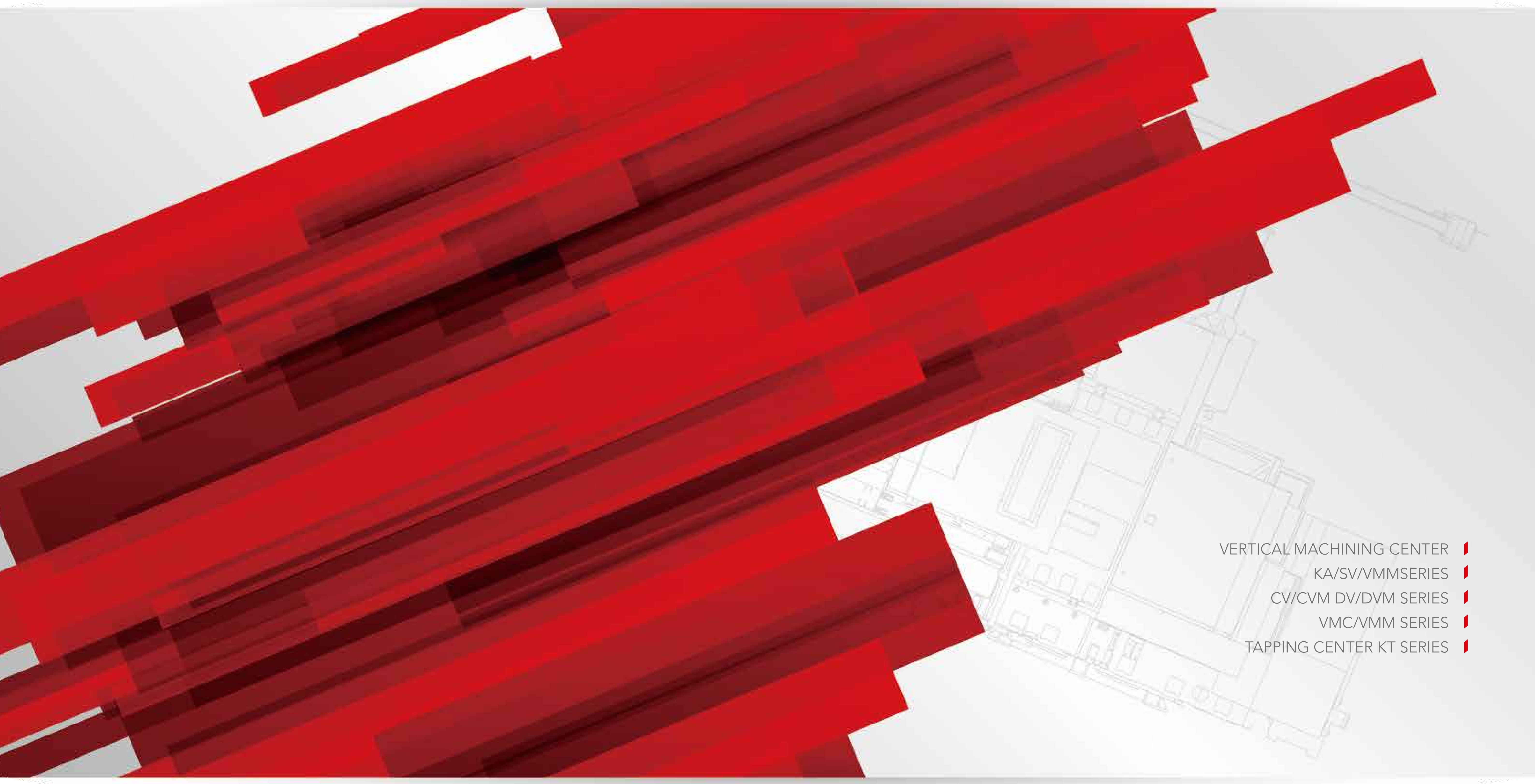

VERTICAL MACHINING CENTER

KA/SV/VMMSERIES

CV/CVM DV/DVM SERIES

VMC/VMM SERIES

TAPPING CENTER KT SERIES

kafo

KAO FONG MACHINERY CO., LTD.

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Version：May,2016

KAO FONG MACHINERY CO., LTD.

ABOUT US

TAIWAN EXCELLENCE

There are hundred thousands of KAFO machines running in worldwide, such as Europe, Middle East, Africa, Asia, Australia, South America,etc.

HOTA INDUSTRIAL MFG. CO., LTD.

KAO FONG MACHINERY CO., LTD.

KAO FONG HORIZONTAL & DOUBLE COLUMN MACHINING CENTER PRODUCTION LINE

KAO FONG VERTICAL MACHINING CENTER PRODUCTION LINE

GLOBAL SALES & SERVICE NETWORK

Think Globally Act Locally | Use Enterprise Resource Effectively

KAO FONG MACHINERY CO., LTD.

SPINDLE

POWERFUL / HIGH SPEED AND PRECISION

BT-40

GEAR HEAD SPINDLE	7,000 rpm
BELT HEAD SPINDLE	10,000 rpm
DIRECT-DRIVEN	15,000 rpm

BT-50

GEAR HEAD SPINDLE	7,000 rpm
DIRECT-DRIVEN SPINDLE	10,000 rpm

ASSEMBLY

A Spindle assembly and adjustment in clean room with constant temperature and humidity

B Assembly KAFO gear box and head unit in clean room

C Scrapping-The difference from other brand, with the KAFO line of Machining Centers, every component surface is finished by hand-scraping for a proper fit, ensuring that the machine itself is geometrically correct and long lasting.

The hand-scraping process is labor intensive and must be performed by skilled craftsman who are trained in the technique. Machine components must be placed then removed up to 5 times to confirm that the machine base in both level and square.

D Spindle, gear box, and spindle motor balance test

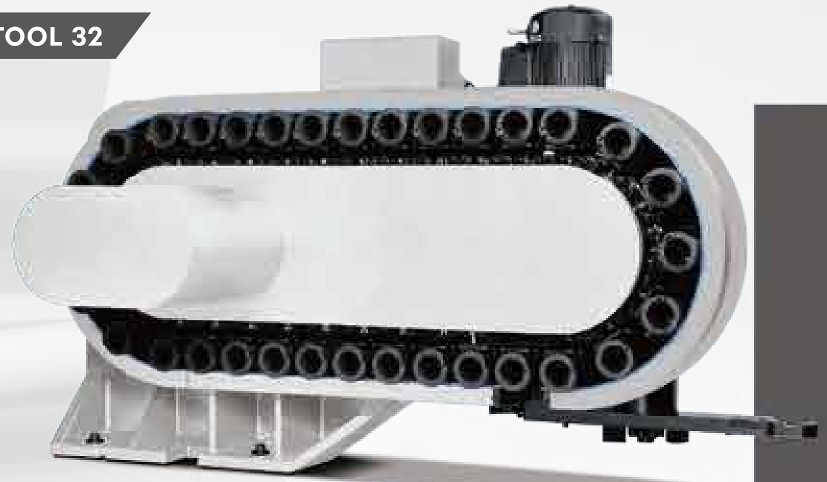
E World class spindle bearings

TAIWAN EXCELLENCE

TOOL MAGAZINE

FAST AND RELIABLE ATC UNIT

TOOL 32



AUTO TOOL CHANGER

Tool change time
2.8 sec. (T-T)

TOOL CAPACITY

Standard: 24
Option: 16, 20, 30, 32, 40

TOOL 24

TOOL 16

CUTTING PERFORMANCE

FACE MILLING

Workpiece material: S45C(SAE 1045)
Tool used: Ø80mm face mill
Spindle Speed: 700 rpm
Feedrate: 2,000 mm/ min
Depth/Width of Cut: 4 mm / 70 mm
Metal removal rate: 560 cm^3/ min

DRILLING

Workpiece material: S45C(SAE 1045)
Tool used: Ø50mm insert drill
Spindle Speed: 1,500 rpm
Feedrate: 180 mm/ min
Metal removal rate: 353 cm^3/ min

TAPPING

Workpiece material: S45C(SAE 1045)
Tool used: M42 X 4.5P tap
Spindle Speed: 200 rpm
Feedrate: 900 mm/ min

TAPPING

Workpiece material: S45C(SAE 1045)
Tool used: M2 X 0.4P tap
Spindle Speed: 1,200 rpm
Feedrate: 480 mm/ min

Spindle spec: BT-50,Gear Head 6000rpm, Motor Fanuc a15/7000i(15/18.5kw)

KAO FONG

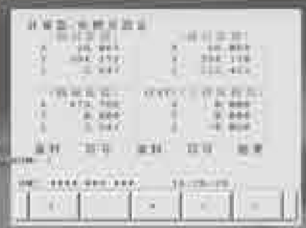
CUSTOMIZED CALCULATOR SOFTWARE FEATURES (option)

MULTI-FUNCTION STATE DISPLAY

- SPINDLE/AXIS LOAD
- TOOLS STATE DISPLAY
- CONTROLLER RUNNING TIMER
- FEED RATE STATE
- SPINDLE SPEED STATE
- COORDINATE STATE
- WORK PIECES COUNTER
- DATE/TIME STATE
- MACHINING TIME STATE
- SOFT-KEY FUNCTION

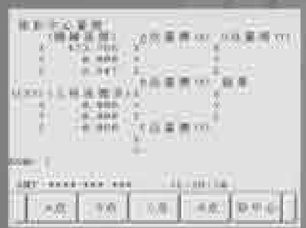
G-MENU

The G-menu function, easy-processing module for customer.



CALCULATING FUNCTION

Calculating function provided customers with fast calculation and completion of the workpiece coordinate corrections and setting.



CENTER OF RECTANGLE FUNCTION

Measured rectangular workpiece four-point and calculate the rectangular center of the workpiece coordinates and tilt angle.

CENTER OF CIRCLE FUNCTION

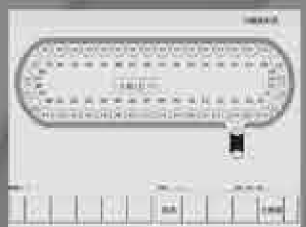
Provide customers with three points to find the center of the circle, user-friendly setting mold.

TOOL LENGTH MEASUREMENT AND SETTING

Manually setting tool length and compensating numbers. After finishing the measurement, it could change to next tool.

TOOL LENGTH MEASUREMENT AND SETTING

Manually setting tool length and compensating numbers. After finishing the measurement, it could change to next tool.



INTELLIGENT ATC SYSTEM MANAGEMENT

Displaying of the tool number, tool pot number and preparation tool number can be pre-set the tool type in the form.

INTELLIGENT ATC SYSTEM MANAGEMENT

Check and set of user-friendly tool storage, and display the program number, feed rate and spindle speed, allowing users to catch processing states.

RIGOR PROCESS OF QUALITY CONTROL AND INSPECTION

LASER INSPECTION

3D CIRCULAR BALL MILLING

RIGIDITY TEST

3D PROBE SYSTEM QUALITY ASSURANCE (CMM)

BALL BAR INSPECTION

VIBRATION TEST

MACHINING PRODUCTS

KAO FONG

KT SERIES TAPPING CENTER

KT- 500

FEATURES

TOOL MAGAZINE AND SPINDLE

- KT Series adopts Direct-driven spindle 20000rpm, and the spindle nose is added gear for meshing with the tool magazine gear when tool changing.
- Gripper arm type of GX series adopts spindle servo motor with the gear ratio of umbrella type when tool changing.

CHIP FLUSHING FUNCTION ON HEAD UNIT

- When the ATC system runs the tool change function, it goes through the cutting fluid to clean the tool taper and spindle. It prevents the chips from sticking to spindle and tool taper which maintains the stability of machining accuracy.

TELESCOPE COVER

- KT Series adopts two-steps telescope cover on X and Y axis, to strengthen the function of cutting fluid and chips prevention. In addition, it can relieve the load on the telescope cover and increase the durability of the telescope cover and the cushion.
- Z axis uses scaled telescope cover to enhance protection and reduce noise.
- Tapping center provides high-speed production volume and high-accuracy machining, suited for vehicle parts, casting and IT parts.

SPINDLE POWER- TORQUE DIAGRAM

Fanuc ail 2-10000i

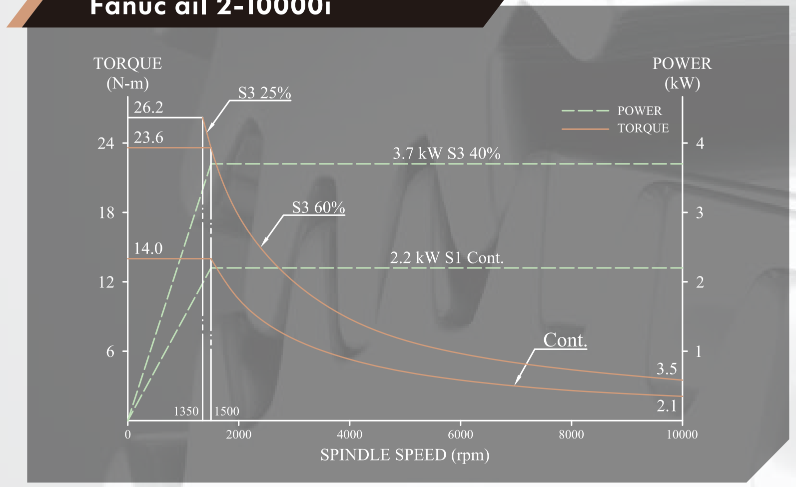
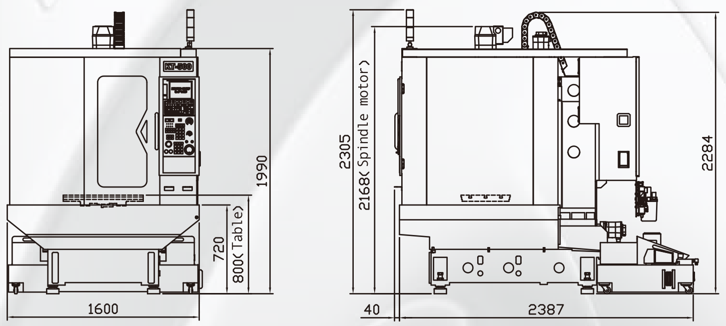
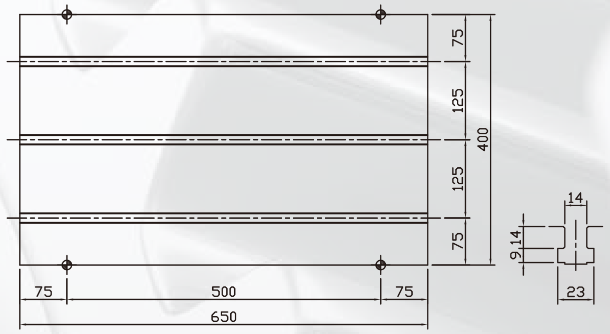


TABLE AND MACHIME LAYOUT



KT TABLE VIEW



MODEL			KT-500
Travel			
X-axis		mm	500
Y-axis		mm	400
Z-axis		mm	330
Guide Way- X/Y/Z		type	X/Y : 23 Ball-Type Linear Guide Way Z : 28 Ball-Type Linear Guide Way
Distance From Spindle Nose To Table Surface		mm	150-480
Distance From Spindle Center To The Track Surface Of Z-axis		mm	429(400)
Table			
Table Dimension		mm	650 × 400
Max. Loading Capacity		kgs	300
T-Slots (number*width*pitch)		no x mm	3 × 14mm × 125mm
Spindle			
Spindle Speed (ST)		rpm	Direct-Driven 10000
Spindle Speed (OP)		rpm	Direct-Driven 20000
Spindle Taper		type	#30
Spindle Bearing Bore Diameter		mm	Ø40
Feed			
Rapid Travel Rate (X/Y/Z)		m/min	48/48/48
Cutting Rate		m/min	15
Manual JOG Feed Rate		m/min	4 (20 steps)
ATC			
Tool Shank Type		type	MAS BT-30(*CAT-30/*DIN-30)
Pull Stud		type	MAS BT-30/P30-T-1 (*CAT-30/*DIN-30)
Auto Tool Change System			KT Series do not support ATC
Magazine Capacity (ST)		tools	16
Magazine Capacity (OP)		tools	20
Max. Tool Diameter (with adjacent tool)		mm	Ø80
Max. Tool Diameter (without adjacent tool)		mm	Ø150
Max. Tool Length		mm	200
Max. Tool Weight		kgs	16T: 2kg/tool (Total Weight 32kg) 3kg/tool (Total Weight 32kg)
			20T: 2kg/tool (Total Weight 40kg) 3kg/tool (Total Weight 40kg)
Tool Change Time (adjacent tool)		sec	1.8
Tool Change Time (tool to tool)		sec	2.1
Time For Tool Magazine Rotating One Circle		sec	1.5
Motor (FANUC)			
Spindle Motor (cont./30min) (ST)		kw	2.2/3.7
Feed Motor X/Y/Z		kw	2.5 / 2.5 / 2.5
Coolant Motor		kw	0.75
Power Supply			
Power Supply		KVA	25
Compressed Air Supply		Mpa · l/min	0.6,500
Coolant Tank Capacity		L	205
Controller			FANUC/ MITSUBISHI
External Dimension			
Width		mm	1600
Length		mm	2430
Height		mm	2305
Net Weight		Kgs	2000
Accuracy (following values were tested in the temperature-controlled room			
ISO 10791 Accuracy	Positioning	mm	0.006
	Repeatability	mm	0.004
JIS 6338 Accuracy	Positioning (within 300mm)	mm	±0.005
	Repeatability (within 300mm)	mm	±0.003
Packing For Export			40'HQ

KAFO reserves the right to modify the specifications without further notice.

