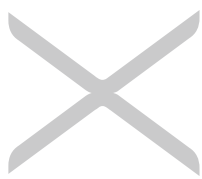


SWISS MACHINING: DRILLING, MILLING, AND MULTIFUNCTIONAL TOOLING



tungaloy.com/us
ntkcuttingtools.com

**ModuMini-Turn**

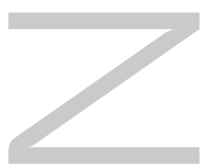
3 - 4

**TungBoreMini**

5 - 7

**TinyMiniTurnMulti**

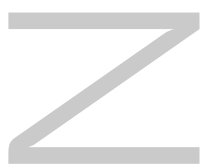
5, 8 - 9

**DrillMeister / AddMeisterDrill**

10 - 16

**GigaMiniDrill**

17

**TungMeister**

18 - 19

SpinJet

20 - 21

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^{INI}TURN

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



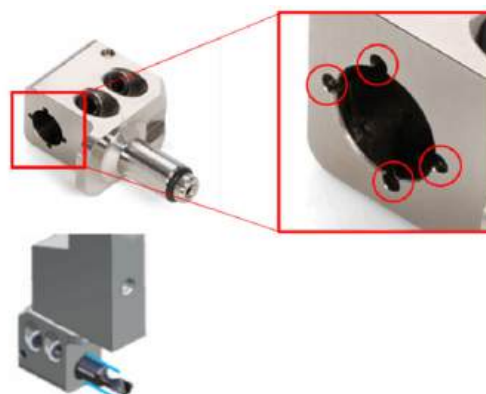
The addition of the QR12-ER11 collet chuck holder enables **versatile machining with a single shank.**

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 ^{INI} M ^{TURN} MULTI							TUNG ^{B^{ORE}} 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						

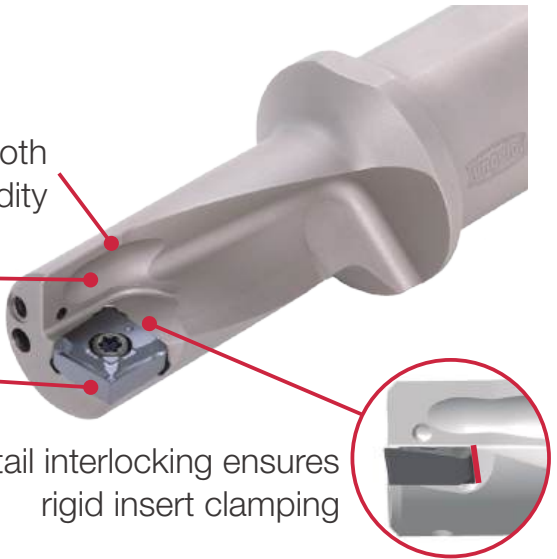
TUNG^{B^{ORE}}MINI

The flute is designed to promote smooth chip flow, while ensuring tool rigidity

Optimized through-coolant ensures effective chip evacuation during machining

Double-sided insert with 2 corners

Dovetail interlocking ensures rigid insert clamping



TINY^{INI}M^{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.



TUNGB^{ORE}MINI

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

TungBoreMini



Scan to
learn more

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

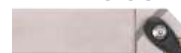
Drill



Boring holder



Ex holder



No rotating
tools in lathe



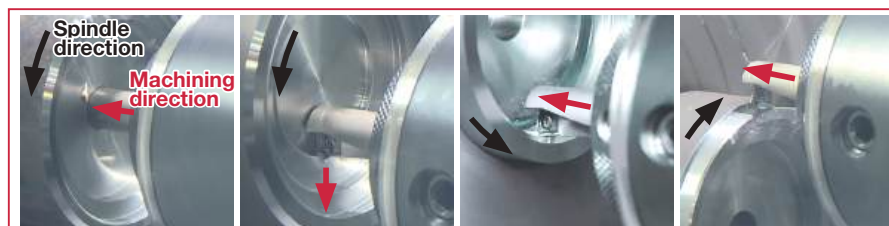
Conventional
Tooling -
3 Tools



Drilling

Face
turningID
turningOD
turning

Multifunctional
Tooling -
1 Tool



TUNGB^{ORE}MINI



TUNGB^{ORE}MINI

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)

