TaeguTec Tooling System

January 2023
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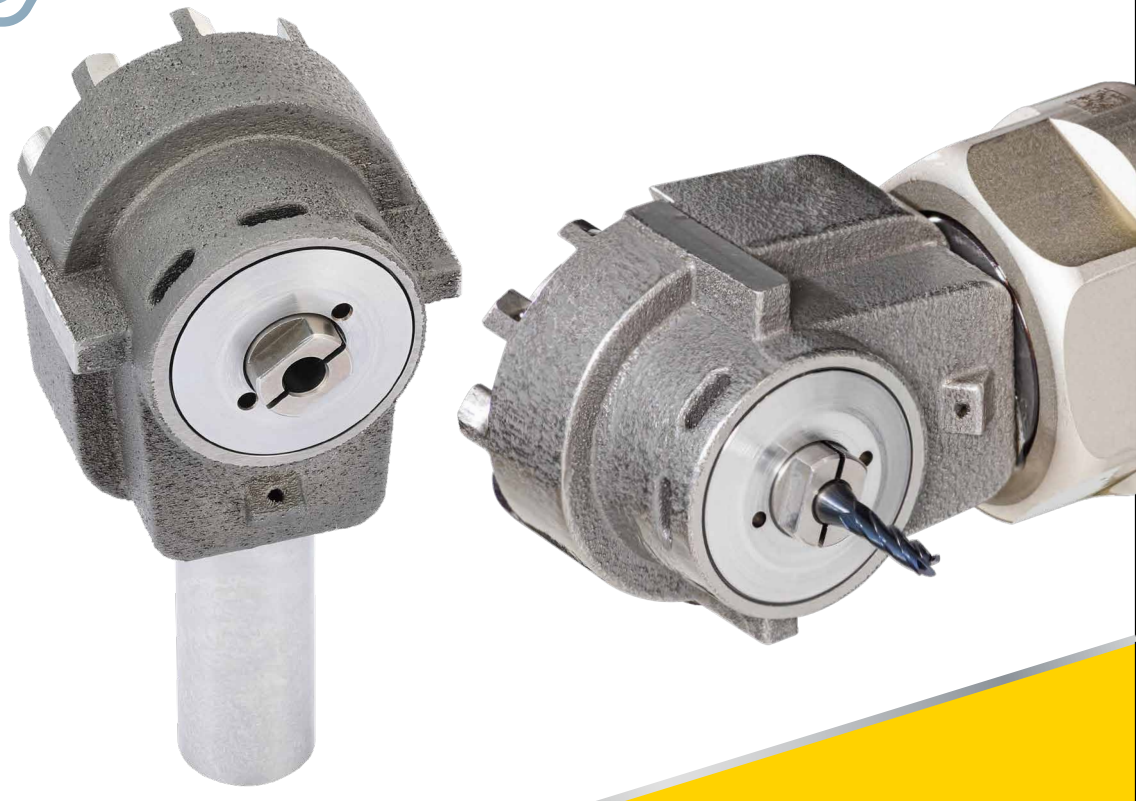
NPN