SPECIFICATION/MODEL		KT-500
Spindle		
BT-30 Direct-Driven 10000rpm (2.2/3.7kw)		●
BT-30 Direct-Driven 20000rpm (2.2/3.7kw)		○
Tool Magazine		
Magazine Capacity	16 Tool (Gripper Arm Type)	●
	20 Tool (Gripper Arm Type)	○
Tool		
Tool Shank	MAS BT-30	●
	CAT-30	☆
	DIN-30	☆
Pull Stud	MAS BT-30/P30T-1	●
Coolant		
Coolant System		●
Coolant Through Spindle		×
Coolant Through Tool And Tool Holder		×
Oil Skimmer		○
Oil-Mist Coolant System		×
Chip Flush Coolant System		○
Coolant Gun		○
Chip disposal system		
Lift-Up Chip Conveyor (Chain Type)		○
Lift-Up Chip Conveyor (Scrape Type)		○
Air Blast Function For Workpiece (M07)		●
Spindle Air Blast		☆
Oil-Mist Collection System		×
Measurement System		
Tool Length Measurement		○
Workpiece Measurement		○
Operation Support		
Auto Power Off (M30)		●
Automatic Door		×
Manual Pulse Generator (MPG)		●
High Accuracy Control		
Liner Scales (axis X,Y,Z)		×
Safety System		
Full Enclosure		●
L Type Splash Guard		×
Splash Guard For Table		×
Air Pressure Detection System		○
Others		
Interior Lighting Lamp (Fluorescent Lamp*1)		○
Work Light		×
Tri-Color Status Light		●
Leveling Bolts And Pads		●
Tool Box		●
4th Axis Interface		○
Rotary Table 4th Axis		☆
Air Conditioner Unit For Electric Cabinet		○
KAFO Customized Calculator Software Function		○
Z-axis Riser		☆
Z-axis Travel Travel Extend		×

● : Standard Specification ○ : Optional Specification
☆ : Consulting Required X : Inadaptable
KAFO reserves the rights to modify the specifications without further notice.

KAO FONG

KA/SV/VMM SERIES VERTICAL MACHINING CENTER

KA- 24

10.4LCD(Opt.)

FEATURES

- The 3-axes motors and ballscrews are directly drived and pre-pulled, which has good precision and no backlash.
- Compact design, with rear-side chip removing, needs smaller floor space and is beneficial for factory layout.
- The 3-axes slide way use the high precision linear guide ways to reach the rapid speed of 48m/min on each axis.
- The belt type spindle in 10,000rpm and direct driving spindle 12,000rpm are available for meeting customer's needs.

KA- 32

Tooling Rack(Opt.)

Storage Shelf(Opt.)

FEATURES

- The features of direct-driven spindle are low noise, less backlash, and little vibration.
- Spindle bearing allocation adopts long span structure, which can extend spindle life with long-term operations.
- Z-axis is driven by servo motor without counter-weight designed which can upgrade the performance during 3D high speed machining.
- Power Failure Detection Module ensures no damage on machine and workpiece.
- User-friendly designed Tooling Rack and Storage Shelf.(Opt.)

KA- 40

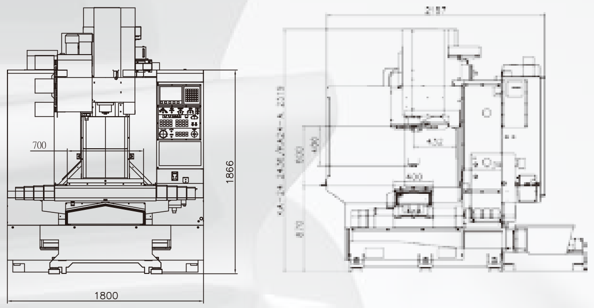
Tooling Rack(Opt.)

Storage Shelf(Opt.)

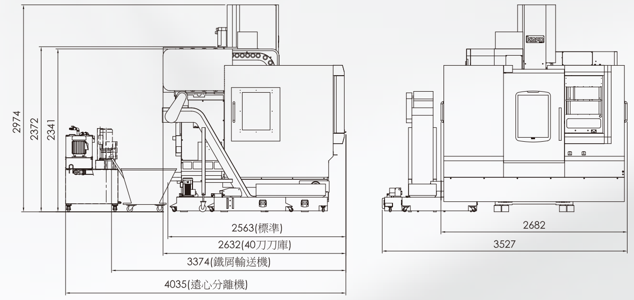
SV-1000

TABLE AND MACHINE LAYOUT

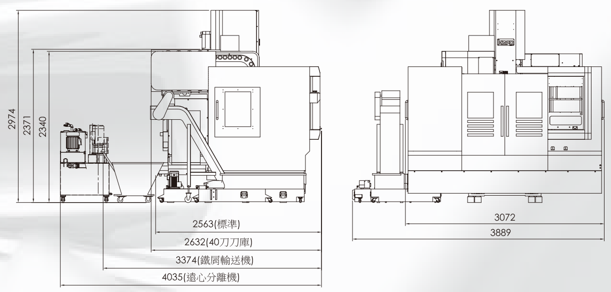
KA- 24



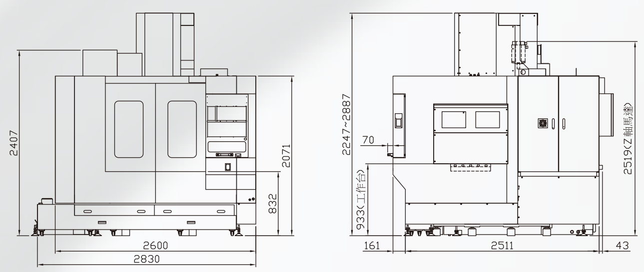
KA- 32



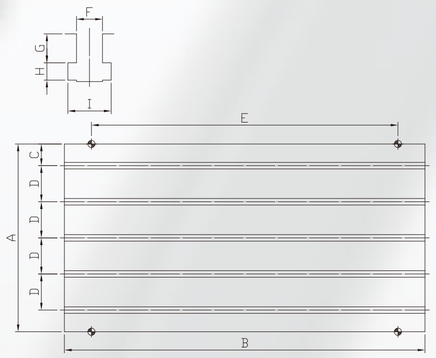
KA- 40



SV-1000



KA/SV TABLE VIEW



KA/SV TABLE SIZE

	A	B	C	D	E	F	G	H	I
KA-24/VMM-24 KA-24A/VMM-24A	400	700	75	125	600	14	18	9	23
KA-32/VMM-32	520	1000	60	100	850	18	20	12	30
KA-40/VMM-40	520	1150	60	100	1050	18	20	12	30
SV-1000/VMM-1000	520	1150	60	100	1020	18	20	12	30

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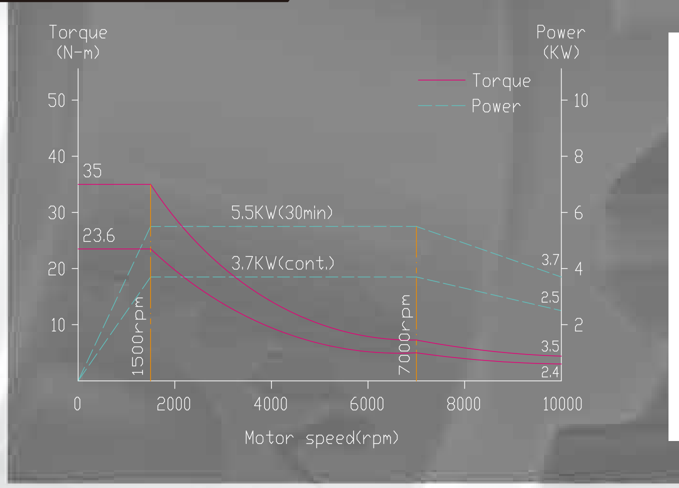
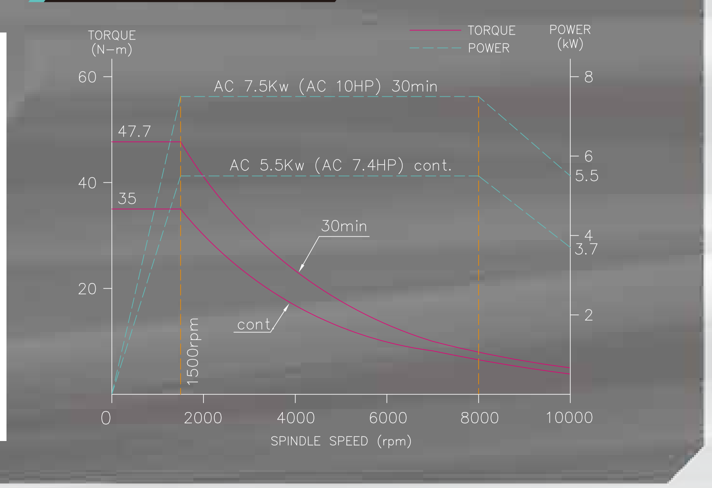
SPINDLE POWER-TORQUE DIAGRAM

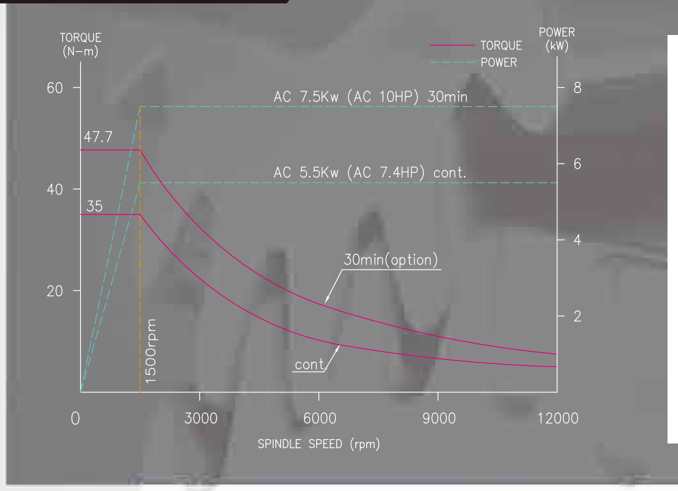
FANUC a3/10000i



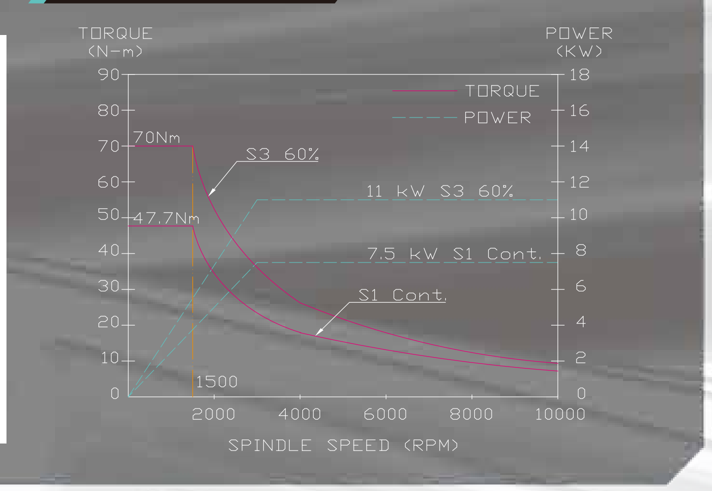
FANUC a6/10000i



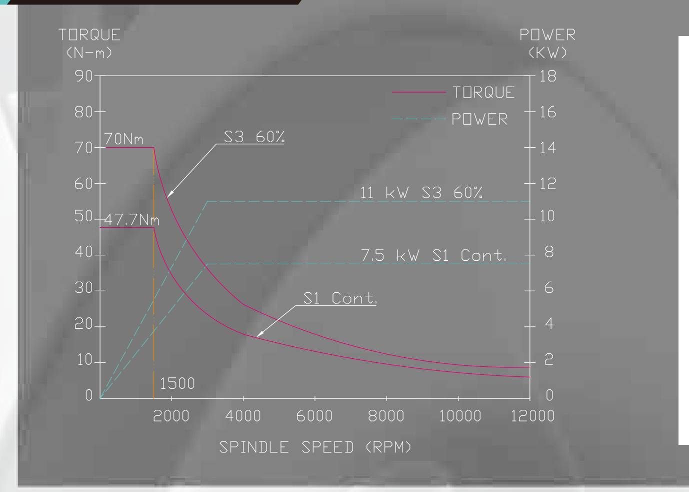
FANUC a6/12000i



FANUC a8/10000i



FANUC a8/12000i



FANUC aT8/12000i

SERIES SPECIFICATION

KA/SV/VMM

MODEL		KA-24 VMM-24	KA-24A VMM-24A	KA-32 VMM-32	KA-40 VMM-40	SV-1000 VMM-1000
Travel						
X-axis	mm	600		850	1050	1020
Y-axis	mm	400		520		520
Z-axis	mm	400		635		640
Guide Way-X/Y/Z	type	30mm Ball-Type Linear Guide Way		35mm Ball-Type Linear Guide Way		35mm Ball-Type Linear Guide Way(Roller-Type)
Distance From Spindle Nose To The Table Surface	mm	200-600		100-735		100-740
Distance From Spindle Center To The Track Surface Of Z-axis	mm	432(430)		604(545)		580(550)
Table						
Table Dimension	mm	700x400		1000x520	1150x520	1150×520
Max. Loading Capacity	kgs	200		500		600
T-Slots (number*width*pitch)	no x mm	3 X 14mm X 125mm		5 X 18mm X 100mm		5×18mm×100mm
Spindle						
Spindle Speed (ST)	rpm	Belt Head 10000		Direct-Driven 10000		Belt Head 8000
Spindle Speed (OP)	rpm	Direct-Driven 10000/12000/15000		Direct-Driven/ Belt Head 10000/12000		Belt Head 10000 Direct-Driven 10000/12000/15000
Spindle Taper	type	#30	#40			#40
Spindle Bearing Bore Diameter	mm	ø50	ø60	ø70		ø70
Feed						
Rapid Travel Rate (X/Y/Z)	m/min	48/48/48		36/36/36		36/36/36(48/48/48)
Cutting Rate	m/min	10				
Manual JOG Feed Rate	m/min	4 (20 steps)				
ATC						
Tool Shank Type	type	MAS BT-30	MAS BT-40 (*CAT-40/*DIN-40)			MAS BT-40
Pull Stud	type	MAS BT-30/P30-T-1	MAS BT-40/P40-T-1 (*CAT-40/*DIN-40)			MAS BT-40/P40-T-1
Auto Tool Change System		VMM Series do not support ATC				
Magazine Capacity (ST)	tools	20 (Cam Type)		24(Cam Type)		
Magazine Capacity (OP)	tools	30 (Cam Type)	16/36 (Cam Type)	16 (Umbrella Type) / 32/40 (Cam Type)		16(Umbrella Type)
Max. Tool Diameter (with adjacent tool)	mm	ø 65	ø75			ø75
Max. Tool Diameter (without adjacent tool)	mm	ø130	ø150			ø150
Max. Tool Length	mm	200	250	300		300
Max. Tool Weight	kgs	3	7			7
Tool Change Time (tool to tool)	sec	1.5	2	2		2
Tool Change Time (time to time)	sec	2.5	3	4.5		4.4
Motor (FANUC)						
Spindle Motor (cont./30min)(ST)	kw	3.5/5.5	5.5/7.5			7.5/11
Spindle Motor (cont./30min)(OP)	kw	-		7.5/11		11/15/18.5
Feed Motor X/Y/Z	kw	1.6/1.6/3.0		3.0/3.0/4.0		3/3/4
Coolant Motor	kw	0.75				0.75
Power Supply						
Power Supply	KVA	15		20		15
Compressed Air Supply	Mpa , l/min	0.6 , 500				0.6, 500
Coolant Tank Capacity	L	200		420	420	250
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN				
External Dimension						
Width	mm	1800		3527	3889	2600
Length	mm	2577		2563	2563	2800
Height	mm	2436	2519	2974	2974	2890
Net Weight	Kgs	2900/2700	3100/2820	5400/5050	5800/5450	5500
Accuracy (following values were tested in the temperature-controlled room)						
ISO 10791 Accuracy — Positioning	mm	0.009				0.009
ISO 10791 Accuracy — Repeatability	mm	0.006				0.006
JIS 6338 Accuracy — Positioning (within 300mm)	mm	±0.004				±0.004
JIS 6338 Accuracy — Repeatability (within 300mm)	mm	±0.002				±0.002
Packing For Export		40'HQ				40'HQ

KAFO reserves the right to modify the specifications without further notice.