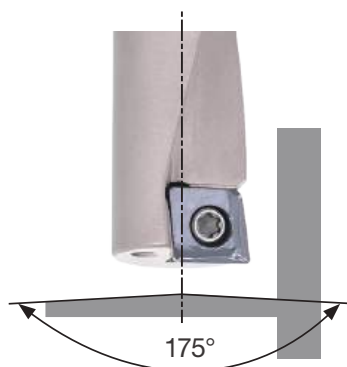
TBM

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

Double-sided insert
with 2 corners

XOMU-PS

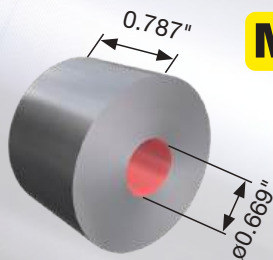
For toolholders for
DMIN = 0.394" - 1.260"
(10 mm - 32 mm)



Creates a near-flat hole bottom

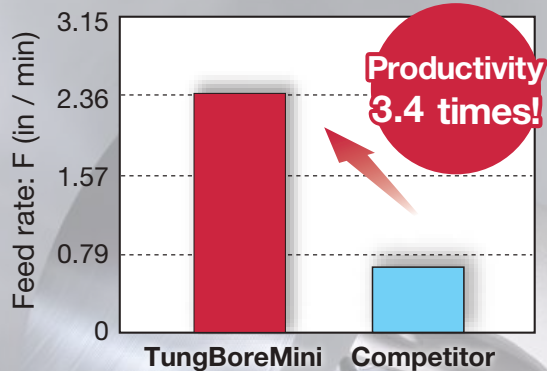
Real World Example

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^{INI}M TURNMULTI

SOLID CARBIDE BORING BAR FOR SMALL-DIAMETER DRILLING & TURNING



TinyMiniTurnMulti



Scan to learn more

...TBMF07

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

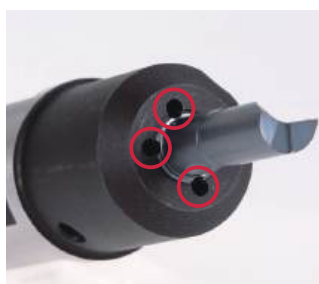
New



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

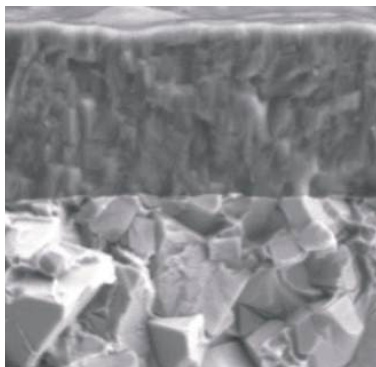


In combination with 4 coolant holes tool sleeve, TBMFR07 delivers superior process security

TINY^{INI}M TURNMULTI

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^{INI}M TURNMULTI

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 : $V_c = 131$ sfm
 Feed : $f = 0.0008$ ipr
 Depth of cut : $a_p = 0.008$ "
 Coolant : Wet

INSERT WEAR



TINY^{INI}M TURNMULTI

Flank wear :
 $V_{bmax} = 0.004$ "



Competitor

Flank wear :
 $V_{bmax} = 0.008$ "

