HURONEWS

HURON GROUP NEWS ROUND-UP

2015 - 2016

OUR MACHINES

OUR SOLUTIONS

OUR SERVICES

PREPARE
FOR THE FUTURE...
to stay one step ahead

Bernard ECHEVARD

HURON

EDITORIAL

HURONews Editorial Committee: Who are Huron today?

"Before answering that question, I'd like to remind readers of what Huron has always been and will continue to be – a progressive company at the cutting edge of technology, that makes no concessions on the quality of its machines or on what we bring to our customers.

We are rightly proud of the solid experience acquired during the company's 160-year history, including the periods of economic turbulence that we have come through, like many others. Our strength lies in the fact that we have always bounced back, and are still here.

I have the backing of a whole team, in which every player makes a vital contribution in terms of technological skill, human values and a touch of audacity. When customers buy a Huron machine, they know they are also getting 160 years of passion, expertise and commitment."

HEC: What is in the Huron product range at the moment?

"The machines within the various Huron ranges today, share the same heritage and genetic makeup, the common traits of which include precision, strength, rigidity and performance. These quality vectors are not negotiable for Huron.

Having said that, on top of the common qualities that form an intrinsic part of all our machines, each series has its own particular features that make it more suitable for specific jobs.

We have series for milling and turning, plus MillTurn and multitasking centres, with two to five working axes.

Huron has a vast array of five-axis milling centres, accomodating workpieces ranging from the cube of 400 to 1200 mm and up to 9 metres in length. Our equipment is modular in terms of the heads, tool changers and spindles available, which means that we have a machine suited to each machining scenario and configuration – from rigid, powerful roughing machines to machines producing extremely complex parts requiring the highest precision. Remember also that Huron masters the technology of high-speed machining in hard materials, applied since 1993 on the EX series.

The Huron product line also includes MillTurn and multitasking centres. The aim is to offer a very fast return on investment by designing increasingly innovative and rational machines and machining processes, guaranteeing higher productivity and quality.

Customers whose investment stretches over a number of years can sleep easy, as our products are reputed for their durability. Their working lives at our customers' factories can be counted in years, or even decades, rather than months. And this holds true across the entire Huron range, from the smallest 3-axis to the largest 5-axis machines."

> **"I have the backing of a whole team, in which every player makes a vital contribution in terms of technological skill, human values and a touch of audacity."**

HEC: Everyone says more or less the same thing nowadays. What makes Huron so different?

"Huron not only talks the talk – and rigidity, precision and strength are always our key words – we also walk the walk. Customers need tools that will boost their productivity, and Huron machines are solid and calibrated to what they offer. The build, structure and table size are in keeping with the weight of the workpiece and the required level of precision. We use finite element calculations to help us find the right compromise between moving mass and machine rigidity. By absorbing vibrations, optimum surface qualities are possible. Spindle power and the strength of the structures help maintain high roughing and finishing speeds to achieve substantial productivity gains. This all saves time, which can be passed on in terms of the cost price of the customers' parts. Having a Huron machine in the shop boosts profitability."

HEC: You have spoken about new additions to the range. What are they?

"We have introduced the extremely rigid and profitable VX 15 and VX 18 machines to the very popular VX series. We are receiving a lot of enquiries about these affordable products. The KX 300 with its portal structure for very large, complex parts is also attracting a great deal of interest from a wide range of areas: mould-making, aviation, railways and general mechanical engineering. This is a machine that weighs 100 tonnes!"

HEC: Going back to the first question, who are Huron today?

"Huron is a bold company – we have the courage to continue offering products that make no concessions in terms of quality and precision. The industrial world has always dreamed of owning a Huron machine, and that is not about to change. We used to be known for our Huron head, nowadays we are recognized for the quality of our products."

HEC: How is Huron preparing for the future?

"Innovating is a very difficult business nowadays. There are a lot of machines about and often the 'innovation' tag is attributed to what is really the enrichment, or perfecting, of an existing product. However we have to continue optimizing our machines and enhance performance in terms of productivity and energy impact. Robotization and automation must be at the centre of our thought processes, and these means must be integrated into our customers' workplace simply and effectively. It is our responsibility to do this to make the future a reality for our customers.

New developments are of course under way, and our customers will hear all about them very soon."

Interview with Bernard Echevard, CEO, Huron Graffenstaden, by the HURONews Editorial Committee.

HURON

HURON, pushing the envelope every day

Innovation

"The world is changing. Our customers' needs too. Our machines move with the times but our values have remained the same, for 160 years."

Dominique LUTZ,
International Business Director

Mutual benefit

"At Huron Graffenstaden, our greatest wealth is our customers. Each one is a new source of knowledge and inspiration. They are what drive the company forward."

Michel SAILLEY,
Deputy CEO

Development

"Purchasing one of our machines is a long-term investment. They are designed to be adaptable to changing needs, to changes in environmental and technical standards, and to changes in technology."

Michel KIMENAU,
Industrialization

Performance

"It's a bit like Formula One: our specialists tune the machine to the driver and the way they drive. Our customers want to win so we listen to their needs, and do what it takes to maximize mechanical performance."

Pascal JUNG,
Customer Applications Manager

Attentiveness

"Human relations are essential. Each of our customers is a partner. We see it every day: problems can be solved much quicker through dialogue, mutual assistance, enthusiasm and trust."

Bernard ECHEVARD,
CEO

Creativity

"Our customers' requirements are the driving force behind our ingenuity and creativity."

Michel SAILLEY,
Deputy CEO

Proximity

"Languages, distances and time zones are not barriers. At Huron Graffenstaden, working internationally is a day-to-day occurrence."

Dominique LUTZ,
International Business Director

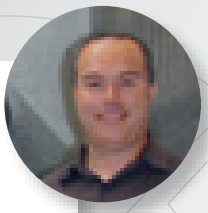
FLEXIBILITY *of the highest level*

The MX series, the direct successor to the EX – a groundbreaker in its day in terms of modularity and adaptability – combines flexible multifunctionality with the latest machining and programming technologies, for workpiece milling and turning in a single setup, from roughing to finishing, along five axes and on five sides.

WHAT MAKES THE DIFFERENCE

- **Suitability for a variety of jobs**
- **Modularity**
- **Precise five-axis positioning** for general mechanical engineering components
- **Volumetric precision** in mould making

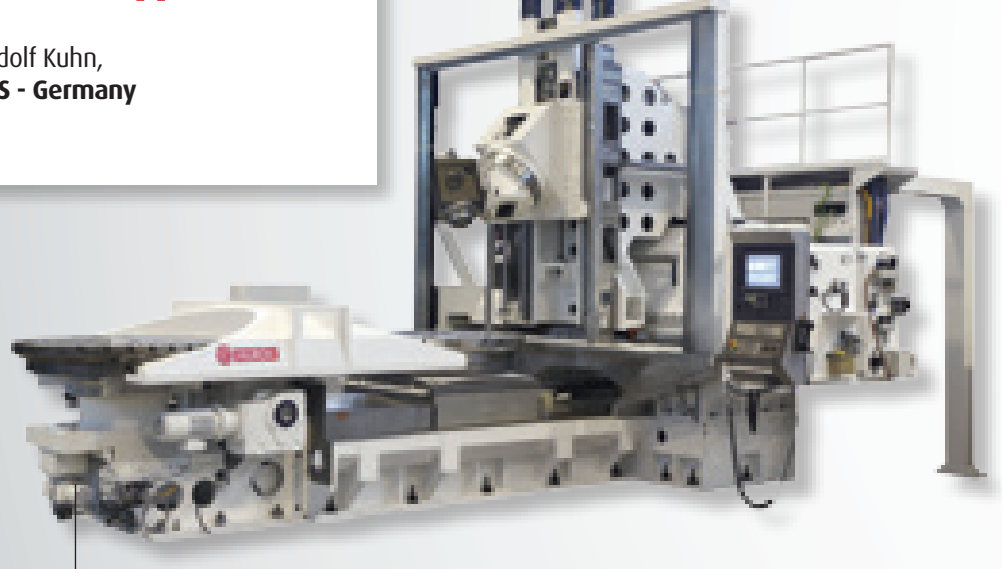
COMMENT



"Wir haben uns für die MX8 entschieden, da diese Maschine mit dem Rundtisch und den Verfahrwegen unsere Bearbeitungsmöglichkeiten ideal ergänzt. Seit Jahren haben wir eine KX 200 und eine KX 30 im Einsatz. Wir haben die Erfahrung gemacht, dass die Maschinen von Huron über Jahre sehr präzise und zuverlässig arbeiten.

We opted for the MX 8 as this machine is perfect for our needs in terms of the table and travel. As we'd already been using a KX 200 and a KX 30 for a few years, we knew from experience that Huron delivers accurate, reliable machines."

Rudolf Kuhn,
K+S - Germany



Palletizing for increased productivity

- Rotary twin-pallet palletizer attached to the front of the machine.
- Optimal operator access to the machine and constant visibility over the work area.
- Circular shroud for easy, ergonomic pallet loading/unloading from above and from the front of the machine.

Ergonomics and environment

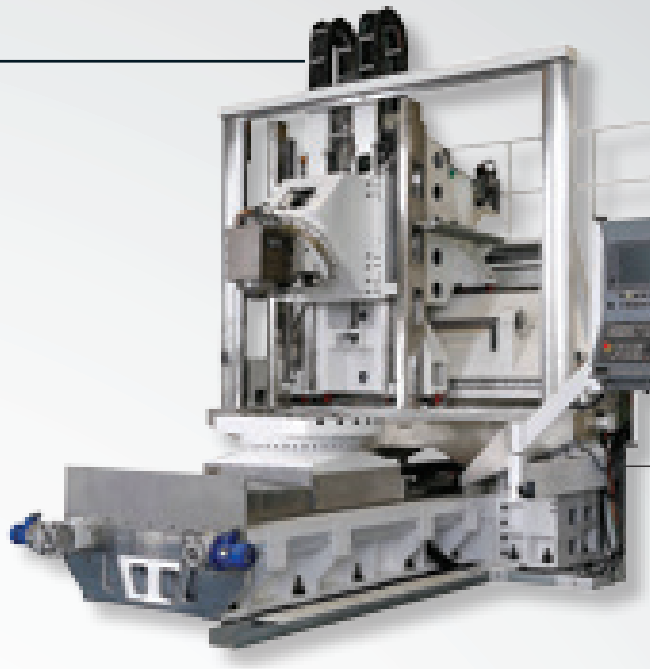
- Swarf chute with washing system and spiral conveyors.
- Large glazed panels, with or without palletizer, for improved visibility over the work area.
- Wide-opening doors for easier operator access to the table, workpiece and work area.
- Tilting operator panel.