New Product News

new

MICRO 90 Typhoon

New High-Pressure Coolant Powered MICRO 90 Angular Head



ADVANCE CUTTING TaeguTec

TaeguTec Member IMC Group

KEY POINT

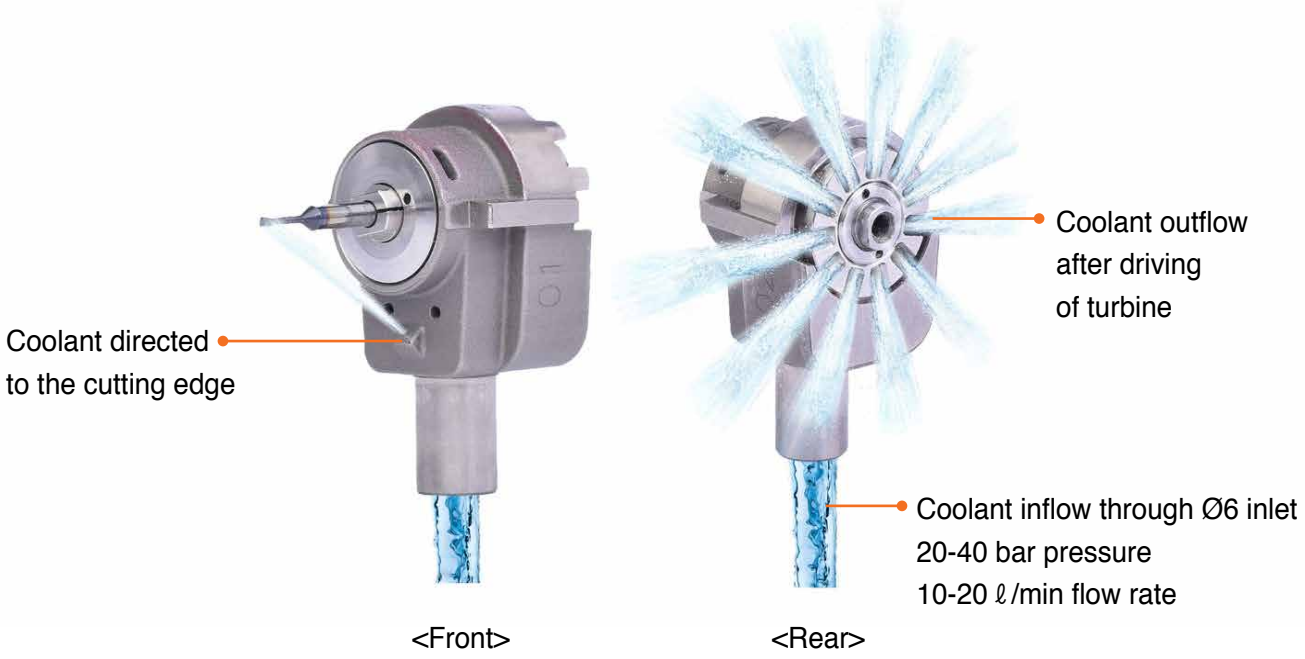
TaeguTec has launched a high-pressure coolant powered, TYPHOON MICRO 90 angular head, for difficult-to-reach space machining.

The TYPHOON MICRO 90 angular head, powered by the machine's internal coolant driven system, is a 53,000 RPM high rotational tooling solution. Comprised of only six components, it is capable of accurate machining in difficult-to-reach spaces characterized by Swiss-type machines.

Features

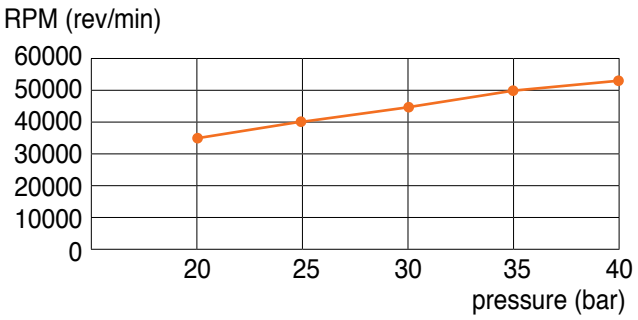
- Minimum 20 bar high-pressure coolant capable angular heads
- Powerful internal coolant system (35,000-53,000 RPM)
- Rigid and compact for excellent machining in difficult-to-reach space machining operations
- Suitable for small diameter semi-finishing and finishing applications (Ø3 mm or less)

TYPHOON Micro 90 Coolant Flow



Spindle RPM according to coolant pressure

pressure (bar)	RPM (rev/min)
20	35,000
25	40,000
30	44,000
35	50,000
40	53,000



B.O.M.

Item	Designation	Q'ty
Angular head	TJS M90 030	1
Collet	TJS M90 COLLET 3.0	1
Wrench	TJS M90 WRENCH-2430	2

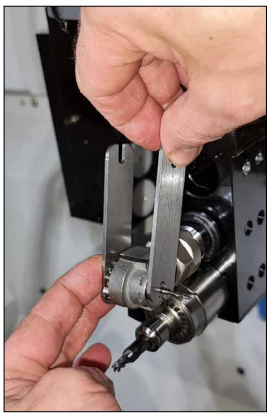
Micro 90 Collets

Designation	Tool diameter
TJS M90 COLLET 1.6	Ø1.6
TJS M90 COLLET 2.0	Ø2.0
TJS M90 COLLET 3.0	Ø3.0
TJS M90 COLLET 3.175	Ø3.175

Collets except Ø3.0 are purchased separately.

Instructions

❶ Hold the rear spindle with a wrench so that the shaft does not rotate



❷ After inserting the collet and tool into the spindle, tighten the collet to secure it

❸ Use the indicator to check the parallelism of the grinding face and the machine

❹ Tighten the collet nut to secure the Micro 90 angular head to the holder

TYPHOON operating instructions

The TYPHOON must be stationary when not in use. To avoid machine spindle rotation when the TYPHOON is in operation, input the correct M code to lock the spindle's orientation.
e.g., “M19” code locks the spindle in a defined angular position.

