



ROTA NCE

**Energy-efficient lightweight
chuck for maximum process
dynamics**

Robust lightweight chuck with up to 40% reduced moment of inertia at highest rigidity

The ROTA NCE unifies lightweight design, maximum load capacity and an extraordinary form language all in one. Ideal preconditions for high process dynamics. Particularly in large-scale production, it provides significant savings and is also ideally suited for the energy management certification DIN EN ISO 50001.



Advantages – Your benefits

- + Energy efficient thanks to extremely low moment of inertia**
Shorter cycle times and reduced energy costs
- + Connection dimensions 100% compatible with power lathe chucks from the Kitagawa BB200 series (up to size 260)**
Existing Kitagawa chucks can be replaced within a short time period
- + Precision wedge-hook power lathe chuck for highest quality requirements**
Allows excellent machining results
- + High efficiency of the wedge hook system**
Process-reliable clamping due to high clamping forces
- + Optimized lubrication system**
Consistently high clamping forces ensured
- + Modular center sleeve system**
Optimal adjustment to new clamping tasks thanks to the exchangeable center sleeves
- + Base jaws with fine serration 1.5 mm x 60° and 1/16" x 90° as standard**
High flexibility in the range of top jaws
- + All sides of the functional parts are hardened and ground**
Ensures a long service life

Technical data

Description	Max. rotational speed [min ⁻¹]	Max. clamping force [kN]	Max. actuating force [kN]	Stroke/jaw [mm]	Through-hole [mm]	Piston stroke [mm]	Moment of inertia [kgm ²]
ROTA NCE 130-38	7500	45	19	3.2	38	14	0.009
ROTA NCE 165-53	6000	65	26	3.3	53	14	0.032
ROTA NCE 210-66	5000	100	38	4.2	66	18	0.08
ROTA NCE 260-81	4500	130	45	4.9	81	21	0.195
ROTA NCE 315-106	3500	155	58	5.8	106	25	0.44

Function of ROTA NCE

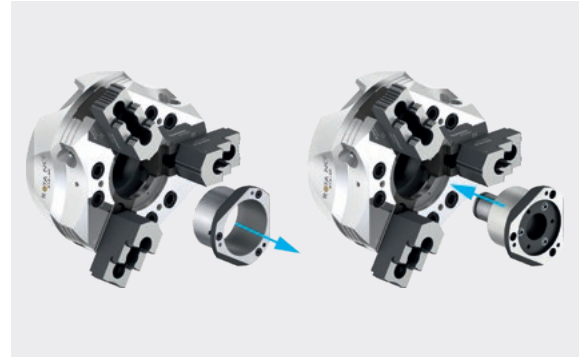
The axially movable piston transfers the force to the base jaw and generates a radial jaw movement synchronized with the rotational axis.



- 1 Wedge hook drive**
 Offers constantly high clamping forces in operation
- 2 Hardened and extremely rigid base body**
 Therefore a longer service life at highest precision. Even with maximum clamping force
- 3 Large through-hole**
 For machining all conventional bar diameters
- 4 Optimized lubrication system**
 For a high level of efficiency
- 5 Mounting thread**
 For workpiece stops
- 6 Base jaw interface**
 Inch, metric or with tongue and groove available
- 7 Jaw stroke display**
 To verify the jaw stroke
- 8 Center sleeve**
 With prefabricated mounting thread for the draw tube or drawbar
- 9 Weight-optimized design**
 For great economy in daily use

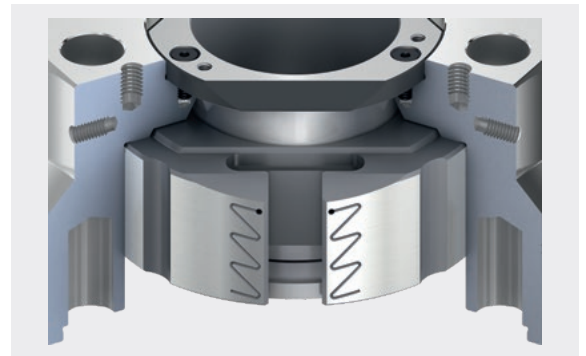
Changing the center sleeve

The modular center sleeves can be changed quickly and easily while the chuck remains mounted. When the three screws are undone, all the protection sleeves can be pulled off from the front and replaced.