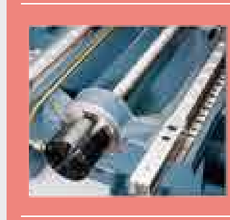
KAO FONG

CV/CVM DV/DVM SERIES VERTICAL MACHINING CENTER

CV/DV SERIES FEATURES

- CV/DV series was designed for the high-efficiency processing demand industrial of models from KAO FONG machinery, most suitable for mass components production of Vehicle parts, 3C and IT industry processing, also applicable to all kinds of precision molds production and processing.

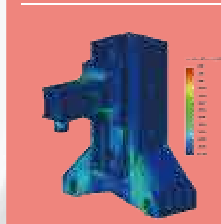
ROLLER-TYPE LINEAR GUIDEWAY



BALLSCREW COOLANT SYSTEM

DIRECT DRIVEN WITH AXES SERVER MOTOR

Z-AXIS WITHOUT COUNTER WEIGHT BLOCKS



STRESS ANALYZE OF CASTING

CV-7A

Option

CV-9A

DV-11B

CV-9B APC

FEATURES

- CV9-APC is a C-type machining center with #40 taper and Auto Pallet Changer system(APC) as standard.
- It is high precision and high efficiency for machining parts, mainly used for mass production of Automotive Industry, Electronics Industry and Aerospace Industry.

CV-14BH

CV-14/CV-16 COMMON FEATUERS

- 3 axes adopt 45mm type precise roller linear guides, provides superior rigidity, heavy-loading capacity, low friction and excellent performance.
- The machine bed, column, spindle head, cross slides and table are all analyzed and optimized by FEM tests. This design assures high stability and cutting rigid performance, and choosing of center cooling system through ballscrews can reduce the thermal compensation and enhance the accuracy.
- Y axis with 1400mm distance between guideways.

OPTION:BT-50

- CV-14AH / CV-14BH
- CV-16AH / CV-16BH

CV-16A

KAO FONG

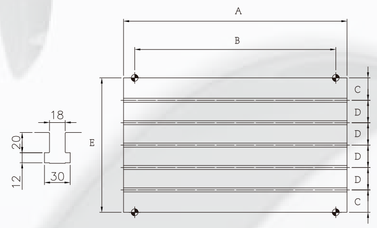
DV/DVM SERIES VERTICAL MACHINING CENTER

DV-168

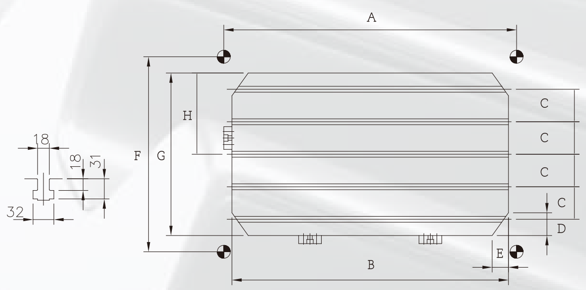
FEATURES

- Linear guide way of X-axis is 45mm and Y-axis is 55mm, Z-axis is box way. This type can adopt the BT-50 Direct-Driven or Built-in type 10,000rpm spindle.
- Y-axis with 4 large spans linear quide way design, and all of them are 55mm roller linear guides. The travel enlarge to 850mm, which can satisfy the processing demand of mold & die industry and also provide the excellent cutting performance.

CV/DV TABLE SIZE



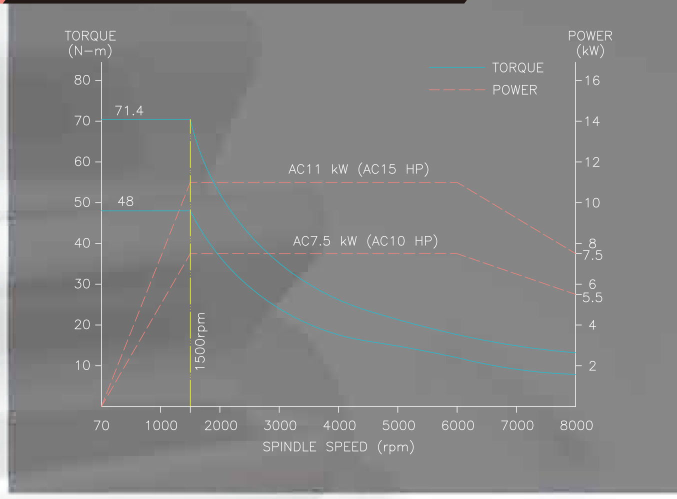
	A	B	C	D	E
CV/CVM-7	860	760	60	100	520
CV/CVM-9 DV/DVM-9	1000	900	100	100	600
CV/CVM-11 DV/DVM-11	1200	1100	100	100	600
CV-14	1550	1400	50	150	700
CV-16	1750	1600	50	150	700
CV/DV-168	1700	1600	50	150	850
CV/DV-188	1900	1800	50	150	850



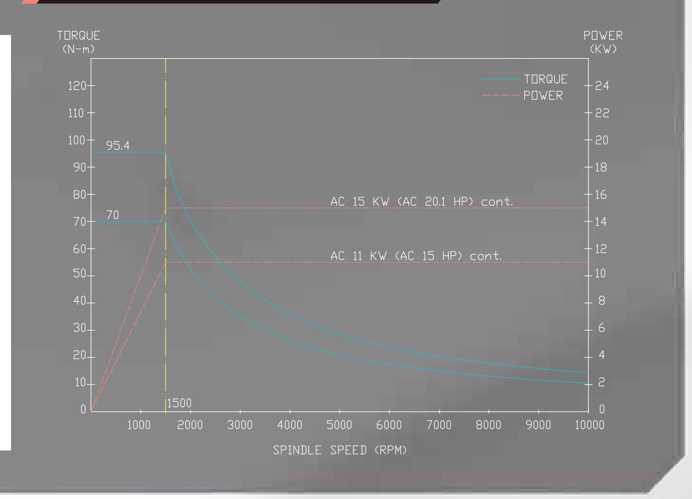
	A	B	C	D	E
CV-9 APC	900	850	100	70	50
	F	G	H		
CV-9 APC	600	500	250		

SPINDLE POWER-TORQUE DIAGRAM

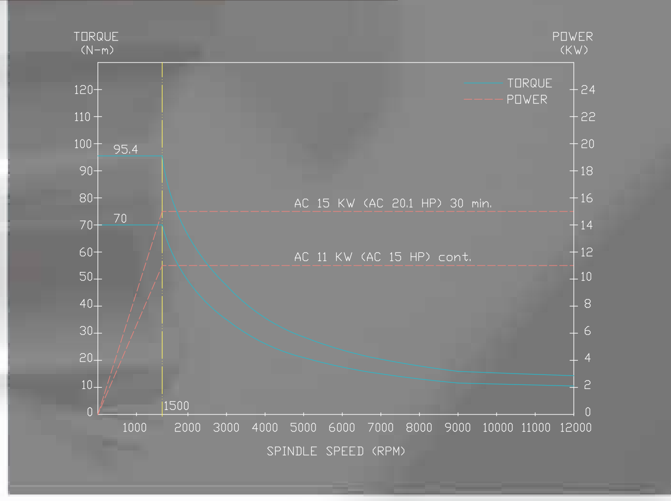
FANUC a8/8000i (Belt Head)



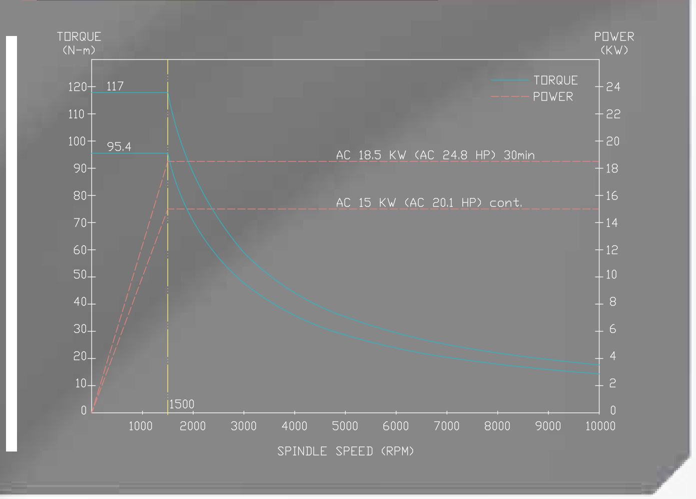
FANUC a12/10000i



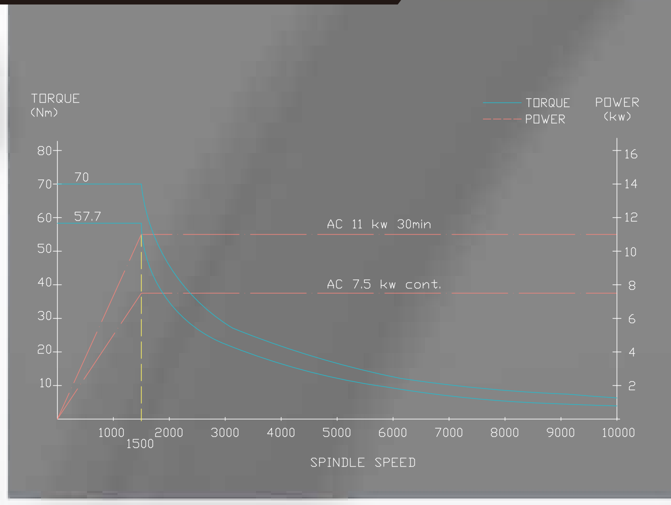
FANUC a12/12000i



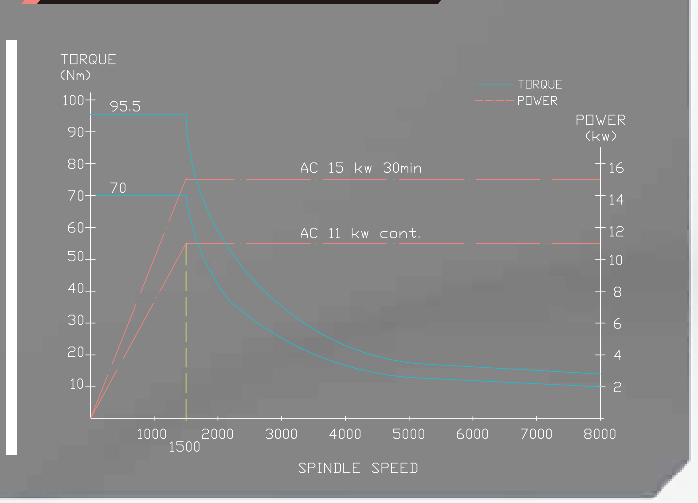
FANUC a15/10000i



MITSUBISHI SJ-D11/100-01



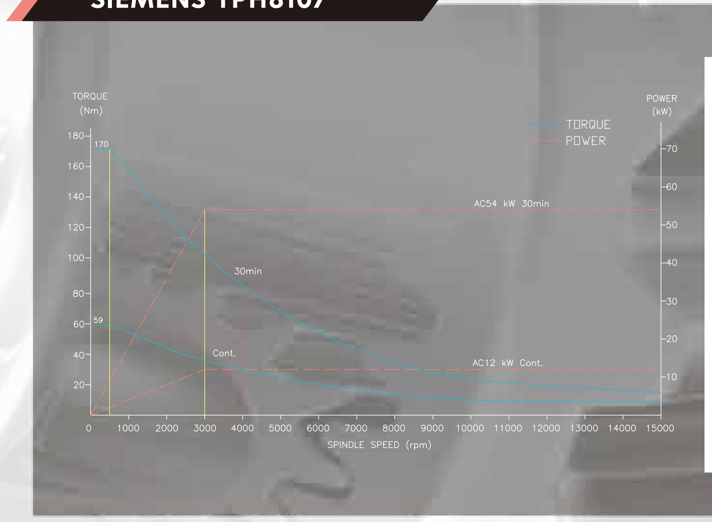
MITSUBISHI SJ-V22/06ZT



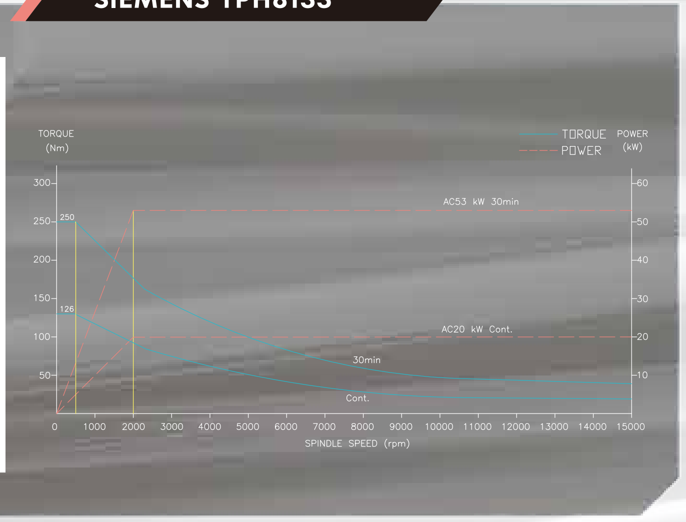
KAO FONG

SPINDLE POWER-TORQUE DIAGRAM

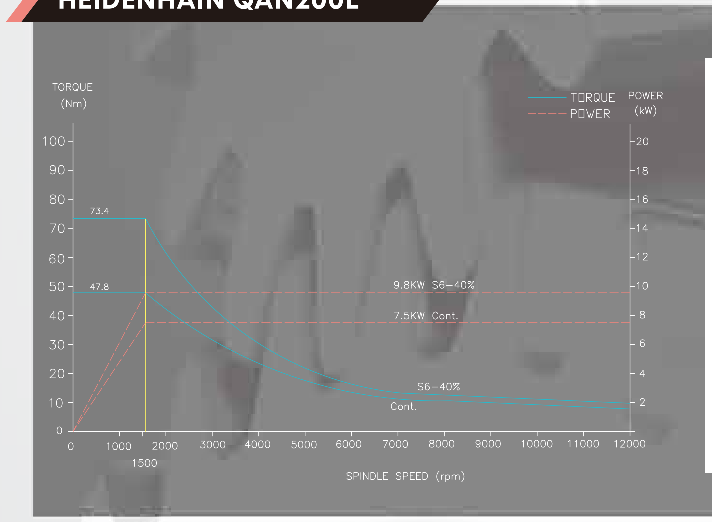
SIEMENS 1PH8107



SIEMENS 1PH8133



HEIDENHAIN QAN200L



HEIDENHAIN QAN200U

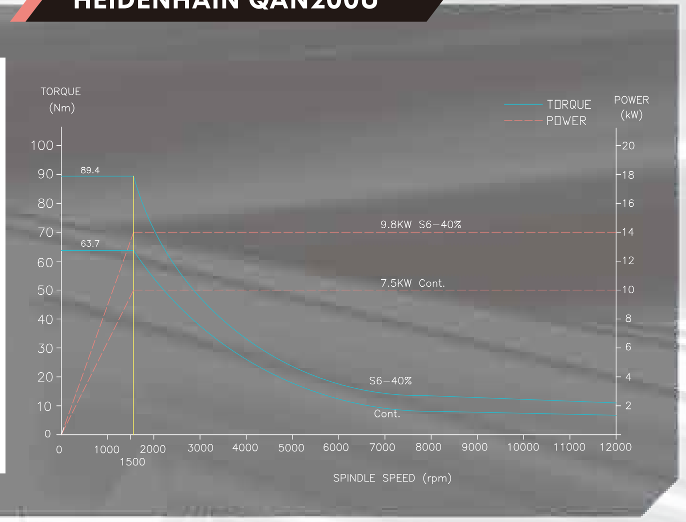
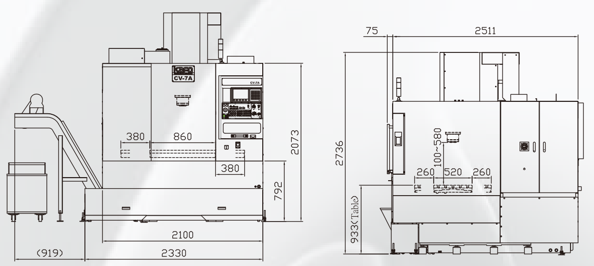