Machine requirements

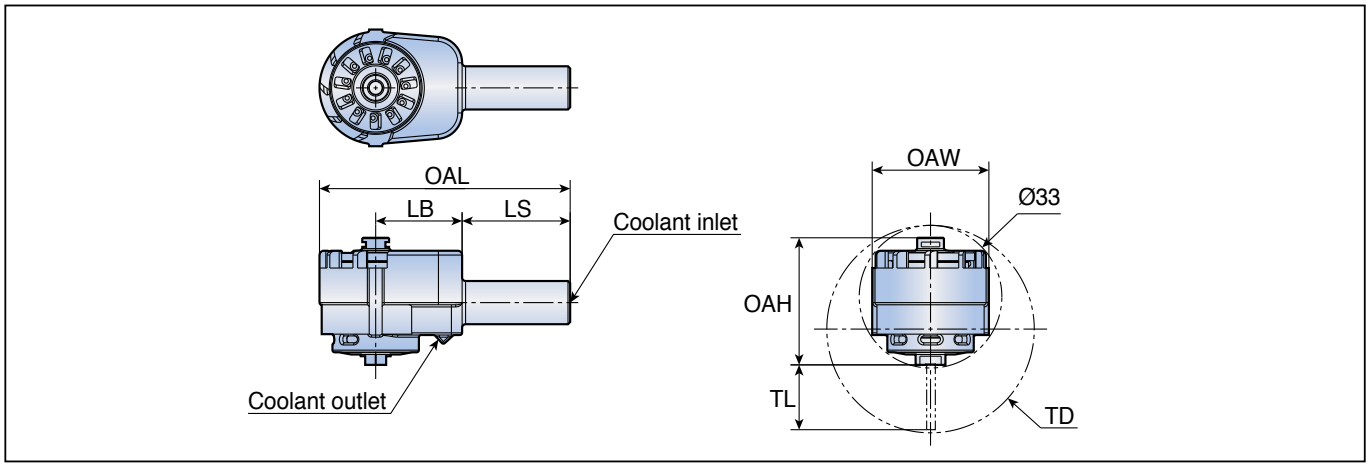
1. Machine spindle coolant flow through (pressure range: 20-40 bar)
2. Minimum coolant flow rate: 10 ℓ/min
3. Minimum coolant filtration level: 100 µm
4. Active mist collector
5. With emulsion coolant, use an anti-foaming agent additive to prevent foaming
6. With oil-based coolant, use anti-dissolution additive suitable for oil

Permissible cutting conditions

Tool	Application	Permissible cutting conditions
End mill	Slotting	Max Ø3 / Ap : 0.05xD
	Shouldering	Max Ø3 / Ap : 0.1xD / Ae : 0.1xD
Ball type end mill	Profiling	Max Ø3 / Ap : 0.25mm
Drill	Drilling	Max Ø2
Thread mill	Threading	Max M3

TJS M90

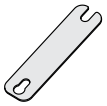
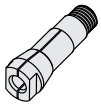
Coolant driven high-speed compact angular head spindle



Designation	Dimension (mm)					
	DCONMS	LS	LB	OAL	OAH	OAW
TJS M90 030	10	25	20	58	29	27

- Coolant pressure 20–40 bar and flow rate 10-20 ℓ/min
- Rotational spindle speed [rpm]: 35,000–53,000 (rev/min)
- The spindle provides only external strong coolant jet around the tool
- TD: TL (Tool Length)+33 mm

