RM-3 7

MODULAR MACHINING CENTER

REALMECA

TECHNICAL DATA

CAPACITY	
Z1 axis	580 mm
Z2 axis	585 mm
Y axis	140 mm
X axis	285 mm
B axis	210°/-30°
C1-C2 axis	360°
HIGH-SPEED MILLING SPINDLE	
HF80	
Max. speed	46 000 rpm
Max. rating	2,5 kW / 3,2 kW
Taper	HSK-E25
HT80 (option)	
Max. speed	30 000 rpm
Max. rating	3,3 kW / 4,3 kW
Taper	HSK-E25
MAIN TURNING SPINDLE	
Max. speed	6000 rpm
Max. rating	9,9 Kw
Spindle nose	Ø 90 mm
Bar capacity	32 mm
Bar capacity (option)	42 mm

SECONDARY TURNING SPINDLE	
Max. speed	6000 rpm
Max. rating	9,9 Kw
Spindle nose	Ø 90 mm
FEEDRATES	
Max. cutting	30 m/mn
Rapids	30 m/mn
B axis	30 rpm
C1-C2 axis	6 000 rpm
Precision	0,1µ / 0,001°
TOOL CHANGER	
Number of station	60
SIZE / MASS	
Length / Width / Height	2200 x 2150 x 2000 mm
Weight	3500 kg

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TECHNICAL DATA

Tool probing (option) :
Marposs : Mida laser 75 pico or Touch T18
Blum : Laser NT-H3D

Laser probing (option) :
Marposs : OP32

Chip conveyor (option)

Lubrification :
- Through surrounding nozzles
- Through the spindle (option)

Part catcher (option) :
For all type of parts

Installation :
- Electrical : 50 kVA
- Air : 5 bars mini

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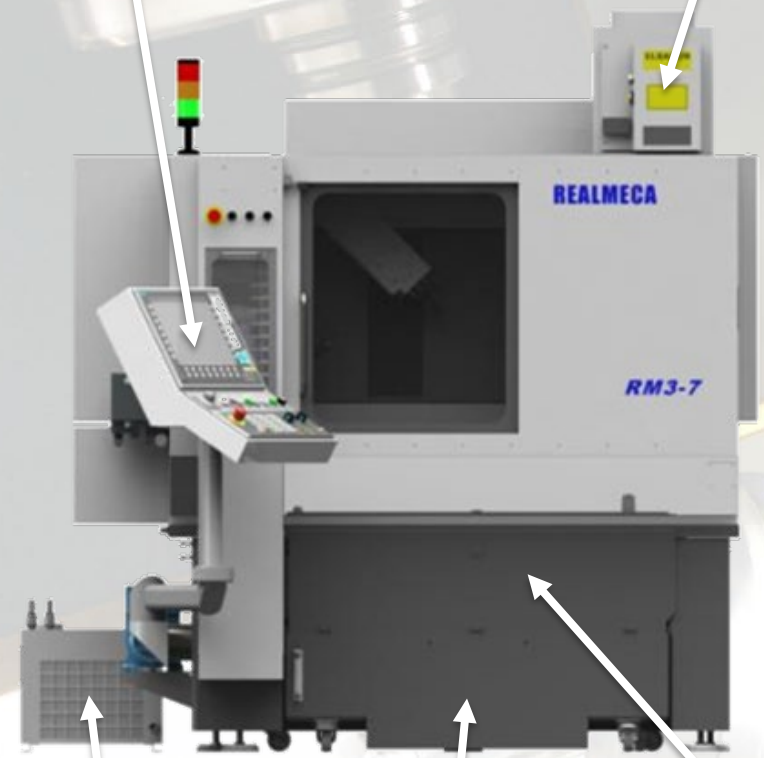


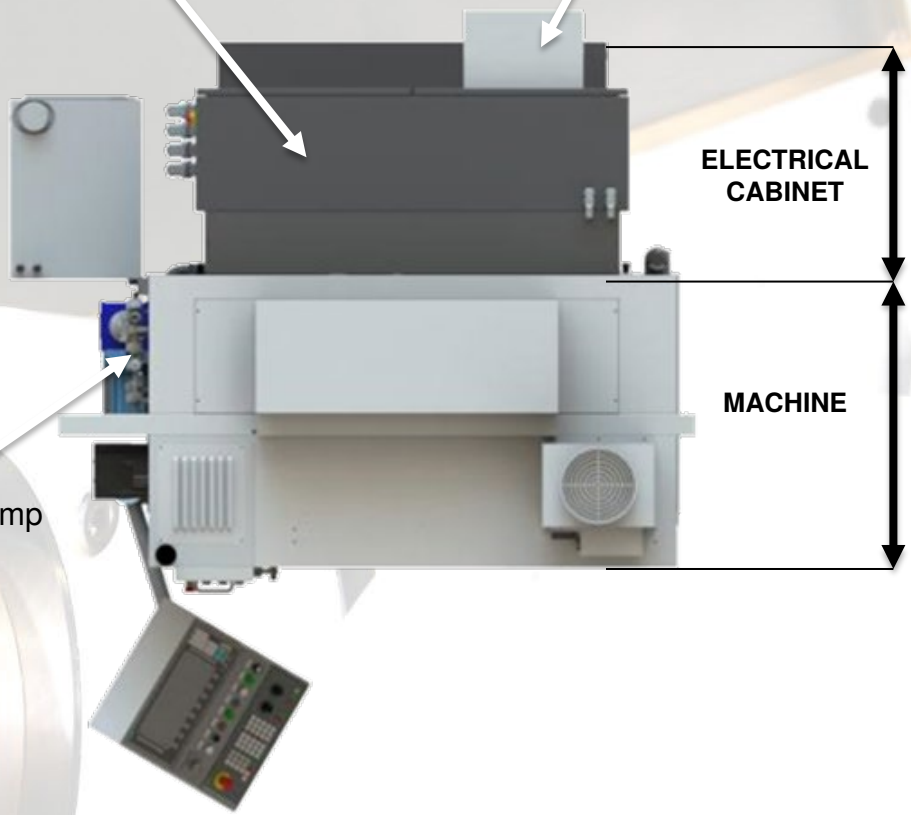
Numerical control

Electrostatic filtration

Spindle cooler

Coolant tank

Chip drawer



Electrical cabinet

Air conditioner

Coolant pump

Note : The electrical cabinet can be separated from the machine to facilite handling the machine

