



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

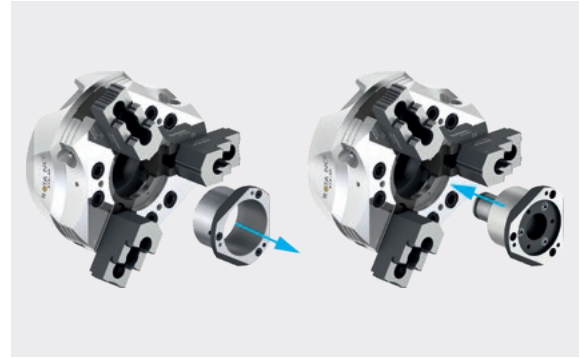
The axially movable piston transfers the force to the base jaw and generates a radial jaw movement synchronized with the rotational axis.



- | | |
|---|---|
| <ul style="list-style-type: none"> ❶ Wedge hook drive
Offers constantly high clamping forces in operation ❷ Hardened and extremely rigid base body
Therefore a longer service life at highest precision.
Even with maximum clamping force ❸ Large through-hole
For machining all conventional bar diameters ❹ Optimized lubrication system
For a high level of efficiency ❺ Mounting thread
For workpiece stops | <ul style="list-style-type: none"> ❻ Base jaw interface
Inch, metric or with tongue and groove available ❼ Jaw stroke display
To verify the jaw stroke ❽ Center sleeve
With prefabricated mounting thread for the draw tube or drawbar ❾ Weight-optimized design
For great economy in daily use |
|---|---|

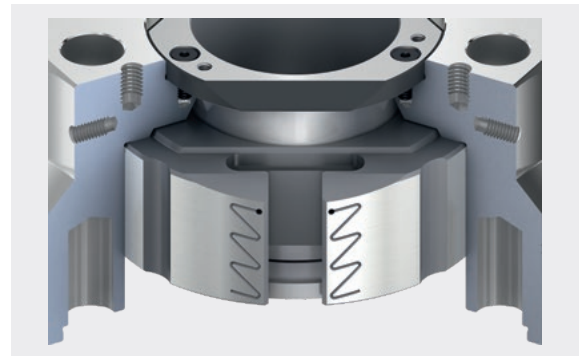
Changing the center sleeve

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.



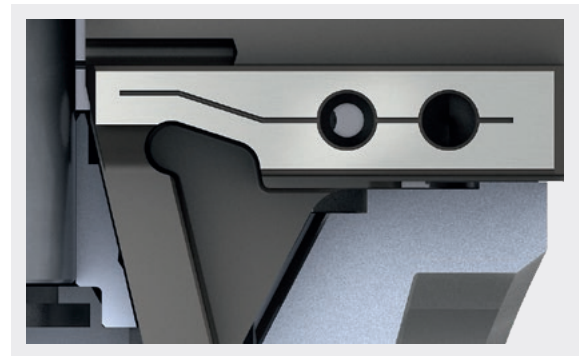
Long and precise piston guidance

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

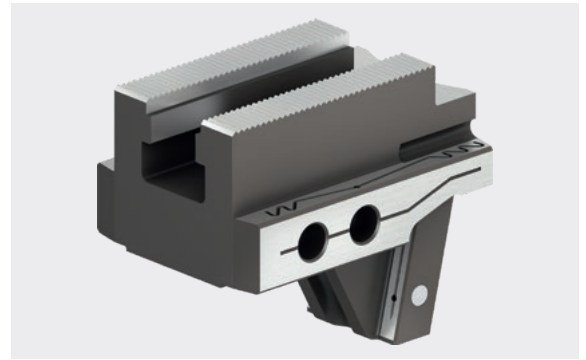
The jaw stroke display is an additional safety feature, which ensures safe workpiece clamping and simplifies the use of the chuck in daily operation.