P

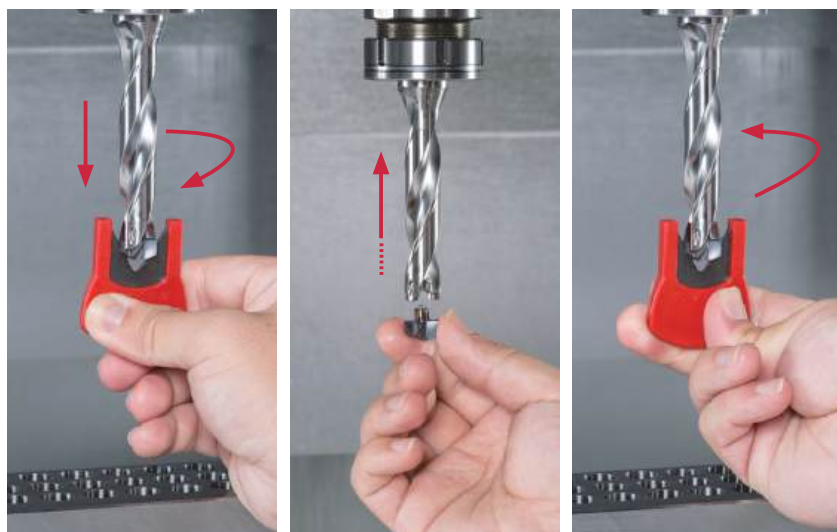
Toolholder : JBBS254-7-L100C-4N
 Insert : TBMFR0718003-D060
 Workpiece material : SUJ2
 Cutting speed : $V_c = 230$ sfm
 Feed : $f = 0.0008$ ipr
 Depth of cut : $a_p = 0.030$ "
 Tool life : 500 pcs
 Coolant : Internal



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



Rc1/8 thread



Dedicated shank size for Swiss type machine

Line up overview

Drill diameter (in)	Drill body 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 MASTER **DRILL**



DMP

Drill dia.:
0.157" - 0.232"
(ø4 - ø5.9 mm)

General purpose drilling head ideal for various drilling applications



DMC

Drill dia.:
0.157" - 0.232"
(ø4 - ø5.9 mm)

High precision drilling head with self-centering chisel edge



New DMF

Drill dia.:
0.157" - 0.232"
(ø4 - ø5.9 mm)

180° flat edges for counterboring and flat bottoms



DRILL MEISTER



DMP

Drill dia.:
0.236" - 1.020"
(ø6 - ø25.9 mm)

General purpose drilling head ideal for various drilling applications



DMC

Drill dia.:
0.236" - 1.020"
(ø6 - ø25.9 mm)

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



DMF

Drill dia.:
0.236" - 1.020"
(ø6 - ø25.9 mm)

180° flat edges for counterboring and flat bottoms



DMH

Drill dia.:
0.236" - 1.020"
(ø6 - ø25.9 mm)

General purpose head with enhanced cutting edge



DMN

Drill dia.:
0.268" - 0.768"
(ø6.8 - ø19.5 mm)

Drill head with sharp edges for non-ferrous materials



New DMM

Drill dia.:
0.394" - 0.657"
(ø10 - ø16.7 mm)

General purpose drilling head for Stainless Steel materials



TOOL BODY VARIATIONS

DRILLMEISTER / ADDMEISTER 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" (ø4 - ø8.4 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 / ADD M^{MASTER} DRILL

VSSD**-W-A...



- Straight shank and neck with coolant hole



VSSD

- Straight neck and cylindrical shank



VTSD**-W-A...



- Straight shank and taper neck with coolant hole



BLM

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



JBBS-4N



- Sleeve for internal coolant supply with 4 coolant holes



JBBS-C

- Sleeve for internal coolant supply



DRILLMEISTER / ADD M^{MASTER} DRILL



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

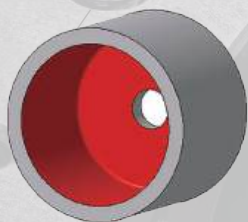
No pre-machining requirement, even over 12xD.



