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ENGLISH VER.

KT 420

SERIE SE

HIGH SPEED TAPPING CENTER



KOMATECH

TURRET TYPE



KT 420

660X400	X/Y/Z	14 / 21	1,08 sec	1,40 sec	10k/15k/24k	300 kg

Travels(X/Y/Z)	mm	560 / 420 / 300
Spindle speed	rpm	10,000 [15,000], [24,000]
Spindle power	kW	21.2/4.8 [21.2/4.8], [26.2/3.5]
Spindle taper		ISO No.30 (7/24)
Tool storage	pcs	14 [21]
Rapids(X/Y/Z)	m/min	60 / 60 / 60

[] Opt

KT 420L

800X400	X/Y	Z	14 / 21	1,08 sec	1,40 sec	10k/15k/24k	300 kg

Travels(X/Y/Z)	mm	700 / 420 / 300
Spindle speed	rpm	10,000 [15,000], [24,000]
Spindle power	kW	21.2/4.8 [21.2/4.8], [26.2/3.5]
Spindle taper		ISO No.30 (7/24)
Tool storage	pcs	14 [21]
Rapids(X/Y/Z)	m/min	50 / 50 / 60

[] Opt

Examples of target workpieces

| I.T & Automotive parts
| General parts



TWIN ARM TYPE



KT 420A



Travels(X/Y/Z)	mm	560 / 420 / 430
Spindle speed	rpm	10,000 [15,000], [24,000], [High Torque 10,000]
Spindle power	kW	21.2/4.8 [21.2/4.8],[26.2/3.5],[28.3/11.0]
Spindle taper		ISO No.30 (7/24)
Tool storage	pcs	20 [26]
Rapids(X/Y/Z)	m/min	60 / 60 / 60

[] Opt

KT 420AL



Travels(X/Y/Z)	mm	700 / 420 / 430
Spindle speed	rpm	10,000 [15,000], [24,000], [High Torque 10,000]
Spindle power	kW	21.2/4.8 [21.2/4.8],[26.2/3.5],[28.3/11.0]
Spindle taper		ISO No.30 (7/24)
Tool storage	pcs	20 [26]
Rapids(X/Y/Z)	m/min	50 / 50 / 60

[] Opt



PRODUCTIVITY

TURRET TYPE MAGAZINE KT420(L)



Tool to Tool
S 1.08 sec **M** 1.07 sec
 Chip to Chip
S 1.40 sec **M** 1.37 sec

Magazine is improved by servo motor drive instead of the conventional cam motor. It is possible fast long-distance tool change with nonstop and C-C time is significantly shortened by optimizing Z axis section and movement of magazine.

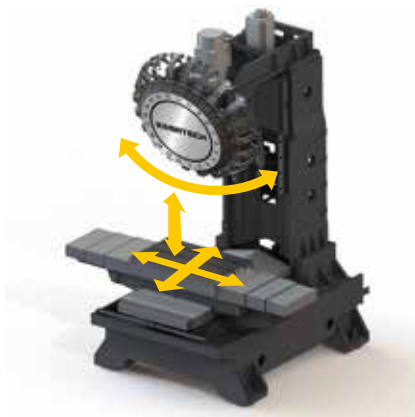
TWIN ARM TYPE MAGAZINE KT420A(AL)



Tool to Tool
1.2 sec
 Chip to Chip
1.8 sec

Tool changer is cam motor driving type and optimized tool change section for fast and stable tool change. Magazine tool port moves next tool position during machining to reduce tool change time and various machining application is available with mass storage magazine.

RAPIDS CAPABILITY & SIMULTANEOUS MOTION CONTROL



Minimized non-cutting time by simultaneously tool change and x, y, additional axes positioning (G130 Cycle). And achieved rapid feedrate 60 m/min, acceleration & deceleration over 1G by applying high power feeding motor, high precision ball screw and quick responsive L/M guide.

