NCT®

CONTROL | DRIVES | MOTORS

KEEP MOVING

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Dear Our Partners and Readers,

Thank you for your kind attention and I welcome you among the readers of the NCT product catalogue. With this publication, we would like to provide you with a comprehensive picture of our company's development, manufacturing and service activities in the fields of machine building.

In the first part of the catalogue you can learn about the history of NCT Kft. We present our development activities. We introduce you to our after-sales services, as well as activities of the NCT Academy. The second half of the catalogue presents the machine tools and accessories we offer. The core business of NCT is development of CNC controls and drive technology and manufacturing them. This cannot be performed at a high level without continuous and close contact with machine manufacturers and machine end users. NCT works with several leading Asian and European machine tool manufacturers. Our cooperation began with the purchase of the mechanics of their machines, but today we are also involved in development of their machine tools.

The technical and market information we receive from them represents a great help to us in gaining access to the huge Asian market with our products and to increase our market share in other European and US countries as well. Our company is also making great strides in its own machine manufacturing. At our new machine manufacturing premises in Taksony, we expanded our machine manufacturing capacity with one of the largest and most accurate bed grinding machines and five-axis machining centres in Central Europe. At that site, in a 5400 m2 modern factory area, we have built a new Hungarian machine tool factory with an excellent team of specialists. All our CNC machines are equipped with electronics developed and manufactured by our company. We provide our Customers with electrical integration, installation of optional accessories, start-up, testing, measuring of the machines and, of course, all warranty and non-warranty services. Together with the building and development of machine tools, we develop and manufacture our CNC controls and drive technology associated with them. As a result, we directly receive and see the needs of users and those of our own machine building activity, and other requirements emerging in the course of testing the machine tools. Our latest products and services are provided bearing environmental awareness, high speed and ultra-precision in mind.

Póka István

István Póka
Managing Director

Products and services of the NCT Kft.

1. Electronic product development and manufacturing

- State of the art CNC controls for widespread use
- Servo drives and servo motors
- Torque motors and motors for motor spindles

2. Manufacturing, modernization and sales of machine tools:

- CNC machining centres, milling machines and lathes
- Grinding machines
- Electrical discharge machines
- Traditional machine tools

3. Services related to the machine tools:

- Designing, manufacturing and installation of specific solutions
- Turret replacement
- Installation of mist cleaners and cooling equipment
- Installation of bar guides and bar feeders
- Installation of CNC indexing mechanisms and rotary tables

4. Service:

- Servicing and procuring products and equipment manufactured or marketed by the NCT
- Scheduled preventive maintenance of machine tool
- Competent servicing the HEIDENHAIN products

5. After-sales services:

- Installation and relocation of machine tools
- Accuracy measurement on machine tools; linear, nonlinear and straightness compensation by using RENISHAW XC-80 laser interferometer
- Dynamic measurement test on machine tools by using RENISHAW QC-20 ballbar system
- Checking the tool drawing force on milling machines
- Checking the chuck clamping force
- Vibration analysis of spindles and motors, motor balancing
- Replacing a CNC control of any type by control of NCT type, renewal older NCT control (NCT UPGRADE)
- Complete electrical and mechanical renewal and modernization of machine tools, converting traditional machine tools of great value to CNC machines

6. Software, training, NCT Academy:

- Training in the operation and programming of NCT controls (NCT Academy)
- Selling, installation of and training the VECTOR software
- Consultation on technology matters

NCT 304 control and services

Rapid development of computer hardware and operating systems enabled us to create a new type in which we have been able to integrate the latest WINDOWS operating system for the user interface without compromise, while maintaining the proven simple hardware architecture of previous NCT controls.

In the NCT 304 control, a single computer behind the screen performs CNC and user interface (HMI) tasks, but in this single computer, 4 processors (4 cores) throb. On two cores, the NCT user interface (HMI) installed for well-known WINDOWS operating system and wide range of applications run, while the CNC system (CNC kernel) runs on the other two cores.

Our state-of-the-art CNC programming software VECTOR and the solid body representation integrated in the NCT HMI can already be used on this control. The system has been designed and opened in such a way that the user interface can be replaced or improved by either NCT or the machine builder himself according to his own needs or the given machine.

This development has opened up a whole new market for NCT. It has enabled us to design custom-tailored, own and specific user interfaces for machine builders. With this, we can reach those OEM partners who want to enter their markets with CNC user and programming interface of their own design.

NCT 304 control and services

Touchscreen

The main advantage of a touchscreen is that very friendly user interface (HMI) can be created by using it. In this case, data are entered by using a virtual keyboard 'painted' on the touchscreen. Since it is a virtual keyboard, adapting to different languages is not a problem either. The size and position of the buttons at the edge of the screen allows convenient data entry.

myNCT dialog programming

The myNCT data entry integrated in NCT 304 helps with efficient G programming. No need to keep in mind complicated title chains. The control offers dialog tables. Spreadsheets can be freely mixed by program writing in a text editor. Of course, we can do all this even at the same time as implementing another technology program.

Solid body representation

Since the input to this graphical representation is command data issued to the servo drives, the workpiece image is displayed on the high-resolution screen of the NCT controls as it will be in reality after machining. You can also display the model of a blank. In this case, the machining is drawn on the blank so that the user can see the exact result of the machining.

Remote diagnostics

Our remote diagnostic service provides simple, fast, economical troubleshooting, if the user provides us with the possibility to connect to the NCT 304 control via the Internet. With the help of remote diagnostics, the NCT specialist has the opportunity to operate almost everything from from our centre he would have as if he stood next to the machine. There is no cost of on-site visit and most of all there is no costly waiting time. The use of the remote diagnostics service extends the warranty period and is completely free of charge.

NCT NOW service – Remote machine monitoring

Whether with your office computer or any mobile device, you can see your machine tools from anywhere in the world at any time. You don't need to add anything other than an internet connection and the NCT NOW service. You can see the current operating status and utilization of your machines. Even in the event of a failure, you don't have to bother sending the log file. Through NCT NOW, our service centre can also download the log file.

Architecture and peripherals of the NCT 304 and the new compact NCT drive technology

The hardware of the NCT 204

In standard version, the NCT 304 is a touchscreen with an industrial computer behind it. This hardware includes the complete CNC software with the PLC integrated in it. All the peripherals operating the machine tool connect to this unit through the EtherCAT channel which is a world standard today. Such EtherCAT peripherals are the machine control keyboard itself with the handwheel, the PLC I/O units available in wide variety and the servo drives. Since we are talking about standardized peripherals management and what is more, about world standard, EtherCAT peripheral elements produced by other manufacturers can also be used, or even they can be mixed freely with the NCT peripherals.

NCT servo motors

The A, Ai, AiS, AMS and TORQUE motors produced by NCT meet even the highest user's requirements. As far as the mechanical design, the size, the speed and the electrical parameters are concerned, our motors are developed specifically for machine tool application.

EnDat 2.2

As standard design, HEIDENHAIN EnDat 2.2 absolute measuring systems are built into the NCT servo motors; these systems provide resolution of 10-50 nm, high accuracy and such degree of reliability, which was unimaginable in the case of the former incremental technology.

NCT compact servo drive family

It is a space-saving, easy-to-mount and economic construction because drive boxes can be placed next to each other and keeping a distance between the units is not required. By relocating the fixing tongue, the cooling elements of the transistors can be place in a ventilated space isolated from the electric cabinet.

The NCT servo drives play a key role in the NCT remote diagnostics service, too. The SoE communication provides remote monitoring up to the level of the EnDat 2.2 encoder mounted on the NCT motor. Covered buses -Smart appearance. The high-voltage power supply for the drive modules is provided by a pair of rails recessed in the front panel. After simply removing the plastic front cover for touch protection, any unit can be removed from the drive row by turning the rail elements without removing them.

NCT®
CONTROL | DRIVES | MOTORS
KEEP MOVING

ROUTER MACHINES
WATER / PLASMA / LASER / MILLING

MILLING MACHINES
AND LATHE MACHINES

DENTAL
MILLING MACHINES

CONSTRUCTION
MACHINING CENTRES

NCT

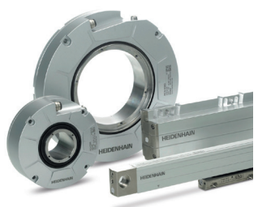
R3, R5, R10

INDUSTRIAL ROBOTS

HEIDENHAIN

Marketing and competent servicing the HEIDENHAIN products:

Our company has applied and marketed HEIDENHAIN measuring systems in large quantities for several decades and our professionals participate regularly in trainings held in the headquarters of the HEIDENHAIN GmbH. As our company has its own electronics development and production, we know the HEIDENHAIN measuring systems in almost the same depth as our own products. NCT was one of the first companies in the world who started to use the EnDat 2.2 absolute scales and encoders, creating the necessary professional skills and (specific) service background.
Our company possesses all available measuring-adjusting and diagnostic devices which are essential for fast service of manufacturer-quality. The parts that are generally needed for repairs are in stock, and we also have spare kits of the measurement systems demanded most commonly.



Measuring systems:

To the NCT products, we use incremental and absolute measuring systems of the HEIDENHAIN GmbH, a leading company in the field of measuring system. We adapt ourselves to the 11 µApp, 1 Vpp and TTL incremental measuring C-type systems – be they systems with one or two reference marks or systems with distance-coded reference marks. By using the HEIDENHAIN EnDat 2.2 measuring systems, we achieve both the absolute position measurement and the sub-micron resolution, at the same time.

NCT ACADEMY

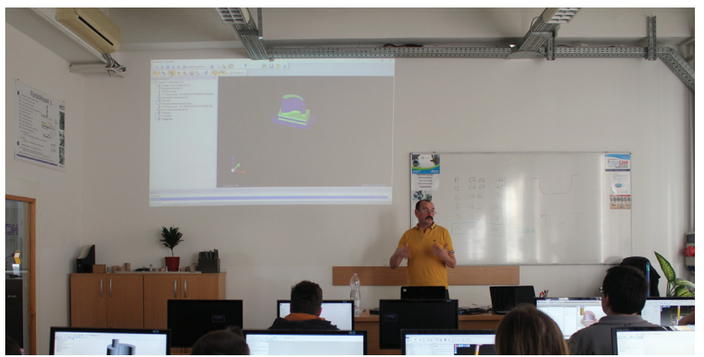
The NCT Academy Non-profit Limited Company is the number one CNC school in Hungary. Our fleet of modern machines and highly qualified teaching staff are the guarantee of success!

