

Patti Perspective

February 2015

Greetings!

When your project involves equipment critical to production output, there is no margin for error. We understand that, and we have your back. When Thermon, a global leader in heat tracing technology, had equipment critical to its manufacturing process begin to fail, the solution had to be on point and on time. Read our feature article on the project which was not only successful, but record high output was achieved in the first month after commissioning!

If you ask our executive team what drives Patti Engineering's success, they will be quick to tell you a big part of the equation is getting the right people on the bus! Our employees are the backbone of the company, and we are happy to spotlight one of our newer engineers on the Texas team. Tauha Kahn has been proving he has what it takes to be a 'Patti Engineer.'

Patti Engineering Upgrades Motion Control to Double Production Speed for Customer in First Month

Founded in 1954, Thermon is an industry leader in the specialized field of heat tracing technology. Thermon provides products such as flexible heating cables, heat tracing compounds and tubing bundles to serve as an external heat source to pipes, vessels and instruments for the purposes of freeze protection, temperature and flow maintenance, environmental monitoring, and surface snow and ice melting.



Thermon's San Marcos, TX manufacturing plant is highly automated, and the heart of the operation is the Electronic Cross-Linking Facility (ECLF). The machine unwinds cable into an electron beam field that gives it a specific dose of radiation. This changes the molecular



properties of the cable. Then it is re-wound onto another cable reel. Cross-linking enhances the thermal, chemical and electrical stability of Thermon's low-temperature self-regulating heater cables. All end products produced at Thermon's San Marcos plant must go through ECLF un-coiler and re-coiler stations for

the finishing process. With the ECLF being critical to production output, Thermon was concerned about the fact that Siemens was phasing out the Simovert MASTERDRIVES drive family. The environment is particularly harsh and components were failing while replacement parts were becoming scarce after Siemens ended serial production of MASTERDRIVES. Thermon knew they needed a long term plan to ensure system longevity.

Thermon's team purchases supplies from AWC, a leading automation supplier and distributor of Siemens automation products. AWC and Patti Engineering have formed a great working relationship and have worked together on many projects. When AWC's representative, Mike Walshe, learned of the issues Thermon needed to address, he recommended contacting Patti Engineering. Understanding the complexity of this project and how downtime of the ECLF affects production output, Patti Engineering's Austin, TX team recommended an engineering study to determine what hardware, software, and programming would be required to replace/upgrade existing legacy

drives and automation equipment used on the ECLF un-coiler and re-coiler stations. Collaborating with Siemens Motion Control Group, Patti Engineering completed the study and recommended a solution to upgrade the ECLF.

Thermon contracted Patti Engineering to complete the recommended work to upgrade the ECLF. Engineering preparation was of key importance to laying the ground work for completing this multifaceted project. "After meeting with Patti Engineering and discussing our needs, we decided to choose Patti for the upgrades. Together a plan was drawn up along with a stringent timeline to enable us to continue producing product without missing ship dates," explained Thermon's Senior Process Engineer Harry Hutchinson.

Our solution was to upgrade the old Simovert servo and vector drives with new Siemens drive technology, specifically the Sinamics S120 drives. All 5 motors needed to be coordinated to work together. Controlling the speed of the unwind and rewind cable reels required precision programming of a sophisticated dancer-control and PID (proportional, integral, derivative) loop control to establish the optimal drive speed. Siemens Starter commissioning software along with Siemens TIA Portal was used to help accomplish this.



The old hardware components, remote IO, and PLC were migrated from S7 classic to TIA Portal V13. WinCC Comfort Advanced was used for the HMI software. A Siemens Comfort Panel HMI was installed to replace the old and no longer supported OP277 panel. A high performance Siemens Field PG laptop which is perfect for harsh industrial

applications because of its rugged industrial design, powerful processors and high-speed RAM was used to commission everything. Several peripheral power and control cables were replaced as well.

The resulting benefits of the project exceeded Thermon's expectations. The system is now more stable than it was in the past allowing a higher

production speed. They were able to increase production to a record high level in the first month of running - approximately doubling output - which allowed Thermon to catchup on the backlog of product waiting for the finishing process of the ECLF while the upgrade was taking place. In addition to improving production speed, the ECLF is much more reliable with less downtime because of the newer components.

For ongoing support, Patti Engineering setup remote access on Thermon's Siemens PG to give remote access to the system. Any future issues or support can be done quickly and remotely by our engineering team.

With the ECLF equipment being critical to Thermon's manufacturing output, Hutchinson explained how working with Patti Engineering met the project's tight timeline goals. "Upon initiation of the project we received regular updates of materials arriving on campus along with progress of the project. Once Patti's engineers arrived on campus for the final integration, we received daily updates as to the status and progress of the project. With completion of the project I will say that Patti Engineering met both the scope and the timeline of the project. This allowed us to continue to get our product out the door and to our customers in a timely manner."

