

In Quality we trust

cnc machine tools

**VERTICAL
MILLING
MACHINES**

**5-AXIS
MACHINING
CENTERS**

www.raisbg.com

RAIS is a leading Bulgarian company for manufacturing and recycling of CNC machine tools. Created in 1994 in Pazardzhik, the company began its operations with recycling Bulgarian CNC machines. Gradually, its activities are directed towards the production of new machines, the company is the only local manufacturer of vertical machining centers.

The machines are designed and implemented in full production by the company experts.

The company carries also complete overhaul, repair and modernization of CNC machines, including horizontal and vertical centers.

Production list of RAIS includes:

- 10 models vertical machining centers with sizes from 300 to 800 mm (table sizes from 400 to 300 mm to 1600 by 800 mm, spindle speed from 8 000 to 15 000 rpm);
- 5 models CNC lathes with a maximum turning diameter from 200 to 700 mm;
- 3 models 5-axis VMC, 350, 550 and 650 mm size;
- 4 models twin-spindle lathes;
- milling-turning VMC and double column milling machines;
- spare parts for forklifts.



All of them are equipped with reliable CNC systems from Siemens, Heidenhain and Fanuc- Japan.

The stability of machines manufactured by RAIS outperforms all others in this frame size. Precision linear guides and ball screws from "Bosch Rexroth" are built-in.

RAIS provides integrated solutions through the selection, procurement, production estimates for the time, tooling, commissioning, training and after-sales service of all types of CNC machine tools.

Precision in assembly, test and control means provides quality on each machine, meeting the requirements of EN ISO standards for machining centers.

The implemented Quality Management System creates all the prerequisites to meet customer requirements.

The company motto expresses our creed that the excellent quality of products and services is the best guarantee for the loyalty of our clients.

Buying from us, you do not receive just a machine, you receive our commitment and guarantee of quality - before and after the sale.

Nishan Bazdighyan - CEO of RAIS Ltd.



24 MONTHS WARRANTY*

Our machines speaks for themselves. We rely on the well-known quality of our machines.

You can always count on us. And benefit from our partnership!

(* Based on one-shift operating schedule)

TECHNICAL SUPPORT

We are always there for you!



- LOCAL
- CENTRAL
- FACTORY SERVICE

SPARE PARTS SUPPLY



YOUR BENEFITS:

- Local sales and attendance in their respective countries and also access to other services;
- The same level of service and support in their respective countries;
- Service network of over 20 service technicians;
- Central spare parts supply (95% of the parts in stock);
- Hotline available locally and centrally;
- Excellent for companies with multiple locations - for easy handling of sales and services.

ONE WORLD,
ONE RELIABLE COMPANY
AND SO MANY PARTNERS



Manufacturers from 15 countries in Europe, Asia and Africa trusted RAIS. Among our major clients are:

- ✘ Hyundai Heavy Industries in the field of heavy engineering
- ✘ OMCO Group in the glass industry and space industry
- ✘ M+S Hydraulic in the field of hydraulics
- ✘ Liebherr in the field of construction machinery and the production of white goods
- ✘ Hertz in climatization, Lenze in drives technology

and many other companies in the fields of mechanical engineering, chemical industry, production of medical equipment and heating technology, thanks to which we constantly develop and for the last 20 years affirm RAIS's name in the CNC machine tools production.

RAIS has offices in Germany, Austria, Switzerland, Russia, Serbia, Macedonia, Turkey, Greece and Romania.

CNC MILLING MACHINES AND CENTERS



CONFIGURATION OPTIONS FOR MILLING CENTERS (Page 6)

VERTICAL MACHINING CENTERS



M400 / M450 (Page 8)



M500 (Page 10)



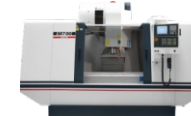
M550 (Page 12)



M700 (Page 14)



M700L / M700LG (Page 16)



M700LL / M700LLG (Page 17)

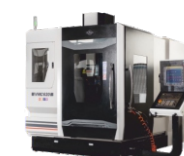


M800 / M1000 / M2000 (Page 18)

4+1 / 5-AXIS MACHINING CENTERS



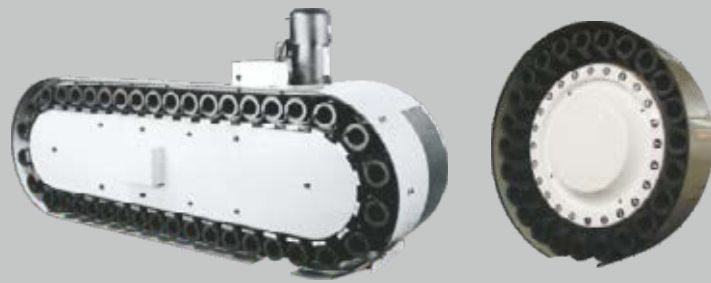
VMC350 (Page 20)