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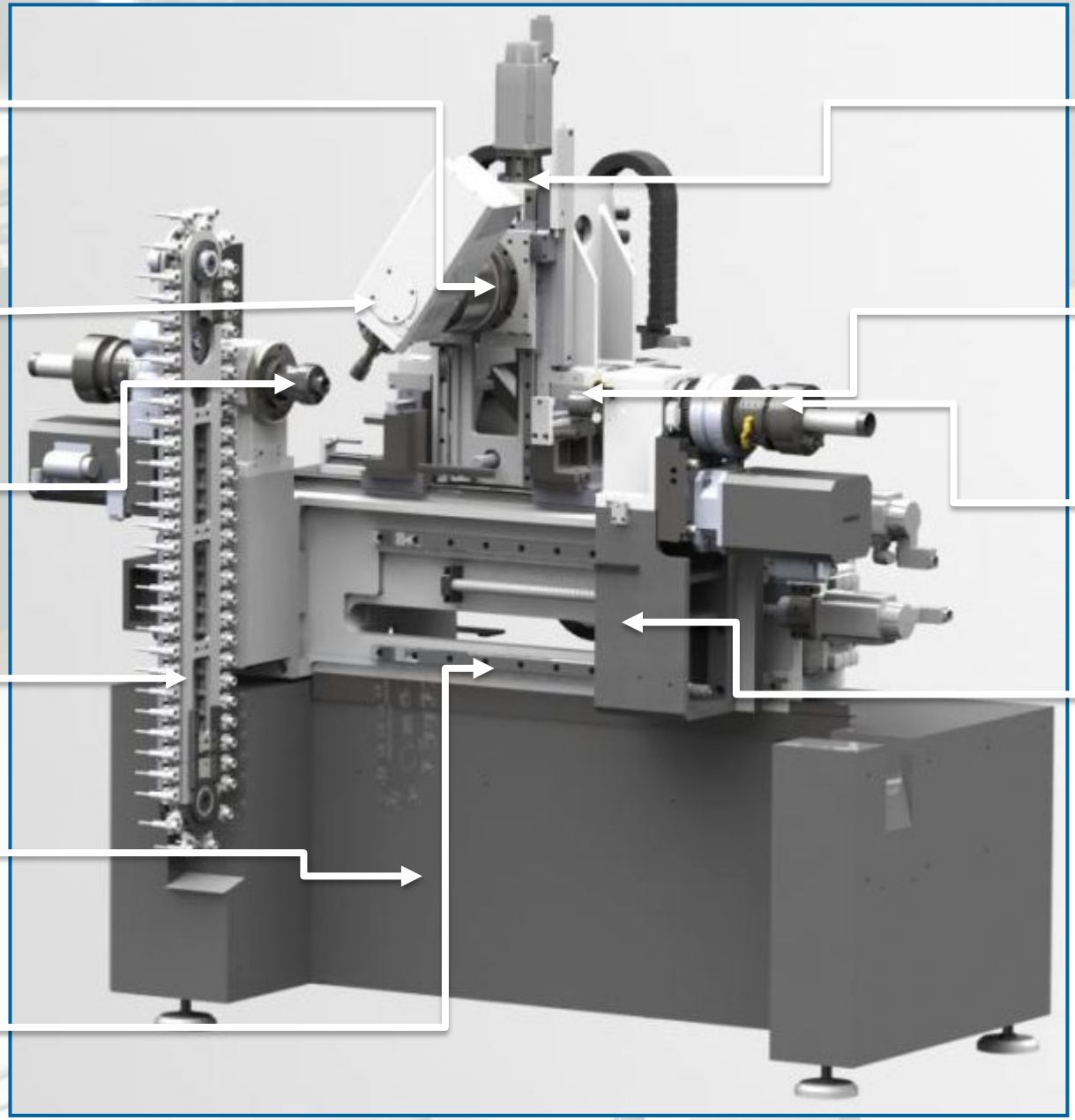

B-axis
0,001° precision

High-speed milling spindle

Main turning spindle, C1-axis

Tool changer

Polymer machine bed

Linear guide

Incremental scale
0.1µm precision

Turning tailstock, C2-axis

Programmable clamping for small parts

Tailstock slide digital Z2-axis

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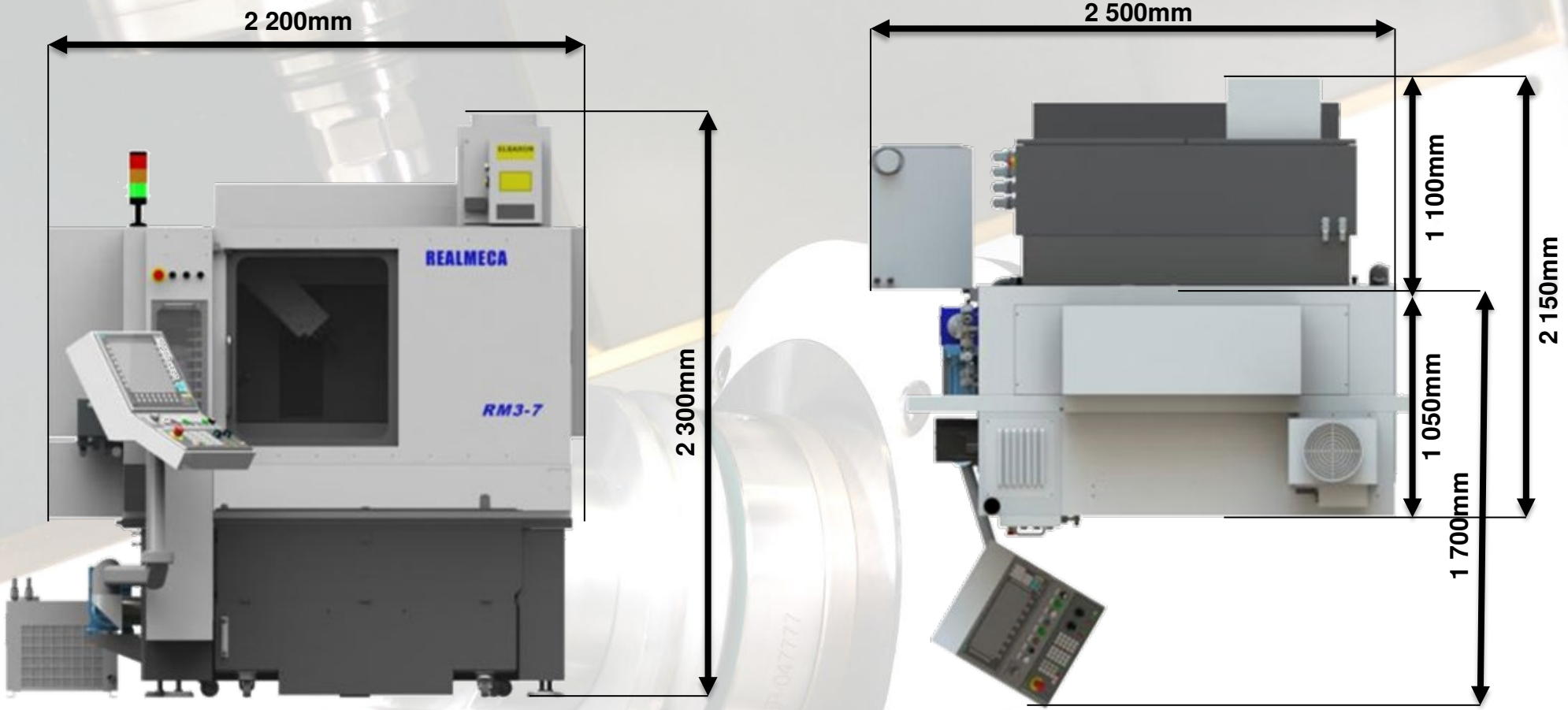
FOOTPRINT



