

TC *Series*

HIGH PERFORMANCE HIGH PRECISION CNC LATHE



TC Series

High Performance High Precision CNC Lathe

YCM TC series is the utmost performance CNC lathe which provides the best solution in various complex machining. With numerous outstanding features, the TC series is suited for mass turning production, such as automotive, aerospace, oil, and IT electronic industries.

- Modular spindle design is for various turning applications.
- The rigid one-piece MEEHANITE® castings absorb the turning vibration and ensure job accuracy.
- The fast and reliable servo driven turret features fast indexing for high production.
- High speed axial traverse design achieves precise positioning which enlarges the benefit of operation.
- The user-friendly interface provides the users a easy way to operate and maintain.
- The full enclosure safely guards the operator, conforms current environmental safety regulations.

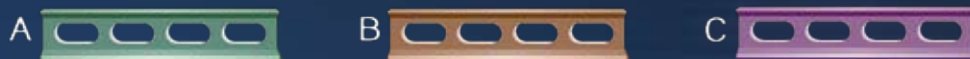


YCM Sophisticated Scraper Work Skill

Scraper Work Skill is viewed as one of the core skills in machine tool industry. Making a perfect surface is the foundation of flawless accuracy and YCM utilizes this hand-made skill to achieve it.

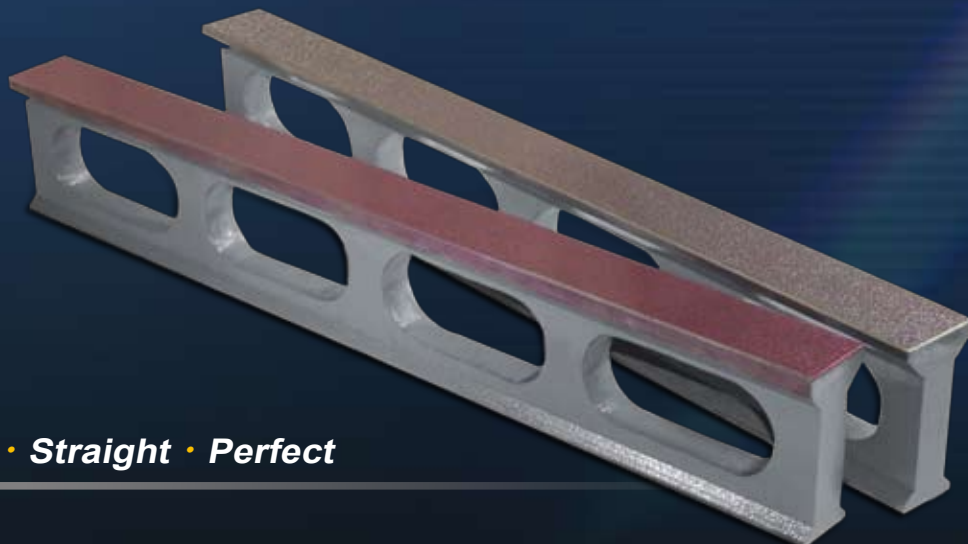
To keep the sophisticated scraper work skill, YCM has created a series of training programs for her employees. YCM seriously demands that all of her technicians are capable of making a perfect surface with 20 spot per square inch, 40% contact rate.

- Making a perfect surface is the foundation for the achievement of geometrical accuracy.



- How to make a perfect surface:

We need three flat blocks first and then test each surface by touching it with other surfaces. Scrape the bumpy points on the surface until every surface is 100% touching with each other.



Smooth · Straight · Perfect

TC-26/26L



- Max. Spindle Speed: 4,000rpm
- X/Z Rapid Feedrate: 15/20 m/min. 591/787ipm
- Extremely Rigid One-piece 45° Slanted Bed Design
- Powerful Gearhead Spindle with Max. Torque Output at 74.5kgf-m 539 lb-ft.
- Material Removal Efficiency: 410cm³/min. Insert Depth: 8mm 0.31"

High Speed High Rigidity Turret

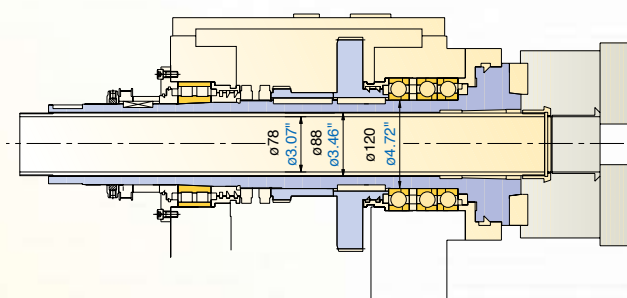
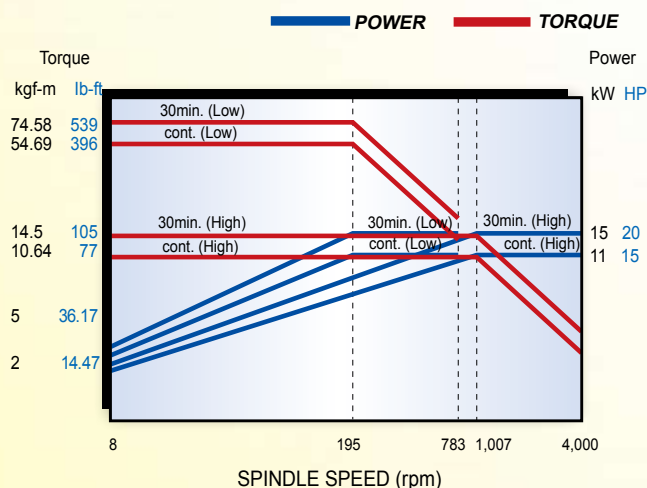
- The 12-station turret index is done by absolute detection to reduce tool selection mistake.
- The powerful turret with large diameter curvic coupling offers high precision and high rigidity in cutting performance.

Powerful Headstock With Built-in Gears

- The spindle is equipped with high precision angular ball bearing and NN series bearing that provides high precision and rigidity working condition.
- The inner diameter of the bearing is $\phi 120\text{mm}$ $\phi 4.72"$, and $\phi 88\text{mm}$ $\phi 3.46"$ of the spindle through hole. $\phi 78\text{mm}$ $\phi 3.07"$ of the drawbar through hole adapts large diameter bar stock jobs.
- The powerful spindle with built-in gears provides various speed transmissions. The max. output of torque reaches 74.5kgf-m 539 lb-ft, with 4,000rpm max. spindle speed.



