



Slantbed Lathes N-Series

N10 // N20 // N30 // N40 // N50



NILES-SIMMONS

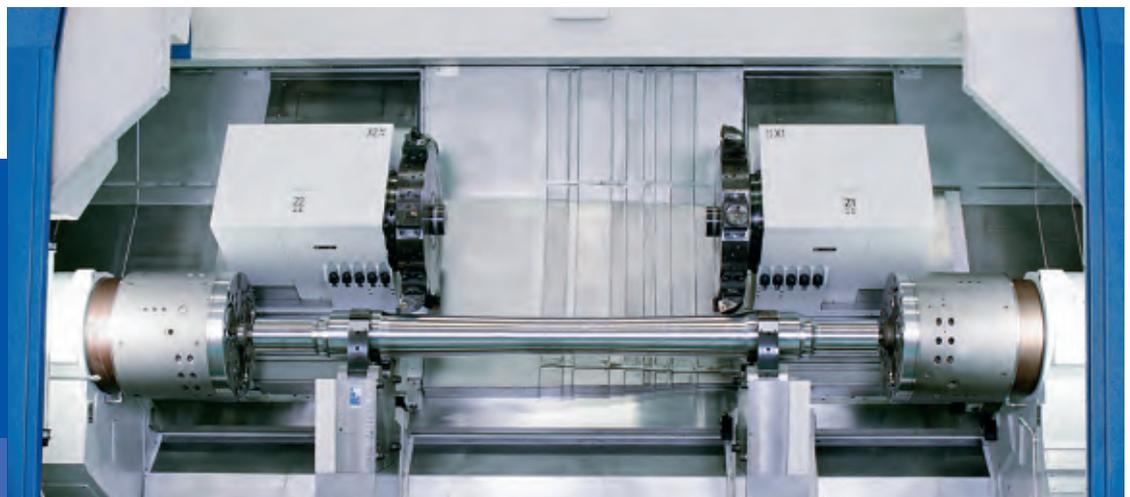


THE N-SERIES

The NILES-SIMMONS N-Series is a modular series of CNC slantbed lathes in five size graduations N10 through N50.

The universal machine concept is designed for the efficient and high precision turning of rotationally symmetrical workpieces including secondary shaping. The guideway system and primary sub-assemblies are designed to accommodate roughing, heavy duty machining and finishing.

The N-Series offers multiple configurations and combinations for chucking and shaft machining. Variable slide concepts with single or double tool turrets, counter spindles, transfer spindles and multiple independent steady rest slides serve as the basis for machining. With innovative drive concepts and machining processes, the N-Series can be configured for system solutions. The NILES-SIMMONS slantbed lathes are focused on providing extraordinary accuracy, high productivity and cutting efficiency.



Double-Slide
Lathe
N40 LT

- **Efficient Turning**
of workpieces up to 8,000mm length and 1,250mm swing
- **Modular Design Principle**
multiple configurations and combinations are realizeable
- **High Cutting Efficiency**
high torque drive systems with generously dimensioned guideway systems and bearings
- **Extraordinary Long Term Accuracy**
sub-assemblies and machine components with outstanding long term durability, direct encoder systems in all axes
- **Flexible Configuration of Tool Turrets**
axial and radial tool acceptance with or without modular holder exchange system, tool drives and special tool holders
- **Minimum Auxiliary Process Time**
resulting from high acceleration and rapid feed, short response and auxiliary times
- **Input and Operator Screens**
application specific and technology oriented operating and programming interfaces
- **Operator and Maintenance friendly**
ergonomic machine design, separate service aisle, low machine access
- **Increased Productivity**
due to optional machining of secondary shape and integrated measuring strategies
- **Environmental friendly hard and dry Machining**
thermally stable sub-assemblies with high stiffness, machining in grinding quality
- **Flexible Automation Capability**
machine integration into automatic loading systems and production lines
- **Optional CNC Controls**
Fanuc or Bosch-Rexroth

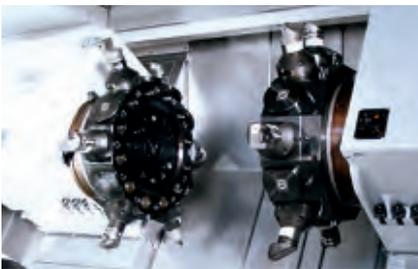
MODULAR DESIGN PRINCIPLE

Flexible Machining Modules and Components

The N-Series is one of the advanced modularized lathes, offering multi-functional machining concepts and a multitude of accessory equipment. With modular subassemblies we offer your state of the art turning solution

Our intelligent hard and software tools complete your processes, from manufacturing planning through process optimization to maintenance.