1 Jaw stroke display

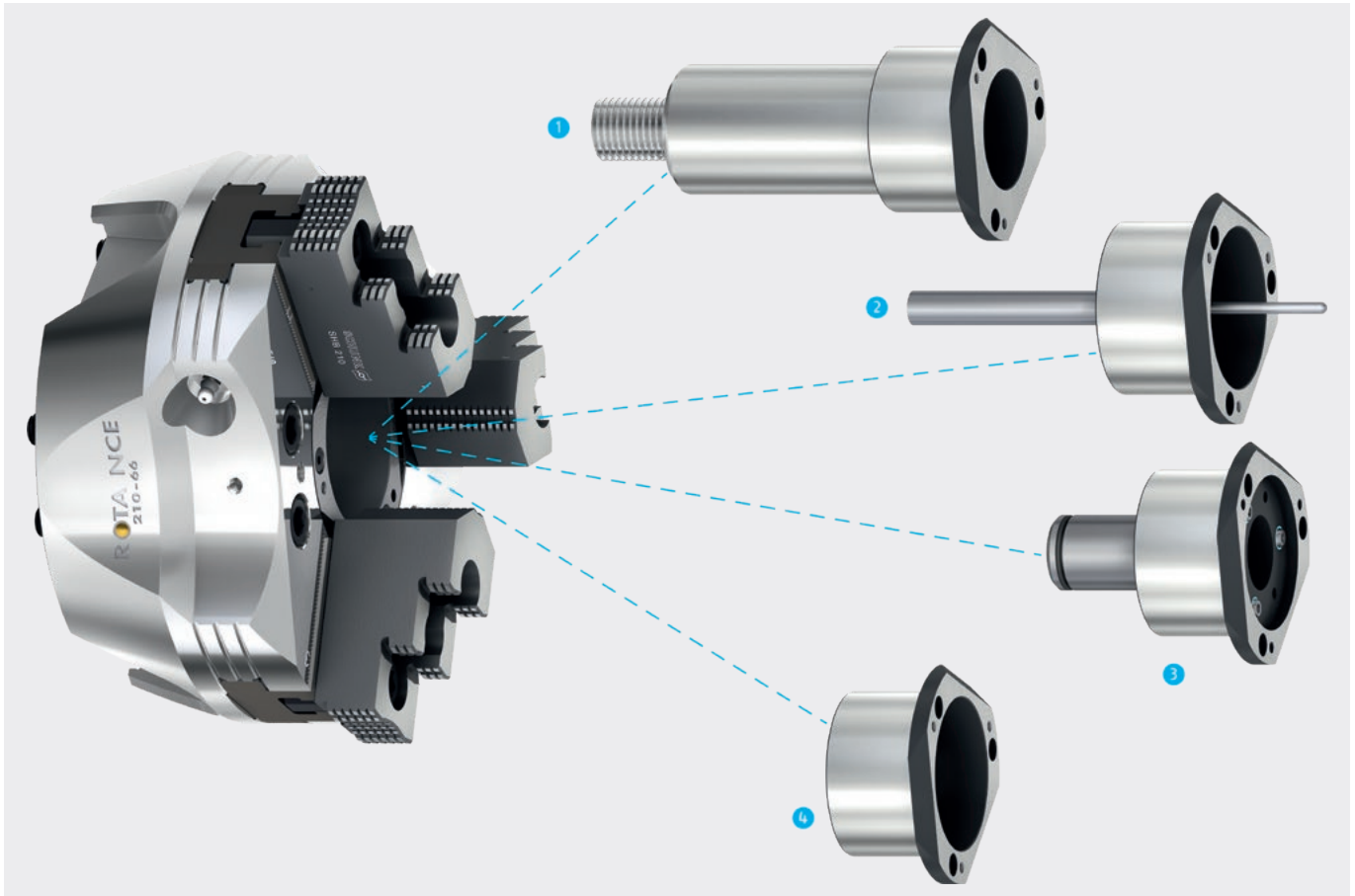


Absolute flexibility of the base jaw

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



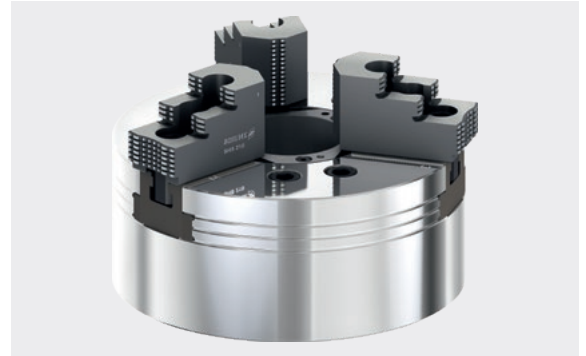
The modular center sleeve system increases flexibility for the most various applications in everyday life.

- 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.



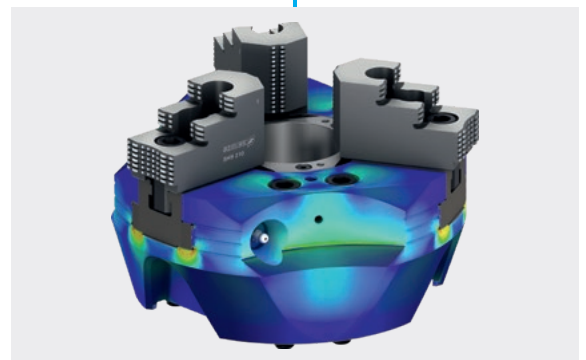
FE topology optimization

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

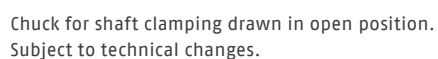
In the second step, FE parameter optimization was used to optimize the design of the highly loaded notch geometries in such a way that minimum notch stresses and maximum stiffness values could be achieved.