Spindle Power-Torque Output Chart



High Precision and High Rigidity Programmable Tailstock

Using "M" code commands the quill stroke of the programmable tailstock can be hooked with a hydraulic hook to the saddle carriage and slide along the Z-axis stroke.

High Speed Ultra Smooth Axial Movement

X/Z-axis guideways are well hardened and ground with Turcite-B to reduce the friction and offer utmost rigidity in cutting. The rapid feedrate of X/Z-axis is 15/20 m/min. [591/787ipm](#)

User-friendly Operation and Easy Maintenance

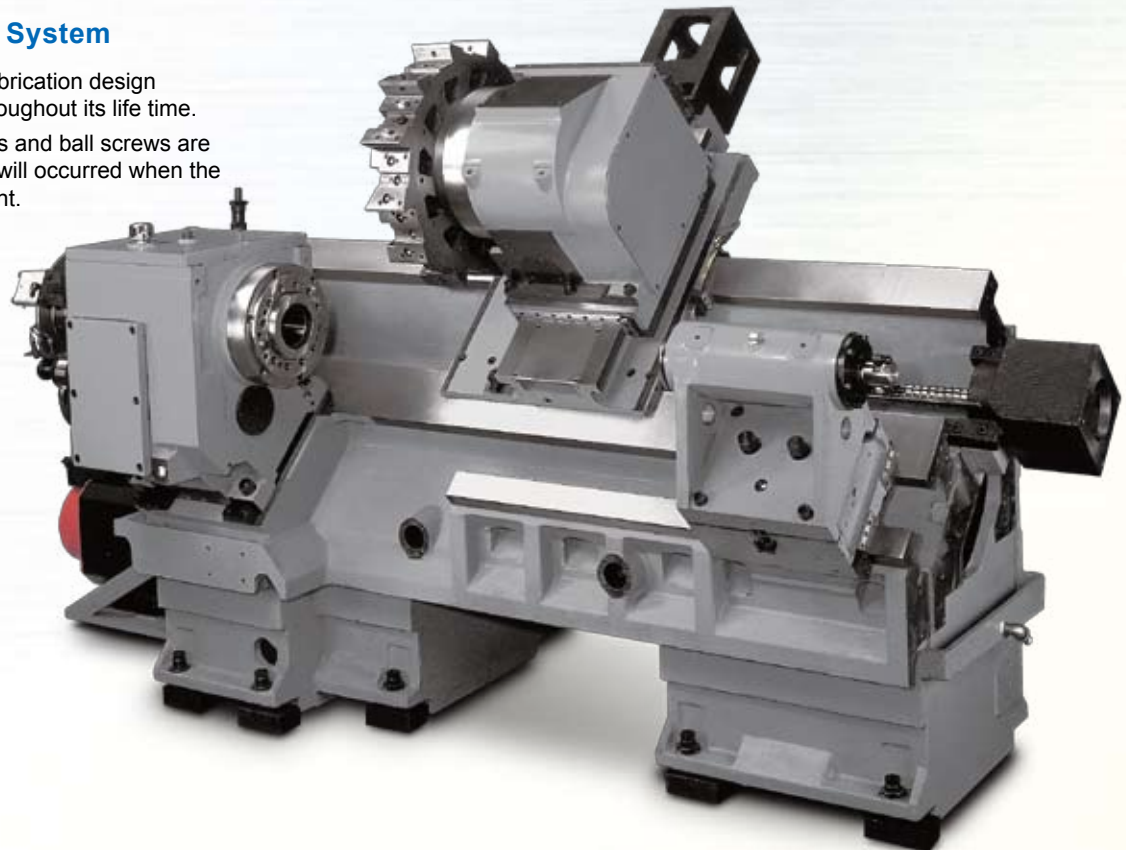
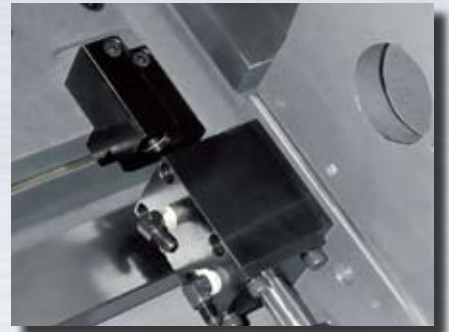
Hydraulic gauges, control valves of chuck and tail stock, and the central lubrication system are installed at the front side; for easy adjustment and maintenance.

Directly Driven Ballscrews Of High Precision And Rigidity

This machine is equipped with high precision ball screws and connected with motor directly. The fixing design supports both ends; the design of pre-tensioned ball screws provides high rigidity, high precision, and low heat effect.

Central Lubrication System

- The machine with auto-lubrication design ensures the accuracy throughout its life time.
- The slide ways of X/Z-axis and ball screws are lubricated. Built-in alarm will occurred when the lubrication oil is insufficient.



CUTTING TESTS

Turning - external S45C Steel

8mm (0.31")

Depth of cut 8mm 0.31"			
Cutting speed	128m/min. 5,039ipm	Feedrate	0.4mm/rev
Spindle speed	200rpm	Metal removal rate	410cm ³ /min.

TC-26/26L 4,000rpm

Drilling S650 Steel

Max. Drilling Capacity: 59mm 2.32"

Cutting speed	120m/min. 4,724ipm	Feedrate	0.15mm/rev
Spindle speed	650rpm	Metal removal rate	266cm ³ /min.

TC-36W/36



■ **Extremely Rigid One-piece 45° Slanted Bed Endures Max. Cutting Force, with Easy Operation.**

■ **Powerful Gearhand Spindle with Max. Torque Output at 140kgf-m **1,013 lb-ft**, and Power Outputs at 26kW **35HP**.**

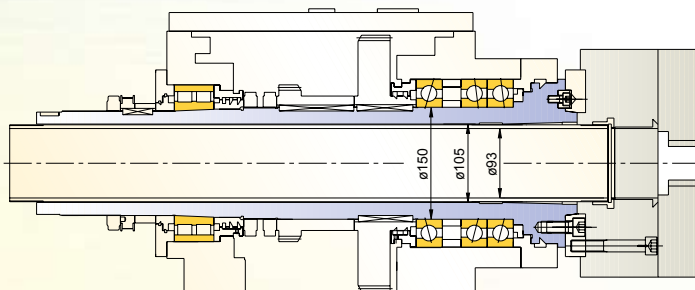
High Speed High Rigidity Turret

- The 12-station turret index is done by absolute detection, and no tool selection mistake is caused.
- The powerful turret of large diameter curvic coupling offers high precision and high rigidity in cutting performance.