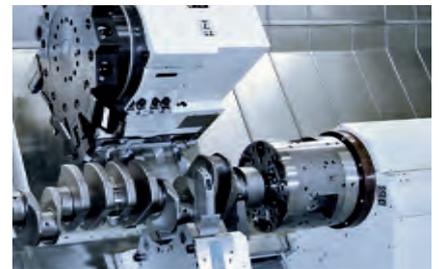
- CAM solutions for NC programming
- “Virtual Machine“ for collision avoidance and NC program optimization
- Realtime collision avoidance with Protection-Control-System (PCS®-online)
- Process monitoring
- Static process monitoring with measurement and correction strategies
- Online diagnosis with Condition Monitoring



■ Tool Turrets (axial/radial) for 2- or 4-Axis Machining



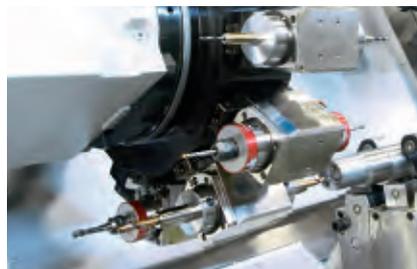
■ Main Spindle with Gearbox or Direct Drive Options selectively



■ Counter Spindle with Motor or Gearbox Options



■ Turning Support for Heavy Duty Machining



■ Milling and Drilling Operations using Power Driven Tooling



■ Slide System with Boring Quill



■ Integrated or separate Loading Systems



■ Simultaneous Machining with two Tool Turrets



■ Special Machining Heads



■ Additional Tool Changers



■ Lower Turret



■ Lowerable Tailstock

TECHNICAL DATA



NILES-SIMMONS TECHNOLOGIES

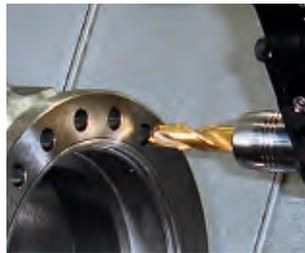
Machine efficiently and preserve resources with the innovative slantbed lathes of NILES-SIMMONS. From individual workpiece to mass production, we offer you an economical complete solution.

Individually configured sub-assemblies and turning lengths with workpiece matched driving power and performance levels with a modular construction offer the basis for an optimized technology for your turning process.

Extensive Applications for Complete Machining



■ Turning



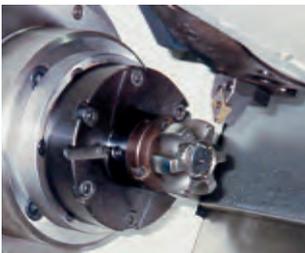
■ Drilling



■ Milling



■ Burnishing



■ Hard Turning



■ NC-Fine Boring



■ Circular Milling



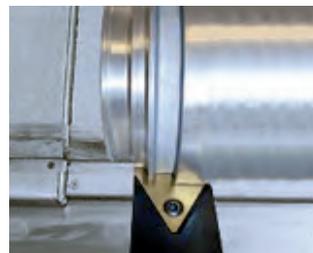
■ Shaping



■ ID Turning



■ Boring Out



■ Profile Grooving



■ Automatic Balancing



■ Thread Turning



■ Tapping



■ Thread Form Turning



■ Thread Rolling



■ Deburring



■ Tool Probing



■ Part Probing



■ Diameter and Profile Measurement

The Technology Provider



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N10



■ CNC Control

Control system		SINUMERIK 840D sl
Drive system		SINAMICS S120

■ Working Area

Nominal length	mm	900 1300
Swing diameter	mm	560
Slidetravel X-Axis	mm	-5...+290

■ Main Spindle / Counter Spindle*

Spindle head acc. to DIN 55026	size	A6
Spindle bore	mm	54
Diameter bearing	mm	120

■ Main Spindle Drive

Driving power S6-40% /S1-100% duty cycle	kW	37,5 / 29	36 / 28
Speed range	rpm	0...6000	0...5000
Torque S6-40% /S1-100% duty cycle	Nm	190 / 250	290 / 370
Speed range of C-Axis	rpm	0...100	0...100

■ Feed Rates

Rapid feed X, Z	m/min	40 / 50
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■ Tool Turrets

	2-Axes	4-Axes
Number of turrets	1	2
Tool acceptance acc. to DIN 69880	30 40	30 40
Tool arrangement	axial radial	axial radial
Tool positions	12	12 / 12

