The Resilience of the HVACR Industry

BY JORDAN BRANDES

In my last couple of columns, I discussed not just the ingenuity of the HVACR industry but also our ability to weather any storms that may come our way. Now, many months into the COVID-19 pandemic that has swept the world, we are truly starting to see that in action.

I get a lot of products across my desk every day. The ones that catch my eye end up in the Products section of this magazine. But, to no surprise, I’ve seen more and more products addressing the pandemic head on. It has been fascinating watching the HVACR industry pivot from this crisis in real-time, literally thinking our way out of the problem.

It, of course, doesn’t help that the problem is essentially a moving target. Every day new information is being learned about COVID-19 and what actually prevents it, but the HVACR industry seems distinctly linked to the pandemic since every building has an HVAC system that circulates the air. As you’ve no doubt read in the Making the Humidity Case (Study) on page 10 of this issue “there is a demonstrable link between humidity and the infectivity and longevity of a variety of viruses.”

The shift from simply comfort to safety will be felt for years to come. Many other companies are getting into the business of HVAC hygiene. Not surprisingly, it has actually been smaller companies that are getting their products out sooner, which might cause a shift in the market. Once AHR Expo does finally return (in 2021 hopefully), expect a very different expo floor.

What we’re seeing now is a new era in the HVACR industry. There has always been a push-and-pull between young and old, analog and digital, but this is something far bigger. The pandemic isn’t something that will just disappear, it is going to linger with the industry for a long time. In a recent webinar I attended, the fact that many consumers are buying their new HVAC products with the big picture in mind was a highlighted topic. They not only want to have a product that keeps them safe during the pandemic but will continue to serve that function long after it’s over.

Indeed, one company has already created an “Epidemic Mode” into their programing, which is a new sequence of operations designed to maintain healthy and safe indoor environments for customers in the event of a global pandemic. The system incorporates recommendations, including increasing outside air ventilation and flushing indoor air both before and after occupancy hours through two new application profiles.

Expect this to be the first of many types of applications like it on the market. The function not only allows them to satisfy the needs of current customers during this current crisis but any new events that might occur. That kind of thinking is how the industry will overcome this obstacle.

There had been a need to move past the old ways before but COVID-19 is bringing it to the forefront. The previous two Last Word columns both dealt with that ideology well and if you haven’t read them I recommend you check them out in our online archives.

As the HVACR industry heads into this brave new world, I am confident that our resilience and ingenuity will carry us through it. No one knows how long this period will last but RSES is here to support you along the way. We too, have adapted to suit the needs of our Members. Our new online learning platform allows Members continue to get cutting edge education from RSES without ever having to leave the house. RSES is additionally working to release a bundled, monthly and annual subscription service model for regularly updated HVACR courses for both Members and non-members alike.

Troubleshooting Answer

At this point, it was time to set up the digital manifold and check the refrigerant side, as this was not an electrical issue or related to airflow.

It was quickly noticed that the saturated suction temperature was too high, and not to my surprise, zero superheat at the compressor inlet. This is why the compressor began to freeze and also why the liquid line was sweating, the accumulator/subcooler was filled with liquid refrigerant.

I brought in another tech to help as I needed someone on the roof as I made adjustments to the thermal expansion valve below in the large facility. We first took a quick baseline of the primary unit, which was running normally and satisfying set point. We were achieving -35°F saturated suction temperature and 77°F degrees of superheat at the compressor inlet on a long pipe run. The compressor is outfitted with liquid injection to keep it cool.

We proceeded to increase the TXV spring tension, as increased spring pressure equates to increased superheat. After the few hours of small adjustments, we were able to mimic the primary unit operation and the box temperature began to drop. Although we were able to get this system running properly, able to reach set point and clear alarms, I still wonder if the TXV lost its marbles, or it was previously adjusted incorrectly. The system will be closely monitored through trend logs and monthly visits. As the tag line in my Facebook group, “HVAC Hub,” goes, “it’s probably not the TXV”...May prove to be incorrect in this situation.