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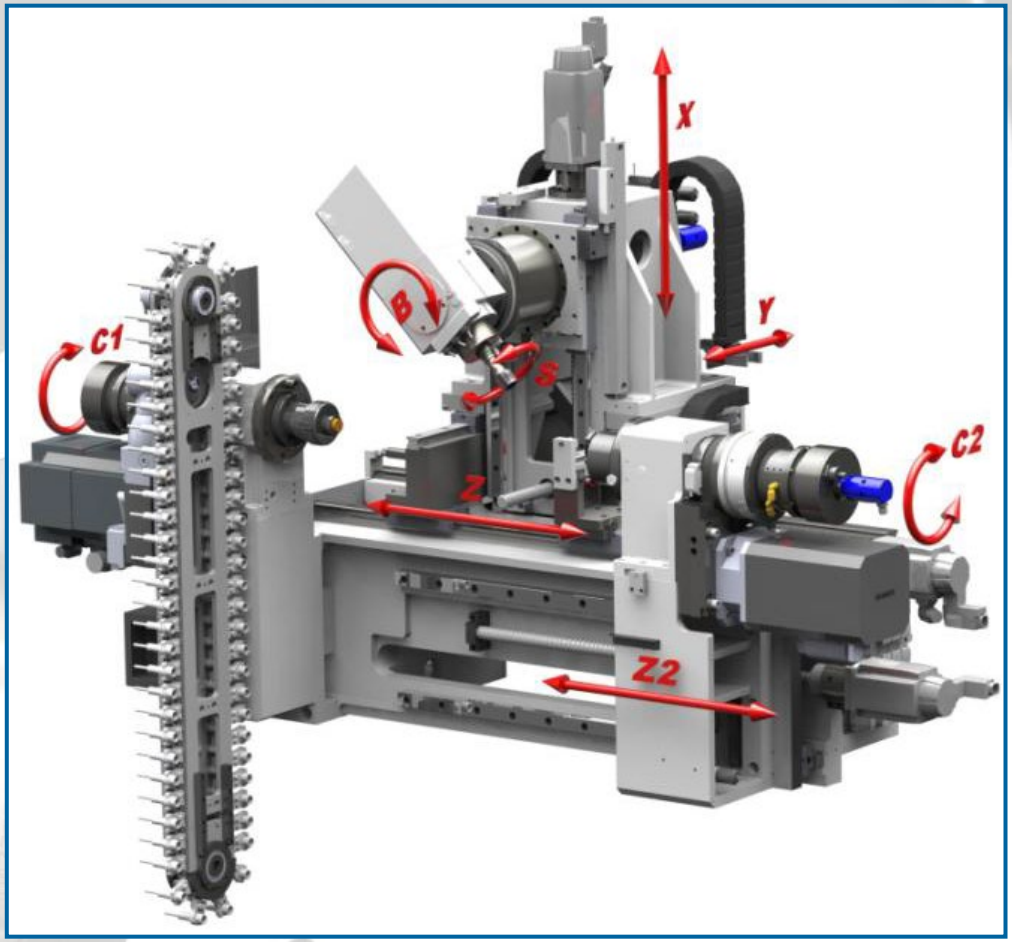
AXIS DEFINITIONS

Capacity :

Z1-axis :	580 mm
Z2-axis :	585 mm
Y-axis :	140 mm
X-axis :	285 mm
Feedrates :	0 to 20 m/mn
Rapids :	20m/mn
Precision :	0.1µm
B-axis :	+/- 110°
Precision :	0.001°
C1/C2-axis :	360°
Precision :	0.001°



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TECHNICAL DATA : HF milling spindle 48.000 rpm

Capacity :

- **HF spindle**

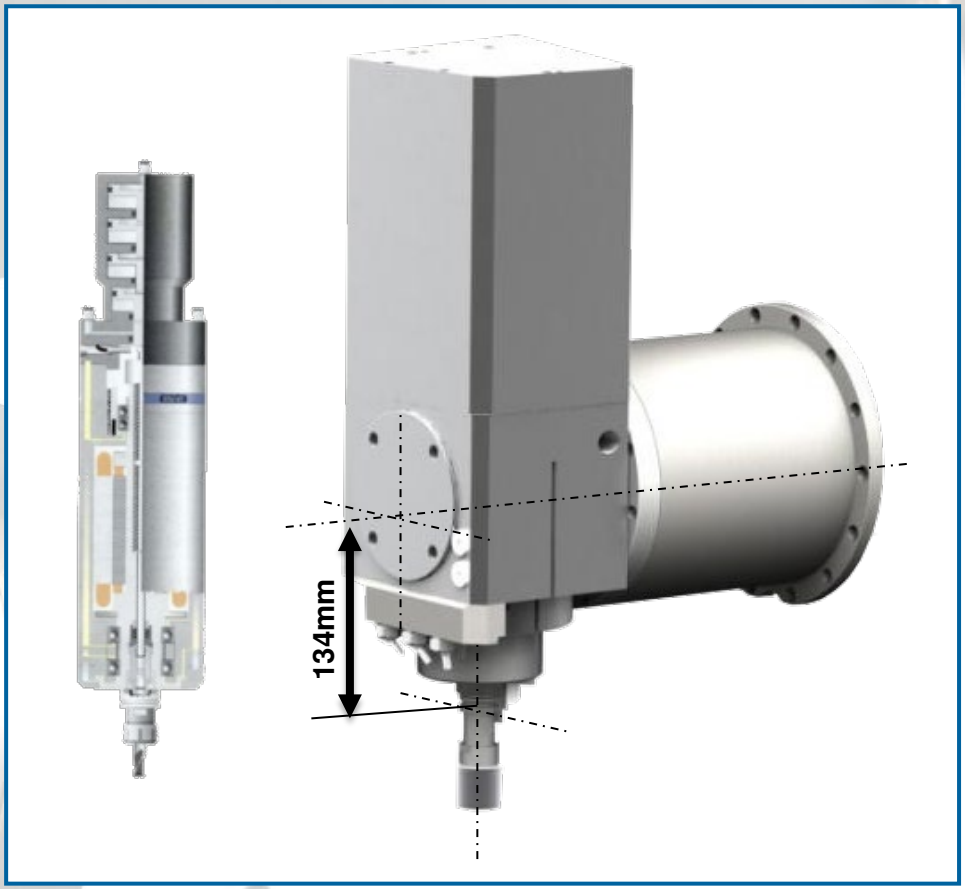
Max. speed :	48 000 Tr/mn
Max. rating :	2,5 kW
Taper :	HSK E 25
Through-spindle coolant:	60 bars max. (Option)

