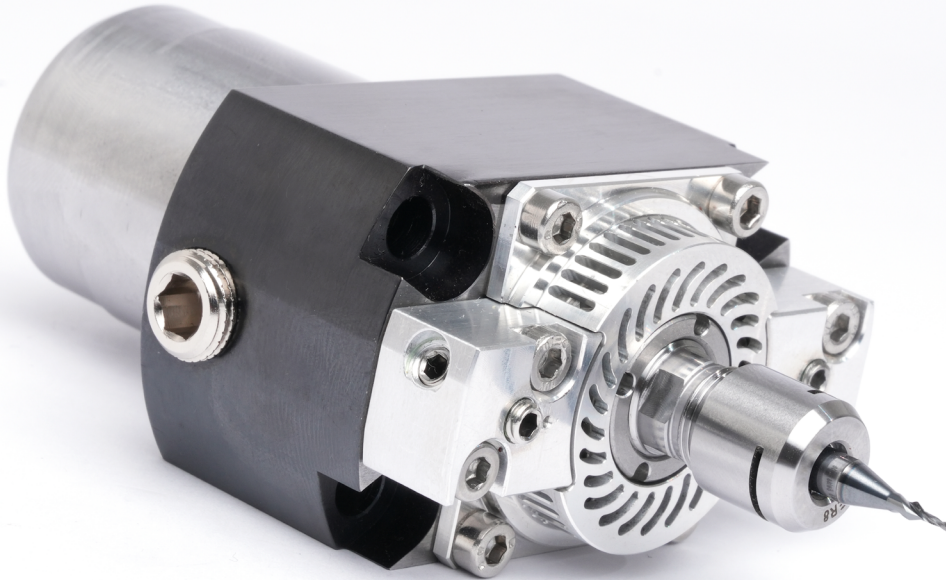


NPR

New Product Release

2025 | Metric



SWISS Jet

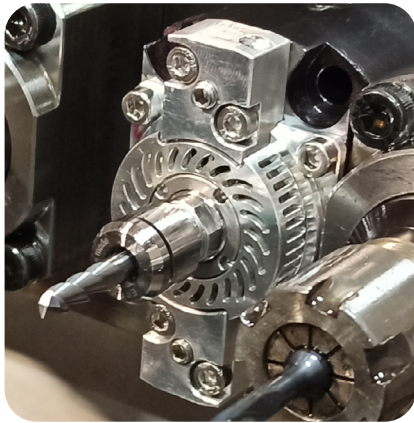
COLIBRI SWISS JET - Universal for all Swiss Type Lathes

UNIVERSAL
For All Swiss Type Lathes,
replaceable jet spindle cartridge,
Connect it like any holder
PlugnPlay



COLIBRI
SPINDLES

Highlights



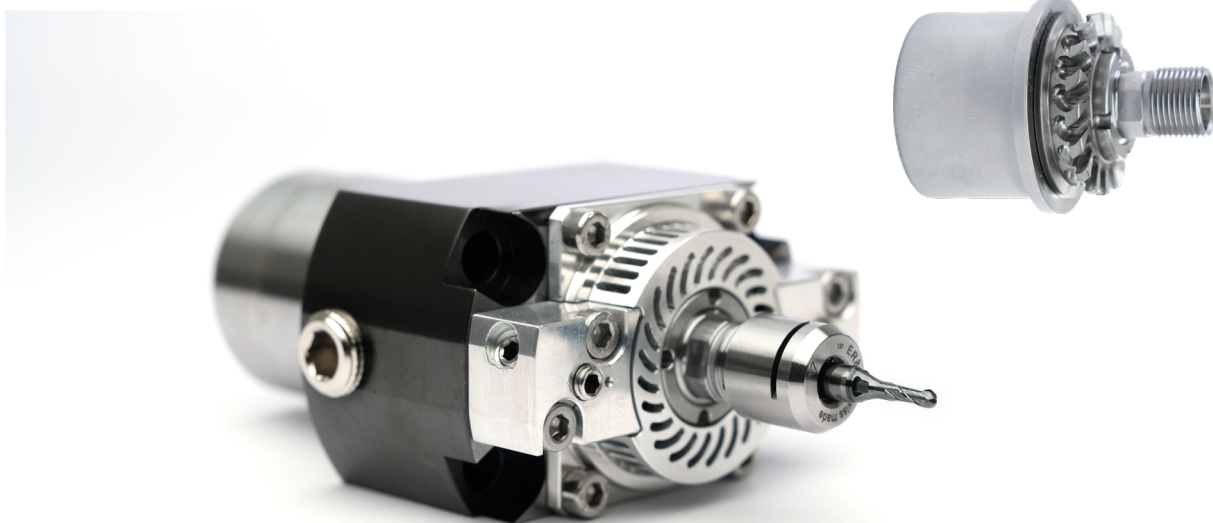
- ▶ **SWISS Type High-Speed Spindle**
- ▶ **Entire range of Swiss Type Lathes**
- ▶ **Works in almost any position**
- ▶ **Just connect like any holder**
- ▶ **Mill, drill, thread mill, groove, profile, engrave**
- ▶ **Shortest cycle-time with cleanest finish**
- ▶ **Lowest wear on your small cutting tools**



