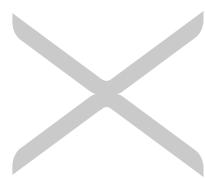


# SWISS MACHINING: DRILLING, MILLING, AND MULTIFUNCTIONAL TOOLING



[tungaloy.com/us](http://tungaloy.com/us)  
[ntkcuttingtools.com](http://ntkcuttingtools.com)

**ModuMini-Turn**

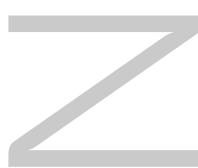
3 - 4

**TungBoreMini**

5 - 7

**TinyMiniTurnMulti**

5, 8 - 9

**DrillMeister / AddMeisterDrill**

10 - 16

**GigaMiniDrill**

17

**TungMeister**

18 - 19

**SpinJet**

20 - 21

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*Tungaloy-NTK is proud to deliver a complete lineup of Swiss machining solutions for drilling, milling, and multifunctional machining. Our tools are engineered to maximize performance, improve efficiency, and ensure exceptional precision in every operation.*



ER11 Collet



Scan to  
learn more

## INTRODUCING TWO NEW MODULAR HEADS FOR MODUMINI-TURN

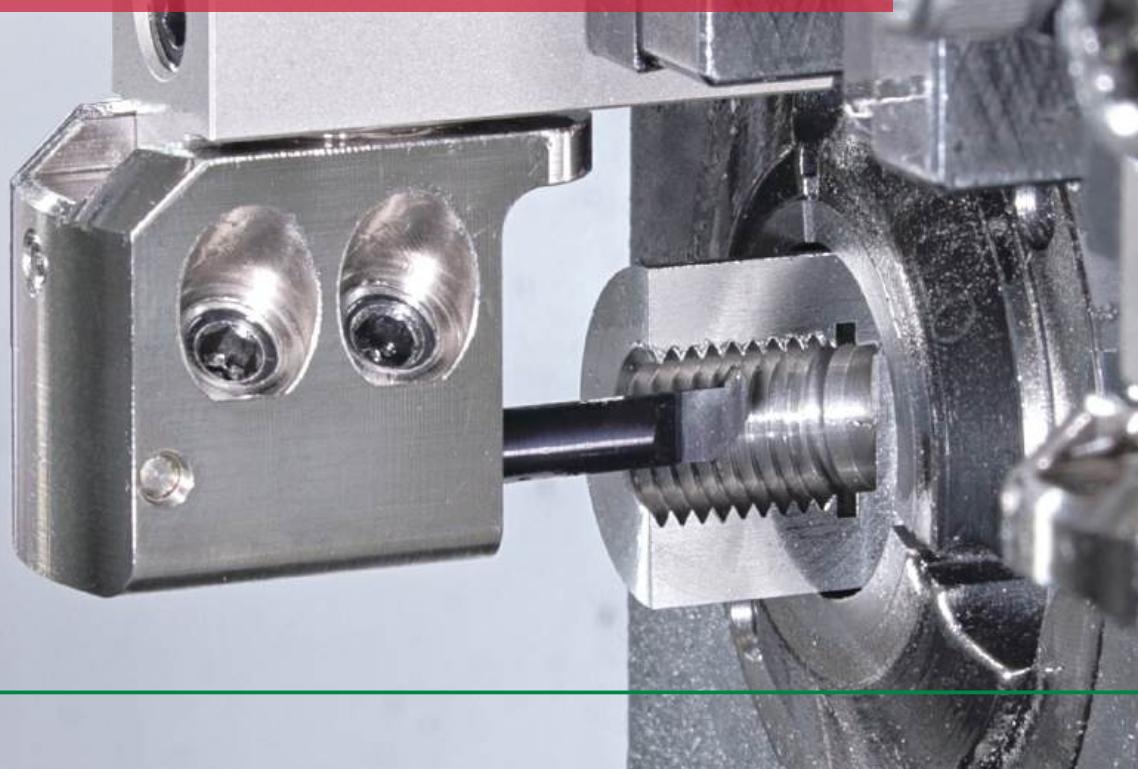
*ER11 collet connection head with  
internal coolant supply.*

*QC head for TinyMini-Turn with  
internal coolant supply.*

TinyMini-Turn



Scan to  
learn more



# MODUM<sup>INI</sup> TURN

*Innovative modular head system with a wide selection of turning, grooving and threading heads. Significantly reduces machine setup time.*



The addition of the QR12-ER11 collet chuck holder enables **versatile machining with a single shank**.