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.





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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]
ISO 702-4	Nr. 8 (Z220)	0808030	1/16" x 90°	4500	130	45	0.195	24
ISO 702-1	Nr. 6	0808031	1/16" x 90°	4500	130	45	0.235	28.9
ISO 702-1	Nr. 8	0808032	1/16" x 90°	4500	130	45	0.22	26.5
ISO 702-4	Nr. 8 (Z220)	0808033	1.5 mm x 60°	4500	130	45	0.195	24
ISO 702-1	Nr. 6	0808034	1.5 mm x 60°	4500	130	45	0.235	28.9
ISO 702-1	Nr. 8	0808035	1.5 mm x 60°	4500	130	45	0.22	26.5

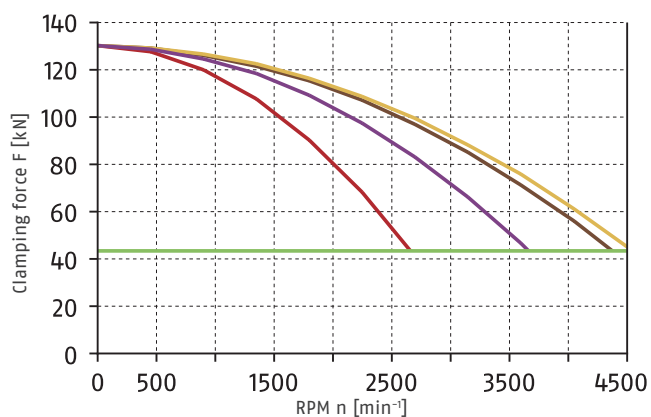
Scope of delivery

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

Further technical data

Chuck type	Through-hole [mm]	Stroke/jaw [mm]	Piston stroke (H) [mm]	Center jaw height [mm]
ROTA NCE 260-81	81	4.9	21	82