Trainings included in the National Training List:

- CNC machine operator (OKJ: 35 521 01)
- Machine tool operator (OKJ: 34 521 03)
- PLC programmer (OKJ: 51 523 01)

Further vocational training courses:

- CNC programmer
- Sub-spindle lathe
- 5-axis CNC
- Solid Edge advanced 3D modeller
- Vector CAD
- Vector CAM



NCT Akadémia

We also provide you with customized training tailored to your needs at your premises or at the NCT Academy..

Contacts:

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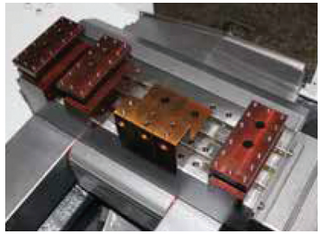
+36 30 519 1811

SD-32

- Cast iron bed and slide structure
- Hardened and ground bed way
- Linear guideway system
- Headstock with grease lubrication
- Easy to operate, spacious workspace

Specifications

	SD-32	SD-32Y
Max. swing (mm)	500	
Max. turning diameter (mm)	100	
Max. turning length (mm)	100	
Spindle drive	BELT	
Spindle speed (rpm)	6000	
Bar capacity (mm)	32	
Main motor power (kW)	3.7	
Axes	X / Z	X / Y / Z
X / Z axis rapid traverse rate (mpm)	15 / 15	15 / 15 / 15
Y axis travel (mm)		100 (mm)
Tooling	GANG-TYPE / TURRET 8 (opt.)	
Net machine weight (kg)	1700	1750
Floor area × height (mm)	1850 x 1500 x 1700	

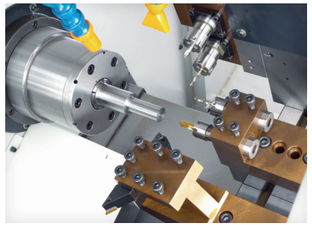


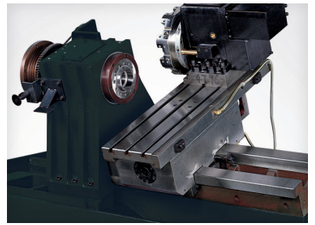
SMART-42

- Massive cast bed and slide structure
- 30° slant X bed
- Hardened and ground bed way
- Linear guideway system
- Headstock with grease lubrication

Specifications

	SMART-42	
Max. swing (mm)	320	
Max. turning diameter (mm)	200	
Max. turning length (mm)	140	
Spindle drive	BELT	
Spindle speed (rpm)	4000 (6000)	
Bar capacity (mm)	42	
Main motor power (kW)	10	
Axes	X / Z	
X / Z axis rapid traverse rate (mpm)	16 / 16	
Tooling	GANG-TYPE / VDI20	GANG-TYPE / VDI16
Number of tool stations (static / live)	8 / 8	12 / 12
Net machine weight (kg)	2200	
Floor area × height (mm)	2050 x 1480 (1850) x 1800	



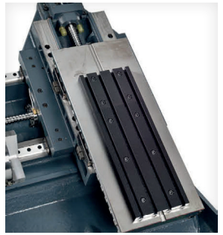


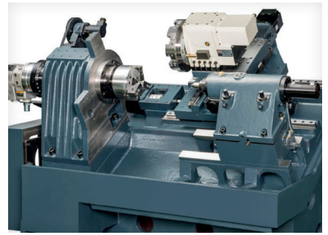
MSL-200

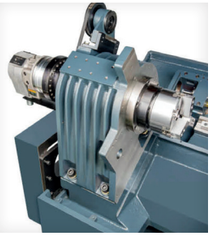
- Robust cast bed, headstock and slide system
- 30° slant X bed
- Linear guideway in each direction
- Hydraulically actuated chuck, turret and tailstock quill

Specifications

	MSL-200
Max. swing (mm)	490
Max. turning diameter (mm)	360
Max. turning length (mm)	400
Spindle drive	BELT
Spindle speed (rpm)	4200
Bar capacity (mm)	52
Main motor power (kW)	11
Axes	X / Z
X / Z axis rapid traverse rate (mpm)	24/30
Tooling	HYDRAULIC TURRET
Number of tool stations (static / live)	10
Net machine weight (kg)	3175
Floor area × height (mm)	3000 × 1665 × 1910





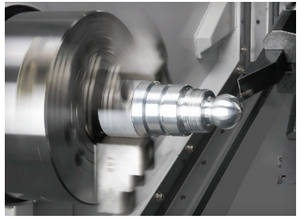


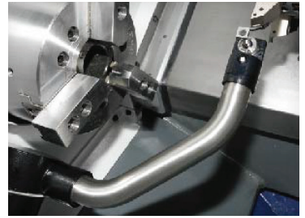
TCS-1500, -2000(L), -2500(L)

- Robust cast bed, headstock and slide system
- 45° slant X bed
- Widespread and assembled linear guideway in each direction
- Ground and double-nut ballscrews
- Headstock with lasting grease lubrication
- Slide system and ballscrews with oil lubrication

Specifications

	TCS-1500	TCS-2000 (L)	TCS-2500 (L)
Max. swing (mm)	520		
Max. turning diameter (mm)	320		
Max. turning length (mm)	400	400 (600)	
Spindle drive	BELT		
Spindle speed (rpm)	4800	4500	2500
Bar capacity (mm)	44	51	64 / 74
Main motor power (kW)	14	21	28
Axes	X / Z		
X / Z axis rapid traverse rate (mpm)	30 / 30		
Tooling	TAIWANESE/ VDI30 / VDI40 / BMT65		
Number of tool stations (static / live)	12 / 12 (TAIWANESE / VDI40 / BMT65), 16 / 16 (VDI30)		
Tool change	TURRET		
Net machine weight (kg)	3250	3300 (3900)	3400 (4000)
Floor area × height (mm)	3231 × 1820 × 2380	3231 (3431) × 1820 × 2380	3231 (3431) × 1820 × 2380



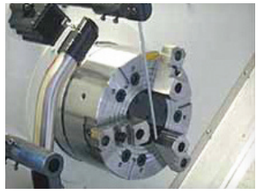


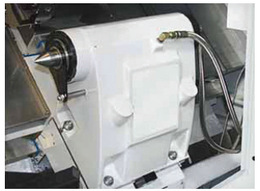
S-TURN-52, -76, -92, -117(L)

- Robust cast bed, headstock and slide system
- 60° slant bed
- Flat slideway with TURCITE coating in each direction
- Ground and double-nut ballscrews
- Headstock with lasting grease lubrication

Specifications

	S-TURN-52 (L)	S-TURN-76 (L)	S-TURN-92 (L)	S-TURN-117 (L)
Max. swing (mm)	600			900
Max. turning diameter (mm)	580			700
Max. turning length (mm)	750 (1250)			1300 (2050 / 2800 / 3800)
Travel of optional Y axis (mm)	110 (+ / -55) (opt.)			110 (+ / -50) (opt.)
Spindle drive	BELT			
Spindle speed (rpm)	4500	3000	2500	1500
Bar capacity (mm)	51	75	90	117
Main motor power (kW)	36	39	45	52
Axes	X / (Y) / Z			
X / Z axis rapid traverse rate (mpm)	24 / 24			20 / 20
Tooling	JAPANESE / VDI 40 / BMT 65		JAPANESE / VDI 40 / VDI 50 / BMT 65	VDI 50 / BMT 75
Number of tool stations (static / live)	12 / 12			
Tool change	TURRET			
Net machine weight (kg)	5700 (7200)			13000 (+)
Floor area × height (mm)	3015 (+1100) × 1846 ×2016			4850 (+) × 2350 × 2300





EUROTURN-12C

- Assembled linear guideway in each direction
- Precision ballscrews
- Coolable headstock with lasting grease lubrication
- Slide system and ballscrews
- Servo turret with live tooling
  + C axis machining
- Sub-spindle + C axis

Specifications

	EUROturn-12C
Max. swing (mm)	310
Max. turning diameter (mm)	150
Max. turning length (mm)	280
Spindle drive	BELT
Spindle / sub-spindle speed (rpm)	6000 / 6000
Spindle / sub-spindle bar capacity (mm)	44 / 20
Main motor power	
Max. spindle / sub-spindle motor power (kW)	12.5 / 3.2
Axes	X / Z / C1 / C2 / W
X / Z / W axis rapid traverse rate (mpm)	13 / 30 / 30
Tooling	VDI16 / VDI20
Number of tool stations (static / live)	12 / 8
Net machine weight (kg)	1950
Floor area × height (mm)	2580 × 2060 × 1950

JCL-60MY

- Slant bed CNC lathe machine
- Y-axis machining
- Cast iron bed and slide system
- Slide system and ballscrews
- BMT turret with live tooling

Specifications

	JCL-60MY
Workspace	
Max. swing over bed (mm)	500
Max. turning diameter (mm)	300
Max. turning length (mm)	400
X / Z / Y axis travel (mm)	190 / 500 / 120 (+/- 60)
Spindle drive	BELT
Spindle speed (rpm)	3500
Bore diameter / bar capacity (mm)	75 / 60
Main motor cont. / max. power (kW)	15 / 21
Axes	
X / Z / Y axis rapid traverse rate (mpm)	24 / 24 / 24
Tooling	BMT
Number of tool stations (static / live)	12
Tool change (s)	0.2
Net machine weight (kg)	4085
Floor area × height (mm)	2885 × 2006 × 2005

DUAL-52, -65 (L) Y

- Slant bed CNC lathe machine
- Sub-spindle with C-axis machining
- Y-axis machining
- Cast iron bed and slide system
- BMT turret with live tooling

