

MAY 2022



HIGH-SPEED MACHINING

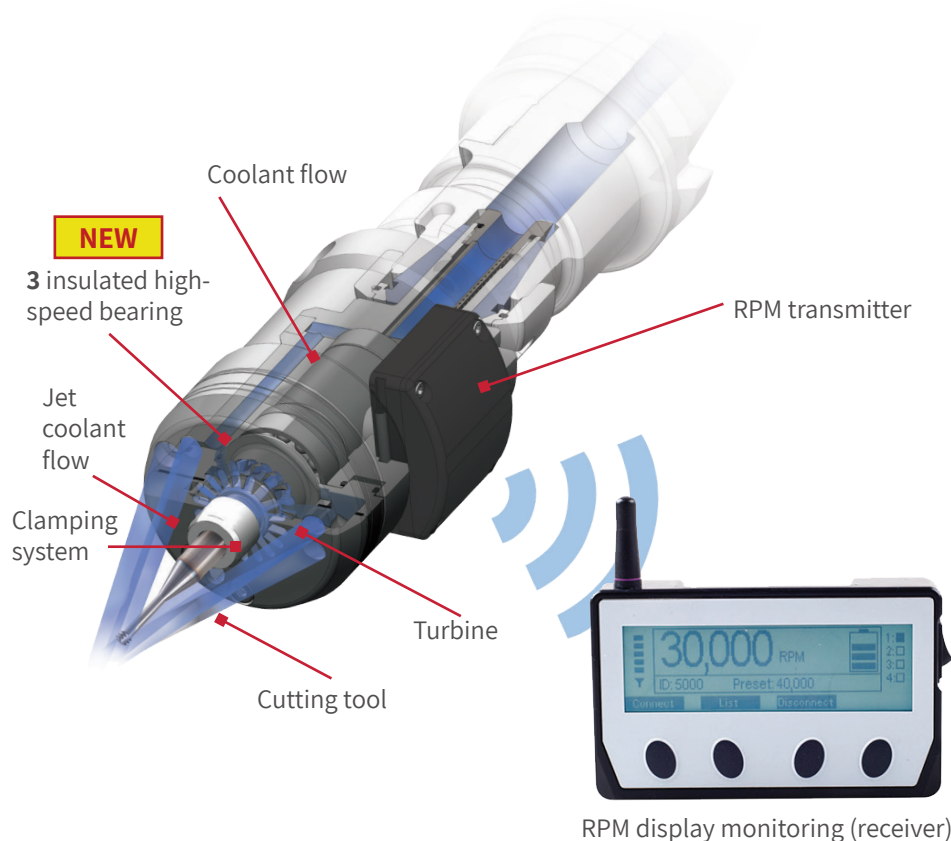


FAMILY OF HSM JET SPINDLES



Ultra precision high-speed Jet Spindles for a variety of milling and drilling processes with small tools. Cuts machining time up to 70%.