Features internal coolant supply for easy chip evacuation.

The latest TinyMini-Turn head features a **robust coupling structure, minimizing deflection and vibration** during machining.

Designed with four circumferential coolant holes, improving chip evacuation.



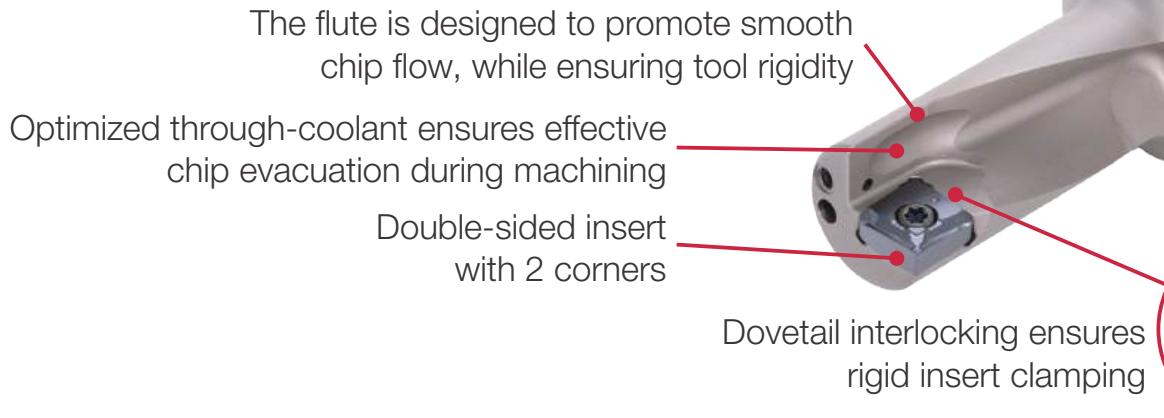
# MULTIFUNCTIONAL TOOLS FOR DRILLING AND TURNING

*Reduced machine downtime thanks to eliminating the need for tool changes.*

Minimum bore diameter: DMIN

| TINY M <sup>INI</sup> TURN MULTI |         |         |         |         |         |         |         |         |         |         |         | TUNG <sup>ORE</sup> B MINI |         |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------------|---------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| ø0.118"                          | ø0.157" | ø0.197" | ø0.236" | ø0.276" | ø0.315" | ø0.394" | ø0.472" | ø0.551" | ø0.630" | ø0.709" | ø0.787" | ø0.984"                    | ø1.260" | ø3 mm | ø4 mm | ø5 mm | ø6 mm | ø7 mm | ø8 mm | ø10 mm | ø12 mm | ø14 mm | ø16 mm | ø18 mm | ø20 mm | ø25 mm | ø32 mm |
| Solid carbide boring bar         |         |         |         |         |         |         |         |         |         |         |         | Indexable                  |         |       |       |       |       |       |       |        |        |        |        |        |        |        |        |

## TUNG<sup>ORE</sup> B MINI



## TINY M<sup>INI</sup> TURN MULTI

Enables multiple tool combinations and productivity boosts for small part machining, such as drilling, internal turning, external turning, face turning, and chamfering.

Eliminates tool changeover time and increases number of open slots in the turret or tool posts in your CNC lathes and swiss machines.