MAIN PROPERTIES

		MX 8 M	MX 8 MT	MX 10 M	MX 10 MT	MX 12 M	MX 12 MT
X/Y/Z-axis travel	mm	1.160 x 1.000 x 900		1.200 x 1.200 x 1.000		1.200 x 1.600 x 1.000	
Fast feedrate	m/min	40					
Spindle speed Tool taper	rpm	18.000 HSK 63-A	10.000 HSK 100-A				
Power (S1/S6) Torque (S1/S6)	kW - Nm	20 / 30 160 / 240	32 / 50 180 / 280				
Tool changer	pockets	60	48				
Positioning (P)		X / Y / Z : 0,007 mm - A, C : 10 sec					
Repeatability (medium Ps)		X / Y / Z : 0,004 mm - A, C : 5 sec					
Machine weight	kg	22.000		35.000		37.000	
Width (doors closed + conveyor)	mm	6.250		6.335		6.990	
Depth	mm	6.150		7.950		8.660	
Height	mm	3.930		4.870		4.870	

Main characteristics of the series. Other variants and accessories optionally available.

MX

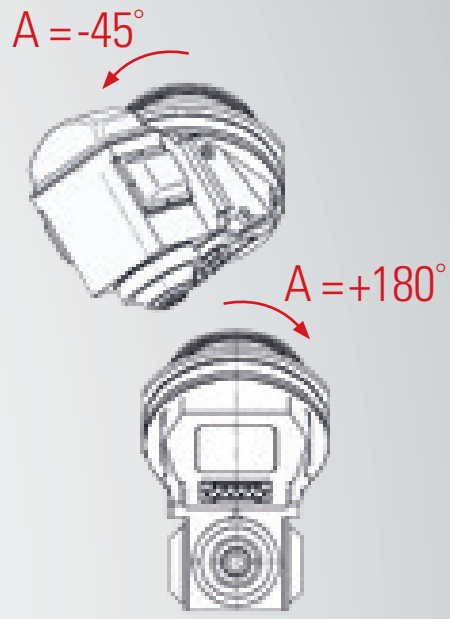


Design and structure

- Extremely rigid design.
- Dedicated foundation for improved dynamics.
- Structural design guaranteeing long mechanical life.
- Column guiding system on the crossrail for a high level of stability.
- Balanced Z-axis movement for greater precision and reduced energy consumption.

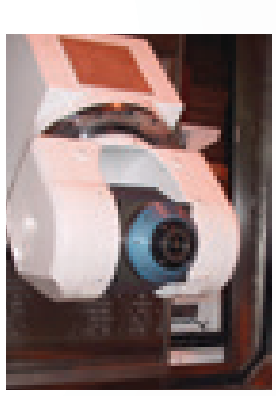
The universal head, a trump card for productivity

Positioned on a 45° plane, the continuously controlled head is designed to maintain the levels of accuracy in terms of positioning and repeatability, even in high-speed machining.
- Optimum clamping torque for a high roughing capacity.
- Direct drive for backlash-free and wear-free movement.



A-AXIS = -45° / +180°

Rotating speed	100 rpm
Clamping torque	2.500 Nm
Working torque (S1)	1.200 Nm



VARIANTS

Fork head, for the machining of workpieces requiring negative angles.
It is combined with a powerful 8000 rpm spindle (86 kW/235 Nm).
On versions 10/12 M

B-AXIS = -110° / +10°

Rotating speed	30 rpm
Clamping torque	7.000 Nm
Working torque (S1)	500 Nm

Mechanical head, for milling difficult materials such as titanium, Inconel and stainless steel.
Combined with a high-torque 6000 rpm spindle (28 kW/1350 Nm), this head is designed for heavy roughing with a high chip removal rate.
On versions 10/12 M/MT

A-AXIS = -45° / +180°

Rotating speed	25 rpm
Clamping torque	7.000 Nm
Working torque (S1)	2.235 Nm

COMMENT

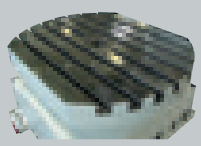
"MX 系列专门设计用于加工高硬合金和钛合金材料的零件，是加工这些零件最优秀、强有力且高精密的机床

The powerful MX series is specially designed to process hard alloy and titanium parts with high levels of precision."

Weber Wang
RICH FRIEND - China

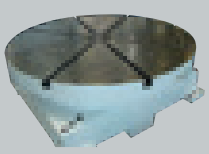
Milling or Turn/Mill table?

- Continuously controlled C-axis.
- Optimum positioning accuracy and repeatability.
- Torque motor drive for backlash-free and wear-free movement.
- Optimum clamping torque.



VERSION **M**
MILLING

		MX 8 M	MX 10 M	MX 12 M
Rotating speed	rpm	50	65	50
Table dimensions	mm	Ø 1.000 x 800	Ø 1.250 x 900	Ø 1.600 x 1.250
Max. weight allowed	kg	2.000	2.500	4.000



VERSION **MT**
MILLING/TURNING

		MX 8 MT	MX 10 MT	MX 12 MT
Rotating speed	rpm	500	500	250
Table dimensions	mm	Ø 800	Ø 1.000	Ø 1.400
Max. weight allowed	kg	2.000	2.500	4.000

VERSATILITY *to meet all customer requirements*

The KX Large series offers a wide selection of machines for continuous five-axis/five-side machining of complex parts.

The fixed-portal architecture and machine design ensure maximum rigidity for extremely precise machining in a variety of difficult materials.
Its large work area, capable of supporting up to 20 tonnes in weight and accommodating processable volumes up to 4080 x 2180 x 1550 mm, is suited to machining large parts for general mechanical and precision engineering, 3D shapes, and the aeronautical and energy sectors.
Customer requirements are comfortably met by the modularity of design, the choice of variants, and equipment.

Design and structure

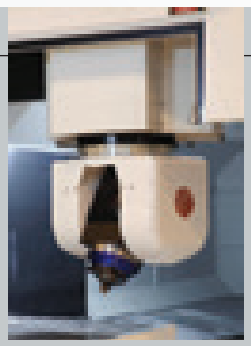
- Front guide rails on the Y-axis designed for effective distribution of the weight of the saddle/headstock assembly.
- Balance for greater precision and reduced energy consumption.
- Multiple mounting points providing rigidity and vibration absorption.

MAIN PROPERTIES		KX 50 M	KX 50 L	KX 100	KX 200
X/Y/Z-axis travel	mm	2.000 x 1.700 x 900	3.000 x 1.700 x 900	2.300 x 2.300 x 1.000	3.300 x 2.300 x 1.000
Fast feedrate	m/min	X / Y / Z : 40	X / Y / Z : 40	X / Y / Z : 40	X : 25 - Y / Z : 40
Table dimensions	mm	2.200 x 1.250	3.300 x 1.250	2.500 x 1.250	3.500 x 1.250
Max. weight allowed	kg	4.000	6.000	6.000	9.000
Spindle speed/taper	rpm	20.000 / HSK 63-A		18.000 / HSK 63-A	
Power - Torque (S1/S6)	kW - Nm	60 / 75 - 60 / 75		20 / 30 - 160 / 240	
Automatic tool changer		30 pockets		40 pockets	
Positioning accuracy (P)		X / Y / Z : 0,007 mm B, C : 10 sec	X / Y / Z : 0,007 mm B, C : 10 sec	X / Y / Z : 0,007 mm B, C : 10 sec	X / Y / Z : 0,007 mm B, C : 10 sec
Repeatability (medium Ps)		X / Y / Z : 0,004 mm B, C : 5 sec	X / Y / Z : 0,004 mm B, C : 5 sec	X / Y / Z : 0,004 mm B, C : 5 sec	X / Y / Z : 0,004 mm B, C : 5 sec
Machine weight	kg	30.000	36.000	37.000	41.000
Width (doors closed + conveyor)	mm	4.930	4.930	7.280	7.280
Depth	mm	7.520	10.150	7.890	10.360
Height	mm	5.050	5.050	5.410	5.410

Main characteristics of the series. Other variants and accessories optionally available.

Fork head

- Positioning accuracy and repeatability maintained in high-speed machining, even for complex-shaped parts.
- Angular encoder in the axis for high positioning accuracy and repeatability.
- Torque motors for backlash-free and wear-free movement.
- High clamping torque for high roughing ability.
- Negative angles possible.
- Spindle and machining safeguarded by a vibration monitor.

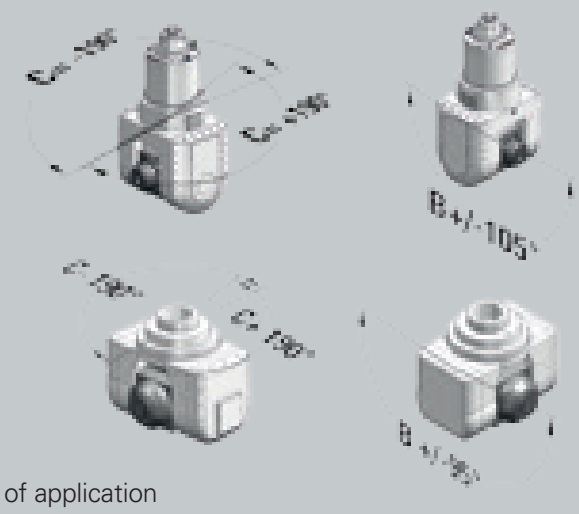


KX 50

Rotating speed	100 rpm
Clamping torque	4.000 Nm
Working torque (S1)	B : 764 Nm C : 810 Nm

KX 100 / 200

Rotating speed	30 rpm
Clamping torque	7.000 Nm
Working torque (S1)	B : 500 Nm C : 750 Nm



Several spindles available according to the type of application for an excellent compromise between power and torque.

Variante

Mechanical head, for milling difficult materials such as titanium, Inconel and stainless steel. Combined with a high-torque 4000 rpm spindle (21 kW/810 Nm), this head is designed for heavy roughing with a high chip removal rate.
On models 100/200.

B-AXIS = ±95° / ±200°

Clamping torque	10.000 Nm
Working torque (S1)	B, C : 2.292 Nm

KX LARGE

WHAT MAKES THE DIFFERENCE

- Machine with palletizing function for **increased productivity**
- **Volumetric precision** for making moulds and complex parts
- **Wide clearance between the columns** to exploit the work volume fully
- **Spindle offering optimum performance** for roughing and finishing
- Spindle suited to **high chip rates**
- Structural design guaranteeing **long mechanical life**
- **High degree of precision** due to direct measurement on the linear and rotary axes

COMMENT

"O Grupo Iberomoldes é constituído por 14 empresas e emprega mais de 1.400 pessoas.
Nas suas várias fábricas de moldes utiliza equipamentos da Huron de 3 e 5 eixos, marca com a qual tem uma relação muito antiga e duradoura.
A nossa escolha pela Huron está relacionada com a eficácia, relação preço/qualidade e assistência pós-venda e ainda porque se se tratam de equipamentos muito adequados para a indústria de moldes pela sua configuração, versatilidade e produtividade.

The Iberomoldes Group comprises 14 companies and employs over 1400 people.
We have a long-standing relationship with Huron as our various mould-making plants use Huron three and five-axis machines.
We chose Huron because of the efficiency and value-for-money of their products, and because of their aftersales service. The configurations, versatility and productivity offered by Huron equipment make it perfectly suitable for the mould-making industry."