Powerful Headstock With Built-in Gears

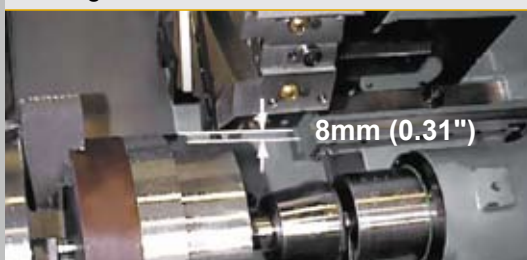
- The spindle is equipped with high precision angular ball bearing and NN series bearing witch provides high precision and rigidity working condition.
 - The inner diameter of the bearing is $\phi 150\text{mm}$ **$\phi 5.91"$** , and $\phi 105\text{mm}$ **$\phi 4.13"$** of the spindle through hole. $\phi 93\text{mm}$ **$\phi 3.66"$** of the drawbar through hole adapts large diameter bar stock jobs.
 - The powerful spindle with built-in gears provides various speed transmissions.
- The max. output of torque reaches 140kgf-m **1,013 lb-ft**, with max. spindle speed of 2,500rpm.



CUTTING TESTS

TC-36/36W 2,500rpm

Turning - external S45C Steel



Depth of cut **8mm 0.31"**

Cutting speed	128m/min. 5,039ipm	Feedrate	0.4mm/rev
Spindle speed	200rpm	Metal removal rate	410cm ³ /min.

Drilling S650 Steel



Max. Drilling Capacity: **59mm 2.32"**

Cutting speed	120m/min. 4,724ipm	Feedrate	0.15mm/rev
Spindle speed	650rpm	Metal removal rate	266cm ³ /min.

Directly Driven Ballscrews Provides High Precision and Rigidity

This machine is equipped with high precision ball screws and connected with motor directly. The fixing design supports both ends; the design of pre-tensioned ball screws provides high rigidity, high precision, and low heat effect.

The Stand Alone Oil Tank Reduces Heat Deformation

The stand alone oil tank ensures the machining precision will not be affected by heat. It is also convenient and efficient for cleaning and maintaining the oil tank.

User-friendly Operation and Easy Maintenance

Hydraulic gauges, control valves of chuck and tail stock, and the central lubrication system are located at the front side for easy operation and maintenance.

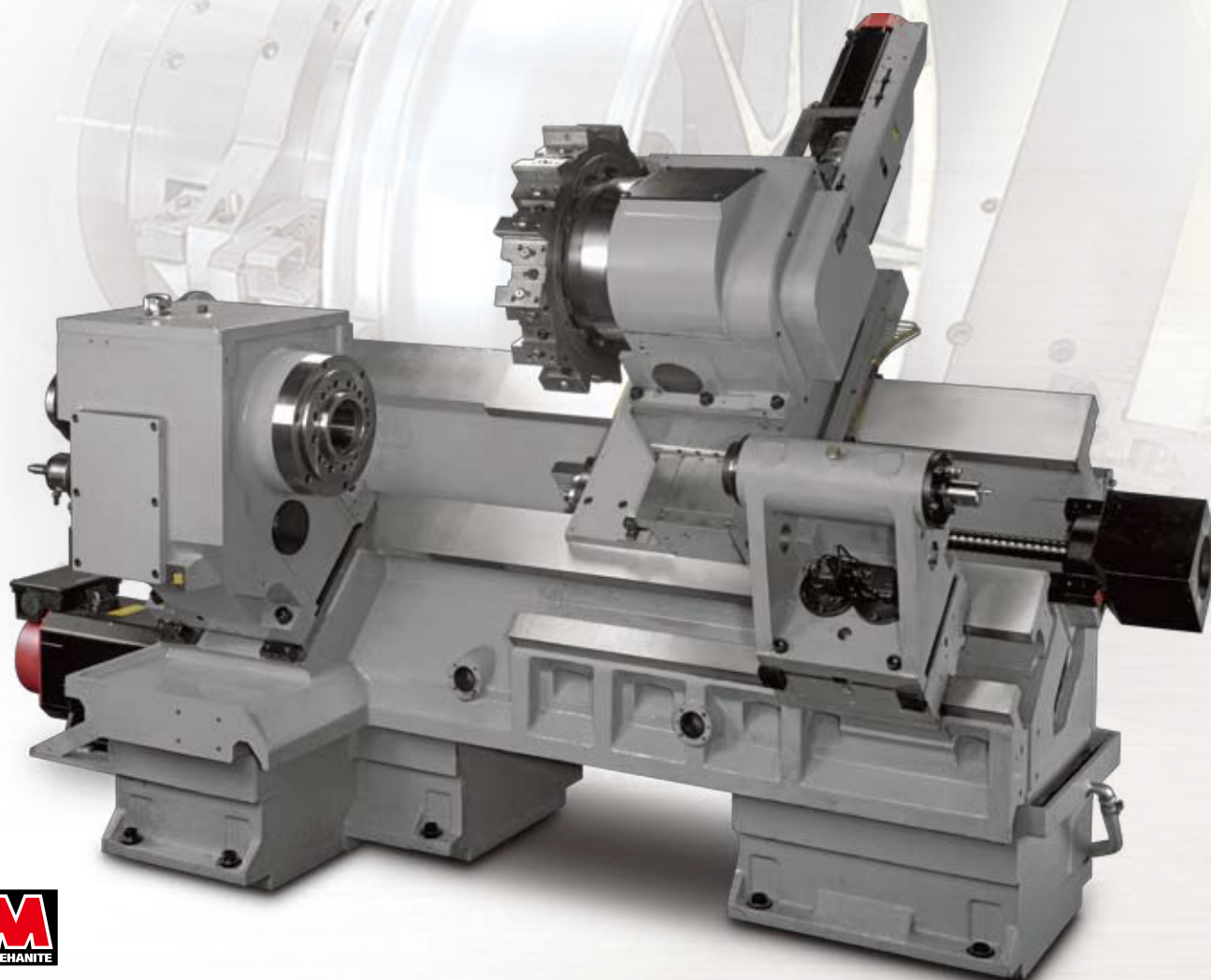
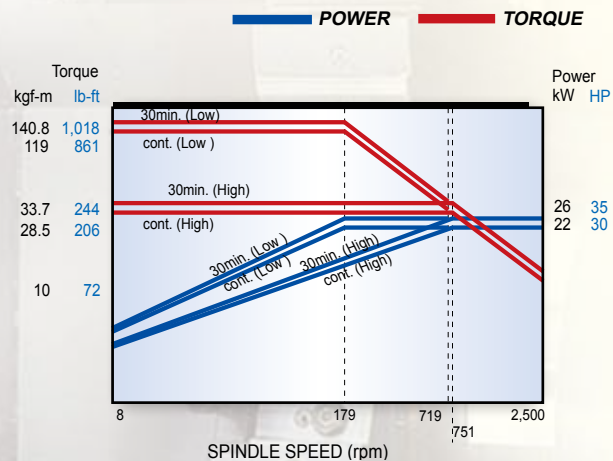
High Precision and High Rigidity Programmable Tailstock