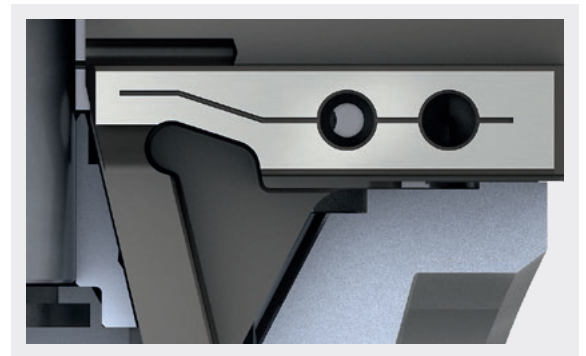
Long and precise piston guidance

For high clamping repeatability and long service life. All functional components used for force transmission are hardened and ground.



Base jaw safety feature

The small nose at the base jaw remains on the chuck body. This prevents the ejection of the jaws in case of a crash.



Jaw stroke display

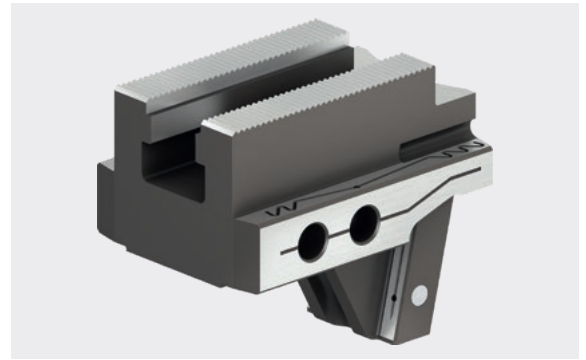
The jaw stroke display is an additional safety feature, which ensures safe workpiece clamping and simplifies the use of the chuck in daily operation.