Joaquim Paulo
GRUPO IBEROMOLDES - Portugal

COMMENT

"KX50L 专门是为航空零部件加工设计的台面移动的龙门加工中心，是价格性能比高，精度高和效率高的机床

The KX 50 L milling centre designed with a mobile table and is particularly recommended for the production of aircraft parts and mechanical components.
This machine offers a high degree of precision and efficiency at a very competitive price."

Weber Wang
RICH FRIEND - China

"**Our machines are becoming "eco-saving", and these principles are applied across all models in the Huron range.**"

Centralized axis grease lubrication
to reduce consumption and avoid coolant contamination.

Energy recovery
during braking (axes and spindle) resulting in a 10% energy saving.

Motors and pumps
IE2 class (IE3 in 2015)
for a minimum 5% energy saving.

eco saving

High-performance slideways
with reduced friction, longer lifetime and lower energy consumption.

Numerical control
Automatic stoppage by M-code at the end of the program.
Programmable conveyor startup, especially for roughing.

The latest addition to the range, the eXtra-Large KX 300, to conquer new heights.

MAIN PROPERTIES		KX 300
X/Y/Z-axis travel	mm	5.000 x 3.100 x 1.500
Fast feedrate	m/min	X / Y / Z : 20
Table dimensions	mm	5.200 x 2.000
Max. weight allowed	kg	20.000
Machine weight	kg	100.000
Width (doors closed + conveyor)	mm	7.000
Depth	mm	15.000
Height	mm	7.050

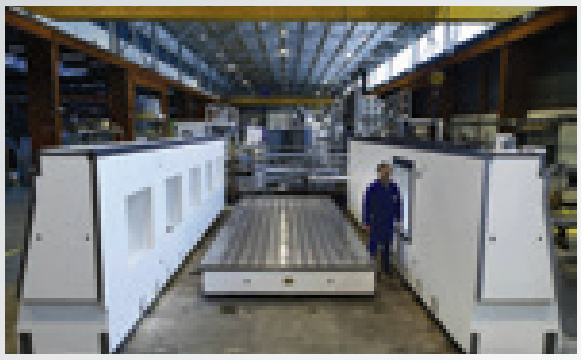
Main characteristics of the machine. The fork head and mechanical head are also available on the KX 300.
Other variants and accessories optionally available.

"A network-wide study revealed the need to develop a large machine offering the same performance levels as the five-axis portal machining centres that we have already built in their hundreds.
Thus was born, in listening to our customers, the eXtra Large KX 300 model. It will meet our customers' expectations in the mould making, aviation, railway and general engineering industries."

Bernard Echevard
HURON - France

MACHINING PERFORMANCE *enhanced*

The KXG series comprises gantry milling centres that are particularly effective in machining large, complex parts.



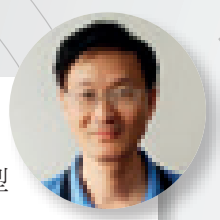
Design and structure

- Gantry structure with reinforced, U-type moving crossrail.
- Polymer concrete walls, each incorporating a linear motor assembly and a double guiding system.
- Optimization of the moving axes by finite element structural calculation.
- Dedicated foundation for improved dynamics.

Ergonomics and environment

- Retractable roof for easy access to the work area and workpiece.
- Tool magazine outside of the work area.
- Tilting, inclined operator panel.
- Energy efficiency for the production of large-sized parts.

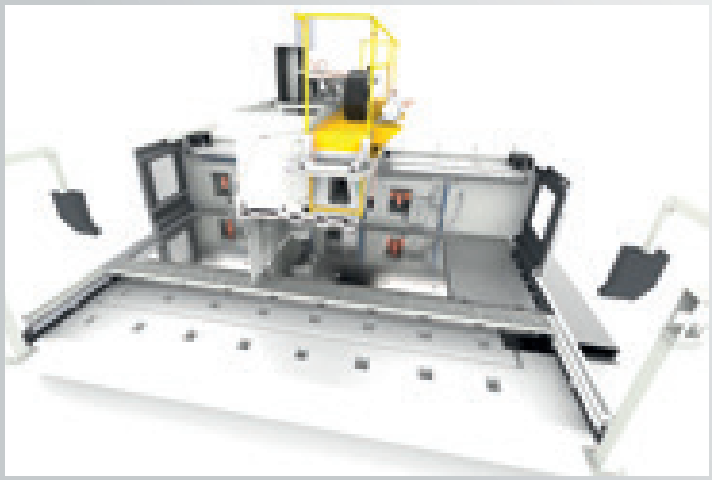
COMMENT



"KXG 系列 是加工大型航空零部件最佳选择，速度快，精度高，加工复杂航空零件可以获得最精密的外形

KXG milling centres are the best choice for the high-speed machining of large aircraft parts with precision. Very precise shapes can be achieved when machining highly complex parts. "

Weber Wang
RICH FRIEND - China



TWIN pendulum machining (optional), to boost return on investment

Adaptability and flexibility of the work space to match the customer's production requirements with ease.
- Two independent machining and work areas obtained by a separating wall with three different positions.
- Retractable shutter for head transfer between areas.
- Access to each area via sliding doors at the front and rear of the machine.
- Each area is equipped with a tool changer, an operator panel and all other necessary workpiece machining equipment.

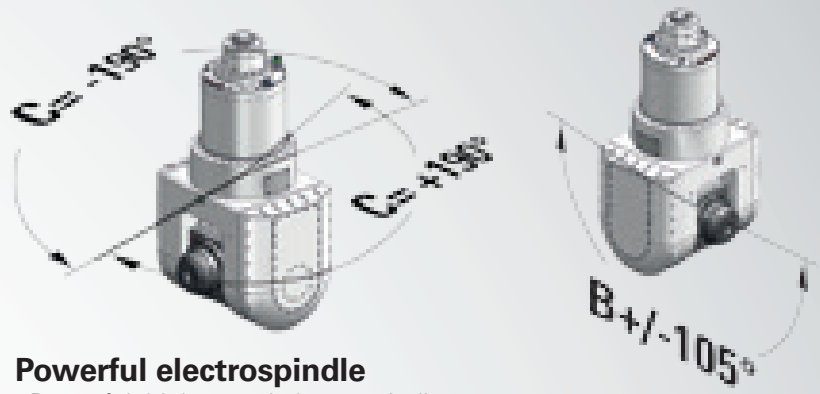
KXG

A winning trio for high productivity

Continuous two-axis swivel fork head

- Positioning accuracy and repeatability maintained in high-speed machining, even for complex-shaped parts.
- Angular encoder in the axis for high positioning accuracy and repeatability.
- Torque motors for backlash-free and wear-free movement.
- High clamping torque for high roughing capacity.
- Negative angles possible.

Rotating speed	100 rpm
Clamping torque	4.000 Nm
Working torque (S1)	B : 764 Nm C : 810 Nm



Powerful electrospindle

- Powerful, high-speed electrospindle.
- Several spindles available according to the type of application for an excellent compromise between power and torque.
- Spindle and machining safeguarded by a vibration monitor.

Tool changer

- Forty-pocket tool changer.

WHAT MAKES THE DIFFERENCE

- **Design suited** to continuous 5-axis machining of very large parts
- **Machining with very high feed speeds**
- **High rigidity** enabling very high metal removal rates

MAIN PROPERTIES

		KXG 45-14	KXG 45-23	KXG 60-23	KXG 90-23
X/Y/Z-axis travel	mm	4.500 x 1.400 x 800	4.500 x 2.300 x 800	6.000 x 2.300 x 800	9.000 x 2.300 x 800
Fast feedrate	m/min	X / Y : 60 - Z : 45			
Table dimensions	mm	4.700 x 1.390	4.700 x 2.480	6.200 x 2.480	9.000 x 2.480
Max. weight allowed	kg	18.000	21.000	25.000	52.000
Spindle speed/taper	rpm	20.000 / HSK 63-A			
Power - Torque (S1/S6)	kW - Nm	60 / 75 - 60 / 75			
Positioning accuracy (P)		X : 0,025 mm Y / Z : 0,010 mm B, C : 10 sec	X : 0,025 mm Y / Z : 0,010 mm B, C : 10 sec	X : 0,035 mm Y / Z : 0,010 mm B, C : 10 sec	X : 0,050 mm Y / Z : 0,010 mm B, C : 10 sec
Repeatability (medium Ps)		X / Y / Z : 0,005 mm B, C : 5 sec	X / Y / Z : 0,005 mm B, C : 5 sec	X : 0,006 mm Y / Z : 0,005 mm B, C : 5 sec	X : 0,006 mm Y / Z : 0,005 mm B, C : 5 sec
Machine weight	kg	60.000	75.500	90.000	130.000
Width (doors closed + conveyor)	mm	7.550	8.940	9.100	10.210
Depth	mm	9.700	10.000	11.700	13.650
Height	mm	4.980	4.980	4.980	4.980

Main characteristics of the series. Other variants and accessories optionally available.

EXCELLENCE *in five-axis precision machining*

The KX Five series is a combination of dynamics and precision for continuous five-axis machining of complex parts. Through the excellent standard of machining vibration damping, high-quality surface finishes and optimum precision can be achieved on a variety of materials.

KX FIVE

WHAT MAKES THE DIFFERENCE

- **Direct measurement** on all axes for increased positioning accuracy
- **Suitability for a variety of jobs**
- **Performance**
- **High level of precision** in contouring and profiles
- **Compact, dynamic table**

Design and structure for greater rigidity

- Large-sized monoblock bed and reinforced portal.
- Cast iron with high mechanical properties.
- Guiding system for the headstock, saddle and table providing high stability during movement.
- Floor anchor points guaranteeing optimum speeds and acceleration.

Ergonomics for improved accessibility and visibility

- Compact machine.
- Permanent visibility over the workpiece.
- Wide-opening doors for exceptional accessibility.
- Efficient swarf removal (the pivoting table prevents build-up).

Continuously controlled two-axis table

- Torque motors for backlash-free and wear-free movement.
- Accurate positioning and optimum repeatability.
- Workpiece tilting close to its centre of gravity for improved performance and precision.
- Excellent load distribution on the table.
- Maximum acceleration rate in rotation.
- Negative angles possible.
- High clamping and hold torque.

K3X 8 Five
Table on 55° plane

K2X 10 Five
Table on 45° plane

MAIN PROPERTIES

		K3X 8 FIVE	K2X 10 FIVE
X/Y/Z-axis travel	mm	780 x 700 x 500	900 x 900 x 500
Fast feedrate	m/min	X / Y / Z : 50	X / Y / Z : 50
Spindle speed/taper	rpm	24.000 / HSK 63-A	
Power - Torque (S1/S6)	kW - Nm	20 / 25 - 32 / 40	
Automatic tool changer		20 pockets	30 pockets
Positioning accuracy (P)		X / Y / Z : 0,004 mm - A, C : 7,2 sec	
Repeatability (medium Ps)		X / Y / Z : 0,002 mm- A, C : 3,6 sec	
Machine weight	kg	10.000	14.500
Width (doors closed + conveyor)	mm	4.710	4.910
Depth	mm	2.685	3.660
Height	mm	3.320	3.470

Main characteristics of the series. Other variants and accessories optionally available.