VMC650 (Page 22)

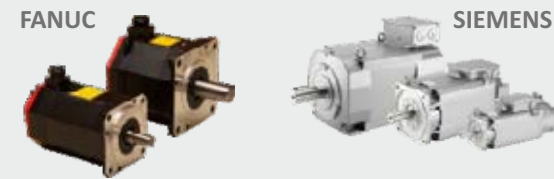
Product specifications, accessories and machine appearance are subject to change without notice

SELECTABLE TOOL MAGAZINE

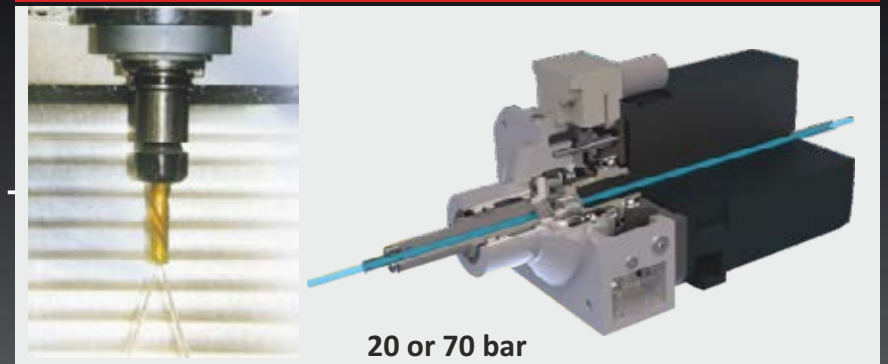


Machine Magazine	M400/M450	M500/M550	M650/M700	M800/1000/2000	VMC350	VMC620
24 Arm - BT40	X	X	X	X	X	X
24 Arm - BT50			X	X		
32 Arm - BT40	X	X	X	X	X	X
32 Arm - BT50			X	X		
40 Chain - BT40		X	X	X	X	X
40 Chain - BT50			X	X		
60 Chain - BT40		X	X	X	X	X
60 Chain - BT50			X	X		
30 Pick up - BT40						

SPINDLE MOTORS



COOLANT THROUGH SPINDLE



20 or 70 bar

CNC ROTARY TABLES

4-th axis



Table diameter: 125; 170; 200; 250; 320 mm

4-th & 5-th axes



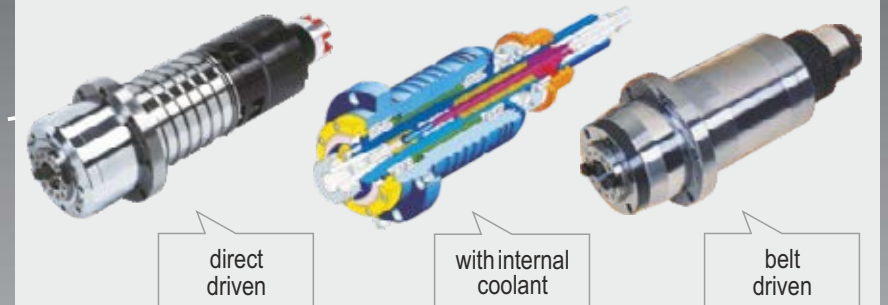
Table diameter: 170; 200; 250; 320 mm

AUTOMATIC PALLETTE CHANGER



SELECTABLE SPINDLE

Toolholder ISO / SK / BT. Precise bearings. Minimum taper play. Increased tightening force.



SELECTABLE CNC CONTROL



RAIS SYSTEM
M400



The vertical machining centers M400 and M450 RAIS are designed to perform various machining operations on small-size workpieces and shapes in high cutting speed conditions, with high precision positioning and excellent reliability.

Optimum construction; minimum heat deformation; absence of vibrations in working process; high geometry accuracy.

Directly driven spindle assembly and high precision bearings: minimum run out of the spindle taper; improved smoothness of operation under high-speed machining conditions; increased tool durability.

Telescopic guards along the three axes: long life of the ball screws and the linear guide ways.

RAIS SYSTEM
M450



Linear guideways along the three axes - size 25, zero clearance. Stable cutting under full load conditions. Minimum friction when in motion. High precision and high speed with no need for adjustment during operational life.



All ball screws - high precision, class P3, Ø32 mm OD, with a double nut, pre-loaded to control backlash. High precision of positioning and smooth operation.

Automated air blow during tool change ensures cleaning of the spindle taper and holder.