TungBoreMini



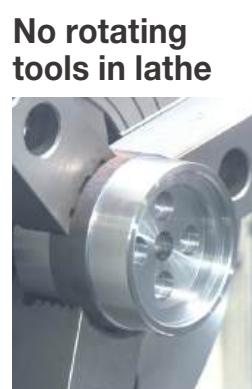
Scan to learn more

**TUNG<sup>BORE</sup><sub>MINI</sub>**

*Expansion of  
DMIN = 0.315"  
(8 mm) holder  
for TinyMini-Turn  
sleeve*



*TungBoreMini can be used just like a standard ISO turning tool for ID, OD, and/or face turning applications.*

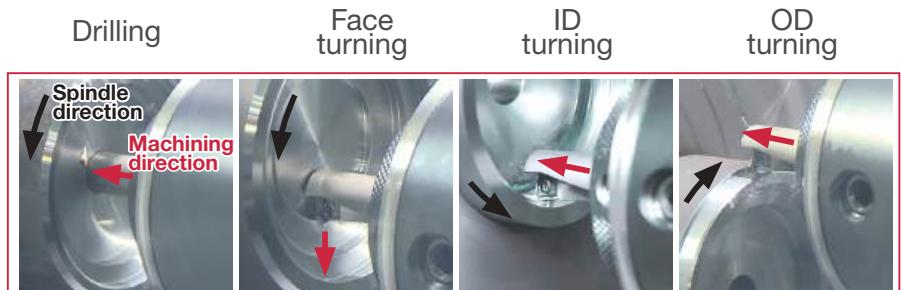


No rotating tools in lathe

Conventional  
Tooling -  
3 Tools



Multifunctional  
Tooling -  
1 Tool


**TUNG<sup>BORE</sup><sub>MINI</sub>**




**New**

### A-TBM

Holder for Drilling and Turning  
with TinyMiniTurn sleeves  
DMIN = 0.315" (8 mm)



Single-sided insert  
with 2 corners



### XCMT-PS

For toolholders for  
DMIN = 0.315" (8 mm)

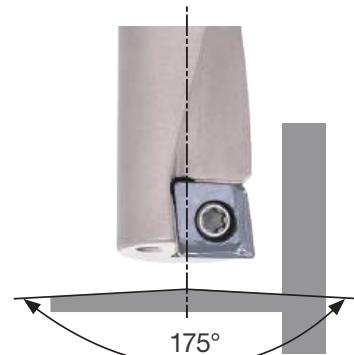
### TBM

Holder for Drilling and Turning  
DMIN = 0.315" - 1.260"  
(8 mm - 32 mm)

Double-sided insert  
with 2 corners

### XOMU-PS

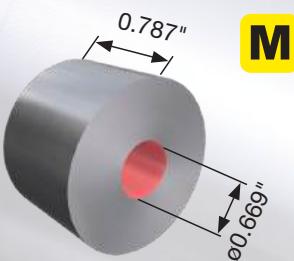
For toolholders for  
DMIN = 0.394" - 1.260"  
(10 mm - 32 mm)



Creates a near-flat hole bottom

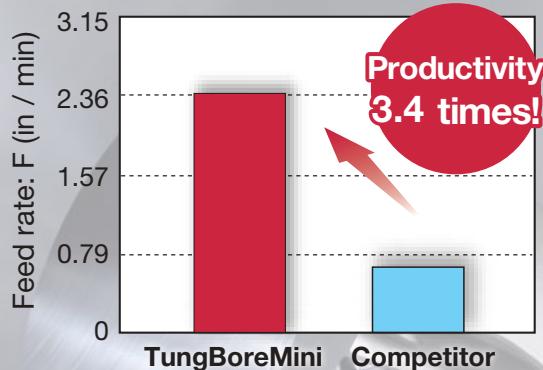
## Real World Example

Workpiece type: Machine Part  
Toolholder: TBM12RF159-2.25  
Insert: XOMU06H204-PS AH725  
Workpiece Material: 440C



Cutting Speed (Vc): 263 sfm  
Feed (f): 0.006 ipr  
Depth of cut (ap): 0.098"  
Coolant: Wet

TungBoreMini has **improved feed rate by 3.4 times for drilling and 1.7 times for ID turning** over the competitor's multifunction tool. Tool life has been improved by as much as 1.2 times.