COOLANT DRIVEN HIGH-SPEED SPINDLES



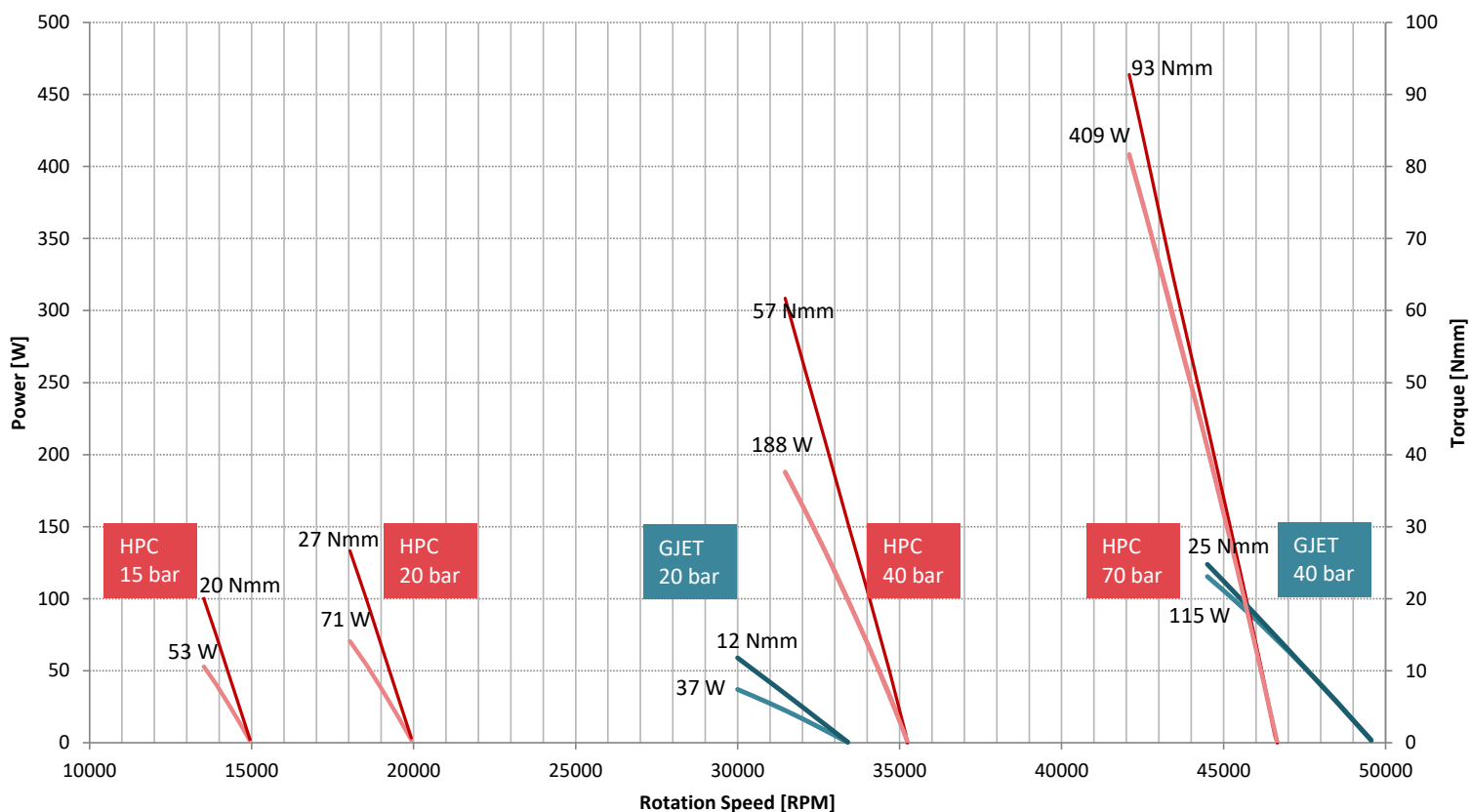
FEATURES

The revolutionary modular high-speed Jet Spindle - meticulously designed, engineered, manufactured and assembled with ultra precision industry collets and nuts - offers maximum flexibility for a wide range of small tool applications.

BENEFITS

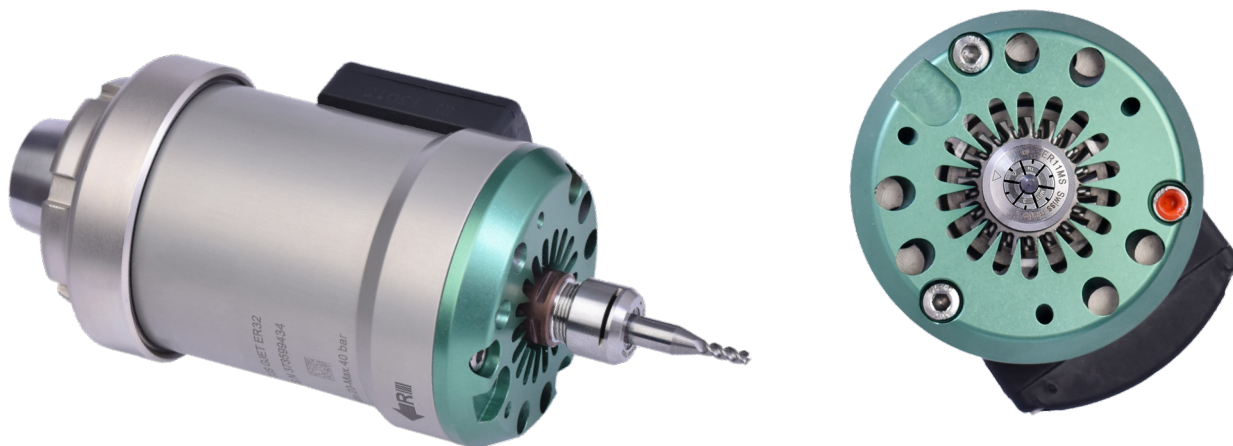
- ✓ Quick and easy installation
- ✓ Free energy source
- ✓ Good chip evacuation
- ✓ Coolant at the cutting edge
- ✓ Used in tool changer
- ✓ Compact design