KT 420 / KT 420A X / Y / Z **60 / 60 / 60** m/min
 (Rapid traverse rate)

KT 420L / KT 420AL X / Y / Z **50 / 50 / 60** m/min
 (Rapid traverse rate)

MACHINING CAPABILITY

	DRILLING	
	Tool dia.(mm) x feed(mm/rev)	
	ADC	Carbon steel
10,000rpm(High torque)	D36 x 0,2	D28 x 0,2
10,000rpm / 15,000rpm	D30 x 0,2	D25 x 0,2
24,000rpm	D24 x 0,2	D18 x 0,2

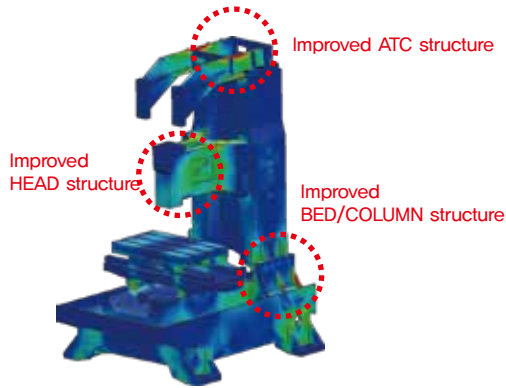
	TAPPING	
	Tool dia.(mm) x pitch(mm)	
	ADC	Carbon steel
10,000rpm(High torque)	M39 x 4,0	M27 x 3,0
10,000rpm / 15,000rpm	M27 x 3,0	M18 x 2,5
24,000rpm	M22 x 2,5	M14 x 2,0

	FACING	
	Tool dia.(mm) x cutting depth(mm) x feed rate(mm/min)	
	ADC	Carbon steel
10,000rpm(High torque)	80 X 5 X 3000	40 X 5 X 500
10,000rpm / 15,000rpm	80 X 4 X 3000	40 X 3 X 500
24,000rpm	80 X 3 X 3000	40 X 1.5 X 500

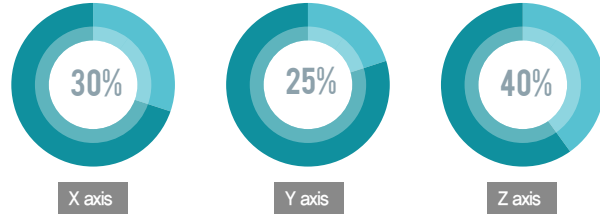
* The data is Komatech's actual test data.

RELIABILITY

HIGH RIGIDITY MACHINE STRUCTURE



DYNAMIC RIGIDITY IMPROVEMENT (COMPARED TO FORMER MODEL)



Improved machine structure and increased dynamic rigidity by FEM analysis.

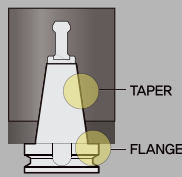
HIGH PERFORMANCE SPINDLE



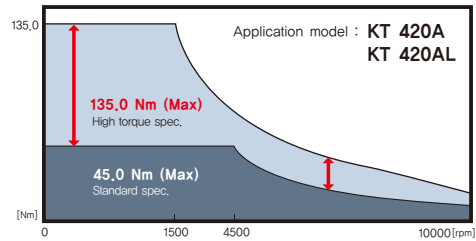
High precision 4 pieces angular ball bearing are applied. High tension spring and prevention of cutting oil inflow design achieves precise, stable machining. A wide range spindle speed enables to variable machining application from heavy duty cutting to high speed machining.

BIG PLUS (Opt.)

The 2-face locking tool system (Big plus) is available. It offer longer tool life, higher power and more precise machining by the dual contact both flange face and taper face.



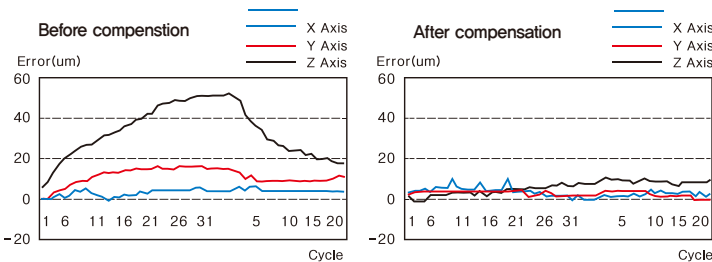
HIGH TORQUE SPINDLE MOTOR (Opt.)



Max. torque **135.0 Nm** Max. power **28.3 kW**

It is possible to achieve an over BT30 grade machining capability with high torque motor.

