BASS
TECHNIK FÜR GEWINDE

# Internal thread machining for the die and mold-making industry

Your requirements. Our solutions.

## CUTTING TAPS FOR THE MACHINING OF BLIND HOLES

### AVANT TIH13 TICN

The AVANT TIH13 TICN impresses with its high reliability in the machining of highly tempered materials with a hardness of 38 up to 45 HRC (1,200 -1,450 N/mm2). The cutting tap for blind holes can also be used in shrink fit chucks (shank tolerance h6).

It creates short chips that are evacuated easily.

**The properties at one glance**
- blind hole tool for thread depth up to 1.5×D
- application: on conventional processing machines
- a very stable tool for high-tensile materials

**Application / workpiece materials**
- steel materials up to 1,450 N/mm²
- cast iron with nodular graphite / malleable cast iron

**Model**
- chamfer form C
- TICN-coating
- 13° spiral flute
- shank tolerance h6

### AVANT H15 TICN

The AVANT H15 TICN has proven its reliability in the machining of tough-hard materials and blind hole depths of up to 1.5xD. The 15° spiral flute gives the tool the maximum stability. The chip is evacuated backwards through the flute to the shank.

Through its tool geometry and the TICN wear-protection-coating the AVANT H15 TICN enables an absolutely process reliable internal thread machining on conventional machines.

**The properties at one glance**
- blind hole tool for thread depth up to 1.5×D
- application: on conventional processing machines
- a very stable tool

**Application / workpiece materials**
- steel materials up to 1,250 N/mm²
- cast iron / cast iron with nodular graphite

**Model**
- chamfer form C
- TICN-coating
- 15° spiral flute
- shank tolerance h9



### AVANT H25 HL

Even under unstable operating conditions, the AVANT H25 HL provides optimal results in the machining of blind holes with a thread depth of up to 2×D.

Due to its chamfer form (1.5 - 2 threads) also components with a short thread run-out like hydraulic, pneumatic or cooling water connections can be machined. This is why the AVANT H25 HL is also available for British standard pipe threads (G).

The cutting tap with a 25° spiral flute is universally applicable in tough-hard materials. Through its geometry, the AVANT H25 HL is far superior in the machining of the described materials to cutting taps with a higher helix angle.

**The properties at one glance**
- blind hole tool for thread depth up to 2×D
- application: universal
- high process reliability through optimum chip evacuation

**Application / workpiece materials**
- steel materials up to 1,250 N/mm² (40 HRC)
- cast iron / cast iron with nodular graphite

**Model**
- short chamfer form E
- HL-coating
- metric, metric fine, G-threads
- 25° spiral flute
- shank tolerance h9

### DOMINANT HZ38 TICN

The DOMINANT HZ38 TICN with its 38° spiral flute was developed for the reliable processing of blind holes with a thread depth of up to 2.5×D. It is perfectly suitable for tough-hard materials with a tensile strength of up to 1,250 N/mm². It performs best on conventional machines and modern machining centers.

**The properties at one glance**
- blind hole tool for thread depth up to 2.5×D
- high tool life
- application: on conventional machines and modern machining centers

**Application / workpiece materials**
- steel materials up to 1,250 N/mm²
- cast iron materials

**Model**
- chamfer form C
- TICN-coating
- 38° spiral flute
- shank tolerance h9

### DOMINANT MHST45 HK HL

The cutting geometry of the DOMINANT MHST45 HK HL reduces the friction between the tool and the workpiece. Together with the HST SYNCHRO tap holder and the synchronized machine spindle, the DOMINANT MHST45 HK HL provides outstanding performance.

The tool is ideal for materials with a hardness of 38 to 45 HRC (e. g. Toolox®).

The higher helix angle and the optimal geometry make the machining of blind holes with a thread depth of up to 3×D process reliable.

**The properties at one glance**
- blind hole tool for thread depth up to 3×D
- application: universal
- applicable on machines with synchronized spindle

**Application / workpiece materials**
- steel materials up to 1,450 N/mm² (e. g. Toolox®)
- cast iron materials

**Model**
- chamfer form C
- increased core diameter HK
- HL-coating
- 45° spiral flute
- shank tolerance h6

## CUTTING TAPS FOR THE MACHINING OF THROUGH AND BLIND HOLES

### VARIO SH TICN SR

The solid carbide tap VARIO SH TICN SR provides maximum process reliability in the machining of threads in hardened materials with a hardness of 48 to 63 HRC.

It allows for an economic reworking in already manufactured and hardened parts.

The VARIO SH TICN SR has straight flutes: this ensures maximum stability. Its cutting geometry provides short chips which makes the machining of both through and blind holes possible.

**The properties at one glance**
- the problem solver in the machining of through and blind holes
- application: universal
- high process reliability
- suitable for reworking

**Application / workpiece materials**
- hardened steels of 48 to 63 HRC
- special materials

**Model**
- chamfer form C
- solid carbide tool
- TICN-coating
- short dimensions according to DIN2184-2 (reduced length)
- shank tolerance h6

## CUTTING TAPS FOR THE MACHINING OF THROUGH HOLES

### VARIANT H TICN

The VARIANT H TICN is perfectly suitable for the application in tough-hard materials with a tensile strength of up to 1,250 N/mm².

The chips resulting from the machining are evacuated forwards through the spiral point.

The VARIANT H TICN stands out for high process reliability and high tool life on conventional machines as well as on modern machining centers.