Features

The SWISS Jet Spindle, with Replaceable Jet Spindle Cartridge, Comes with the Following Key Features & Benefits

FEATURE	BENEFIT
NEW cartridge design	On-sight maintenance
Swiss Type design	Plug n Play installation on Swiss type turning machine
High precision ER8 Nut & Collet	Supports cutting tools 0.5 - 5 mm shank, with accuracy
Low run out	Accuracy up to 3 microns at the cone
Optimal performance	Output power of large jet spindle in mini size design
High speed precision ball bearings	High speed machining up to 56,000 RPM
Rear & top side high pressure coolant inlets	Quick and easy connection to high pressure coolant
Integrated cutting tool coolant nozzle	Effective cooling of the cutting edge
NEW high-pressure turbine	Spindle powered by 15 to 45 bar high pressure coolant

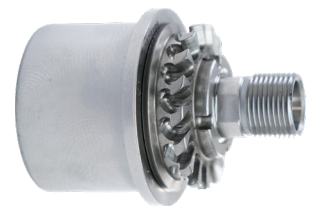
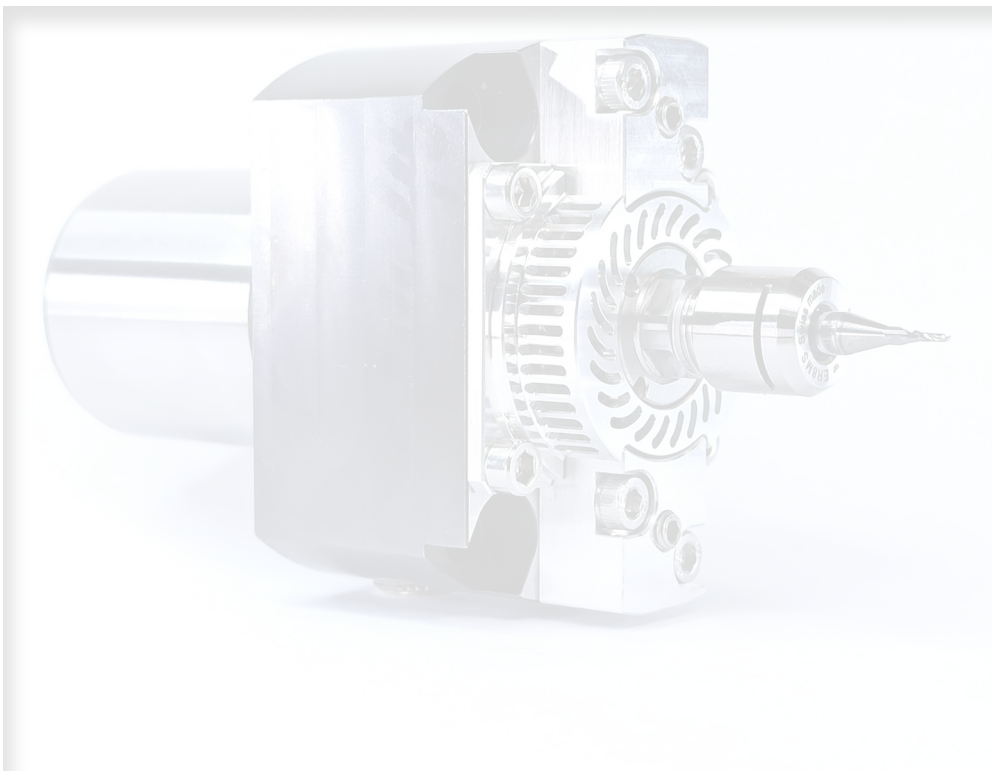


Customers

High Pressure Coolant Driven SWISS Jet Spindle for Full Line of Citizen Swiss Type Lathes

Prerequisites to Qualify Customer:

1. Coolant flows through the main CNC machine spindle
2. Min. coolant pressure, of main spindle outlet: 15 bar
3. Max. coolant pressure, of main spindle outlet: 45 bar
4. Minimum flow rate: 10 l/min
5. Max. viscosity 15 mm²/s
6. Filter element: Max. 100 µm
7. Active mist collector
8. When using emulsion coolant, use an anti-foaming agent additive suitable for emulsion
9. When using oil-based coolant, high-pressure increases the oil fumes:
 - a. Use appropriate means of fire protection
 - b. Use anti-dissolution additive suitable for oil



