

A HUDSON VALLEY MANUFACTURING SUCCESS STORY

A proud, loyal, and dedicated team.

Tucked away in the idyllic town of Woodstock is a company that manufactures products and systems critical to our country's defense. AMETEK Rotron's Fans, Blowers and Cooling Systems are, and have been critical components in some of the most sophisticated military and aerospace vehicles, programs and installations for more than 60 years. Their products are designed specifically to operate in harsh environments, while delivering effective, efficient and highly reliable cooling solutions. Their fans, blowers and air handling systems are in submarines, jet fighters and tanks in addition to commercial aircraft and even drones.



Nildeep Patel, VP of Operations, addressing the multidisciplinary MRO team in Woodstock.



MRO technician, Carlos, repairing a fan using paperless, state-of-the-art Visual Instructions touchscreen.

Rotron has been in business, providing reliable fans and blowers to the military and aerospace industries, since 1947 when it was founded by J. Constant van Rijn. The company was incorporated as Rotron Manufacturing Company in 1949 and developed a variety of innovative fans and air-movers over the quarter century. In 1976 the company was acquired by EG&G and became known as EG&G Rotron. In 1998 both facilities were purchased by AMETEK, Inc., a leading global manufacturer of electronic instruments and electromechanical devices. The Woodstock plant became known as AMETEK Rotron. Rotron is ISO 9001:2000 and AS9100 Rev D approved, meaning they meet the strictest of the international manufacturing standards. 2017 was their 70th year of operation.

Several of the employees at the Woodstock facility have worked for the company for decades, a handful of them for over 40 years. Barbara Volk, Executive Administrator at AMETEK Rotron, began working there over two years ago and has become one of their loyal and dedicated employees. “They are just a fantastic company to be a part of and the largest employer for this area. There are even some families that work here.” She added that, “The company is growing and currently looking for new additions to our workforce.”

Rotron’s Fans, blowers and thermal management systems are vital to many of the aerospace and defense applications we encounter frequently and especially important for our military. Dr Nildeep Patel, Vice President of Operations at AMETEK Rotron, explained, “Thermal management systems regulate the temperature, not just of people, but crucial electronics, parts and equipment. You can find a Rotron fan in a majority of the submarines in the U.S. fleet. Radar systems rely on the fans to keep sensitive technology cool in hot temperatures and warm in cold temperatures with smart fans that communicate with other systems.”

In tanks and armored vehicles Rotron components are critical to the systems that keep the vehicles protected from EMP’s (Electromagnetic Pulses) so vehicles in conflict zones do not leave the base without their fans on and working. Often while patrolling through areas local combative persons attach IED’s (Intelligent Electronic Devices) to the vehicles. The same system is designed to create an envelope that blocks the EMP (often a signal sent from a remote cell phone) meant to detonate the bomb. As the vehicles

return to the base they are swept (inspected) for these devices and they are removed safely because of the system.

Rotron’s fan, blowers and systems are also found on commercial aircraft and military fighter jets where they serve to provide critical thermal conditioning of the avionics or crew cabin space. Some of these products are deemed flight safety critical, without these fully functional, critical functionalities the aircraft may be severely jeopardized.

There are Rotron parts not only on tanks, submarines, jet fighters, and aircraft carriers but on unmanned apparatus as well. Long range missiles have systems onboard to keep the electronics working properly and you can find Rotron fans on UAV’s (Unmanned Aerial Vehicles), often referred to as drones. The products are designed to withstand or meet specific environmental specifications. Testing on each part is done to ensure it meets the

specification for shock and vibration, humidity, salt spray, temperature extremes, EMI, and water resistance. Rotron parts are high quality and highly dependable. Some systems run for 20 plus years before needing any unscheduled repair or overhaul.

Last year photos of a U.S. Military drone that was shot down by insurgents in the Middle East were posted on social media. According to Patel, who viewed the photos, “The drone had been virtually disintegrated except for a Rotron fan that was still intact showing the nameplate stamped with ‘Rotron, Woodstock, NY’ amongst other manufacturer details” – a real world testament to the superiority of their products.

“When people in the defense and aerospace industry talk about fans, people say Rotron. The name stands for quality and reliability,”



Andrew, one of the Manufacturing Engineers inspecting a production fixture, printed with an in-house 3-D printer.



Operator preparing subassembly for motor windings.

explained Patel. About 65 % of their products are for military applications, with the other 20% used commercially in aerospace by companies such as Boeing, Airbus, Northrup Grumman or Lockheed Martin, just to name a few. The remaining 15% are in other commercial uses like thermal control systems in semi-conductors in Silicon Valley.