Scan to learn more

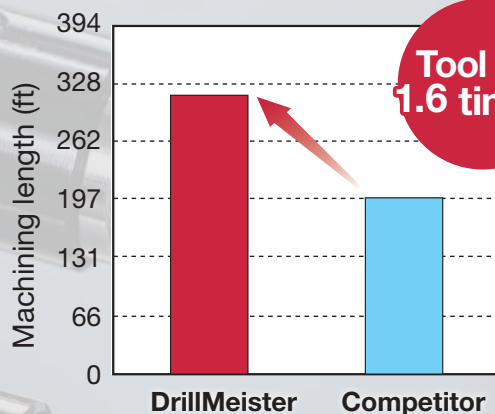
Real World Example

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



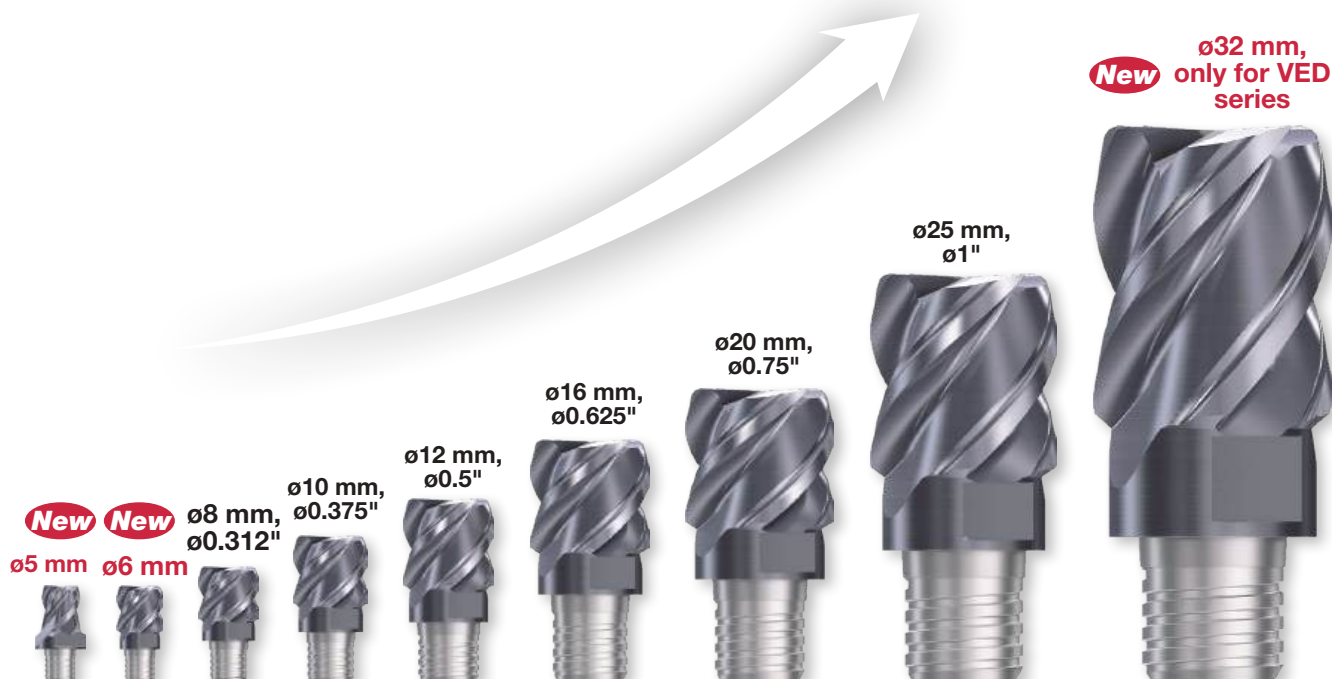
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learn more



Square

VEH, VEE, VED

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.



New ø32 mm,
only for VED
series

ø25 mm,
ø1"

ø20 mm,
ø0.75"

ø16 mm,
ø0.625"

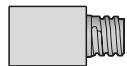
ø12 mm,
ø0.5"

ø10 mm,
ø0.375"

ø8 mm,
ø0.312"

New ø6 mm

New ø5 mm



Square

VEH, VED



VEH...



VED**-07/09...



Roughing
VED**R...

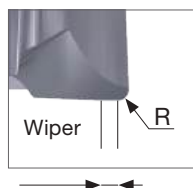
Additional lineup for 1.5D long flute milling head series.

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



Face mill

VFM



New face milling head

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



Center hole

VDP



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.



Chamfering

VCA



Chamfering
Spot Drill

VCP02



Chamfering
Spot Drill

VDS



Center hole

VDP02



Slotting

VST**-4/6...



VTB**-06...