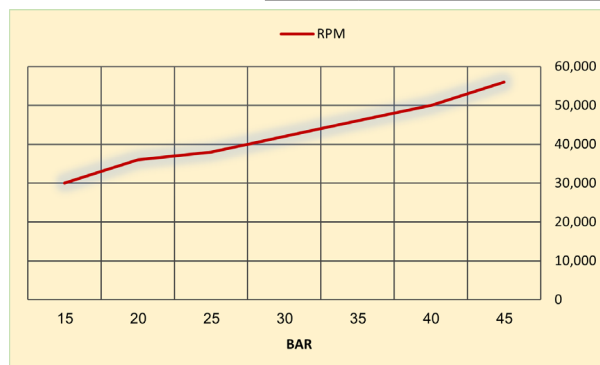
Operating Data

JET SPINDLE OPERATING PARAMETERS						MINI00	
HIGH PRESSURE COOLANT (BAR)	15 BAR	20 BAR	25 BAR	35 BAR	45 BAR	Terms of Use	
Min Coolant Supply Diameter [mm]	4					Collet	ER 8 High Precision
Min flow rate (L/min)	12	14	16	18	20	Nut & Wrench	ER 8 High Precision
Rotational spindle speed [RPM]*	30,000	36,000	38,000	46,000	56,000		E8 Wrench
Cutter [mm]	P	M	SST	N	S		
Drilling	0.1 - 2.0						
Ball Nose	0.1 - 4.0						
Chamfering	0.1 - 4.0						
Lollipop	0.3 - 4.0						
Milling	0.3 - 4.0						
Deburring	0.1 - 4.0						
Engraving 45 / 60 Degree	0.1 - 4.0						

JET SPINDLE OPERATING PARAMETERS

- MILLING**
 - Slotting - up to D=4.0mm, ap= 0.05D
 - Shouldering - up to D=4.0mm, ae=0.1D & ap=0.1D
- THREAD MILLING**
 - Max. M3 thread
- DRILLING**
 - Max drill dia. 2.00mm
- DEBURRING**
 - Max tool dia. 4.00mm
 - Can use 45 to 60 degree end-mill
- ENGRAVING**
 - Max tool dia. 4.00mm
 - Max Ap 0.25mm

BAR	Idle Speed RPM
15	30,000
20	36,000
25	38,000
30	42,000
35	46,000
40	50,000
45	56,000



Features

The MINI Universal Jet Spindle supports all Swiss type lathes, with **plugnplay** high-precision, high-speed sub spindles, that are as simple to install as any sleeve holder tool. Runout up to 3 microns at the ER 8 cone, speed up to 56,000 RPM and power combine to ensure faster, higher quality machining with extended tool life for small cutting tools with shanks up to 5.00 mm or 3/16” diameter.

