

# HEULE CASE STUDY

## Aerospace Application BSF



### Reducing Production Costs for Machining Inconel Bearing Housings

#### Challenge

A precision manufacturer focused on the aerospace industry was using a competitor's back spotfacing tool for a gear housing, as the Heule BSF had not been introduced at the time his project began. Due to his lack of success with the competitor's tool (tool breakage as well as insert longevity) the customer was willing to test the HEULE BSF not long after its introduction.

#### Application details:

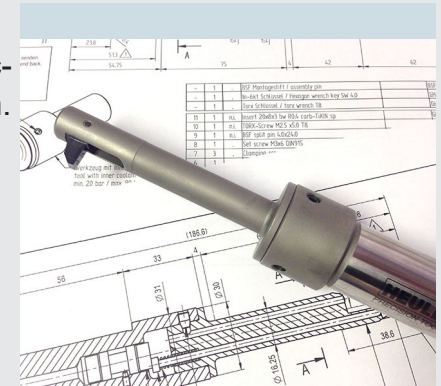
- Main bore:  $\text{Ø}.278''$
- Spotface diameter:  $\text{Ø}.535''$   
Plus/Minus .008
- Material: Inco718 (cast)
- Machine: Cat 40 VMC  
Okuma: 1000Psi  
through-spindle

#### Solution

HEULE recommended the BSF-A-0700/040-7.5 using carbide TiAlN-coated blade BSF-M-A-1A-6.0 to obtain a .531 back spotface.

#### Machining parameters:

Speed: 55 SFM / 345 RPM  
Feed:  $F=.0006''$  per revolution / .25 IPM  
Coolant: Internal coolant



#### Results:

The HEULE BSF was able to complete 1 part per blade (10 holes) while the competitor's tool used 5 blades per part. In-cut cycle time (time to index inserts on competitor not included) went from 62 minutes to 7 minutes 45 seconds. Estimated savings \$130,000 amortized over 300 parts per year.