TABLE AND MACHINE LAYOUT

CV-7



CV-9 APC

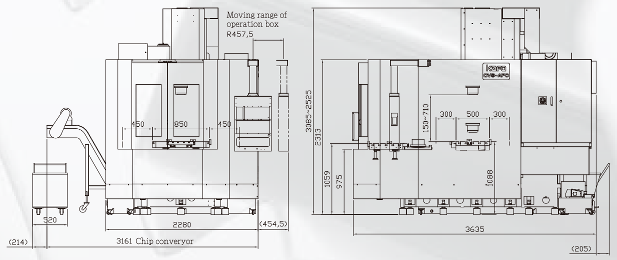
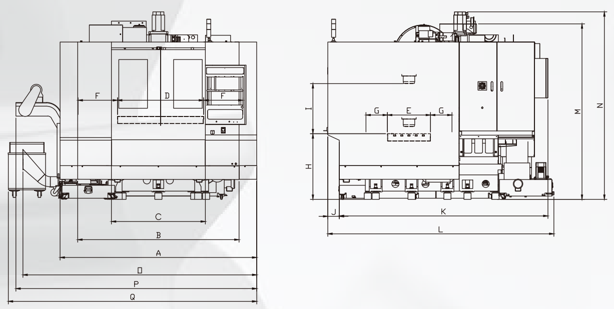
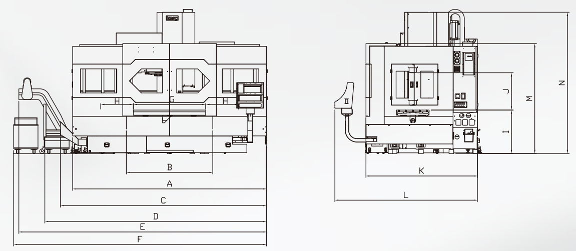


TABLE AND MACHINE LAYOUT

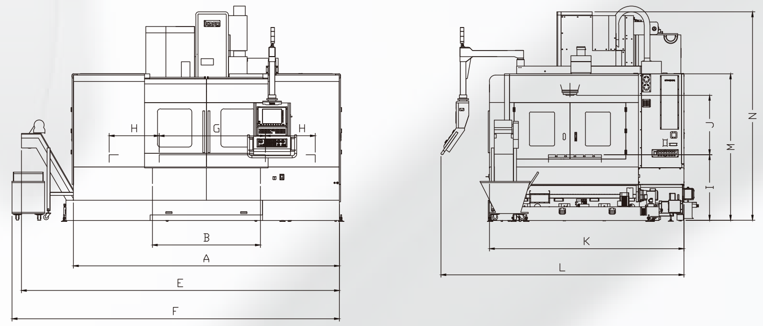
CV/DV-9/11



CV-14/16



CV-168/188



	A	B	C	D	E	F	G
CV-9A/B	-	2250	1150	1000	600	450	300
DV-9A/B	-	2250	1150	1000	600	450	300
DV-9C	-	2250	1150	1000	600	450	300
CV-11A/B	2740	2250	1310	1200	600	550	300
DV-11A/B	2740	2250	1310	1200	600	550	300
DV-11C/G	2740	2250	1310	1200	600	550	300

	H	I	J	K	L	M
CV-9A/B	980	100-700	160	2909	3150	2360-2960
DV-9A/B	980	100-700	160	2949	3190	2360-2960
DV-9C	980	100-700	160	2949	3190	2380-2980
CV-11A/B	980	100-700	160	2909	3150	2360-2960
DV-11A/B	980	100-700	160	2949	3190	2360-2960
DV-11C/G	980	100-700	160	2949	3190	2380-2980

	N	O	P	Q
CV-9A/B	2615	3004	3127	3235
DV-9A/B	2615	3004	3127	3235
DV-9C	2615	3004	3127	3235
CV-11A/B	2615	3260	3360	3460
DV-11A/B	2615	3260	3360	3460
DV-11C/G	2615	3260	3360	3460

	A	B	C	D	E	F	G
CV-14A/B	3686	1652	4358	4690	4820	4930	1550
CV-14AH/BH	3686	1652	4358	4690	4820	4930	1550
CV-16A/B	4152	1850	4820	5120	5270	5380	1750
CV-16AH/BH	4152	1850	4820	5120	5270	5380	1750
CV/DV-168	4400	1730	-	-	5200	5300	1700
CV/DV-188	4700	1930	-	-	5500	5600	1900

	H	I	J	K	L	M
CV-14A/B	700	933	100-800	2386	3230	2358
CV-14AH/BH	700	933	100-800	2386	3230	2358
CV-16A/B	800	933	100-800	2386	3230	2358
CV-16AH/BH	800	933	10	2386	3230	2358
CV/DV-168	800	1050	950	3115	4000	2400
CV/DV-188	800	1050	950	3115	4000	2400

	N
CV-14A/B	2584-3030
CV-14AH/BH	2833-3072
CV-16A/B	2584-3030
CV-16AH/BH	2833-3072
CV/DV-168	2540-3340
CV/DV-188	2540-3340

SERIES SPECIFICATION

CV/CVM

MODEL			CV-7A CVM-7A	CV-7B CVM-7B
Travel				
X-axis		mm	760	760
Y-axis		mm	520	520
Z-axis		mm	480	480
Guide Way-X/Y/Z		type	35mm Roller-Type Linear Guide Way	35mm Ball-Type Linear Guide Way
Distance From Spindle Nose To The Table Surface		mm	100~580	100~580
Distance From Spindle Center To The Track Surface Of Z-axis		mm	581(550)	
Table				
Table Dimension		mm	860x520	860x520
Max. Loading Capacity		kgs	300	300
T-Slots (number*width*pitch)		no x mm	5 X 18mm X 100mm	5 X 18mm X 100mm
Spindle				
Spindle Speed (ST)		rpm	Direct-Driven 10000	Belt Head 8000
Spindle Speed (OP)		rpm	12000/15000	10000
Spindle Taper		type	#40	
Spindle Bearing Bore Diameter		mm	ø70	
Feed				
Rapid Travel Rate (X/Y/Z)		m/min	48/48/48	36/36/36
Cutting Rate		m/min	10	
Manual JOG Feed Rate		m/min	4(20 steps)	
ATC				
Tool Shank Type		type	MAS BT-40(*CAT-40/*DIN-40)	
Pull Stud		type	MAS BT-40/P40-T-1 (*CAT-40/*DIN-40)	
Auto Tool Changing System			CVM Series do not support ATC	
Magazine Capacity (ST)		tools	24 (Cam Type)	
Magazine Capacity (OP)		tools	16 (Umbrella Type)	
Max. Tool Diameter (with adjacent tool)		mm	ø75	
Max. Tool Diameter (without adjacent tool)		mm	ø150	
Max. Tool Length		mm	300	
Max. Tool Weight		kgs	7	
Tool Change Time (tool to tool)		sec	2	2
Tool Change Time (time to time)		sec	4.4	4.4
Motor (FANUC)				
Spindle Motor (cont./30min)(ST)		kw	7.5/11	
Spindle Motor (cont./30min)(OP)		kw	11/15/18.5	
Feed Motor X/Y/Z		kw	3/3/4	
Coolant Motor		kw	0.75	
Power Supply				
Power Supply		KVA	20	
Compressed Air Supply		Mpa · l/min	0.6, 500	
Coolant Tank Capacity		L	250	
Controller			FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN	
External Dimension				
Width		mm	2330	
Length		mm	2586	
Height		mm	2736	
Net Weight		Kgs	5100/4800	
Accuracy (following values were tested in the temperature-controlled room)				
ISO 10791 Accuracy	Positioning	mm	0.009	
	Repeatability	mm	0.006	
JIS 6338 Accuracy	Positioning (within 300mm)	mm	±0.004	
	Repeatability (within 300mm)	mm	±0.002	
Packing For Export			40'HQ	

KAFO reserves the right to modify the specifications without further notice.

SERIES SPECIFICATION

CV/CVM

MODEL			CV-9A CVM-9A	CV-9B CVM-9B	CV-11A CVM-11A	CV-11B CVM-11B
Travel						
X-axis		mm	900	900	1100	1100
Y-axis		mm	600	600	600	600
Z-axis		mm	600	600	600	600
Guide Way-X/Y/Z		type	45mm Roller-Type Linear Guide Way			
Distance From Spindle Nose To The Table Surface		mm	100~700	100~700	100~700	100~700
Distance From Spindle Center To The Track Surface Of Z-axis		mm	669(610)		669(610)	
Table						
Table Dimension		mm	1000 x 600	1000 x 600	1200 x 600	1200 x 600
Max. Loading Capacity		kgs	650	650	800	800
T-Slots (number*width*pitch)		no x mm	5 X 18mm X 100mm			
Spindle						
Spindle Speed (ST)		rpm	Direct-Driven 10000	Belt Head 8000	Direct-Driven 10000	Belt Head 8000
Spindle Speed (OP)		rpm	12000/15000	10000	12000/15000	10000
Spindle Taper		type	#40			
Spindle Bearing Bore Diameter		mm	ø70			
Feed						
Rapid Travel Rate (X/Y/Z)		m/min	48/48/48	36/36/36	48/48/48	36/36/36
Cutting Rate		m/min	10			
Manual JOG Feed Rate		m/min	4(20 steps)			
ATC						
Tool Shank Type		type	MAS BT-40(*CAT-40/*DIN-40)			
Pull Stud		type	MAS BT-40/P40-T-1 (*CAT-40/*DIN-40)			
Auto Tool Changing System			CVM Series do not support ATC			
Magazine Capacity (ST)		tools	24 (Cam Type)			
Magazine Capacity (OP)		tools	32/40 (Cam Type)			
Max. Tool Diameter (with adjacent tool)		mm	ø75			
Max. Tool Diameter (without adjacent tool)		mm	ø150			
Max. Tool Length		mm	300			
Max. Tool Weight		kgs	7			
Tool Change Time (tool to tool)		sec	2	2	2	2
Tool Change Time (time to time)		sec	4.5	4.5	4.5	4.5
Motor (FANUC)						
Spindle Motor (cont./30min)(ST)		kw	7.5/11			
Spindle Motor (cont./30min)(OP)		kw	11/15/18.5		11/15/18.5	
Feed Motor X/Y/Z		kw	3/4/7		3/4/7	
Coolant Motor		kw	0.75		0.75	
Power Supply						
Power Supply		KVA	20		20	
Compressed Air Supply		Mpa · l/min	0.6, 500			
Coolant Tank Capacity		L	420		420	
Controller			FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN			
External Dimension						
Width		mm	3235		3460	
Length		mm	3150		3150	
Height		mm	2960		2960	
Net Weight		Kgs	6750/6400		6950/6600	
Accuracy (following values were tested in the temperature-controlled room)						
ISO 10791 Accuracy	Positioning	mm	0.009			
	Repeatability	mm	0.006			
JIS 6338 Accuracy	Positioning (within 300mm)	mm	±0.004			
	Repeatability (within 300mm)	mm	±0.002			
Packing For Export			40'HQ			

KAFO reserves the right to modify the specifications without further notice.

SERIES SPECIFICATION

CV/CVM

MODEL		CV-14B CVM-14B	CV-14BH CVM-14BH	CV-16B CVM-16B	CV-16BH CVM-16BH
Travel					
X-axis	mm	1400	1400	1600	1600
Y-axis	mm	700	700	700	700
Z-axis	mm	700	700	700	700
Guide Way-X/Y/Z	type	45mm Roller-Type Linear Guide Way			
Distance From Spindle Nose To Table Surface	mm	100~800	100~800	100~800	100~800
Distance From Spindle Center To The Track Surface Of Z-axis	mm	809(740)			
Table					
Table Dimension	mm	1550x700	1550x700	1750x700	1750 x 700
Max. Loading Capacity	kgs	1000	1000	1000	1000
T-Slots (number*width*pitch)	no x mm	5 X 18mm X 150mm	5 X 18mm X 150mm	5 X 18mm X 150mm	5 X 18mm X 150mm
Spindle					
Spindle Speed (ST)	rpm	Belt Head8000	Direct-Driven 10000	Belt Head 8000	Direct-Driven 10000
Spindle Speed (OP)	rpm	Belt Head 10000 Direct-Driven 10000/12000/15000	-	Belt Head 10000 Direct-Driven 10000/12000/15000	-
Spindle Taper	type	#40	#50	#40	#50
Spindle Bearing Bore Diameter	mm	ø70	ø90	ø70	ø90
Feed					
Rapid Travel Rate (X/Y/Z)	m/min	36/36/30 (*40/40/36)	36/36/24 (*40/40/24)	36/36/30 (*40/40/36)	36/36/24 (*40/40/24)
Cutting Rate	m/min	10			
Manual JOG Feed Rate	m/min	4(20 steps)			
ATC					
Tool Shank Type	type	MAS BT-40(*CAT-40/*DIN-40)	MAS BT-50(*CAT-50/*DIN-50)	MAS BT-40(*CAT-40/*DIN-40)	MAS BT-50(*CAT-50/*DIN-50)
Pull Stud	type	MAS BT-40/P40-T-1(*CAT-40/*DIN-40)	MAS BT-50/P50-T-1(*CAT-50/*DIN-50)	MAS BT-40/P40-T-1(*CAT-40/*DIN-40)	MAS BT-50/P50-T-1(*CAT-50/*DIN-50)
Auto Tool Changing System		CVM Series do not support ATC			
Magazine Capacity (ST)	tools	24 (Cam Type)			
Magazine Capacity (OP)	tools	16,20 (Umbrella Type) / 32,40 (Cam Type)	30/40(Cam Type)	16,20 (Umbrella Type) / 32,40 (Cam Type)	30/40(Cam Type)
Max. Tool Diameter (with adjacent tool)	mm	ø75	ø108	ø75	ø108
Max. Tool Diameter (without adjacent tool)	mm	ø150	ø216	ø150	ø216
Max. Tool Length	mm	300			
Max. Tool Weight	kgs	7	15	7	15
Tool Change Time (tool to tool)	sec	2	2.8	2	2.8
Tool Change Time (time to time)	sec	5	6	5	6
Motor (FANUC)					
Spindle Motor (cont./30min)(ST)	kw	7.5/11	15/18.5	7.5/11	15/18.5
Spindle Motor (cont./30min)(OP)	kw	11/15/18.5	22/26	11/15/18.5	22/26
Feed Motor X/Y/Z	kw	4/4/7	4/4/7	4/4/7	4/4/7
Coolant Motor	kw	0.75			
Power Supply					
Power Supply	KVA	35			
Compressed Air Supply	Mpa · l/min	0.6, 500			
Coolant Tank Capacity	L	496.5			
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN			
External Dimension					
Width	mm	4690	4690	5120	5120
Length	mm	3230	3230	3230	3230
Height	mm	3030	3072	3030	3072
Net Weight	Kgs	9540/9190	9740/9040	10540/10190	10740/10040
Accuracy (following values were tested in the temperature-controlled room)					
ISO 10791 Accuracy – Positioning	mm	0.009			
ISO 10791 Accuracy – Repeatability	mm	0.006			
JIS 6338 Accuracy – Positioning (within 300mm)	mm	±0.004			
JIS 6338 Accuracy – Repeatability (within 300mm)	mm	±0.002			
Packing For Export		40'HQ			

* CV(CVM)-14/16A is Direct-Driven spindle with INA roller linear guideways. *CV(CVM)-14/16B is Blet-Head spindle with HIWIN roller linear guideways.

CV/CVM DV/DVM SERIES VERTICAL MACHINING CENTER

SERIES SPECIFICATION

CV/CVM

MODEL		CV-168 CVM-168	CV-188 CVM-188	CV-9A APC	CV-9B APC
Travel					
X-axis	mm	1600	1800	900	900
Y-axis	mm	850	850	600	600
Z-axis	mm	800	800	600	600
Guide Way-X/Y/Z	type	X: 45mm, Y/ Z: 55mm Roller-Type Linear Guide Way		45mm Rollerl-Type Linear Guide Way	
Distance From Spindle Nose To Table Surface	mm	150~950		110~710	110~710
Distance From Spindle Center To The Track Surface Of Z-axis	mm	940(875.5)		669(610)	
Table					
Table Dimension	mm	1700 x 850	1900 x 850	850 x 500 (x 2)	
Max. Loading Capacity	kgs	1500		300 (x 2)	
T-Slots (number*width*pitch)	no x mm	5 X 18mm X 150mm		5 X 18mm X 100mm	
Spindle					
Spindle Speed (ST)	rpm	Gear Head 6000		Direct-Driven 10000	Belt Head 8000
Spindle Speed (OP)	rpm	Gear Head 7000 Direct-Driven/Built-in 10000		12000/15000	10000
Spindle Taper	type	#50		#40	
Spindle Bearing Bore Diameter	mm	ø90		ø70	
Feed					
Rapid Travel Rate (X/Y/Z)	m/min	30/30/30	30/24/30	48/48/48	36/36/36
Cutting Rate	m/min	10			
Manual JOG Feed Rate	m/min	4(20 steps)			
ATC					
Tool Shank Type	type	MAS BT-50(*CAT-50/*DIN-50)		MAS BT-40(*CAT-40/*DIN-40)	
Pull Stud	type	MAS BT-50/P50-T-1(*CAT-50/*DIN-50)		MAS BT-40/P40-T-1(*CAT-40/*DIN-40)	
Auto Tool Changing System		CVM Series do not support ATC			
Magazine Capacity (ST)	tools	24 (Cam Type)			
Magazine Capacity (OP)	tools	30/40 (Cam Type)		32/40 (Cam Type)	
Max. Tool Diameter (with adjacent tool)	mm	ø108 (ø125)		ø75	
Max. Tool Diameter (without adjacent tool)	mm	ø216 (ø250)		ø150	
Max. Tool Length	mm	300			
Max. Tool Weight	kgs	15		7	
Tool Change Time (tool to tool)	sec	2.8		2	
Tool Change Time (time to time)	sec	6		4.5	
Motor (FANUC)					
Spindle Motor (cont./30min)(ST)	kw	15/18.5		7.5/11	
Spindle Motor (cont./30min)(OP)	kw	22/26		11/15/18.5	
Feed Motor X/Y/Z	kw	4/4/7		3/3/7	
Coolant Motor	kw	0.75			
Power Supply					
Power Supply	KVA	35		20	
Compressed Air Supply	Mpa · l/min	0.6, 500			
Coolant Tank Capacity	L	700		420	
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN			
External Dimension					
Width	mm	4400	4700	2280	
Length	mm	4100	4100	3840	
Height	mm	3450	3450	3085	
Net Weight	Kgs	16000/15200	16500/15700	8300	
Accuracy (following values were tested in the temperature-controlled room)					
ISO 10791 Accuracy – Positioning	mm	0.006		0.009	
ISO 10791 Accuracy – Repeatability	mm	0.004		0.006	
JIS 6338 Accuracy – Positioning (within 300mm)	mm	±0.004			
JIS 6338 Accuracy – Repeatability (within 300mm)	mm	±0.002			
Packing For Export		20'FR	40'FR	40'HQ	

*CV(CVM)-14/16AH and BH are with #50 spindle taper. *KAFO reserves the right to modify the specifications without further notice.