Recommended Working Zone for HPC JET vs GJET



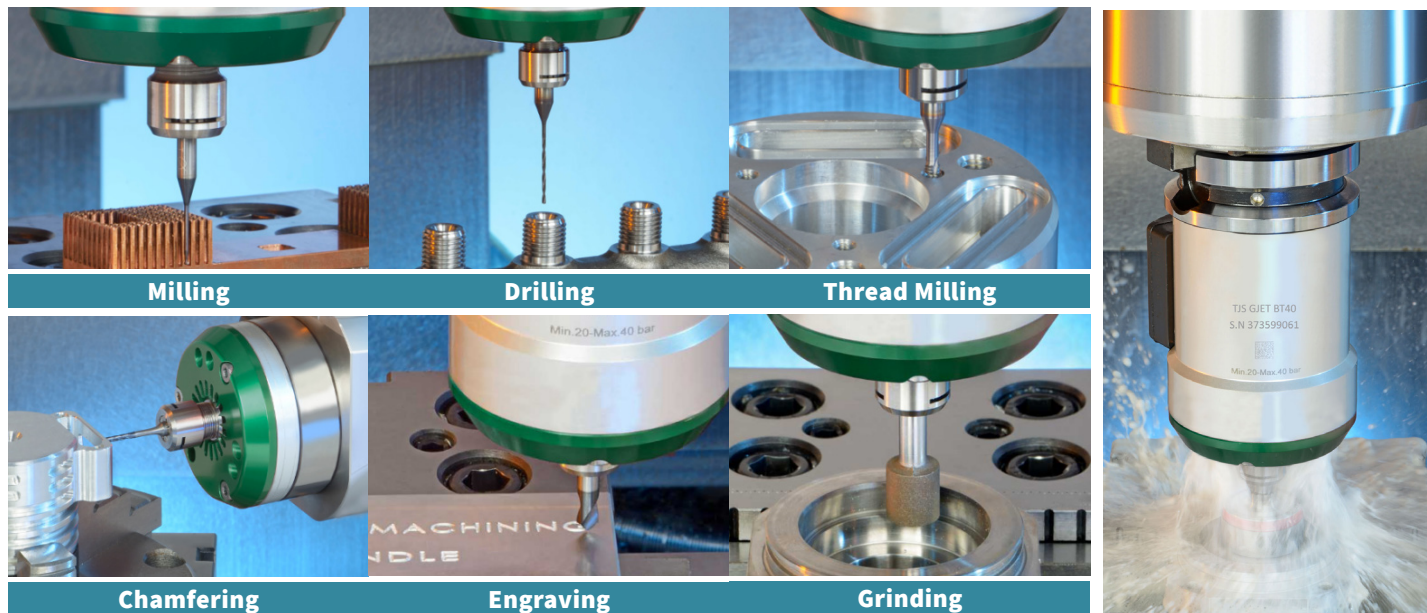
HPC JET - ideal for all small tools, both versatile and powerful and as accurate as the GJET.

GJET - ideal for applications requiring micro tools and very high speeds at 20 to 40 bar.