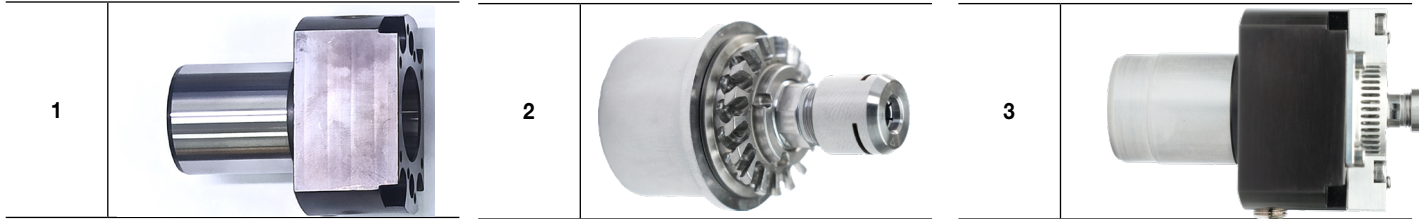
Recommended Cutting Parameters

Material	Process	Type	Cutting Tool dia.	Hardness	Pressure	Speed (n)	Ae (mm)	Ap (mm)	Fz (mm)		
N	Al-Si 9%	Drilling	Drill	0.3	80-160 HB	20	33000	0.30	0.025	0.002	
				0.3		30	44000	0.30	0.027	0.002	
				0.3		40	55000	0.30	0.027	0.002	
			0.5	20		33000	0.50	0.03	0.002		
			0.5	30		44000	0.50	0.03	0.002		
			0.5	40		55000	0.50	0.03	0.002		
			0.8	20		33000	0.80	0.05	0.002		
			0.8	30		44000	0.80	0.05	0.002		
			0.8	40		55000	0.80	0.05	0.002		
			1	20		33000	1.00	0.07	0.003		
			1	30		44000	1.00	0.07	0.003		
			1	40		55000	1.00	0.07	0.003		
			1.5	20		33000	1.50	0.08	0.004		
			1.5	30		44000	1.50	0.08	0.004		
			1.5	40		55000	1.50	0.08	0.004		
		2	20	33000		2.00	0.10	0.004			
		2	30	44000		2.00	0.10	0.004			
		2	40	55000		2.00	0.10	0.004			
		3	20	33000		3.00	0.10	0.004			
		3	30	44000		3.00	0.10	0.004			
		3	40	55000		3.00	0.10	0.004			
		0.5	Profile Milling	Ball Nose		0.5	20	33000	0.06	0.05	0.008
		0.5				30	44000	0.06	0.05	0.008	
		0.5				40	55000	0.07	0.10	0.008	
		0.8				20	33000	0.06	0.05	0.008	
		0.8				30	44000	0.06	0.05	0.008	
		0.8				40	55000	0.07	0.13	0.008	
		1				20	33000	0.10	0.08	0.004	
		1				30	44000	0.10	0.09	0.004	
		1				40	55000	0.11	0.15	0.004	
	1.5	20			33000	0.12	0.09	0.006			
	1.5	30			44000	0.13	0.09	0.006			
	1.5	40			55000	0.15	0.10	0.006			
	2	20			33000	0.13	0.05	0.008			
	2	30			44000	0.13	0.05	0.008			
	2	40			55000	0.17	0.13	0.008			
	2.5	20	33000	0.15	0.10	0.030					
	2.5	30	44000	0.16	0.10	0.030					
	2.5	40	55000	0.25	0.13	0.030					
	3	20	33000	0.22	0.08	0.030					
	3	30	44000	0.25	0.08	0.030					
	3	40	55000	0.25	0.15	0.030					
	4	20	33000	0.20	0.08	0.030					
	4	30	44000	0.25	0.09	0.030					
	4	40	55000	0.27	0.15	0.030					
	0.5	Slot Milling	End-Mill	0.5	20	33000	0.50	0.05	0.007		
	0.5			30	44000	0.50	0.05	0.007			
	0.5			40	55000	0.50	0.05	0.007			
	0.8			20	33000	0.80	0.08	0.008			
	0.8			30	44000	0.80	0.08	0.008			
	0.8			40	55000	0.80	0.08	0.008			
	1			20	33000	1.00	0.10	0.018			
	1			30	44000	1.00	0.10	0.018			
	1			40	55000	1.00	0.10	0.018			
	1.5			20	33000	1.50	0.15	0.020			
	1.5			30	44000	1.50	0.15	0.020			
	1.5			40	55000	1.50	0.15	0.020			
	2			20	33000	2.00	0.20	0.022			
	2			30	44000	2.00	0.20	0.022			
	2			40	55000	2.00	0.20	0.022			
2.5	20		33000	2.50	0.25	0.025					
2.5	30		44000	2.50	0.25	0.025					
2.5	40		55000	2.50	0.25	0.025					
3	20		33000	3.00	0.30	0.025					
3	30		44000	3.00	0.30	0.025					
3	40		55000	3.00	0.30	0.025					
3.5	20		33000	3.50	0.25	0.025					
3.5	30		44000	3.50	0.25	0.025					
3.5	40		55000	3.50	0.25	0.025					
4	20		33000	4.00	0.28	0.025					
4	30		44000	4.00	0.28	0.025					
4	40		55000	4.00	0.28	0.025					
1	Shoulder Mill			1	20	33000	0.30	0.10	0.015		
1				30	44000	0.30	0.15	0.017			
1				40	55000	0.30	0.15	0.017			
2		20		33000	0.60	0.10	0.015				
2		30		44000	0.60	0.10	0.015				
2		40		55000	0.60	0.10	0.018				
3		20		33000	0.90	0.10	0.020				
3		30		44000	0.90	0.10	0.020				
3		40		55000	0.90	0.10	0.025				
4		20		33000	1.20	0.10	0.025				
4		30		44000	1.20	0.10	0.025				
4		40		55000	1.20	0.10	0.025				