Clamping force-RPM-diagram



Required minimum clamping force F_{spmin} 33%

SHB 250
3.5 kg



SWB 250
9.2 kg



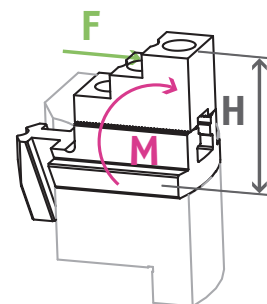
SHB-J 100
2.8 kg



KM-WB 110
3.8 kg



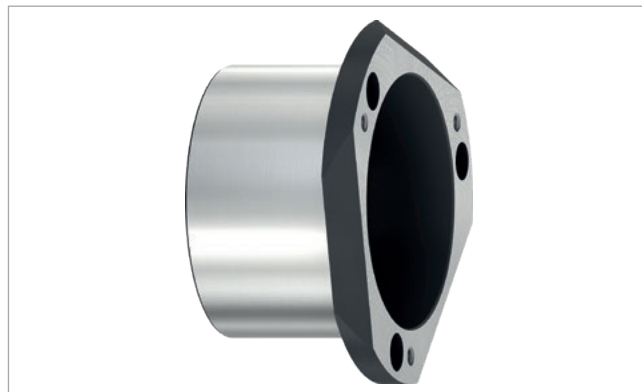
Load of base jaw guidance



$$M_{\max} = 3553 \text{ Nm}$$

Center sleeves

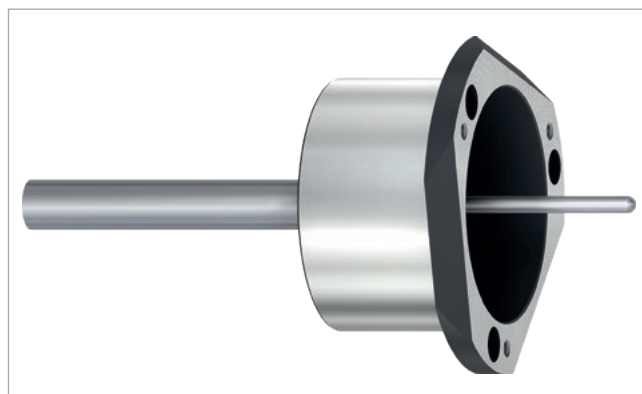
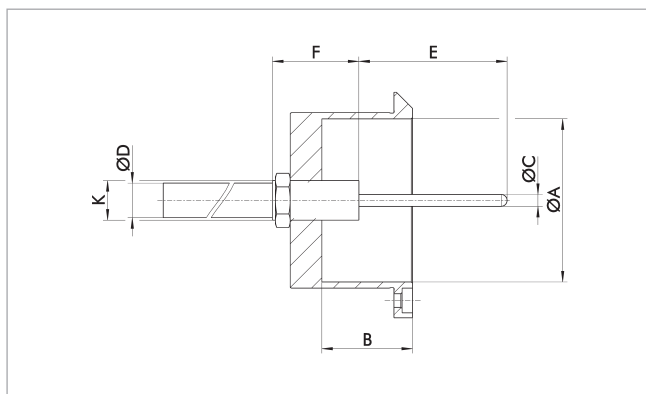
Center sleeve closed



Technical data

Description	ID	Suitable for	ØA [mm]	B [mm]	K	Weight [kg]
SBS-G-E 260	1300322	ROTA NCE 260-81	81	39	M16x1.5	1

Protection sleeve with ejector

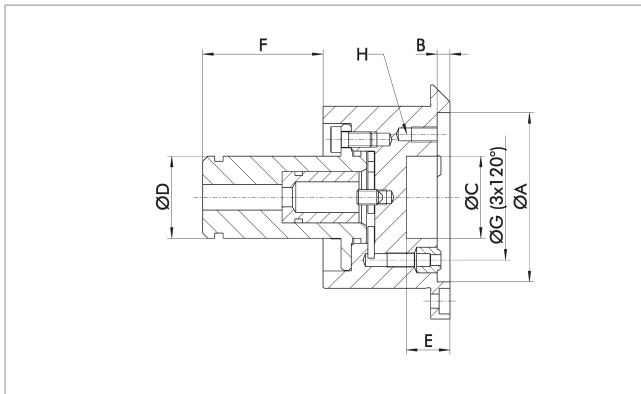


Technical data

Description	Suitable for	ØA [mm]	B [mm]	ØC [mm]	ØD [mm]	E [mm]	F [mm]	K
SBS-A-E 260	ROTA NCE 260-81	81	39	4.8	14	10 - 100	35	M16x1.5