1 Jaw stroke display

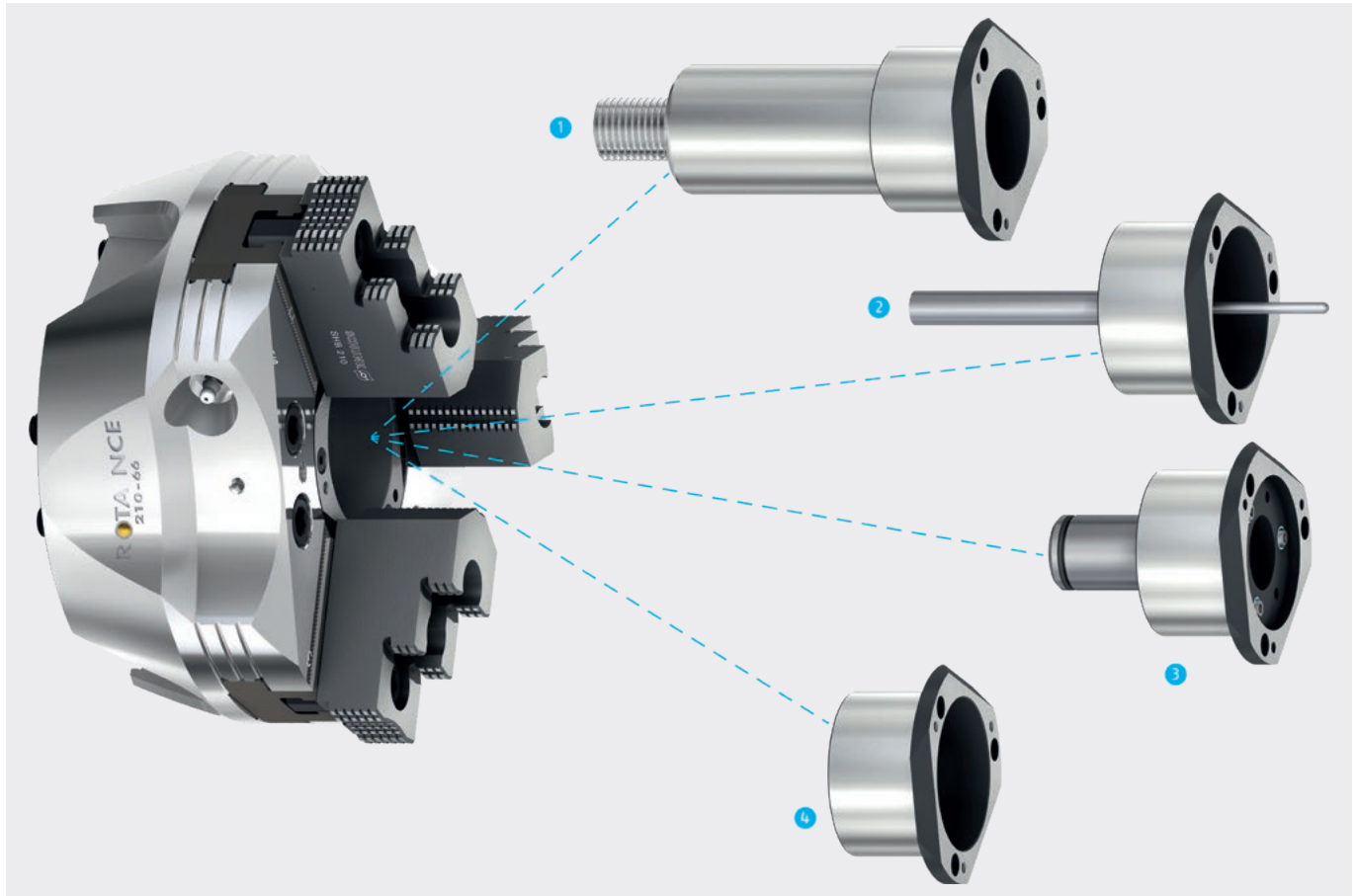


Absolute flexibility of the base jaw

Select between three standard jaw interfaces 1/16" x 90°, 1.5 mm x 60°, or tongue and groove with the advantage of being able to continue using your existing top jaws on the new SCHUNK chuck.



Modular center sleeve system



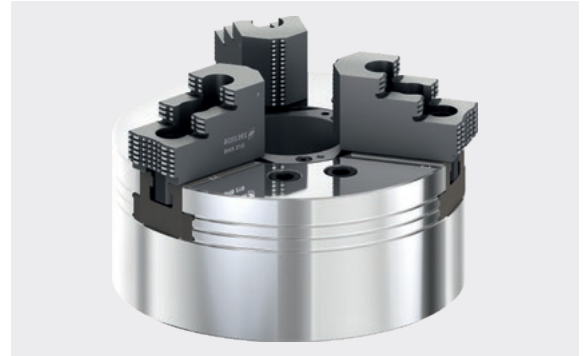
The modular center sleeve system increases flexibility for the most various applications in everyday life.

- 1 Adjustable stop in the center sleeve**
The adjustable stop ensures that all workpieces are stopped with high repeat accuracy in the same selectable position. This makes handling quick and easy.
- 2 Part ejector in the center sleeve**
An optimum addition for automatic loading. The part ejector disposes of a gas spring, which will eject your workpiece safely out of the chuck.
- 3 Coolant nozzles in the center sleeve**
Ideal as an additional component if your machine is equipped with a central coolant supply. For I.D. machining, coolant will be fed directly to the tool.
- 4 Closed center sleeve**
The closed center sleeve prevents penetration of chips and coolant into the through-hole.

Weight-optimized power lathe chuck ROTA NCE

Initial situation

The starting point for today's ROTA NCE was a traditional power lathe chuck with through-hole. This chuck represented the constructive volume for the finite element (FE) model, which was modified by optimization until the desired volume and weight reductions were achieved.



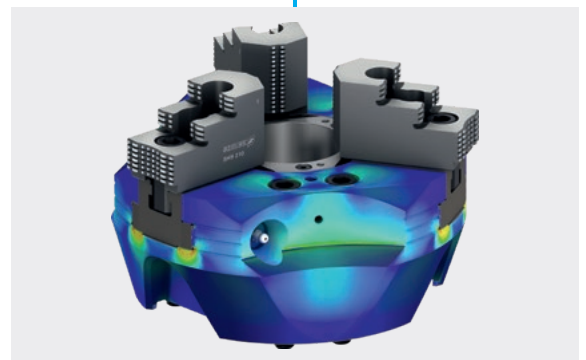
FE topology optimization

In the first step, FE topology optimization was used to calculate the lightest chuck design from the force flow, in which maximum stiffness is achieved.