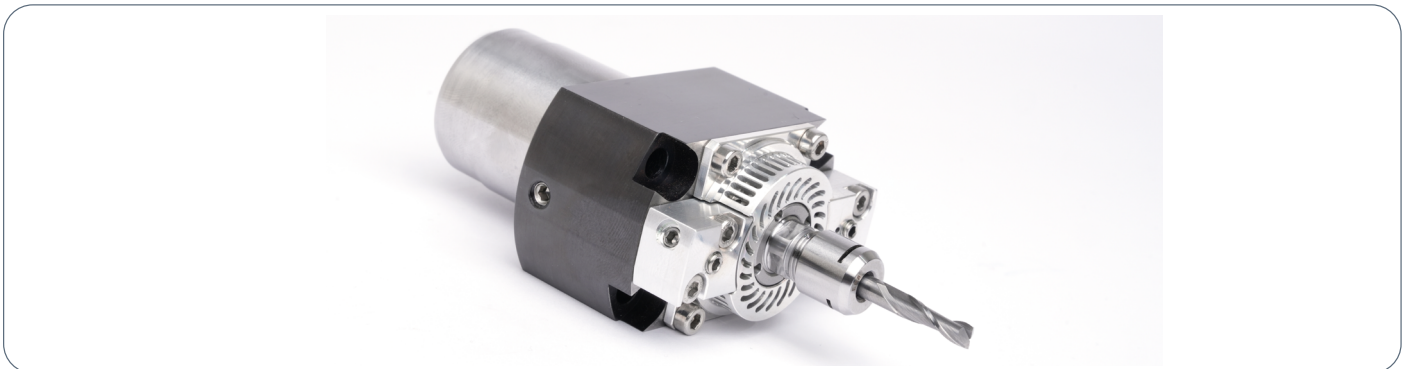
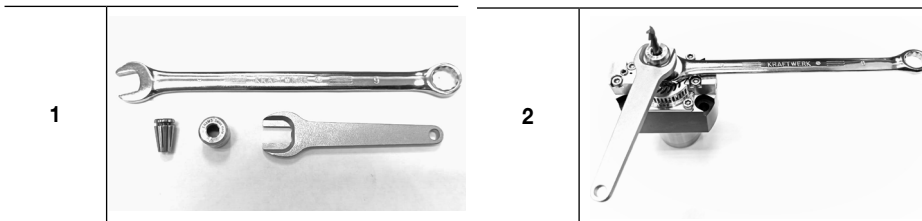
Recommended Cutting Parameters

	Material	Process	Type	Cutting Tool dia.	Hardness	Pressure	Speed (n)	Ae (mm)	Ap (mm)	Fz (mm)			
H	SAE 1.2316	Drilling	Drill	0.3	35 HRC	20	33000	0.30	0.07	0.002			
				0.3		30	44000	0.30	0.07	0.002			
				0.3		40	55000	0.30	0.07	0.002			
				0.5		20	33000	0.50	0.10	0.002			
				0.5		30	44000	0.50	0.10	0.002			
				0.5		40	55000	0.50	0.10	0.002			
				0.8		20	33000	0.80	0.10	0.002			
				0.8		30	44000	0.80	0.10	0.002			
				0.8		40	55000	0.80	0.10	0.002			
				1		20	33000	1.00	0.10	0.003			
				1		30	44000	1.00	0.10	0.003			
				1		40	55000	1.00	0.10	0.003			
				1.5		20	33000	1.50	0.10	0.004			
				1.5		30	44000	1.50	0.10	0.004			
				1.5		40	55000	1.50	0.10	0.004			
				2		20	33000	2.00	0.10	0.004			
				2		30	44000	2.00	0.10	0.004			
				2		40	55000	2.00	0.10	0.004			
				0.3		Profile Milling	Ball Nose	0.3	20	33000	0.03	0.02	0.010
				0.3				30	44000	0.03	0.02	0.010	
		0.3	40	55000				0.03	0.02	0.010			
		0.5	20	33000				0.05	0.03	0.012			
		0.5	30	44000				0.05	0.03	0.012			
		0.5	40	55000				0.05	0.03	0.012			
		1	20	33000				0.10	0.06	0.012			
		1	30	44000				0.10	0.06	0.012			
		1	40	55000				0.10	0.06	0.012			
		1.5	20	33000				0.15	0.09	0.012			
		1.5	30	44000				0.15	0.09	0.012			
		1.5	40	55000				0.15	0.09	0.012			
		2	20	33000				0.20	0.12	0.012			
		2	30	44000				0.20	0.12	0.012			
		2	40	55000				0.20	0.12	0.012			
		2.5	20	33000				0.25	0.15	0.012			
		2.5	30	44000				0.25	0.15	0.012			
		2.5	40	55000				0.25	0.15	0.012			
		3	20	33000				0.30	0.15	0.012			
		3	30	44000				0.30	0.15	0.012			
		3	40	55000		0.30	0.15	0.012					
		0.3	Slot Milling	End-Mill		0.3	20	33000	0.30	0.10	0.006		
		0.3				30	44000	0.30	0.10	0.006			
		0.3				40	55000	0.30	0.15	0.006			
		0.5				20	33000	0.50	0.10	0.007			
		0.5				30	44000	0.50	0.10	0.007			
		0.5				40	55000	0.50	0.15	0.007			
		0.8				20	33000	0.80	0.12	0.010			
		0.8				30	44000	0.80	0.14	0.010			
		0.8				40	55000	0.80	0.14	0.010			
		1				20	33000	1.00	0.12	0.010			
		1		30		44000	1.00	0.12	0.010				
		1		40		55000	1.00	0.15	0.010				
		1.5		20		33000	1.50	0.50	0.014				
		1.5		30		44000	1.50	0.50	0.017				
		1.5		40		55000	1.50	0.50	0.018				
		2		20		33000	2.00	0.08	0.009				
		2		30		44000	2.00	0.08	0.009				
		2		40		55000	2.00	0.09	0.009				
		2.5		20		33000	2.50	0.10	0.010				
		2.5		30		44000	2.50	0.10	0.013				
		2.5	40	55000		2.50	0.15	0.013					
3	20	33000	3.00	0.12	0.010								
3	30	44000	3.00	0.14	0.010								
3	40	55000	3.00	0.14	0.010								
0.5	Shoulder Mill	End-Mill	0.5	20	33000	0.50	0.30	0.009					
0.5			30	44000	0.50	0.30	0.009						
0.5			40	55000	0.50	0.35	0.010						
1			20	33000	1.00	0.50	0.015						
1			30	44000	1.00	0.50	0.017						
1			40	55000	1.00	0.50	0.018						
2			20	33000	2.00	0.08	0.009						
2			30	44000	2.00	0.08	0.009						
2			40	55000	2.00	0.09	0.009						
3			20	33000	3.00	0.50	0.015						
3	30	44000	3.00	0.50	0.017								
3	40	55000	3.00	0.50	0.018								

