IMPROVE YOUR SETUP TIME!!

Innovative Exchangeable Head System

MillLine  
TUNGMEISTER

DrillLine  
DRILLMEISTER

www.tungaloy.com
Quick Change Milling Head

**Costly**

Solid Carbide Endmill

**Inefficient**

1. Set up time
2. Change head
3. Replace head
4. Machine down time
5. Reduce machine down time by replacing the head on the machine *with exchange accuracy within 0.0008"*

**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!

[Images of various milling heads]

[www.tungaloyamerica.com]
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

Fly wheel  Wheel hub  Valve

Brake disk  Heat exchanger

Tube sheet  Cylinder head  Knuckle arm  Differential case

www.tungaloyamerica.com
Combines drilling and chamfering operations, therefore reducing cycle time.

Chamfering inserts

\[ \alpha = 30^\circ \]
\[ \alpha = 45^\circ \]
\[ \alpha = 60^\circ \]

Drill body types

Flange type TID:
for general drilling operations

Straight type TIDC:
for pre-thread hole or with chamfer

Coolant system

Tool depth capacity

Available in:
1.5xD
3xD
5xD
8xD
**No setup time and machine downtime**

1. **Center drilling + chamfering**
   - **VDP head**
   - 2 flutes for center drilling + chamfering (DIN332)
   - **Range:** from ø0.129" to ø0.254" with 60° chamfer

2. **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"

3. **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"

4. **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

5. **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"
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"

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 to R0.062"

High precision heads for finishing and profiling 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"

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

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"

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

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"
Quick Change Drilling Head

Tungaloy’s System Vs Others

**Economical**
Uses a replaceable carbide head

**Costly**
Expensive solid carbide drill

**No Setup Time**
Reduce machine downtime by replacing the head on the machine

**Inefficient**

**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 ø0.394" to ø0.783"

 Replay these instructions with a different prompt.

> ø0.004" x 10 times

Covers for hole diameter range from ø0.394" to ø0.783"

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