

**Threading tools for  
heat resistant steels**



# HVA

## Threading tools for heat resistant steels



VARIANT HVA

- » machine tap
- » for through hole
- » up to 3xd
- » BT-coating



AVANT HVA15

- » machine tap
- » for blind hole
- » up to 2xd
- » BT-coating



DOMINANT HVA45

- » machine tap
- » for blind hole
- » up to 3xd
- » BT-coating

### A GEOMETRY HARD TO RESIST

With shaft speeds of 200,000 rpm and temperatures up to 1,300 °C, modern turbochargers are exemplary for components made of heat-resistant steels.

Alloying elements such as chromium, nickel, molybdenum or titanium influence the properties of the materials in order to withstand high temperatures and stress.

#### Problem materials in machining

As a consequence, however, short and irregular tool life, uneven wear and problems with chip formation and removal occur during machining of the abrasive material.

A hardening of the edge zones of the bore surfaces and the poor thermal conductivity of the materials also contribute to the difficult machinability. The same applies to the tendency to stick and clamp with increasing nickel content, which results in the formation of built-up edges.

#### Process-reliable threading tools

In the newly developed **HVA geometry**, BASS has considered the requirements of heat-resistant high-alloyed steels. The optimized tool geometry ensures that clamping is drastically reduced despite the high elastic deformation components of the machined materials. Sharp cutting edges avoid sticking and the formation of built-up edges.

#### Accurately fitting macro geometry

In order to achieve long and process-reliable tool life during machining despite the heavy loads on the threading tool, further features have been adapted. The HVA family has a specific macro geometry that has been specially developed for heat-resistant steels. It reduces cutting forces and optimizes chip shape and removal. This is reflected in a considerable reduction and stabilization of the axial forces during machining (see diagram below).

Stable and short cutting edges ensure a long tool life by counteracting the extreme temperatures and the associated crater wear.

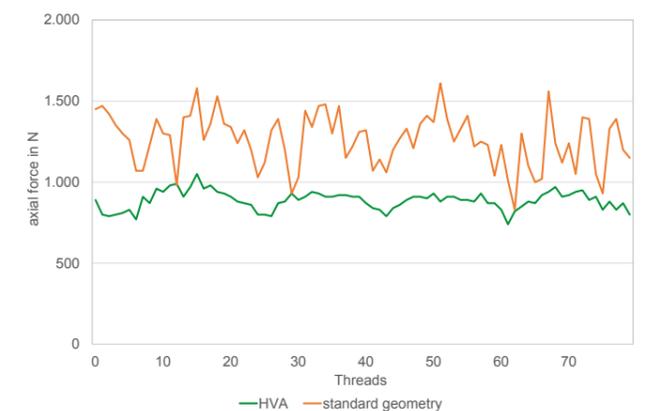
#### Precise micro geometry

In addition to the specially developed macro geometry, a coordinated micro geometry and coating is required. These must have a high toughness and wear resistance. The innovative BT coating is particularly convincing in terms of thermal conductivity, hot hardness and resistance to abrasive wear.

The HVA tools are designed for wet and MQL machining and are available with different chamfer leads and coolant supply.

Further information can be obtained from your contact at BASS.

Diagram: comparison of the axial force course



# BASS

TECHNIK FÜR GEWINDE



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