

CASE STUDY •**Application:** Exhaust Flange**Material:** Inconel 718**Benefits:** Manual To Automated
Reduced Time Per Part
Enhanced Part Quality**Industry:** Aerospace**Tool:** BSF

CHALLENGE: In the realm of aerospace manufacturing, a precision-focused company grappled with efficiency concerns related to the utilization of a competitor's manual back counterbore tool for an exhaust flange. Specifically, the challenge lay in the need for a quicker, automated solution, aligning with the successful methodologies employed in their previous projects.

This predicament centered around a particular application, where the machine type and holder were identified as a VMC, and the material in focus was Inconel 718. The precision requirements included a main bore of $\text{\O}8.5\text{mm}$ and a spotface diameter of $\text{\O}15.5\text{mm}$. Additionally, intricate machining parameters further delineated the operational nuances, featuring a working speed of 30 SFM, a working feed of 0.0005 IPR, internal coolant for optimal performance, and a target cycle time of approximately 25 holes per blade.

SOLUTION: Heule recommended the BSF-A-0700/040-7.5 with a carbide TiAlN-coated blade (BSF-M-A-1A-6.0) to efficiently achieve a .531 back spotface.

OUTCOME: The implementation of the Heule BSF proved highly successful in back spotfacing the Inconel 718 exhaust flange with unparalleled precision. Automating the process not only significantly reduced the time per part but also raised the overall quality standard of the manufactured components. This successful integration showcased the tool's effectiveness in meeting the demands of aerospace manufacturing with precision and efficiency.