HIGH ACCURACY MACHINING



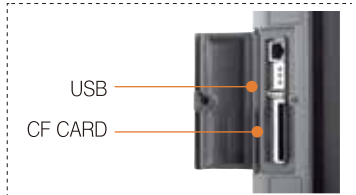
Optimized thermal displacement compensation system for Komatech's machine is realized by analyzing actual operation/non-operation hours. The differentiated positioning control function compare with others enables high precision machining.

* Accuracy may be different by external factors.

Komatech's own test program (limitation test)

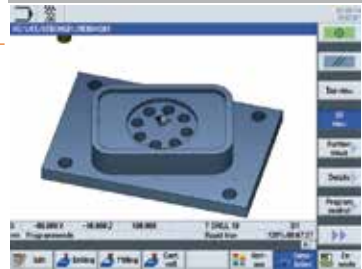
CONVENIENCE

Convenient Data Expandability



USB driver and CF memory card interface are standard for expansion of memory, easy for file copy & save.

Simple Programming



G-Code, M-Code and interactive program input mode (Shop Mill) are available including user friendly function, copy, cut, paste, search etc.

Administrator Edit Setting



NC Control lock function is applied to prevent operation mistake and lock level setting is available upon operator's level.

User Friendly Centralized Control Panel



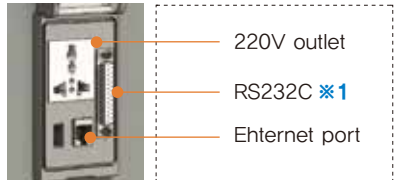
Rotary switch and On/Off buttons are added on each function for operator's convenience and common buttons are user friendly located for easy to operate and access.

Switch Panel



CL/UNCL, START, FEED HOLD, SINGLE BLOCK and EMERGENCY STOP buttons are separately configured on the SWITCH PANEL, ensuring ease of operation.

External communication interface



Ethernet port, 220V outlet and 25-pin connector are installed for convenient external communication devices.

※1 RS232C is available with Mitsubishi M80 and Fanuc OiMF (OPT.)

STANDARD & OPTIONAL SPECIFICATIONS

STANDARD SPECIFICATIONS



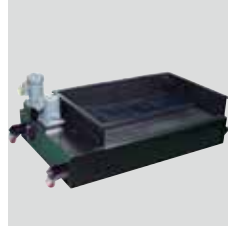
LED Patrol Light

High visibility and long lifespan LED Patrol Light



FIXED MPG HANDLE

Easy axis travel control device



Coolant Tank

Coolant tank including coolant pump



Work Light

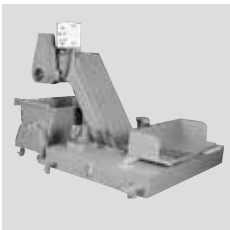
Inside working light that applies high brightness



AUTOMATIC LUBRICATION PUMP

Automatic lubrication pump that supplies lubrication oil to X,Y,Z axis

OPTIONAL SPECIFICATIONS



CHIP CONVEYOR

Automatic chip disposal equipment (Scraper / Hinge / Drum filter type)



BROKEN TOOL DETECTOR

Tool breakage detector, Available for tool length measuring when required



MACHINE TOP COVER

Cover which prevents cutting oil & chip are scattered to outside of the machine.



SPINDLE COOLER UNIT

Automatic cooling device by checking spindle temperature



HIGH COLUMN

Available up to 250mm upon request



DUST COLLECTOR

Equipment that absorbs tiny mist and dust while machining



AUTOMATIC DOOR

Front door automatic open/close option for factory automation purpose and operator's convenience



COOLANT THROUGH THE SPINDLE

Provide high performance on deep drilling & longer tool lifespan & increase roughness



ROTARY TABLE

Angle divide and additional axis for various machining purposes



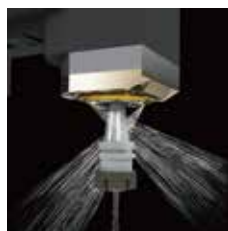
TRANSFORMER

Voltage adjusting equipment in case of different voltage between factory & machine



OIL PRESSURE UNIT

Hydraulic oil supply device for Jig application (70kg/cm², 25L)