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



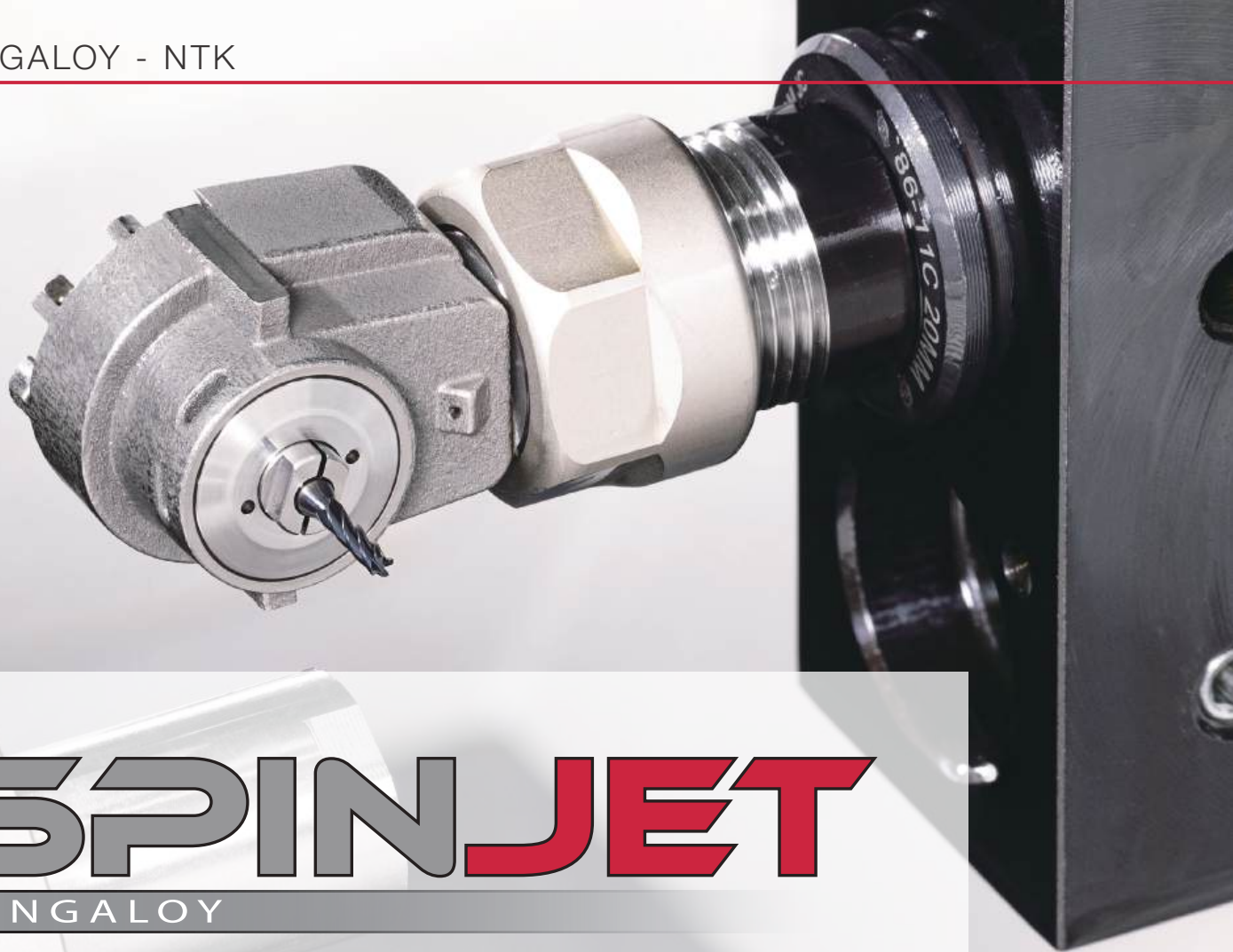
VST**-3...



VST**A45...



VTB**C15-06...



