Creation of the Automated Pedestal System for VFAW

What We Aimed to Do:

VFAW is a technology that was developed here at Ohio State in the Impulse Manufacturing Laboratory, which is led by Professor Glenn Daehn. This process allows for dissimilar metals to be welded together, such as aluminum and steel, which is not possible with traditional resistance spot welding processes. This automated pedestal system was developed to increase the manufacturing readiness level of this technology by integrating automated foil feeding and part fixturing capabilities.

What We Did:

This system was created through a joint effort by Coldwater Machine Company, CDME, IML, Honda, and several other industry partners. Coldwater and IML co-designed the system to demonstrate the VFAW on Honda subassembly structures, while CDME designed and built the capacitor bank system that allows the foil vaporization process to take place. It has proven to be very useful for repeatable fabrication of weld sample structures.

What’s Next:

In the coming months, we will be working with IML to integrate automated part loading and weld sequencing capabilities to this system, which will allow for us to run closed-door, lights-off production runs of sample parts. This will help truly demonstrate the readiness for VFAW to be integrated into manufacturing facilities for dissimilar metal welding processes.

To learn more about this project, contact Ryan Brune (brune.12@osu.edu)