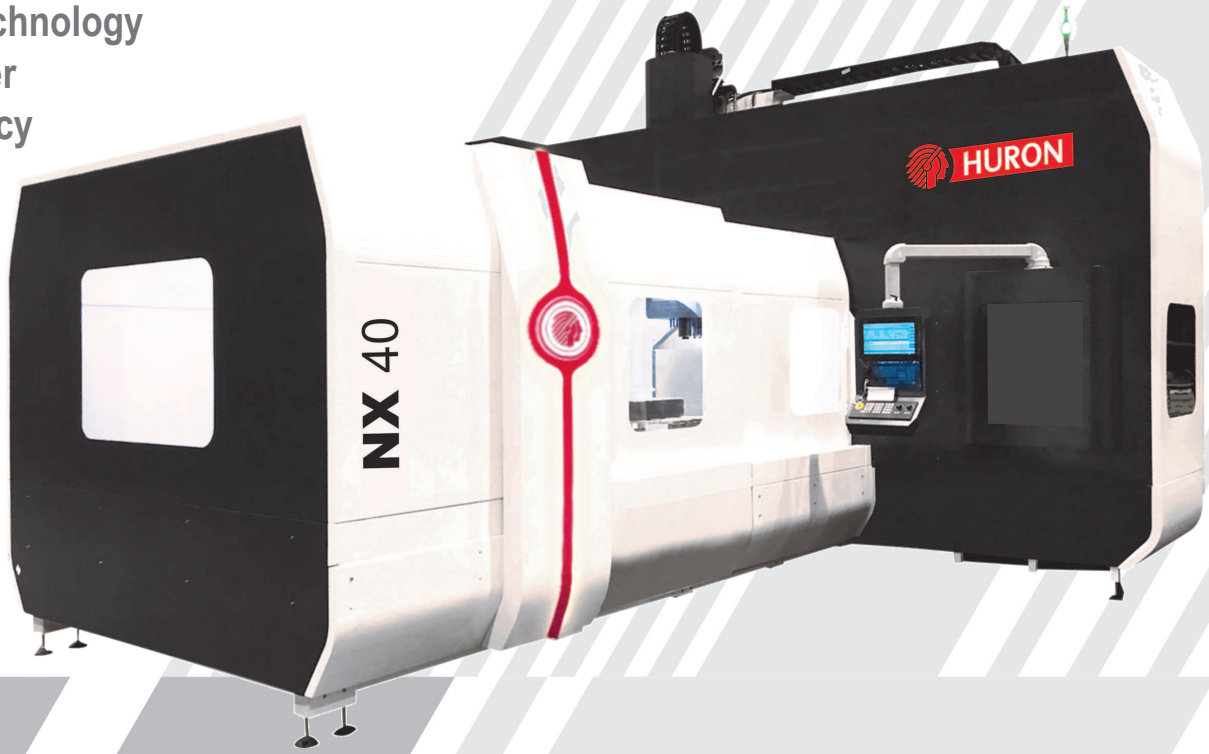
NX Series

Milling centres
3 axes, high performances

Performance
Technology
Power
Accuracy



NX Series

Powerful, Rigid, Accurate
Portal milling centre,
3 axes, high performances

NX vertical milling centres are suitable for machining very large parts in both roughing and finishing.

The machine's extremely rigid design, initially developed for large roughing operations, gives the NX range excellent finishing performance as well.

