

TENABLE SCREW INVESTS IN MODIFIED ALCOHOL TECHNOLOGY TO COMPLEMENT EXISTING PERCHLOROETHYLENE OPERATIONS

Strategic investment adds flexibility to meet evolving customer cleaning requirements

Tenable Screw is a long-established, family-owned precision engineering company with over 80 years of expertise in the machining of high-precision CNC-turned and milled components. Operating across three UK sites – London, Coventry, and Marlborough – Tenable Screw supports a broad spectrum of industries, including automotive, aerospace, medical, defence, construction, and telecommunications.

The company operates more than 250 production machining centers, including up to 70 CNC (computer numerical control) sliding head machines – making it one of the UK's and world's leading subcontract machining specialists for high-volume, basic and complex CNC-turned and milled parts. Tenable Screw works with a wide range of materials, including brass, nickel silver, aluminum, mild steels, stainless steels, and copper.

Each year the company produces millions of parts tailored to specific customer requirements. This results in a vast range of complex component profiles, demanding highly adaptable cleaning systems. Renowned particularly for its production of electrical connectors, Tenable places strong emphasis on degreasing and technical cleanliness. Efficient removal of oils and contaminants is essential to maintaining the high standards of quality and performance that define its manufacturing output.

TENABLE PRECISION COMPONENTS

COMPANY

- Tenable Screw – precision engineering specialist of CNC-turned and milled components

CHALLENGE

- Increase cleaning capacity and operational flexibility while meeting evolving industry requirements and customer sustainability goals

SOLUTION

- Vacuum closed system (RCTS Advantage 2) from Karl Roll
- DOWCLENETM* 1601 modified alcohol solvent
- COMPLEASETM chemical leasing

RESULTS

- Cleaning throughput doubled with parallel operation of two systems
- Reduced downtime and improved workflow efficiency
- Increased flexibility to meet evolving, customer-specific cleaning requirements
- All-inclusive service package with reliable budgeting

Strategic Shift to Modified Alcohol

So far, Tenable Screw had been operating three closed degreasing machines on DOWPER™ MC, virgin-grade perchloroethylene – one at each of their three facilities.

With increasing production volumes, the company identified the need for a fourth degreasing system. This time round, the company decided to invest into modified alcohol cleaning technology. As part of an ongoing strategic investment plan, the machining specialist not only wanted to increase capacity but also introduce greater flexibility into their cleaning process.

While the cleaning performance with perchloroethylene has always been excellent and continues to meet many customer needs, Tenable Screw recognized the value in expanding their capabilities. By adding a complementary technology, they are better positioned to address evolving customer preferences and regulatory expectations in certain areas, such as defence and medical, where enhanced process control and documentation, as well as an increased focus on sustainability, are becoming more common.

DOWCLENETM* 1601 can remove oils and greases just as effectively as certain polar contaminants like cooling emulsions or solids such as particles and abrasives.

New Vacuum System with DOWCLENETM* 1601

In March 2024, Tenable Screw implemented the Karl Roll RCTS Advantage 2 closed vacuum cleaning system at their headquarter facility in London which runs on DOWCLENETM* 1601, a modified alcohol solvent. Thanks to its lipophilic and hydrophilic properties, DOWCLENETM* 1601 can remove oils and greases just as effectively as certain polar contaminants like cooling emulsions or solids such as particles and abrasives. The solvent also has low toxicity and good biodegradability.

The new system was installed alongside their existing plant. The addition of a second machine has increased operational flexibility and enabled solvent selection based on specific customer or industry requirements. As a result, the company now has the capability to clean using both modified alcohol and PERC, depending on the application.

Initially, the company anticipated a 6–12 month transition period, with the new system operating as a secondary unit. However, the implementation process surpassed expectations and proceeded more smoothly than anticipated. Within just a month of installation, Tenable Screw shifted the primary cleaning workload to the new machine and solvent.



“Before COMPLETE™, I was sourcing products from different suppliers, arranging transport, and dealing with scattered support. It was messy. If a problem came up, no one took ownership. Now, with everything under one roof from SAFECHEM, it’s far more manageable.”



Boosting Capacity and Operational Flexibility

Since implementing the new system, Tenable Screw has yielded several benefits. The new degreasing machine has allowed the company to keep up with the growing production volumes – doubling its weekly cleaning throughput when used in tandem with the existing system.

“We were struggling to keep up with demand. Now, not only are we meeting it – we’re getting ahead. That gives us breathing room to perform regular maintenance, which we hadn’t even considered before. Having two machines means we can now plan for maintenance and servicing without disrupting production. It’s been a real win for us”, says James King, Production Manager.

Operators report the new machine to be highly user-friendly, with significantly reduced downtime that helps maintain consistent productivity and minimizes interruptions for maintenance or troubleshooting.

The state-of-the-art machine technology with built-in distillation unit enables continuous recovery of used solvent, thereby reducing solvent consumption, waste and overall cleaning costs. Used in combination with DOWCLENETM* 1601, the cleaning results achieved have been excellent. Importantly, the new machine acquisition aligns Tenable Screw more closely with both internal sustainability goals and rising customer expectations around environmental responsibility.

To monitor solvent condition, operators can use the MAXICHECK™ Test Kit to easily perform regular on-site solvent testing. Thanks to the remarkable stability of DOWCLENETM* 1601, the need for re-stabilization is only occasional.



Streamlining Solvent Management with COMPLEASE™

When Tenable Screw converted to DOWPER™* MC (perchloroethylene) from competitor product on their three existing degreasing machines a year before, they had become a customer of COMPLEASE™ – the chemical leasing model offered by SAFECEM to help optimize solvent cleaning process and budget planning.

The agreement has now been extended to cover their solvent consumption with DOWCLEN™* 1601 in their fourth new machine. Under this agreement, all three of Tenable Screw's sites now benefit from an integrated approach to solvent supply, waste management, monitoring, and technical support – simplifying what was once a fragmented and inefficient process.

For a fixed monthly fee, COMPLEASE™ covers the supply of fresh solvent and take back of used solvent in the SAFE-TAINER™ System, service elements such as test kits and stabilizers, waste analysis and lab services, as well as employee training in process optimization and safe solvent handling.

King highlights the benefits: "Before COMPLEASE™, I was sourcing products from different suppliers, arranging transport, and dealing with scattered support. It was messy. If a problem came up, no one took ownership. Now, with everything under one roof from SAFECEM, it's far more manageable."

Initially, there were some concerns about the upfront cost, particularly during the first phase when full system refills and solvent replacements were needed. "There was a bit of a spike early on due to the initial fill volumes, However, as the system stabilized, ongoing costs aligned much more closely to our expectations. The overall value of the solution – including the services and support – has become very clear and compelling," says King.

The predictability and clarity of the ongoing costs, along with the technical support provided, have given Tenable Screw greater piece of mind in managing their cleaning operations. "More importantly, if any issues arise, we now have a partner we can rely on to help resolve them quickly," concludes King.



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