Spare parts

Designation	Ø3 collet	Wrench	Ø1.6 collet*	Ø2 collet*	Ø3.175 collet*
					
TJS M90 030	TJS M90 COLLET 3.0	TJS M90 WRENCH -2430	TJS M90 COLLET 1.6	TJS M90 COLLET 2.0	TJS M90 COLLET 3.175

* Optional, sold separately

Recommended Cutting Conditions

ISO	Material	Tool	Application	Tool diameter (mm)	Coolant pressure (bar)	Spindle speed (rev/min)	Cutting width (mm)	Depth of cut (mm)	Feed (mm/teeth)
M	SUS 316 HRC 35	Drill	Drilling	0.5	20	35000	-	-	0.015
					30	44000	-	-	0.015
					40	53000	-	-	0.015
				1.0	20	35000	-	-	0.015
					30	44000	-	-	0.015
					40	53000	-	-	0.015
				2.0	20	35000	-	-	0.015
					30	44000	-	-	0.015
					40	53000	-	-	0.015
		End mill	Slotting	1.0	20	35000	1.00	0.10	0.015
					30	44000	1.00	0.15	0.015
					40	53000	1.00	0.15	0.015
				2.0	20	35000	2.00	0.15	0.015
					30	44000	2.00	0.15	0.015
					40	53000	2.00	0.20	0.015
			Shouldering	2.0	20	35000	0.35	0.15	0.020
					30	44000	0.40	0.15	0.020
					40	53000	0.50	0.18	0.025
N	ADC12 HRC 28	Drill	Drilling	0.5	20	35000	-	-	0.010
					30	44000	-	-	0.010
					40	53000	-	-	0.010
				1.0	20	35000	-	-	0.010
					30	44000	-	-	0.010
					40	53000	-	-	0.010
				2.0	20	35000	-	-	0.015
					30	44000	-	-	0.017
					40	53000	-	-	0.018
		Ball type end mill	Profiling	1.0	20	35000	-	0.05	0.003
					30	44000	-	0.05	0.003
					40	53000	-	0.13	0.003
				2.0	20	35000	-	0.08	0.004
					30	44000	-	0.08	0.004
					40	53000	-	0.15	0.004
				3.0	20	35000	-	0.08	0.006
					30	44000	-	0.09	0.006
					40	53000	-	0.15	0.006
		End mill	Slotting	0.5	20	35000	0.50	0.10	0.020
					30	44000	0.50	0.12	0.020
					40	53000	0.50	0.15	0.020
				1.0	20	35000	1.00	0.10	0.025
					30	44000	1.00	0.15	0.025
					40	53000	1.00	0.15	0.025
				2.0	20	35000	2.00	0.20	0.025
					30	44000	2.00	0.20	0.025
					40	53000	2.00	0.20	0.025
			Shouldering	2.0	20	35000	0.50	0.25	0.020
					30	44000	0.50	0.50	0.020
					40	53000	0.50	0.50	0.025

Stainless steel Nonferrous

Recommended Cutting Conditions

ISO	Material	Tool	Application	Tool diameter (mm)	Coolant pressure (bar)	Spindle speed (rev/min)	Cutting width (mm)	Depth of cut (mm)	Feed (mm/teeth)
H	SKD61 HRC 58	Ball type end mill	Profiling	1.0	20	35000	-	0.05	0.005
					30	44000	-	0.05	0.005
					40	53000	-	0.05	0.005
				2.0	20	35000	-	0.07	0.006
					30	44000	-	0.08	0.006
					40	53000	-	0.08	0.006
				3.0	20	35000	-	0.08	0.006
					30	44000	-	0.10	0.006
					40	53000	-	0.10	0.006
	X38CrMo16 HRC 35	Drill	Drilling	0.5	20	35000	-	-	0.010
					30	44000	-	-	0.010
					40	53000	-	-	0.010
				1.0	20	35000	-	-	0.010
					30	44000	-	-	0.010
					40	53000	-	-	0.010
				2.0	20	35000	-	-	0.010
					30	44000	-	-	0.010
					40	53000	-	-	0.010
		Ball type end mill	Profiling	1.0	20	35000	-	0.05	0.003
					30	44000	-	0.05	0.003
					40	53000	-	0.05	0.003
				2.0	20	35000	-	0.08	0.004
					30	44000	-	0.08	0.004
					40	53000	-	0.08	0.004
				3.0	20	35000	-	0.10	0.006
					30	44000	-	0.10	0.006
					40	53000	-	0.10	0.006
		End mill	Slotting	0.5	20	35000	0.50	0.05	0.006
					30	44000	0.50	0.05	0.006
					40	53000	0.50	0.05	0.006
				1.0	20	35000	1.00	0.10	0.006
					30	44000	1.00	0.10	0.006
					40	53000	1.00	0.15	0.006
				2.0	20	35000	2.00	0.12	0.010
					30	44000	2.00	0.14	0.010
					40	53000	2.00	0.14	0.010
				3.0	20	35000	3.00	0.12	0.010
					30	44000	3.00	0.12	0.010
					40	53000	3.00	0.15	0.010
			Shouldering	2.0	20	35000	0.50	0.50	0.001
					30	44000	0.50	0.50	0.017
					40	53000	0.50	0.50	0.018

Hardened steel