JET SPINDLE OPERATING PARAMETERS					GJET
High Pressure Coolant	20 BAR (290 PSI)	40 BAR (580 PSI)	Terms of Use		
Min Coolant Inlet Diameter	6 mm (0.24")		Collet	ER11	AA/UP
Min Flow Rate	10 L/min (2.64 G/min)	20 L/min (5.28 G/min)	Runout	3 micron	At length of 3D
Idle Speed (RPM)	33,000	55,000			
Max Power (W) / Torque (Nmm)	37 / 12	115 / 25	SMALL TOOL EXPERTISE REQUIRED		
Application	Cutting tool [mm]	P	M	N	S
Drilling		0.1 - 1.0mm (0.004"-0.04")		0.1 - 2.0mm (0.004"-0.08")	
Milling	1 / 2 / 4 Flute Helical, Corner Radii	0.1 - 2.0mm (0.004"-0.08")		0.1 - 3.0mm (0.004"-0.12")	
Profiling	Ball-Nose [1]	0.1 - 2.0mm (0.004"-0.08")		0.1 - 3.0mm (0.004"-0.12")	
Chamfering		0.1 - 2.0mm (0.004"-0.08")		0.1 - 3.0mm (0.004"-0.12")	
Lollipop	Lollipop [1]	0.2 - 2.0mm (0.008"-0.08")		0.2 - 3.0mm (0.008"-0.12")	
Profiling	Barrel	0.5 - 2.0mm (0.020"-0.08")		0.5 - 3.0mm (0.020"-0.12")	
Engraving		0.2 - 2.0mm (0.008"-0.08")		0.2 - 3.0mm (0.008"-0.12")	