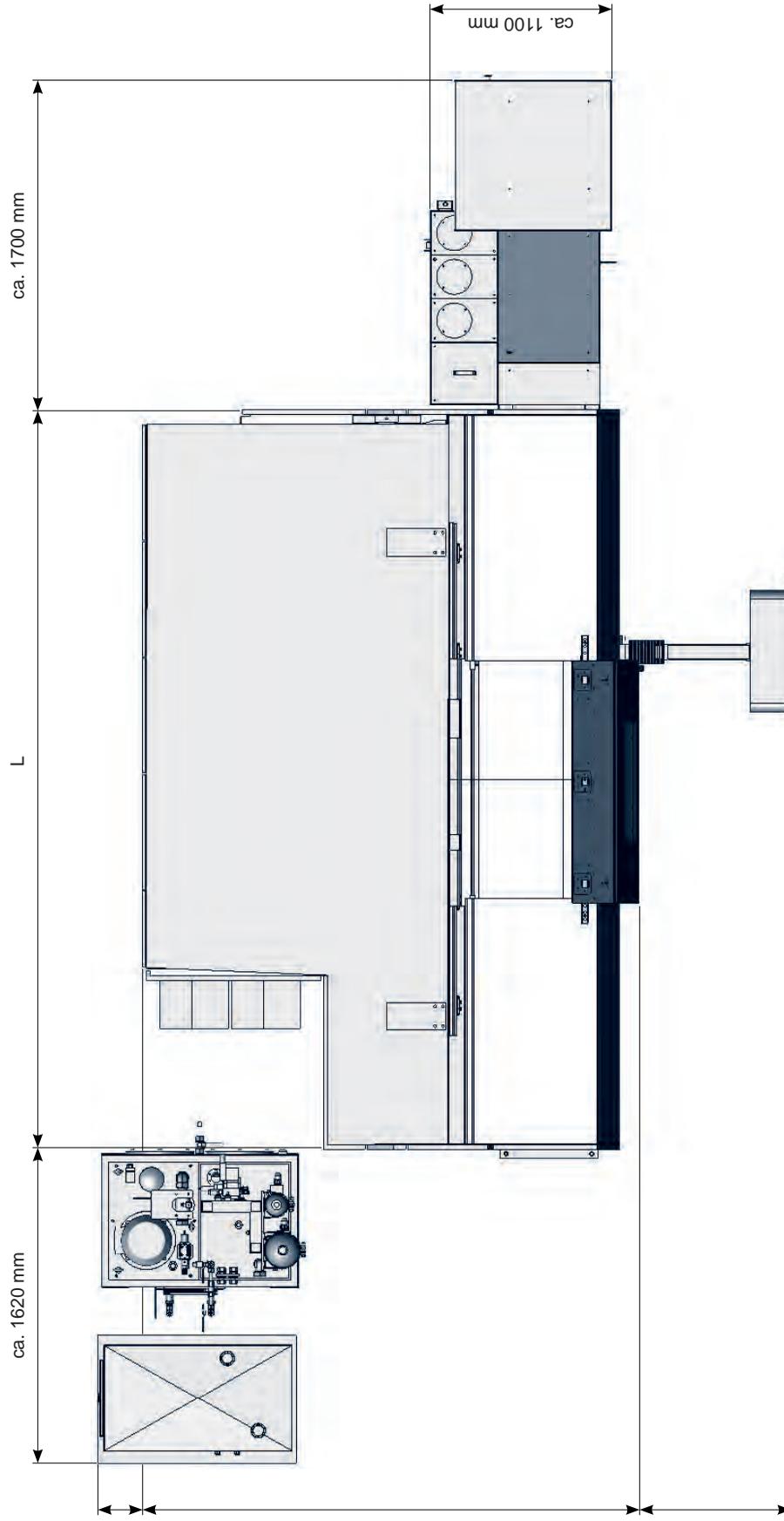
■ Tailstock

Quill centre	size	MK 4
Quill travel	mm	130
Quill diameter	mm	110
Clamping force	kN	3...10

* Option

// Technical changes reserved

Top view



■ Nominal length	mm	900	1300
Machine length (L)	mm	3810	4210
Machine weight	ton	8,5	9,5

N20



■ CNC Control

Control system		SINUMERIK 840D sl
Drive system		SINAMICS S120

■ Working Area

Nominal length	mm	1000 1500 2000 2500 3000 3500
Swing diameter	mm	650
Slidetravel X-Axis	mm	-15...660
Slidetravel Y-Axis	mm	-150...+220

■ Main Spindle / Counter Spindle*

Spindle head acc. to DIN 55026	size	A8	A11
Spindle bore	mm	92	105
Diameter bearing	mm	150	180

■ Main Spindle Drive

Driving power S6-40% /S1-100% duty cycle	kW	34 / 30,4	- / 32
Speed range	rpm	0...3800	0...2000
Torque S6-40% /S1-100% duty cycle	Nm	655 / 580	- / 1200
Speed range of C-Axis	rpm	0...100	0...100