Using "M" code commands the quill stroke of the programmable tailstock can be hooked with a hydraulic hook to the saddle carriage and slide along the Z-axis stroke. Tailstock with live quill is standard.

Environments Concerned Safety Guarding

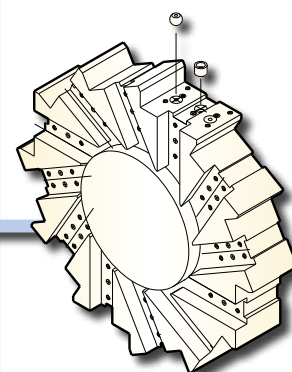
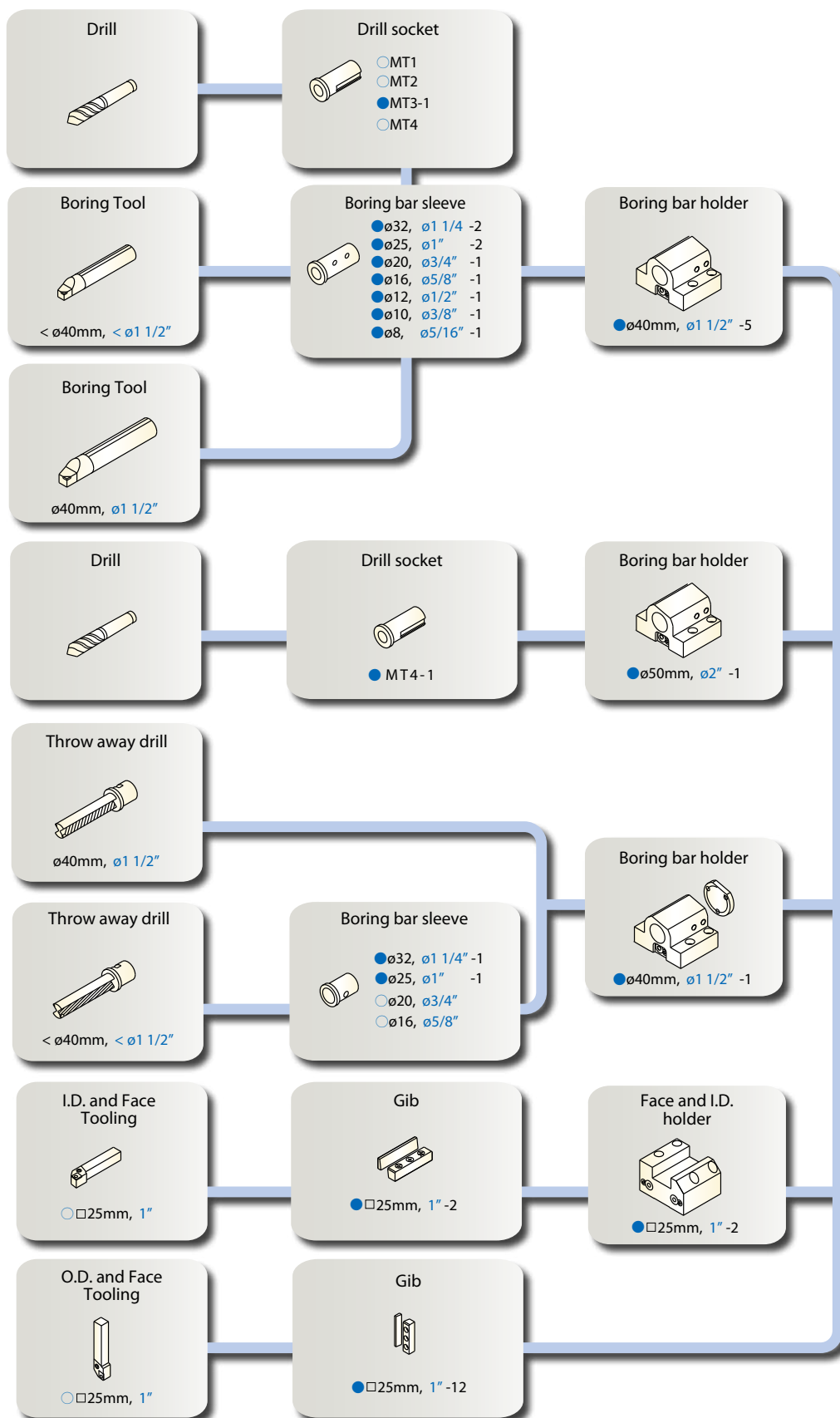
From the window of the safety guard, operator can see through the engaged job, and shield from the cutting chips and coolant mist.