Specifications

	DUAL-52 (L) Y	DUAL-65 (L) Y
Max. swing (mm)	650	
Max. turning diameter (mm)	380	
Max. turning length (mm)	520 (opt. 1020)	
X / Y / Z / Z2 axis travel (mm)	215(200+15) / 100(+/-50) / 520 (opt. 1020) / 520 (opt. 1020)	
Spindle drive	BELT	
Spindle / sub-spindle speed (rpm)	5000 / 5000	4000 / 5000
Spindle / sub-spindle bar capacity (mm)	52 / 45	65 / 45
Max. spindle / sub-spindle motor power (kW)	15 / 11	15 / 11
Axes	X / Y /Z / Z2	
X / Y /Z / Z2 axis rapid traverse rate (mpm)	24 / 6 / 24 / 24	
Tooling	BMT	
Number of tool stations (static / live)	12	
Net machine weight (kg)	5100	5200
Floor area × height (mm)	3985 × 3135 × 1950	4485 × 3135 × 1950

JSL-20A, JSL-26A, JSL-32A, JSL-26AB, JSL-32AB, JSL-42AB

- Cast iron bed and slide system
- Assembled linear guideways in each axis
- Live tooling, Y- and C-axis machining
- Directly-driven spindleand sub-spindle (motor spindle)

Specifications

	JSL-20A	JSL-26A	JSL-32A
Max. turning diameter (mm)	20	26	32
Max. turning length with static / rotary guide bush (mm)	200 / 85	220 / 200	
Spindle drive	MOTOR SPINDLE		
Spindle speed (rpm)	8000	7000	
Main motor power (kW)	3.7	7.5	
Axes	X / Y / Z / C		
Number of axes	4		
Net machine weight (kg)	1800	2500	
Floor area × height (mm)	2015 × 1040 ×2210	2360 × 1660 × 2095	

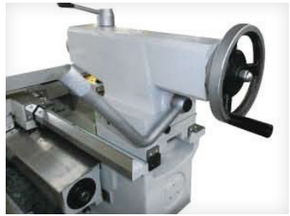
	JSL-26AB	JSL-32AB	JSL-42AB	JSL-42ABY
Max. turning diameter (mm)	26	32	42	
Max. turning length with static / rotary guide bush (mm)	220 / 200			- / 200
Spindle drive	MOTOR SPINDLE			
Spindle speed (rpm)	7000		6000	
Main motor power (kW)	7,5			
Axes	X1 / Y1 / Z1 / X2 / Z2 / C1 / C2			C1 / (C2) / X1 / Y1 / Z1 / X2 / Y2 / Z2
Number of axes	7			8
Net machine weight (kg)	3100			7500
Floor area × height (mm)	2865 x 1625 x 2045			3380 x 2455 x 2155

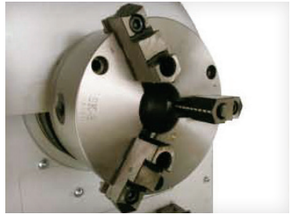
F-TURN-446, -1600, -1800

- General-purpose horizontal lathe machine
- Cast iron bed and slide system
- Z axis saddle with one (F-TURN-446) or two-prism way and X axis slide with dovetail way
- Headstock with grease lubrication
- Slide system and ballscrews with central oil lubrication

Specifications

	F-TURN-446	F-TURN-1600	F-TURN-1800
Max. swing over bed (mm)	446	425	475
Max. swing over gap (mm)	546	660	710
Max. swing over cross-slide (mm)	240	190	240
Max. turning length (mm)	650	1000 / 1500	1000 / 1500
Spindle drive	BELT		
Spindle speed (rpm)	3000	5000	4500
Spindle bore diameter (mm)	52	46	65
Main motor power (kW)	7	15	
Axes	X / Z		
X / Z axis rapid traverse rate (mpm)	15/15		
Tooling	JAPANESE / VDI20 / VDI30	TAIWANESE / VDI30	TAIWANESE / VDI40
Number of tool stations	8		
Tool change	MANUAL QUICK-CHANGE TOOL POST / TURRET		
Net machine weight (kg)	2600	2400 / 2850	3000 / 3450
Floor area × height (mm)	2230 × 1560 × 1790	3030/3530 × 1932 × 2022	3030/3530 × 1932 × 2022





F-TURN-2200 ... -6500

- Robust cast bed, headstock and slide system
- Flat slideway with TURCITE coating in each direction
- Widespread horizontal bed guideway
- Ground and double-nut ballscrews
- Slide system and ballscrews with oil lubrication

Specifications

	F-TURN-2200	F-TURN-2600	F-TURN2800A	F-TURN-3000	F-TURN-3500	F-TURN-4000	F-TURN-5000	F-TURN-6500
Max. swing over bed (mm)	550	650	710	760	890	1020	1300	1600
Max. swing over gap (mm)	770	870	970	1020	1150	1280	-	-
Max. swing over cross-slide (mm)	310	410	370	420	550	680	980	1280
Max. turning length (mm)	1000-4000		1000-6000		1000-6000		3000-12000	
Spindle drive	BELT							
Spindle speed (rpm)	3500 / 2400	3500 / 2400 / 1480	1480	1480 / 650 / 500	1480 / 650 / 500		800	
Spindle bore diameter (mm)	82 (106 opc.)	82 (106, 153 opt.)	153	106 (153) / 254 /355	106 (153, 254, 355 opt.)		153	
Main motor power (kW)	15 / 22		22 / 26	22 / 33	22 / 33		60 / 75	
Axes	X / Z							
X / Z axis rapid traverse rate (mpm)	15 / 15		10 / 12		10 / 12		10 / 10	
Tooling	TAIWANESE / VDI40		TAIWANESE / VDI40 / VDI50		TAIWANESE / VDI40 / VDI50		TAIWANESE / VDI50 / VDI60	
Number of tool stations	4 / 8 / 12							
Tool change	MANUAL QUICK-CHANGE TOOL POST / TURRET							
Net machine weight (kg)	3800-6800	3800-6800	8300-13300	9000-14000	9500 - 14500	10000 - 15000	18000 - 45000	
Floor area × height (mm)	3190-6190 x 2225 x 2050		3900-8900 x 2977 x 223	3900-8900 x 2630 x 2220	3900-8900 x 2630 x 2220	3900-8900 x 2800 x 2285	7520-16430 x 3388 x 2680	7520-16430 x 3388 x 2680

VL-TYPE BORING AND TURNINGMILLS

- Robust cast bed, headstock and slide system
- Flat slideway for X axisand square box slidewayfor Z axis (TURCITE coating)
- Spindle with cylindrical roller bearing
- Slide system and ballscrewswith oil lubrication
- Enclosed safeguard

Specifications

	VL-46	VL-66	VL-86C	VL-100C	VL-125C	VL-160C	VL-200C	VL-250C	VL-300	VL-400	VL-500	VL-600
Max. swing (mm)	560	800	950	1200	1600	2000	2500	3000	3600	4500	6000	7000
Max. turning diameter (mm)	460	760	950	1100	1600	2000	2500	2970	3600	4500	6000	7000
Max. turning height (mm)	450	750	650	800	1200	1200	1600		2000		2600	
Face plate dimension (mm)	305	457	800	1000	1250	1600	2000	2500	3000	4000	5000	6000
Max. workpiece weight (kg)	700	1500	2000	3500								
Table speed (rpm)	2500	2000	600	400	300	250	200	160	120	85	50	20
Main motor power (kW)	18,5 / 22			30 / 37	37 / 45		60 / 75		60 / 75			
Axes	X / Z											
X / Z axis rapid traverse rate (mpm)	10 / 10											
Number of tool stations (static / live)	12 / (12 opt.)				12 / (16 opt.)				16 / 12			
Tool change	10								15			
Net machine weight (kg)	6500	11500	13500	17800	24500	27500	47000	51000	99000	114000	139000	169000
Floor area × height (mm)	1700 x 3100 x 2855	1950 x 3410 x 3450	2520 x 2800 x 3900	4050 x 2900 x 3700	6500 x 4900 x 5200	7100 x 5200 x 5250	7600 x 5500 x 6650	7800 x 6100 x 6650	8500 x 6500 x 7400	10200 x 7000 x 7400	12500 x 9000 x 9000	13000 x 11000 x 9000

myNCT

LATHE MACHINE

myNCT

MILLING MACHINE

SFM-760 / SFM-1020

- Cast bed, column and slide system
- Assembled roller guideway in X, Y and Z directions
- Slide system and ballscrews with central oil lubrication
- Headstock with lasting grease lubrication

Specifications

	SFM-760	SFM-1020
X / Y / Z axis travel in the workspace (mm)	760 / 400 / 400	1020 / 400 / 400
Table dimensions (mm)	1270 × 305	1524 × 305
Table load capacity (kg)	200	300
T-slot number × width × pitch (mm)	3 × 16 × 102	
Positioning accuracy (mm)	<0.02	
Repeatability (mm)	<0.01	
X / Y / Z axis rapid traverse rate (mpm)	12 / 12 / 12	
Type of X / Y / Z axis guidance	BALL ROLLER GUIDEWAY	
Spindle drive	BELT	
Spindle speed (rpm)	6000	6000
Max. power (kW)	7.8	
Max. torque (Nm)	51.8	
Tool changer	UMBRELLA	
Max. tool storage capacity	16	
TtT tool change time (s)	2	
Chip conveyor	SPIRAL (OPTIONAL)	
Net machine weight (kg)	2500	2700
Floor area × height (mm)	2510 × 2170 × 2390	3020 × 2170 × 2390

SMART S5, S8

- Cast bed, column and slide system
- Assembled roller guideway in X, Y and Z directions
- Umbrella-type tool changer
- Ergonomic operator's panelrotatable around vertical axis
- Directly belt-driven spindle

