Metal-Asia

Commercial Proposal for Supply

CNC Turn-Mill Centers from China for Complete Machining in One Setup

Proposal Author: Milosh Kovachevi, Technical Consultant at Metal-Asia.pw, specializing in global procurement of multi-tasking machine tools from China for automotive OEMs, aerospace suppliers, energy sector manufacturers, and precision engineering firms worldwide.

Metal-Asia.pw specializes in the supply of CNC turn-mill centers that enable complete machining of complex components in a single setup. The key procurement risks we mitigate for global buyers include: ensuring precise multi-axis interpolation across X, Y, Z, B, and C axes; the absence of validated CAM postprocessors; complexity in calibrating live tooling spindles; and the risk of acquiring machines with incorrect geometric alignment at the intersection of turning and milling axis groups. Our solution encompasses rigorous pre-shipment accuracy verification on all axes, CAM postprocessor adaptation for SolidCAM, Mastercam, or NX, supervised installation with three-plane geometric alignment, startup commissioning with live 5-axis cycle validation, and programmer certification. We work with Haitian Precision, Neway CNC, Shandong Creatall, and Borui CNC, delivering centers with live tooling, Y-axis, and sub-spindle capability for the automotive, aerospace, and power generation industries across Europe, the Americas, Asia-Pacific, and the Middle East.

Product Range and Technical Specifications

Turn-mill centers combine the functionality of a lathe and a machining center. Chinese manufacturers offer horizontal models with slant-bed configurations at 30°/45°, equipped with turrets featuring live tooling (VDI or BMT format), Y-axis for eccentric turning and milling, and sub-spindles for back-side machining.

Turn-Mill Center Product Range

Model	Manufacturer	Bed Type	Turning Diameter, mm	Machining Length, mm	Axes (Count)	Live Tooling	Y-Axis	Sub-spindle	CNC System
HCK 6125-550	Haitian Precision	Slant 30°	250	550	5 (X, Y, Z, C, B)	VDI 30, 12 tools	Yes, ±25 mm	No	Fanuc 0i-TF / Siemens 828D
HCK 6132-750	Haitian Precision	Slant 30°	320	750	5 (X, Y, Z, C, B)	VDI 40, 16 tools	Yes, ±30 mm	Option	Fanuc 0i-TF / Siemens 828D

Model	Manufacturer	Bed Type	Turning Diameter, mm	Machining Length, mm	Axes (Count)	Live Tooling	Y-Axis	Sub-spindle	CNC System
HCK 6140-1000	Haitian Precision	Slant 45°	400	1000	5 (X, Y, Z, C, B)	VDI 40, 20 tools	Yes, ±40 mm	Yes	Fanuc 0i-TF / Siemens 828D
NTM 200	Neway CNC	Slant 30°	200	400	5 (X, Y, Z, C, B)	BMT 55, 12 tools	Yes, ±20 mm	No	Fanuc 0i-TF
NTM 250	Neway CNC	Slant 30°	250	550	5 (X, Y, Z, C, B)	BMT 55, 16 tools	Yes, ±25 mm	Option	Fanuc 0i-TF / Siemens 828D
NTM 350	Neway CNC	Slant 30°	350	750	5–6 (X, Y, Z, C, B, W)	BMT 65, 20 tools	Yes, ±35 mm	Yes	Fanuc 0i-TF / Siemens 828D
BNC 200	Borui CNC	Slant 30°	200	350	5 (X, Y, Z, C, B)	VDI 30, 12 tools	Yes, ±20 mm	No	Fanuc 0i-TF / GSK 980TDc
BNC 250	Borui CNC	Slant 30°	250	500	5 (X, Y, Z, C, B)	VDI 40, 16 tools	Yes, ±25 mm	Option	Fanuc 0i-TF
BNC 400	Borui CNC	Slant 45°	400	1000	5–6 (X, Y, Z, C, B, W)	VDI 40, 20 tools	Yes, ±40 mm	Yes	Fanuc 0i-TF / Siemens 828D
CTM 200	Shandong Creatall	Slant 30°	200	400	5 (X, Y, Z, C, B)	VDI 30, 12 tools	Yes, ±20 mm	No	Fanuc 0i-TF / Mitsubishi
CTM 320	Shandong Creatall	Slant 30°	320	650	5 (X, Y, Z, C, B)	VDI 40, 16 tools	Yes, ±30 mm	Option	Fanuc 0i-TF / Siemens 828D
CTM 400	Shandong Creatall	Slant 45°	400	1000	5–6 (X, Y, Z, C, B, W)	VDI 40, 20 tools	Yes, ±40 mm	Yes	Fanuc 0i-TF / Siemens 828D
NL251MY	Neway CNC	Slant 30°	250	550	5 (X, Y, Z, C, B)	BMT 55, 16 tools	Yes, ±25 mm	Option	Fanuc 0i-TF / Siemens 828D