■ Feed Rates

Rapid feed X, Y, Z	m/min	25 / 12 / 40
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■ Tool Turrets

	2-Axes	4-Axes
Number of turrets	1	2
Tool acceptance acc. to DIN 69880	50 40	50 40
Tool arrangement	axial radial	axial radial
Tool positions	12	12 / 12

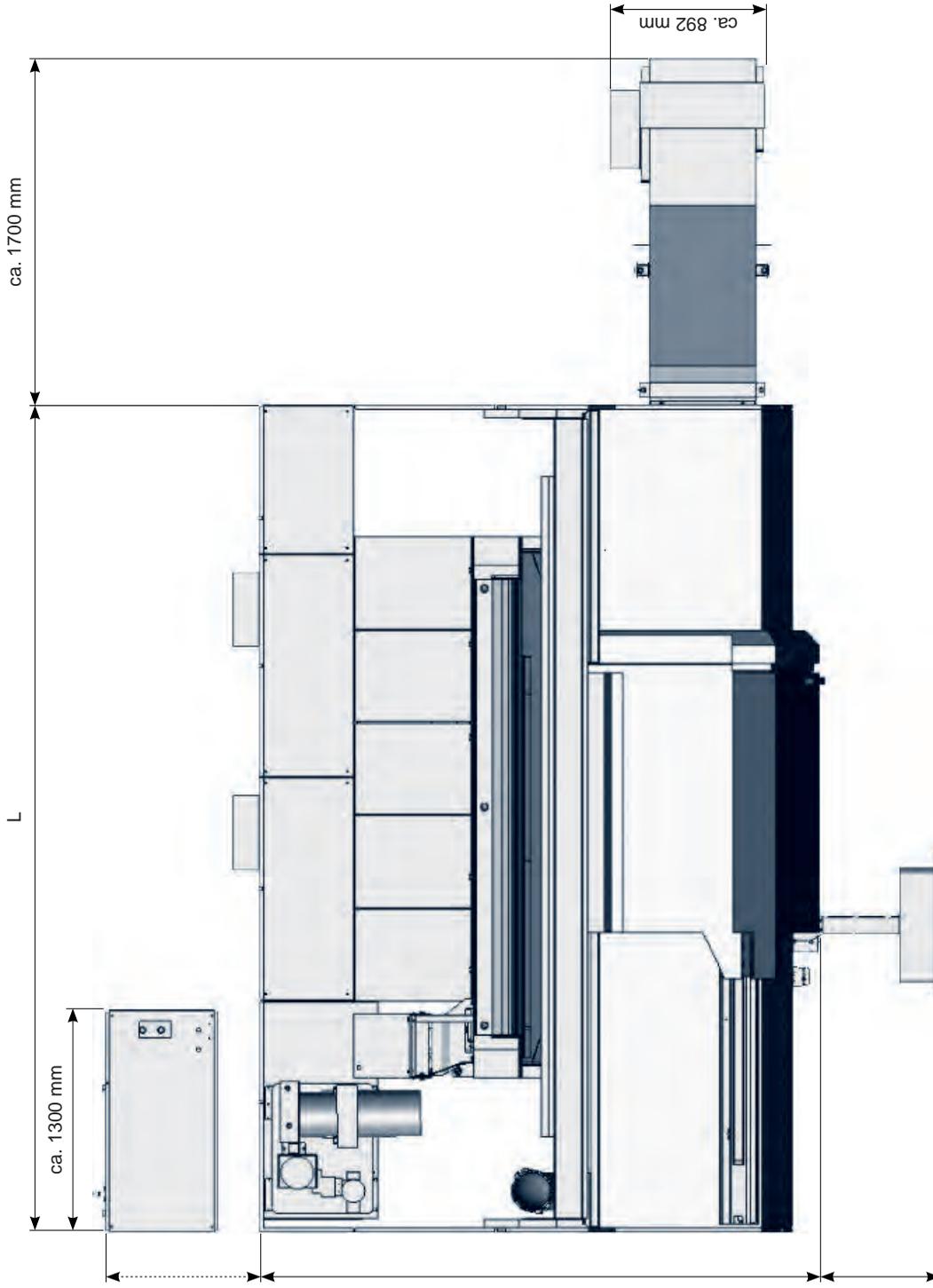
■ Tailstock

Quill centre	size	MK 5	MK 5
Quill travel	mm	162	160
Quill diameter	mm	140	150
Clamping force	kN	5...15	4...20