TABLE

		K3X 8 FIVE	K2X 10 FIVE
		55° plane	45° plane
Table dimensions	mm	Ø 500	Ø 630
Max. workpiece dia.	mm	Ø 700	Ø 800
Weight allowed	kg	250 (max.300)	500 (max.750)
A-axis			
Travel		-30° / +180°	-45° / +180°
Max. orientation		-110°	-90°
Rotating speed	rpm	50	40
C-axis			
Travel		360° (continuous)	
Rotating speed	rpm	50	90

COMMENT

"A nossa cooperação com a HURON tem mais de 15 anos, a nossa aposta na HURON teve 3 motivos, qualidade dos equipamentos, formação e assistência. Esta parceria tem tido uma continuidade e sendo hoje HURON a principal marca dentro do grupo TJ Moldes.

We have been cooperating with Huron for over 15 years and our choice is based on three criteria: equipment quality, training and support. We have developed a lasting partnership and Huron is now the main brand used within the TJ Moldes group."

João Faustino
TJ MOLDES - Portugal

Increased productivity

- Standard or custom automation solution.
- Spindle suited to a variety of applications.
- Choice of standard or custom tool changers.
- Ergonomic accessibility to the work area

QUALITY *machining*

MX4

The MX 4 offers outstanding power, precision, rapidity and rigidity for the very high quality machining of complex parts in difficult materials in minimum time.

TABLE

		MX 4
		Rotary table on 45° plane
A-axis		-45° / + 180°
C-axis		360°
A/C rotating speed	rpm	100
Table dimensions	mm	Ø 440
Max. weight allowed	kg	250

- High rotation and acceleration.
- Torque motors for backlash-free and wear-free movement.

MAIN PROPERTIES

		MX 4
X/Y/Z-axis travel	mm	750 x 700 x 500
Fast feedrate	m/min	X : 60 - Y / Z : 120
Spindle speed/taper	rpm	24.000 / HSK 63-A
Power - Torque (S1/S6)	kW - Nm	20 / 25 - 32 / 40
Automatic tool changer		36 pockets
Positioning accuracy (P)		X / Y / Z : 0,004 mm - A, C : 7,2 sec
Repeatability (medium Ps)		X / Y / Z : 0,002 mm - A, C : 3,6 sec
Machine weight	kg	8.700
Width (doors closed + conveyor)	mm	4.170
Depth	mm	4.300
Height	mm	3.020

Main characteristics of the series. Other variants and accessories optionally available.

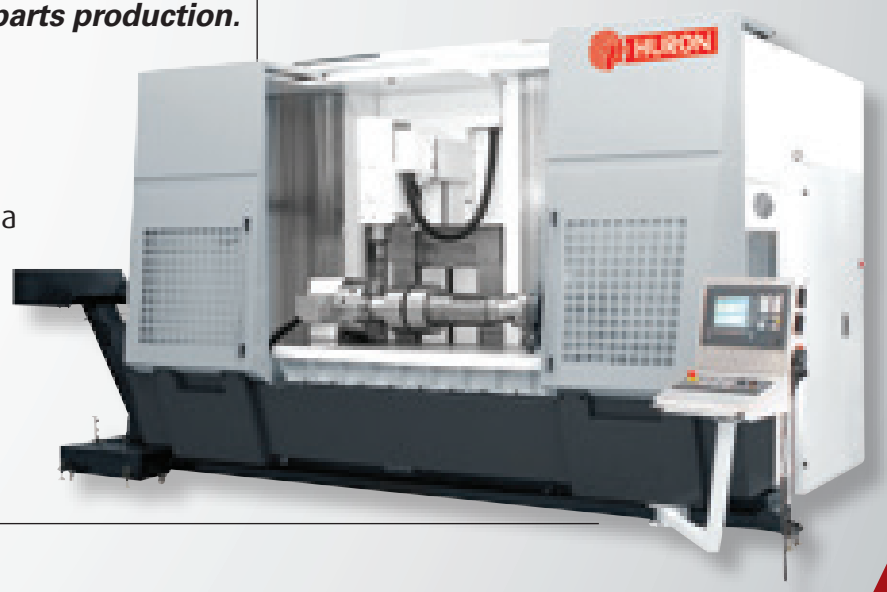
WHAT MAKES THE DIFFERENCE

- **Linear motors on Y and Z axes** to increase speed of movement and boost acceleration and rapid tool change
- **Light, rigid mobile structures** to get the most out of linear motor performance
- **Ballscrew on X-axis** to eliminate the risks of pollution
- **Floor anchoring** for improved rigidity and greater dynamics
- **Excellent positioning accuracy and repeatability**
- **Palletizable concept** for increased productivity

MODULARITY *for a range of applications*

EXP

As a pioneer of high-speed machining, the EX has boosted its users' productivity levels enormously. Today, the modularity in terms of the configurations and applications of this timeless series meets the widest variety of customer requirements, from the machining of prototypes to small and medium-scale parts production.



WHAT MAKES THE DIFFERENCE

- **Cast iron structure** for high stability and rigidity
- **Spindle mounted on moving column** to cover a wide work area
- **Versatility and ease of use**
- **Accessibility to the workpiece** through the wide-opening doors
- **Panel mounted on tilting arm**
- **High-performance spindle** available
- **Variety of fixed or rotary tables** available

MAIN PROPERTIES

		EXP 20	EXP 30
X/Y/Z-axis travel	mm	1.600 x 800 x 800	2.400 x 800 x 800
Fast feedrate	m/min	X / Y / Z : 30	X / Y / Z : 30
B-axis – Head rotation		Travel : ±100°	
Table dimensions	mm	2.000 x 750	2.800 x 750
Max. weight allowed	kg	3.500	4.500
Spindle speed/taper	rpm	12.000 / HSK 63-A	
Power - Torque (S1/S6)	kW - Nm	26 / 26 - 84 / 110	
Automatic tool changer		36 pockets	
Positioning accuracy (P)		X / Y / Z : 0,010 mm - B : 16 sec	
Repeatability (medium Ps)		X / Y / Z : 0,006 mm - B : 8 sec	
Machine weight	kg	18.000	21.000
Width (doors closed + conveyor)	mm	5.910	7.300
Depth	mm	4.300	4.300
Height	mm	3.770	3.770

Main characteristics of the series. Other variants and accessories optionally available.

COMMENT

"Le choix de notre nouvelle machine a été déterminé par une collaboration historique avec la société HURON, marque qui symbolise puissance, robustesse, précision et que nous avons pu constater depuis plusieurs décennies.

The fact that we have been working with Huron for a good many years was a decisive factor when it came to choosing our new machine. Huron is a brand that symbolizes power, strength and precision – a fact we have appreciated for several decades."

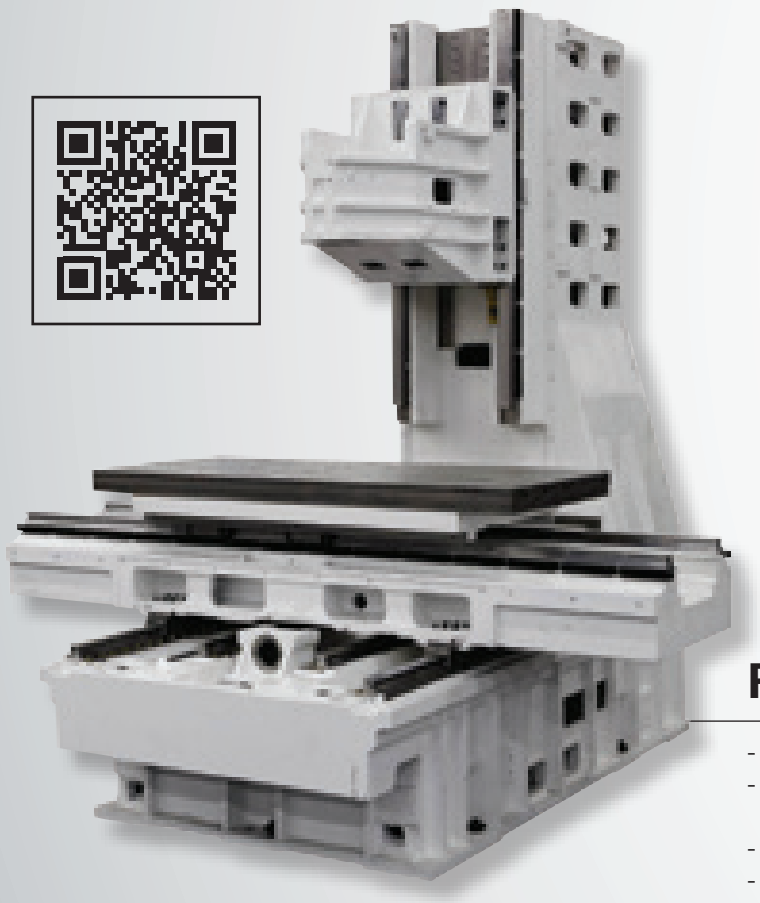
Hervé Pouyet
LAROCHE - France

THE CHOICE *for profitability*

The VX series, specially designed to meet customers' precision and reliability criteria, is extremely user-friendly and guarantees excellent profitability. Proven rapid return on investment. Compact, ergonomic, powerful and precise, the VX is an ideal investment for the manufacture of tooling and for small to medium-scale production.

WHAT MAKES THE DIFFERENCE

- **Versatility and performance in a range of machining operations:** milling, drilling, boring and tapping
- **High chip removal capability** through the rigidity of the machine and a high-torque spindle
- **Machining quality** with a very high degree of precision in contouring and shaping
- **Easy to program** with the ergonomic human-machine interface
- **Excellent price/performance ratio**
- **Compact footprint**



Ergonomic, accessible layout

- Moving table for easy access to the workpiece.
- Tilting operator panel.
- Improved accessibility to maintenance components, for checking fluid levels and for cleaning the work areas.

Rigidity and constant precision over time

- C-frame structure in quality ribbed cast iron.
- Broad-based architecture with reinforced column to withstand cutting forces and absorb the effects of machining vibrations.
- Excellent dynamic performance for rapid changes of direction and acceleration.
- Calibrated, pre-stressed ballscrews with direct motor coupling.

MAIN PROPERTIES

		VX 6	VX 8	VX 10	VX 12
X/Y/Z-axis travel	mm	600 x 400 x 460	820 x 510 x 510	1.020 x 510 x 510	1.220 x 600 x 610
Fast feedrate (X/Y/Z)	m/min	24			
Table dimensions	mm	800 x 500	1.000 x 530	1.200 x 530	1.400 x 630
Max. weight allowed	kg	400	500	800	1.200
Spindle speed	rpm	10.000 / ISO 40			
Power - Torque (S1/S6)	kW - Nm	Siemens : 10,5 - 14,5 / 50 - 69 Heidenhain : 10 - 14 / 64 – 89 Fanuc : 7,5 – 11 / 45 - 70			
Automatic tool changer		24 pockets			
Positioning accuracy (P)	mm	X / Y / Z : 0,015			
Repeatability (medium Ps)	mm	X / Y / Z : 0,003			
Machine weight	kg	5.300	5.300	6.700	8.000
Width (doors closed + conveyor)	mm	3.340	3.340	3.520	3.775
Depth	mm	2.470	2.470	2.595	2.520
Height	mm	2.900	2.900	2.900	3.150

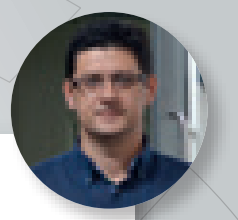
Main characteristics of the series. Other variants and accessories optionally available.