Specifications

	SMART S5		SMART S8	
Spindle taper size (mm)	# 30	# 40	# 40	
X / Y / Z axis travel in the workspace (mm)	390 x 210 x 340	390 x 210 x 400	400 x 300 x 500	
Table dimensions (mm)	810 x 250		600 x 300	
Table load capacity (kg)	80		100	
T-slot number × width × (mm)	4 x 16		3 x 16	
Positioning accuracy (mm)	< 0,008			
Repeatability (mm)	< 0,004			
X / Y / Z axis rapid traverse rate (mpm)	15 / 15 / 15			
Type of X / Y / Z axis guidance	BALL ROLLER GUIDEWAY			
Spindle drive	BELT			
Spindle speed (rpm)	8000		8000	10000
Max. power (kW)	3,5	3	3,7	3
Max. torque (Nm)	30	20	40	20
Tool changer	UMBRELLA			
Max. tool storage capacity	8			
TtT tool change time (s)	6 (2.5 opt.)			
Net machine weight (kg)	1085	1175	1840	
Floor area × height (mm)	2120 x 1950 x 2300		2068 x 2365 x 2300	

VD-510S

- Cast bed, column and slide system
- Assembled precision roller guideway in X, Y and Z directions
- Direct main motor-spindle drive (without belt drive)
- TtT / CtC tool change time (s): 5

Specifications

	VD-510S
X / Y / Z axis travel in the workspace (mm)	510 / 406 / 330
Table dimensions (mm)	650 × 400
Table load capacity (kg)	300
T-slot number × width × pitch (mm)	3 × 14 × 125
Positioning accuracy (mm)	<0.008
Repeatability (mm)	<0.004
X / Y / Z axis rapid traverse rate (mpm)	48 / 48 / 48
Type of X / Y / Z axis guidance	BALL ROLLER GUIDEWAY
Spindle drive / taper size	DIRECT / #30
Spindle speed (rpm)	12000 / 18000
Max. power (kW)	4.9 (6.9) / 3.7 (5.5)
Max. torque (Nm)	24.6 (37) / 11.7 (17.8)
Braking mode	FEEDING THE BRAKING ENERGY BACK TO THE ELECTRIC MAINS
Tool changer	DISC
Max. tool storage capacity	21
Max. tool diameter (mm)	80
TtT tool change time (s)	1.6
Chip conveyor	SPIRAL
Net machine weight (kg)	2600
Floor area × height (mm)	1600 × 2150 × 2320

HSP-450, -660, -780, -80100

- Cast bed, column and slide system
- Extremely rigid portal design
- Assembled roller guideway in X, Y and Z directions
- Spindle with built-in motor
- Direct measuring system with EnDat 2.2

Specifications

	HSP-450	HSP-660	HSP-780	HSP-80100
X / Y / Z axis travel in the workspace (mm)	450 / 500 / 200	600 / 600 / 250	700 / 800 / 320	800 / 1000 / 450
Table dimensions (mm)	480 × 505	600 × 650	750 × 850	800 × 1000
Table load capacity (kg)	250	500	800	1500
Positioning accuracy (mm)	<0.008			
Repeatability (mm)	<0.004			
X / Y / Z axis rapid traverse rate (mpm)	10 / 10 / 10			5 / 5 / 5
Type of X / Y / Z axis guidance	BALL ROLLER GUIDEWAY			
Spindle drive	MOTOR SPINDLE / ER20	MOTOR SPINDLE / ER32	MOTOR SPINDLE / ER32	MOTOR SPINDLE / ER40
Spindle speed (rpm)	24000 (50000 opt.)	24000 (50000 opt.)	24000 (50000 opt.)	24000 (50000 opt.)
Spindle rated / max. power (kW)	3 / 6	5.5 / 8.5	7.5 / 12	7.5 / 19
Tool changer	GANG-TYPE			
Max. tool storage capacity	6			
Exhaust system	Graphite and mist cleaner			
Net machine weight (kg)	1600	3200	4200	6000
Floor area × height (mm)	1530 × 1940 × 1940	1800 × 2160 × 2300	1970 × 2455 × 2700	2280 × 2900 × 2820

EML-510

- Robust cast bed, column and slide system
- Ground and double-nut ballscrews on each axis
- Spindle bearings protected with air overpressure
- Due to the indirect absolute measuring system, there is no reference point return

Specifications

	EML-510OP	EML-510E	EML-510SV	EML-510HS
	CUSTOMIZABLE FREELY	ECONOMICAL VERSION	SUPER VERTICAL	HIGH-SPEED
X / Y / Z axis travel in the workspace (mm)	510 x 410 x 460			
Table dimensions (mm)	600 x 320			
Table load capacity (kg)	300			
T-slot number × width × pitch (mm)	3 x 14 x 100			
Positioning accuracy (mm)	< 0,005			
Repeatability (mm)	< 0,003			
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 30			
Type of X / Y / Z axis guidance	BALL / CYLINDRICAL	BALL ROLLER GUIDEWAY	CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY
Spindle drive	BELT / DIRECT / MOTOR SPINDLE	BELT	DIREKT	MOTORORSÓ / #30
Spindle speed (rpm)	10000 / 15000 / 24000	10000	15 000	24 000
Max. power (kW)	16 / 16 / 13	16	16	13
Max. torque (Nm)	110 / 110 /7.1	110	110	7,1
Tool changer	UMBRELLA (ARM opt.)	ARM		
Max. tool storage capacity	12 (20 opt.)	20		
TtT tool change time (s)	6 (2.5 opt.)	2,5		
Chip conveyor	SPIRAL (BELT opt.)	SPIRAL	STEEL BELT	
Net machine weight (kg)	2800			
Floor area × height (mm)	2000 x 2305 x 2460			

EML-610

- Robust cast bed, column and slide system
- Assembled precision roller guideway in X, Y and Z directions
- Tool releasing mechanism unloading the spindle bearings
- EnDat 2.2 Heidenhain measuring system

Specifications

	EML-610OP	EML-610E	EML-610SV	EML-610HS
	CUSTOMIZABLE FREELY	ECONOMICAL	SUPER VERTICAL	HIGH-SPEED
X / Y / Z axis travel in the workspace (mm)	610 x 460 x 510			
Table dimensions (mm)	800 x 450			
Table load capacity (kg)	400			
T-slot number × width × pitch (mm)	5 x 18 x 100			
Positioning accuracy (mm)	< 0,005			
Repeatability (mm)	< 0,003			
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 36			
Type of X / Y / Z axis guidance	BALL / CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY	CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY
Spindle drive	BELT / DIRECT / MOTOR SPINDLE	BELT	DIRECT	MOTOR SPINDLE
Spindle speed (rpm)	10000 / 15000 / 24000	10000	15000	24000
Max. power (kW)	16 / 29 / 13	16	29	13
Max. torque (Nm)	110/ 106 /7.1	110	106	7.1
Tool changer	UMBRELLA (ARM opt.)	ARM		
Max. tool storage capacity	16 (24 opt.)	24		
TtT tool change time (s)	6 (2.5 opt.)	2.5		
Chip conveyor	SPIRAL (BELT opt.)	SPIRAL	STEEL BELT	
Net machine weight (kg)	3800			
Floor area × height (mm)	2260 x 2435 x 2550			

MM-850

- Robust cast bed, column and slide system
- Ground and double-nut ballscrews on each axis
- Maintenance-free asynchronous main motor with cooled case and vector controlled digital AC asynchronous main drive with position feedback
- Due to cooling by heat exchanger, the electric cabinet is protected against contamination from the environment

Specifications

	MM-850OP	MM-850E	MM-850SV	MM-850HS
	CUSTOMIZABLE FREELY	ECONOMICAL	SUPER VERTICAL	HIGH-SPEED
X / Y / Z axis travel in the workspace (mm)	850 x 510 x 510			
Table dimensions (mm)	950 x 500			
Table load capacity (kg)	600			
T-slot number × width × pitch (mm)	5 x 18 x 100			
Positioning accuracy (mm)	< 0,005			
Repeatability (mm)	< 0,003			
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 36			
Type of X / Y / Z axis guidance	BALL / CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY	CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY
Spindle drive	BELT / DIRECT / MOTOR SPINDLE	BELT	DIRECT	MOTOR SPINDLE
Spindle speed (rpm)	10000 / 15000 / 24000	10000	15000	24000
Max. power (kW)	16 / 29 / 13	16	29	13
Max. torque (Nm)	110 / 106 /7.1	110	106	7.1
Tool changer	UMBRELLA (ARM opt.)	ARM		
Max. tool storage capacity	16 (24 opt.)	16	24+	
TtT tool change time (s)	6 (2.5 opT.)	6	2.5	
Chip conveyor	SPIRAL (BELT opt.)	SPIRAL	STEEL BELT	
Net machine weight (kg)	3900			
Floor area × height (mm)	2600 × 2330 × 2685			

EML-1020, -1200

- Robust cast bed, column and slide system
- Ground and double-nut ballscrews on each axis
- Holding the headstock at a temperature by using digital oil cooler
- Spindle bearings protected with air overpressure

Specifications

	EML-1020OP / -1200OP	EML-1020E / -1200E	EML-1020SV / -1200SV	EML-1020HS / -1200HS
	CUSTOMIZABLE FREELY	ECONOMICAL	SUPER VERTICAL	HIGH-SPEED
X / Y / Z axis travel in the workspace (mm)	1020 / 510 / 560 / 1200 / 610 / 610			
Table dimensions (mm)	1200 × 500 / 1300 ×600			
Table load capacity (kg)	650 /1000			
T-slot number × width × pitch (mm)	5 × 18 × 100			
Positioning accuracy (mm)	<0.016			
Repeatability (mm)	<0.008			
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 30			
Type of X / Y / Z axis guidance	BALL / CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY	CYLINDRICAL ROLLER GUIDEWAY	BALL ROLLER GUIDEWAY
Spindle drive	BELT / DIRECT / MOTOR SPINDLE	BELT	DIRECT	MOTOR SPINDLE
Spindle speed (rpm)	10000 / 15000 / 24000	10000	15000	24000
Max. power (kW)	22 / 29 / 13	22	29	13
Max. torque (Nm)	118/ 106 /7.1	118	106	7.1
Tool changer	UMBRELLA (ARM opt.)	ARM		
Max. tool storage capacity	20 / 24 / 30	24 (30 opt.)		
TtT tool change time (s)	6 (2.5 opT.)	2.5		
Chip conveyor	SPIRAL (BELT opt.)	SPIRAL	STEEL BELT	
Net machine weight (kg)	5200 / 6800			
Floor area × height (mm)	3100 × 2420 × 2850 / 3450 × 2805 × 2950			

