



**SMALL BEAD FIP: BREAKING THE
BEAD SIZE BOUNDARIES OF
FORM-IN-PLACE GASKETS**

CASE STUDY



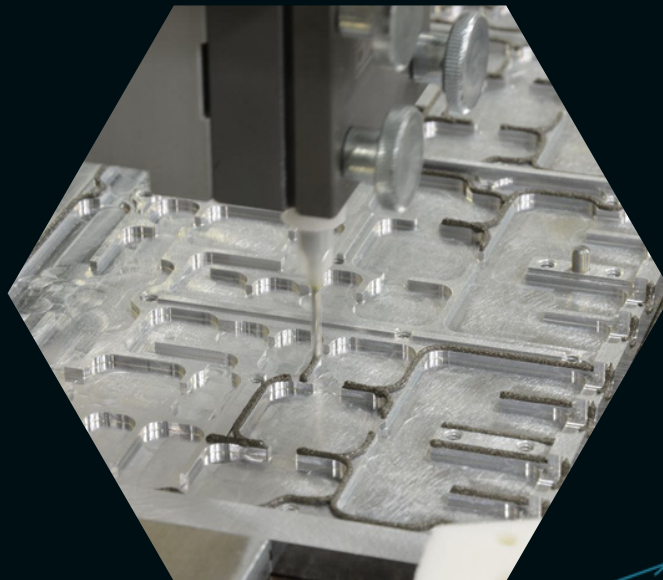
Project Highlights

Many of our Defense partners are challenging the boundaries of technology daily. As technology advances, electronics and devices are shrinking in size to accommodate more complex project designs—simply put, they require more technology in less space.

One of our long-time customers came to us for a machining project with a highly intricate and complex design. The walls of this device were incredibly thin, and our team noticed the call out for a significantly smaller Form-in-Place (FIP) gasket than we typically see. The requested material is not rated for a bead size this small and has never successfully been done before.

Always up for a challenge, Modus took the initiative and took to the drawing board.

This is what it looks like to work with Modus. Beyond our lightning-fast lead times and unwavering commitment to quality, we promise to always be on the lookout for ways to be of service to our customers.



Small Bead Challenges

Being a partner with Modus means that we will always be looking for ways to better serve you. For this customer, there was an undeniable opportunity for us to alleviate some of their struggles with the gasket.

Dispensing a bead as small as this project required was a tremendously tall task, especially since we had never done it for a customer before. Nano-particle FIP materials are yet to enter the market with consistency, and working with the existing requested FIP material to create such a small bead required that our highly skilled team pull out all the stops to find a solution.



Our customer needed to know that the bead we were producing was within their established tolerances, something both they and their previous supplier had been unable to measure.

Because we have invested heavily in our people and technology, we have the quality tools to measure and provide the necessary data, millimeter by millimeter of the full dispensed path, to confirm that each part is to spec.

Further, quality control is incredibly important. Any deviation from the design plan in a FIP gasket this small would likely result in a failed device, even the smallest changes in bead height. Failure is never an option for us, and certainly not an option for the warfighters serving around the world who are directly impacted by our work.

FIP Problems Solved

When our sales team presented the idea of attempting this gasket, our customer requested a sample of straight lines. We knew that we could serve them with the speed and precision they had come to know us for, but we had to figure out a way to execute the small bead FIP gasket they required.

Our FIP team got to work navigating the trial-and-error process of nailing down the small bead. It was a complex design with very challenging requirements, but the expertise and ingenuity of our engineering and FIP dispensing teams rose to the challenge.

Through vigorous testing of the materials and equipment, they were able to program a repeatable process that would get the job done with incredible precision.

Once our FIP department was able to execute a precise dispensed path, our quality control (QC) department stepped in for review. In reviewing the bead, QC proved what we knew we would accomplish—a bead dispensed smaller than the material manufacturer thought possible, and a FIP gasket within tolerance that we can measure with certainty.

At this point, when proof of concept had been completed, we could have simply handed our customer the sample of straight lines as requested. Instead, our machining department created an identical second housing to match their part design.

Modus is well known for our machining capabilities—our machinists can tackle tough requirements and are incredibly skilled in controlling flatness issues which can wreak havoc on the adhesion of a FIP gasket.

This is part of what made the FIP gasket so successful—the skills and knowledge of our machining department. A shining example of the benefits of vertical integration.

After the housing was completed, the FIP department then expertly dispensed the complex gasket. QC confirmed that the entire small bead dispensed path was within tolerance. Our sales team then hand-delivered the successfully executed part to the customer. Suffice it to say, our customer was thoroughly impressed with the delivery and thankful to have a partner like Modus on board.



Conclusion

We've invested heavily into our people, processes, and equipment here at Modus, which allows us to iterate quickly on unique projects like this. Over several weeks, many hours were clocked to get this project on its feet. But once we had completed a proof of concept, which involved significant time, energy, and resources, we delivered a commercialized process within a week.

Not only did Modus provide an alternative choice in small bead FIP partner for our customer, but we also demonstrated that we are always up for a challenge. True partnership with Modus means that we are ready, willing, and able to work with our customers in lock-step, from idea to ignition.

Your mission is our mission.

With this capability in our repertoire, we are eager to meet the small bead FIP gasket demand with speed and precision—the Modus way.

FIP Problems Solved

REQUEST A QUOTE TODAY.