TAPER WASHING SYSTEM

Cleaning taper surface after tool change



PORTABLE MPG HANDLE

Portable MPG makes workpiece setup easier



JIG INTERFACE

Preparation for Jig application, (M-Code/ Solenoid valve & Piping)



AUTOMATION INTERFACE

Preparation for Factory automation (Robot/Gantry/etc)

CONTROLLER

SIEMENS SINUMERIK 828D

Easy Operation



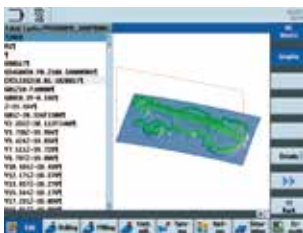
JOG functions

Tool, spindle, M Commands without coding on JOG mode, saves your time



Tool management

Intuitive tool screen with icons. Tool life monitoring function is provided as a Standard.



Mold making Quick view

Quick and filtered view on mold & die details



Online help

Powerful online help system including user-friendly graphics

Easy Programming



ShopMill

Interactive program input mode. Achieving shortest programming time.



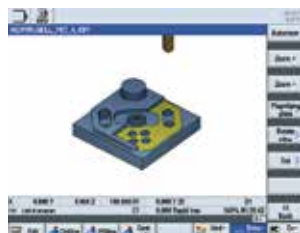
Program GUIDE

Interactive Cycle provides convenient programming.



ISO Dialect interpreter

Maximum compatibility for operators familiar with ISO codes




Simultaneous recording

Program simulation test and Real time machining simulation are available.



NC specification

- * Controllable axes : 6 axes
- * Simultaneous controlled axes : 4 axes
- * Minimum setting unit : 0.0001mm
0.00001 inch
- * Display: 10.4" TFT COLOR
- * User memory: 3MB [Extensible] 
- * Program format : G/M code [Conversational program]

NC function

- * Absolute / Incremental
- * Scailing / Rotating
- * Background editing
- * Mirror image
- * Program guide
- * Optional stop
- * Tool dimension interpolation
- * Tool life management
- * JOG/MDI (Manual operation)
- * Single block
- * Dry run
- * Linear interpolation
- * Circular interpolation
- * Synchro Tapping
- * Auto servo tuning function
- * Auto servo tuning function
- * Emergency stop
- * Thermal displacement compensation
- * Inch / Metric
- * Block search
- * ISO program (G291)
- * Program stop
- * Program test
- * 2D simulation
- * Max. work offset (100)
- * Max.no of tools / cuttings (128/256)
- * Ref.1,2 position
- * Feed hold
- * Block skip
- * Helical interpolation
- * Advanced surface
- * Jerk limitation
- * Feed forward control
- * Tap return
- * soft limit

NC optional specification

- * Shop mill
- * 3D simulation
- * Additional axis control
- * Real time simulation
- * Network drive

OPTIONAL CONTROLLER

FANUC Oi-MF



NC specification

- * Controllable axes : 6 axes
- * Simultaneous controlled axes : 4 axes
- * Minimum setting unit : 0.001mm
0.0001 inch
- * Display : 8.4"[10.4"] TFT COLOR
- * User memory : 512kbyte [Extensible] ※1
- * Program format : G/M code
[Conversational program]

NC function

- * Absolute / Incremental
- * Coordinate system rotating
- * Skip / High speed skip
- * Background editing
- * Mirror image
- * Linear interpolation
- * Circular interpolation
- * Tool dimension interpolation
- * Tool offset amount interpolation
- * Tool life management
- * Single block
- * Feed hold
- * Dry run
- * Tap return
- * Pitch error compensation
- * Stored stroke check II
- * Interlock
- * Inch / Metric
- * Canned cycle
- * Optional block skip
- * Program stop
- * Sbu.program call
- * Helical interpolation
- * Nano interpolation
- * Tool length interpolation
- * Tool offset pairs (400 pairs)
- * MDI operation
- * Program test
- * Optional stop
- * Rigid tapping
- * Backlash compensation
- * Stored stroke check I
- * Emergency stop
- * Machine lock