- Center sleeves with ejector are available on request
- The ejector stroke is selectable in increments of 10 from 10 - 100 mm
- The ejection force is selectable with 40, 100, 150, 200, 250, or 300 N

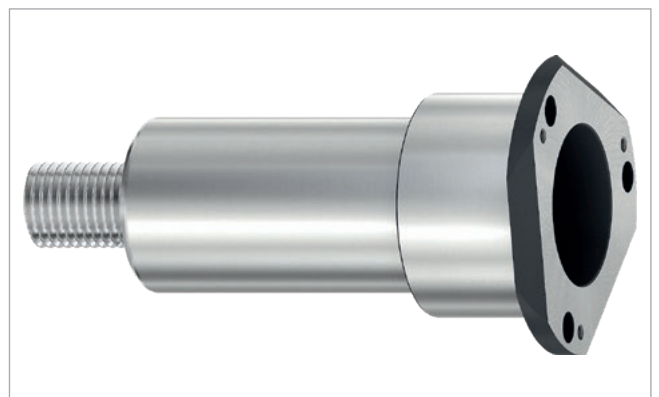
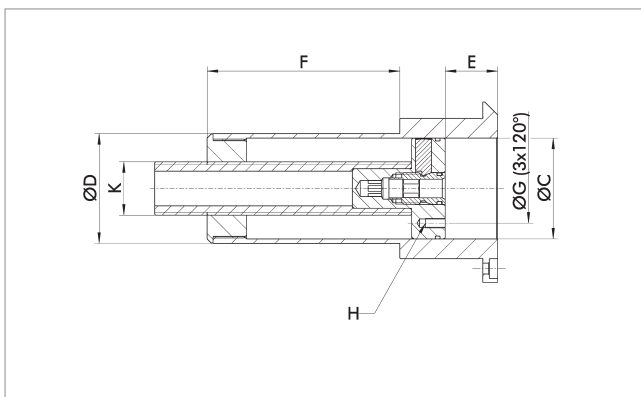
Protection sleeve with spray nozzles



Technical data

Description	ID	Suitable for	ØA [mm]	B [mm]	ØC [mm]	ØD [mm]	F [mm]	ØG [mm]	H	Weight [kg]
SBS-S-E 260	1300317	ROTA NCE 260-81	81	5	48	32	47	67	M6x10	2.2

Center sleeve with adjustable stop



Technical data

Description	ID	Suitable for	ØC [mm]	ØD [mm]	E [mm]	F [mm]	ØG [mm]	H	K	Weight [kg]
SBS-T-E 260	1300324	ROTA NCE 260-81	61	65.5	0 - 110	95	40	M5x10	M27	2.9

- Important: Check the spindle/draw tube through-hole
- The spindle through-hole must be at least $\varnothing D + 0.5 \text{ mm}$

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]
FFK-T2 Z220-A5	FF-T2	0805113	ROTA NCE 260-81	Nr. 5	79.6	Z220	11 (6x60°) 11 (3x120°)	17	M16 (6x60°) M16 (3x120°)	28	104.8	171.4
FFK-T2 Z220-A6	FF-T2	0805122	ROTA NCE 260-81	Nr. 6	103.2	Z220	14 (6x60°) 18 (6x60°) 18 (3x120°)	20	M16 (6x60°) M16 (3x120°)	25	133.4	171.4
FFK-T1 Z220-A8	FF-T1	0805123	ROTA NCE 260-81	Nr. 8	136.2	Z220				18	171.4	
FFK-T3 Z220-A11	FF-T3	0805121	ROTA NCE 260-81	Nr. 11	148	Z220	21 (6x60°)	32	M16 (6x60°) M16 (3x120°)	36	235	171.4