Directly coupled to the ball screws AC servo motors along all axes: guaranteed excellent interpolation accuracy.

Fully enclosed splash guard. Swivel panel of the CNC control. Maximum convenience for adjusting and operation purposes.

High-quality housing castings of gray cast iron. Optimum ribbed base, column and spindle casing; guaranteed maximum rigidity and minimum bending under applied load conditions.



TECHNICAL PARAMETERS	UNIT	M400	M450
CAPACITY			
X axis travel	mm	500	600
Y axis travel	mm	400	450
Z axis travel	mm	500	500
Spindle nose to table	mm	150 - 650	150 - 650
Table size	mm	760 x 400	760 x 450
T - slots: number x size x pitch	mm	3 x 18 x 93	3 x 18 x 93
Max workpiece weight	kg	350	350
Guideways		Linear	Linear
Floor to table	mm	870	870
SPINDLE			
Spindle speed range	rpm	8 000 / 12 000* / 15 000**	8 000 / 12 000* / 15 000**
Main motor power (100% ED / 30 min.)	kW	7.5 / 11	7.5 / 11
Main motor torque (100% ED / 30 min.)	Nm	35.8 / 70	35.8 / 70
Spindle taper		SK40 / ISO40 / BT40	SK40 / ISO40 / BT40
ATC			
Tool capacity		16 / 24***	16 / 24***
Max tool diameter	mm	90	90
Max tool diameter (adjacent pockets empty)	mm	110	110
Max tool length	mm	250	250
Max tool weight	kg	6	6
FEED			
Rapid traverse X / Y / Z	m/min	30 / 30 / 20	30 / 30 / 20
Max cutting feedrate	m/min	10	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW	Fanuc β iS 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 12/3000 / 1.8 kW	Fanuc β iS 12/3000 / 1.8 kW
X / Y axes motor torque (100% ED)	Nm	11	11
SIZE			
Machine weight	kg	3 100	3 200
Machine dimensions (approx.): L x W x H	mm	2230 x 2000 x 2400	2230 x 2000 x 2400
CNC CONTROL		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)****	
ACCURACY OF THE MACHINE		DIN8605-8607	DIN8605-8607

(*) with direct drive
(**) with motor spindle
(***) option
(****) on customer request

OPTIONAL ACCESSORIES

- | | |
|--|---|
| ✓ 4-th axis, table diameter 125 / 170 mm | ✓ 4-th & 5-th axes, table diameter 125 mm |
| ✓ Tool magazine 24 tools with arm | ✓ Direct drive spindle 15 000 rpm |
| ✓ Chip conveyor | ✓ Coolant trough spindle with pump 20 Bar |
| ✓ Tool setter | ✓ Touch probe with infra-red connection |

RAIS SYSTEM
M500

The vertical machining center M500 RAIS is designed to perform various machining operations on medium-size workpieces in high cutting speed and feed conditions.



Cartridge type spindle, without need of maintenance. High precision bearings (P4 class). The increased axial tightening force eliminates vibrations at heavy cutting conditions.

Linear guide ways along the three axes - size 35, zero clearance. Stable cutting under full load conditions. Minimum friction when in motion. High precision and high speed with no need for adjustment during operational life.

All ball screws - high precision, class P3, Ø40 mm OD, with a double nut, pre-loaded to control backlash. High precision of positioning and smooth operation.

Directly coupled to the ball screws AC servo motors along all axes: guaranteed excellent interpolation accuracy.

Telescopic guards along the three axes: long life of the ball screws and the linear guideways; fast and efficient flushing of chips by means of coolant liquid.

24 ATC fast tool change magazine - 2.8 sec. Automated air blow during tool change ensures cleaning of the spindle cone and holder.

High-quality housing castings of grey cast iron. Optimum ribbed base, column, spindle casing and table. Ensured for maximum rigidity and minimum bending under applied load conditions.

Fully enclosed electrical cabinet with heat exchanger, accordance to CE requirements.

Ability to implement with Automatic Pallette Changer.

Optimum construction: minimum heat deformation; absence of vibrations in working process; high geometry accuracy and smoothness; of finished surfaces.