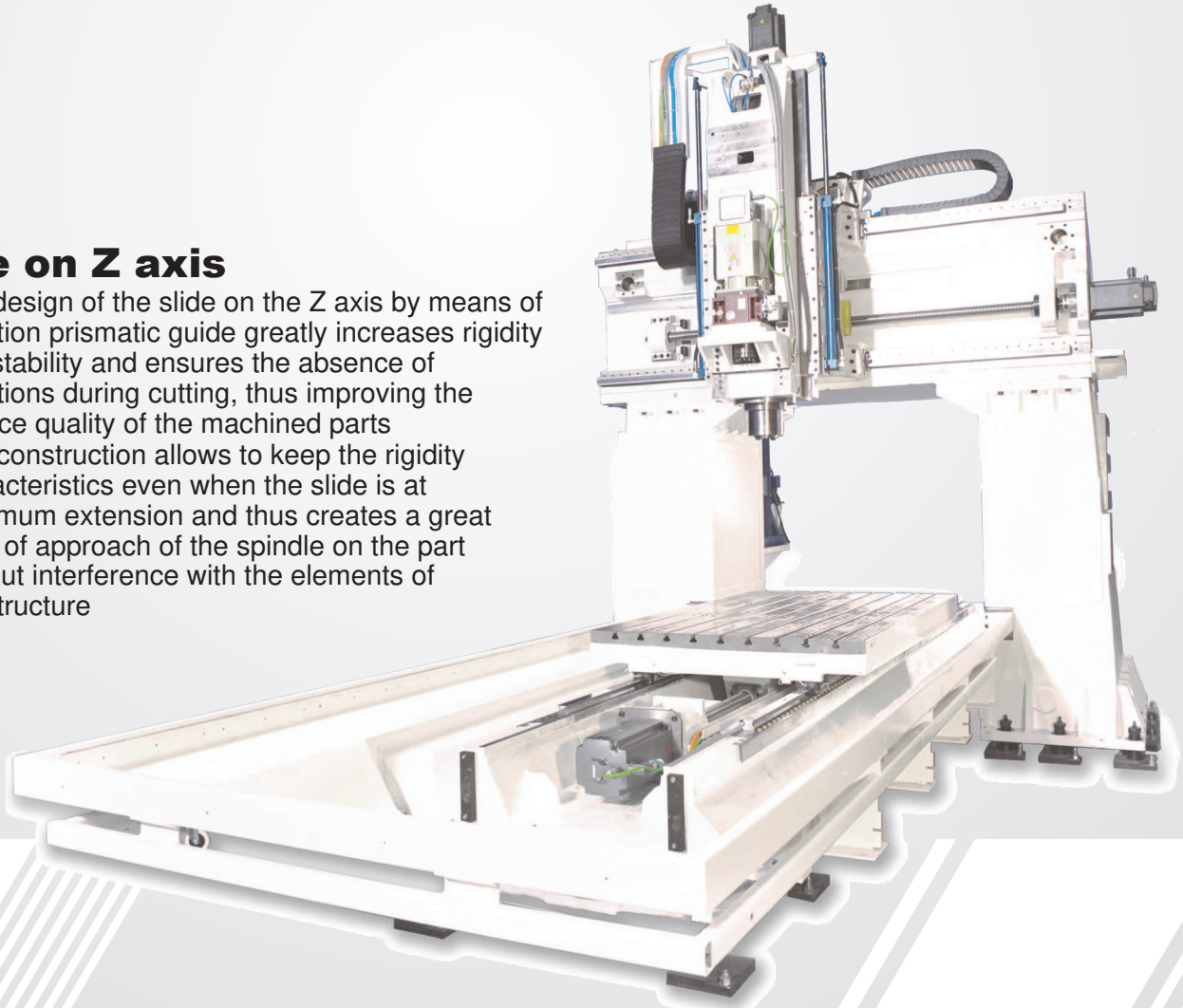
This flexibility makes it possible to adapt both to the parts to be roughened and to more complex parts such as molds, forging dies or large plates.

Many options have been added to this range to meet the constraints and requirements of customers.

- Designed for machining large mould frames, as well as moulds
- Admissible load : up to 10.000 kg
- Very high machining accuracy and reduction of production costs
- Hydraulic balancing of the Z axis for better machining stability

Slide on Z axis

- The design of the slide on the Z axis by means of a friction prismatic guide greatly increases rigidity and stability and ensures the absence of vibrations during cutting, thus improving the surface quality of the machined parts
- This construction allows to keep the rigidity characteristics even when the slide is at maximum extension and thus creates a great ease of approach of the spindle on the part without interference with the elements of the structure



Rigidity and Accuracy

- Portal structure: movable table on X axis, Y-axis on the traverse, spindle slide on Z-axis
- A large distance between the columns allows the positioning of large parts
- The mechanical performances and rigidity of the machine are optimized thanks to the cast iron structure
- The stability of the machine combined with vibration damping allows highly demanding cutting conditions
- Several anchorage points on the ground for a fair distribution of the machine's weight, guaranteeing increased rigidity and better geometric stability over the years