EML-1300, -1600

- Robust cast bed, column and slide system
- Ground and double-nut high-precision ballscrews on each axis
- Guideways protected with metal telescopic cover on each axis end
- Rigid tapping

Specifications

	EML-1300OP / -1600OP	EML-1300E / -1600E	EML-1300SV / -1600SV	EML-1300HS / -1600HS
	CUSTOMIZABLE FREELY	ECONOMICAL	SUPER VERTICAL	HIGH-SPEED
X / Y / Z axis travel in the workspace (mm)	1300 x 700 x 700 / 1600 x 700 x 700			
Table dimensions (mm)	1450 x 700 / 1750 x 700			
Table load capacity (kg)	1500			
T-slot number × width × pitch (mm)	5 x 18 x 125			
Positioning accuracy (mm)	< 0,005			
Repeatability (mm)	< 0,003			
X / Y / Z axis rapid traverse rate (mpm)	30 / 30 / 24			
Type of X / Y / Z axis guidance	CYLINDRICAL ROLLER GUIDEWAY			
Spindle drive	BELT / DIRECT / MOTOR SPINDLE	BELT	DIRECT	MOTOR SPINDLE #40
Spindle speed (rpm)	10000 / 15000 / 24000	10000	15000	24000
Max. power (kW)	22 / 29 / 17	22	29	17
Max. torque (Nm)	118/ 106 /11.8	118	106	11.8
Tool changer	UMBRELLA (ARM opt.)	ARM (CHAIN opt.)		
Max. tool storage capacity	20 / 24 / 30 / 32	24 (30 / 32 opt.)		
TtT tool change time (s)	6 (2.5 opt.)	2.5		
Chip conveyor	SPIRAL (BELT opt.)	SPIRAL	STEEL BELT	
Net machine weight (kg)	8350 / 10000			
Floor area × height (mm)	3650 × 2915 × 3027 / 4370 × 2915 × 3027			

EMB-1300, -1600, -2000, -2200

- Robust cast column and slide system
- TURCITE sliding surface on each axis with central oil lubrication
- Ground and double-nut pre-tensioned ballscrews on each axis
- Tool releasing mechanism unloading the spindle bearings

Specifications

	EMB-1300 B/D/G	EMB-1600 B/D/G	EMB-2000 B/D/G	EMB-2200 B/D/G
	(B) BELT / (D) DIRECT / (G) HEADSTOCK GEAR			
X / Y / Z axis travel in the workspace (mm)	1300 / 700 / 710	1600 / 800 / 800	2000 / 900 / 800	2200 / 1000 / 800
Table dimensions (mm)	1500 × 650	1800 × 840	2200 × 850	2400 × 1000
Table load capacity (kg)	1000	2200	2500	3000
T-slot number × width × pitch (mm)	5 × 18 × 100	5 × 22 × 150	5 × 22 × 150	7 × 22 × 150
Positioning accuracy (mm)	<0.02			
Repeatability (mm)	<0.008			
X / Y / Z axis rapid traverse rate (mpm)	24 / 24 / 15	15 / 15 / 12		12 / 12 / 10
Type of X / Y / Z axis guidance	SLIDEWAY			
Spindle drive	BELT / DIRECT / HEADSTOCK GEAR			
Spindle taper size	SK40 / SK50			SK50
Spindle speed (rpm)	8000 - 14 000 (SK40) / 6000 - 10 000 (SK50)			6000
Max. power (kW)	(B) 22 / (D) 29 / (G) 31			
Max. torque (Nm)	(B) 118 / (D) 106 / (G) 446		(B) 118 / (D) 106 / (G) 784	
Tool changer	UMBRELLA / ARM / CHAIN			
Max. tool storage capacity	20 / 24 / 30 / 32			
TtT tool change time (s)	6 / 2.5 / 2.5 / 2.5			
Chip conveyor	SPIRAL / STEEL BELT			
Net machine weight (kg)	9200	14500	16000	24000
Floor area × height (mm)	3200 × 2825 × 3080	4400 × 3300 × 3300	5500 × 3435 × 3310	6130 × 4200 × 3661

KAFO CV-7A / SV-1000

- Robust cast bed, column and slide system
- Assembled precision cylindrical roller guidewayin X, Y and Z directions
- Ground and double-nut ballscrews on each axis
- Slide system and ballscrewswith central oil lubrication

Specifications

	KAFO CV-7A	KAFO SV-1000
X / Y / Z axis travel in the workspace (mm)	760 / 520 / 480	1020 / 520 / 640
Table dimensions (mm)	860 × 520	1150 × 520
Table load capacity (kg)	300	600
T-slot number × width × pitch (mm)	5 × 18 × 100	
Positioning accuracy (mm)	<0.005	
Repeatability (mm)	<0.003	
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 36	
Type of X / Y / Z axis guidance	CYLINDRICAL ROLLER GUIDEWAY	
Spindle drive	DIRECT	
Spindle speed (rpm)	15000	
Max. power (kW)	29	
Max. torque (Nm)	106	
Tool changer	ARM	
Max. tool storage capacity	24	24 (40 opt.)
TtT tool change time (s)	2	
Chip conveyor	CHAIN	
Net machine weight (kg)	5100	5500
Floor area × height (mm)	2330 × 2658 × 2736	2600 × 2800 × 2890

KAFO VMC-1688

- Robust cast column and slide system
- Hardened and ground ways and high-precision ballscrew on X, Y and axes
- TURCITE sliding surface on each axis with central oil lubrication
- 4-way Y guide

Specifications

	KAFO VMC-1688
X / Y / Z axis travel in the workspace (mm)	1600 / 880 / 700
Table dimensions (mm)	1900 × 850
Table load capacity (kg)	2500
T-slot number × width × pitch (mm)	7 × 22 × 125
Positioning accuracy (mm)	<0.008
Repeatability (mm)	<0.005
X / Y / Z axis rapid traverse rate (mpm)	20 / 20 / 15
Type of X / Y / Z axis guidance	SLIDEWAY
Spindle drive	HEADSTOCK GEAR
Spindle speed (rpm)	6000
Max. power (kW)	18.5
Max. torque (Nm)	528
Tool changer	ARM
Max. tool storage capacity	24 (30 / 40 opt.)
TtT tool change time (s)	2
Chip conveyor	SPIRAL
Net machine weight (kg)	17000
Floor area × height (mm)	4500 × 3312 × 3112

MXS 650 / 650DD / 400MT

- Robust cast bed and slide system
- Belt-driven B and C axes (KFO-650)
- B and C axes driven by torque motor (KFO-650DD)
- High-speed C-axis also suitable for turning tasks
- BIG-PLUS-type tooling

Specifications

	MXS-650	MXS-650DD	MXS-400MT
	GEARED DRIVE	DIRECT DRIVE	DIRECT DRIVE WITH LATHE FUNCTION
X / Y / Z axis travel in the workspace (mm)	620 / 520 / 460		
Table diameter (mm)	650	650	400
Table load capacity (kg)	300		100
B / C axis speed (rpm)	25 / 25	120 / 210	30 / 1000
B / C axis travel (degree)	- 50°+110° / 360°		
T-slot number × width × pitch (mm)	5 × 18 × 100		WITH HOLE
Positioning accuracy (mm)	<0.005 / <B / C 16” / 8”		
Repeatability (mm)	<0.003 / <B / C 8” / 4”		
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 36		
Type of X / Y / Z axis guidance	CYLINDRICAL ROLLER GUIDEWAYS		
Spindle drive	DIRECT		
Spindle speed (rpm)	15000 (20000 opt.)		
Max. power (kW)	29		
Max. torque (Nm)	106		
Tool changer	ARM (WITH CHAIN-TYPE MAGAZINE)		
Max. tool storage capacity	32 (40 / 60 opt.)		
Taper size	BIG PLUS SK40		
TtT tool change time (s)	2		
Chip conveyor	CHAIN		
Net machine weight (kg)	8500		
Floor area × height (mm)	4250 × 4120 × 2980		

EML-1300GT/DT, EML-1600GT/DT

- Tilting head / rotary table design (optional)
- Spacious workspace, wide opening workspace door
- Spacious and easy to open side workspace door with glazed window
- Spindle with built-in motor
- #40 spindle taper, DIN or BT tooling
- Holding the headstock at a temperature by using a digital oil cooler

Specifications

	EML-1300GT	EML-1600GT	EML-1300DT	EML-1600DT
	TILTING BY GEAR	TILTING BY GEAR	TILTING BY TORQUE MOTOR	TILTING BY TORQUE MOTOR
X / Y / Z axis travel in the workspace (mm)	1300 / 700 / 700	1600 / 700 / 700	1300 / 700 / 700	1600 / 700 / 700
Table dimensions (mm)	1450 × 700	1750 × 700	1450 × 700	1750 × 700
Table load capacity (kg)	1000	1200	1000	1200
T-slot number × width × pitch (mm)	5 × 18 × 125			
Positioning accuracy (mm)	<0.005			
Repeatability (mm)	<0.003			
X / Y / Z axis rapid traverse rate (mpm)	30 / 30 / 24			
Type of X / Y / Z axis guidance	CYLINDRICAL ROLLER GUIDEWAY			
Axis of tilting	B axis			
Max. tilting torque (Nm)	1000	1000	700	700
Max. holding torque (Nm)	1530	1530	500	500
Spindle drive	MOTOR SPINDLE			
Spindle speed (rpm)	15000	15000	15000	15000
Max. power (kW)	19.4	19.4	19.4	19.4
Max. torque (Nm)	92.6	92.6	92.6	92.6
Tool changer	ARM (CHAIN opt.)			
Max. tool storage capacity	24 (30 / 32 opt.)			
TtT tool change time (s)	2.5			
Chip conveyor	STEEL BELT			
Net machine weight (kg)	8000	10000	8000	10000
Floor area × height (mm)	4370 × 3400× 3300	4670 × 3400× 3300	4370 × 3400× 3300	4670 × 3400× 3300