TECHNICAL PARAMETERS

UNIT

M500

CAPACITY

X axis travel	mm	850
Y axis travel	mm	510
Z axis travel	mm	560
Spindle nose to table	mm	150 - 710
Table size	mm	1000 x 500
T - slots: number x size x pitch	mm	5 x 18 x 100
Max workpiece weight	kg	500
Guideways		Linear
Floor to table	mm	870

SPINDLE

Spindle speed range	rpm	8 000 / 10 000* / 12 000* / 15 000**
Main motor power (100% ED / 30 min.)	kW	11 / 15
Main motor torque (100% ED / 30 min.)	Nm	52.5 / 95.5
Spindle taper		SK40 / ISO40 / BT40

ATC

Tool capacity		24 (16 / 30 / 40)***
Max tool diameter	mm	80
Max tool diameter (adjacent pockets empty)	mm	150
Max tool length	mm	300
Max tool weight	kg	6

FEED

Rapid traverse X / Y / Z	m/min	30 / 30 / 20
Max cutting feedrate	m/min	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 12/3000 / 1.8 kW
X / Y axes motor torque (100% ED)	Nm	11

SIZE

Machine weight	kg	5 000
Machine dimensions (approx.): L x W x H	mm	2900 x 2420 x 2850

CNC CONTROL

Fanuc 0i
(Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)****

ACCURACY OF THE MACHINE

DIN8605-8607

(*) with direct drive
(**) with motor spindle
(***) option
(****) on customer request

OPTIONAL ACCESSORIES

- | | |
|---|---|
| ✓ 4-th axis, table diameter 250 / 320 mm | ✓ Tool setter |
| ✓ 4-th & 5-th axes, table diameter 200 / 250 / 320 mm | ✓ Touch probe with infra-red connection |
| ✓ Direct drive spindle 15 000 rpm | ✓ Coolant trough spindle 20 or 70 Bar |
| ✓ Tool magazine 30 or 40 tools with arm | ✓ Chip conveyor |

RAIS SYSTEM
M550

The vertical machining center M550 RAIS is designed to perform various machining operations on medium-size workpieces in high cutting speed and feed conditions.



Optimum construction: minimum heat deformation; absence of vibrations in working process; high geometry accuracy and smoothness; of finished surfaces.

Cartridge type spindle, without need of maintenance. High precision bearings (P4 class). The increased axial tightening force eliminates vibrations at heavy cutting conditions.

Linear guide ways along the three axes - size 35, zero clearance. Stable cutting under full load conditions. Minimum friction when in motion. High precision and high speed with no need for adjustment during operational life.

All ball screws - high precision, class P3, Ø40 mm OD, with a double nut, pre-loaded to control backlash. High precision of positioning and smooth operation.

Directly coupled to the ball screws AC servo motors along all axes: guaranteed excellent interpolation accuracy.

Telescopic guards along the three axes: long life of the ball screws and the linear guideways; fast and efficient flushing of chips by means of coolant liquid.

24 ATC fast tool change magazine - 2.8 sec. Automated air blow during tool change ensures cleaning of the spindle cone and holder.

High-quality housing castings of grey cast iron. Optimum ribbed base, column, spindle casing and table. Ensured for maximum rigidity and minimum bending under applied load conditions.

Fully enclosed electrical cabinet with heat exchanger, accordance to CE requirements.

Ability to implement with Automatic Pallette Changer.



TECHNICAL PARAMETERS	UNIT	M550
CAPACITY		
X axis travel	mm	1200
Y axis travel	mm	610
Z axis travel	mm	610
Spindle nose to table	mm	150 - 760
Table size	mm	1300 x 600
T - slots: number x size x pitch	mm	5 x 18 x 100
Max workpiece weight	kg	1000
Guideways		Linear
Floor to table	mm	870
SPINDLE		
Spindle speed range	rpm	8 000 / 10 000* / 12 000* / 15 000**
Main motor power (100% ED / 30 min.)	kW	11 / 15
Main motor torque (100% ED / 30 min.)	Nm	52.5 / 95.5
Spindle taper		SK40 / ISO40 / BT40
ATC		
Tool capacity		24 (16 / 30 / 40)***
Max tool diameter	mm	80
Max tool diameter (adjacent pockets empty)	mm	150
Max tool length	mm	300
Max tool weight	kg	6
FEED		
Rapid traverse X / Y / Z	m/min	20 / 20 / 20
Max cutting feedrate	m/min	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
X / Y axes motor torque (100% ED)	Nm	20
SIZE		
Machine weight	kg	6 800
Machine dimensions (approx.): L x W x H	mm	3450 x 2805 x 2950
CNC CONTROL		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)****
ACCURACY OF THE MACHINE		DIN8605-8607

(*) with direct drive
(**) with motor spindle
(***) option
(****) on customer request

OPTIONAL ACCESSORIES

- ✓ 4-th axis, table diameter 250 / 320 mm
- ✓ 4-th & 5-th axes, table diameter 200 / 250 / 320 mm
- ✓ Direct drive spindle 15 000 rpm
- ✓ Tool magazine 30 or 40 tools with arm
- ✓ Tool setter
- ✓ Touch probe with infra-red connection
- ✓ Coolant trough spindle 20 or 70 Bar
- ✓ Chip conveyor

RAIS SYSTEM
M700

These vertical machining centers are designed to perform various machining operations on medium and large-size work pieces in high cutting speed and feed conditions.