Spindle Power-Torque Output Chart



TURRET ACCESSORIES

● : Standard
○ : Optional

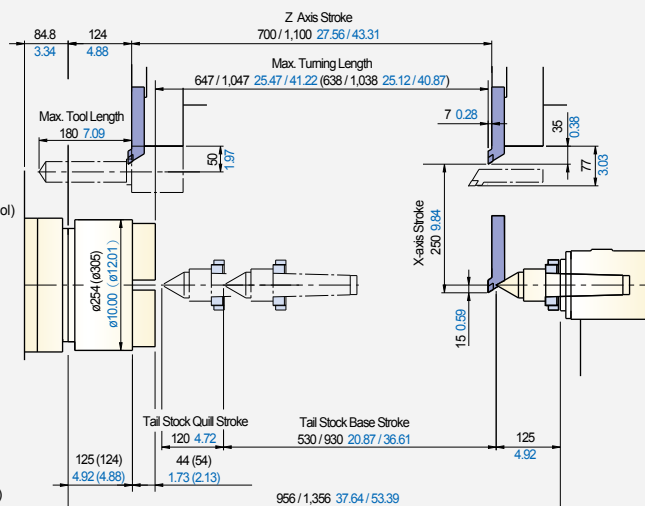
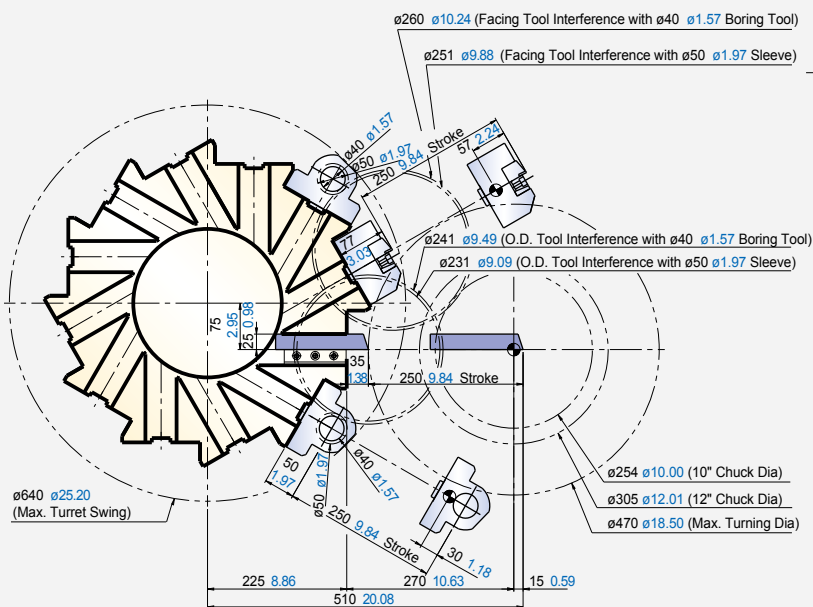


12 Station Turret Head

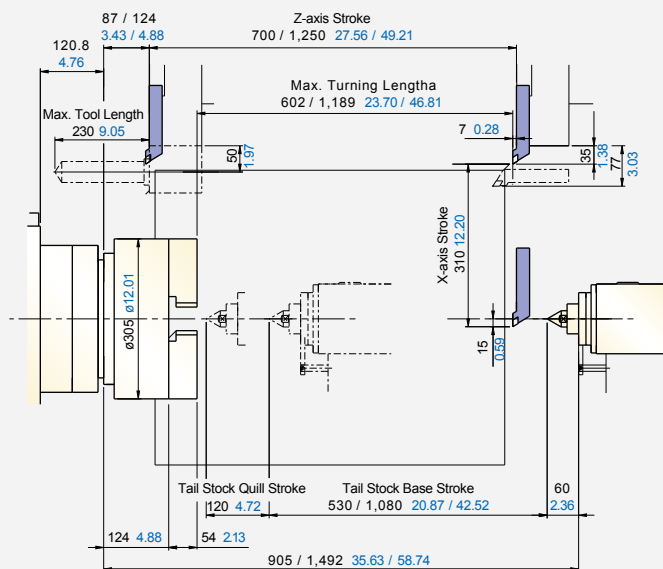
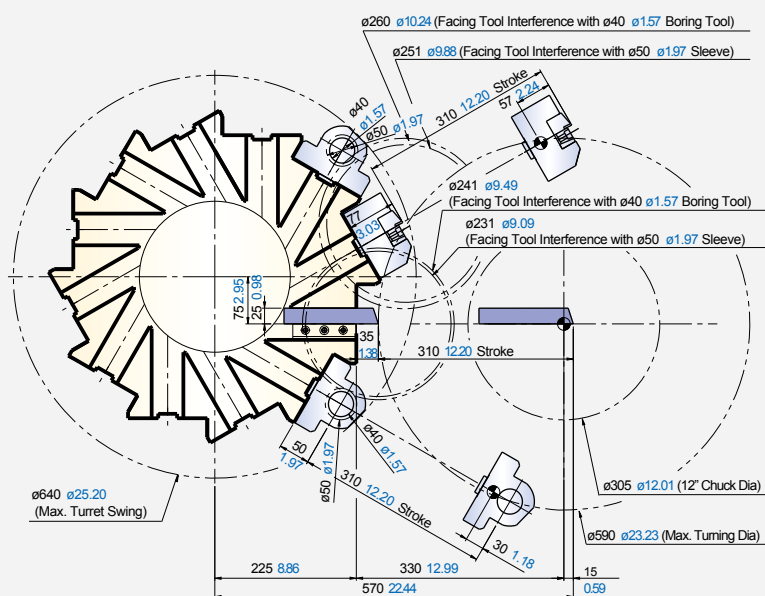
TOOL INTERFERENCE & WORKING CAPACITY