Linear axes

- Guide rails with roller recirculating bearings on the X and Y axes and friction prismatic guide in Turcite on the Z axis for better productivity and consistency in accuracy
- Prestressed ball screw with integrated expansion compensation system
- Pre-stressed bearings to eliminate backlash and axial stresses on ball screws for very high quality surfacing
- Preloaded spring bearing at the end of ball screws

Environment - Ergonomics

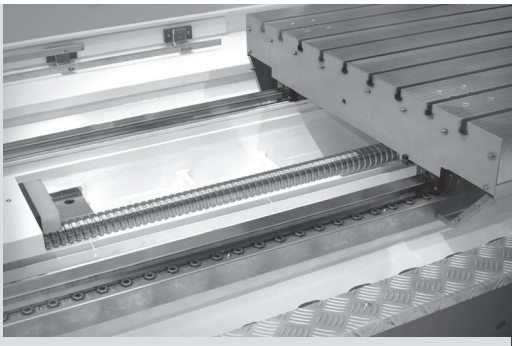
- Chip evacuation duct with washing system and worm conveyors on either side of the table
- Efficient and high performance chip removal system
- Adjustable cooling nozzles positioned around the spindle for perfectly oriented distribution of the cutting fluid
- Complete machine safeguard for protection of the machine, the operator and his environment
- Wide accessibility to the work area from above and from the side thanks to a large door opening for loading with crane
- Operator panel on swivel arm for better visibility on the working area and improved user-friendliness

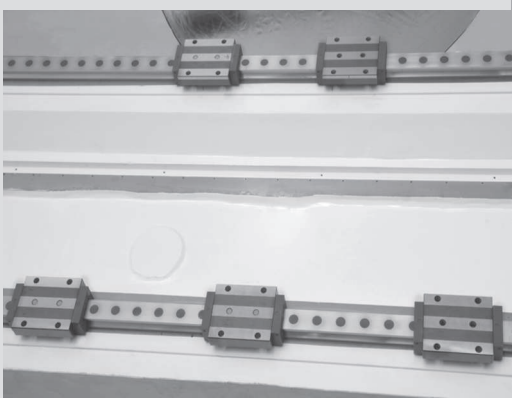
Numerical controller

- Extremely ergonomic design
- Large memory and computing capacity
- Interactive programming
- Graphical simulation before machining for optimal safety

Maintenance

- Control points easily accessible to the operator for optimal maintenance efficiency





NX Series

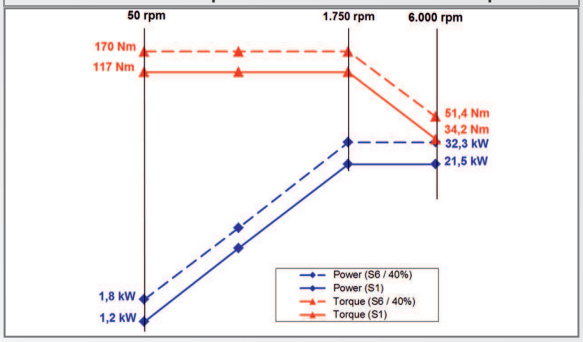
Standard spindle

- Powerful and high-torque spindle for high chips removal in roughing
- Spindle fixed in a movable slide to increase the capacity of the working area by limiting interference with structural elements
- Mechanical spindle with belt drive
- Perfectly balanced spindle for high performance
- Lifetime lubricated angular contact bearings for high stability, even in demanding machining operations

Equipments included

- Coolant by nozzles
- Air barrier for sealing
- Angular position control sensor
- Mechanically held clamping
- Hydraulically operated tool release
- Lubrication of bearings with grease
- Cleaning of the taper by compressed air