Water cooling
Air/Oil bearing lubrication
Position encoder

- **Tilting B-axis**

Max. speed :	35 Tr/mn
Precision :	0.001°

Direct drive



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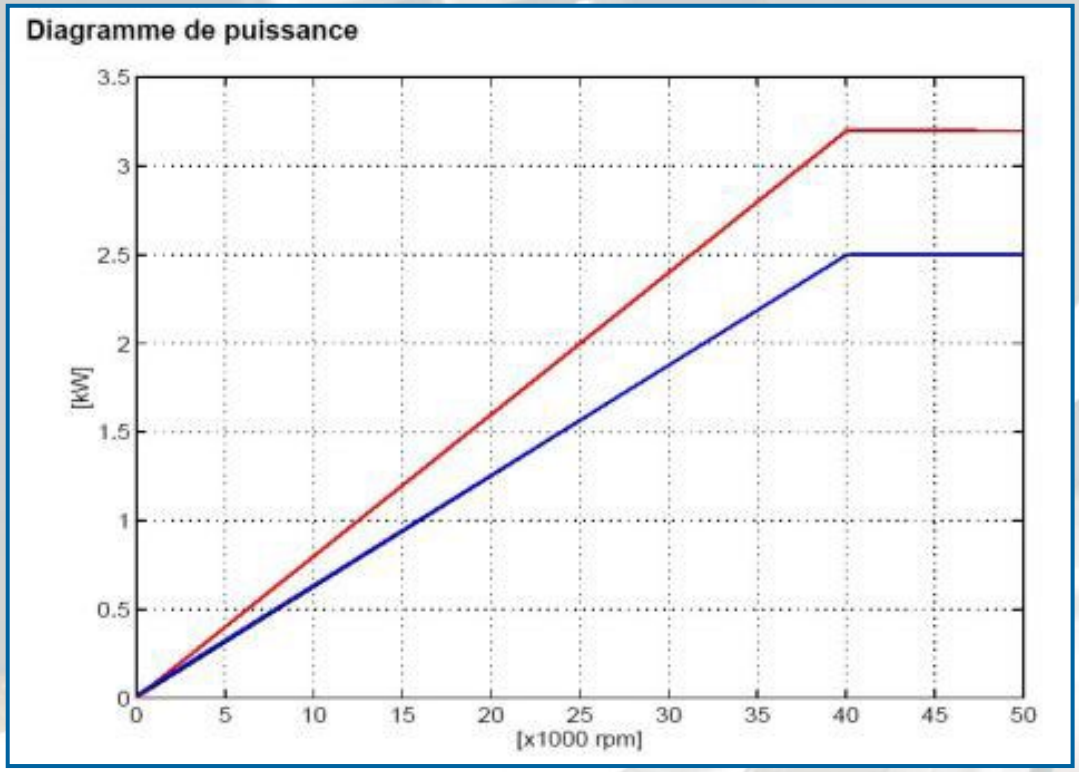
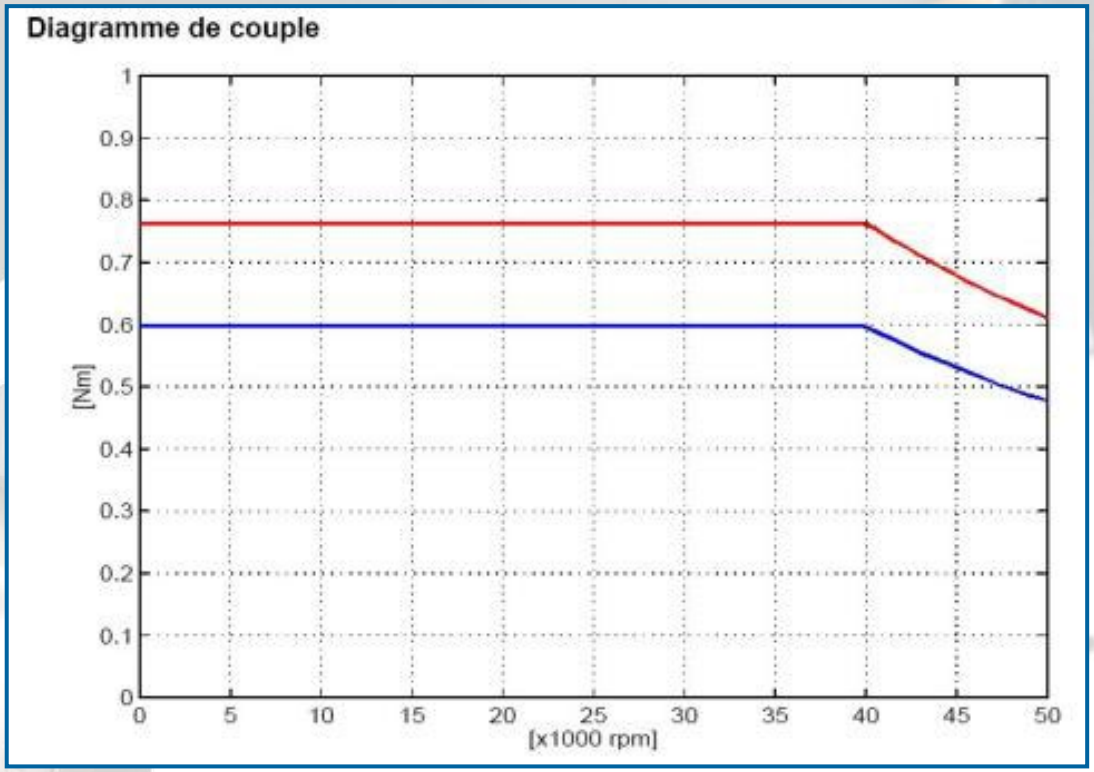
SPINDLE CHART : HF milling spindle 48.000 rpm

POWER



TORQUE



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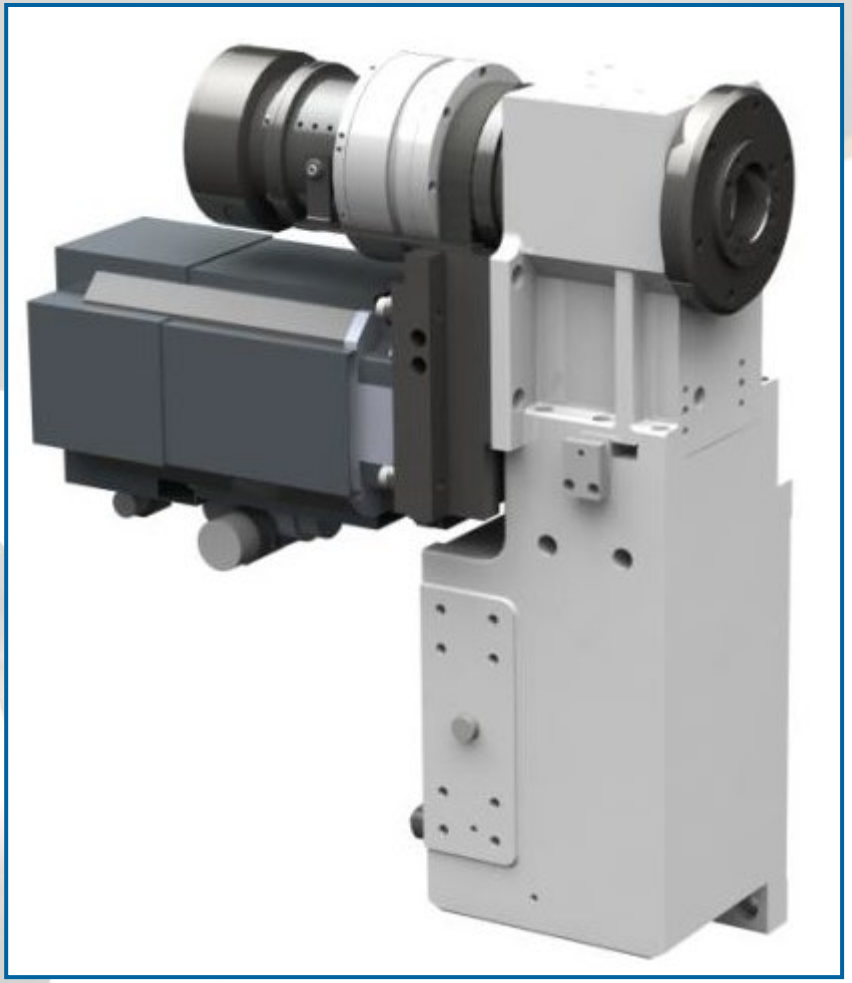
Capacity :

Max. speed :	6 000 Tr/mn
Max. rating :	3,7 kW
Spindle nose :	Ø 90 mm
Bar capacity :	Ø 32 mm
	(Ø 42mm option)
Pneumatic clamping :	5600N at 6 bars
Balancing :	< 0.8 mm/s Veff
C1-axis precision :	0.001°

Belt drive

Synchronization of 2 spindles in turning and C-axis



REALMECA

TECHNICAL DATA : Secondary turning spindle

Capacity :

Max. speed :	6 000 rpm
Max. rating :	3,7 kW
Spindle nose :	Ø 90 mm
Pneumatic clamping :	5600N at 6 bars
Balancing :	< 0.8 mm/s Veff
C2-axis precision :	0.001°

Synchronization of 2 spindles in turning and C-axis
Belt drive
Part ejector
Programmable clamping (option)