CV/CVM DV/DVM SERIES VERTICAL MACHINING CENTER

SERIES SPECIFICATION

DV /DVM

MODEL		DV-9A DVM-9A	DV-9B DVM-9B	DV-9C DVM-9C	DV-11A DVM-11A
Travel					
X-axis	mm	900	900	900	1100
Y-axis	mm	600	600	600	600
Z-axis	mm	600	600	600	600
Guide Way-X/Y/Z	type	X/Y: 45mm Roller-Type Linear Guide Way, Z: Box Way			
Distance From Spindle Nose To The Table Surface	mm	100~700	100~700	100~700	100~700
Distance From Spindle Center To The Track Surface Of Z-axis	mm	650(620)			
Table					
Table Dimension	mm	1000 x 600			
Max. Loading Capacity	kgs	650			800
T-Slots (number*width*pitch)	no x mm	5 X 18mm X 100mm			
Spindle					
Spindle Speed (ST)	rpm	Direct-Driven 10000	Belt Head 8000	Gear Head 6000	Direct-Driven 10000
Spindle Speed (OP)	rpm	12000/15000	10000	7000	12000/15000
Spindle Taper	type	#40			
Spindle Bearing Bore Diameter	mm	ø70		ø75	ø70
Feed					
Rapid Travel Rate (X/Y/Z)	m/min	48/48/24	36/36/24	36/36/24	48/48/24
Cutting Rate	m/min	10			
Manual JOG Feed Rate	m/min	4(20 steps)			
ATC					
Tool Shank Type	type	MAS BT-40(*CAT-40/*DIN-40)			
Pull Stud	type	MAS BT-40/P40-T-1(*CAT-40/*DIN-40)			
Auto Tool Changing System		DVM Series do not support ATC			
Magazine Capacity (ST)	tools	24 (Cam Type)			
Magazine Capacity (OP)	tools	32/40 (Cam Type)			
Max. Tool Diameter (with adjacent tool)	mm	ø75			
Max. Tool Diameter (without adjacent tool)	mm	ø150			
Max. Tool Length	mm	300			
Max. Tool Weight	kgs	7			
Tool Change Time (tool to tool)	sec	2			
Tool Change Time (time to time)	sec	4.5			
Motor (FANUC)					
Spindle Motor (cont./30min)(ST)	kw	7.5/11			
Spindle Motor (cont./30min)(OP)	kw	11/15		11/15/18.5	11/15
Feed Motor X/Y/Z	kw	3/4/3			
Coolant Motor	kw	0.75			
Power Supply					
Power Supply	KVA	20			
Compressed Air Supply	Mpa, l/min	0.6, 500			
Coolant Tank Capacity	L	420			
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN			
External Dimension					
Width	mm	3235			3460
Length	mm	3190			3190
Height	mm	2960		2980	2960
Net Weight	Kgs	7750/7400	7750/7400	7850/7500	7950/7600
Accuracy (following values were tested in the temperature-controlled room)					
ISO 10791 Accuracy – Positioning	mm	0.009			
ISO 10791 Accuracy – Repeatability	mm	0.006			
JIS 6338 Accuracy – Positioning (within 300mm)	mm	±0.004			
JIS 6338 Accuracy – Repeatability (within 300mm)	mm	±0.002			
Packing For Export		40'HQ			

KAFO reserves the right to modify the specifications without further notice.

SERIES SPECIFICATION

DV /DVM

MODEL		DV-11B DVM-11B	DV-11C DVM-11C	DV-11G DVM-11G	DV-168 DVM-168	DV-188 DVM-188
Travel						
X-axis	mm	1100	1100		1600	1800
Y-axis	mm	600	600		850	850
Z-axis	mm	600	600		800	800
Guide Way-X/Y/Z	type	X/Y: 45mm Roller-Type Linear Guide Way, Z: Box Way			X: 45mm and Y: 55mm Roller-Type Linear Guide Way; Z: Box Way	
Distance From Spindle Nose To The Table Surface	mm	100~700	100~700		150~950	
Distance From Spindle Center To The Track Surface Of Z-axis	mm	650(620)			905(875.5)	
Table						
Table Dimension	mm	1200 x 600			1700 x 850	1900 x 850
Max. Loading Capacity	kgs	800			1500	
T-Slots (number*width*pitch)	no x mm	5 X 18mm X 100mm			5 X 18mm X 150mm	
Spindle						
Spindle Speed (ST)	rpm	Belt Head 8000	Gear Head 6000		Gear Head 6000	
Spindle Speed (OP)	rpm	10000	7000		Gear Head 7000 Direct-Driven/Built-in 10000	
Spindle Taper	type	#40		#50		
Spindle Bearing Bore Diameter	mm	ø70	ø75	ø85	ø90	
Feed						
Rapid Travel Rate (X/Y/Z)	m/min	36/36/24	36/36/24		30/30/15	30/24/15
Cutting Rate	m/min	10				
Manual JOG Feed Rate	m/min	4(20 steps)				
ATC						
Tool Shank Type	type	MAS BT-40(*CAT-40/*DIN-40)		MAS BT-50(*CAT-50/*DIN-50)		
Pull Stud	type	MAS BT-40/P40-T-1(*CAT-40/*DIN-40)		MAS BT-50/P50-T-1(*CAT-50/*DIN-50)		
Auto Tool Changing System		DVM Series do not support ATC				
Magazine Capacity (ST)	tools	24 (Cam Type)				
Magazine Capacity (OP)	tools	32/40 (Cam Type)			30/40 (Cam Type)	
Max. Tool Diameter (with adjacent tool)	mm	ø75		ø108	ø108(ø125)	
Max. Tool Diameter (without adjacent tool)	mm	ø150		ø216	ø216(ø250)	
Max. Tool Length	mm	300				
Max. Tool Weight	kgs	7		15		
Tool Change Time (tool to tool)	sec	2		2.8		
Tool Change Time (time to time)	sec	4.5		6		
Motor (FANUC)						
Spindle Motor (cont./30min)(ST)	kw	7.5/11		15/18.5		
Spindle Motor (cont./30min)(OP)	kw	11/15	11/15/18.5	-	22/26	
Feed Motor X/Y/Z	kw	3/4/3			4/4/7	
Coolant Motor	kw	0.75			0.75	
Power Supply						
Power Supply	KVA	20			35	
Compressed Air Supply	Mpa, l/min	0.6, 500				
Coolant Tank Capacity	L	420			700	
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN				
External Dimension						
Width	mm	3460			4400	4700
Length	mm	3190			4100	
Height	mm	2960	2980		3450	
Net Weight	Kgs	7950/7600	8050/7700	8350/7650	16000/15200	16500/15700
Accuracy (following values were tested in the temperature-controlled room)						
ISO 10791 Accuracy – Positioning	mm	0.009			0.006	
ISO 10791 Accuracy – Repeatability	mm	0.006			0.004	
JIS 6338 Accuracy – Positioning (within 300mm)	mm	±0.004				
JIS 6338 Accuracy – Repeatability (within 300mm)	mm	±0.002				
Packing For Export		40'HQ			20'FR	40'FR

KAFO reserves the right to modify the specifications without further notice.

KAO FONG

VMC/VMM SERIES VERTICAL MACHINING CENTER

SUPERIOR STRUCTURE DESIGN

- Ultra-wide A-shaped Column Design
- Full support Base Design
- Ultra-wide Y-axis Design
- Best Supporting BESSEL Point Design
- One-Piece Coolant Collect Frame Design
- 3 axis Direct Coupled Servo Motors
- 3 axis Pretensioned Ball Screws
- Large Size Heavy Duty Working Table
- Robust Cast Iron Headstock
- Built-in Screw Type Chip Conveyor

VMC-3100

VMC-116A/B

VMC-1688

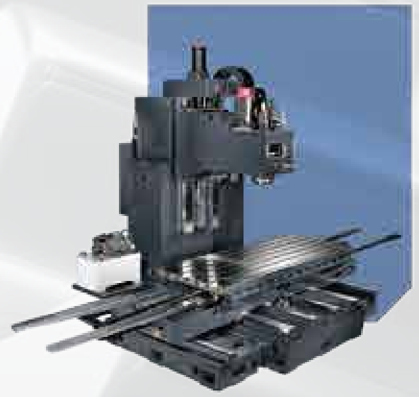
ATC 40 tools as option

VMC-1370

Option

VMC-21100+

Full enclosure as option

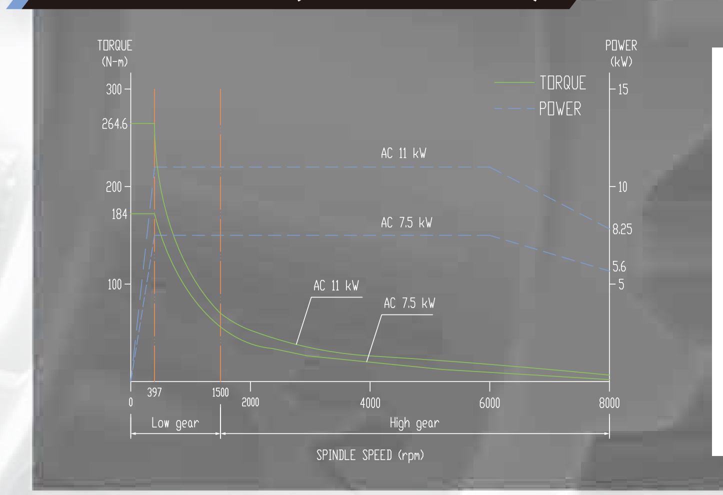


VMC-15800

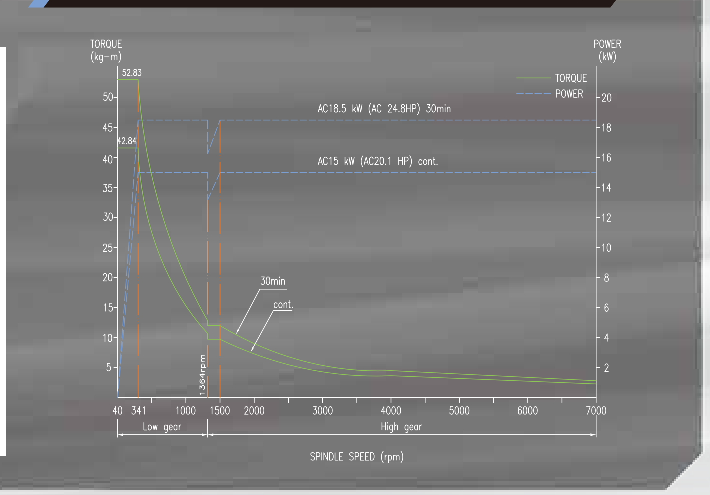
Full enclosure as option

KAO FONG
SPINDLE POWER-TORQUE DIAGRAM

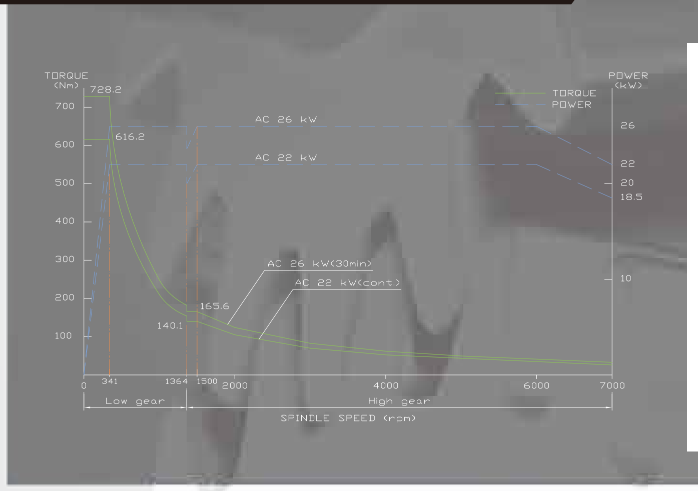
FANUC a8/8000i (BT-40 Gear Head)



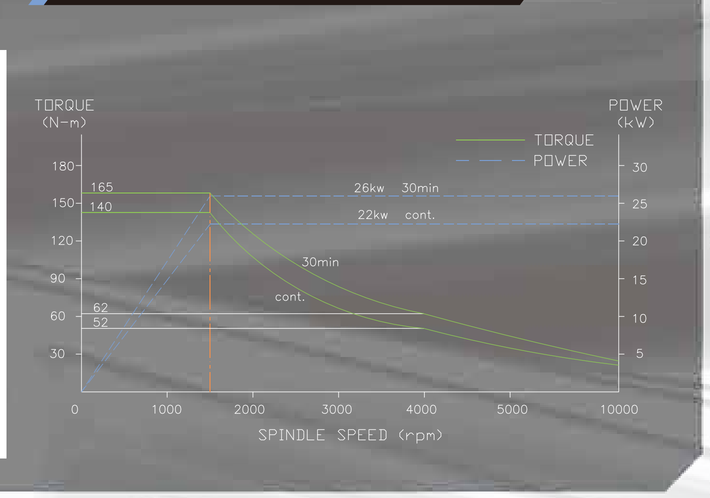
FANUC a15/7000i (BT-50 Gear Head)



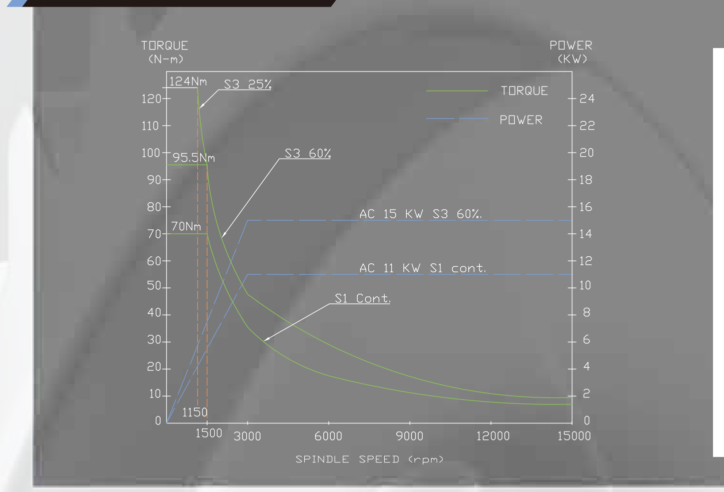
FANUC a22/7000i (BT-50 Gear Head)



FANUC a22/10000i (BT-50 Direct Driven)



FANUC aL8/15000i



FANUC aT8/15000i

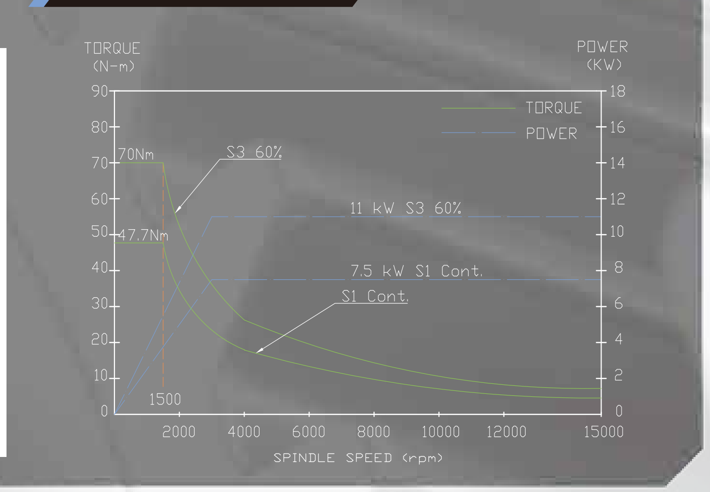
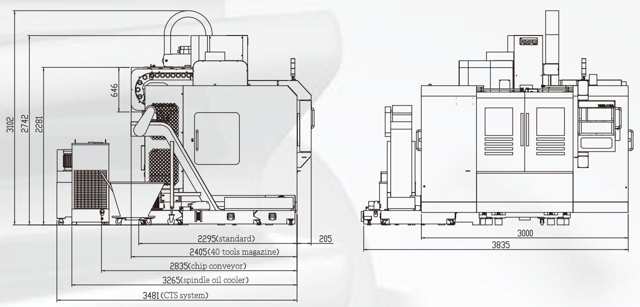
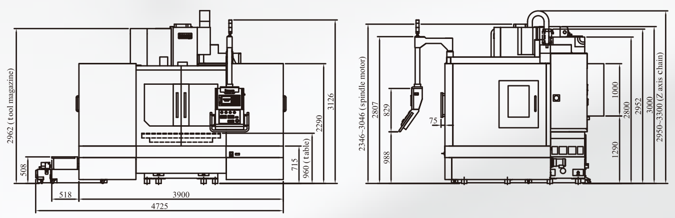