VX

A genuine production tool ready for action

The basic version of the VX is a comprehensive, packaged model that is delivered and installed, ready for production
- 10,000 rpm spindle with ceramic ball bearings for improved thermal stability
- Low-pressure cooling nozzles (2 bar)
- Pre-equipped for through-tool cooling
- Air blower nozzles
- 24-pocket tool changer
- Swarf conveyor
- Handwheel
- Electrical cabinet air conditioning
- Wash gun
- Swarf bin

Other optional equipment, available for the machine: various spindles, tool changer with a large number of pockets, workpiece and tool touch probes, 4th/4th-5th axis index plates, encoders for the three axes, etc.



COMMENT

"Huron diğer makinalara göre daha sağlamdır. Kesme esnasında sessiz ve az titreşimle çalışmaktadır. %30-%40 daha fazla talaş kaldırma kabiliyeti ile işleme zamanına büyük avantaj sağlanıyor. En önemlisi de yüzey kalitesi ve hassasiyetidir. Bu kaliteli özelliklerinden dolayı %15-%20 daha fazla para ödemeye hazırım. Bana göre Huron makinaları ile diğer makinaları karşılaştırmak doğru değildir.

Huron machines are more robust than most of its Asian rivals. They are also quieter with less vibration on cutting. Being able to machine with 30 to 40% deeper passes is a big advantage in terms of processing times. The machine's strong points are the surface quality and levels of precision achieved. These benefits are well worth the extra 15-20% on the price tag. In my opinion, Asian competitors are no match for Huron's experience."

Fuat Banusoglu
PAY TEKNIK KALIP YEDEC PARCA METAL - Turkey

New! Extended range and new design.

MAIN PROPERTIES

		VX 15	VX 18
X/Y/Z-axis travel	mm	1.510 x 810 x 810	1.810 x 810 x 810
Fast feedrate (X/Y/Z)	m/min	24	
Table dimensions	mm	1.700 x 810	2.000 x 810
Max. weight allowed	kg	2.000	2.500
Spindle speed	rpm	10.000 / ISO 40	
Power - Torque (S1/S6)	kW - Nm	Siemens : 10,5 - 14,5 / 50 - 69	
Automatic tool changer		24 pockets	
Positioning accuracy (P)	mm	0,015	0,015
Repeatability (medium Ps)	mm	0,008	0,008
Machine weight	kg	14.500	16.000
Width (doors closed + conveyor)	mm	5.400	6.100
Depth	mm	3.310	3.310
Height	mm	4.000	4.000

Main characteristics of the series. Other variants and accessories optionally available.

DEFYING *Time*

KMILL KX K2X

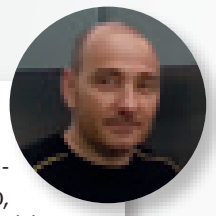
KX, a timeless name given to the first portal-structured machine and one that still features in the Huron product range. It incarnates the most efficient concept for machining complex parts along three axes, from roughing to finishing.

This series of machines combines dynamic action and precision for top quality surface finishes, especially for 3D shapes for moulds, forgings and tooling.

WHAT MAKES THE DIFFERENCE

- **Ribbed cast iron structure** offering high mechanical performance for greater rigidity
- **Excellent absorption of the vibrations** generated by the tough cutting conditions
- **Floor anchoring** to maintain geometric stability and precision over time

COMMENT



"Per la C.A.D. un punto di forza del centro di lavoro è l'ingombro totale a terra nonostante un discreto campo di lavoro, semplicità e versatilità d'utilizzo, un tempestivo e buon servizio d'assistenza, un buon rapporto qualità prezzo ed un elevato interesse di Huron ad ascoltare e a implementare le richieste di miglioramento avanzate dall'utilizzatore.

For CAD, the strong points of the machine are its compact size with a nonetheless sizeable machining area, its simplicity and versatility, an available aftersales service, good value for money and Huron's eagerness to listen to and implement the requests and suggestions for improvement submitted by users."

Luigi Genasi
CAD 2001 Engineering s.r.l. - Italy

COMMENT

"Neben der guten Zugänglichkeit gab vor allem die Eigensteifigkeit den Ausschlag für Huron, denn für unsere Präzisionsbearbeitung benötigen wir eine hohe Stichmaßgenauigkeit und eine außerordentliche Wiederholgenauigkeit.

On top of the excellent accessibility, the other key factor in the decision to buy a Huron was the rigidity inherent in the product. To guarantee precision machining of our parts, we need a high level of positioning accuracy and exceptional repeatability."

Lars Schwarzmannseder
MARBACH - Germany

MAIN PROPERTIES		KMILL 8	KMILL 10
X/Y/Z-axis travel	mm	700 x 600 x 500	1.000 x 700 x 600
Fast feedrate	m/min	X / Y / Z : 40	X / Y : 30 Z : 18
Table dimensions	mm	800 x 600	1.250 x 700
Max. weight allowed	kg	500	1.500
Spindle speed/taper	rpm	15.000 / ISO 40	
Power - Torque (S1/S6)	kW - Nm	26,4 / 26,4 - 84 / 110	
Automatic tool changer		24 pockets	
Positioning accuracy (P)	mm	X / Y / Z : 0,010	X / Y : 0,015 Z : 0,007
Repeatability (medium Ps)	mm	X / Y / Z : 0,005	X / Y : 0,007 Z : 0,005
Machine weight	kg	7.000	10.500
Width (doors closed + conveyor)	mm	4.100	4.590
Depth	mm	2.050	2.600
Height	mm	3.060	3.060

Main characteristics of the series. Other variants and accessories optionally available.

MAIN PROPERTIES		K2X 8	K2X 10	K2X 20	KX 30
X/Y/Z-axis travel	mm	700 x 600 x 450	1.000 x 800 x 500	1.200 x 1.000 x 500	1.800 x 1.000 x 600
Fast feedrate	m/min	X / Y / Z : 40	X / Y / Z : 60	X : 50 Y / Z : 60	X / Y : 30 Z : 18
Table dimensions	mm	800 x 600	1.150 x 800	1.400 x 1.000	2.000 x 1.000
Max. weight allowed	kg	500	1.000	2.000	2.500
Spindle speed/taper	rpm	24.000 / HSK 63-A	18.000 / HSK 63-A		18.000 / HSK 63-A
Power - Torque (S1/S6)	kW - Nm	20 / 25 - 32 / 40	25 / 35 - 86 / 120		25 / 35 - 86 / 120
Automatic tool changer		20 pockets			20 pockets
Positioning accuracy (P)	mm	X / Y / Z : 0,004	X / Y / Z : 0,004	X / Y / Z : 0,005	X : 0,009 Y / Z : 0,007
Repeatability (medium Ps)	mm	X / Y / Z : 0,002	X / Y / Z : 0,002	X / Y / Z : 0,003	X / Y / Z : 0,005
Machine weight	kg	7.000	12.500	14.400	17.000
Width (doors closed + conveyor)	mm	4.100	5.130	4.700	5.480
Depth	mm	2.050	3.520	4.510	6.310
Height	mm	3.060	3.400	3.560	3.160

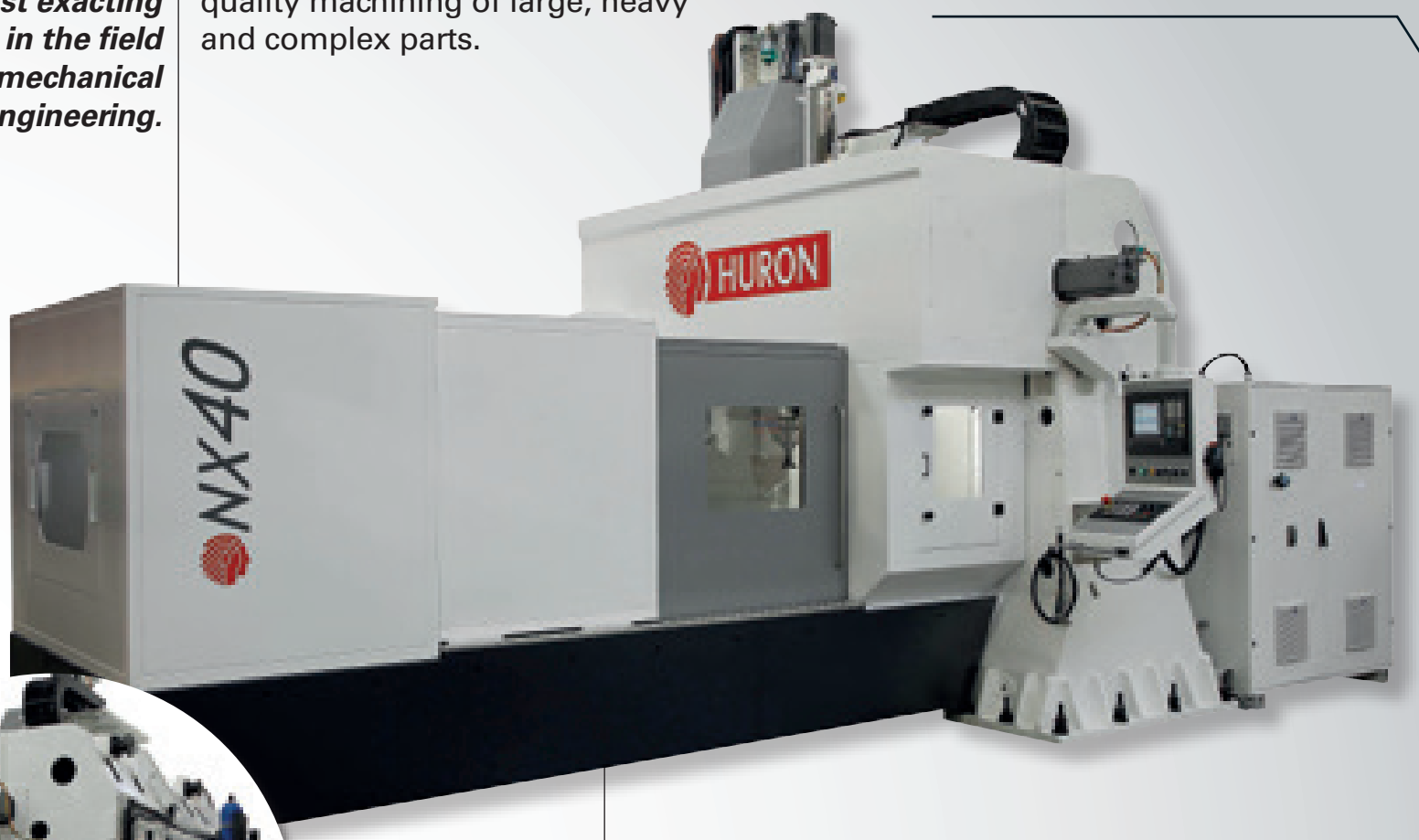
Main characteristics of the series. Other variants and accessories optionally available.