EMP-350DD

- Table-mounted double-acting rotary table (moving the table around the A and C axes)
- Table drive with direct torque control
- Robust cast bed, column and slide system
- Portal design
- Assembled precision cylindrical roller linear guideway on each axis
- Direct drive or built-in motor design
- BIG-PLUS SK40 tooling

Specifications

	EMP-350DD
X / Y / Z axis travel in the workspace (mm)	1020 / 610 / 510
A / C axis travel range (degree)	-120° - +30° / 360°
Rotary table diameter (mm)	350
Table load capacity (kg)	200
T-slot number × width × pitch (mm)	8 × 12 × 45
X / Y / Z axis Positioning accuracy (mm)	< 0.008
X / Y / Z axis Repeatability (mm)	< 0.004
A / C axis Positioning accuracy (mm)	±5" / ±5"
A / C axis Repeatability (mm)	±4" / ±4"
X / Y / Z axis rapid traverse rate (mpm)	36 / 36 / 36
Type of X / Y / Z axis guidance	CYLINDRICAL ROLLER GUIDEWAY
Max. holding torque (Nm)	840 / 1380
Spindle drive	DIRECT
Spindle speed (rpm)	15000 (20000 opt.)
Max. power (kW)	29
Max. torque (Nm)	106
Tool changer	ARM
Max. tool storage capacity	24
Taper size	BIG PLUS SK40 (HSK-63A opt.)
TtT tool change time (s)	2.5
Chip conveyor	CHAIN
Net machine weight (kg)	8500
Floor area × height (mm)	3559 × 2437 × 3760

KAFO BMC-15, 16, 22, 27, 31, 40,

- Cast bed, headstock and slide system providing high rigidity and vibration absorption
- High-pitch and pre-tensioned ballscrews for keeping constant accuracy
- Supported table guidance in all working positions
- Ballscrews cooled by liquid cooler controlled digitally

Specifications

	BMC-12	BMC-15	BMC-16	BMC-22	BMC-27	BMC-31	BMC-40
	SOME TYPES ARE AVAILABLE WITH X AXIS TRAVEL OF 2100 / 2600 / 3100 / 4100 / 5100 / 6100 / 8100 / 10100 mm						
Table X axis dimension (mm)	2000 - 3000	2000 - 3000	2500 - 6000	2500 - 10000	3000 - 10000	4000 - 10000	4000 - 10000
Table Y axis dimension (mm)	1100	1400	1500	2100	2600	2900	3200
X axis travel (mm)	2100 - 3100	2100 - 3100	2600 - 6100	2600 - 10100	3100 - 10100	4100 - 10100	4100 - 10100
Y axis travel (mm)	1200	1500	1600	2200	2700	3100	4000
Z axis travel (mm)	800		900 (1100 opt.)			1100	
Table load capacity (t)	4	6-7	9-20	11-29	15-29	18-29	15-29
Distance between columns (mm)	1350	1650	1700	2300	2800	3200	3750
Spindle drive	DIRECT / HEADSTOCK GEAR						
Spindle speed (rpm)	6000 / 10000 (SK50) - 10000 / 15000 (SK40)			4000 / 6000 / 10000 (SK50) - 10000 / 15000 (SK40)			
Tool changer	CHAIN						
Max. tool storage capacity	30 (40 / 60 opt.)	30 (40 / 60 / 90 opt.)					
Net machine weight (kg)	21	23,5 - 27,5	31 - 45,5	32,5 - 80	39 - 70	53,5 - 77,5	68 - 98
Floor area × height (mm)	6040 x 4300 x 4340	6000-7600 x 4600 x 4200	7790 - 14570 x 4460 x 4380	7540 - 22740 x 5500 x 4570	8540 - 22900 x 5600 x 4570	10800 - 22900 x 6100 x 4570	10800 - 22900 x 7000 x 5050

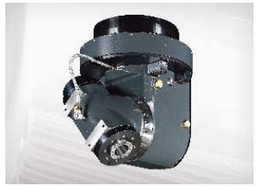
KAFO RV-22, 27, 35, 40, 42

- Cast bed, headstock and slide systemproviding high rigidity and vibration absorption
- Hardened and ground slideways on Z axis with TURCITE-B coating
- 5-axis machining
- Automatic head change unit

Specifications

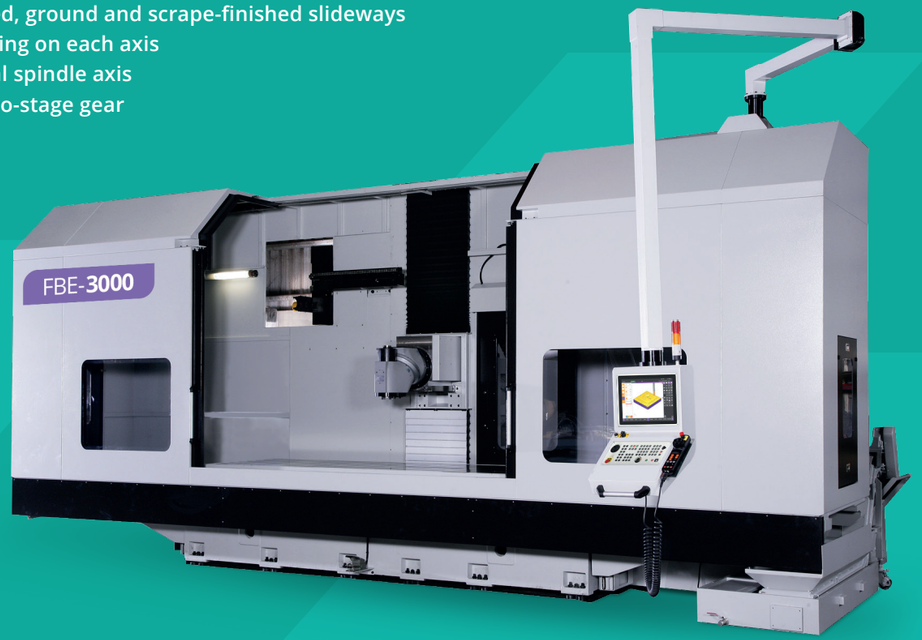
NCT

	RV-22	RV-27	RV-35	RV-40	RV-42
	SOME TYPES ARE AVAILABLE WITH X AXIS TRAVEL OF 2600 / 3100 / 4100 / 5100 / 6100 / 8100 / 10100 mm				
Table X axis dimension (mm)	2500 - 6000	2500 - 10000		4000 - 10000	4000 - 10000
Table Y axis dimension (mm)	1500	2100		2600	3200 (3500 opt.)
X axis travel (mm)	2600 - 6100	2600 - 10100		4100 - 10100	4100 - 10100
Y axis travel (mm)	2200	2700	3500	4000	4200
Z axis travel (mm)	1100				
Table load capacity (t)	9 - 20	11 - 29	15 - 29	18 - 29	15 - 29
Distance between columns (mm)	1700	2300	2700	3200	3750
Spindle drive	DIRECT / HEADSTOCK GEAR				
Spindle speed (rpm)	4000 / 6000 / 8000 (SK50)				
Tool changer	CHAIN				
Max. tool storage capacity	30 (40 / 60 opt.)		30 (40 opt.)		30 (40 / 60 opt.)
Net machine weight (kg)	34,5 - 46	36 - 83,5	44,5 - 86,5	47,5 - 76,5	68,5 - 98,5
Floor area × height (mm)	7790 - 14950 x 4675 x 5050	7540 - 22740 x 5900 x 5050	8650 - 22770 x 6180 x 5050	10770 - 22770 x 6680 x 5050	12250 - 24250 x 7315 x 5050



FBE-1500, 2000, 2600, 3000, 4000

- Robust cast bed, column and slide system providing high rigidity and vibration absorption
- Assembled. hardened, ground and scrape-finished slideways with TURCITE-B coating on each axis
- Vertical or horizontal spindle axis
- Spindle driven by two-stage gear



Specifications

	FBE-1500	FBE-2000	FBE-2600	FBE-3000	FBE-4000
X / Y / Z axis travel in the workspace (mm)	1500 x 1000 x 950 (1500 opt.)	2000 x 1000 x 950 (1500 opt.)	2600 x 1000 x 950 (1500 opt.)	3000 x 1000 x 950 (1500 opt.)	4000 x 1000 x 950 (1500 opt.)
Table dimensions (mm)	1600 x 1050	2100 x 1050	2700 x 1050	3100 x 1050	4100 x 1050
Table load capacity (kg)	3000	5000	6000	8000	9000
T-slot number × width × (mm)	7 x 22H8				
Positioning accuracy (mm)	< 0,005				
Repeatability (mm)	< 0,003				
X / Y / Z axis rapid traverse rate (mpm)	10 / 10 / 10				
Type of X / Y / Z axis guidance	SLIDEWAY				
Spindle drive	BELT / HEADSTOCK GEAR				
Spindle taper size	SK50				
Spindle speed (rpm)	3500 (6000 opt.)				
Max. power (kW)	25				
Max. torque (Nm)	650				
Tool changer	ARM / CHAIN				
Max. tool storage capacity	24 / 32 / 60				
Chip conveyor	STEEL BELT				
Net machine weight (kg)	11000	14000	15000	18000	23600