TABLE AND MACHINE LAYOUT

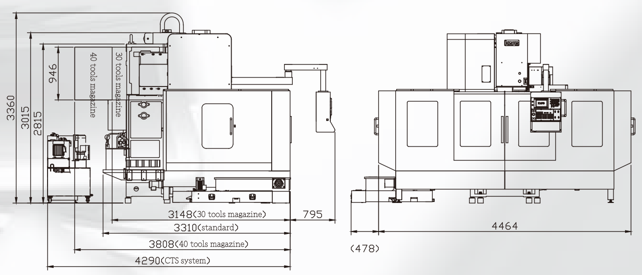
VMC-116A/B



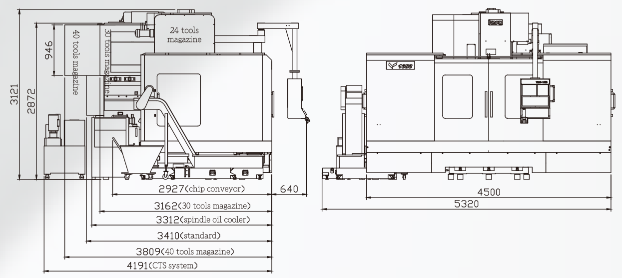
VMC-1370



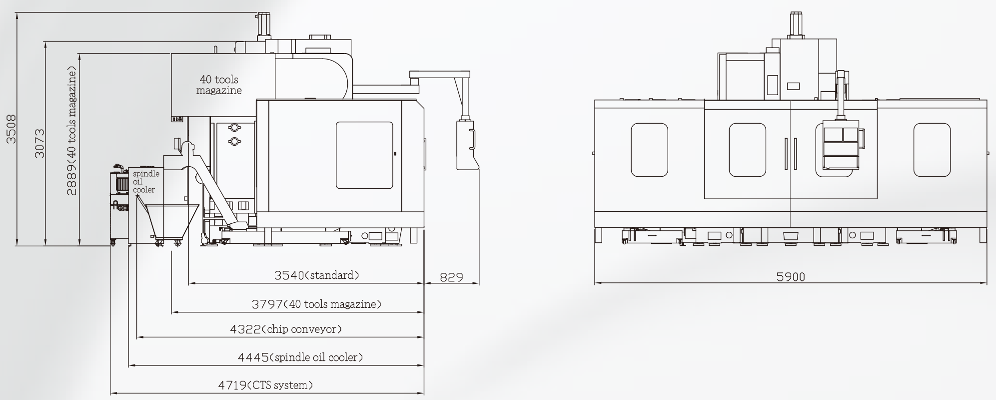
VMC-15800



VMC-1688



VMC-21100+



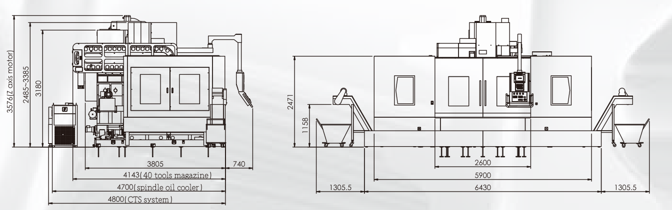
KAO FONG

SERIES SPECIFICATION

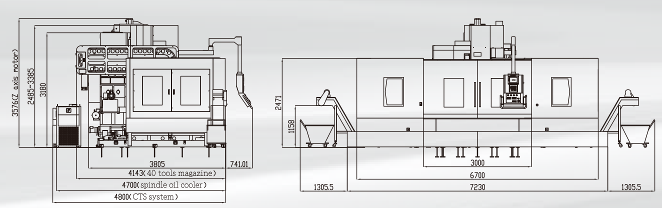
VMC/VMM

TABLE AND MACHINE LAYOUT

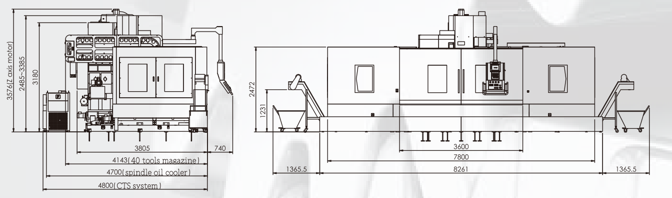
VMC-2100



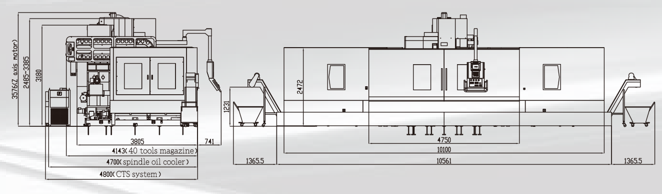
VMC-2600



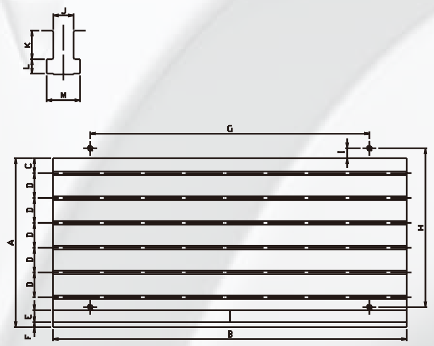
VMC-3100



VMC-4100



VMC TABLE VIEW



VMC TABLE SIZE

	A	B	C	D	E	F	G	H	I	J	K	L	M
WMM-116A/B WMC-116A/B	600	1250	50	125	-	-	1100	600	-	18	24	12	30
VMM-1370 VMC-1370	700	1500	100	125	-	-	1300	700	-	18	24	12	30
VMM-15800 VMC-15800	850	1900	75	125	60	25	1500	800	35	18	24	12	30
VMM-1688 VMC-1688	950	1800	65	125	45	25	1600	880	-	22	29	16	37
VMM-21100+ VMC-21100+	1000	2400	50	150	-	-	2200	1000	8	22	29	16	37
VMM-2100 VMC-2100	1000	2100	50	150	-	-	1900	1000	-	22	30	16	37
VMM-2600 VMC-2600	1000	2600	50	150	-	-	2400	1000	-	22	30	16	37
VMM-3100 VMC-3100	1000	3100	50	150	-	-	2900	1000	-	22	30	16	37
VMM-4100 VMC-4100	1000	4100	50	150	-	-	3900	1000	-	22	30	16	37

MODEL		VMM-116A VMC-116A	VMM-116B VMC-116B	VMM-1370 VMC-1370	VMM-15800 VMC-15800	VMM-1688 VMC-1688	VMM-21100+ VMC-21100+	VMM-2100 VMC-2100	VMM-2600 VMC-2600	VMM-3100 VMC-3100	VMM-4100 VMC-4100
Travel											
X-axis	mm	1100		1400	1500	1600	2150	2100	2600	3100	4100
Y-axis	mm	600		700	800	880	1000	1020	1020	1020	1020
Z-axis	mm	635		700			790	900/1070			
Guide Way-X/Y/Z	type	Box Way									
Distance From Spindle Nose To Table Surface	mm	100-735		200-900			250-1040	100-1000/100-1170			
Distance From Spindle Center To The Track Surface Of Z-axis	mm	650(620)		750(705)	815(712)	935(897)	1042	1070(1010)			
Table											
Table Dimension	mm	1250X600		1500X700	1900X850	1800X950	2400X1000	2100X1000	2600X1000	3100X1000	4100X1000
Max. Loading Capacity	kgs	1200		1500	2000	2500	3000			4000	5500
T-Slots (number*width*pitch)	no x mm	5 X 18mm X 125mm			6X18mmX125mm	7 X 22mm X 125mm	7 X 22mm X 150mm				
Spindle											
Spindle Speed (ST)	rpm	Gear Head 6000									
Spindle Speed (OP)	rpm	Belt Head/Direct-Driven 8000/10000/12000	-	Gear Head 7000 Direct-Driven 10000	Gear Head 7000	Gear Head 7000 Direct-Driven 10000		Gear Head 4000/7000 Direct-Driven 10000			
Spindle Taper	type	#40	#50								
Spindle Bearing Bore Diameter	mm	ø75 (ø70 Belt Head)	ø85	ø90							
Feed											
Rapid Travel Rate (X/Y/Z)	m/min	24/24/20			15/15/12	20/20/15	12/12/10	10/10/10			8/8/8
Cutting Rate	m/min	10						7			5
Manual JOG Feed Rate	m/min	4 (20 steps)									
ATC											
Tool Shank Type	type	MAS BT-40 (*CAT-40/*DIN-40)	MAS BT-50 (*CAT-50/*DIN-50)								
Pull Stud	type	MAS BT-40/P-40-T-1 (*CAT-40/*DIN-40)	MAS BT-50/P50-T-1 (*CAT-50/*DIN-50)								
Auto Tool Change System		VMM Series do not support ATC									
Magazine Capacity (ST)	tools	24 Cam Type									
Magazine Capacity (OP)	tools	*32/*40 (Cam Type)	-	*30/*40 (Cam Type)				*30/*40/*60 (Cam Type)			
Max. Tool Diameter (with adjacent tool)	mm	ø75	ø108	ø108 (ø125)							
Max. Tool Diameter (without adjacent tool)	mm	ø150	ø216	ø216 (ø250)							
Max. Tool Length	mm	300									
Max. Tool Weight	kgs	7	15								
Tool Change Time (tool to tool)	sec	2	2.8								
Tool Change Time (time to time)	sec	5.8	6								
Motor (FANUC)											
Spindle Motor (cont./30min)(ST)	kw	7.5/11	15/18.5								
Feed Motor X/Y/Z	kw	3.0/3.0/3.0		4.0/4.0/7.0			7.0/7.0/7.0	7.0/(7.0/7.0)/7.0			6.0/(7.0/7.0)/7.0
Coolant Motor	kw	0.75									
Power Supply											
Power Supply	KVA	20		35				55			
Compressed Air Supply	Mpa，l/min	0.6,500									
Coolant Tank Capacity	L	420			320	420	320	770			
Controller		FANUC/ MITSUBISHI/ SIEMENS/ HEIDENHAIN									
External Dimension											
Width	mm	3835		4725	4942	5320	5900	5900	6700	7800	10100
Length	mm	3265		3925	3310	3312	4445	4700			
Height	mm	3102		3300	3360	3121	3508	3576/3746			
Net Weight	Kgs	7250/7600		12700/13500	12700/13500	16200/17000	17650/18500	20500/21000	22000/22500	23000/23500	27500/28000
Accuracy (following values were tested in the temperature-controlled room											
ISO 10791 Accuracy – Positioning	mm	0.01		0.012			0.014	0.02		0.03	0.035
ISO 10791 Accuracy – Repeatability	mm	0.01		0.012			0.014	0.01		0.016	0.02
JIS 6338 Accuracy – Positioning (within 300mm)	mm	±0.005								±0.008	±0.01
JIS 6338 Accuracy – Repeatability (within 300mm)	mm	±0.002		±0.003						±0.005	±0.008
Packing For Export		40'HQ		20'F/R					40'F/R		

KAFO reserves the right to modify the specifications without further notice.

ACCESSORIES
KA/SV/VMM

● : Standard Specification ○ : Optional Specification X : Inadaptable

<table>
<tr><th colspan="2">SPECIFICATION/MODEL</th><th>KA-24
VMM-24</th><th>KA-24A
VMM-24A</th><th>KA-32
VMM-32</th><th>KA-40
VMM-40</th><th>SV-1000
VMM-1000</th></tr>
<tr><td colspan="7">Spindle</td></tr>
<tr><td colspan="2">BT-30 Belt Head 10000rpm (3.5/5.5kw)</td><td>●</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td colspan="2">BT-30 Direct-Driven 10000/12000/15000rpm (3.5/5.5kw)</td><td>○</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td colspan="2">BT-40 Belt Head 10000rpm (5.5/7.5kw)</td><td>×</td><td>●</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 10000rpm (5.5/7.5kw)</td><td>×</td><td>○</td><td>●</td><td>●</td><td>×</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 12000rpm (5.5/7.5kw)</td><td>×</td><td>○</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 15000rpm (5.5/7.5kw)</td><td>×</td><td>○</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td colspan="2">BT-40 Belt Head 8000/10000rpm (7.5/11kw)</td><td>×</td><td>×</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 10000/12000rpm (7.5/11kw)</td><td>×</td><td>×</td><td>○</td><td>○</td><td>●</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 15000rpm (7.5/11kw)</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td></tr>
<tr><td colspan="2">BT-40 Belt Head 8000/10000rpm (11/15kw)</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 10000/12000/15000rpm (11/15kw)</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td></tr>
<tr><td colspan="2">BT-40 Direct-Driven 10000/12000/15000rpm (15/18.5kw)</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td></tr>
<tr><td colspan="7">Tool Magazine</td></tr>
<tr><td rowspan="8">Magazine Capacity</td><td>16 Tools (Umbrella Type)</td><td>×</td><td>×</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>16 Tools (Cam Type)</td><td>×</td><td>○</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>20 Tools (Cam Type)</td><td>●</td><td>●</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>24 Tools (Cam Type)</td><td>×</td><td>×</td><td>●</td><td>●</td><td>●</td></tr>
<tr><td>30 Tools (Cam Type)</td><td>○</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>32 Tools (Cam Type)</td><td>×</td><td>×</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td>36 Tools (Cam Type)</td><td>×</td><td>○</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>40 Tools (Cam Type)</td><td>×</td><td>×</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td colspan="7">Tool</td></tr>
<tr><td rowspan="4">Tool Shank</td><td>MAS BT-30</td><td>●</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>MAS BT-40</td><td>×</td><td>●</td><td>●</td><td>●</td><td>×</td></tr>
<tr><td>CAT-40</td><td>×</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>DIN-40</td><td>×</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td rowspan="2">Pull Stud</td><td>MAS BT-30/ P30-T-1</td><td>●</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>MAS BT-40/ P40-T-1</td><td>×</td><td>●</td><td>●</td><td>●</td><td>●</td></tr>
<tr><td colspan="7">Coolant</td></tr>
<tr><td colspan="2">Coolant System</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Coolant Through Spindle</td><td>×</td><td colspan="4">○</td></tr>
<tr><td colspan="2">Coolant Through Tool And Tool Holder</td><td>×</td><td colspan="4">○</td></tr>
<tr><td colspan="2">Oil Skimmer</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Oil-Mist Coolant System</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Chip Flush Coolant System</td><td colspan="2">●</td><td colspan="3">○</td></tr>
<tr><td colspan="2">Coolant Gun</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Coolant Through Spindle With Filter 25μm</td><td>×</td><td colspan="4">○</td></tr>
<tr><td colspan="7">Chip Disposal System</td></tr>
<tr><td colspan="2">Screw Type Chip Conveyor</td><td colspan="2">×</td><td colspan="2">●</td><td>○</td></tr>
<tr><td colspan="2">Lift-up Chip Conveyor With Bucket</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Air Blast Function For Workpiece (M07)</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Spindle Air Blast</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Oil-Mist Collection System</td><td colspan="5">○</td></tr>
<tr><td colspan="7">Measurement System</td></tr>
<tr><td colspan="2">Tool Length Measurement</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Workpiece Measurement</td><td colspan="5">○</td></tr>
<tr><td colspan="7">Operation Support</td></tr>
<tr><td colspan="2">Auto Power Off (M30)</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Automatic Door</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Manual Pulse Generator (MPG)</td><td colspan="5">●</td></tr>
<tr><td colspan="7">High Accuracy Control</td></tr>
<tr><td colspan="2">Liner Scales (axis X,Y,Z)</td><td colspan="5">○</td></tr>
<tr><td colspan="7">Safety System</td></tr>
<tr><td colspan="2">Full Enclosure</td><td colspan="5">●</td></tr>
<tr><td colspan="7">Others</td></tr>
<tr><td colspan="2">Work Light & Tri-Color Status Light</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Leveling Bolts And Pads</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Tool Box</td><td colspan="5">●</td></tr>
<tr><td colspan="2">Spindle Oil Cooler</td><td>○</td><td colspan="4">●</td></tr>
<tr><td colspan="2">4th Axis Interface</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Rotary Table 4th Axis</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Z-axis Riser</td><td colspan="4">○</td><td>×</td></tr>
<tr><td colspan="2">Air Conditioner Unit For Electric Cabinet</td><td colspan="5">○</td></tr>
<tr><td colspan="2">KAFO Customized Calculator Software Function</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Hydraulic Unit</td><td colspan="5">○</td></tr>
<tr><td colspan="2">Tooling Rack & Storage Shelf</td><td colspan="2">×</td><td colspan="2">○</td><td>×</td></tr>
</table>