Optimum construction: minimum heat deformation; absence of vibrations in working process; high geometry accuracy of finished surfaces.

M700 - machine with belt driven or direct driven spindle

OPTION:
M700G - machine with a gearbox between main motor and spindle



Reinforced spindle assembly with precise grinded parts. Increased size of bearings. High processing speeds under heavy operating conditions.

Telescopic guards along the three axes: long life of the ball screws and the linear guide ways; fast and efficient flushing of chips by means of coolant liquid.

24 ATC fast tool change magazine - 2.8 sec. Automated air blow during tool change.

Fully enclosed machine guarding design provides a save, dry, clean working environment. Swivel panel of the CNC control. Highest convenience for easy setup and manipulating.

Wide and hardened precise grinded flat slide ways on all axes. Stable work by heavy cutting conditions. Super high grade "Turcite-B" fitted to X, Y, Z slide ways gives 40 % greater stability.

All ball screws - high precision, class P3, Ø40 mm OD, with a double nut, pre-loaded to control backlash. High precision of positioning and smooth operation.

Directly coupled to the ball screws AC servo motors along all axes. Excellent interpolation accuracy.

Guaranteed precision and stability in the long transverse stroke of the four flat guideways surfaces on Y-axis.



TECHNICAL PARAMETERS	UNIT	M700
CAPACITY		
X axis travel	mm	1300
Y axis travel	mm	700
Z axis travel	mm	710
Spindle nose to table	mm	130 - 840
Table size	mm	1500 x 650
T - slots: number x size x pitch	mm	5 x 18 x 100
Max workpiece weight	kg	1000
Guideways		Flat
Floor to table	mm	820
SPINDLE		
Spindle speed range	rpm	8 000 (6 000 / 12 000 / 15 000)*
Main motor power (100% ED / 30 min.)	kW	11 / 15
Main motor torque (100% ED / 30 min.)	Nm	52.5 / 95.5
Spindle taper		SK40 / ISO40 / BT40 (50)*
ATC		
Tool capacity		24 (30 / 40)**
Max tool diameter	mm	80 / 125*
Max tool diameter (adjacent pockets empty)	mm	150 / 200*
Max tool length	mm	300
Max tool weight	kg	6 / 15*
FEED		
Rapid traverse X / Y / Z	m/min	20 / 20 / 20
Max cutting feedrate	m/min	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
X / Y axes motor torque (100% ED)	Nm	20
SIZE		
Machine weight	kg	9 200
Machine dimensions (approx.): L x W x H	mm	3200 x 2825 x 3080
CNC CONTROL		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)***
ACCURACY OF THE MACHINE		DIN8605-8607

(*) option with BT / ISO 50

(**) option

(***) on customer request

OPTIONAL ACCESSORIES

- | | |
|---|---|
| ✓ 4-th & 5-th axes, table diameter 320 mm | ✓ Tool magazine 30, 40 or 60 tools with arm |
| ✓ Tool setter | ✓ Direct drive spindle 10 000 rpm |
| ✓ Touch probe with infra-red connection | ✓ Chip conveyor |
| ✓ Coolant trough spindle 20 or 70 Bar | |

OPTION:

RAIS SYSTEM

M700L / M700LG

TECHNICAL PARAMETERS	UNIT	M700L	M700LG
CAPACITY			
X axis travel	mm	1300	
Y axis travel	mm	700	
Z axis travel	mm	700	
Spindle nose to table	mm	130 - 830	
Table size	mm	1450 x 700	
T - slots: number x size x pitch	mm	5 x 18 x 125	
Max workpiece weight	kg	1000	
Guideways		Linear	
Floor to table	mm	820	
SPINDLE			
Spindle speed range	rpm	8 000 (6 000 / 12 000 / 15 000)*	
Main motor power (100% ED / 30 min.)	kW	11 / 15	
Main motor torque (100% ED / 30 min.)	Nm	52.5 / 95.5	
Spindle taper		SK40 / ISO40 / BT40 (50)*	
ATC			
Tool capacity		24 (30 / 40)**	
Max tool diameter	mm	80 / 125*	
Max tool diameter (adjacent pockets empty)	mm	150 / 200*	
Max tool length	mm	200 / 300*	
Max tool weight	kg	6 / 15*	
FEED			
Rapid traverse X / Y / Z	m/min	20 / 20 / 20	
Max cutting feedrate	m/min	10	
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW	
Z axis motor torque (100% ED)	Nm	20	
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW	
X / Y axes motor torque (100% ED)	Nm	20	
SIZE			
Machine weight	kg	7 000	7 400
Machine dimensions (approx.): L x B x H	mm	3650 x 2915 x 3027	
CNC CONTROL			
		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)****	
ACCURACY OF THE MACHINE		DIN8605-8607	