Cartridge Replacement



Tool Replacement



Application Limits

MILLING

- Slot milling – $D=4.0$ mm and $a_p=0.05xD$
- Shoulder milling – $D=4.0$ mm, $a_e=0.1xD$ and $a_p=0.1xD$

THREAD MILLING

- Max. M3 thread

DRILLING

- Max drill dia. 2.0 mm

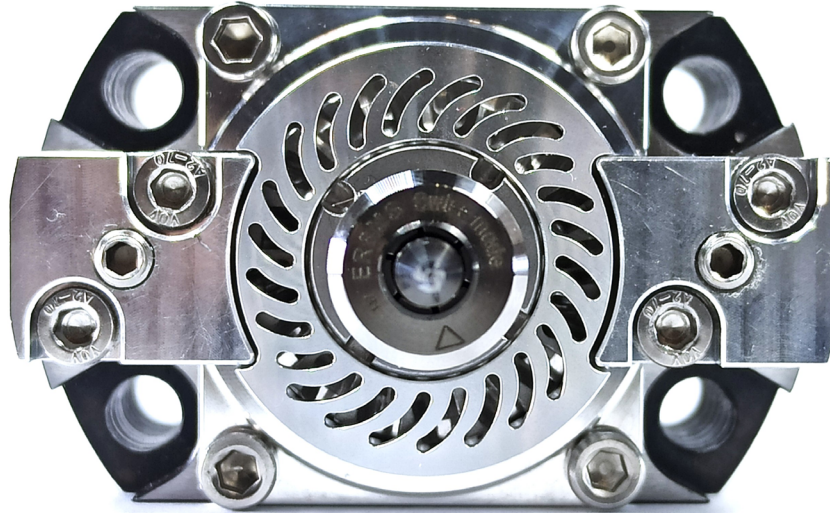
DEBURRING

- Max tool dia. 4.0 mm
- 45 to 60° endmills can be used for deburring as well

ENGRAVING

- Max tool dia. 4.0 mm
- Max a_p 0.25 mm

Clamping and Coolant



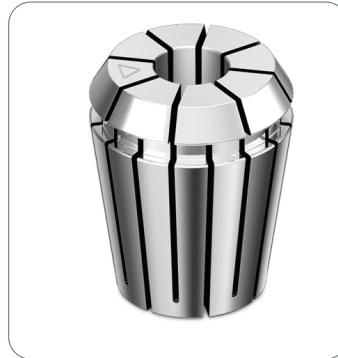
When machining at high speeds you must have a high precision spindle that provides the speed, accuracy and power using high-precision nut & collet to optimize dynamic balancing with pinpointed coolant to the cutting edge. **Assures a simple tool change with no setup time and a low runout.**

Coolant outlets from the turbine outlet and a nozzle point to the cutting edge.

SWISS Nut & Collet

ER 8 High Precision Nut

ER 8 High Precision Collet Ø
4.00 mm (5/32")



SWISS Wrench

ER 8 Wrench



Catalog

Mini Jet Spindle universal holders for all Swiss Type Lathes adaptor sizes:

Sleeve holder shank size	Availability
16 mm	In stock
19.05 mm	In stock
20 mm	In stock
22 mm	Q2 2025
24 mm	In stock
31 mm (A32-VII/L32).	Q2 2025