ACCESSORIES
VMC/VMM

● : Standard Specification ○ : Optional Specification ☆ : Consulting Required X : Inadaptable

<table>
<tr><th colspan="2">SPECIFICATION/MODEL</th><th>VMM-116A
VMC-116A</th><th>VMM-116B
VMC-116B</th><th>VMM-1370
VMC-1370</th><th>VMM-15800
VMC-15800</th><th>VMM-1688
VMC-1688</th><th>VMM-21100+
VMC-21100+</th><th>VMM-2100
VMC-2100</th><th>VMM-2600
VMC-2600</th><th>VMM-3100
VMC-3100</th><th>VMM-4100
VMC-4100</th></tr>
<tr><td colspan="12">Spindle</td></tr>
<tr><td colspan="2">BT-40 Belt Head 10000rpm (5.5/7.5kw)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BBT-40 Direct-Driven 12000rpm (5.5/7.5kw)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BT-40 Gear Head 6000rpm (7.5/11kw)</td><td>●</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BT-40 Gear Head 7000rpm (7.5/11kw)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BT-40 Belt Head 10000/12000rpm (7.5/11kw)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BT-40 Belt Head 12000rpm (11/15kw)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td colspan="2">BT-50 Gear Head 6000rpm (15/18.5kw)</td><td>×</td><td colspan="9">●</td></tr>
<tr><td colspan="2">BT-50 Gear Head 6000rpm (22/26kw)</td><td colspan="2">×</td><td colspan="8">○</td></tr>
<tr><td colspan="2">BT-50 Gear Head 7000rpm (15/18.5kw)</td><td>×</td><td colspan="9">○</td></tr>
<tr><td colspan="2">BT-50 Gear Head 7000rpm (22/26kw)</td><td colspan="6">×</td><td colspan="4">○</td></tr>
<tr><td colspan="2">BT-50 Direct-Driven 10000rpm (15/18.5kw)</td><td colspan="2">×</td><td>○</td><td>×</td><td colspan="6">○</td></tr>
<tr><td colspan="2">BT-50 Direct-Driven 10000rpm (22/26kw)</td><td colspan="6">×</td><td colspan="4">○</td></tr>
<tr><td colspan="12">Tool Magazine</td></tr>
<tr><td rowspan="5">Magazine Capacity</td><td>24 Tools (Cam Type)</td><td colspan="10">●</td></tr>
<tr><td>30 Tools (Cam Type)</td><td colspan="2">×</td><td colspan="8">○</td></tr>
<tr><td>32 Tools (Cam Type)</td><td>○</td><td colspan="9">×</td></tr>
<tr><td>40 Tools (Cam Type)</td><td>○</td><td>×</td><td colspan="8">○</td></tr>
<tr><td>60 Tools (Cam Type)</td><td colspan="4">×</td><td>○</td><td>×</td><td colspan="4">○</td></tr>
<tr><td colspan="12">Tool</td></tr>
<tr><td rowspan="6">Tool Shank</td><td>MAS BT-40</td><td>●</td><td colspan="9">×</td></tr>
<tr><td>CAT-40</td><td>○</td><td colspan="9">×</td></tr>
<tr><td>DIN-40</td><td>○</td><td colspan="9">×</td></tr>
<tr><td>MAS BT-50</td><td>×</td><td colspan="9">●</td></tr>
<tr><td>CAT-50</td><td>×</td><td colspan="9">○</td></tr>
<tr><td>DIN-50</td><td>×</td><td colspan="9">○</td></tr>
<tr><td rowspan="2">Pull Stud</td><td>MAS BT-40/P-40-T-1</td><td>●</td><td colspan="9">×</td></tr>
<tr><td>MAS BT-50/P-50-T-1</td><td>×</td><td colspan="9">●</td></tr>
<tr><td colspan="12">Coolant</td></tr>
<tr><td colspan="2">Coolant System</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Coolant Through Spindle</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Coolant Through Tool And Tool Holder</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Oil Skimmer</td><td colspan="3">●</td><td>○</td><td>●</td><td>○</td><td colspan="4">○</td></tr>
<tr><td colspan="2">Oil-Mist Coolant System</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Chip Flush Coolant System</td><td colspan="3">○</td><td>×</td><td>○</td><td>×</td><td colspan="4">○</td></tr>
<tr><td colspan="2">Coolant Gun</td><td colspan="10">●</td></tr>
<tr><td colspan="12">Chip disposal system</td></tr>
<tr><td colspan="2">Lift-Up Chip Conveyor (Chain Type)</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Lift-Up Chip Conveyor (Scrape Type)</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Screw Type Chip Conveyor (front of base)</td><td colspan="3">●</td><td>×</td><td>●</td><td colspan="5">×</td></tr>
<tr><td colspan="2">Screw Type Chip Conveyor (behind of table)</td><td colspan="2">×</td><td>×</td><td colspan="3">●</td><td colspan="4">×</td></tr>
<tr><td colspan="2">Screw Ttype Chip Conveyor (on either sides and center of base)</td><td colspan="2">×</td><td>●</td><td>○</td><td colspan="6">●</td></tr>
<tr><td colspan="2">Air Blast Function For Workpiece (M07)</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Spindle Air Blast</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Oil-Mist Collection System</td><td colspan="10">○</td></tr>
<tr><td colspan="12">Measurement System</td></tr>
<tr><td colspan="2">Tool Length Measurement</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Workpiece Measurement</td><td colspan="10">○</td></tr>
<tr><td colspan="12">Operation Support</td></tr>
<tr><td colspan="2">Auto Power Off (M30)</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Automatic Door</td><td colspan="10">☆</td></tr>
<tr><td colspan="2">Manual Pulse Generator (MPG)</td><td colspan="10">●</td></tr>
<tr><td colspan="12">High Accuracy Control</td></tr>
<tr><td colspan="2">Liner Scales (axis X,Y,Z)</td><td colspan="10">○</td></tr>
<tr><td colspan="12">Safety System</td></tr>
<tr><td colspan="2">Full Enclosure</td><td colspan="3">●</td><td>○</td><td>●</td><td>○</td><td colspan="4">●</td></tr>
<tr><td colspan="2">L Type Splash Guard</td><td colspan="2">×</td><td>○</td><td>●</td><td>○</td><td>●</td><td colspan="4">×</td></tr>
<tr><td colspan="2">Splash Guard For Table</td><td colspan="3">×</td><td>○</td><td>×</td><td>○</td><td colspan="4">×</td></tr>
<tr><td colspan="2">Air Pressure Detection System</td><td colspan="10">●</td></tr>
<tr><td colspan="12">Others</td></tr>
<tr><td colspan="2">Interior Lighting Lamp (Fluorescent Lamp*1)</td><td colspan="3">●</td><td>○</td><td>●</td><td>○</td><td colspan="4">●</td></tr>
<tr><td colspan="2">Work Light & Tri-Color Status Light</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Leveling Bolts And Pads</td><td colspan="10">●</td></tr>
<tr><td colspan="2">Tool Box</td><td colspan="10">●</td></tr>
<tr><td colspan="2">4th Axis Interface</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Rotary Table 4th Axis</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Air Conditioner Unit For Electric Cabinet</td><td colspan="10">○</td></tr>
<tr><td colspan="2">KAFO Customized Calculator Software Function</td><td colspan="10">○</td></tr>
<tr><td colspan="2">Z-axis Riser</td><td colspan="6">☆</td><td colspan="4">○</td></tr>
<tr><td colspan="2">Z-axis Travel Extend</td><td colspan="2">○ (全行程: 785mm)</td><td colspan="4">×</td><td colspan="4">○ (Z軸行程: 1070mm)</td></tr>
</table>

ACCESSORIES
CV/CVM

● : Standard Specification ○ : Optional Specification X : Inadaptable

SPECIFICATION/MODEL		CV-7A CVM-7A	CV-7B CVM-7B	CV-9A CVM-9A CV-9A APC	CV-9B CVM-9B CV-9B APC	CV-11A CVM-11A	CV-11B CVM-11B	CV-14A CVM-14A	CV-14B CVM-14B
Spindle									
BT-40 Direct-Driven 10000rpm (7.5/11kw)		●	○	●	○	●	○	●	○
BT-40 Direct-Driven 12000/15000rpm (7.5/11kw)		○	○	○	○	○	○	○	○
BT-40 Direct-Driven 10000/12000/15000rpm (11/15kw)		○	○	○	○	○	○	○	○
BT-40 Direct-Driven 10000/12000/15000rpm (15/18.5kw)		○	○	○	○	○	○	○	○
BT-40 Belt Head 8000rpm (7.5/11kw)		×	●	×	●	×	●	×	●
BT-40 Belt Head 10000rpm (7.5/11kw)		×	○	×	○	×	○	×	○
BT-40 Belt Head 8000/10000rpm (11/15kw)		×	○	×	○	×	○	×	○
BT-40 Belt Head 8000/10000rpm (15/18.5kw)		×	×	×	×	×	×	×	○
BT-40 Gear Head 6000rpm (7.5/11kw)		×	×	×	×	×	×	×	×
BT-40 Gear Head 6000/7000rpm (11/15/18.5kw)		×	×	×	×	×	×	×	×
BT-50 Gear Head 6000rpm (15/18.5kw)		×	×	×	×	×	×	×	×
BT-50 Gear Head 7000rpm (15/18.5kw)		×	×	×	×	×	×	×	×
BT-50 Direct-Driven 10000rpm (15/18.5kw)		×	×	×	×	×	×	(CV-14AH/CV-14BH)	
BT-50 Direct-Driven 10000rpm (22/26kw)		×	×	×	×	×	×		
Tool Magazine									
Magazine Capacity	16 Tools (Umbrella Type)	○	○	×	×	×	×	○	○
	20 Tools (Umbrella Type)	×	×	×	×	×	×	○	○
	24 Tools (Cam Type)	●	●	●	●	●	●	●	●
	32 Tools (Cam Type)	×	×	○	○	○	○	○	○
	40 Tools (Cam Type)	×	×	○	○	○	○	○	○
Tool									
Tool Shank	MAS BT-40	●	●	●	●	●	●	●	●
	CAT-40	○	○	○	○	○	○	○	○
	DIN-40	○	○	○	○	○	○	○	○
	MAS BT-50	×	×	×	×	×	×	(CV-14AH/CV-14BH)	
	CAT-50	×	×	×	×	×	×		
	DIN-50	×	×	×	×	×	×		
Pull Stud	MAS BT-40/P40-T-1	●	●	●	●	●	●	●	●
	MAS BT-50/P50-T-1	×	×	×	×	×	×	(CV-14AH/CV-14BH)	
Coolant									
Coolant System		●							
Coolant Through Spindle		○							
Coolant Through Tool And Tool Holder		○							
Ballscrew Coolant System		×	×	●	○	●	○	●	○
Oil Skimmer		●							
Oil-mist Coolant System		○							
Chip Flush Coolant System		○							
Coolant Gun		●							
Chip Disposal System									
Screw Type Chip Conveyor		○		●					
Lift-up Chip Conveyor With Bucket		○							
Air Blast Function For Workpiece (M07)		●							
Spindle Air Blast		●							
Oil-mist Collection System		○							
Measurement System									
Tool Length Measurement		○							
Workpiece Measurement		○							
Operation Support									
Auto Power Off (M30)		●							
Automatic Door		○							
Manual Pulse Generator (MPG)		●							
High Accuracy Control									
Liner Scales (Axis X, Y, Z)		○							
Safety System									
Full Enclosure		●							
Others									
Work Light & Tri-Color Status Light		●							
Leveling Bolts And Pads		●							
Tool Box		●							
Spindle Oil Cooler		●							
4th Axis Interface		○							
Rotary Table 4th Axis		○							
Z-axis Riser		×		○					
Air Conditioner Unit For Electric Cabinet		○							
KAFO Customized Calculator Software Function		○							
Hydraulic Unit		○							
X-axis Changes From 4 Blocks To 6 Blocks		×		○					
Z-axis Changes From 4 Blocks To 6 Blocks		×		○					
Z-axis Travel Extend		○ (Z-axis: 640mm)		○ (Z-axis: 820mm) : CV-9 APC series is inadaptable.				○ (Z-axis: 900mm)	

KAFO reserves the rights to modify the specifications without further notice.

ACCESSORIES
DV/DVM

● : Standard Specification ○ : Optional Specification X : Inadaptable

SPECIFICATION/MODEL		CV-16A CVM-16A	CV-16B CVM-16B	CV-168 CVM-168	CV-188 CVM-188	DV-9A DVM-9A	DV-9B DVM-9B	DV-9C DVM-9C	DV-11A DVM-11A	DV-11B DVM-11B	DV-11C DVM-11C	DV-11G DVM-11G	DV-168 DVM-168	DV-188 DVM-188
Spindle														
BT-40 Direct-Driven 10000rpm (7.5/11kw)		●	○	×	×	●	○	×	●	○	×	×	×	×
BT-40 Direct-Driven 12000/15000rpm (7.5/11kw)		○	○	×	×	○	○	×	○	○	×	×	×	×
BT-40 Direct-Driven 10000/12000/15000rpm (11/15kw)		○	○	×	×	○	○	×	○	○	×	×	×	×
BT-40 Direct-Driven 10000/12000/15000rpm (15/18.5kw)		○	○	×	×	×	○	×	×	○	×	×	×	×
BT-40 Belt Head 8000rpm (7.5/11kw)		×	●	×	×	×	●	×	×	●	×	×	×	×
BT-40 Belt Head 10000rpm (7.5/11kw)		×	○	×	×	×	○	×	×	○	×	×	×	×
BT-40 Belt Head 8000/10000rpm (11/15kw)		×	○	×	×	×	○	×	×	○	×	×	×	×
BT-40 Belt Head 8000/10000rpm (15/18.5kw)		×	○	×	×	×	×	×	×	×	×	×	×	×
BT-40 Gear Head 6000rpm (7.5/11kw)		×	×	×	×	×	×	●	×	×	●	×	×	×
BT-40 Gear Head 6000/7000rpm (11/15/18.5kw)		×	×	×	×	×	×	○	×	×	○	×	×	×
BT-50 Gear Head 6000rpm (15/18.5kw)		×	×	●	●	×	×	×	×	×	×	●	●	●
BT-50 Gear Head 7000rpm (15/18.5kw)		×	×	○	○	×	×	×	×	×	×	○	○	○
BT-50 Direct-Driven 10000rpm (15/18.5kw)		(CV-16AH/CV-16BH)		○	○	×	×	×	×	×	×	×	○	○
BT-50 Direct-Driven 10000rpm (22/26kw)				○	○	×	×	×	×	×	×	×	○	○
Tool Magazine														
Magazine Capacity	16 Tools (Umbrella Type)	○	○	×	×	×	×	×	×	×	×	×	×	×
	20 Tools (Umbrella Type)	○	○	×	×	×	×	×	×	×	×	×	×	×
	24 Tools (Cam Type)	●	●	●	●	●	●	●	●	●	●	●	●	●
	32 Tools (Cam Type)	○	○	○	○	○	○	○	○	○	○	○	○	○
	40 Tools (Cam Type)	○	○	○	○	○	○	○	○	○	○	○	○	○
Tool														
Tool Shank	MAS BT-40	●	●	×	×	●	●	●	●	●	●	×	×	×
	CAT-40	○	○	×	×	○	○	○	○	○	○	×	×	×
	DIN-40	○	○	×	×	○	○	○	○	○	○	×	×	×
	MAS BT-50	(CV-16AH/CV-16BH)		●	●	×	×	×	×	×	×	●	●	●
	CAT-50			○	○	×	×	×	×	×	×	○	○	○
	DIN-50			○	○	×	×	×	×	×	×	○	○	○
Pull Stud	MAS BT-40/P40-T-1	●	●	×	×	●	●	●	●	●	●	×	×	×
	MAS BT-50/P50-T-1	(CV-16AH/CV-16BH)		●	●	×	×	×	×	×	×	●	●	●
Coolant														
Coolant System		●		●	●	●							●	
Coolant Through Spindle		○		○	○	○							○	
Coolant Through Tool And Tool Holder		○		○	○	○							○	
Ballscrew Coolant System		●	○	●	●	●	○	○	●	○	○	○	●	
Oil Skimmer		●		●	●	●							●	
Oil-mist Coolant System		○		○	○	○							○	
Chip Flush Coolant System		○		○	○	○							○	
Coolant Gun		●		●	●	●							●	
Chip Disposal System														
Screw Type Chip Conveyor		●		●	●	●							●	
Lift-up Chip Conveyor With Bucket		○		○	○	○							○	
Air Blast Function For Workpiece (M07)		●		●	●	●							●	
Spindle Air Blast		●		●	●	●							●	
Oil-mist Collection System		○		○	○	○							○	
Measurement System														
Tool Length Measurement		○											○	
Workpiece Measurement		○											○	
Operation Support														
Auto Power Off (M30)		●											●	
Automatic Door		○											○	
Manual Pulse Generator (MPG)		●											●	
High Accuracy Control														
Liner Scales (Axis X, Y, Z)		○											○	
Safety System														
Full Enclosure		●											●	
Others														
Work Light & Tri-Color Status Light		●											●	
Leveling Bolts And Pads		●											●	
Tool Box		●											●	
Spindle Oil Cooler		●											●	
4th Axis Interface		○											○	
Rotary Table 4th Axis		○											○	
Z-axis Riser		○											○	
Air Conditioner Unit For Electric Cabinet		○											○	
KAFO Customized Calculator Software Function		○											○	
Hydraulic Unit		○		●	●	○							●	
X-axis Changes From 4 Blocks To 6 Blocks		○		○(6->8)	○(6->8)	○							○(6->8)	
Z-axis Changes From 4 Blocks To 6 Blocks		○		○	○	×							○	
Z-axis Travel Extend		○ (Z-axis:900mm)		○ (Z-axis: 1000mm)		○ (Z-axis: 820mm)							○(Z-axis: 1000mm)	

*Ballscrew Coolant System : DV series only for X and Y- axis.