POWER
and rigidity for roughing

NX

The NX series of flexible, modular three-axis portal milling centres fulfils the most exacting demands in the field of general mechanical and precision engineering.

Its portal structure, wide distance between uprights and optimized cutting conditions provide an ideal environment for intense, quality machining of large, heavy and complex parts.



Robust design

- Solid column and portal for greater stability.
- Friction guide ram design for rigidity, stability on machining and the absence of vibration during cutting.
- Balanced Z-axis for fluid axis movement.
- X and Y-axis guide rails for greater productivity and constant precision.

WHAT MAKES THE DIFFERENCE

- **Robust construction and floor anchoring** to guarantee precision and geometric stability
- **High chip removal capacity on roughing** with the friction guiding system on the vertical axis
- **Large table area and wide distance between uprights** to process the full volume of the workpiece
- **Outstanding accessibility to the table and workpiece** thanks to the tunnel-type shroud
- **Efficient swarf removal**
- **Tilting operator panel**
- **Simpler maintenance**

COMMENT

"Binómio de produtividade industrial sustentada num desafio diário, potenciado com a incorporação de um conjunto de tecnologias de potencial inovador, aliado à procura constante de aperfeiçoamento contínuo, constituem as bases para uma produção de excelência.

Industrial productivity is a daily challenge. Innovative technologies allied with a constant quest for perfection is the foundation for the production of excellence."

Luís Marrazes
TECNIMOPLAS - Portugal

MAIN PROPERTIES

		NX 40	NX 50	NX 60
X/Y/Z-axis travel	mm	2.200 x 1.500 x 800	3.200 x 1.500 x 800	3.200 x 2.200 x 800
Fast feedrate	m/min	X / Y : 20 Z : 15	X / Z : 15 Y : 20	X / Y / Z : 15
Table dimensions	mm	2.200 x 1.250	3.000 x 1.250	3.000 x 2.000
Max. weight allowed	kg	6.000	8.000	10.000
Spindle speed/taper	rpm	6.000 / ISO 50		
Power - Torque (S1/S6)	kW - Nm	21,5 / 32,3 – 117 / 170		
Automatic tool changer		24 pockets		
Positioning accuracy (P)	mm	X / Y / Z : 0,020	X / Y / Z : 0,020	X / Y / Z : 0,020
Repeatability (medium Ps)	mm	X / Y / Z : 0,008	X / Y / Z : 0,008	X / Y / Z : 0,008
Machine weight	kg	22.000	25.000	30.000
Width (doors closed + conveyor)	mm	5.200	5.400	6.160
Depth	mm	7.400	9.550	9.550
Height	mm	4.420	4.420	4.420

Main characteristics of the series. Other variants and accessories optionally available.

POWER

MUTECH

The MuTech is a rapid, powerful, multipurpose machine that is particularly suitable for general mechanical and precision engineering. It offers a unique solution for a wide range of milling operations requiring a high degree of precision and a broad workpiece clamping area.

WHAT MAKES THE DIFFERENCE

- **Ribbed cast iron structure** for geometric stability
- **Measuring on all axes**
- **Wide door opening** for easy access to the workpiece
- **Excellent, high-capacity swarf removal**
- **Compact machine**

COMMENT

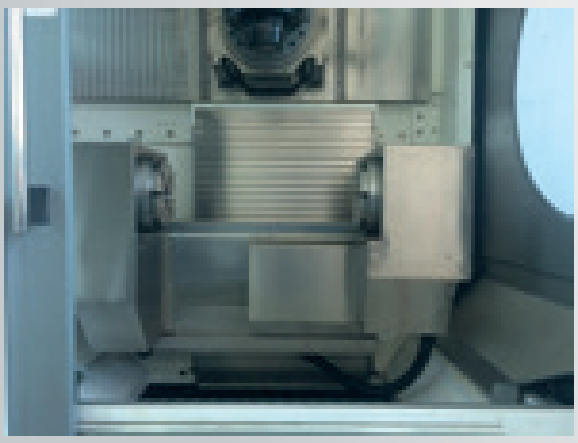
"Si è scelto il modello MuTech per la sua versatilità, dalle corse della macchina al cambio utensile in zona molto riparata. Per non parlare poi dell'accesso per piazzare i pezzi piccoli o grossi ; con 2 grandi porte scorrevoli !
Anche se si tratta del modello più piccolo per Huron, grazie alla tavola girevole e alla testa tiltante, ci permette di piazzare pezzi di medie dimensioni.
La prima cosa che mi è venuta in mente parlando di Huron è la sua mitica Testa. Dopo essermi informato, scoprii che ben 2 miei clienti avevano in ditta questa marca di fresatrici (macchine datate ma affidabili). Inoltre il distributore è conosciuto per un ottimo supporto tecnico.

We chose the Mutech model for its versatility, from the machine's range of travel to the tool changer located in a protected area. And that's without mentioning the two large sliding doors offering outstanding accessibility for positioning workpieces, large or small! Although this model is one of the smallest in the Huron product line, its turntable and tilting head mean that it is capable of processing medium-sized workpieces.
Before, I associated Huron especially with the legendary Huron head. After asking around, I discovered that at least two of my customers had old but reliable Huron milling machines in their workshops. What's more, the distributor has a reputation for providing excellent technical support. "

Sig. Bonacina
WIRE CUT SRL - Italy

Head and spindle

- Tilting head for machining on five sides.
- General mechanical parts can be machined vertically and horizontally thanks to the head pivot angle (+30°/-120°).
- Continuous head rotation by backlash eliminating gears for machining with 3+2 axes and up to five axes continuously.
- Negative angles possible.
- Cooled electrospindle for good thermal stability.



Progressive table concept

- Integrated Ø 600 mm rotary table for positioning or for simultaneous five-axis machining.
- Fixed 1000 x 600 mm table possible.
- Capacity to receive index plates for five-axis machining of complex parts.
- Specific configuration for the machining of turbine blades.

MAIN PROPERTIES		MUTECH 6
X/Y/Z-axis travel	mm	750 x 560 x 560
Fast feedrate	m/min	X / Y / Z : 30
Table structure		Fixed table with integrated rotary table
Table dimensions	mm	Fixed table: 1000 x 600 Rotary table: Ø 600
Max. weight allowed	kg	500
B-axis – Head rotation		+30° / -120°
Rotating speed	rpm	35
Spindle speed/taper	rpm	12.000 / ISO 40
Power - Torque (S1/S6)	kW - Nm	26 / 26 - 84 / 110
Automatic tool changer		24 pockets
Positioning accuracy (P)		X / Y / Z : 0,010 mm
Repeatability (medium Ps)		X / Y / Z : 0,005 mm
Machine weight	kg	9.500
Width (doors closed + conveyor)	mm	4.220
Depth	mm	3.000
Height	mm	2.580

Main characteristics of the series. Other variants and accessories optionally available.

DYNAMIC PERFORMANCE *conceptualized...*

SX

The SX is a mini milling centre for the production of small general mechanical and precision components, requiring pinpoint accuracy and outstanding dynamic performance.

Ergonomics

- Compact machine, smaller footprint.
- Excellent visibility and accessibility to the workpiece and its loading/unloading area.
- Adjustable control panel.
- Swarf removal integrated into the bed.

MAIN PROPERTIES

		SX 4	SX 6
X/Y/Z-axis travel	mm	400 x 300 x 300	500 x 400 x 400
Fast feedrate (X/Y/Z)	m/min	50	
Automatic pallet changer	mm / kg	2x 550 x 300 / 125	2x 650 x 400 / 300
Spindle speed	rpm	12.000 / HSK 50-A	
Power - Torque (S1/S6)	kW - Nm	13,5 / 13,5 - 45 / 64	
Automatic tool changer		16 pockets	
Positioning accuracy (P)	mm	X / Y / Z : 0,010	X / Y / Z : 0,010
Repeatability (medium Ps)	mm	X / Y / Z : 0,005	X / Y / Z : 0,005
Machine weight	kg	4.400	5.500
Width (doors closed + conveyor)	mm	3.320	4.100
Depth	mm	1.380	1.700
Height	mm	2.500	2.925

Main characteristics of the series. Other variants and accessories optionally available.

WHAT MAKES THE DIFFERENCE

- **Fixed base and column, and three linear axes on the tool:** constant precision even at high speed
- **Cross saddle and bed structure** for high dynamic performance and machining precision
- **Integrated rotopallet** with rapid rotation to reduce part changeover times
- **Hirth coupling** for accurate, repetitive positioning and clamping
- **Workpiece volume** sized in relation to travel
- **Fast, thermally stable electrospindle**

... for graphite machining

SXG

SXG, a compact, rigid mini milling centre designed for the machining of graphite parts.

WHAT MAKES THE DIFFERENCE

- **Cast iron structure**
- **Reinforced rigidity** for the machining of steel parts
- **Fixed table integrated into the bed** with **effective graphite dust extraction** close up to the machining area
- Complete soundproofed assembly with high suction capability
- **High-speed spindle** for finishing
- **Robotizable**

MAIN PROPERTIES

		SXG
X/Y/Z-axis travel	mm	400 x 400 x 300
Fast feedrate (X/Y/Z)	m/min	50
Table dimensions	mm	600 x 450
Max. weight allowed	kg	125
Graphite extraction: suction/bin	m3/h / l	1.200 / 38
Rotating speed	rpm	42.000 / HSK 40-E
Power - Torque (S1/S6)	kW - Nm	10 / 12 - 6,54 / 9
Automatic tool changer		30 pockets
Positioning accuracy (P)	mm	X / Y / Z : 0,010
Repeatability (medium Ps)	mm	X / Y / Z : 0,005
Machine weight	kg	5.000
Width (doors closed + conveyor)	mm	4.700
Depth	mm	1.600
Height	mm	2.565

Main characteristics of the series. Other variants and accessories optionally available.

PRODUCTIVITY
for mass production

HSX

The HSX horizontal machining centre series comfortably combines dynamic performance and outstanding precision for a wide range of applications. Its high productivity helps reduce finished part completion times significantly.

WHAT MAKES THE DIFFERENCE

- Stable machine for **good vibration absorption**
- **High table load capacity**
- **Indexable table** as standard
- **Excellent accessibility** to the workpiece and its loading/unloading area

- ***Torque-motor table*** *optionally available for optimum positioning accuracy*

Productivity

- High-torque, high-speed electrospindle for maximum output. High axial and radial rigidity. Cooler for thermal stability.
- Fast, accurate automatic pallet changer with possibility of extending to up to six pallets.
- Wide choice of tool changer.
- Rapid tool change.
- Perfect swarf removal system.

Design and structure

- Cast iron machine structure for excellent rigidity and geometric precision.
- Robust structural design for increased positioning accuracy.
- Optimum work clearance.