Unit : mm inch
 ⬤ : Spindle Center


TC-26/TC-26L

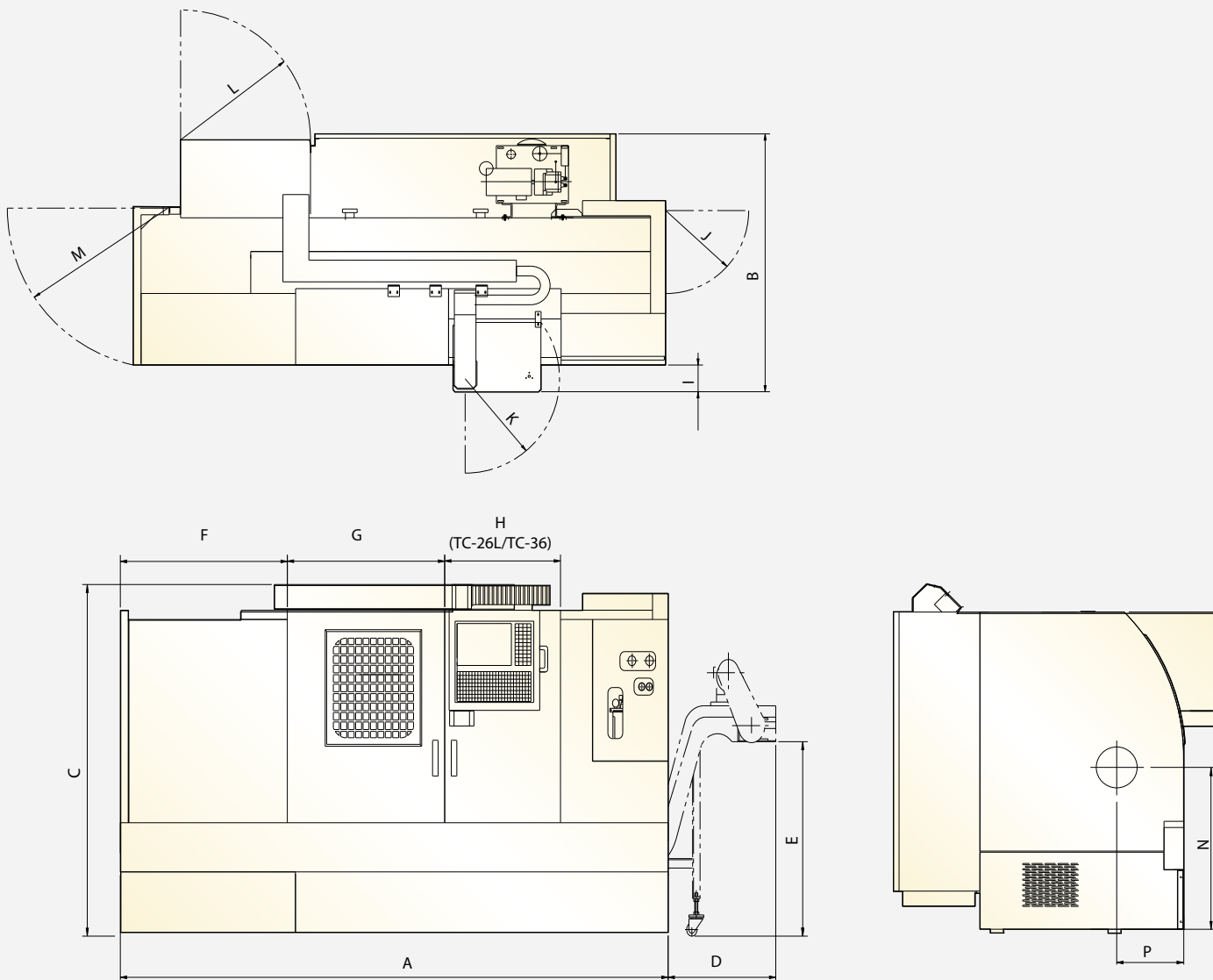


TC-36W/TC-36



MACHINE DIMENSIONS

Unit : mm inch
 Spindle Center



	A	B	C	D	E	F	G	H (2nd Door)	I	J	K	L	M	N	P
TC-26	3,250 127.95"	1,786 70.31"	1,841 72.48"	730 28.74"	1,029 40.51"	1,010 39.76"	1,060 41.73"	-	185 7.28"	575 22.64"	654 25.75"	900 35.43"	1,090 42.91"	900 35.43"	365 14.37"
TC-26L	3,690 145.28"	1,786 70.31"	1,861 73.27"	730 28.74"	1,029 40.51"	1,125 44.29"	1,060 41.73"	780 30.71"	185 7.28"	575 22.64"	654 25.75"	900 35.43"	1,113 43.82"	900 35.43"	365 14.37"
TC-36W	3,390 133.46"	1,993 78.46"	2,011 79.17"	710 27.95"	1,029 40.51"	1,095 43.11"	1,060 41.73"	-	206 8.11"	556 21.89"	663 26.10"	900 35.43"	1,117 43.98"	960 37.8"	435 17.13"
TC-36	3,936 154.96"	2,093 82.40"	2,011 79.17"	760 29.92"	1,029 40.51"	1,095 43.11"	1,060 41.73"	840 33.07"	206 8.11"	572 22.52"	663 26.10"	900 35.43"	1,117 43.98"	960 37.8"	435 17.13"

SPECIFICATIONS

	TC-26		TC-26L	TC-36W	TC-36
MACHINING CAPACITY					
Swing Over Bed	ø500mm ø19.69"			ø690mm ø27.17"	
Swing Over Carriage	ø350mm ø13.78"			ø510mm ø20.08"	
Max. Turning Diameter	ø470mm ø18.50"			ø590mm ø23.23"	
Max. Turning Length (opt.)	647mm (638mm) 25.47" (25.12")	1,047mm (1,038mm) 41.22" (40.87")		602mm 23.70"	1,189mm 46.81"
Distance Between Center	956mm 37.64"	1,356mm 53.39"		905mm 35.63"	1,492mm 58.74"
SPINDLE					
Chuck Size (opt.)	10" (12")			12"	
Spindle Nose	A2-8				
Hole Through spindle	ø88mm ø3.46"			ø105mm ø4.13"	
Hole Through draw bar	ø78mm ø3.07"			ø93mm ø3.66"	
Spindle Speed (opt.)	4,000rpm (2,500rpm, 2 Speed Gearhead Spindle)			2,500rpm, 2 Speed Gearhead Spindle	
Spindle Motor (cont./30min.)	11/15kW 15/20HP			22/26kW 30/35HP	
TRAVEL					
X-axis Travel	250mm 9.84"			310mm 12.20"	
Z-axis Travel	700mm 27.56"	1,100mm 43.31"		700mm 27.56"	1,250mm 49.21"
FEEDRATE					
Rapid Feedrate (X/Z)	15/20m/min. 591/787ipm				
Cutting Feedrate	1~5,000mm/min. 0.04~197ipm				
TURRET					
Turret Type	Servo Motor Drive (Hydraulic Clamp)				
Turret Capacity (opt.)	12T (8T)				
Shank Height for Square Tool	□ 25mm 1"				
Shank Diameter for Boring Bar	ø40/ø50mm ø1½" / ø2"				
TAILSTOCK					
Tailstock Quill Taper (std.)	MT-5 (Stationary Type)			MT-4 (Live Type)	
Tailstock Quill Taper (opt.)	MT-4 (Live Type)			—	—
Tailstock Quill Diameter	ø100mm ø3.94"				
Tailstock Quill Stroke	120mm 4.72"				
Tailstock Stroke	530mm 20.87"	930mm 36.61"		530mm 20.87"	1,080mm 42.52"
GENERAL					
Power Consumption (Transformer)	30kVA (30kVA)			51kVA (65kVA)	
Machine Weight	4,400kg 9,700 lb	5,500kg 12,125 lb		5,450kg 12,015 lb	7,000kg 15,432 lb

*We reserve the right to modify and improve our products.