Accuracy and Dynamic Performance Parameters

Model	Positioning Accuracy X/Y/Z, mm	Resolution, mm	Max. Acceleration X/Y, m/s²	Spindle Power, kW	Live Tool Power, kW	Max. Live Tool Speed, rpm	Sub-spindle Power, kW	Turret Stations
HCK 6125-550	±0.005 / ±0.005 / ±0.008	0.001	6 / 4	5.5	3.7	6000	—	12
HCK 6132-750	±0.005 / ±0.005 / ±0.008	0.001	8 / 5	7.5	5.5	8000	3.7	16
HCK 6140-1000	±0.008 / ±0.008 / ±0.010	0.001	8 / 5	11	7.5	8000	5.5	20
NTM 200	±0.005 / ±0.005 / ±0.008	0.001	6 / 4	5.5	3.7	6000	—	12
NTM 250	±0.005 / ±0.005 / ±0.008	0.001	8 / 5	7.5	5.5	8000	3.7	16
NTM 350	±0.008 / ±0.008 / ±0.010	0.001	10 / 6	11	7.5	10000	5.5	20
BNC 200	±0.005 / ±0.005 / ±0.008	0.001	6 / 4	5.5	3.0	5000	—	12
BNC 250	±0.005 / ±0.005 / ±0.008	0.001	8 / 5	7.5	5.5	6000	3.7	16
BNC 400	±0.008 / ±0.008 / ±0.010	0.001	10 / 6	11	7.5	8000	5.5	20
CTM 200	±0.005 / ±0.005 / ±0.008	0.001	6 / 4	5.5	3.7	6000	—	12
CTM 320	±0.005 / ±0.005 / ±0.008	0.001	8 / 5	7.5	5.5	8000	3.7	16
CTM 400	±0.008 / ±0.008 / ±0.010	0.001	10 / 6	11	7.5	10000	5.5	20
NL251MY	±0.005 / ±0.005 / ±0.008	0.001	8 / 5	7.5	5.5	8000	3.7	16

Technological Capabilities and Configuration Matrix

Model	Tapping	Face Milling	Groove Milling	Angled Drilling	Face Drilling	Contour Turning	Shaft Polishing	In-Process Probe	Workpiece Clamping System
HCK 6125-550	Yes	Yes	Yes	Yes, via B-axis	Yes	Yes	Option	Option	Hydraulic chuck
HCK 6132-750	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
HCK 6140-1000	Yes	Yes	Yes	Yes	Yes	Yes	Option	Yes	Hydraulic chuck
NTM 200	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
NTM 250	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
NTM 350	Yes	Yes	Yes	Yes	Yes	Yes	Option	Yes	Hydraulic chuck
BNC 200	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Hydraulic chuck
BNC 250	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
BNC 400	Yes	Yes	Yes	Yes	Yes	Yes	Option	Yes	Hydraulic chuck
CTM 200	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
CTM 320	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck
CTM 400	Yes	Yes	Yes	Yes	Yes	Yes	Option	Yes	Hydraulic chuck
NL251MY	Yes	Yes	Yes	Yes	Yes	Yes	Option	Option	Hydraulic chuck

Customs Classification and HS Codes

Turn-mill centers are classified under the Harmonized System (HS) based on their primary machining function. Metal-Asia.pw prepares complete documentation packages to ensure seamless customs clearance in all destination markets.

