



# RESEARCH SECTOR



The mission of Company is the creation of a Research Centre for machining of new or exotic materials such as CFRP, GRP, HONEYCOMB, TITANIUM, ALLUMINIUM,

that demands special cutting materials, geometries and special coatings.

Whereas in aerospace industry exotic materials have been used for quite some time, the implementation in the automotive industry of materials such as cfrp or titanium has only just started. The main reason is the reduction of weight and the optimisation of performance and efficiency while at the same time keeping the maximum degree of strenght and stability.

One of the greatest challenges concerning the application of advanced material is the chip removing process.

For example CFRP is very abrasive and Titanium is a long-chipping material with very poor heat conductivity. This leads to high temperatures at the tool cutting edge which affects enormous tool wear with accordingly low tool life.

For many years HTT has been working on solutions for efficient and economic tool machining of advanced materials and is now able to offer an extensive program for Solid Carbide and PCD-tipped tools in standard and special designs to work all Advanced Materials.

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# ADVANCED MATERIALS



## COMPOSITE MATERIALS



Composite Materials, such as Al-Ti-CFRP / Ti-CFRP / Ti-Al / CFRP-Al, consist of a combination of exotic materials that create special difficulties, because of the different chipping characteristics of each material. Instead of using 2 tools, we have combined the solution in 1 tool that in one working step (drilling/reaming/ countersinking) offers finished hole, respecting all tolerances.

## ALUMINIUM



Aluminium and its alloys are often employed where dimensions are important, like in the aeronautic world. Because of its low density, the weight is considerably reduced.

## TITANIUM



Titanium and its alloys are characterized by relatively low density, high stability and thermal load capacity as well as good corrosion resistance.

## HONEYCOMB



The honeycomb structure consists of plastic material, aramid fibre or aluminium, which is covered by a different top layer material to increase stability.

Al = Aluminium - Ti = Titanium - CFRP = Carbon Fiber -

## DRILLING Solution

Standard and special  
Drills in solid carbide with Diamond  
Coating or PCD  
- Tipped for high hole quality.



## COUNTERSINKING Solution

Solid Carbide Tools, coated with diamond  
on demand, for countersinking  
or drill sinking of rivet holes.



## REAMING Solution

Solid Carbide Tools and  
PCD tipped reaming tools for exact  
measurement and excellent surface quality.



## MILLING Solution

Standard and special End-Mills  
in solid carbide with diamond profiled  
teeth, diamond coating or PCD-Tipped.





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