~ Contact Patti Engineering for assistance with your project ~

Patti Personnel - Tauha Khan



Tauha Khan has been a Controls Engineer for Patti Engineering's Texas team for more than a year now, and has been an exceptional addition. Born and raised in Karachi, Pakistan, we are thrilled he made the move to the U.S. with his brother in 2012. Tauha is enjoying his work and new life in Austin, TX.

As for his work, Tauha has been involved with a variety of projects for our Texas team ranging from software development to startup and commissioning industrial manufacturing assembly lines. He has also been involved in Patti Engineering's water and wastewater projects. All of the work on these projects has given Tauha some great hands on experience with Siemens PLCs, HMIs, Drives, as

well as Indusoft Web Studio and Matrox Cameras. "Tauha is extremely dependable and hardworking. He has proven himself to be an asset to our team," said Steve Palmgren, Vice President of Texas Operations. "His desire to learn new technologies and team player mentality makes him a great fit for Patti Engineering."

Tauha's first exposure to automation technology was a college internship with Siemens. Prior to Patti Engineering, Tauha was a Laboratory Research Assistant at the Center of Petroleum and Geosystems Engineering at the University of Texas at Austin. His responsibilities centered around real-time monitoring and controls using LabView for research prototypes and experiments. As Tauha transitioned to his work at Patti Engineering, he realized his love of working in the development phase of projects. "Once completed and working, the sense of accomplishment is great," explains Tauha. "At Patti Engineering, I've been able to work on many different projects types. It's really like a buffet, where I get to see and work on almost everything. There something new to learn every time."

After Tauha graduated from NED University of Engineering and Technology (NEDUET) in Pakistan, with a Bachelor's Degree in Electrical and Computer Engineering, he and his brother moved to Houston, TX. Since then, they moved to Austin. Tauha loves the "hippy-techno vibe" of Austin.



On the fun side of things, when you get to know Tauha, you quickly realize that just because he lives here now, doesn't mean he has succumbed to rooting for the traditional American sports teams. Tauha is a huge cricket fan, especially the Pakistani cricket team! Tauha still pursues his love of cricket; he has played for the Longhorns Cricket Club and is currently playing for the University

Cricket Club (UCC) of UT Austin, where his team is the runner up for the 2014 Central Texas Cricket League championship. In the championship, Tauha earned the "man of the match" trophy - similar to an MVP Award.



Tauha gave us this insight on working for Patti Engineering, "The projects I work on and the industries we cater to are why I am so happy working at this company. I have great passion for technology and deploying these technologies for automation based work," says Tauha. "Beyond that, I enjoy coming to work every day because of the great team members and mentors I have here. I have found balance in life between work and social. It's great!"

~ Download the PDF ~

We work as partners with our clients. When you need an expert to help solve automation challenges, we are here to add value to your solution - enhance efficiency, increase productivity, and work with your team as a trusted resource. Visit our **website** for more information on our areas of expertise, or call us (248)364-3200 for a free initial consultation.

Thank you for your interest in Patti Engineering.

Best regards,

Georgia H. Whalen
Director of Marketing
Patti Engineering



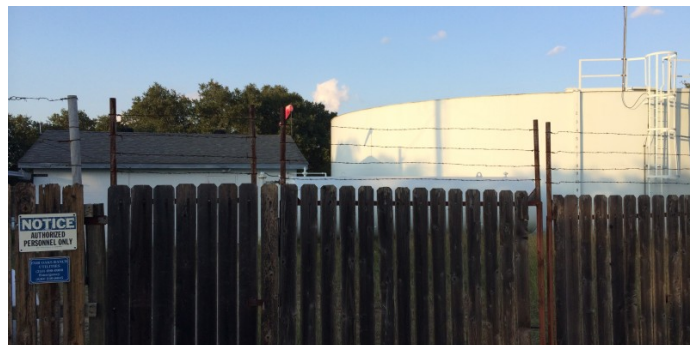


On February 24, Patti Engineering announced that it hired Nick Hobbs to lead business development in the Midwest region of the United States, specifically Indiana, Illinois and Ohio regions. Manufacturing demand for specialized integration expertise in Mitsubishi Electric Automation and Siemens Automation technologies is driving Patti Engineering's expansion.

Hobbs' relationships and experience in technical sales and marketing to the automotive, pharmaceutical, food and beverage, plastics, and veneer industries will be instrumental in building a strong presence in the region. Prior to Patti Engineering, Hobbs was the District Sales Engineer at Allied Automation where he managed the Southern Indiana region and managed major Fortune 500 accounts.

Read more in the press release

here: <http://pattiengineering.com/newsroom/press-releases/patti-engineering-hires-lead-business-development-midwest/>.



On February 17, Patti Engineering released details on completed water and wastewater infrastructure automation project for the city of Fair Oaks Ranch, TX; engineering team made improvements to allow central control, remote equipment management, save energy, and reduce operating cost.

Read more in the press release

here: <http://pattiengineering.com/newsroom/siemens-water-wastewater-project/>.

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