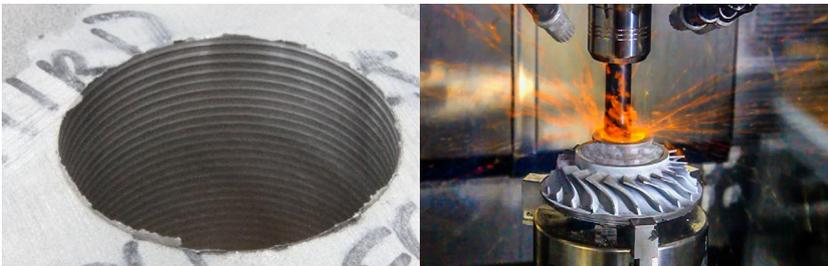




CASE - ECOJET

At the DAMRC Technology Center the Hermle C22U 5 Axis milling machine was an important part of solving the challenge of machining a hole in an Inconel 718 turbine in the ECOJET project.

DAMRC is participating as a Research and Technological Development partner in this FP7 EU project. The project required a deep research as well as the employment of innovative technologies to solve the challenge of machining a Ø35 x 50 mm roughing hole in Inconel 718.



As this is a very hard to machine material, drilling was ruled out as an option. A circular ramping was used instead, where a spiral movement of the tool enables to machine this hard material. Moreover, it was also found, that ceramic tools offer a much higher productivity than conventional (carbide) tools.

Sandvik offers the necessary tool-holders and inserts to take advantage of the ceramic machining.

The machining was done in the **Hermle C22U 5 axis-milling machine**, which provides the stability that is of special importance for ceramic tools. After various tests, the results were:

Traditional tools:	1260 seconds (21 minutes)
Ceramic tools:	27 seconds = 42 times faster
Price reduction:	factor 6.6 cheaper milling with ceramic tools than traditional tools.

Projectname:	ECOJET Partners: 9 international partners
Budget:	€1.6 MILL (≈ 12 Mill DKK)
Time:	2 years

The aim of the ECOJET project is to design and develop an engine - based on an innovative radial gas turbine with an integrated electric generator.



The ECOJET project is addressing a major market opportunity through the optimization and deployment of a proprietary 10Kwe micro gas turbine power generator into an innovative system solution - tailored for environmentally friendly micro CHP (Combined Heat and Power) applications for the residential sector. It is estimated, that micro CHP can help a consumer save close to 60% of their electricity bills.

Funding:



Consortium:



You also have the opportunity to cooperate with DAMRC based on your needs - either with a membership or project collaboration.