(*) option with BT / ISO 50

(**) option

(***) on customer request

M700L

- is a linear guideway variant of M700

M700LG

- linear guideway variant of M700 with a gearbox between main motor and spindle

M700LL

- machine with linear guideways and long X-axis travel

M700LLG

- variant of M700LL with a gearbox between main motor and spindle

OPTION:

RAIS SYSTEM

M700LL / M700LLG

TECHNICAL PARAMETERS	UNIT	M700LL	M700LLG
CAPACITY			
X axis travel	mm	1600	
Y axis travel	mm	700	
Z axis travel	mm	700	
Spindle nose to table	mm	130 - 830	
Table size	mm	1750 x 700	
T - slots: number x size x pitch	mm	5 x 18 x 125	
Max workpiece weight	kg	2200	
Guideways		Linear	
Floor to table	mm	900	
SPINDLE			
Spindle speed range	rpm	8 000 (6 000 / 12 000 / 15 000)*	
Main motor power (100% ED / 30 min.)	kW	15 / 18.5	
Main motor torque (100% ED / 30 min.)	Nm	71.6 / 117.8	
Spindle taper		SK40 / ISO40 / BT40 (50)*	
ATC			
Tool capacity		24 (30 / 40)**	
Max tool diameter	mm	80 / 125*	
Max tool diameter (adjacent pockets empty)	mm	150 / 200*	
Max tool length	mm	200 / 300*	
Max tool weight	kg	6 / 15*	
FEED			
Rapid traverse X / Y / Z	m/min	20 / 20 / 15	
Max cutting feedrate	m/min	10	
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 30/2000 / 3 kW	
Z axis motor torque (100% ED)	Nm	27	
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 30/2000 / 3 kW	
X / Y axes motor torque (100% ED)	Nm	27	
SIZE			
Machine weight	kg	10 000	10 400
Machine dimensions (approx.): L x B x H	mm	4370 x 2915 x 3027	
CNC CONTROL			
		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)***	
ACCURACY OF THE MACHINE		DIN8605-8607	

(*) option with BT / ISO 50

(**) option

(***) on customer request

OPTIONAL ACCESSORIES FOR M700L / M700LG / M700LL / M700LLG

- ✓ 4-th & 5-th axes, table diameter 320 mm
- ✓ Tool setter
- ✓ Touch probe with infra-red connection
- ✓ ZF gear box

- ✓ Coolant trough spindle 20 or 70 Bar
- ✓ Tool magazine 30, 40 or 60 tools with arm
- ✓ Direct drive spindle 10 000 rpm
- ✓ Chip conveyor

RAIS SYSTEM
M800
M1000
M2000

These vertical machining centers are designed to perform various machining operations on large-size work pieces in high cutting speed and feed conditions.



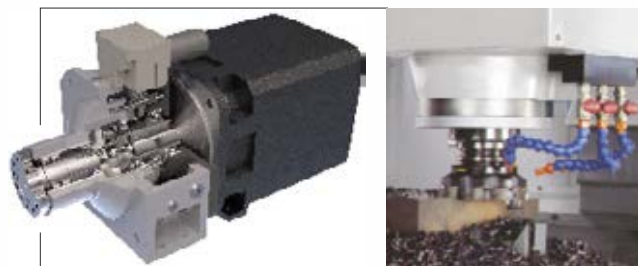
M800 / 1000 / 2000

- machines with belt driven or direct driven spindle

OPTION:

M800G / 1000G / 2000G

- machines with a gearbox between main motor and spindle



Directly coupled to the ball screws AC servo motors along all axes.

All ball screws - high precision, class P3, Ø50 mm OD, with a double nut, pre-loaded to control backlash. Screw pre-tensioned to compensate for temperature variations.

Two-step gear box. All gear wheels are hardened and precisely ground to size. Low noise and excellent smoothness during the process. High torque.

Reinforced spindle assembly. 4 - 6 slide way configuration on Y axis.

Fully enclosed electrical cabinet with heat exchanger, accordance to CE requirements.

Optimum machine design: minimum temperature deformation; absence of vibrations in working process; high and stable geometry accuracy.