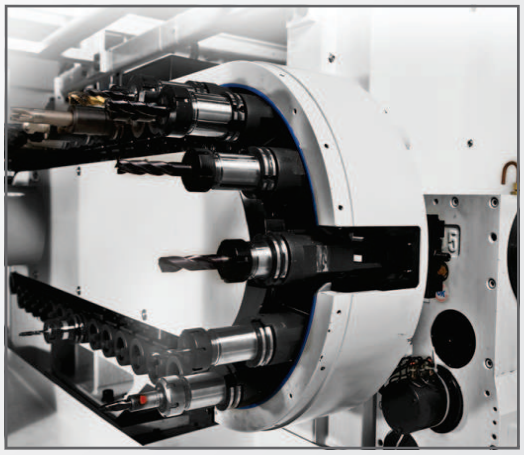
NX 40 / 50 / 60	
Taper	ISO 50
Rotation speed	6.000 rpm
Power (S6/S1)	32,3 / 21,5 kW
Torque (S6/S1)	170 / 117 Nm
Characteristic speed	1.750 rpm



Standard tools changer

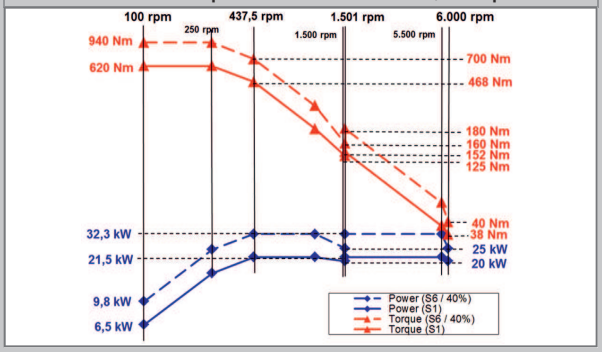
Chain-type tool changer with double arm for tool change.
It is placed in the working area and the tools are loaded by the spindle.

	NX 40 / 50 / 60
Type	Chain
Loading/Unloading	Double arm
Qty of housings	40
Tool dimension : Ø contiguous / non contiguous Length Tool weight Admissible weight in the magazine	 125 / 220 mm 350 mm 15 kg 400 kg
Tool changing time : tool to tool - chip to chip	10 - 15 sec

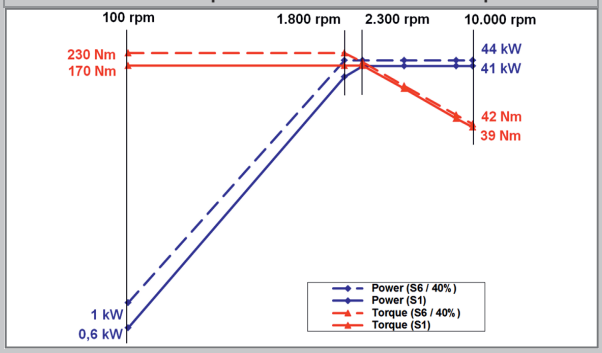


Spindle alternatives (NX 40 / 50 / 60)

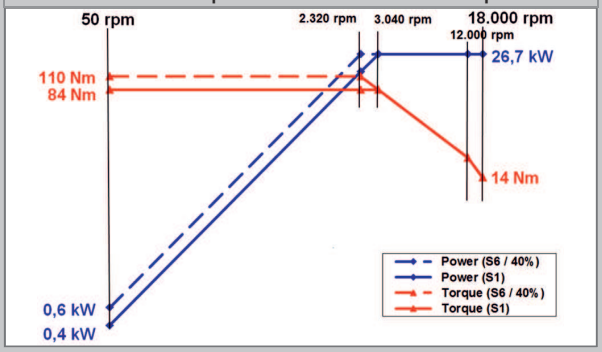
6.000 rpm - Mechanical spindle Belt-driven with 1:4 gearbox	
Taper	ISO 50
Rotation speed	6.000 rpm
Power (S6/S1)	32,3 / 21,5 kW
Torque (S6/S1)	940 / 620 Nm
Characteristic speed	437,50 rpm



10.000 rpm - Electrospindle	
Taper	ISO 50
Rotation speed	10.000 rpm
Power (S6/S1)	44 / 41 kW
Torque (S6/S1)	230 / 170 Nm
Characteristic speed	2.300 rpm