FE parameter optimization

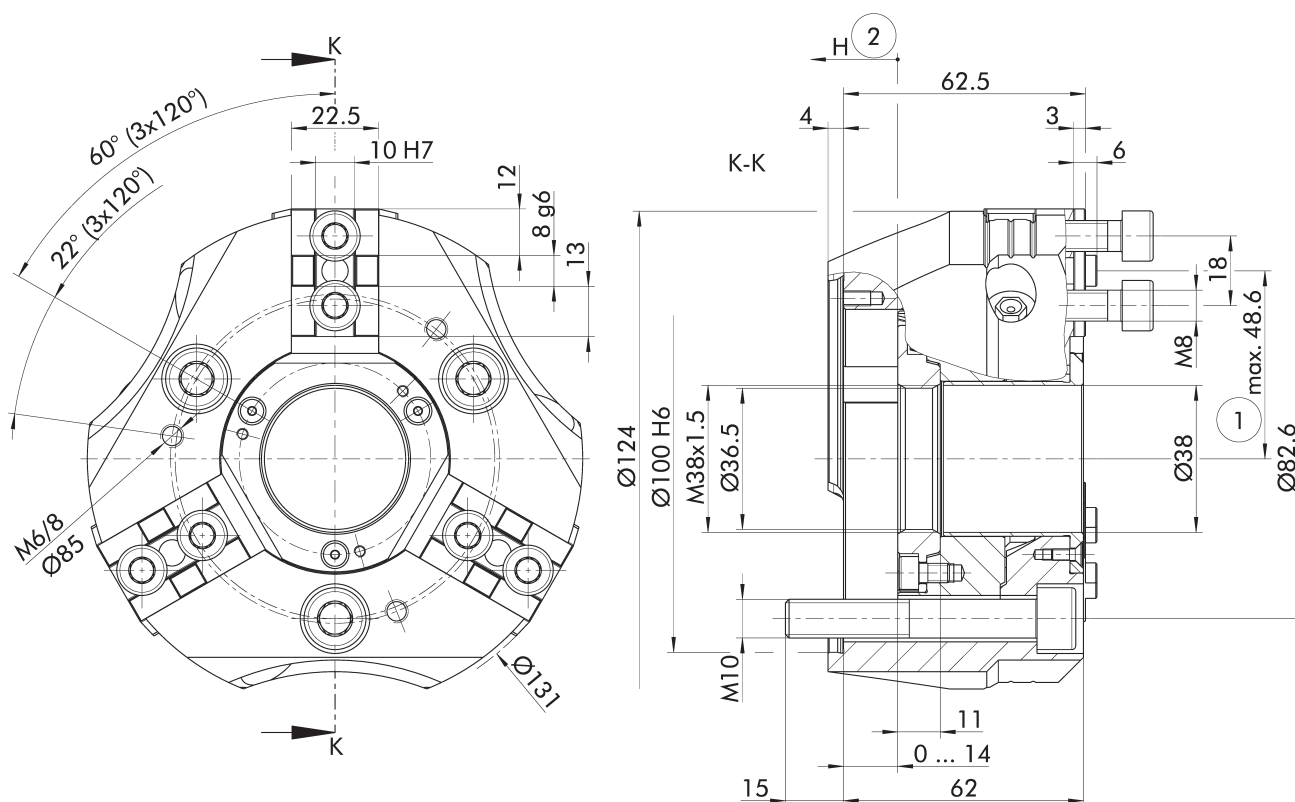
In the second step, FE parameter optimization was used to optimize the design of the highly loaded notch geometries in such a way that minimum notch stresses and maximum stiffness values could be achieved.



Result

The optimization process resulted in the current ROTA NCE, in which a computer-based adjustment of the chuck geometry to the prevailing force flow reduced the mass and the mass moment of inertia by up to 40% respectively – while maintaining the rigidity of the chuck.





Chuck for shaft clamping drawn in open position.
Subject to technical changes.

① Distance to center of tongue and groove

② Piston stroke direction

Technical data

Spindle type	Spindle size	ID	Serration	Max. rotational speed [min ⁻¹]	Max. clamping force [kN]	Max. actuating force [kN]	Moment of inertia [kgm ²]	Weight [kg]
-	Z100	1334152	Tongue and groove	7500	45	19	0.009	4.1

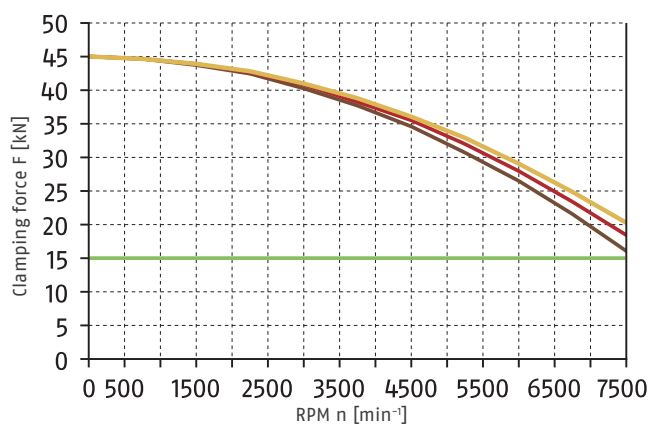
Scope of delivery

Chuck, T-nuts with screws, chuck mounting screws, mounting wrench for turnable threaded ring, center sleeve, and operating manual