**The properties at one glance**
- a stable tool for the machining of through holes
- application: universal
- high process reliability

**Application / workpiece materials**
- steel materials up to 1,250 N/mm²

**Model**
- chamfer form B
- TICN-coating
- shank tolerance h9

### VARIANT TIH TICN

The VARIANT TIH TICN was developed for the process reliable machining of alloyed and stainless steels with a hardness of 38 to 45 HRC (1,200–1,450 N/mm²).

Through its adapted geometry, this cutting tap for through holes is perfectly suitable for the typical mold-making materials like 1.2312, 1.2738 and Toolox® tool steels.

**The properties at one glance**
- a stable tool for the machining of through holes
- application: universal
- high process reliability

**Application / workpiece materials**
- steel materials up to 1,450 N/mm² (e. g. Toolox®)

**Model**
- chamfer form B
- TICN-coating
- shank tolerance h6

## THREAD MILLING CUTTER

### GFS N
### GFS TIH

The application of GFS thread milling cutters on CNC-controlled processing machines provides an economic alternative to thread cutting: The GFS is a cost-effective tool made of solid carbide. All tolerances can be produced for each dimension as either right-hand or left-hand thread.

The thread milling process allows for short chips.

The countersink provides the component with a protected start of the thread.

Internal threads with a thread depth of up to 2×D can be manufactured in materials with a hardness of up to 56 HRC.

**The properties at one glance**
- high process reliability through short milling chips
- application: universal in blind and through hole
- right- and left-hand threads in all tolerances can be produced
- with countersink

**Application / workpiece materials**
- steel materials up to 56 HRC
- titanium and nickel

**Model**
- solid carbide tool
- internal coolant
- TICN-coating
- straight shank acc. DIN 6535 HA

## BASS – a strong partner for the tool and mold-making industry

The machining of internal threads in the tool and mold-making industry is an extraordinarily challenging issue.

Complex single components or small production lot sizes: the process reliability of threading tools is the key factor for an optimum result.

No matter which thread size or type of dimension: **BASS** has the right tool solution for both hardened dies as well as for forms or standard parts.

The **HST SYNCHRO** tap holder is another advantage in our product range. It is opening up totally new opportunities in the thread clamping technology.

**Performance connects – from the machine interface to the tool tip**

## THREAD MILLING SYSTEMS WITH INSERTS

Thread milling systems with inserts are the optimum choice for large thread dimensions.

### BFW

Milling holders with solid carbide milling cutter inserts are available for fine threads starting with M20x1.5 and standard threads starting with M24.

The milling cutter inserts are available with flank angles 60° or 55°.

The pitch ranges from 0.75 to 6.0 mm or 32 to 4 TPI respectively.

The milling system enables a manufacturing of different thread dimensions and pitches with the same holder and the same inserts: maximum flexibility is ensured.

The insert with profile 60° allows for the production of metric, metric fine, UNC, UNF and UN threads.

The system is applicable for all working materials and has radial internal coolant; the holders have a straight shank according to DIN 1835 B.

### GFK

The thread milling head with solid carbide milling cutter inserts was developed for fine threads starting with M24x1.5 and standard threads starting with M27.

The milling cutter inserts are available with flank angles 60° or 55°.

The pitch ranges from 1.5 to 6.0 mm or 32 to 4 TPI respectively.

The GFK is applicable for all working materials and features internal coolant as well as a tightening thread.

Existing tool holders are compatible with this system so that you are not bound to fix cantilever lengths.

### AFK

Der Aufsteck-Gewindefräskopf mit VHM-Gewindefräsplatten ist passend für Gewindegrößen ab M54×1,5 und Regelgewinde ab M60. Der Steigungsbereich liegt zwischen 0,75 und 6,0 mm beziehungsweise 16 bis 4 Gang je Zoll.

Die Gewindefräsplatten sind in den Flankenwinkeln 60° und 55° erhältlich.

Einsetzbar ist der AFK in sämtlichen Werkstoffen. Er hat eine innere Kühlmittelzufuhr.

**The properties at one glance**

- only one tool for different pitches and thread sizes
- for through and blind hole
- all tolerances can be produced
- suitable for large thread depths
- perfectly cylindrical threads for large thread depths
- very suitable for small series with changing pitch

## HST SYNCHRO

This tap holder compensates synchronization errors between the machine and the feed spindle which in turn minimizes the high frictional forces that would otherwise have to be absorbed by the tap's thread flanks. The micro-compensation of ± 0.5 mm is ensured by a patented steel spring element which — in contrast to competitors' tap holders — guarantees a long tool life.

The HST SYNCHRO tap holder for standard applications is available with straight or HSK shank. The tapping chuck is available in different sizes and with compatible accessories.


**The properties at one glance**

- reduction of axial forces by up to 96%
- torque reduction before and after reversion of rotation by up to 78 %
- tool life increase by min. 30 % through lower friction
- better surface quality of the thread flanks
- reduced risk of tool breakage
- very good accuracy to gauge

BASS

TECHNIK FÜR GEWINDE

www.**bass-tools**.com

BASS GmbH & Co. KG
Technik für Gewinde
Bass-Strasse 1
97996 Niederstetten
Deutschland · Germany

Tel.: +49 7932 892-0
Fax: +49 7932 892-88
E-mail: info@bass-tools.com

TÜV PROFI CERT certified! ® TÜV Hessen
70 100/104/110/130 1226
www.proficert.com
ISO 9001 · VDA 6.4
ISO 14001 · ISO 50001

Stand 03/2014 Subject to modifications ID 052055