**TINY M IN TURN MULTI**

# SOLID CARBIDE BORING BAR FOR SMALL-DIAMETER DRILLING & TURNING

TinyMiniTurnMulti



Scan to learn more

**New****...TBMF07**

From drilling to internal, external, and face turning  
L/D = 2 & 3



Strategically positioned on the tool body, three coolant grooves provide effective chip evacuation and control



- Creates a flat hole bottom
- Excellent chip control by unique chipbreaker shape

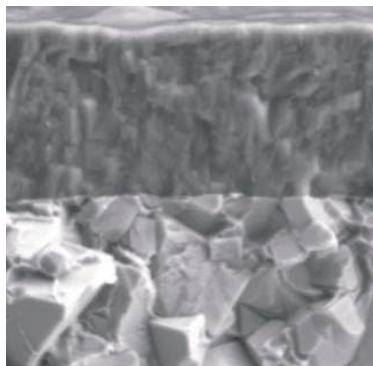
 $\approx 180$ 

In combination with 4 coolant holes tool sleeve, TBMFR07 delivers superior process security

# TINY M<sup>INI</sup> TURN MULTI

## GRADE

### SH725



#### PVD coated grade SH725

(Ti,Al)N coating combined with a tough carbide substrate offers excellent coating adhesion and edge sharpness.

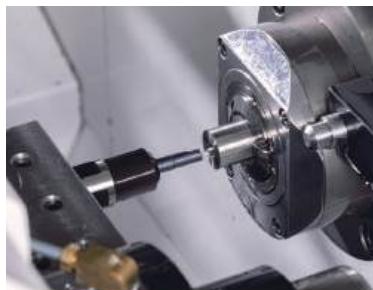
#### Excellent resistance to wear and chip welding

Smooth surface prevents coating from peeling off, while its incredible wear resistance provides long tool life.

#### High resistance to plastic deformation

Tough carbide substrate offers stable and longer tool life.

## CHIP CONTROL



### TINY M<sup>INI</sup> TURN MULTI

Secure process with no chip entanglement



### Competitor

Chips entangled on the tool

### M

|                    |                           |
|--------------------|---------------------------|
| Toolholder         | : JBBS19-7-L100C-4N       |
| Insert             | : TBMFR0712001-D060 SH725 |
| Workpiece material | : SUS304 / X5CrNi18-9     |
| Cutting speed      | : Vc = 131 sfm            |
| Feed               | : f = 0.0008 ipr          |
| Depth of cut       | : ap = 0.008"             |
| Coolant            | : Wet                     |

## INSERT WEAR



### TINY M<sup>INI</sup> TURN MULTI

Flank wear :  
Vbmax = 0.004"



### Competitor

Flank wear :  
Vbmax = 0.008"

### P

|                    |                      |
|--------------------|----------------------|
| Toolholder         | : JBBS254-7-L100C-4N |
| Insert             | : TBMFR0718003-D060  |
| Workpiece material | : SUJ2               |
| Cutting speed      | : Vc = 230 sfm       |
| Feed               | : f = 0.0008 ipr     |
| Depth of cut       | : ap = 0.030"        |
| Tool life          | : 500 pcs            |
| Coolant            | : Internal           |



# OUTSTANDING RANGE OF HEAD EXCHANGEABLE DRILLS

*Exchangeable head drill system for superior drilling performance and long tool life*

## DRILLMEISTER



**< 15 sec.**

Quick drill tip change for reduced machine downtime.

Tool inventory and management costs are significantly reduced as there is no need for regrinding.