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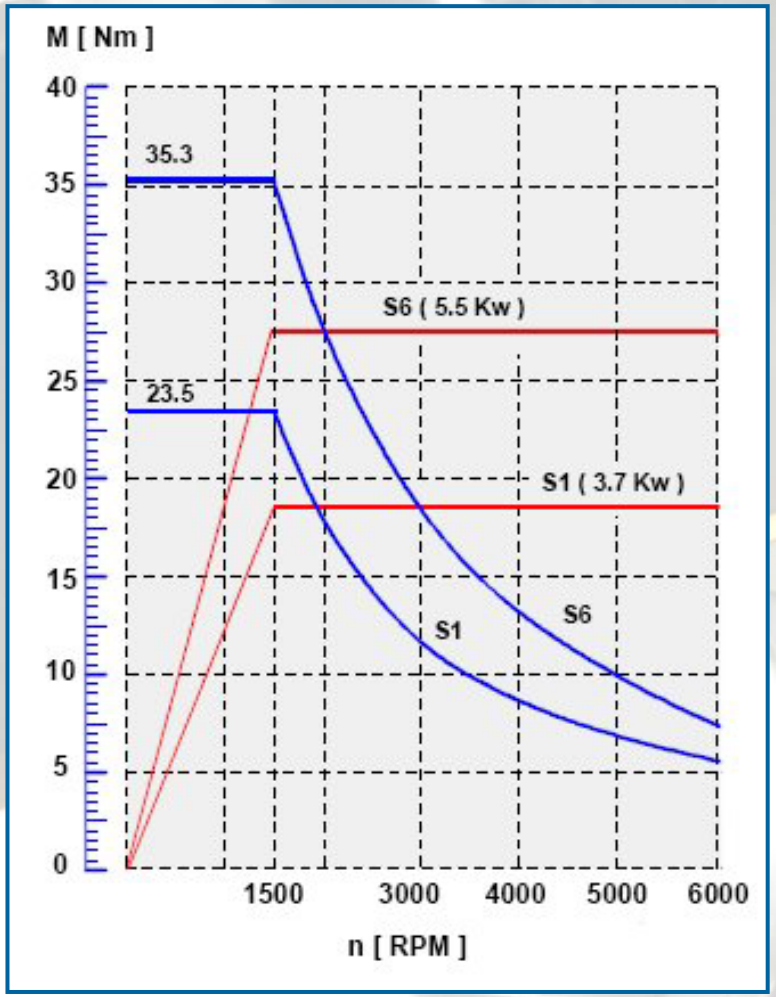
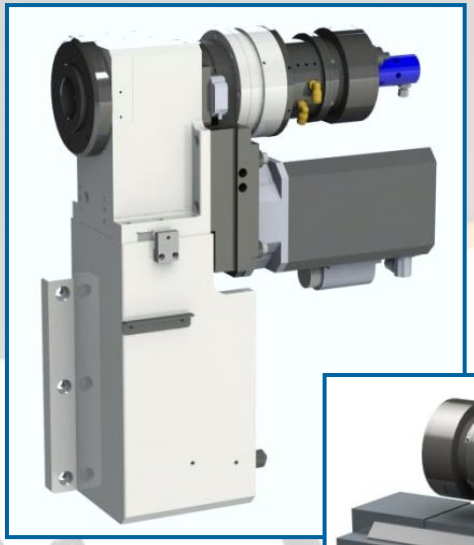
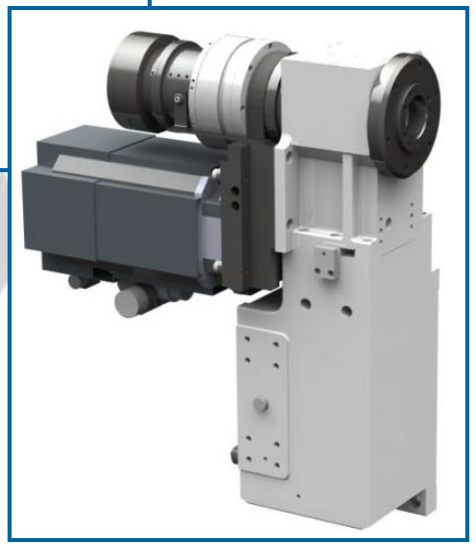
SPINDLE CHART : Main and secondary turning spindles







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Capacity :

Capacity :	60 tool
Max. length :	110 mm
Max. diameter :	40 mm

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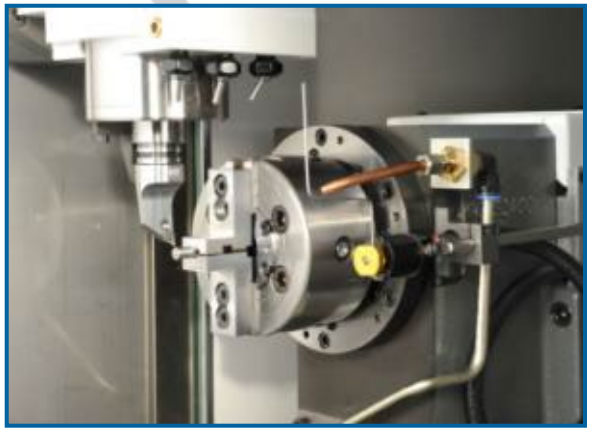
Turning and 5-axis milling on the main and secondary spindles :

- **One milling spindle with a tilting B-axis**
- **Two turning spindles with C-axis**

For a complete 5-axis machining process on the two turning spindles.

Turning and milling on the main spindle

Turning and milling on the secondary spindle



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Turning / Milling : From the bar to the finished part

Turning and milling on main spindle

Synchronization and cutting

Turning and milling on secondary spindle

Catching and ejecting the part

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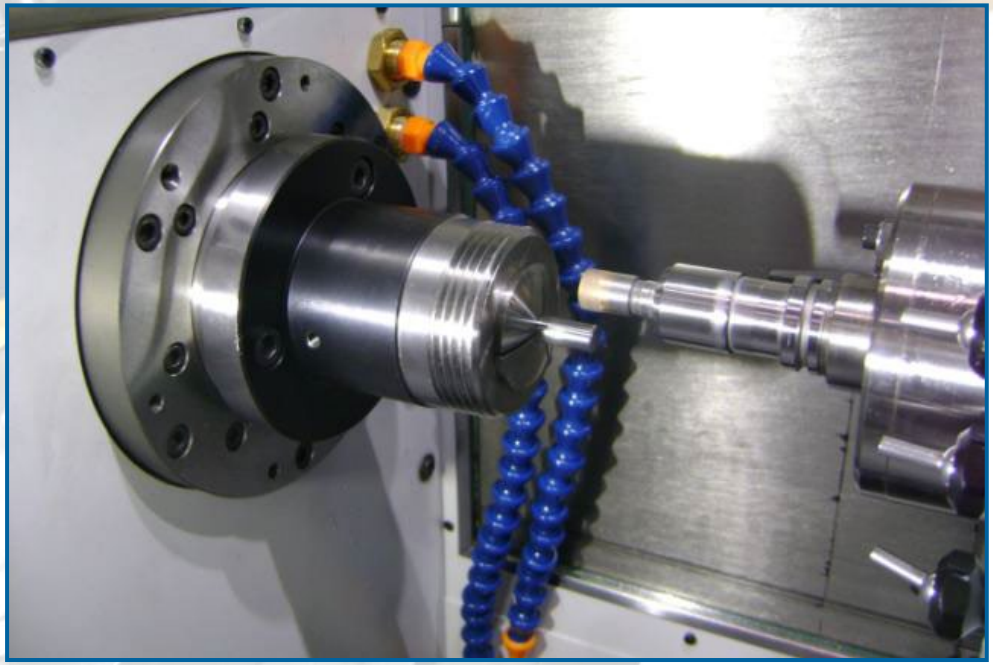
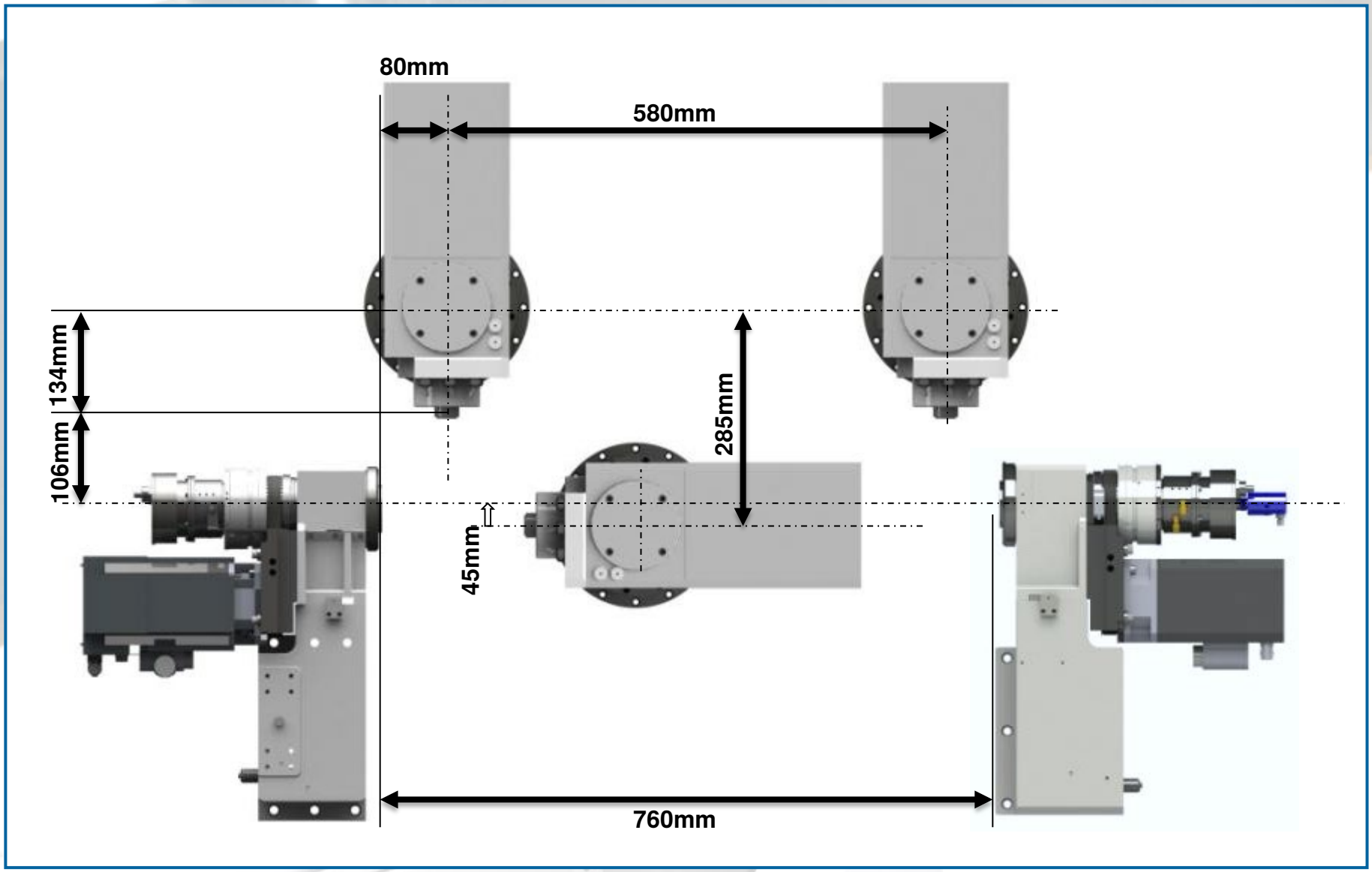
Rectification