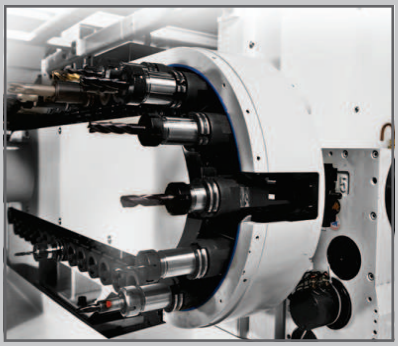
18.000 rpm - Electrospindle	
Taper	HSK 63-A
Rotation speed	18.000 rpm
Power (S6/S1)	26,7 kW
Torque (S6/S1)	110 / 84 Nm
Characteristic speed	3.040 rpm



Vibration monitoring during machining (Option)

Vibration monitoring during machining allowing a secured work for the machine elements, for the tool as well as for the part. The system consists of a vibration sensor and an electronic signal processing box.

Alternative for tools changer



	NX 40 / 50 / 60
Type	Chain
Loading/Unloading	Double arm
Qty of housings	60
Taper	ISO 50 / HSK 63-A
Tool dimension : Ø - Length Tool weight / Weight in the magazine	 125/220 - 350 mm 15 / 600 kg
Tool changing time : tool to tool - chip to chip	10 - 15 sec

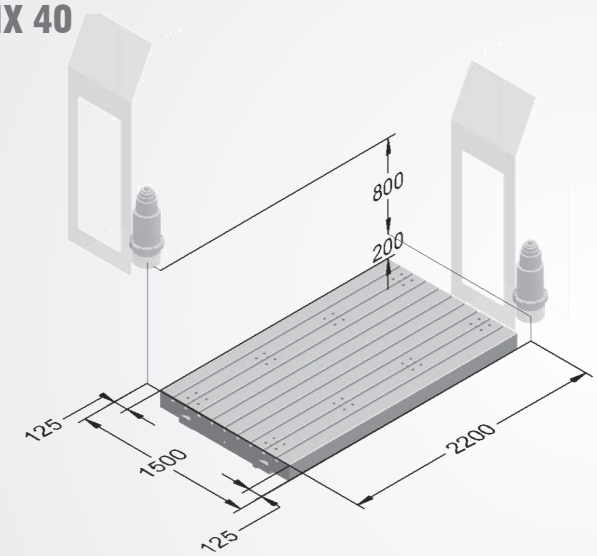
NX Series

The table

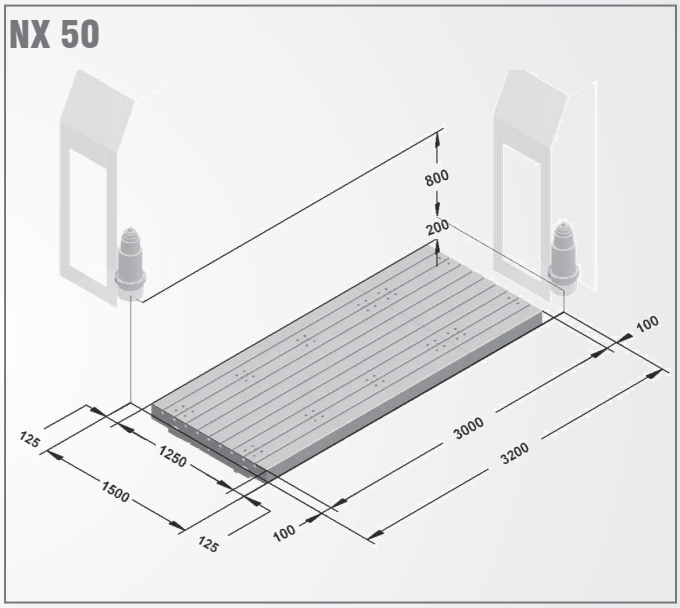
		NX 40	NX 50	NX 60
Table dimension	mm	2.200 x 1.250	3.000 x 1.250	3.000 x 2.000
Distance spindle / table surface Distance between columns	mm mm	200 / 1.000 1.600	200 / 1.000 1.600	200 / 1.000 2.500
Admissible load	kg	6.000	8.000	10.000
Qty of slots		9	9	12
Referential slot Other slots	mm mm	18 H 7 18 H 12	18 H 7 18 H 12	22 H 7 22 H 12
Distance between slots	mm	125	125	160