“There are projects where the customers insist on Rotron fans – this happens all the time,” says Patel. “Our products are not cheap but they are high quality and they last.” Many parts have a life

requirement of 10 years and often designed and manufactured to last longer. There is actually a live test building at Rotron where fans run non-stop. One has been running for over 20 years. Reliability and quality are just part of the reason companies insist on Rotron. There are over 18,000 different products and close to 3,000 product families simply because customers come to Rotron with a specific need and their engineers and sales representatives work together to invent new products or tweak existing technology to meet those needs.

“Rotron’s business model is that of a solution provider,” explains Patel. “There are three variables that we can work with in each product: mass, volume, or power. Some products are big in size but need to be light weight, some must fit in a small space but be very powerful. There can be certain power limitations we must work with. We specialize in working with our customers to create unique product configurations to address the specific

cooling or warming requirement – not only for the aerodynamics or temperature regulating capability, but also for space claim, weight, noise, power draw and system controls.”

It helps that the majority of AMETEK’s management team have backgrounds in engineering. Patel comes from Space Systems Engineering background with an extensive experience in design and manufacture of critical space and aerospace systems. Before moving to AMETEK Rotron, Patel was Vice President of Engineering for another AMETEK business in London, UK and prior to that



Nildeep Patel, VP of Operations, Tom Hafele Production Manager and Adam Casinelli in one of the two production facilities in Woodstock.

he worked for Airbus Defense and Space in the UK as a Systems Architect for ExoMars - the European Mars Rover, where he was responsible for all the critical mechanisms on the Martian robotic exploration vehicle. Patel is a Mechanical Engineer with a PhD in Space Robotics and an MBA.

Rotron is part of AMETEK, a conglomerate company focused on manufacturing electronic instruments and electromechanical devices with headquarters in the United States and over 220 manufacturing sites worldwide. The president of AMETEK is an engineer and the company is run more like a small business than one with over \$4.0 billion in sales. AMETEK buys niche businesses and invests in them to improve and make them sustainable. They currently have 150 manufacturing facilities in more than 30 countries. AMETEK has never sold a business and their executives are very hands on.

Rotron was purchased by AMETEK in 1998. Patel said, "There is an open culture and the company is more of a flat structure than several tiers of management. AMETEK wants to keep talented people

in the company and will move someone across divisions to promote them and keep them engaged." There is also shared knowledge between business units, which is helpful. There are sister facilities in Long Island, NY and El Cajon, California, where Custom Heat

Exchangers and Subassembly Products are manufactured.

Rotron itself is a growing company, currently with a staff of 235, they are looking to add a full second shift. "We have had great success with our job fairs and hired 19 people in the last two months," says Volk. "In addition to increasing our workforce, there are employees that will be retiring in the next few years and we would like to get people in now to learn from them before they leave."

Ametek Rotron's facility itself is a vertically integrated campus with 121,000 sq. ft.

dedicated to design engineering, rapid prototyping, manufacturing, customer support, program management, product test facilities, quality test, procurement, finance and FAA repair stations. The manufacturing areas include casting, machining, motor winding, balancing, final assembly and testing. The product families produced



A batch of motor windings ready for final assembly.

Commercial - Industrial Pharmaceutical - Healthcare

- Process Piping
- Pipe Prefabrication
- Plumbing
- Heating/Ventilation/Air-Conditioning
- High Purity Orbital Welding
- Clean Room Pipe Prefabrication
- Institutional Lab Plumbing
- Data Center HVAC
- Engineering/Design Build
- BIM/Drafting
- QA/QC
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- Building Automation & Controls



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CNC operator, Jesse Roy - currently at SUNY Ulster part time, studying for a degree in Mechantronics. Shown here working on a machined fan housing.

here have a high degree of vertical integration and core competencies in the design and manufacture of aerodynamics, electromechanical assemblies, motor drives and liquid vapor cycle cooling systems.

Rotron's workforce is a proud, loyal, and dedicated group. There are several family's that have multiple members employed at the facility. The workforce includes a variety of positions from highly skilled engineers to manufacturing processors, material handlers,

CNC operators, fitters, painters, wiremen and quality testers. They hire high school graduates, college interns, military veterans and a wide variety in between. Anyone interested in working for Rotron can either go to their website to view open positions at www.rottron.com or send in your resume and cover letter to our Human Resource Manager at Marie.Tynan@ametek.com. Job Fairs are posted locally in the news media. Keep an eye out for the next one.

AMETEK Rotron is a Hudson Valley manufacturing success story. Rotron is a solutions company and their products are vital to our country's military and aerospace industry. They are a company that inspires pride and loyalty in their workforce and they are growing. This is one facet of the future of manufacturing in not only New York, but the entire United States, create a high-quality product with excellent customer service and dependability that provides an answer to a consumer need.



Alison Butler is the Director of Member Programs & Services at the Council of Industry.

Manufacturing industry attorneys at Bond provide coordinated, comprehensive legal counsel on all business matters affecting manufacturers such as:

- environmental matters
- OSHA and other workplace regulations
- product safety
- trade secrets and other intellectual property issues
- labor and employment



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