■ Heat Exchanger for electrical cabinet

ACCESSORIES

●: Standard ○: Optional —: None ★: Special

		TC-26	TC-26 _L	TC-36 _W	TC-36
Tool Kit		●	●	●	●
Work Lamp		●	●	●	●
Pilot Lamp		●	●	●	●
Automatic Door		○	○	○	○
Safety Door		●	●	●	●
Hydraulic System		●	●	●	●
General Tool Holder		●	●	●	●
VDI Tool Holder		○	○	○	○
Hydraulic Hollow Chuck		●	●	●	●
Hard and Soft Jaws 1 Set		●	●	●	●
Additional hard and Soft Jaws		○	○	○	○
Soft Jaw Former		○	○	○	○
Collet Chuck		○	○	—	—
Padel for Main Spindle		●	●	●	●
Padel for Tailstock		○	○	○	○
Programmable Tailstock		●	●	●	●
Tailstock Quill Taper	Stationary Type	●	●	—	—
	Live Type	○	○	●	●
Full Chip Enclosure		●	●	●	●
Leveling Blocks and Bolts		●	●	●	●
Foundation Screw Bolt		○	○	○	○
Air Gun		●	●	●	●
Cutting Air Blast		○	○	○	○
Coolant Equipment	System MTH2-30/3	●	●	●	●
	System MTH2-40/4	○	○	○	○
	System MTR3-17/17	★	★	○	○
Coolant Gun		○	○	○	○
Oil Skimmer		○	○	○	○
Paper Filter		○	○	○	○
Coolant Shower System		○	○	○	○
Oil-mist Collector		○	○	○	○
Central Lubrication System		●	●	●	●
Right Side Chip Conveyor		●	●	●	●
Heat Exchanger for Electrical Cabinet		●	●	●	●
A/C. Cooler for Electrical Cabinet		○	○	○	○
Workpiece Length Setter		○	○	○	○
Auto Tool Length Measurement System for Main Spindle		○	○	○	○
Bar Feeder		○	○	—	—
Parts Catcher for Main Spindle		○	○	—	—
Feeder Safety Clutch		○	○	○	○
Feeder Safety Clutch		●	●	●	●
Transfer System		○	○	—	—
CNC Control	TXP-100FA	●	●	●	●
	TXP-200FA	○	○	○	○
Mechanical Electrical & Operating Manuals		●	●	●	●
Steady Rest Manual		○	○	○	○
Steady Rest Hydraulic		○	○	○	○

★ Special options, please consult with sales representatives.



■ Central Lubrication system



■ Hydraulic System



■ Tool Length Measurement System (opt.)