SPINJET

TUNGALOY

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



SpinJet



Scan to
learn more

SPINJET

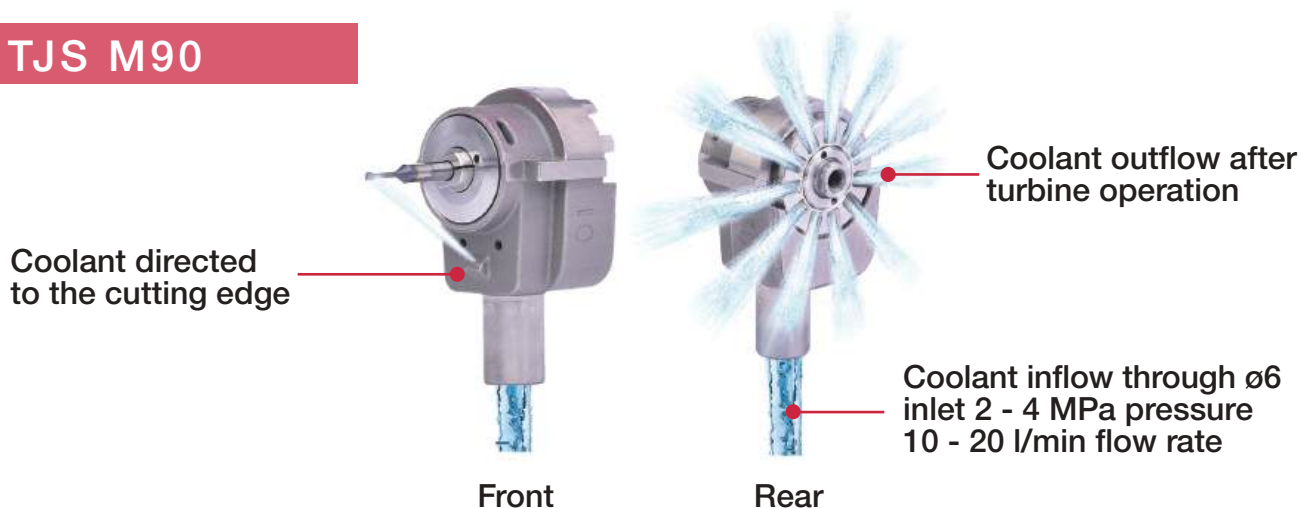
Rigid and compact, ideal for machining operations in difficult-to-reach areas.

Powered by the machine's internal coolant driver system.

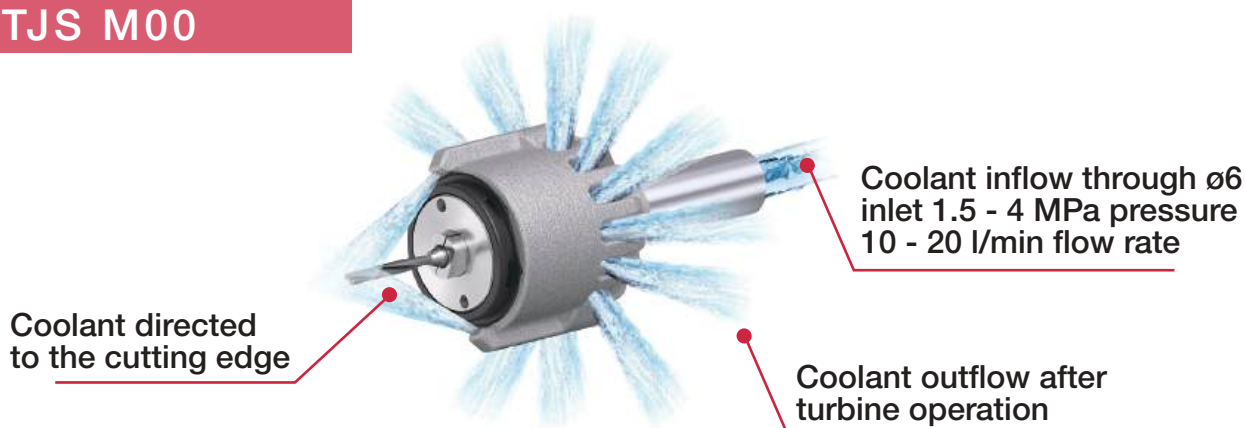
Suitable for small diameter semi-finishing and finishing application.

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 (min ⁻¹)	35,000 - 53,000	18,000 - 40,000
Tool diameter: DC	Drilling: 0.020" - 0.079" (0.5 - 2 mm)	Drilling: 0.004" - 0.079" (0.1 - 2 mm)
	Milling: 0.059" - 0.138" (1.5 - 3.5 mm)	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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