NC optional specification

- * Manual guide OI
- * AI contour control I (40 block)
- * Nano soomthing
- * Additional axis control
- * Manual guide I
- * AI contour control II (200 block)
- * Data server (1GB)

MITSUBISHI ELECTRIC M80



NC specification

- * Controllable axes : 8 axes
- * Simultaneous controlled axes : 4 axes
- * Minimum setting unit : 0.0001mm
0.00001 inch
- * Display : 8.4"[10.4"] TFT COLOR
- * User memory : 500kbyte [Extensible] ※1
- * Program format : G/M code
[Conversational program]

NC function

- * Absolute / Incremental
- * Coordinate system rotating
- * Background editing
- * Mirror image
- * Linear interpolation
- * Circular interpolation
- * High speed&accuracy control I
- * SSS control
- * Tool dimension interpolation
- * Tool offset pairs (400 pairs)
- * MDI operation
- * Single block
- * Feed hold
- * Rigid tapping
- * Block skip
- * Backlash compensation
- * Emergency stop
- * Inch / Metric
- * Canned cycle
- * Program stop
- * Optional block skip
- * Helical interpolation
- * High accuracy control
- * High speed&accuracy control II
- * Tolerance control
- * Tool length interpolation
- * Rapid traverse block overlap
- * Auto. Operation
- * Dry run
- * Tap return
- * 3D program check
- * Pitch error compensation
- * Soft limit
- * Interlock

NC optional specification

- * Additional axis control

※1 Memory capacity is extensible with USB memory and CF card

MACHINE SPECIFICATION

ITEM		UNIT	KT 420	KT 420L	KT 420A	KT 420AL	
Table	Size	mm	660 x 400	800 x 400	660 x 400	800 x 400	
	Max. loading capacity	kg	250 [300] ※1				
Travels	X axis	mm	560	700	560	700	
	Y axis		420	420	420	420	
	Z axis		300	300	430	430	
	Distance between table top and spindle nozzle end		200~500	170~470	200~630	170~600	
Spindle	Taper		ISO No.30 (7/24)				
	BIG PLUS		OPTIONAL				
	Max. spindle speed	rpm	10,000 [15,000], [24,000]		10,000 [HIGH-TORQUE 10,000], [15,000], [24,000]		
	Spindle motor	Max. / Cont. kW	10,000rpm : 21.2 / 4.8 [15,000rpm : 21.2 / 4.8], [24000rpm : 26.2/3.5]		10,000rpm:21.2/4.8 [HIGH-TORQUE 10,000rpm:28.2/11.0] [15,000rpm : 21.2 / 4.8], [24000rpm : 26.2/3.5]		
Feed rate	X / Y / Z	m/min	60 / 60 / 60	50 / 50 / 60	60 / 60 / 60	50 / 50 / 60	
ATC	Tool shank type		MAS403-BT30				
	Pull stud type		MAS403-P30T-1				
	Tool storage capacity	pcs	14 [21]		20 [26]		
	Max. tool diameter	mm	110		80 [64]		
	Max. tool length		200				
	Max. tool weight	kg	3.0 (Total tool weight 25kg for 14tools, 35kg for 21tools)		3.0 (Total tool weight 40kg)		
	Tool selection method		Turret (Fixed address)		Twin Arm (Random memory)		
	Tool change time	T-T	sec.	Ⓢ 1.08 Ⓜ 1.07		1.2	
C-C		Ⓢ 1.40 Ⓜ 1.36		1.8			
Power source	Power supply		AC380V ± 10%, 55Hz ± 5Hz				
	Power capacity	kVA	25				
	Required air pressure	MPa	0.5				
Machine dimension	Size (Tank included)	W x L	mm	1,760 x 2,520	2,064 x 2,520	1,760 x 2,520	2,064 x 2,520
	Height	H	mm	2,655	2,655	2,655	2,655
	Weight		kg	2,300	2,600	2,500	2,800
CNC	Model		SIEMENS 828D [MITSUBISHI M80 / FANUC Oi-MF]				
	Program method		G-code, M-code [Conversation]				
	Display	inch	10.4 TFT Color				

※1 : Acceleration for X and Y axes must be adjusted.

Ⓢ SIEMENS 828D

Ⓜ MITSUBISHI M80

[] opt.