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

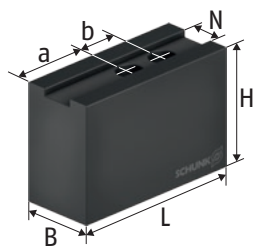
Reduction adapter plates are used if the mounting bolt circle of the spindle is smaller than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Expansion adapter plates FF-T3

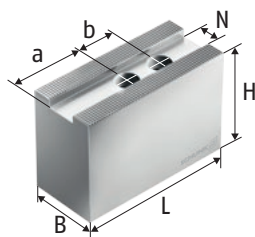
Expansion adapter plates are used if the mounting bolt circle of the spindle is larger than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Soft top jaws

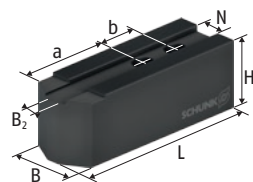
with fine serration 60°



KM-WB
Soft top jaws



KM-WBAL
Soft top jaws



KM-WBL
Soft top jaws

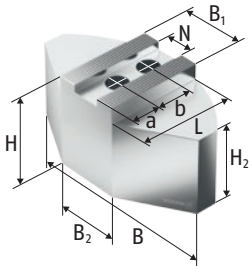
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCE 260-81	KM-WBL 100	0132602	16	40	42	125	65	30	M12	4.1
ROTA NCE 260-81	KM-WBL 101	0132608	16	40	100	125	65	30	M12	9.8
ROTA NCE 260-81	KM-WBL 103	0132609	16	40	60	125	65	30	M12	5.7
ROTA NCE 260-81	KM-WB 102	0132104	16	40	60	90	45	30	M12	4.3
ROTA NCE 260-81	KM-WB 103	0132105	16	40	60	110	50	30	M12	5.2
ROTA NCE 260-81	KM-WB 104	0132106	16	50	80	90	45	30	M12	7.3
ROTA NCE 260-81	KM-WB 105	0132129	16	40	80	110	50	30	M12	7.2
ROTA NCE 260-81	KM-WB 106	0132152	16	40	100	120	60	30	M12	9.7
ROTA NCE 260-81	KM-WB 110	0132140	16	40	42	110	50	30	M12	3.8
ROTA NCE 260-81	KM-WB 111	0132147	16	50	50	120	60	30	M12	6.2
ROTA NCE 260-81	KM-WBAL 100	0132523	16	40	60	110	55	30	M12	1.9

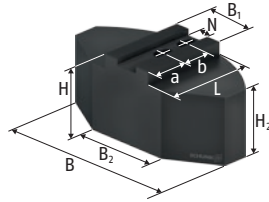
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

Hard stepped top jaws, Full grip jaws

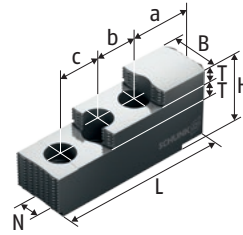
with fine serration 60°



KMWB-SA
Full grip jaws



KMWB-SM
Full grip jaws



SHB-J
Hard stepped top jaws

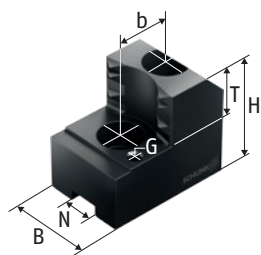
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	B1 [mm]	H [mm]	H2 [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA NCE 260-81	KMWB-SA 250	0132802	16	180	40	58	43	87.5		40	30		M12	4.5
ROTA NCE 260-81	KMWB-SA 251	0132806	16	180	40	80	65	87.5		40	30		M12	6.6
ROTA NCE 260-81	KMWB-SM 250	0132702	16	180	40	60	45	80		29	30		M12	12.0
ROTA NCE 260-81	KMWB-SM 251	0132706	16	180	40	80	70	80		29	30		M12	18.0
ROTA NCE 260-81	SHB-J 100	0133111	16	40		54		101.5	13	25.5	30	30	M12	2.8

