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## Marvac Scientific Servicing the Modern Cooling System

**U**nder the hood of every automobile functioning at optimum capacity lies a precise composition of fluids regulating engine temperature and ensuring peak performance. Routine upkeep and replenishment of radiator coolants strike a balance between heat dissipation and vehicle efficiency, keeping breakdowns at bay.

Marvac Scientific, a third-generation family-operated manufacturing company, specializes in the design and production of top-tier cooling system service tools for consumer vehicles, commercial trucks, and heavy equipment. Its experience, spanning over half a century, began with producing and selling vacuum pumps that witnessed a spike in sales toward the end of the 1960s when they were used for repairing air conditioners.

A turning point came soon after the year 2000 when Marvac partnered with a number of leading mobile tool selling companies to make high-end single-stage vacuum generators that were used on tools that put empty automotive cooling systems under vacuum so that the cooling system could be filled with little trapped air. In the years since then, Marvac has continued to make improvements and expand its applications from passenger vehicles to large trucks and industrial equipment.

Most recently, Marvac created and launched the XV PRO and XV PRO HD cooling system fillers under its own name. These tools produce a vacuum level of 29.6 inches of mercury and ensure 99 percent air removal during the refill process.

“Unlike conventional single-stage vacuum venturi cooling systems, the two-stage design of our products creates a higher vacuum, leading to a complete fill,” says Steve Marin, co-president at Marvac Scientific.

Its industry-grade products offer fluid transfer at twice the rate of existing market options. Marvac Scientific’s portfolio also includes pressure tester kits, coolant retainers, and an extensive line of adapters for both the cooling system and the cooling system cap, all sold through major distributors. The adapters enable XV PRO to fit into the cooling system of different vehicles, irrespective of the varying engine configurations.

Many automobiles, however, have tight vertical clearances that do not permit technicians to use equipment with adapters. One such notable instance was when a client was struggling to service the Porsche 911 GT3 RS. The rear-mounted engine vehicle had body panels different from the mass-produced base model, making the top of the coolant expansion tank inaccessible. Marvac designed an in-house cap that would fit onto the car with a 90-degree access point, allowing technicians to use their tools outside the cramped engine compartment. Similar setups resulted



Steve Marin,  
Co-President

in a series of four extensions designed to fit non-traditional engine bay configurations and service marine engines, passenger vehicles, and large industrial equipment.

The evolution of automobiles has led to a very high level of complexity in contemporary cooling systems, making it challenging for customers to navigate through intricacies. For instance, electric vehicles, despite operating without combustion engines, require complex cooling systems to stabilize battery temperature. Marvac’s XV PRO series vacuum re-fillers serve as a dependable solution, offering a more efficient and complete refill process for these sophisticated systems.

The quick refill rate, maximum vacuum, and evacuation rate of Marvac’s products sets it apart from competitors. The company excels at meeting customer demands and improving sales for distributors.

To stay ahead of the curve, Marvac directly engages with technicians at trade shows. It actively listens to them and incorporates their feedback into product development to design tools that address real-world challenges.

The dedication to continuous improvement is evident in its transition from using dyes on manual drawings to SolidWorks, a 3D design software, for faster designing processes and 3D printouts. This allows Marvac to prototype and analyze designs swiftly, ensuring product accuracy and reducing time-to-market.

A keen understanding of market needs fosters Marvac’s product-driven excellence. Every product manufactured is backed by decades of experience and a commitment to quality. With a history rooted in meeting unforeseen challenges head-on, it continues to shape the future of cooling system tools. 