# NEW SLEEVE DEDICATED TO SWISS TYPE MACHINES FOR EASY SETUP WITH DRILLMEISTER TOOLS



## DRILLMEISTER

### Dedicated design for Swiss type machines

- Allows standard TID-F bodies (flange type) to be used without additional machining
- Easy tool change in the machine with side lock system
- Tool can be replaced with minimal misalignment
- Internal lubrication enables high-efficiency machining



### Line up overview

| Drill diameter<br>(in) | Drill body<br>designation | Shank diameter of sleeve (in) |        |        |        |        |        |        |
|------------------------|---------------------------|-------------------------------|--------|--------|--------|--------|--------|--------|
|                        |                           | ø0.630                        | ø0.750 | ø0.787 | ø0.866 | ø0.984 | ø1.000 | ø1.260 |
| ø0.236 - ø0.390        | TID***F12...              | ○                             | ○      | ○      | ○      | ○      | ○      | ○      |
| ø0.394 - ø0.587        | TID***F16...              |                               | ○      | ○      | ○      | ○      | ○      | ○      |
| ø0.591 - ø0.705        | TID***F20...              |                               |        |        |        | ○      | ○      | ○      |

# NEW LONG REACH DRILLING SOLUTION WITH MODULAR BODY

## Modular System

- TungFlex and TungMeister tooling systems ensure optimal toolholder combination, allowing stable drilling operation even with long overhang tool set up
- Quick change capability in the machine helps minimize machine downtime
- Standard drilling depth of 2xD or 3xD



| Modular body | Maximum drilling depth | Shank type             | Drilling diameter range: mm (inch) |
|--------------|------------------------|------------------------|------------------------------------|
| TID-M        | 2xD                    | TungFlex connection    | Ø6 [0.236"] Ø14.4 [0.567"]         |
|              | 3xD                    |                        | Ø6 [0.236"] Ø18.9 [0.744"]         |
| TID-S        | 2xD                    | TungMeister connection | Ø6.9 [0.272"] Ø10.9 [0.429"]       |

## A broad tooling range of TungFlex and TungMeister systems



# DRILL HEAD SELECTION

**ADD M DRILL**

**DMP**

Drill dia.:  
0.157" - 0.232"  
( $\varnothing 4$  -  $\varnothing 5.9$  mm)

General purpose drilling head ideal for various drilling applications

**DMC**

Drill dia.:  
0.157" - 0.232"  
( $\varnothing 4$  -  $\varnothing 5.9$  mm)

High precision drilling head with self-centering chisel edge

**New DMF**

Drill dia.:  
0.157" - 0.232"  
( $\varnothing 4$  -  $\varnothing 5.9$  mm)

180° flat edges for counterboring and flat bottoms

video



e-catalog



**DRILL MEISTER**

**DMP**

Drill dia.:  
0.236" - 1.020"  
( $\varnothing 6$  -  $\varnothing 25.9$  mm)

General purpose drilling head ideal for various drilling applications

**DMC**

Drill dia.:  
0.236" - 1.020"  
( $\varnothing 6$  -  $\varnothing 25.9$  mm)

High-precision head with double margin and self-centering edge

**DMF**

Drill dia.:  
0.236" - 1.020"  
( $\varnothing 6$  -  $\varnothing 25.9$  mm)

180° flat edges for counterboring and flat bottoms

**DMH**

Drill dia.:  
0.236" - 1.020"  
( $\varnothing 6$  -  $\varnothing 25.9$  mm)

General purpose head with enhanced cutting edge

**DMN**

Drill dia.:  
0.268" - 0.768"  
( $\varnothing 6.8$  -  $\varnothing 19.5$  mm)

Drill head with sharp edges for non-ferrous materials

**DMM New**

Drill dia.:  
0.394" - 0.657"  
( $\varnothing 10$  -  $\varnothing 16.7$  mm)

General purpose drilling head for Stainless Steel materials

video



e-catalog



# TOOL BODY VARIATIONS

**DRILLMEISTER / ADDM DRILL**

## TID-F...

- Constant tool length due to flange support
- Flat for side-lock clamping



**New**

## TID\*\*T\*\*

- Dedicated for TinyMini-Turn sleeve
- Application for Swiss type machine and small lathe
- Tool diameter: 0.157" - 0.331" ( $\varnothing 4$  -  $\varnothing 8.4$  mm)



## TID-R...

- Economical option for external coolant environment
- Tool overhang to be adjusted more freely within shank length