HS Code	Product Description	Declaration Notes
8458.11.00	Numerically controlled lathes	Primary classification for turn-mill centers with dominant turning axis group

HS Code	Product Description	Declaration Notes
8457.10.10	Machining centers numerically controlled for milling	Alternative classification when milling functions predominate
8457.10.90	Other numerically controlled machine tools for metals	For universal multi-purpose centers

For machines equipped with sub-spindles and Y-axis, customs authorities may require an extended technical description specifying axis count and functions. Metal-Asia.pw prepares English technical descriptions with translations as required, and accompanies customs clearance at all stages to prevent delays.

Project Management, Installation, and Commissioning Services

Supply Chain Project Management

- Technical specification development based on buyer part drawings, analyzing the need for Y-axis, B-axis, and sub-spindle functionality
- CAM system selection and postprocessor adaptation for the specific machine model and CNC system
- Manufacturing facility audit to verify availability of 5-axis calibration equipment and quality management systems
- Delivery schedule management accounting for postprocessor development and FAT with 5-axis test part machining
- Coordinated delivery within flexible manufacturing systems (FMS) with robotic integration

Supervised Installation and Startup

- Supervised installation on vibration-isolation mounts with three-plane geometric alignment to 0.01 mm/m
- Production line installation with robotic loader synchronization and finished-product conveyor integration
- Electrical and pneumatic cabinet installation, connection to plant utilities
- CNC startup commissioning (SAT): X, Y, Z, B, C axis calibration, backlash compensation, validation of angled milling and drilling cycles
- Production line SAT: synchronization of readiness signals between machine and robotic cell controller

Training and Technical Documentation

- Operator training: turning cycles, milling cycles, drilling, tapping, turret operation, tool wear offset management
- Programmer training: CAM programming, 5-axis trajectory verification, postprocessing, collision simulation
- Maintenance technician training: live tool replacement, turret head diagnostics, Y-axis adjustment
- Health and safety training for multi-tasking machinery operation and pressurized coolant systems
- Complete English-language documentation: operation manual, electrical and pneumatic schematics, CAM postprocessor, setup reference cards

Warranty and After-Sales Support

- 12-month warranty from commissioning date with field engineer dispatch
- Remote technical support via Ethernet connectivity to Fanuc and Siemens CNC systems for parameter and program adjustment
- Spare parts and consumables supply: live tools, collets, turret head bearings, servo amplifier boards
- Post-warranty service through annual maintenance contracts
- Planned service support: spindle runout verification, Y and B axis calibration, turret head lubrication replacement

Metal-Asia.pw provides comprehensive global procurement of titanium alloy components from China, including tender support for public sector and defense-related procurement frameworks. Services include quality control (NDT,

ultrasonic testing), chemical composition verification to international standards, and customs clearance on a turnkey basis.

FAQ: Frequently Asked Questions on Turn-Mill Center Procurement from China

Question 1: What distinguishes a turn-mill center from a standard lathe with live tooling?

Answer: A standard turning center with live tooling has X, Z, C axes and a turret with rotating tools, enabling drilling and face milling operations. A turn-mill center adds a Y-axis, allowing the tool to move off the rotational axis of the part for eccentric turning, face milling, cross-drilling, and angular tapping. Combined with high-power live tooling (5.5 kW+) and a sub-spindle, the machine becomes a true multi-tasking center capable of replacing separate turning and milling machines, reducing work-in-process inventory and improving part accuracy by eliminating multiple setups.

Question 2: Which CAM system is recommended for programming Chinese-built turn-mill centers?