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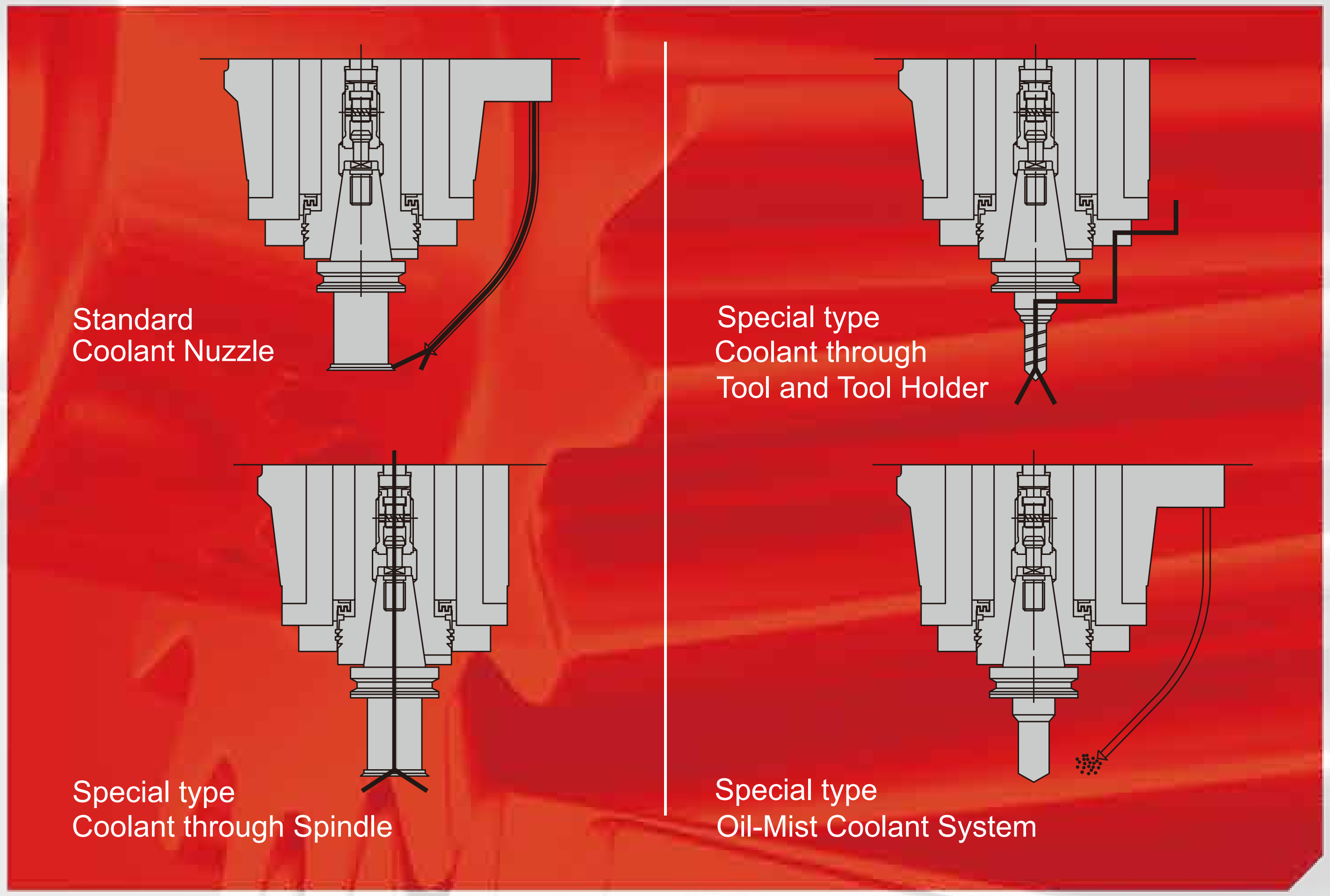
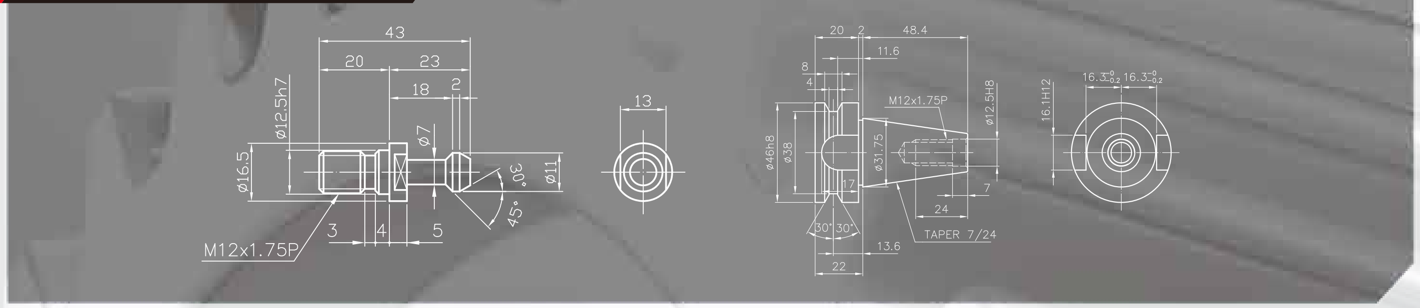
CV/CVM DV/DVM ACCESSORIES

KAO FONG

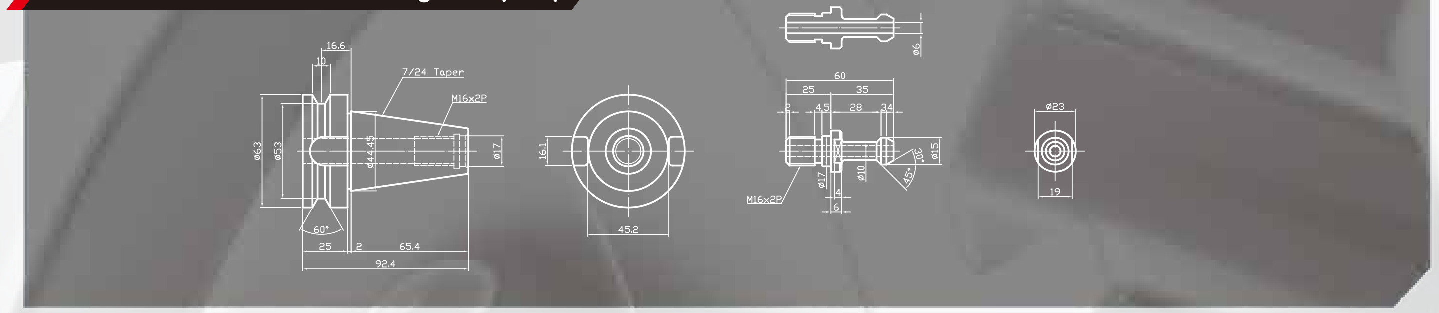
TOOL SHANK & PULL STUD SPEC



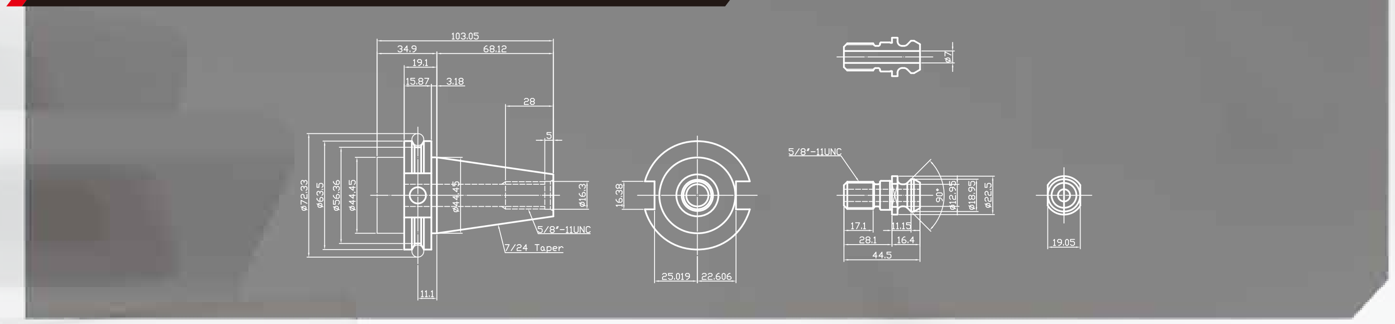
BT-30 Pull Stud& Tool shank



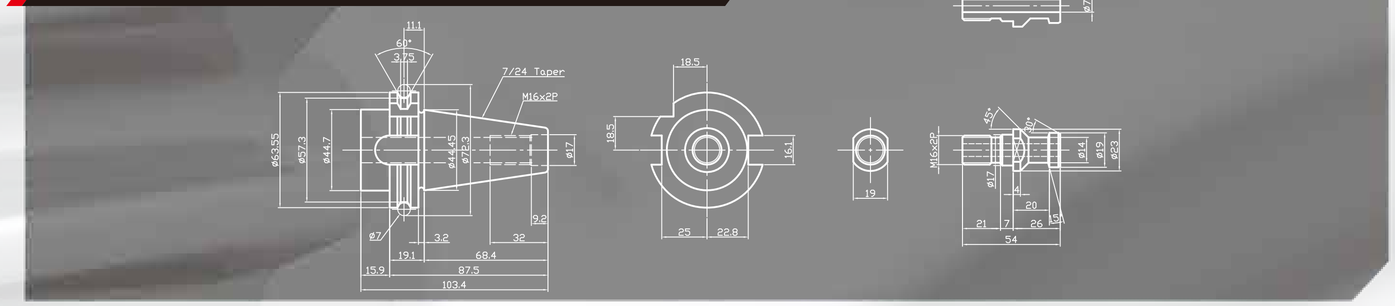
MAS BT-40+MAS P40T Tooling Dim. (CTS)



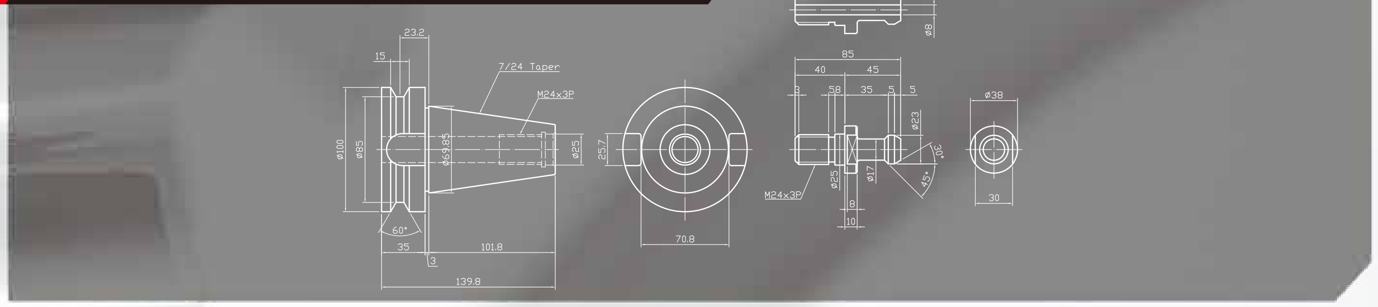
V-Flange CAT-40+V-Flange CAT-40 Tooling Dim. (CTS)



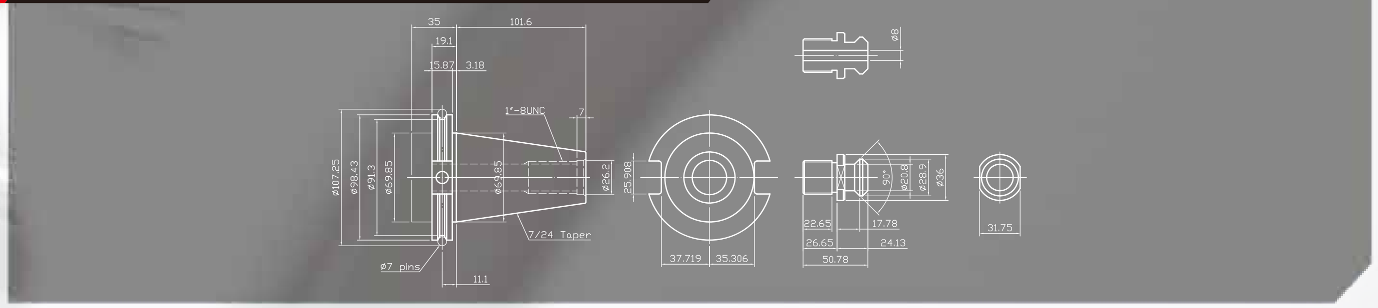
DIN69871(#40)+DIN69872-B(#40) Tooling Dim. (CTS)



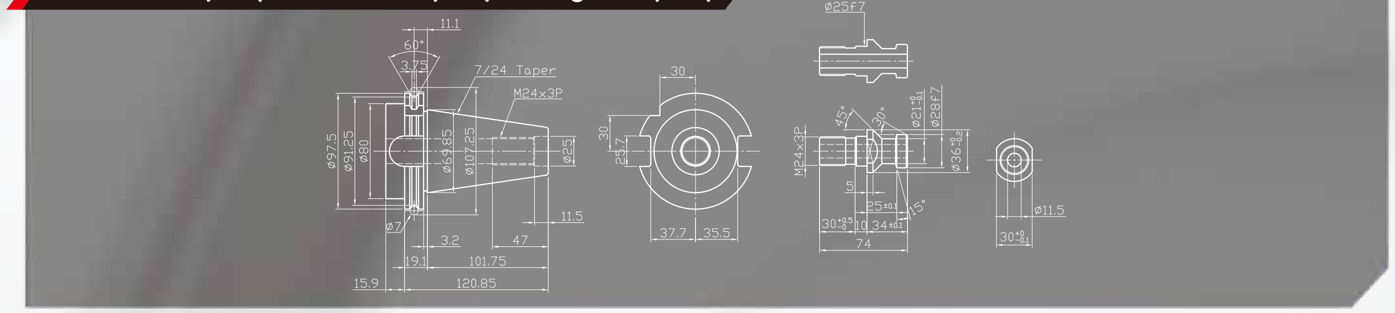
MAS BT-50+MAS P50T Tooling Dim. (CTS)



V-Flange CAT-50+V-Flange CAT-50 Tooling Dim. (CTS)



DIN69871A(#50)+DIN69872-A(#50) Tooling Dim. (CTS)



KAO FONG

TURN-KEY PROJECT PLANNING - EXCELLENT PROCESS

- Meet customer's processing demand
- Achieve customer's required quantity production
- Carry out automation processing
- Flexibly used in various products

PROFESSIONAL ENGINEERING TEAM

- Having the most state-of-the-art software and hardware provides customers with the proposal to increase the production efficiency.
- Improving the processing efficiency through the work analysis, construction method and application test.

Technical center

Expert service and immediate response professional analysis in all cases

Certified technicians

Skillful technical service team provide professional training

In-stock spare parts availability

Full line service and maintenance parts clear parts management

PERFECT MACHINE PLANNING AND INSEPARABLE TECHNICAL NETWORK GIVES BEST BENEFICIAL RESULT

Worldwide After-sales Service

- By immediate service network to reach efficient service capability
- Through worldwide service to give supports to all customers
- With experienced and qualified technicians for routine maintenance

Service Network

- Headquarter:Taichung City, Taiwan TEL:+886-4-25662116
- Agent:Taipei,Taoyuan,Tainan,Kaohsiung
- Mainland China
- Worldwide

Global Marketing Information

www.kafo.com.tw

I-operation

Kao Fong Customized Calculator Software Features

- G-menu
- Calculating Function
- Center of Rectangle Function
- Center of Circle Function
- Tool length Measurement and Setting
- Intelligent ATC System Management

SERVICE CALLS

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