* Option

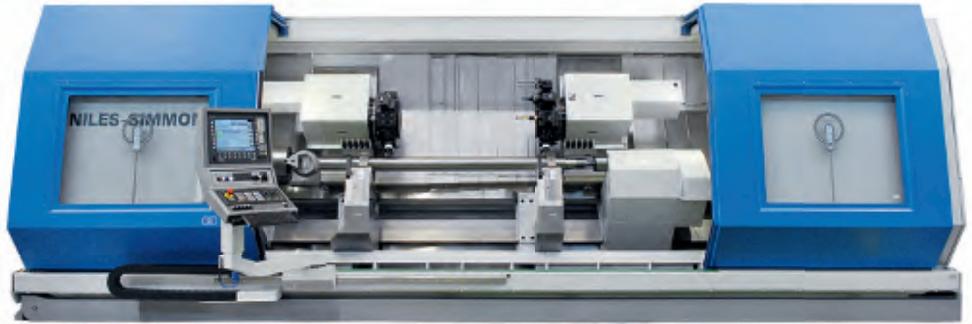
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Top view



■ Nominal length	mm	1000	1500	2000	2500	3000	3500
Machine length (L)	mm	4450	4950	5450	5950	6450	7575
Machine weight	ton	16	17	18	19	20	20

N30



■ CNC Control

Control system	SINUMERIK 840D sl
Drive system	SINAMICS S120

■ Working Area

Nominal length	mm	1500 2000 2500 3200 4000 4500
Swing diameter	mm	780 880
Slidetravel X-Axis	mm	-25...+750
Slidetravel Y-Axis	mm	-200...+300 -250...-250

■ Main Spindle / Counter Spindle*

Spindle head acc. to DIN 55026	size	A11	A11 A15	A11
Spindle bore	mm	92	123	123
Diameter bearing	mm	180	200 220	200

■ Main Spindle Drive

Driving power S6-40% /S1-100% duty cycle	kW	78 / 64	80 / 67	77 / 68
Speed range	rpm	0...3000	0...3000 0...2000	0...2000
Torque S6-40% /S1-100% duty cycle	Nm	932 / 779	3135 / 2642	2110 / 1872
Speed range of C-Axis	rpm	0...100	0...50	0...100

■ Feed Rates

Rapid feed X, Z	m/min	18 / 12 / 30
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■ Tool Turrets

	2-Axes	4-Axes
Number of turrets	1	2
Tool acceptance acc. to DIN 69880	50 60	50 60
Tool arrangement	axial radial	axial radial
Tool positions	12 16*	12 / 12 16 / 16*

■ Tailstock

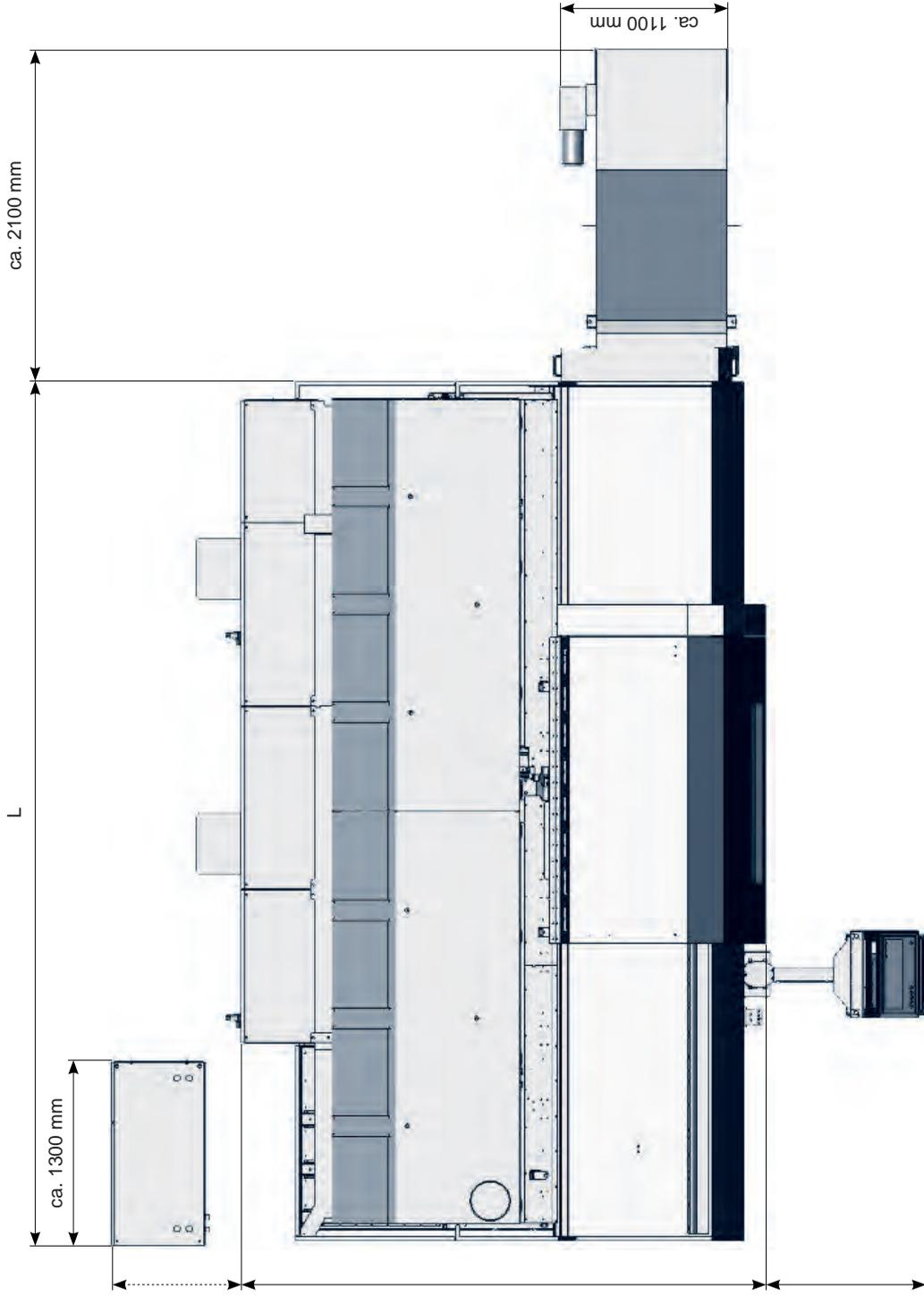
Quill centre	size	MK 5 MK 6	MK 5
Quill travel	mm	160 170	160
Quill diameter	mm	150 180	150
Clamping force	kN	4...20 5...30	4...20