Wide and hardened precise grinded prismatic slide ways on the three axes. Guaranteed stable work by heavy cutting conditions. Super high grade "Turcite-B" fitted to X, Y, Z slide ways.

24 ATC fast tool change magazine - 2.8 sec. Automated air blow during tool change.



TECHNICAL PARAMETERS	UNIT	M800	M1000	M2000
CAPACITY				
X axis travel	mm	1600	2000	2000
Y axis travel	mm	800	900	900
Z axis travel	mm	800	800	800
Spindle nose to table	mm	200 - 1000	200 - 1000	200 - 1000
Table size	mm	1800 x 840	2200 x 850	2200 x 850
T - slots: number x size x pitch	mm	5 x 22 x 150	5 x 22 x 150	5 x 22 x 150
Max workpiece weight	kg	2 200	2 500	2 500
Guideways		Flat	Flat	Flat
Floor to table	mm	900	900	910
SPINDLE				
Spindle speed range	rpm	6 000	6 000	6 000
Main motor power (100% ED / 30 min.)	kW	15 / 18.5	15 / 18.5	15 / 18.5
Main motor torque (100% ED / 30 min.)	Nm	71.6 / 117.8	71.6 / 117.8	71.6 / 117.8
Spindle taper		SK / ISO / BT50 (40)*	SK / ISO / BT50 (40)*	SK / ISO / BT50 (40)*
ATC				
Tool capacity		24 (40 / 60)*	24 (40 / 60)*	24 (40 / 60)*
Max tool diameter	mm	130	130	130
Max tool diameter (adjacent pockets empty)	mm	150	150	150
Max tool length	mm	300	300	300
Max tool weight	kg	6	6	6
FEED				
Rapid traverse X / Y / Z	m/min	20 / 20 / 15	20 / 20 / 15	20 / 20 / 15
Max cutting feedrate	m/min	10	10	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 30/2000 / 3 kW	Fanuc β iS 30/2000 / 3 kW	Fanuc β iS 30/2000 / 3 kW
Z axis motor torque (100% ED)	Nm	27	27	27
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 30/2000 / 3 kW	Fanuc β iS 30/2000 / 3 kW	Fanuc β iS 30/2000 / 3 kW
X / Y axes motor torque (100% ED)	Nm	27	27	27
SIZE				
Machine weight	kg	14 500	16 000	24 000
Machine dimensions (approx.): L x B x H	mm	4 400 x 3 300 x 3 300	5 500 x 3 435 x 3 310	6 130 x 4 200 x 3 660
CNC CONTROL				
Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)**				
ACCURACY OF THE MACHINE		DIN8605-8607	DIN8605-8607	DIN8605-8607

(*) option

(**) on customer request

OPTIONAL ACCESSORIES

- ✓ 4-th & 5-th axes, table diameter 320, 350 mm
- ✓ Tool setter
- ✓ Touch probe with infra-red connection

- ✓ Direct drive spindle 6000 rpm
- ✓ Tool magazine 32, 40 or 60 tools with arm
- ✓ Coolant trough spindle with pump 20 or 70 Bar



The machine design is distinguished by minimal temperature deformation; absence of vibrations in working process; high and stable geometry accuracy of finished surfaces.



The 5-axis vertical machining center RAIS VMC350 is designed to perform various machining operations with high cutting speed and feed conditions for Aerospace industry, Automotive industry, Die & Mold, Medical industry.

All VMC machines are designed to operate with direct drive spindle - to avoid noise and vibration.

24 ATC fast tool change magazine. Automated air blow during tool change.

Directly coupled to the ball screws AC servo motors along all axes.

All ball screws - high precision, class P3, Ø40 mm OD, with a double nut, pre-loaded to control backlash. Screw pre-tensioned to compensate for temperature variations.

The 5-axis machine can also deal with complex parts from aluminum to stainless steel.

TECHNICAL PARAMETERS	UNIT	VMC350
CAPACITY		
X axis travel	mm	600
Y axis travel	mm	560
Z axis travel	mm	510
Spindle nose to table	mm	150 - 510
Max tilting on A axis	deg	+ 125 / -10
Max rotating on C axis	deg	+/- 360
Table size	mm	Ø350 (Ø450)
T - slots: number x size	mm	8 x 14H7
Max workpiece weight: horizontal / 90°	kg	300 / 200
Guideways		Linear
Floor to table	mm	680
SPINDLE		
Spindle speed range	rpm	12 000 (8 000 / 15 000 / 18 000)*
Main motor power (100% ED / 30 min.):**	kW	7.5 / 11
Main motor torque (100% ED)	Nm	17.9 / 47.7
Spindle taper		SK40 / ISO40 / BT40
ATC		
Tool capacity		24 (40 / 60)*
Max tool diameter	mm	80
Max tool diameter (adjacent pockets empty)	mm	110
Max tool length	mm	350
Max tool weight	kg	8
FEED		
Rapid traverse X / Y / Z	m/min	20 / 20 / 20
Max cutting feedrate	m/min	10
Z axis motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc β iS 22/2000 / 2.5 kW
X / Y axes motor torque (100% ED)	Nm	20
SIZE		
Machine weight	kg	8 000
Machine dimensions (approx.): L x B x H	mm	3650 x 3400 x 2700
CNC CONTROL		Fanuc Oi (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)***
ACCURACY OF THE MACHINE		DIN8605-8607