Commercial

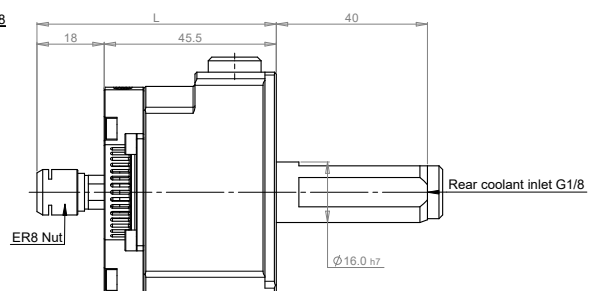
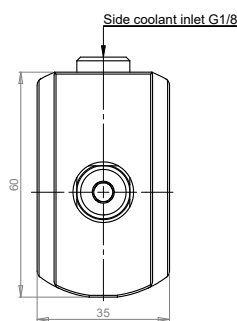
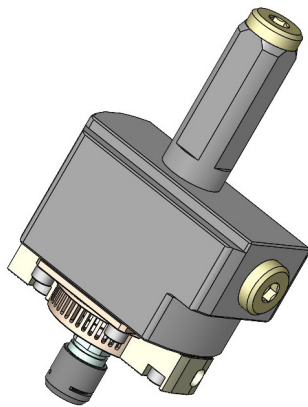
Contact one of [Colibri Partners](#) for details.

Each package contains:

- High Precision ER 8 Nut x1
- High Precision ER 8 Collet \varnothing 4.00 mm (5/32") x1
- ER 8 Wrench x1

COMPATIBLE ADAPTOR MODELS

Adapter	160	190	200	220	250	310
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Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 160	97-000-160	16.00	63.5	5.0	0.57

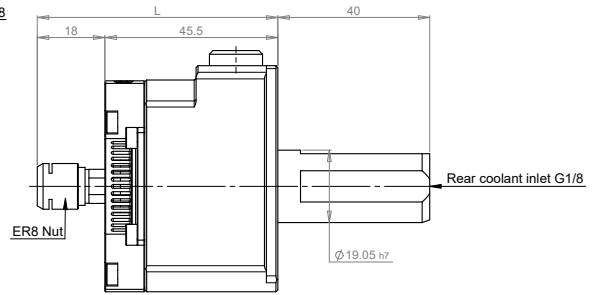
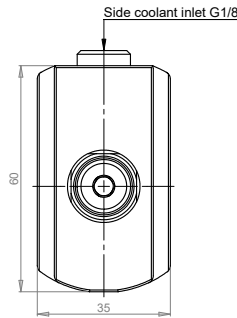
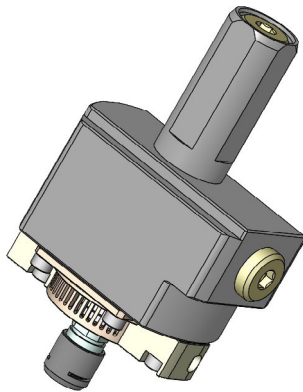
FILES AVAILABLE FOR DOWNLOAD IN ONLINE CATALOGUE: <https://colibrispindles.com/catalog/>

DXF - 2D	STEP - 3D Detail	STEP - 3D Light
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Catalog

COMPATIBLE ADAPTOR MODELS

Adapter	160	190	200	220	250	310
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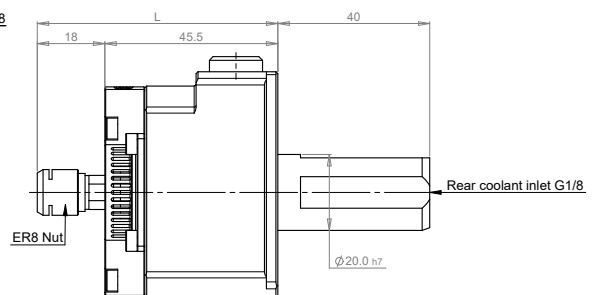
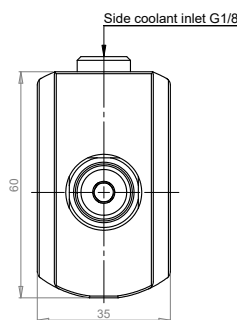
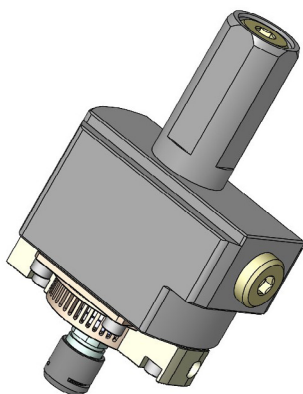
Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 190	97-000-190	19.05	63.5	5.0	0.60

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DXF - 2D	STEP - 3D Detail	STEP - 3D Light
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COMPATIBLE ADAPTOR MODELS

Adapter	160	190	200	220	250	310
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Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 200	97-000-200	20.00	63.5	5.0	0.60