* Option

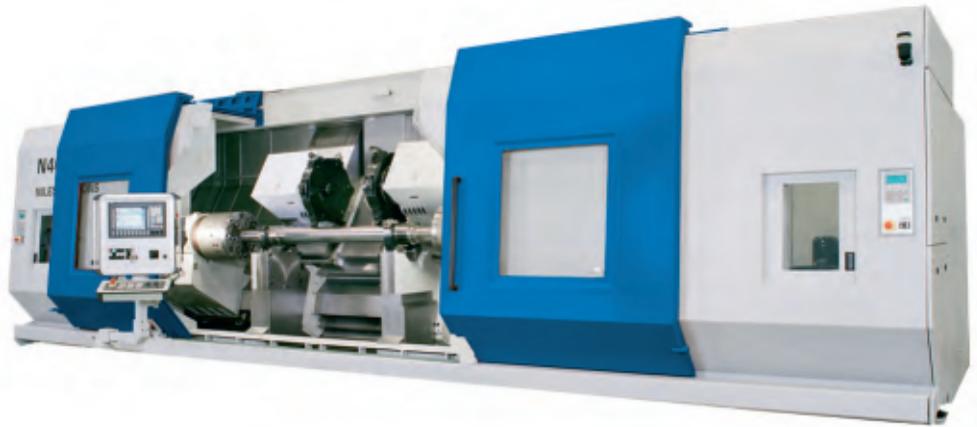
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N30

Top view



Nominal length	mm	2000	2500	3200	4000	4500
Machine length (L)	mm	6120	6620	7320	8120	8620
Machine weight	ton	29	33	37	40	43



■ CNC Control

Control system	SINUMERIK 840D sl
Drive system	SINAMICS S120

■ Working Area

Nominal length	mm	1000 2500 3500 4500 6000 7500
Swing diameter	mm	1100
Slidetravel X-Axis	mm	-25...+1050
Slidetravel Y-Axis	mm	-350...+350

■ Main Spindle / Counter Spindle*

Spindle head acc. to DIN 55026	size	A15	B20
Spindle bore	mm	160	265
Diameter bearing	mm	280	360

■ Main Spindle Drive

Driving power S6-40% /S1-100% duty cycle	kW	- / 71,2	77 / 64	87 / 78	77 / 64
Speed range	rpm	0...1000	0...1800	0...1750	0...1300
Torque S6-40% /S1-100% duty cycle	Nm	3400 / 3400	4430 / 3700	8000 / 7230	6893 / 5765
Speed range of C-Axis	rpm	100	0...50	0...50	0...50

■ Feed Rates

Rapid feed X, Y, Z	m/min	24 / 15 / 30
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■ Tool Turrets

	2-Axes	4-Axes
Number of turrets	1	2
Tool acceptance acc. to DIN 69880	60	60
Tool arrangement	axial radial	axial radial
Tool positions	12	12 / 12