## TID-M, TID-S

- Modular bodies compatible with 2xD and 3xD hole depths
- TungFlex and TungMeister connections
- Ensures stable machining even with long overhangs



## TIDC



- Tools have peripheral flats for correct clamping of the chamfering inserts when assembled with TIDCF holder
- Flat for side-lock clamping



## TID\*\*A\*\*M

- Modular drill bodies with chamfering inserts for tap drill hole processing
- Tung Flex modular body
- Compatible with various overhang lengths when combined with the shank



## TIDCF



- Drilling and chamfering in one shot
- Three different chamfering angles are available on the same holder



## TID-R...

- Tool overhang to be adjusted more freely within shank length
- Perfectly suitable for hydro holders



# SLEEVE VARIATIONS

**DRILLMEISTER / ADDM DRILL**

**VSSD\*\*-W-A...**



- Straight shank and neck with coolant hole



**VTSD\*\*-W-A...**



- Straight shank and taper neck with coolant hole



**JBBS-4N**



- Sleeve for internal coolant supply with 4 coolant holes



**VSSD**

- Straight neck and cylindrical shank



**BLM**

- Dedicated sleeves for automatic lathes and small lathes
- Designed for use in combination with TID-F



**JBBS-C**

- Sleeve for internal coolant supply



# DRILLMEISTER / ADDM DRILL



*Modular drill series featuring superb stability and high-rigidity during drilling, even in setups with long tool overhangs.*

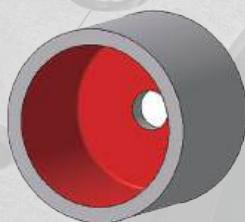
*No pre-machining requirement, even over 12xD.*



*Scan to learn more*

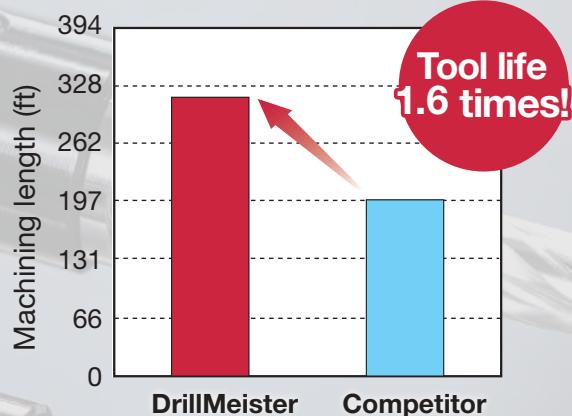
## Real World Example

Workpiece type: Sleeve  
 Drill Body: TID095F12-1.5  
 Head: DMF095-R0.2  
 Grade: AH9130  
 Material: Low carbon steel C 0.13%



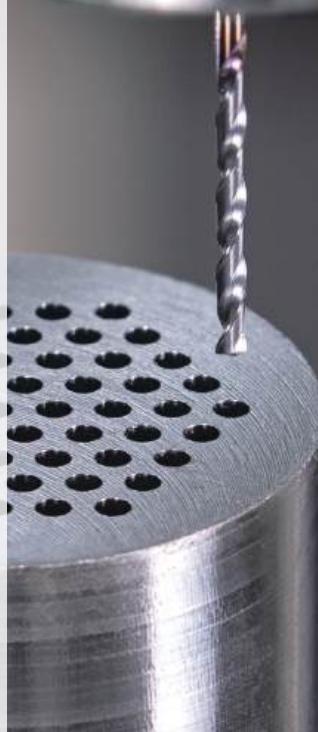
Cutting Speed (Vc): 295 sfm  
 Feed (f): 0.004 ipr  
 Feed speed (Vf): 11.89 in/min  
 Drill diameter: 0.374"  
 Hole depth: 0.787"  
 Coolant: Wet (Internal Coolant)

DrillMeister DMF excels in tool life, **achieving 1.6 times the tool life** compared to existing head-exchangeable drills.