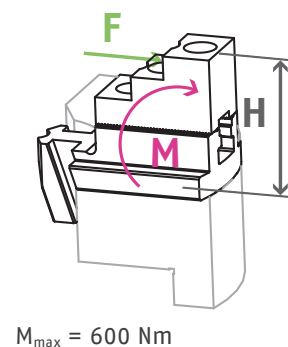
Further technical data

Chuck type	Through-hole [mm]	Stroke/jaw [mm]	Piston stroke (H) [mm]	Center jaw height [mm]
ROTA NCE 130-38	38	3.2	14	40

Clamping force-RPM-diagram

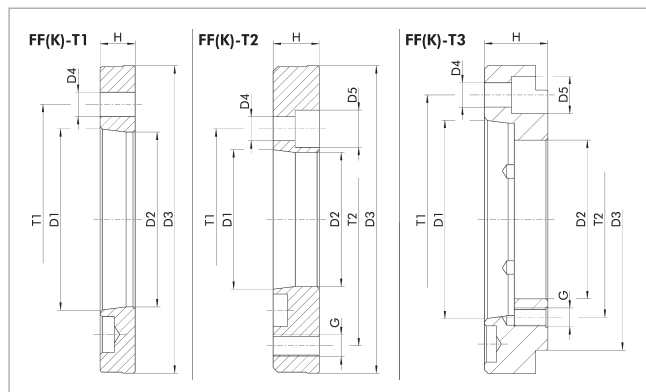


Load of base jaw guidance



Adapter plates

Z-mount on short taper ISO 702-1



Technical data

Description	Adapter plate type	ID	Suitable for	D1	D2	D3	D4	D5	G	H	T1	T2
					[mm]		[mm]	[mm]		[mm]	[mm]	[mm]
FF-T1 Z100-A4	FF-T1	0803010	ROTA NCE 130-38	Nr. 4	61	Z100	11 (6x60°)			12	82.6	
FF-T3 Z100-A5	FF-T3	0801008	ROTA NCE 130-38	Nr. 5	66	Z100	11 (6x60°)	17	M10 (6x60°)	30	104.8	82.6

Direct adapter plates

Direct adapter plates are used if the spindle mounting bolt circle has the same size as the lathe chuck mounting bolt circle. The adapter plate has to be mounted on to the spindle together with the lathe chuck. The adapter plate is preassembled on the lathe chuck.

Reduction adapter plates FF-T2

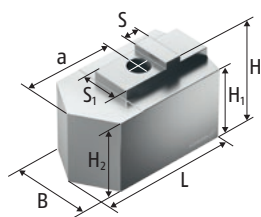
Reduction adapter plates are used if the mounting bolt circle of the spindle is smaller than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Expansion adapter plates FF-T3

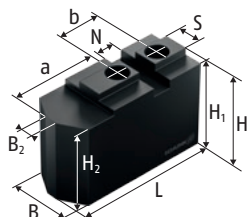
Expansion adapter plates are used if the mounting bolt circle of the spindle is larger than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Soft top jaws

with tongue and groove



SRK-AL
Soft top jaws



SRK
Soft top jaws

Technical data

Chuck type	Description	ID	N [mm]	S [mm]	B [mm]	H [mm]	H1 [mm]	H2 [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCE 130-38	SRK 112	0136103	8	10	25	30	27.5	26	53	28	18	M8	0.7
ROTA NCE 130-38	SRKL 112	1496961	8	10	25	30	27.5	26	61.5	28	18	M8	0.8
ROTA NCE 130-38	SRKL-AL 112	1496963	8	10	25	30	27.5	26	61.5	28	18	M8	0.3

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

Accessories

Clamping force tester

For measuring the jaw clamping force of 2, 3 and 6-jaw chucks up to 6,000 RPM.



Suitable for	Description	ID
ROTA NCE 130-38	IFT Set	1404235

Grease

LINOMAX plus

High-performance grease as standard for regularly lubricating SCHUNK manual and power lathe chucks and steady rests.



Bundle	Description	ID
Cartridge	LINOMAX plus cartridge	1342585
Can	LINOMAX plus can	1342586
Bucket	LINOMAX plus bucket	1342587

Grease gun

Auxiliary tools for lubrication of all kinds of SCHUNK products. The grease gun can be used for cartridges of all types of SCHUNK grease.



Bundle	Description	ID
Cartridge	Grease gun	9900543



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