A combined rotation of the part and of the tool for a rectification process



REALMECA



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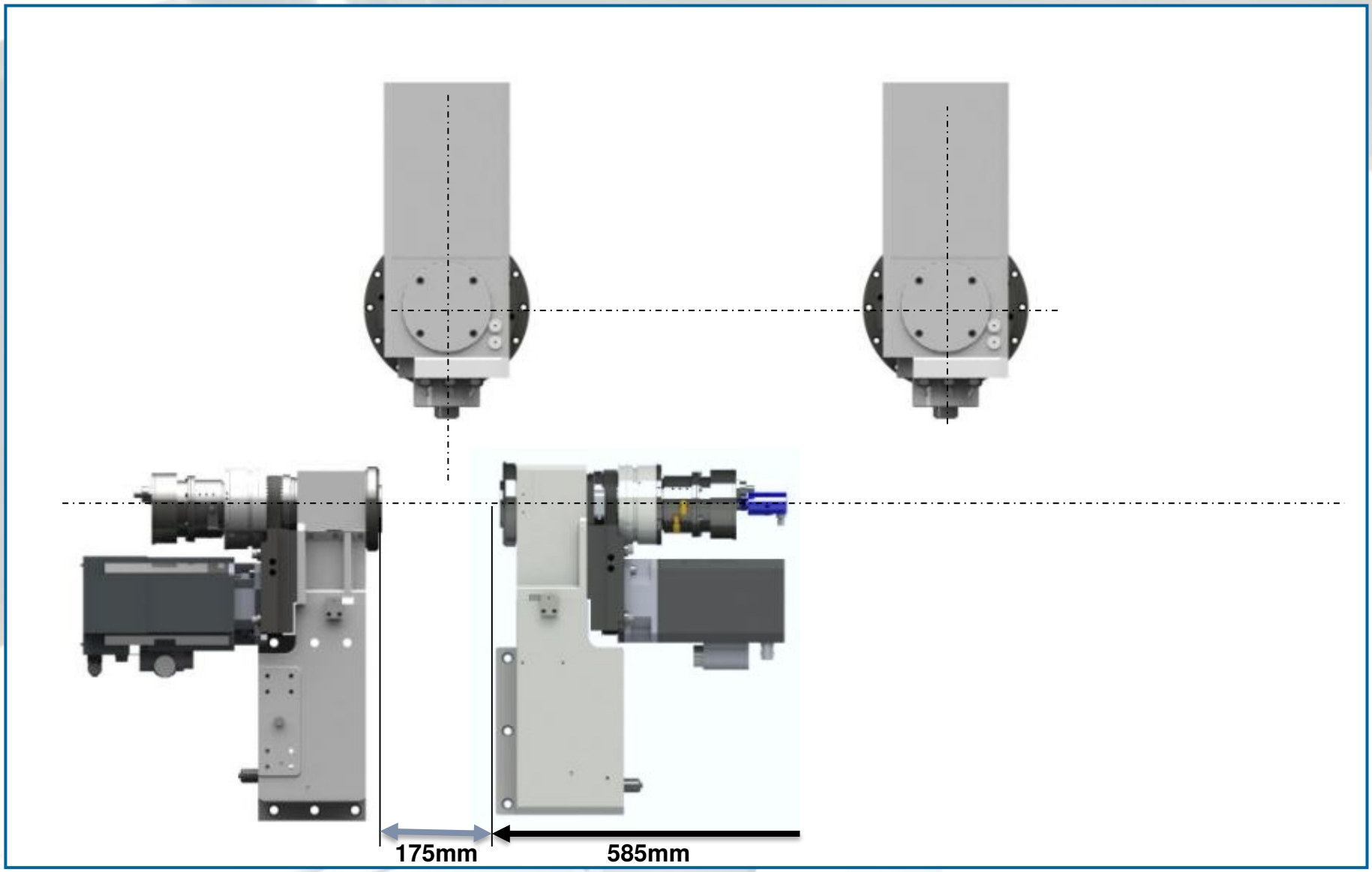

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NUMERICAL CONTROL : SIEMENS 840 SL

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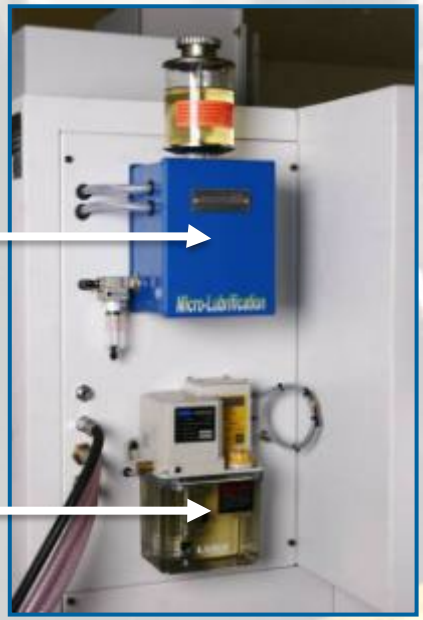
EQUIPMENTS



