



# YOUR SETUP TIME!! **Innovative Exchangeable Head System**



**Drill**Line







# Quick Change Milling Head

Vs

Others

### Costly



Solid Carbide Endmill



### Inefficient



Tungaloy's System

### Economical

Use of a replaceable carbide head for a variety of applications

Replaceable Carbide Head



### No Setup Time

Reduce machine downtime by replacing the head on the machine *with exchange accuracy within 0.0008*"



.....

Versatile Hundreds of combinations available with a wide range of heads in different shapes and sizes!







# Best solution for high production where every second counts

Replacing not only the expensive solid carbide tools, but also reducing tool change and setup time For the most demanding applications where achieving higher productivity on difficult materials is the prime target.

# **Covering your holemaking needs** for any kind of industry



Combines drilling and chamfering operations, therefore reducing cycle time



### Chamfering inserts



## Drill body types

Flange type TID:

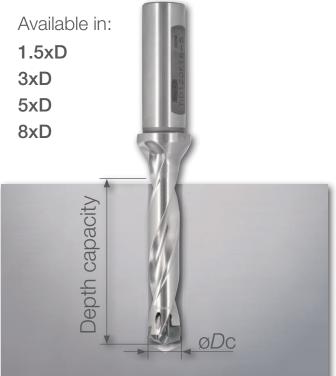
for general drilling operations

#### Straight type TIDC:

for pre-thread hole or with chamfer



## Tool depth capacity





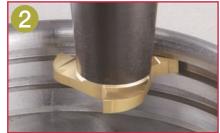
# No setup time and machine downtime



Center drilling + chamfering VDP head 2 flutes for center drilling +

chamfering (DIN332)

- Range: from ø0.129" to ø0.254" with 60° chamfer



#### Shallow slotting VST head

3, 4, 6 flutes for slot milling solution

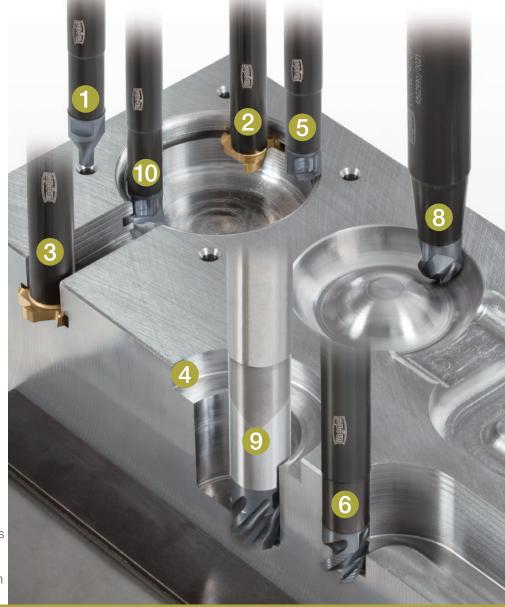
- Form slotting operation - Chamfering operation
- Width range: from 0.030" to 0.394" with slotting depth up to 0.236"



#### T-Slot milling

#### VTB head

- 6 flutes for high productivity
- Form slotting operation
- Slotting with corner radius and chamfer
- Width range: from 0.056" to 0.312" with slotting depth up to 0.190"





#### Roughing & finishing combination head VEE-C head

#### 4 flutes / 45° helix

- Reduces cutting load and vibration due to combined roughing and finishing flutes
- Range: from ø0.312" to ø0.750" with possibility to machine almost any material



#### Concave radius milling VCR head

- 2 flutes with concave radius
- For edge breaking and deburring
- Useful for machining edges of pockets or holes for easy entry of male parts in an assembly
- Range: from ø0.315" to ø0.787" with concave radii of R0.039" to R0.236"

#### High flexibility with only one shank



3 shank materials

### All in one!



# Low cutting force, rough milling solution VEE-R head

- 4, 5, 6 flutes / 45° helix
- High performance head with low cutting force
- Large depth of cut at high feed rates
- Range: from ø0.312" to ø0.750" with corner chamfer to reduce burr on the component



#### Chamfering, deburring, and countersinking solutions

#### VCA head

- 4, 6 flutes with center cutting edge
- Convenient design for deburring and countersinking, eliminating manual operation



#### Ballnose endmills for profiling and finishing operations VBD / VBE-BG head

- 4 flutes / 30°, 45° helix
- High precision heads for finishing and profiling operations
- Range: from ø0.250" to ø0.750" with tight radius tolerances of ±0.004" to ±0.005"



# Highly productive, finish milling solution VEE / VED head

- 6, 8, 10 flutes / 30°, 45°, 50° helix
- Suitable even for superalloy and hardened steel finishing
- Available in different helix angles to machine poorly clamped components
- Range: from ø0.625" to ø0.750" with corner radii from R0 to R0.062"



#### High feed in small diameters VFX head

2 flutes / high feed milling solution for high productivity

- Range: from ø0.375" to ø0.750" with depth ranging from 0.020" to 0.059" and feed up to .079"/rev



Endmills with corner radius for profiling and shoulder milling operations VRD / VRB head

- 2, 6 flutes with back taper design
- Heads for profiling, corner radius, and shoulder milling operations
- Range: from ø0.312" to ø0.750" with corner radii from R0.031" to R0.312"





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Vs

Tungaloy's System

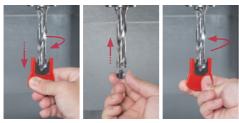
### Economical

Uses a replaceable carbide head



### No Setup Time

Reduce machine downtime by replacing the head on the machine



< 1 min



Costly

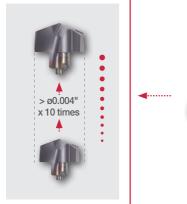


Others

Expensive solid carbide drill

Solid Carbide Drill

**Versatile** Tool range in increments of 0.004" covers from ø0.394" to ø0.783"; 10 different heads in 0.004" increments mount on each drill body





**x 10 =** Covers for hole diameter range from  $\emptyset 0.394$ " to  $\emptyset 0.783$ "

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