■ Chip Conveyor

Control Functions and Specifications

●: Standard ○: Optional —: None

Controlled axis			
Item	Specifications	TXP-100FA	TXP-200FA
Controlled axis	2 axes	●	●
Simultaneously controlled axis	4 axes	●	●
Axis name	X / Y / Z / U / V / W / A / B / C	●	●
Inch / Metric conversion	G21 / G20	●	●
Least input increment	0.001mm / 0.0001inch / 0.001deg	●	●
Increment system 1/10	0.0001mm / 0.00001inch / 0.0001deg	●	●
Fine Acc & Dec control		●	●
Follow-up		●	●
Inter lock	All axes / each axis / cutting block start	●	●
Machine lock	All axes / each axis	●	●
Emergency stop		●	●
Overtravel		●	●
Stored stroke check 1		●	●
Position switch		●	●
Backlash compensation	Rapid traverse / cutting feed	●	●
Stored pitch error compensation		●	●
Chamfering on/off	M22 / M23	●	●
M-Code mirror image	M94 / M95 / M96	●	●
HRV control	HRV2	●	●
	HRV3	●	●
Controlled axis expansion (total)	Max. 4 axes	○	○
Simultaneously controlled axis expansion (total)	Max. 4 axes	○	○
Operation			
Item	Specifications	TXP-100FA	TXP-200FA
Automatic operation		●	●
DNC operation	Reader / Puncher interface is required	●	●
Dry run		●	●
Buffer register		●	●
Single block		●	●
MDI operation	MDI-B	●	●
JOG feed		●	●
Manual reference position return		●	●
Manual absolute on and off		●	●
Manual handle feed rate	X1 / X10 / X100	●	●
Program number search		●	●
Sequence number search		●	●
Manual handle feed	1 unit / each path	●	●
	2 units	○	○
Manual handle interruption	Hardware is necessary	●	●
Sequence number comparison and stop		●	●
Program restart	Hardware is necessary	●	●
Interpolation			
Item	Specifications	TXP-100FA	TXP-200FA
Positioning	G00	●	●
Dwell	G04	●	●
Linear interpolation	G01	●	●
Circular interpolation	G02 / G03	●	●
Thread, synchronous cutting	G33	●	●
Skip function	G31	●	●
Reference position return	G28	●	●
Reference position return check	G27	●	●
2nd reference position return		●	●
Threading retract		●	●
Continuous threading	G32	●	●
Variable lead threading	G34	●	●
Cylindrical interpolation		●	●
Polar coordinate interpolation	G12.1 / G13.1	●	●
3rd / 4th Reference position return	G30	●	●
Conversational programming function			
Item	Specifications	TXP-100FA	TXP-200FA
Manual Guide i	10.4"LCD / MDI is necessary	—	●
Tool function / Tool compensation			
Item	Specifications	TXP-100FA	TXP-200FA
Tool function	T7+1 digit / T6+2 digit	●	●
Tool offset pairs	64 pairs	●	●
Tool nose radius compensation		●	●
Tool geometry / wear compensation		●	●
Tool offset value counter input		●	●
Automatic tool offset	G36 / G37 (Touch sensor and Macro B are necessary)	○	○
Tool life management function		●	●
Feed function			
Item	Specifications	TXP-100FA	TXP-200FA
Rapid traverse rate		●	●
Rapid traverse override	F0, 25%, 50%, 100%	●	●
Feed per minute	G94 (mm/min)	●	●
Feedrate override	0~200%	●	●
JOG override	0~200%	●	●
Feed per revolution (mm/rev)	G95, A spindle position coder is required	●	●
Manual per revolution feed		●	●
Feed stop		●	●
Tangential speed constant control		●	●
Cutting feedrate clamp		●	●
Automatic acceleration / deceleration		●	●
Rapid traverse bell-shaped acceleration / deceleration		●	●
Linear acceleration / deceleration after cutting feed interpolation		●	●
External deceleration		●	●
Program input			
Item	Specifications	TXP-100FA	TXP-200FA
EIA / ISO automatic recognition		●	●
Label skin		●	●
Parity check		●	●
Control in / out		●	●
Max. programmable dimension	± 8 - digit	●	●
Program number	O4 - digit	●	●
Sequence number	N5 - digit	●	●
Absolute / Incremental programming		●	●
Diameter / radius programming		●	●
Direct drawing dimension programming		●	●
Decimal point programming / pocket calculator type decimal point programming		●	●
Input unit 10 time multiply		●	●
Plane selection	G17 / G18 / G19	●	●
Rotary axis designation		●	●
Rotary axis roll-over function		●	●
Sub program call	4 folds nested	●	●
Program stop / program end	M00 / M01 / M02 / M30	●	●
Reset		●	●
G-Code A system		●	●
Canned cycles	G70~G76	●	●
Coordinate system setting		●	●
Automatic coordinate system setting		●	●
Coordinate system shift		●	●
Direct input of Coordinate system		●	●
Workpiece coordinate system preset		●	●
Chamfering / corner R		●	●
Programmable data input	G10	●	●
Custom macro B	Macro B	●	●
Optional block skip	1, Hardware is necessary 9, Hardware is necessary	●	○
Canned cycles for drilling	G80~G89	●	●
Program format FS10 / 11	Word and address format	●	●
G-Code B / C system		●	●
Workpiece coordinate system	G52 / G53 G54~G59	○	○
Addition of custom macro common variables	#100~#199 / #500~#999	●	●
Edit operation			
Item	Specifications	TXP-100FA	TXP-200FA
Number of registerable programs	400	●	●
Part program editing		●	●
Extended part program editing		●	●
Background editing		●	●
Program protect		●	●
Part program storage length	640M (256kbyte)	●	●
Playback	Hardware is necessary	●	●
Data input / output			
Item	Specifications	TXP-100FA	TXP-200FA
Reader / Puncher interface	RS-232 interface	●	●
Memory card interface	For maintenance For customer	●	●
External message		●	●
Data Server-ATA	Slot unit is necessary Standard 128MB, MAX.2 GB	○	○
Setting / Display			
Item	Specifications	TXP-100FA	TXP-200FA
Status display		●	●
Current position display		●	●
Program display	Program name 31 characters	●	●
Parameter setting and display		●	●
Alarm display		●	●
Alarm history display		●	●
Operation history display		●	●
Run hour and parts count display	Included Machining time stamp	●	●
Actual cutting feedrate display		●	●
Display of spindle speed and T code at all screens		●	●
Display of hardware and software configuration		●	●
Graphic function	Graphic display unit is necessary	●	●
Dynamic graphic display	Graphic function is necessary	●	●
Help function		●	●
Clock function		●	●
Data protection key		●	●
Erase CRT screen display		●	●
Servo setting screen		●	●
Spindle setting screen		●	●
Periodic maintenance screen		●	●
Maintenance information screen		●	●
Multi-language display	English, Chinese French, German, Italian, Korean, Spanish, Japanese, Portuguese, Czech, Polish, Hungarian	●	●
Operation message history display		●	●
Auxiliary / Spindle speed function			
Item	Specifications	TXP-100FA	TXP-200FA
Auxiliary function (M)	M8 digit	●	●
High speed M / S / T interface		●	●
Spindle speed function (S)		●	●
Spindle override	50~200%	●	●
Spindle positioning		●	●
1st spindle orientation	M19	●	●
Rigid tapping	M29	●	●
Spindle speed fluctuation detection function		●	●
Cutting air blast	M14 / M15	○	○
Auto power off	M30	○	○
Others			
Item	Specifications	TXP-100FA	TXP-200FA
Status output signal		●	●
Connectable servo motor		●	●
Connectable servo AMP		●	●
Connectable spindle motor		●	●
Connectable spindle AMP		●	●
8.4"color LCD / MDI (full key)	Separate type	●	—
10.4"color LCD / MDI (full key)	Separate type	—	●

*We reverse the right to make any modification without notice.



The ATA FLASH memory card interface is standard.

The huge volume of programs and production data can be carried by flash memory card (option) for high-speed data transmission, and monitoring the machining execution.

VMC

Vertical Machining Center

FP Series High Precision High Performance Die Mold Vertical Machining Center
FP55A, FP66A, FP100A

FV Series High Speed High Performance Vertical Machining Center
 / High Speed High Performance Drilling & Tapping Center
FV56T, FV56A, FV85A, FV102A, FV125A / FV50T

XV Series High Performance Vertical Machining Center
XV560A, XV1020A, XV1250A

EV Series High Efficiency Vertical Machining Center
EV1020A

TV Series Heavy Duty Vertical Machining Center
TV116B, TV146A/B, TV158B, TV188B, TV2110B, TV2610B

MV Series High Performance High Rigidity Vertical Machining Center
MV66A, MV76A, MV86A, MV106A

WV Series Ultra Wide High Performance Vertical Machining Center
WV108A/B

FX Series 5-axis Vertical Machining Center
FX380A

NSV Series Ultra High Performance Vertical Machining Center
NSV66A, NSV85A, NSV102A, NSV156A

NDV Series High Precision Die Mold Vertical Machining Center
NDV66A, NDV85A, NDV102A

DCV Series Advanced Double Column Vertical Machining Center
DCV2012A/B, DCV3016B, DCV4016B, DCV3021B, DCV4021B, DCV3025B, DCV4025B, DCV4035B, DCV4035B-5AX

TCV Series High Performance Traveling Column Vertical Machining Center
TCV2000A, TCV3000A, TCV3000A-5AF

HMC

Horizontal Machining Center

H Series High Production Horizontal Machining Center
H500A/B, H630B, H800B, H2612B

CNC LATHES

CNC Turning Center

NT Series High Performance Mill-turn Multi-tasking Center
NT-2000Y/SY, NT-2500Y/SY

GT Series High Performance Geo Turning Center
GT-200A/B/MA, GT-250A/B/MA, GT-300A/B/MA/LB, GT-380A/B/LA/LB

TC Series High Performance High Precision CNC Lathe
TC-16A/B/LA/LB, TC-26, TC-26L, TC-36, TC-36W, TC-46

Integrated Operation Control System **iOPERATION**

Spindle Thermal Compensation System **STC PLUS**

Remote Monitoring System **iDirect**

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012011-E05-2000