Air-oil spindle lubrification

Microlubrification

Part ejector

Bar feeder

Oil filtration

OR

Electrostatic filtration

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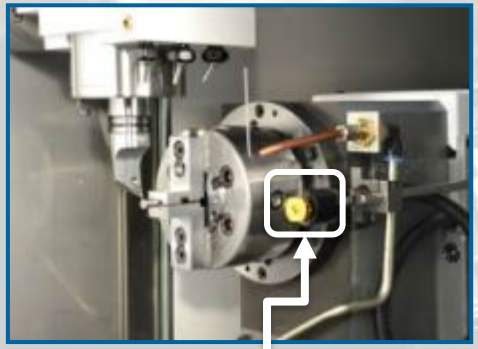
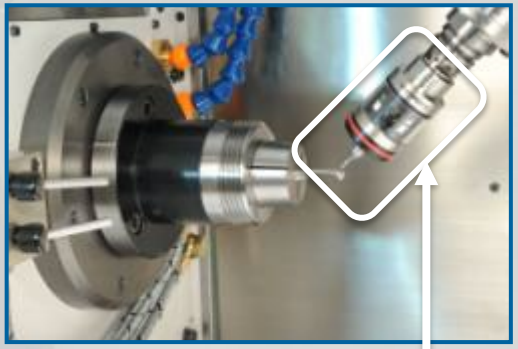
EQUIPMENTS



❑ Part detector



❑ Part probing

❑ Tool probing

❑ Fire protection (option)

❑ Filtration system (option)

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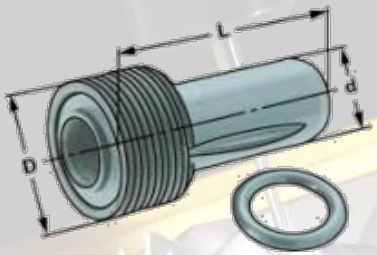
Milling toolholder

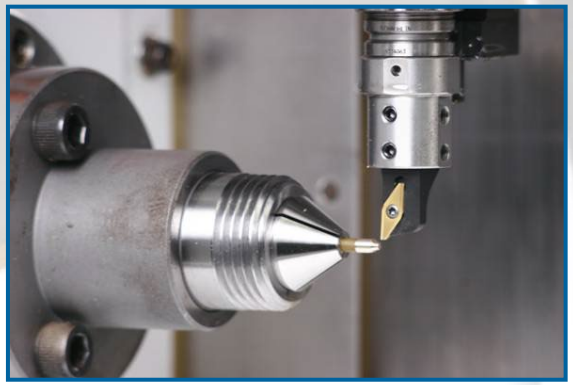
Toolholder HSK E 25 (Type E only)
Recommended balancing : G2.5 at 40.000 rpm

Attention : Specific toolholders are required for through-spindle coolant



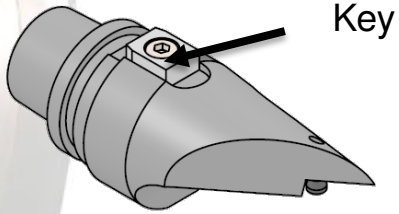
Turning toolholder

A specific range of toolholder is available through REALMECA.



The position of the toolholder is guaranteed during the tool change by the indexation of the spindle.

The toolholder is held in place by an assembly of a key (mounted on the toolholder) and a keyway (mounted on the spindle).



Specific toolholder for HORN tools

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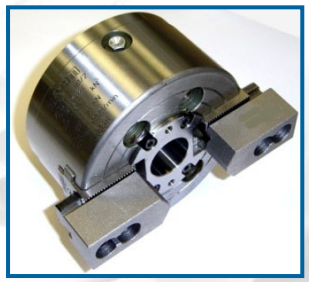
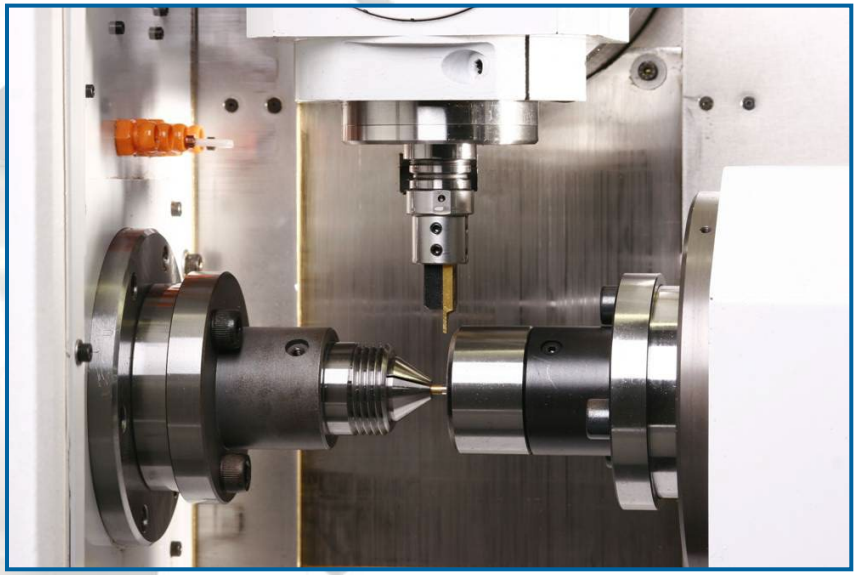
CHUCKS AND GRIPPER HOLDER

A large range of clamping systems can be adapted individually to each spindle :

- 2, 3 or 4 jaws chucks ;
- Type F chuck ;
- Type W or C chuck.





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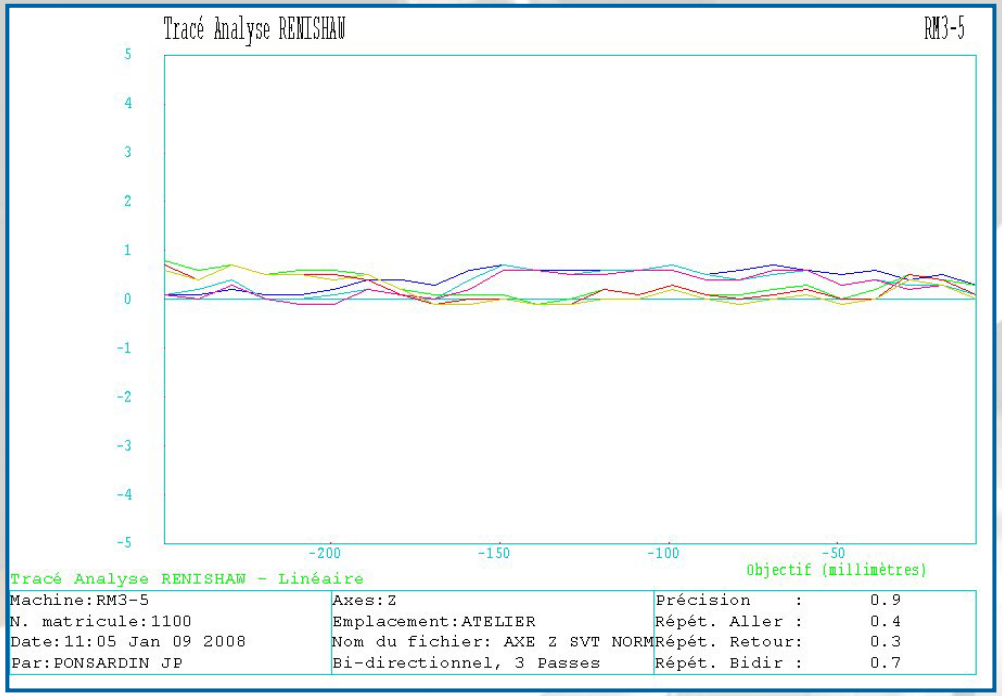
VALIDATION MACHINE CONTROLE

The precision and accuracy of the machine’s axis is controlled with laser interferometry