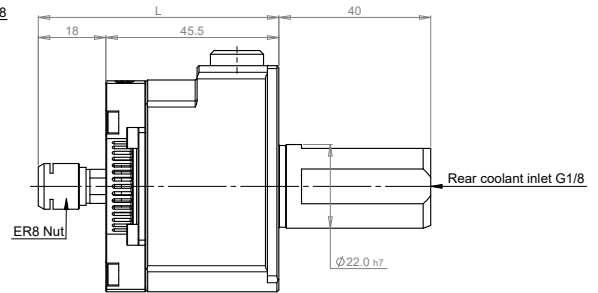
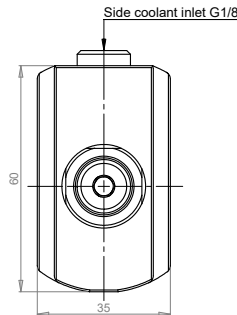
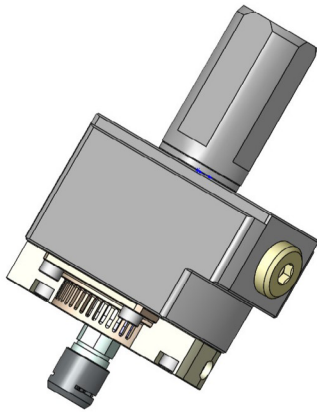
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DXF - 2D	STEP - 3D Detail	STEP - 3D Light
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Catalog

COMPATIBLE ADAPTOR MODELS

Adapter	160	190	200	220	250	310
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Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 220	97-000-220	22.00	63.5	5.0	0.66

FILES AVAILABLE FOR DOWNLOAD IN ONLINE CATALOGUE: <https://colibrispindles.com/catalog/>

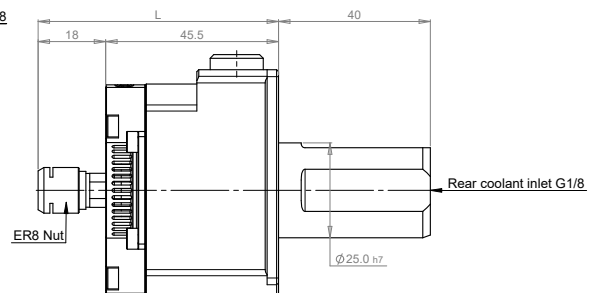
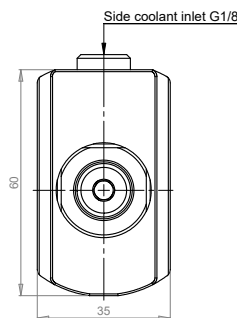
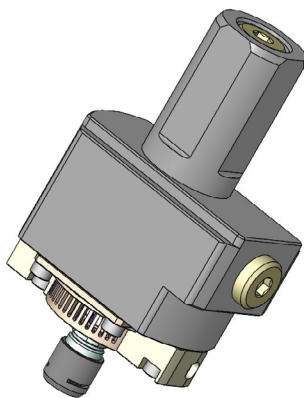
[DXF - 2D](#)

[STEP - 3D Detail](#)

[STEP - 3D Light](#)

COMPATIBLE ADAPTOR MODELS

Adapter	160	190	200	220	250	310
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Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 250	97-000-250	25.00	63.5	5.0	0.66

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Catalog

COMPATIBLE ADAPTOR MODELS

Adapter

160

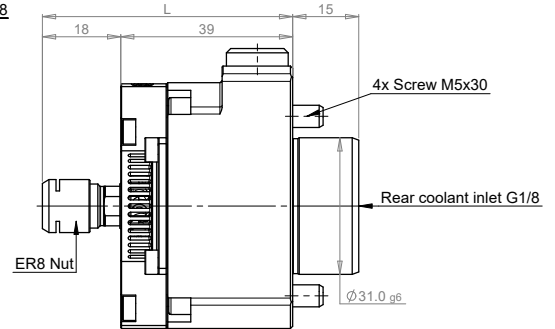
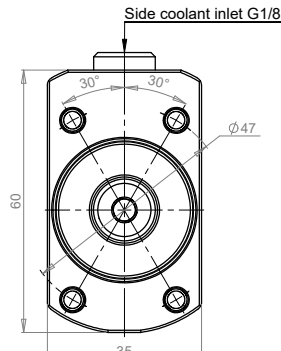
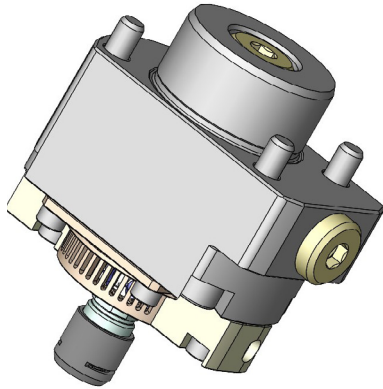
190

200

220

250

310



Designation	P/N	D mm	L mm	Tool d max mm	Kg
TJS MINI 310	97-000-310	31.00	57.0	5.0	0.51

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[DXF - 2D](#)

[STEP - 3D Detail](#)

[STEP - 3D Light](#)