[1] Effective DC (DCap) - Cutting diameter at cutting depth ap

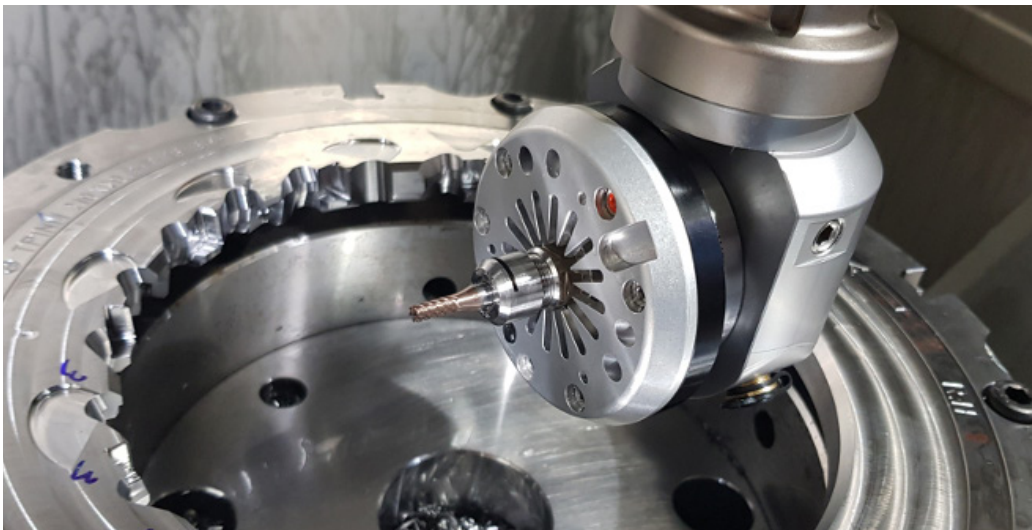


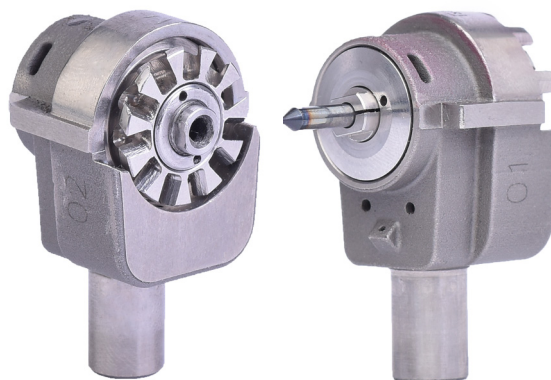


JET SPINDLE OPERATING PARAMETERS					HPC JET	
High Pressure Coolant	15 BAR (218 PSI)	20 BAR (290 PSI)	40 BAR (580 PSI)	70 BAR (1015 PSI)	Terms of Use	
Min Coolant Inlet Diameter	6 mm (0.24")				Collet	ER11 AA/UP
Flow Rate	10 L/min (2.64 G/min)	12 L/min (3.17 G/min)	16 L/min (4.23 G/min)	22 L/min (5.81 G/min)	Runout	3 micron
Idle Speed (RPM)	20,000	25,000	35,000	45,000	SMALL TOOL EXPERTISE REQUIRED	
Max Power (W) / Torque (Nmm)	196 / 100	261 / 134	460 / 293	694 / 444		
Application	Cutting Tool	P		M	N	S
Drilling			0.5 - 2.0mm (0.020"-0.08")		0.5 - 3.0mm (0.020"-0.12")	
Milling	Single / 2 / 4 Flute Helical, Corner Radii		0.3 - 4.0mm (0.012" - 0.157")		0.3 - 6.0mm (0.012"-0.236")	
Profiling	Ball-Nose [1]		0.3 - 6.0mm (0.012"-0.236")		0.3 - 6.0mm (0.012"-0.236")	
Chamfering			0.1 - 4.0mm (0.004"-0.157")		1.0 - 6.0mm (0.040"-0.236")	
Deburring	Lollipop [1]		0.1 - 4.0mm (0.004"-0.157")		1.0 - 6.0mm (0.040"-0.236")	
Profiling	Barrel		0.5 - 4.0mm (0.020"-0.157")		0.5 - 6.0mm (0.020"-0.236")	
Engraving (45-60°)			0.2 - 5.0mm (0.008"-0.197")		0.2 - 6.0mm (0.008"-0.236")	

[1] Effective DC (DCap) - Cutting diameter at cutting depth ap

MORE SPEED / MORE TORQUE / MORE FLEXIBILITY





SWISS TYPE MICRO JET SPINDLE

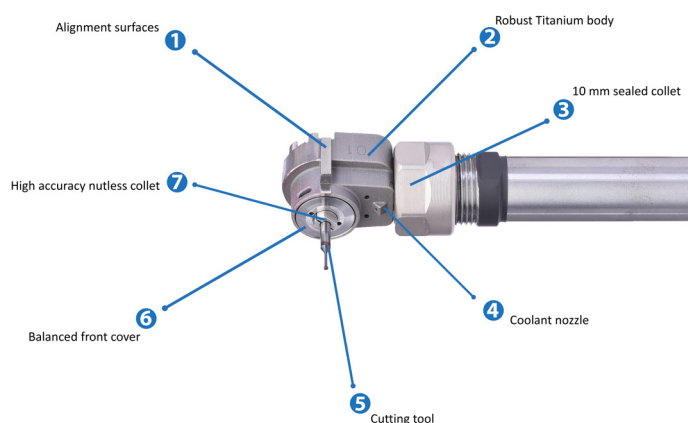
Tailor made only. Contact us if interested

JET SPINDLE OPERATING PARAMETERS				MICRO90 JET	
High Pressure Coolant	20 BAR (290 PSI)	40 BAR (580 PSI)	Terms of Use		
Min Tube Diameter	4 mm (0.16")		Collect	1.6, 2.0, 3.0, 3.175 mm	
Min Flow Rate	10 L/min (2.64 G/min)	20 L/min (5.28 G/min)	Accessories	ST 20X100 ER16 / ER16 SEAL 10 AA	
Idle Speed (RPM)	35,000	53,000	Warranty	SMALL TOOL EXPERTISE REQUIRED	
Cutter		P	M	N	S
Drilling		0.1 - 2.0mm (0.004"-0.08")			
Ball-Nose		0.1 - 3.0mm (0.004"-0.12")			
Chamfering		0.1 - 3.0mm (0.004"-0.12")			
Lollipop		0.1 - 3.0mm (0.004"-0.12")			
Barrel		0.5 - 3.0mm (0.019"-0.12")			
Helical				0.1 - 2.0mm (0.004"-0.08")	
Engraving		0.1 - 3.0mm (0.004"-0.12")			