EBM-1000, 2150, 2600, 3200

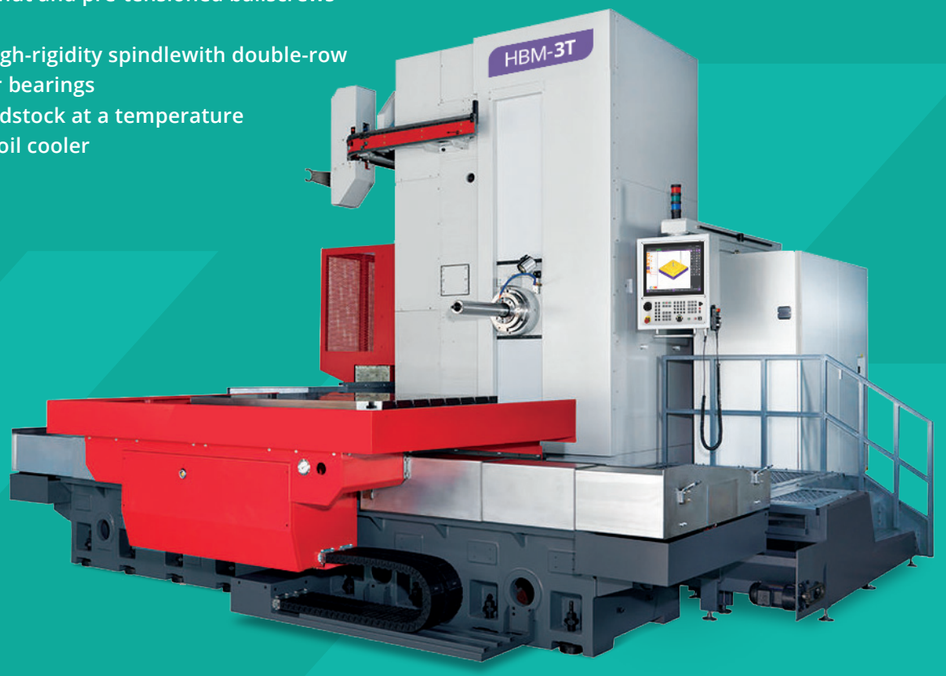
- Robust cast bed, column and slide system
- Hardened and ground flat ways on X, Y and Z axes with TURCITE-B sliding surface
- Moving the axes by directly driven ballscrews with bearings at both ends
- Also suitable for 5-axis machining

Specifications

	EBM-1000	EBM-2150	EBM-2600	EBM-3200
	SOME TYPES ARE AVAILABLE WITH ROTARY TABLE INTEGRATED IN THE TABLE			
X / Y / Z axis travel in the workspace (mm)	1400 x 900 (1400 opt.) x 1000	2150 x 1400 x 1100	2600 x 1400 x 1100	3000 x 1400 x 1100
Table dimensions (mm)	1500 x 700	2200 x 1100	2650 x 1100	3250 x 1100
Table load capacity (kg)	1500	4000	4500	5000
T-slot number × width × pitch (mm)	6 x 18 x 125	7 x 22 x 125		
Positioning accuracy (mm)	< 0,005			
Repeatability (mm)	< 0,003			
X / Y / Z axis rapid traverse rate (mpm)	10 (15) / 10 (15) / 10 (15)			
Type of X / Y / Z axis guidance	SLIDEWAY			
Spindle drive	HEADSTOCK GEAR (BELT / DIRECT opt.)			
Spindle taper size	SK50			
Spindle speed (rpm)	6000 (8000 / 10000 opt.)			
Max. power (kW)	30			
Max. torque (Nm)	784			
Tool changer	ARM / CHAIN			
Max. tool storage capacity	32 (40 / 60 opt.)			
Chip conveyor	SPIRAL / STEEL BELT			
Net machine weight (kg)	15000	21000	23000	25000

HBM-3, 4, 3T, 4T

- Robust cast bed, column and slide system
- Ground double-nut and pre-tensioned ballscrews on each axis
- Precision and high-rigidity spindlewith double-row cylindrical roller bearings
- Holding the headstock at a temperature by using digital oil cooler

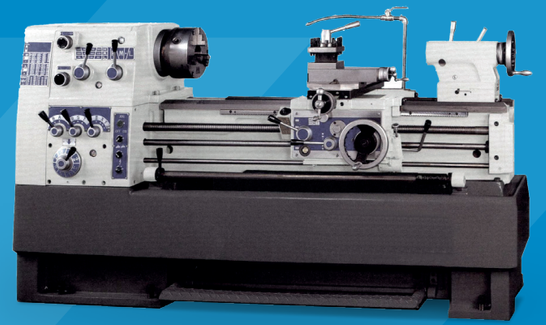


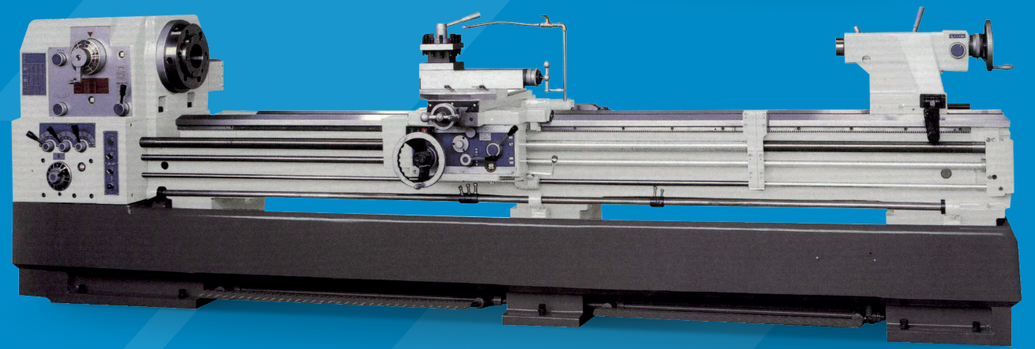
Specifications

	HBM-3	HBM-4	HBM-3T	HBM-4T
X axis travel (mm)	2000	2200	2000 (3000 opt.)	
Y axis travel (mm)	1700	1600	2000	
Z axis travel (mm)	1400	1600	1400 (1700 opt.)	1400 (2000 opt.)
W axis travel (mm)		550		700
Table dimensions (mm)	1250 x 1500	1250 x 1500	1400 x 1600	1400 x 1600 (1600 x 1800)
Table load capacity (kg)	5000	5000	8000	8000 (10 000 opt.)
T-slot number × width × pitch (mm)	7 x 22 x 150	7 x 22 x 150	7 x 22 x 150	9 x 22 x 160
Table indexing accuracy (degree)	0,001			
X / Y / Z / W axis rapid traverse rate (mpm)	15 / 15 / 12 / 6	12 / 12 / 12 / 6	10 / 10 / 10 / 6	10 / 10 / 10 / 8
Type of X / Y / Z axis guidance	SLIDEWAY / ROLLER GUIDEWAY			
Spindle drive	HEADSTOCK GEAR			
Spindle taper size	SK 50			
Spindle speed (rpm)	3000			
Max. power (kW)	18,5			30
Max. torque (Nm)	963			2362
Tool changer	CHAIN			
Max. tool storage capacity	28 (40 / 60 opt.)		40	60
TtT tool change time (s)	9			
Chip conveyor	STEEL BELT		OPTIONAL	
Net machine weight (kg)	25500	25500	37000	40000
Floor area × height (mm)	7700 x 4600 x 3900	7543 x 4715 x 3706	7850x4815x3900	5670 x 6570 x 4600

CONVENTIONAL LATHE MACHINES

- Robust cast bed, headstock and slide system
- Widespread bed ways
- Hardened and ground slideway
- Headstock with lasting grease lubrication
- Speed range changer in headstock
- Hand-operated slide system with central oil lubrication
- 4-way tool post, tailstock and chuck
- Digital position indicator (optional)





Specifications

NCT

	LA-430	LA-530	LA-460	LA-560	LA-560	LA-660	LA-760
Bed width (mm)	300		350		400		
Swing over bed / gap (mm)	430 / 610	530 / 710	460 / 620	560 / 730	560 / 785	660 / 990	760 / 1015
Swing over cross-slide (mm)	272	372	280	390	330	445	560
Distance between centres (mm)	550 / 800 / 1100 / 1700		1100 / 1500 / 2000		1500 / 2000 / 2500 / 3000 / 4000		
Spindle bore (mm)	58		80		86 (104 opt.)		
Max. spindle speed (rpm)	35 - 2000		25 - 1540		13 - 1200		
Number of speed ranges	12		12		12		
Tailstock quill diameter / travel (mm)	60 / 150		70 / 175		75 / 178		
Tailstock quill inner taper	MT4		MT4		MT5		
Machine weight (kg)	1300 - 1900		1800 - 2300		3200 - 5200		

HEIDENHAIN

CONVENTIONAL MILLING MACHINES

- Cast bed, headstock and slide system
- Ground table surface
- Hardened and ground precision spindle quill
- 7210(p4) precision spindle bearings
- X and Y axes are drivenby double-nut precision ballscrews (dia. 32 mm, C5)
- Hardened and ground X, Y and Z ways
- X and Y axis sliding surfaces with TURCITE coating
- Wipers on each slide way
- Rubber covers to protect Y axis ways
- Automatic central oil lubrication
- Digital position indicator (optional)

Specifications

	SP150 (VS)	SP460 (VS)	SP520 (VS)	VH-250VS	V-200 (VS)	B180 (VS)	B185 (VS)	B410 (VS)
Table dimensions (mm)	230 x 1245	250 x 1370	250 x 1370	305 x 1270	280 x 1320	250 x 1270	305 x 1270	380 x 1270
Manual /automatic X axis travel (mm)	930 / 850	870 / 775	870 / 775	- / 900	920 / 840	776 / 696	840 / 840	1000 x 1000
Y axis travel (mm)	305	390	410	400	380	540	500	500
Ram overhang / table height adjustment (mm)	356 / 406	560 / 406	560 / 450	485 / 450	485 / 406	-	-	-
Spindle quill / Z axis travel (mm)	127 / -			140 / -	127 / -	127 / 500	127 / 450	140 / 500
Column rotation / spindle tilt (degree)	0-360° / +/-45°			- / +/- 45°				
Max. spindle speed (rpm)	2720 (3900)	2720 (4500)	2875 (3600)	3000	3000 (3600)	2270 (3900)	2875 (3600)	3000 (3600)
Spindle taper size	NST 30	NST 30	NST 40	NST 40	NST 40	NST 40	NST 40	NST 40
Main motor power (kW)	2,2	2,2	3,75	3,75	3,7	2,2	2,2	3,75
Net machine weight (kg)	950	1300	1600	2500	1700	2000	2250	3100