Tracé Analyse RENISHAW - Linéaire

Machine:RM3-5	Axes:Z	Précision : 0.9
N. matricule:1100	Emplacement:ATELIER	Répét. Aller : 0.4
Date:11:05 Jan 09 2008	Nom du fichier: AXE Z SVT NORM	Répét. Retour: 0.3
Par:PONSARDIN JP	Bi-directionnel, 3 Passes	Répét. Bidir : 0.7

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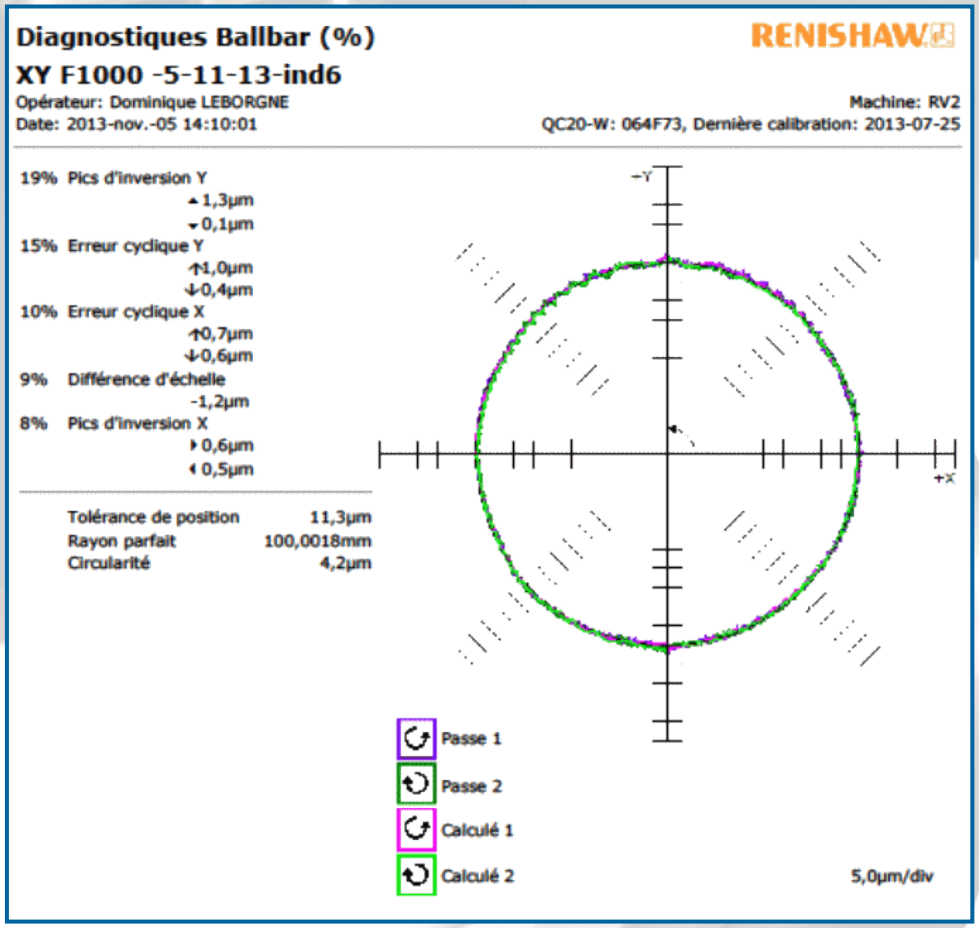
VALIDATION MACHINE CONTROLE

Ballbar test



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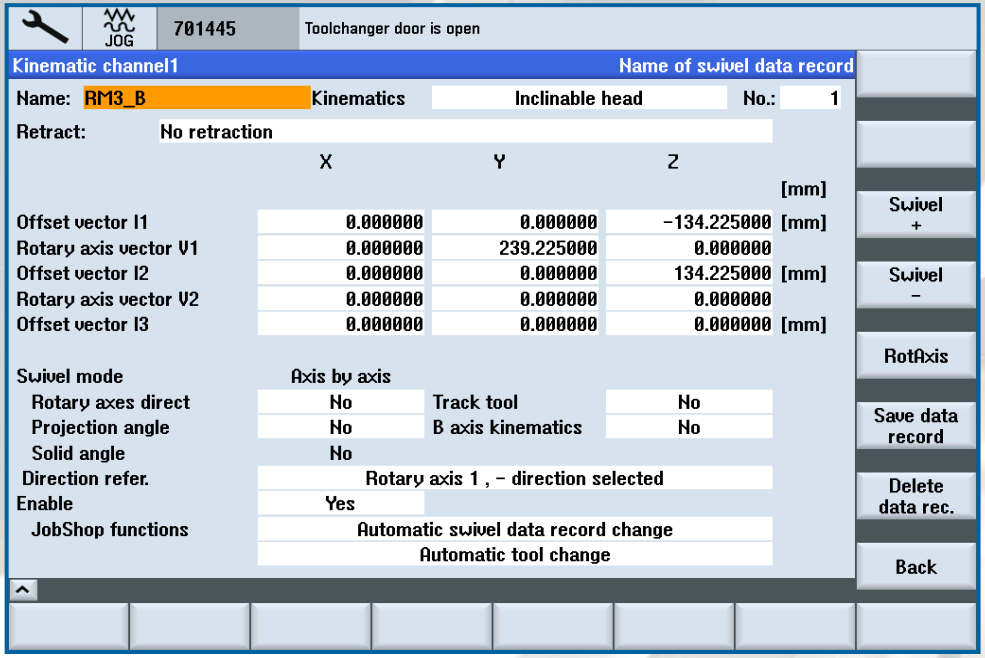
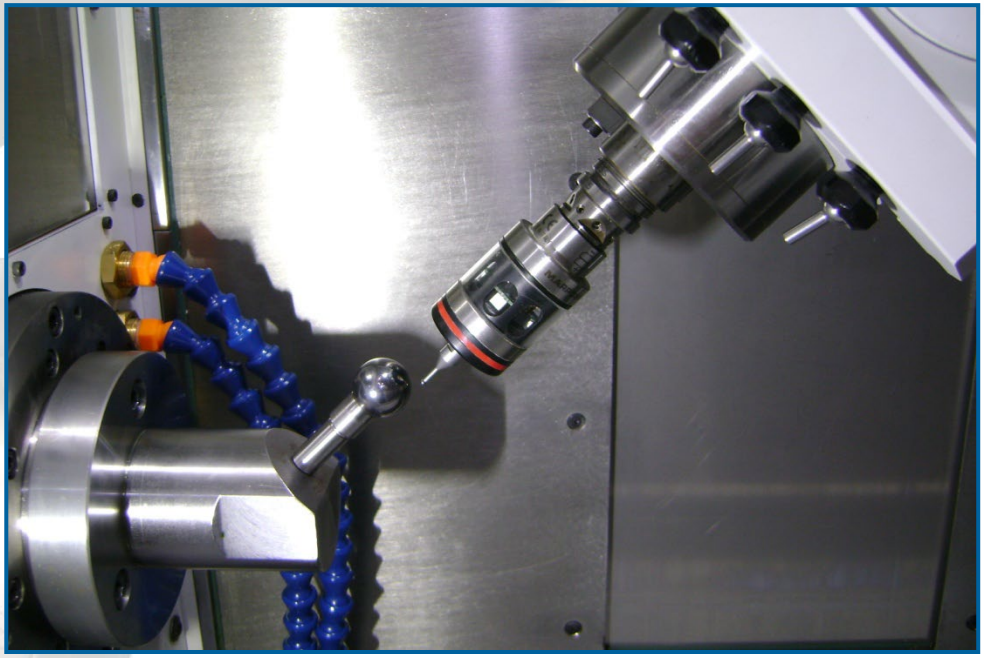
VALIDATION MACHINE CONTROLE

Automatic measurement and parameter-setting cycle for 5-axis kinematics using infrared probes.





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