APPLICATIONS

- Finishing & semi-finishing processes
- Small tools drilling and milling processes
- Special emphasis on the internal machining of parts with a minimum bore of 40mm (1.5")
- Ideal for hard to reach places

Example of clamping with ER16



HIGH SPEED MACHINED PARTS



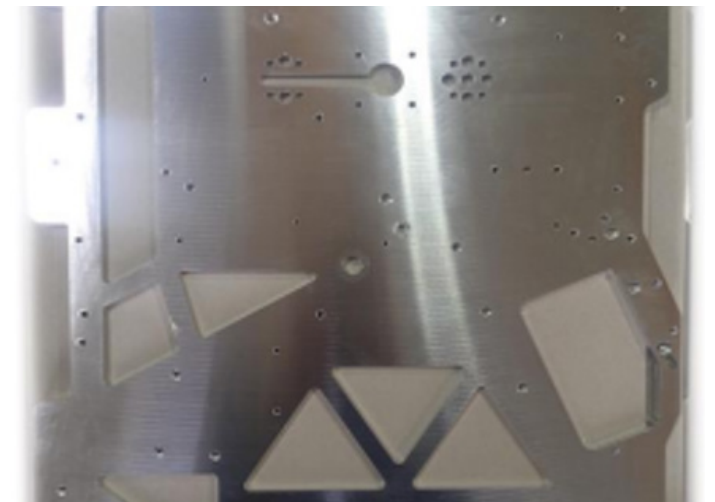
HPC Engraving & Chamfering



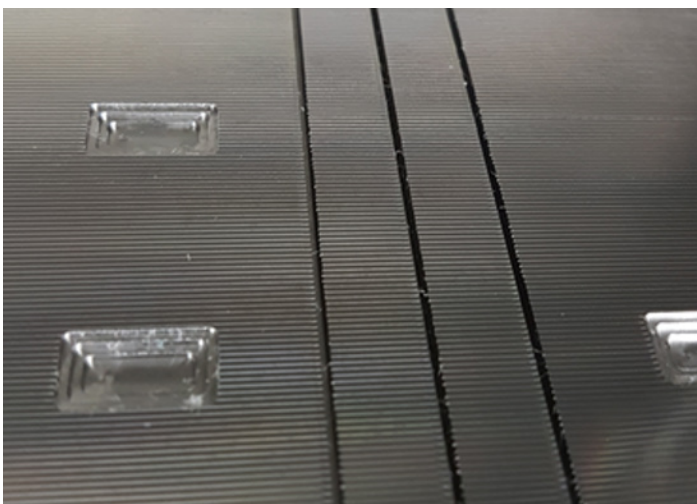
GJET Engraving



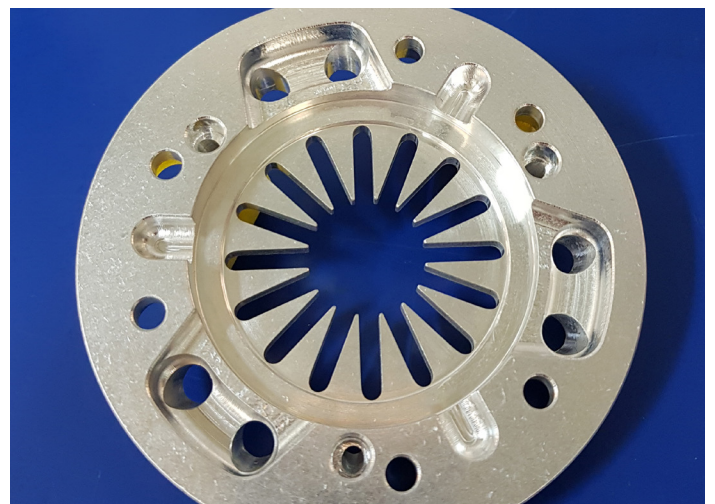
HPC Profiling



GJET Slot Milling & Drilling



HPC Pocket, Slot & Plan Milling



HPC Slot & Helical Milling



Tungaloy America, Inc.
3725 N Ventura Rd.
Arlington Heights, IL 60004
Phone: 888.554.8394
www.tungaloy.com/us