



ROTA NCF *plus* 2

**Power lathe chuck with
centrifugal force com-
pensation and large
through-hole**

Weight-optimized power lathe chuck with integrated centrifugal force compensation for reducing the loss of clamping force under speed of rotation

High speeds mean high centrifugal forces of the jaws and thus high clamping force losses in turning applications. The ROTA NCF plus 2 with integrated centrifugal force compensation effectively counteracts this loss of clamping force. As a result, significantly higher speeds can be run than with conventional lathe chucks. The modular sealed center sleeve system also increases flexibility.



Advantages – Your benefits

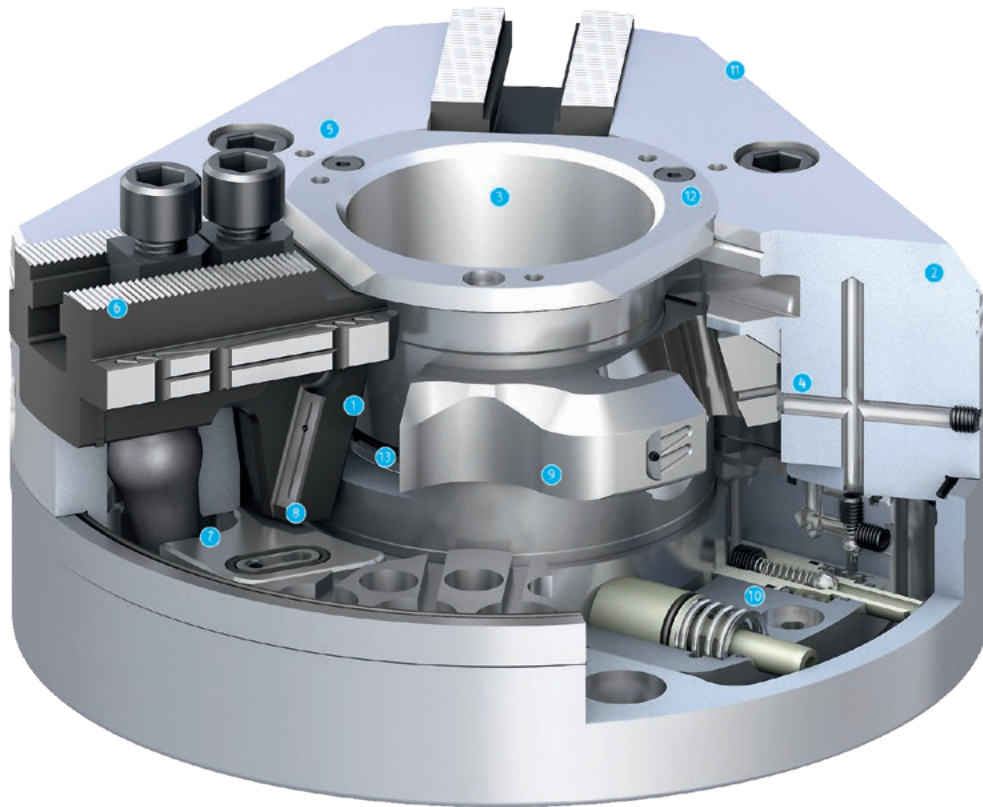
- + Precision wedge-hook power lathe chuck for highest quality requirements**
Allows excellent machining results
- + Very high RPM without essential clamping force reduction**
Optimum utilization of the lathe chuck performance due to high economic efficiency
- + With integrated centrifugal force compensation**
Thereby high machining speeds are possible
- + Large through-hole**
Machining all standard pipe diameters
- + 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
- + Double-guided chuck piston**
For highest run-out and repeat accuracy
- + Low chuck weight**
Fast acceleration and deceleration operations shorten the cycle times
- + 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]	Piston stroke [mm]	Through-hole [mm]
ROTA NCF plus 2 185-52	6000	72	30	5.3	20	52
ROTA NCF plus 2 215-66	6000	100	42	5.3	20	66
ROTA NCF plus 2 260-86	4500	140	60	5.3	20	86
ROTA NCF plus 2 315-104	4000	160	70	5.3	20	104
ROTA NCF 400-120	3300	187.5	77	8	30	120
ROTA NCF 500-160	2200	200	75	8	30	160
ROTA NCF 630-180	1800	300	122	11.2	42	180

Function of ROTA NCF plus 2

The axially movable piston transfers the force to the base jaw and generates a radial jaw movement synchronized with the rotational axis. The jaws are coupled to a compensating weight via a lever, which leads to a constant clamping force when the lathe chuck rotates.

