PVDF tuning

Gain and maintain precise and linear flow

There are several reasons why you should find that your PVDF Super Air Knife has an inhomogeneous airflow over the whole length of the Air Knife. This might happen because PVDF is a softer respectively less rigid material in comparison to aluminum or stainless steel. Another reason might be the high temperature differences during the flight shipping from the U.S. to Europe.

To (re-)gain a precise linear flow over the complete length of the Super Air Knife, our manufacturer and supplier (EXAIR Corp., USA) gives the following recommendation:

The tuning process of the PVDF Air Knives can be difficult. First, please double check if you have plumbed the air knife properly. That can have an impact when trying to tune the knife to a precise flow.

The process of tuning the Air Knife can be tedious and has to be done carefully across the length of the knife. In the points where you notice a weaker flow, slightly loosening the bolts will increase the airflow. Where the airflow is greater, tightening the bolts will reduce it. To restore the knife back to its original flow pattern the following procedure is recommended:

- Tighten the bolts on both ends of the knife until they're snug (Do NOT over tighten, threads in the body can become damaged). This will prevent the ends of the shim from blowing out the sides. If this happens, the knife must be disassembled to reinstall the shim. This could also potentially damage the shim.
- Tighten the remaining bolts hand-tight across the length of the knife.
- Run air through the knife at about 3.5 BAR (pay attention to the gauge, as adjustments are made to the bolts air pressure will change)
- Starting with the bolts at the back of the knife, begin to make slight adjustments along the full length. If the airflow is light loosen the bolt, if the airflow is too high tighten the bolt. Again, taking care not to loosen the bolts too much on the end of the knife.
- Now working with the bolts on the front end of the knife (closest to the airflow) make similar adjustments to the bolts. (Bolts along the back of the knife can still be adjusted as needed)
- Continue this process with air passing through the knife until the desired airflow is achieved.

While you are tuning the knife, there is potential to loosen the bolts to the point air is leaking out the back of the knife. Be aware that this is a possibility and pay close attention while making your adjustments.