# GIGAMINIDRILL

## SOLID CARBIDE MICRO DRILLS FOR SUPERIOR PRECISION, RELIABILITY, AND LONGEVITY



GigaMiniDrill



Scan to learn more

*Outstanding micro-precision and deep-hole drilling performance especially in carbon steel and stainless steel*

### Extensive offering of micro drills

Diameters available from 0.004" - 0.118" (0.1 mm - 3 mm)

- In 0.0004" (0.01 mm) increments
- All drills have 0.118" (3 mm) diameter shank

### Deep hole drilling up to 15xD

Drilling lengths start from 5xD

### Extremely high precision hole repeatability

The web of the drills in 0.012" (0.3 mm) or greater diameters is thinned so as to promote better drill engagement in the material for better hole repeatability.

### High reliability

Tough sub-micro grain carbide drills with durable design offer good fracture resistance and process security

### Dedicated coating

A coating technology developed specifically for micro drills provides long tool life

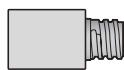


# TUNGMEISTER

## EXCHANGEABLE HEAD ENDMILL SERIES



TungMeister

Scan to  
learn more

### VEH, VEE, VED

Square

Extensive tool diameter range from 5 to 32 mm, 0.312" to 1".  
Covers a broad range of applications from precision machining to large size parts.

ø32 mm,  
**New** only for VED series



**VEH, VED**

Square



VEH...

VED\*\*-07/09...

Roughing  
VED\*\*R...

Additional lineup for 1.5D long flute milling head series.

New close-pitch milling head and serrated edge roughing head for expanded coverage.

**VFM**

Face mill

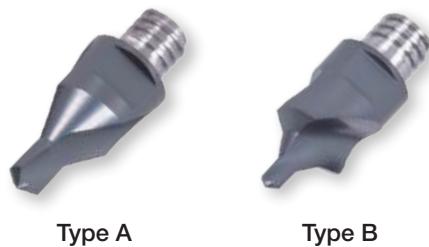


New face milling head

The VFM cutting edge incorporates a built-in wiper that will provide better surface quality than standard solid carbide endmills.

**VDP**

Center hole

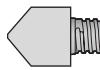


Type A

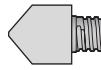
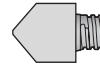
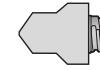
Type B

Enhanced lineup of center drill heads for small diameter bar stocks

A center hole as small as 0.039" (1.0 mm) in diameter can now be created with TungMeister. Now offering Type B drill.

**VCA**

Chamfering

**VCP02**Chamfering  
Spot Drill**VDS**Chamfering  
Spot Drill**VDP02**

Center hole

**VST\*\*-4/6...**

VST\*\*-3...

**VTB\*\*-06...**

VTB\*\*C15-06...

Slotting head lineup for groove widths ranging from 0.047" - 0.079" (1.2 mm - 2 mm).



# SPINJET

TUNGALOY

*High productivity drilling and  
milling tooling system for  
difficult to reach spaces*



SpinJet



Scan to  
learn more

# SPINJET

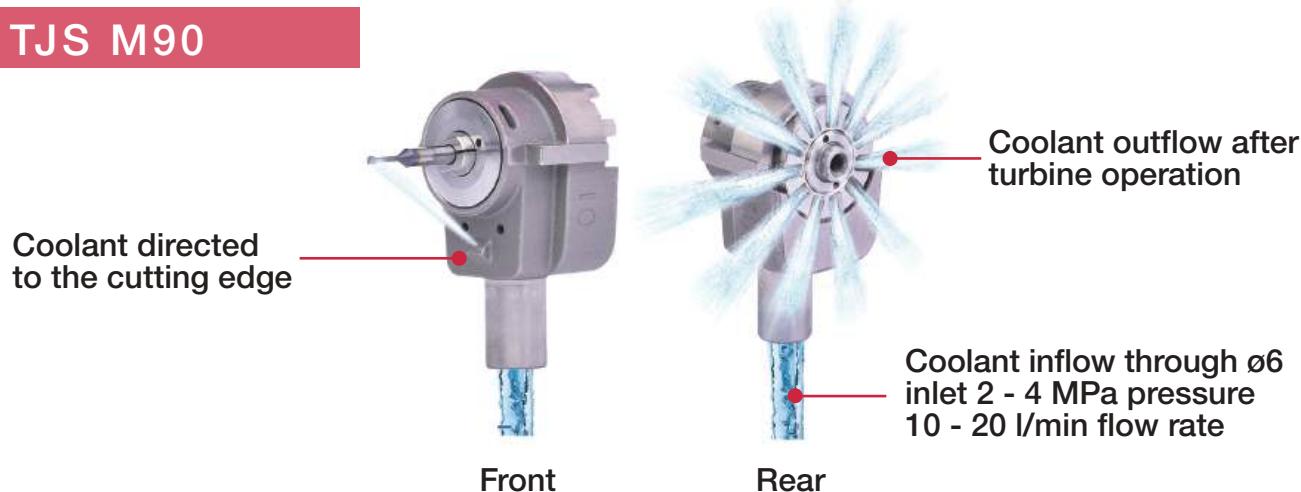
*Rigid and compact, ideal for machining operations in difficult-to-reach areas.*