Answer: For turn-mill applications, CAM systems with mature mill-turn modules are recommended: SolidCAM with iMachining, Mastercam Mill-Turn, Siemens NX CAM, or Esprit. Metal-Asia.pw delivers a validated postprocessor for the buyer's selected CAM system and machine model as part of the standard supply package. The postprocessor undergoes real-machine verification during SAT: turning cycles, milling cycles, drilling cycles, and sub-spindle part transfer are all validated on the buyer's test components.

Question 3: What milling accuracy can be achieved on a turn-mill center from China?

Answer: Modern centers from Haitian Precision and Neway CNC equipped with linear guideways (HIWIN, THK) and Fanuc / Siemens servo drives achieve X and Y positioning accuracy within ±0.005 mm. Face milling on parts up to 250 mm diameter delivers surface roughness Ra 1.6–3.2 µm. For higher precision (IT6–IT7), machines with thermal compensation and in-process probing are recommended. Metal-Asia.pw supplies recommended cutting parameters and a starter tooling package matched to the buyer's material list.

Question 4: What foundation requirements apply to turn-mill centers?

Answer: Standard turn-mill centers with slant-bed construction weighing 2500–4500 kg require a standard industrial concrete floor (minimum C22/25, 200 mm thickness) or a 300 mm foundation pad with M16–M20 anchor bolts. Models with sub-spindle and Y-axis weighing over 6000 kg require a separate 400×400 mm foundation with vibration isolators. Metal-Asia.pw provides a foundation drawing with anchor point coordinates and allowable floor loading data. Foundation readiness inspection by our engineer is available on request.

Question 5: What materials can be machined on a Chinese-built turn-mill center?

Answer: Turn-mill centers with 7.5–11 kW main spindles and 5.5–7.5 kW live tooling successfully machine structural steels (C35, C45, 4140), stainless steels (AISI 304, 316, 420), titanium alloys (Grade 2, Grade 5), aluminum alloys (2024, 6061), and copper alloys. For hardened steels (up to 45 HRC) and tool steels, high-frequency spindle options (10000 rpm) and solid carbide tooling are required. Metal-Asia.pw selects recommended speeds and feeds and supplies a starter tooling kit matched to the buyer's declared material range.

Question 6: How does sub-spindle part transfer and back-side machining work?

Answer: The transfer sequence involves: machining the first side of the part in the main spindle with stock allowance left for gripping; moving the sub-spindle to the part face; synchronized gripping with precise rotational axis alignment; cutoff of the finished part from the bar; machining the second side in the rotating sub-spindle. The entire cycle is programmed in a single NC program using synchronization wait functions (M-codes for Fanuc / Siemens). During SAT, our engineer validates the transfer cycle on the buyer's test component, adjusting grip speed and clamp force parameters.

Question 7: What are realistic delivery and commissioning timelines for a turn-mill center?

Answer: Standard 5-axis configurations (without sub-spindle) require 45–60 days production. Builds with sub-spindle and Y-axis require 60–75 days. Sea freight to European ports takes 25–35 days, to North American west coast 20–30 days, to Southeast Asia 7–14 days. Supervised installation requires 3–4 days, SAT with 5-axis cycle validation 3–5 days, operator training 3–5 days. Total contract-to-production cycle: 95–130 days for standard builds and 110–150 days for maximum configurations.

Question 8: How are live tools and turret collets supplied after machine acquisition?

Answer: The starter kit includes live tools for basic configurations: face mills, drills, taps, reamers sized to the buyer's standard part diameters. Tool holding format: VDI 30/40 (DIN 69880) or BMT 55/65. Metal-Asia.pw supplies ER16/ER20/ER32 collets, adapters, and accessories with the machine. Subsequent live tool orders are fulfilled from our central logistics hub or through European tool distributors for premium-grade requirements. Spare parts delivery for turret heads: 12–20 days.

Contact Information

For all inquiries regarding the supply of CNC turn-mill centers from China, technical support, and after-sales service, contact Metal-Asia.pw:

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For a detailed overview of our full service portfolio, current promotions, and new equipment arrivals, visit Metal-Asia.pw.