High Precision SM325/385/405/425 Swiss Lathe Machine 5 Axis Slide Head Machine

Our Product Introduction

Basic Information

- Place of Origin: SHANDONG
- Brand Name: cnc swiss lathe machine
- Certification: CE
- Model Number: SM325
- Minimum Order Quantity: 1/SET
- Price: USD25000-USD55000
- Packaging Details: non-fumigation wooden box
- Delivery Time: 45 working days
- Payment Terms: L/C, T/T
- Supply Ability: 100sets

Product Specification

- Model: CNC Lathe
- Axis: 5
- Type: CNC Lathe Machine
- Number Of Tools: 12
- Axis Travel: X: 130mm, Z: 200mm
- Power Requirement: 3 Phase, 220V/380v
- Spindle Speed: 8000rpm

Product Description

Describe				unit	specifications
Processing capacity	Max maching diameter			mm	40
	Stroke			mm	220
	Main Spindle RPM			rpm	8000
	Sub Spindle RPM			rpm	8000
	Cross Driven Tools RPM			rpm	5000
	Additional Positive Brake			°	1/1000(0.001)
	Max. Turning Diameter			mm	40
Traverse Rate	Stroke	X1 axis		mm	60
		Y axis		mm	380
		Z1 axis		mm	220
		X2 axis		mm	380
		Z2 axis		mm	220
	Rapid Traverse Rate	X1 axis		m/min	24
		Y/Z1/X2/Z2 axis		m/min	32
Arrangement of tools	O.D Tools			ea	5
	Front Work Tools			ea	5
	Cross Driven Tools			ea	4
	Back Work Tools			ea	4
	O.D Tools specification			mm	16×16
	Front Work Tools diameter			mm	3*25+2*20
	Power Tool Chuck Specifications			mm	ER16
	Spindle motor			kw	5.5/7.5
Motors	Sub Spindle motor			kw	1.5/2.2
	Servo axis motor			kw	1
	Cross Driven Tools motor			kw	0.55/1.1
	Lubrication pump motor			w	5
	Coolant motor			kw	0.9
	Coolant tank capacity			L	200
Others	Lubrication tank capacity			L	1.8
	Height from floor tospindle center			mm	1000
			(L)	mm	2800
	Floor space		(W)	mm	1475
			(H)	mm	1850
	Mass of machine			kg	4500
	CNC control unit				SYNTEC/FANUC
					SYSTEM

Swiss-Type Lathes (also known as Swiss-Style or Sliding Head stock Lathes) offer significant advantages in the field of precision machining, especially for small, slender shaft-type parts. Here is a detailed breakdown of their core advantages:

Core Advantages
High Precision and Stability:

High Structural Rigidity: The Z-axis (spindle) moves while the cutting tools remain fixed. This structure provides greater rigidity and better vibration resistance than traditional fixed-headstock lathes (where tools move).

Reduced Thermal Deformation: Heat generated by the moving spindle is less likely to transfer to the head stock and guide ways, effectively minimizing thermal deformation that affects accuracy.

Short Tool Path: Tools operate close to the spindle chuck point with minimal overhang, resulting in high rigidity, stable cutting, and reduced vibration/tool deflection.

Single Setup Completion: Eliminates cumulative errors from multiple setups, ensuring exceptional geometric tolerances like concentricity and positional accuracy.

High Efficiency:

Multi-Turret, Multi-Spindle Collaborative Machining: Typical configurations include:

Main Spindle: Holds the bar stock for primary turning operations.

Sub-Spindle (Counter Spindle): Takes over the work piece after front-end machining is complete to perform back-end operations (e.g., back turning, drilling, tapping) – enabling backside machining without a second setup.

Multiple Radial/Axial Driven Tool Turrets: Equipped with live tools (milling cutters, drills, etc.) for simultaneous or sequential combined operations such as turning, milling, drilling, tapping, boring, and grooving.

Simultaneous Machining: The main spindle, sub-spindle, and multiple turrets can perform different operations concurrently, drastically reducing cycle times, especially for complex parts.

Continuous Production: After the sub-spindle takes the part, the main spindle can immediately begin machining the front end of the next bar, enabling uninterrupted continuous production.

Short Travel Distances: Z-axis travel typically needs only to be slightly longer than the single part length, minimizing non-cutting time.

Ideal for Small, Slender, Complex Parts:

Exceptional for Slender Shafts: For slender shafts with high length-to-diameter ratios, prone to bending/vibration on traditional lathes. Swiss lathes provide tool support very close to the cutting point with minimal work piece overhang, ensuring outstanding stability and precision.

Efficient Small Part Production: Highly suitable for high-volume production of small diameter parts (common range Φ1mm - Φ32mm, max ~Φ42mm), relatively long parts, and complex-shaped parts requiring multi-operation combined machining.

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