*Powered by the machine's internal coolant driver system.*

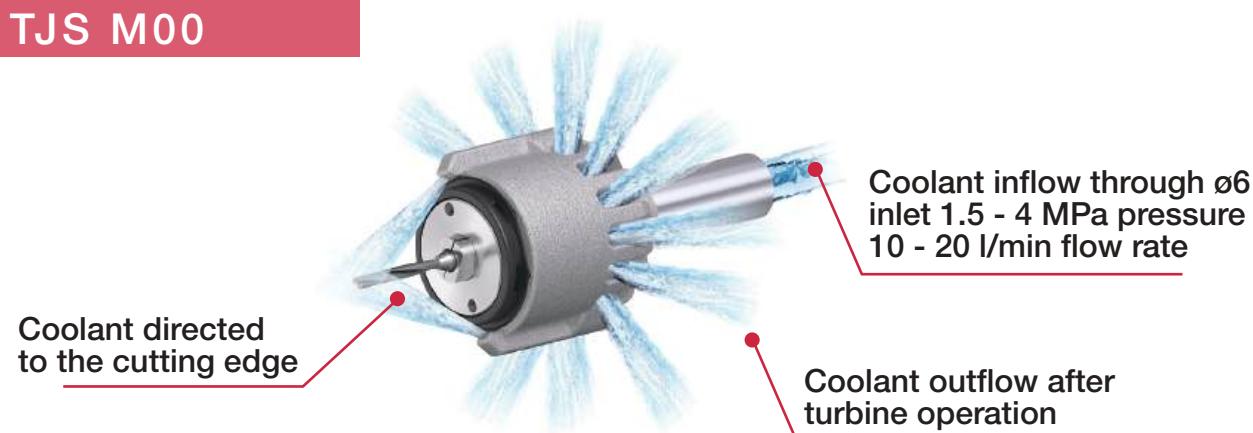
*Suitable for small diameter semi-finishing and finishing application.*

*Powerful internal coolant system.*

## TJS M90



## TJS M00



## Prerequisites for CNC Machine

| Prerequisites                               | SPINJET TJS M90   | SPINJET TJS M00   |
|---|---|---|
| Coolant pressure: P (MPa)                   | 2 - 4   | 1.5 - 4   |
| Flow rate: Q (l/min)                        | 10 - 20   | 10 - 20   |
| No. of revolutions: n ( $\text{min}^{-1}$ ) | 35,000 - 53,000   | 18,000 - 40,000   |
| Tool diameter: DC                           | Drilling: 0.020" - 0.079" (0.5 - 2 mm)<br>Milling: 0.059" - 0.138" (1.5 - 3.5 mm) | Drilling: 0.004" - 0.079" (0.1 - 2 mm)<br>Milling: 0.012" - 0.118" (0.3 - 3 mm) |
| Max. shank diameter: DCONMS                 | 0.125" (3.175 mm)   | 0.125" (3.175 mm)   |

These are approximate revolution values, depending on coolant pressure, flow rate, and type.

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