

# MAXIMIZING MANUFACTURING FLOORSPACE AND LEAK TESTING EFFICIENCIES FOR A GLOBAL HVAC MANUFACTURER

CASE STUDY

---

# BACKGROUND

---

Our Client is part of the world's largest manufacturer of Heating, Ventilation and Air Conditioning products and systems.

Their North America base is responsible for manufacturing a wide range of residential heating and cooling systems for a global market – with a mission to provide high-quality, affordable HVAC equipment for households across the USA

and beyond. Their commitment to excellence allows them to offer their worldwide customer base some of the best warranties in the industry.

In 2018, Vacuum Engineering Services, USA, commenced engagement with the Client to design and build a bespoke helium leak detection system for a new production line in the HVAC sector.

# CHALLENGES

---

As part of our Client's continued expansion, a brand new production line was created, meaning extra helium leak detection machinery and a new, custom set-up was required.

The bespoke equipment specification detailed the need for maximizing efficiency, space, and time, in order to streamline current production processes. The Client are

committed to ensuring processes are continually improving and wanted operations to be as smooth-running as possible for the new line.

As a result, the organization embarked on a large tender process to help meet the demands of this bespoke installation in a relatively short timeframe.

# THE SOLUTION

Vacuum Engineering Services were selected due to our innate ability to consistently deliver innovative, cost-effective solutions that include ongoing maintenance, 24-hour technical support and decades of engineering expertise.

Having recently designed and installed a very similar set-up for another HVAC client, our engineering experts were able to recommend the leak detection machinery and unique set-up that precisely matched the custom spec requested.

With the know-how and tools in place to bring the concept to life, we were able to offer a super-fast turnaround that exceeded our Client's expectations. This meant they were able to launch their production line sooner than anticipated – minimizing any potential downtime.

Not only did our design match the Client's demands, it also offered higher efficiency, with a substantial saving on space and time. While former production lines of this kind, in the same factory, usually featured 10 pieces of machinery, VES was able to consolidate the 10 pieces of machinery into just 3 leak detection machines.

The average timing for an installation of this kind is around 24 weeks. However, due to prior experience, we were able

to complete the design, along with full installation, in just 18 weeks. This included the integration of a newly designed load unload mechanism, upon special request – with no impact on turnaround.

Because of the complex nature of bespoke designs on a production scale this large, integrating our build around the existing facilities proved challenging at times. This represented an important learning curve for VES. As part of our drive for continuous improvement, we now aim to be even more specific with hook-up points, in terms of both location and sizing, to ensure an even faster installation for future projects.

In line with our Client's ambition to achieve improved processes and meet tighter production demands, we presented the option to train their staff on the new set-up and systems, with full support and coaching. Prior to the installation, our engineers visited the site to sit down with the facilities team and align our systems with their existing facilities – equipping and familiarizing workers with all the relevant tools and know-how. This enabled the Client's workforce to confidently and effectively run operations with immediate effect, as soon as the installation was completed.

# RESULTS

As a result of the new helium leak detection systems and installation, designed and installed by VES USA, our Client(s) have since achieved significant production improvements, including;



**70% reduction**  
in the amount of  
equipment



**Reduction in the footprint  
of the leak detectors by  
50%**, allowing for more  
production machinery on  
the same line



**Improved employee  
confidence and effective  
communication** - with  
coaching & support from  
the VES engineers