serviced and cleaned every five (5) years.



Parts are placed into the primary ultrasonic cleaning bath.



Easy to operate control panel.

SAVING TIME AND MONEY

Since converting to the Omega® X2 dual tank system, parts are now placed into the first station, an alkaline soap and water bath and ultrasonically processed for several minutes. The parts then go directly into a fresh water, secondary stage and are ultrasonically cleaned again to leave the finished products residue free.

This process not only reduces the cleaning time required per system from 4 hours to ½ hour, but eliminates the need for an IPA rinse. Because ultrasonic cleaning gets into microscopic areas more thoroughly than hand cleaning, PCI found there was no longer any residual soap or debris left to deal with. Hal acknowledged, "The previous cleaning method involving hand scrubbing was labor intensive and not entirely consistent. By nature, people have difficulty doing something exactly the same way every time. We aimed to streamline the parts cleaning process while proactively improving quality control. The X2 is a major contributor to this goal."



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