MAIN PROPERTIES		HSX 540	HSX 650	HSX 860
X/Y/Z-axis travel	mm	630 x 600 x 600	800 x 730 x 750	1.100 x 900 x 1.000
Fast feedrate	m/min	X / Y / Z : 50	X / Y / Z : 50	X / Y / Z : 40
Automatic pallet changer	mm	2x 400 x 500	2x 500 x 630	2x 630 x 800
Max. weight allowed on pallet	kg	400	700	1.100
Min. table indexing	° (degrees)	1°	1°	1°
Spindle speed	rpm	12.000 / ISO 40	10.000 / ISO 50	
Power - Torque (S1/S6)	kW / Nm	26 - 125	41 - 170	
Automatic tool changer		40 pockets		
Positioning accuracy (P)		X / Y / Z : 0,010 mm	X / Y / Z : 0,010 mm	X / Y / Z : 0,015 mm
Repeatability (medium Ps)		X / Y / Z : 0,005 mm	X / Y / Z : 0,005 mm	X / Y / Z : 0,007 mm
Machine weight	kg	12.000	19.000	22.000
Width (doors closed + conveyor)	mm	3.820	4.010	4.660
Depth	mm	4.780	5.620	7.890
Height	mm	2.650	3.400	3.700

Main characteristics of the series. Other variants and accessories optionally available.

MULTITASKING *with precision*

AX

The flexible yet rigid AX series has been designed to meet a variety of needs.

The new AX is equipped with a C-axis and a Y-axis to tackle all types of turning and milling operations. The AX multitasking centre is perfectly suited to the production of small mechanical parts for motor vehicles and the hydraulics industry, as well as electronic components.

AX 300, taking a new turn!

Multitasking TurnMill centre for the mass production of parts.

WHAT MAKES THE DIFFERENCE

- **Rigid, robust monoblock construction** for excellent vibration damping
- Outstanding **surface quality**
- **High degree of accuracy and repeatability**
- **12-station live tool turret**
- **C-axis** for milling operations
- **High-speed electrospindle** and rigid spindle holder
- **Y-axis**
- **Excellent swarf removal**
- **Compact machine,** smaller footprint
- **Accessible, intuitive CNC**
- Simple to program with **ShopTurn**

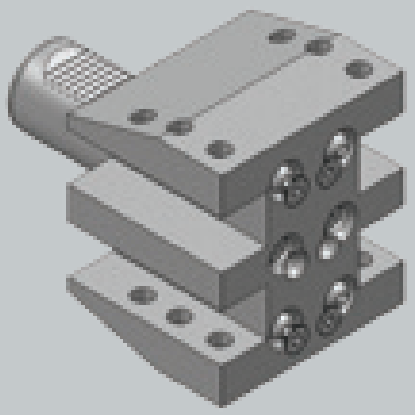
MAIN PROPERTIES

		AX 300
Max. swing over bed	mm	675
Max. turning dia.	mm	420
Max. turning length	mm	600
Chuck dia.	mm	
X/Z-axis travel	mm	250 / 625
Y-axis travel	mm	± 50
Fast feedrate	m/min	X / Y : 24 Z : 30
Spindle speed	rpm	4.000
Spindle nose		A_2-8
Max. bar capacity	mm	65
Turret type		Live tool
Number of driven stations		12
Live tool holder		VDI 40
Max. tool speed	rpm	4.500
Positioning accuracy (P)	mm	X / Z : 0,007 mm
Repeatability (medium Ps)	mm	X / Z : 0,005 mm
Machine weight	kg	6.500
Width (doors closed + conveyor)	mm	4.950
Depth	mm	2.000
Height	mm	2.210

- Second spindle possible
- Wide range of productivity boosting options, such as bar feeder, parts collector, steady rests, etc.
- For extra precision, optional encoders can be fitted

Optimized tool management

- Possibility of placing four outer tools in a single pocket and increasing the operations to save time on tool changeover.

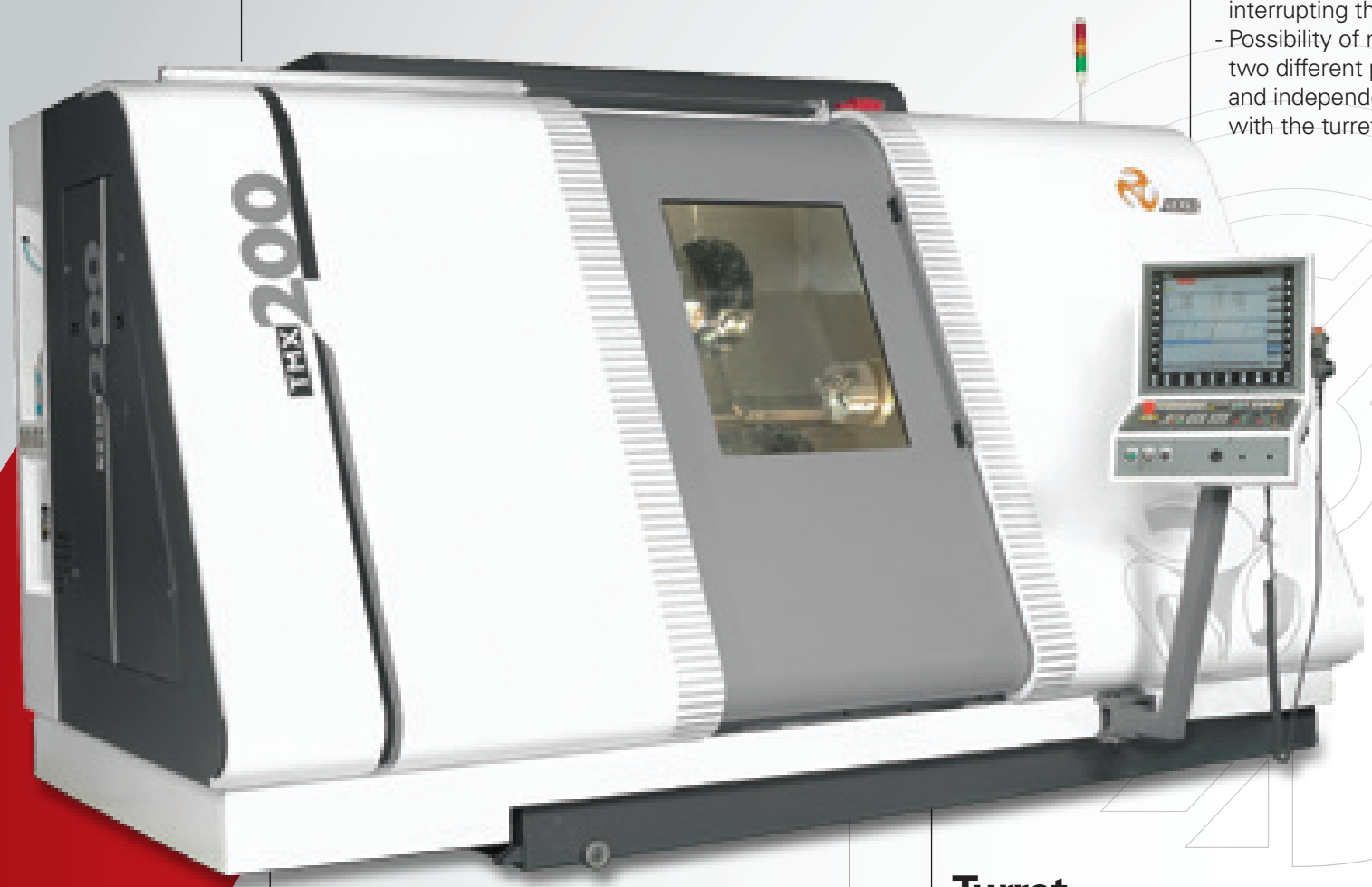


MULTITASKING *for production*

TMX

The flexible, yet rigid, TMX series has been designed for production shops.

It offers the key advantage of being able to process several parts and conduct several operations simultaneously, thereby achieving significant gains in productivity and cost-effectiveness.
The TMX is equipped with a C-axis and a Y-axis to tackle all types of turning and milling operations. The TMX multitasking centre is perfectly suited to the production of small mechanical parts for motor vehicles and the hydraulics industry or electronic components.



Spindle

- Fixed, powerful main spindle with direct drive.
- Optional secondary spindle available. Can be combined with the main spindle to produce two parts without interrupting the machining operation.
- Possibility of machining two different parts simultaneously and independently, in combination with the turrets.

Productivity

- Plurality of configurations with a second spindle and/or second turret. Cycle times are balanced for optimum productivity.
- Wide range of productivity boosting options, such as bar feeder, parts collector, steady rests, etc.
- For extra precision, optional encoders can be fitted.

Turret

- Upper turret with 12 driven stations offering a high level of flexibility for complex turning and milling applications.
- Optional secondary turret available.
- By combining two turrets, up to 24 tools can be used for complex machining work.
- Each turret's travel offers the possibility of working individually, close to and in combination with, their respective spindle, to meet the requirements of the most demanding applications and create a totally flexible work environment.

MAIN PROPERTIES		TMX
Turning dia.	mm	250
Max. turning length	mm	725
Chuck size	mm	210
X/Z-axis travel	mm	300 / 750
Y-axis travel	mm	± 40
Fast feedrate	m/min	25 / 15 / 30
Spindle speed	rpm	4.000
Spindle nose		A_2-6
Max. bar capacity	mm	65
Turret type		Live tool
Number of driven stations		12
Live tool holder		VDI 40
Max. tool speed	rpm	4.000
Positioning accuracy (P)	mm	X / Y : 0,008 Z : 0,012
Repeatability (medium Ps)	mm	0,005
Machine weight	kg	10.500
Width (doors closed + conveyor)	mm	5.500
Depth	mm	2.500
Height	mm	2.600

Main characteristics of the series. Other variants and accessories optionally available.

WHAT MAKES THE DIFFERENCE

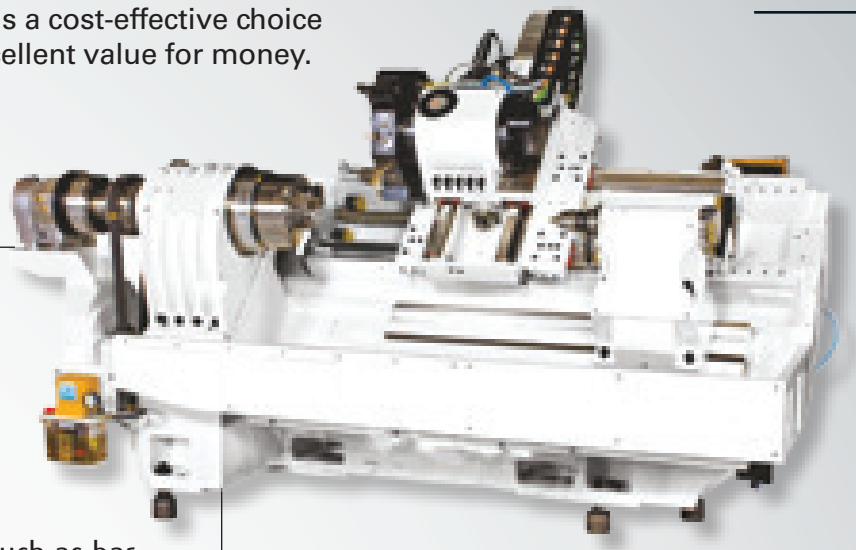
- Multitasking in **a single setup**
- Outstanding **surface quality**
- High degree of **accuracy and repeatability**
- Production machine
- **C-axis** for milling operations
- **Y-axis**
- **Excellent swarf removal**
- Significant **reduction in cycle times**
- **Longer tool life**
- **Easy ergonomic access** to the workpiece, for tool setting and for tip replacement
- Accessible, **intuitive CNC**
- Easy programming with **ShopTurn**

From TURNING...