■ Tailstock

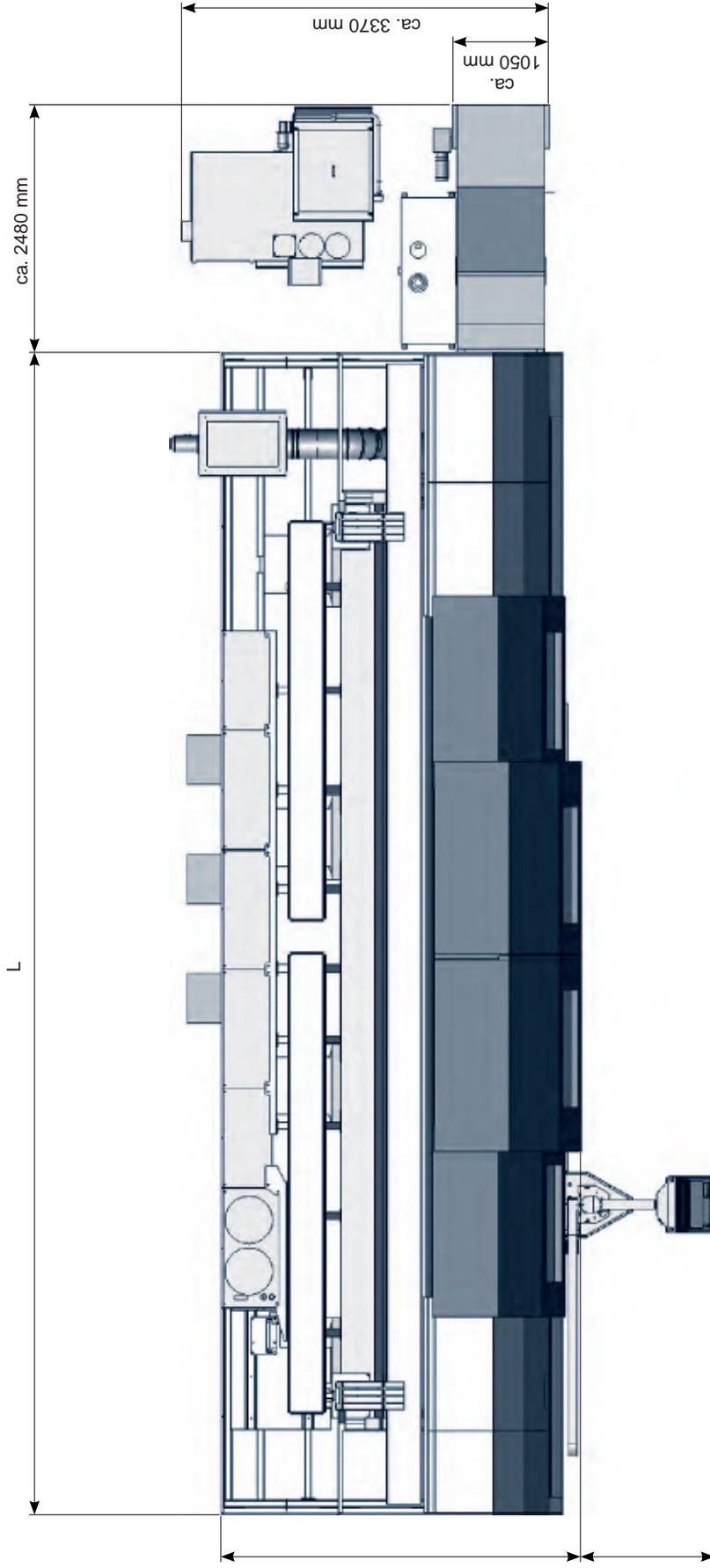
Quill centre	size	MK 6
Quill travel	mm	170
Quill diameter	mm	180
Clamping force	kN	5...30 8...40

* Option

// Technical changes reserved

N40

Top view



■ Nominal length	mm	1000	2500	3500	4500	6000	7500
Machine length (L)	mm	5200	7700	8700	10200	11700	13200
Machine weight	ton	27	34	39	45	51	57



■ CNC Control

Control system	SINUMERIK 840D sl
Drive system	SINAMICS S120

■ Working Area

Nominal length	mm	2000 3000 4500 6000 7500
Swing diameter	mm	1250
Slidetravel X-Axis	mm	-20...+1050
Slidetravel Y-Axis	mm	-400...+395 -375...295

■ Main Spindle / Counter Spindle*

Spindle head acc. to DIN 55026	size	A15	B20
Spindle bore	mm	160	225
Diameter bearing	mm	280	360