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Claw jaws

with fine serration 60°



SZAJ
Claw jaws

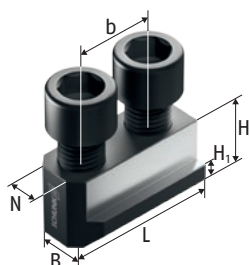
Technical data

Chuck type	Clamping range ØD	Swing diameter SDmax	Description	ID	N	B	H	L	T	G	b	Screws	m/SET
	[mm]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]		[mm]		[kg]
ROTA NCE 260-81	47 - 91	271	SZAJ 25-1	0138117	16	40	58	99.5	25	M6	30	M12	2.9
ROTA NCE 260-81	88 - 133	273	SZAJ 25-2	0138119	16	40	58	81	25	M6	30	M12	2.3
ROTA NCE 260-81	132 - 178	277	SZAJ 25-3	0138121	16	40	58	70.5	25	M6	30	M12	2.1
ROTA NCE 260-81	177 - 223	290	SZAJ 25-4	0138123	16	40	58	75	25	M6	30	M12	2.3
ROTA NCE 260-81	212 - 258	322	SZAJ 25-15	0138118	16	40	58	94.5	25	M6	30	M12	2.8

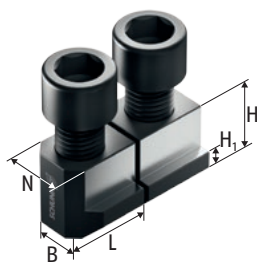
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T-nut

with fine serration 60°



NJ
T-nut



NJ sawn
T-nut

Chuck type	Description	ID	N	B	H	H1	L	b	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA NCE 260-81	NJ 103 gesägt/sawn	0146002	16	22.4	21.5	8.5	22.7		M12 x 30	70
ROTA NCE 260-81	NJ 103	0146132	16	22.4	21.5	8.5	50.7	30	M12 x 30	70

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Hard stepped top jaws

with fine serration 60°



Jaw position I

Jaw position II

O.D. clamping

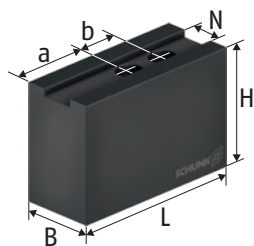
Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA NCE 260-81	SHB-J 100	0133111	19 - 127	40 - 130	126 - 164	160 - 254

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCE 260-81	SHB-J 100	0133111	103 - 141	137 - 225	220 - 325

Soft top jaws

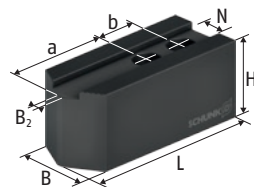
with fine serration 90°



CWB
Soft top jaws



SWB-AL
Soft top jaws



SWBL
Soft top jaws

Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCE 260-81	SWBL 250-21	0120155	21	50	50	120	72	28	M16	5.4
ROTA NCE 260-81	SWBL 315	0120156	21	50	50	140	82	28	M16	6.5
ROTA NCE 260-81	CWB 251	0100012	21	50	60	95	52	28	M16	5.2
ROTA NCE 260-81	SWB 250	0120105	21	50	80	120	62	28	M16	9.2
ROTA NCE 260-81	SWB-FR 315	0120406	21	50	60	105	65	25	M16	6.0
ROTA NCE 260-81	SWB-AL 250	0168102	21	50	80	120	62	28	M16	3.3

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Hard stepped top jaws, Full grip jaws