(*) option
(**) option with Fanuc equipment
(***) on customer request

OPTIONAL ACCESSORIES

- ✓ Direct drive spindle 12 000 rpm and 15 000 rpm
- ✓ Touch probe with infra-red connection
- ✓ Tool setter with infrared connection
- ✓ Coolant trough spindle with pump 20 or 70 Bar

RAIS SYSTEM
VMC650

The machine design is distinguished by minimal temperature deformation; absence of vibrations in working process; high and stable geometry accuracy of finished surfaces.

The 5-axis vertical machining center RAIS VMC650 is designed to perform various machining operations with high cutting speed and feed conditions for Aerospace industry, Automotive industry, Die & Mold, Medical industry.

Linear rollers provide low friction and slip-away (particularly important advantages for high-speed 3D cutting and finishing). Improves the surface quality of the workpiece - there is no need for further polishing!

Reinforced linear guide carrier for structural stability and fast power supply.

The rotating table with a solid base provides excellent resistance to plasticity and vibration.

24 ATC fast tool change magazine. Automated air blow during tool change.

The machine has two doors for more convenient loading of the workpiece. Control panel with a turnover of 160 ° for operator convenience.

Full protection of the work area. Emergency stop button for full operator safety.

The 5-axis machine can also deal with complex parts from aluminum to stainless steel.



TECHNICAL PARAMETERS	UNIT	VMC650
CAPACITY		
X axis travel	mm	620
Y axis travel	mm	520
Z axis travel	mm	460
Spindle center to column surface	mm	150 - 610
B-axis swiveling range	deg	-50 / +110
Max rotating on C axis	deg	+/- 360
Table size	mm	Ø650
T - slots: number x size x pitch	mm	5 x 18H7 x 100
Max workpiece weight: horizontal / 90°	kg	300 / 200
3 axis slide ways		Linear (roller type) guideways
SPINDLE		
Spindle speed range	rpm	12 000 (15 000 / 24 000)*
Main motor power (100% ED / 30 min.)**	kW	7.5 / 11
Main motor torque (100% ED)	Nm	47.7
Spindle taper		BT40
ATC		
Tool capacity		24 (40)*
Max tool diameter	mm	75
Max tool diameter (adjacent pockets empty)	mm	125
Max tool length	mm	250
Max tool weight	kg	6.8
FEED		
Rapid traverse X / Y / Z	m/min	36 / 36 / 36
Max cutting feedrate	m/min	15
Z axis motor: type / power (100% ED)	kW	Fanuc βi S 22/2000 / 2.5 kW
Z axis motor torque (100% ED)	Nm	20
X / Y axes motor: type / power (100% ED)	kW	Fanuc βi S 22/2000 / 2.5 kW
X / Y axes motor torque (100% ED)	Nm	20
SIZE		
Machine weight	kg	8 200
Machine dimensions (approx.): L x W x H	mm	2500 x 2700 x 3000
CNC CONTROL		Fanuc 0i (Fanuc 32i / Siemens 828D / Siemens 840D / Heidenhain iTNC620)***
ACCURACY OF THE MACHINE		DIN8605-8607

(*) option

(**) option with Fanuc equipment

(***) on customer request

OPTIONAL ACCESSORIES

- ✓ Direct drive spindle 15 000 rpm and 24 000 rpm
- ✓ Tool setter
- ✓ Automatic tool changer (40-tools BT40), chain type
- ✓ Touch probe with infra-red connection
- ✓ Coolant trough spindle with pump 20 or 70 Bar
- ✓ Main motor 15 kW

RAIS ^{cnc} machine tools

**VERTICAL
MILLING
MACHINES**

**5-AXIS
MACHINING
CENTERS**

**CNC
LATHES**

**DOUBLE
SPINDLE
CNC LATHES**



ISO 9001 ISO 18001 **CE**



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Manufacturer's specifications are accurate as of the date of publication and may be changed without prior notice to incorporate improvements resulting from ongoing research and development programs.