■ Main Spindle Drive

Driving power S6-40% /S1-100% duty cycle	kW	77 / 64	87 / 78	115 / 100
Speed range	rpm	0...1400	0...1244	0...888
Torque S6-40% /S1-100% duty cycle	Nm	6900 / 5765	11020 / 9880	15000 / 13040
Speed range of C-Axis	rpm	0...50	0...50	0...50

■ Feed Rates

Rapid feed X, Y, Z	m/min	12 / 12 / 24
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■ Tool Turrets

	2-Axes	4-Axes
Number of turrets	1	2
Tool acceptance acc. to DIN 69880	60	60
Tool arrangement	axial radial	axial radial
Tool positions	12	12 / 12

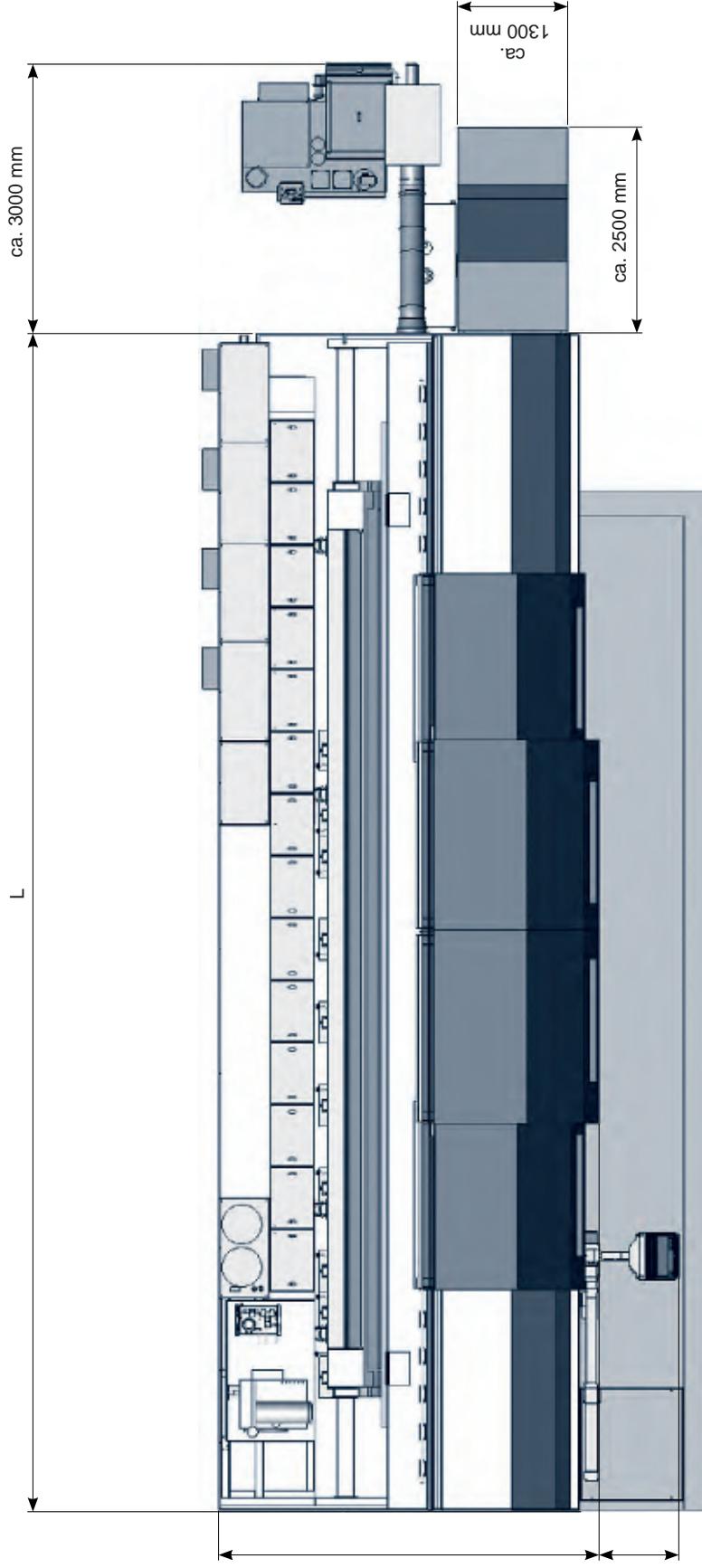
■ Tailstock

Quill centre	size	MK 6 ME 80
Quill travel	mm	300
Quill diameter	mm	195 240
Clamping force	kN	5...35 8...55

* Option

N50

Top view



Nominal length	mm	2000	3000	4500	6000	7500
Machine length (L)	mm	8350	9350	10850	12350	13850
Machine weight	ton	44	49	55	62	69