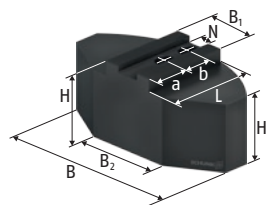
with fine serration 90°



SHB
Hard stepped top jaws



SWB-SA
Full grip jaws



SWB-SM
Full grip jaws

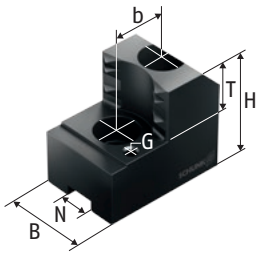
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	B1 [mm]	H [mm]	H2 [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA NCE 260-81	SWB-SA 250-21	0170103	21	180	50	78	63	87.5		40	28		M16	6.3
ROTA NCE 260-81	SWB-SA 251	0170107	21	180	50	100	85	87.5		40	28		M16	8.3
ROTA NCE 260-81	SWB-SA 315	0170104	21	240	50	78	63	117		70	28		M16	11.0
ROTA NCE 260-81	SWB-SM 250-21	0169103	21	180	50	70	55	80		29	28		M16	14.5
ROTA NCE 260-81	SWB-SM 251	0169107	21	180	50	100	85	80		30	28		M16	22.0
ROTA NCE 260-81	SWB-SM 315	0169104	21	240	50	70	55	110		60	28		M16	26.6
ROTA NCE 260-81	SHB 250	0121105	21	50		58		103.5	14	34	25	25	M16	3.5
ROTA NCE 260-81	SHB 315	0121111	21	50		58		128	14	46	30	30	M16	4.6

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Claw jaws

with fine serration 90°



SZA
Claw jaws

Technical data

Chuck type	Clamping range ØD	Swing diameter SDmax	Description	ID	N	B	H	L	T	G	b	Screws	m/SET
	[mm]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]		[mm]		[kg]
ROTA NCE 260-81	60 – 98	271	SZA 25-37	0138180	21	50	58	95.9	25	M8	28	M16	3.3
ROTA NCE 260-81	100 – 138	271	SZA 25-38	0138181	21	50	58	81	25	M8	28	M16	2.9
ROTA NCE 260-81	149 – 188	274	SZA 25-39	0138182	21	50	58	76.2	25	M8	28	M16	2.7
ROTA NCE 260-81	196 – 235	309	SZA 25-40	0138183	21	50	58	90.5	25	M8	28	M16	3.2
ROTA NCE 260-81	46 – 75	280	SZA 31-10	0138184	21	50	58	115.4	25	M8	28	M16	3.4
ROTA NCE 260-81	224 – 263	340	SZA 31-13	0138187	21	50	58	111.1	25	M8	28	M16	4.7

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

T-nut

with fine serration 90°



NKA
T-nut



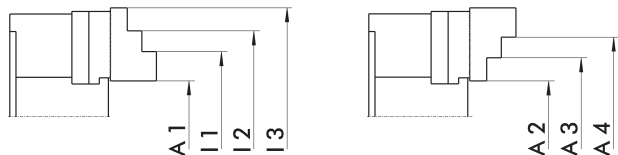
NKS
T-nut

Chuck type	Description	ID	N	B	H	H1	L	b	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA NCE 260-81	NKA 3	0145105	21	25	26.5	10	54	28	M16 x 35	150
ROTA NCE 260-81	NKS 3	0143107	21	25	26.5	10	25		M16 x 35	150

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Hard stepped top jaws

with fine serration 90°



Jaw position I

Jaw position II

O.D. clamping

Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA NCE 260-81	SHB 250	0121105	23 - 120	53 - 140	135 - 213	208 - 254

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCE 260-81	SHB 250	0121105	74 - 151	147 - 231	227 - 324

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 260-81	IFT Set	1404235

Mounting wrench

For power lathe chucks with a turnable threaded ring in pipe design with two actuation tabs.



Suitable for	Description	ID
ROTA NCE 260-81	SSH-MR Ø81-165	1301753

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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