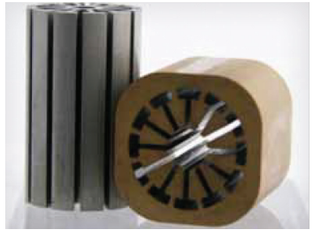
HEIDENHAIN

MOLYBDENUM WIRE CUT EDMS

- Cast iron bed, column and slide system
- Long lasting accuracy by HIWIN roller guideways on X, Y, U and V axes
- Lifting the Z axis by using motor
- Automatic cut repetition (roughing, pre-finishing, finishing)
- Automatic stop at the program end or in the case of wire breakage

Specifications

	SCT-32	SCT-40	SCT-50	SCT-63	SCT-80
Table dimensions (mm)	660 x 450	720 x 520	880 x 600	1050 x 650	1280 x 990
X / Y axis travel (mm)	400 / 320	500 x 400	630 x 500	800 x 630	1000 x 800
U / V axis travel (mm)	25 / 25				
Max. cutting height (mm)	300				
Max. taper cutting angle / workpiece thickness (degree / mm)	±12° / 80 mm				
Max. workpiece dimensions (mm)	980 x 550	1180 x 710	1310 x 795	1400 x 940	1580 x 1150
Max. workpiece weight (mm)	500	600	750	800	1600
Machine weight (kg)	2200	2500	3200	3800	5500
Max. machining speed (mm2/min)	170				
The best surface roughness (µm)	Ra≤0,8				
The highest cutting accuracy (µm)	±5				
Wire diameter range (mm)	0,12 - 0,2				



WIRE CUT EDMS

- Letter S in the type of the machine – machine with submerged condition
- Letter L in the type of the machine – machine with linear motors (on X and Y axes)

Specifications

NCT

	G32F/S	G43F/S	G53F/S	G64F/S	A422SL
X / Y / (/Z) axis travel (mm)	360 x 250	400 x 300	500 x 300	600 x 400	400 x 250 x 200
U / V / (/Z) axis travel (mm)	60 x 60 x 220			100 x 100 x 300	60 x 60
Max. workpiece dimensions (mm)	725 x 600 x 215	725 x 600 x 215	825 x 600 x 215	910 x 700 x 295	800 x 560 x 195
Max. workpiece weight (kg)	300	500 / 350	550 / 400	600 / 450	550
Max. XY feed rate (mpm)	800				1500
Max. wire feed rate (mps)	300				
Wire diameter range (mm)	0.15-0.3				
Tank capacity (litre)	300 / 590	340 / 650	340 / 650	340 / 760	580

	A422S	RX853F/S	RX1063F/S	RX1065F/S	RX1283S
X / Y / (/Z) axis travel (mm)	400 x 250 x 220	800 x 500	1000 x 600	1000 x 600	1200 x 800
U / V / (/Z) axis travel (mm)	60 x 60	150 x 150 x 300	150 x 150 x 300	160 x 160 x 500	120 x 120 x 300
Max. workpiece dimensions (mm)	800 x 560 x 215	1210 x 800 x 295	1450 x 900 x 295	1240 x 900 x 495	1600 x 1100 x 295
Max. workpiece weight (kg)	250	2000 / 1000	3000 / 1500	5000 / 3000	3000
Max. XY feed rate (mpm)	800				
Max. wire feed rate (mps)	300				
Wire diameter range (mm)	0.15-0.3				
Tank capacity (litre)	480	340 / 1370	650 / 2000	650 / 2400	3000

WIRE CUT EDMS

- Design with high precision capability (Q and EQ series)
- Gantry design with high rigidity (Q and EQ series)
- Design with linear motor (on X and Y axes)

Specifications

NCT

	GX360L+	GX430L+	GX530L+	GX640L+	Q3020SL	Q4025SL
X / Y / (/Z) axis travel (mm)	360 x 250 x 220	400 x 300 x 220	500 x 300 x 220	600 x 400 x 300	300 x 200 x 150	400 x 250 x 200
U / V / (/Z) axis travel (mm)	60 x 60			100 x 100	60 x 60	
Max. workpiece dimensions (mm)	725 x 560 x 215	725 x 600 x 215	825 x 600 x 215	910 x 700 x 295	600 x 500 x 145	750 x 550 x 195
Max. workpiece weight (kg)	300	350	500	600	300	55t
Max. XY feed rate (mpm)	1500					
Max. wire feed rate (mps)	300					
Wire diameter range (mm)	0.15-0.3					
Tank capacity (litre)	590	650	650	760	650	760

	Q5020SL	EQ325L	EQ425L	EQ530L	EQ640L
X / Y / (/Z) axis travel (mm)	500 x 300 x 200	360 x 250	400 x 250	500 x 300	600 x 400
U / V / (/Z) axis travel (mm)	60 x 60	60 x 60 x 200			100 x 100 x 300
Max. workpiece dimensions (mm)	850 x 610 x 195	650 x 450 x 180(195)	750 x 450 x 180(195)	850 x 500 x 180(195)	910 x 600 x 200(295)
Max. workpiece weight (kg)	600	350	550	600	1000
Max. XY feed rate (mpm)	1500				
Max. wire feed rate (mps)	300				
Wire diameter range (mm)	0.15-0.3				
Tank capacity (litre)	930	700	760	930	1150

DIE SINK EDMS

- CMxxx series – Conventional design
- CMxxxZ series – ZNC design (hand-operated X and Y axes)
- CMxxxC series – CNC design
- DxxxCL series – High-speed design with linear motor
- Tool magazine can be ordered optionally
- 4th (rotary) axis and 5th (tilting) axis can be ordered optionally

Specifications

	CM240R	CM380	CM545	CM655	CM323Z	CM434Z	CM545Z	CM655Z
Table dimensions (mm)	500 x 350	650 x 400	800 x 500	1000 x 600	500 x 350	650 x 400	800 x 500	1000 x 600
X / Y axis table travel (mm)	300 x 200	400 x 300	500 x 400	600 x 500	300 x 200	400 x 300	500 x 400	600 x 500
Z1 axis travel (mm)	300	350	500	500	300	350	500	500
Table load capacity (kg)	500	750	1500	2250	500	750	1500	2250
Max. electrode weight (kg)	60	70	300	300	60	100	300	300

	CM 323C	CM434C	CM655C	CM865C	CM1065C	CM1265C	CM1475C	CM1675C
Table dimensions (mm)	500 x 350	650 x 400	900 x 600	1200 x 800	1200 x 800	1500 x 800	1700 x 1000	1700 x 1000
X / Y axis table travel (mm)	300 x 200	400 x 300	600 x 500	800 x 600	1000 x 600	1200 x 600	1400 x 700	1600 x 750
Z1 axis travel (mm)	300	350	500	500	500	500	600	600
Table load capacity (kg)	500	1000	3000	4000	5000	7500	6500	7000
Max. electrode weight (kg)	60	100	300	300	300	300	500	500

	CM1876C	CM2076C	CM3076CL	D322CL	D433CL	A43C	A53C	A64C
Table dimensions (mm)	1700 x 1000	1700 x 1000	3100 x 1000	500 x 350	650 x 400	650 x 400	650 x 400	800 x 500
X / Y axis table travel (mm)	1800 x 750	2000 x 750	3000 x 750	300 x 200	400 x 300	400 x 300	500 x 350	600 x 400
Z1 axis travel (mm)	600	600	600	250	300	350	350	350
Table load capacity (kg)	8000	11000	12000	300	350	1000	1000	1500
Max. electrode weight (kg)	500	500	500	20	30	60	100	100

START HOLE DRILLING EDMS

Specifications

	CM H30A	CM H32A	CM H86A	H86C	AH53C	AH64C
X / Y axis table travel (mm)	300 x 200	350 x 250	600 x 800	600 x 800	300 x 500	400 x 600
Z1 / Z2 axis travel (mm)	340 / -	340 / 200	340 / -	340 / -	340 / 200	340 / 150
Machine head movement range (mm)	150					
Max. workpiece dimensions (mm)	600 x 400 x 205	800 x 460 x 350	700 x 950 x 310	740 x 1140 x 350	440 x 900 x 270	540 x 1000 x 270
Table load capacity (kg)	100	180	1500	1500	700	800
Max. electrode diameter / length (kg)	0.2-3.0/400					

	AH1080CL	AH1260CL	HQ703S
X / Y axis table travel (mm)	800 x 1000	1200 x 1000	350 x 250
Z1 / Z2 axis travel (mm)	600/-	600/-	380 / 300
Machine head movement range (mm)			-
Max. workpiece dimensions (mm)	1100 x 1400 x 600	2300 x 1500 x 600	550 x 360 x 350
Table load capacity (kg)	3000	4000	350
Max. electrode diameter / length (kg)	0.2-3.0/600		0,15 - 3 / 400

SURFACE GRINDING MACHINES

Features:

- Transversal ways: twin V-shaped way
- Longitudinal ways: twin V-shaped way
- Hydraulic movement in longitudinal direction
- Automatic lubrication system

Specifications

NCT

	PSGS								
	1535M	1545M	2045M	2550M	1545H	2050H	3060H	3060BH	4080AHR
Table surface dimensions (mm)	150x350	150x450 150x450	200x450	250x500	150x450	250x500	300x600	300x600	400x800
Grinding wheel dimensions (mm)	180x13					355x25		355x38	
Machine weight (kg)	560	780	900	1100	885	1350	1650	1900	2800

	PSGC							PSGO			
	50100AHR	50120AHR	50150AHR	60120AHR	60150AHR	60220AHR	60250AHR	60150AHR	70150AHR	70220AHR	70300AHR
Table surface dimensions (mm)	500 x 1000	500 x 1200 150x450	500 x 1500	600 x 1200	600 x 1500	600 x 2200	600 x 2500	600 x 1500	700 x 1500	700 x 2200	700 x 3000
Grinding wheel dimensions (mm)	355 x 50										
Machine weight (kg)	5800	6100	7000	6500	7400	8900	12500	9350	11000	12500	14400

NCT®

CONTROL | DRIVES | MOTORS

KEEP MOVING

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Version 4.0