Interference diagrams

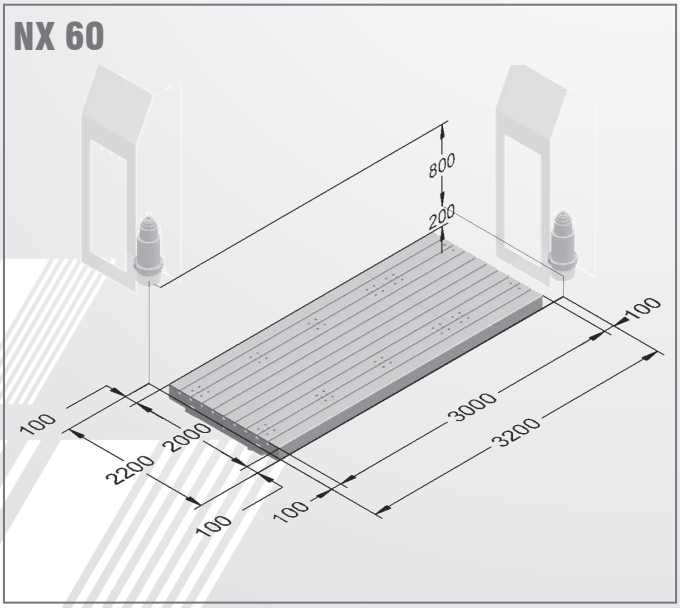
NX 40



NX 50



NX 60



Technical characteristics

Linear axes X / Y / Z		NX 40	NX 50	NX 60
Travel X Travel Y Travel Z	mm mm mm	2.200 1.500 800	3.200 1.500 800	3.200 2.200 800
Feedrates	m/min	X - Y : 20 Z : 15	X - Z : 15 Y : 20	15
Table		**NX 40**	**NX 50**	**NX 60**
Dimension	mm	2.200 x 1.250	3.000 x 1.250	3.000 x 2.000
Admissible load	kg	6.000	8.000	10.000
Qty of slots		9	9	12
Referential slot Other slots	mm mm	18 H 7 18 H 12	18 H 7 18 H 12	22 H 7 22 H 12
Distance between slots	mm	125	125	160
Spindle			**NX 40 / 50 / 60**	
Rotation speed	rpm		6.000	
Taper			ISO 50	
Power / Torque	kW / Nm		32,3 / 170	
Characteristic speed	rpm		1.750	
Accuracies (VDI DGQ 3441) (with measuring scales)		**NX 40**	**NX 50**	**NX 60**
Linear axes (X/Y/Z) – Positioning (P) – Repeatability (Ps medium)	 mm mm	 0,010 0,008	 0,010 0,008	 0,010 0,008
Tools changer			**NX 40 / 50 / 60**	
Qty of housings			40	
Tool length Tool Ø Tool weight	mm mm kg		350 125 / 220 15	
Tool changing time : tool to tool - chip to chip	sec		10 - 15	
Coolant		**NX 40**	**NX 50**	**NX 60**
Flow - Pressure	l/min - bar	30 - 3	30 - 3	30 - 3
Tank	Liters	400	400	400
Over-all measurements *(Doors opened + Conveyor)*		**NX 40**	**NX 50**	**NX 60**
Width	mm	5.100	5.390	6.160
Depth	mm	8.200	10.600	10.600
Height	mm	4.630	4.630	4.630
Weight of the machine	kg	22.000	25.000	34.000

Equipements as options

Z Travel extension to 1.000 mm - Portal extension - Various spindles - Various tools changers - High coolant device 70 bar - Microspraying coolant - Air blast - Workpiece probe - Tool probe - Extraction of oil mist

EURO-QUALITY SYSTEM
ISO 9001

CE

All descriptions, data and photos are supplied for information only. Huron Graffenstaden reserves the right to make changes to the models described for technical or commercial reasons at any time.
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