DX

The DX two-axis turning centre series is ideal for the production of parts in a single setup.

Particularly flexible and equipped with a turret with tools for drilling, boring and turning operations, the DX turning centre helps produce significant time savings.
The rigidity and high degrees of positioning accuracy and repeatability make this a cost-effective choice investment that offers excellent value for money.



WHAT MAKES THE DIFFERENCE

- **Wide range**
- **Robustness and precision**
- Excellent **swarf removal**
- **Compact machine, smaller footprint**
- Accessible, **intuitive CNC**
- Simple to program with **ShopTurn**
- Wide range of **productivity boosting options,** such as bar feeder, parts collector, steady rests, etc.

Concept and Structure

- Monoblock structure in high-grade cast iron, with slant bed for additional rigidity and strength.
- Total absence of vibration producing excellent surface conditions, even on hard materials.
- Cost-effective tooling.

... to TURNING & MILLING

TMC

Flexible yet rigid, with high levels of positioning accuracy and repeatability, TMC turning centres are perfect for the small-scale production of general mechanical components.

The TMC is equipped with a C-axis to tackle milling operations in addition to traditional turning operations such as drilling and boring. The quality of the parts produced and the significant time savings generated make TMC an excellent choice for optimum profitability.

Live tools – TMC version

- C-axis for milling operations.
- BMT-profile turret for extra rigidity.
- All turret stations designed for live tools.

MAIN PROPERTIES

DX / TMC		100	150	200	250 -700	250 -1000	350 -700	350 -1000	350 -1500	500 -1000	500 -2000	750
Max. swing over bed	mm	470	375	500	600	600	700	700	700	800	800	1.050
Standard/max. turning dia.	mm	100 / 200	150 / 250	200 / 350	300 / 470	300 / 470	400 / 470	400 / 470	400 / 460	550 / 700 (555 sur TMC)	550 / 700 (555 sur TMC)	770 / 920
Max. turning length	mm	200	350	500	700	1.000	700	1.000	1.500	1.000	2.000	3.000
Chuck dia.	mm	169	169	210	254	254	304	304	304	304	304	380
Travel: X/Z	mm	360 / 200	150 / 350	200 / 500	250 / 700	250 / 1.000	250 / 700	250 / 1.000	250 / 1.700	360 / 1.000	360 / 2.000	480 / 3.100
Spindle speed	rpm	50 - 4.500	50 - 4.500	50 - 4.000	50 - 3.500	50 - 3.500	50 - 2.500	50 - 2.500	50 - 2.500	50 - 2.500	50 - 2.500	50 - 1.500
Spindle nose		A_2-5	A_2-5	A_2-6	A_2-6	A_2-6	A_2-8	A_2-8	A_2-8	A_2-8	A_2-8	A_2-11
Max. bar capacity	mm	38	38	52	52	52	65	65	65	65	65	90
Power (S1/S6) Torque (S1/S6)	kW Nm	7 / 10,5 50 / 75	7 / 10,5 50 / 75	9 / 13,5 114 / 170	12 / 18 230 / 350	12 / 18 230 / 350	18,5 / 27,8 236 / 360	18,5 / 27,8 236 / 360	18,5 / 27,8 236 / 360	18,5 / 27,8 236 / 360	18,5 / 27,8 236 / 360	22 / 33 420 / 630
Tool-holder table Number of stations		4										
DX turret Number of stations			8	8	8	8	8	8	8	8	8	12
TMC turret Number of driven stations				12	12	12	12	12	12	12	12	12
Live tool holder				VDI 25	BMT 45	BMT 45	VDI 40	VDI 40	VDI 40	VDI 50	VDI 50	VDI 60
Max. tool speed	rpm			6.000	5.000	5.000	5.000	5.000	4.000	3.000	3.000	3.000

IN THE WORDS OF OUR EXPERT

Yan Boutin
Head of CNC Applications at Huron

Increased productivity has become vital for survival in the world of machining. Nowadays, optimizing the machining process calls for knowledge in several areas of engineering, making it complex and costly for businesses.

To give our customers the support they need to face this challenge, we are developing a set of features designed to boost productivity and profitability while optimizing precision. Each cycle developed deals with one complex technical issue. Ultimately, the programmer – or the operator – has an intuitive interface to implement complicated concepts simply and effectively. These cycles combined with our milling centres' capabilities make Huron equipment more efficient and benefit the automation of manufacturing processes.

Huron cycles "Preci" concern SIEMENS CNC

PreciLIFE

Automatic tool life management

Efficient use of cutting tools means replacing them when wear has reached a specific level. Replacing them too early increases tooling costs whereas replacing them too late can have the catastrophic consequence of the tool breaking and the workpiece having to be scrapped.
The PreciLIFE cycle automates tool checking transparently during machining or on tool changeover. If critical wear is detected, the system automatically triggers the replacement of the tool at the most appropriate time.
PreciLIFE therefore safeguards the integrity of the workpiece and the cutting tools and optimizes tool use. The profitability of the machine is increased by reducing downtime and tooling costs.

MAIN PROPERTIES

- Automated **tool measurement, inspection** and **replacement** concurrently with machining operations
- No change to the machining program
- Transparent installation
- Configuration of checking parameters for each tool such as wear, break tolerance or checking intervals
- Automatic replacement of worn tools, or interruption of the program, in the event of a broken tool

PreciPOWER

Adaptive feedrate – how to optimize roughing operations

Optimized roughing means obtaining a maximum chip removal rate in a minimum of time. Achieving this objective by programming is technically complex as it depends on several factors such as cutting settings, tools, tool routes and workpiece profiles.
The PreciPOWER cycle modulates the feedrate automatically and in real time. Consequently, spindle power is constant which optimizes the metal removal rate and boosts roughing productivity. It also monitors overloading of the spindle and rotary axes and thus protects the machine and workpiece.
PreciPOWER is very simple to set up and use, and results in a substantial increase in productivity.

MAIN PROPERTIES

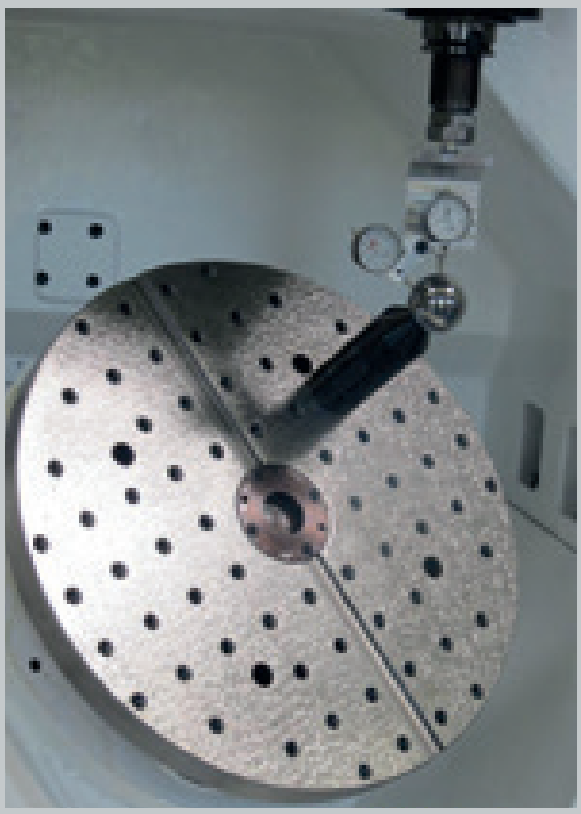
- **Full exploitation** of available **spindle power** within the scope of the tool, the setup and the workpiece.
- **Automatic feedrate modulation.**
- **Optimum effectiveness** in terms of stock removal.
- Use on a five-axis machine possible: due to feedrate modulation, the torque applied to the rotary axes on five-axis roughing does not exceed the available torque.
- Activation of **overload monitoring,** separately or concurrently with other operations, to avoid damage to the tool, spindle or workpiece.
- **No change to the machining program.**

PreciFIVE

Automatic calibration of five-axis machines

(TRAORI – 5axes; CYCLE800 – 3+2 positioning or machining on an inclined plane)

- Fully automated measuring, updating of machine settings and reporting activated with a single button.
- Improved quality of work due to the high positioning accuracy and precise tool orientation in space during machining.
- Measuring time optimized for more frequent calibration.
- Measuring elements fully user-configurable.



Automatic updating of the machine parameters used

- No particular knowledge required.
- Possibility of including calibration directly in the machining process for optimum precision.
- "Verification" mode for comparing calibrated and used data.
- Current and previous position and orientation of the rotary axes.
- Automatic report printout.

MAIN PROPERTIES

- **Quick, accurate automated system** measuring the position and orientation of the rotary axes
- **Optimized machining precision**
- **Compensation of the thermal expansion** of the machine
- **Maximum precision** for parts production
- **Scrap elimination**
- **Rapid rebalancing** following a machine collision
- **Documented history**

GLOBAL ACTIVITY *every day*

THE WORLD IS OUR MARKET PROXIMITY IS OUR STRENGTH

Through our worldwide business units who provide backup to our commercial and callout teams, we rely on partners within easy reach of our customers, who are capable of offering advice and support and intervening quickly and efficiently when needed.
A network approach based on field expertise and a profound sense of service and human relations is the backbone of our philosophy: to strive to be better in order to guarantee maximum customer satisfaction, in a spirit of trust and cordiality.

TELEDIAGNOSTICS

The best way to increase machine uptime and save time and money

TELEDIAGNOSTICS… or remote maintenance.

Remote maintenance is not a mere gadget – it's a genuine investment!
Increase your equipment's uptime by activating remote monitoring, complete with quick, accurate diagnostics and 'online' repair operations.

- All telephone line or systems/Internet connection charges are to be met by the customer.
- This service is provided free of charge during the warranty period. An annual subscription fee applies thereafter.

MAIN PROPERTIES

- **Increased machine availability.**
- **Lower hourly rate** (also applies to all other service operations over the year).
- **Rapid remote diagnostics** by our qualified staff, leading to shorter downtime.
- Reduced diagnostic and maintenance times: **lower service costs** and **increased productivity!**
- **Avoids** machine shutdowns.
- Connection via modem, Internet or telemaintenance (VPN).

HURON, an Alsatian team and over 200 employees worldwide.

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