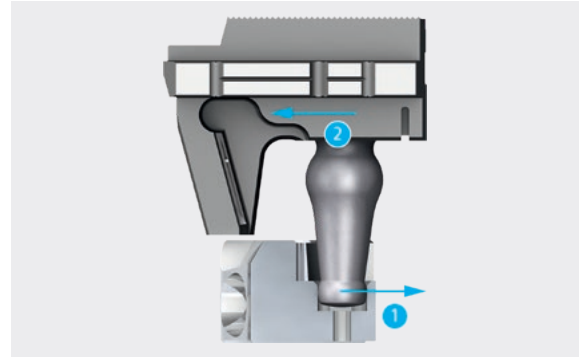


- | | |
|---|---|
| <ul style="list-style-type: none"> ❶ Wedge hook drive
Offers constantly high clamping forces in operation ❷ Hardened and extremely rigid base body
Therefore a longer service life at highest precision. Even with maximum clamping force ❸ Large through-hole
For machining of all standard raw material diameters ❹ Optimized lubrication system
For a high level of efficiency ❺ Mounting thread
For workpiece stops or cover plates ❻ Base jaw serration
Available in inch or metric sizes ❼ Integrated centrifugal force compensation
For constant clamping force even at top speeds | <ul style="list-style-type: none"> ❽ Robust and advanced wedge-hook
For excellent power transmission ❾ Innovative piston guidance
Optimizes the force flow and provides optimal rigidity ❿ Integrated, patented grease pump system
For permanent grease circulation during every clamping stroke. Extended maintenance intervals can be realized as a result ⓫ Weight-optimized design
For great economy in daily use ⓬ Modular center sleeve system
Therefore optimal adjustment to new clamping tasks ⓭ Additional seals
For sealing against coolants and chips |
|---|---|

Integrated centrifugal force compensation

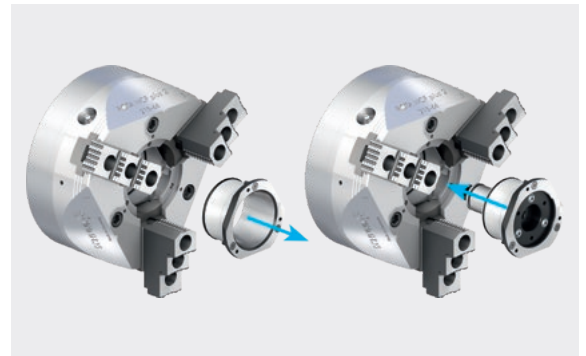
Compared to conventional lathe chucks, the loss of clamping force is compensated by the integrated centrifugal force compensation. Due to the speed, the centrifugal force balancing weight is pressed to the outside. The lever directly transmits the force onto the base jaw.

- ❶ Centrifugal force via compensation weight
- ❷ Clamping force support for O.D. clamping



Changing the center sleeve

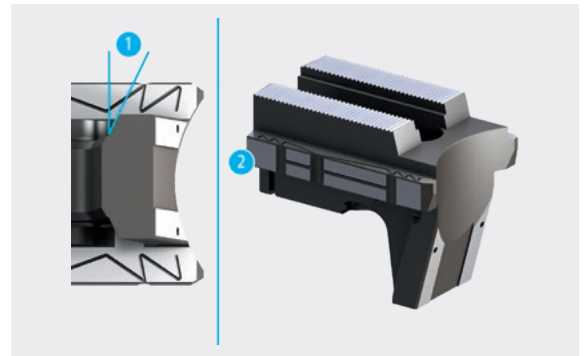
The modular center sleeves can be changed quickly and easily while the chuck remains mounted. When the three screws are undone, all the protection sleeves can be pulled off from the front and replaced.



Optimized wedge hook and precision jaw guidance

For longer life time and high repeat accuracy, fine serration 1/16" x 90° or 1.5 mm x 60°.

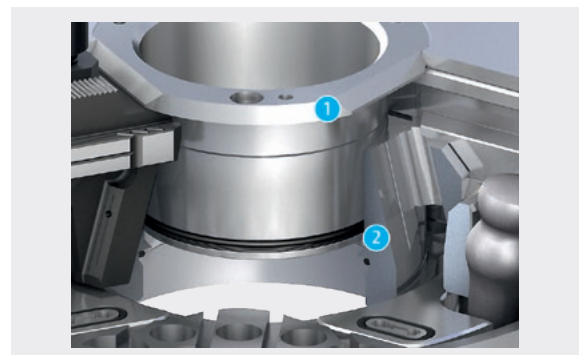
- ❶ Trapezoidal angle
Between the base jaw and piston
- ❷ Precision flat guidance



Additional sealing inside of the center sleeve and optimized greasing system

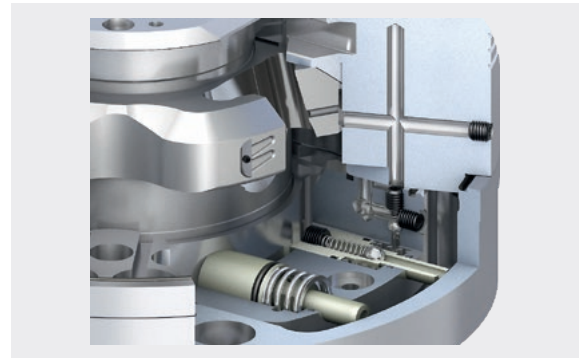
Therefore the maintenance intervals are longer and permanent supply to all function and friction surfaces is ensured.

- ❶ Modular center sleeve
Also exchangeable in built-in condition from the front chuck face
- ❷ Long piston guidance
For more accuracy



Integrated, patented grease-pump system in the centrifugal force compensation

For permanent grease circulation during every clamping stroke. Extended maintenance intervals can be realized as a result



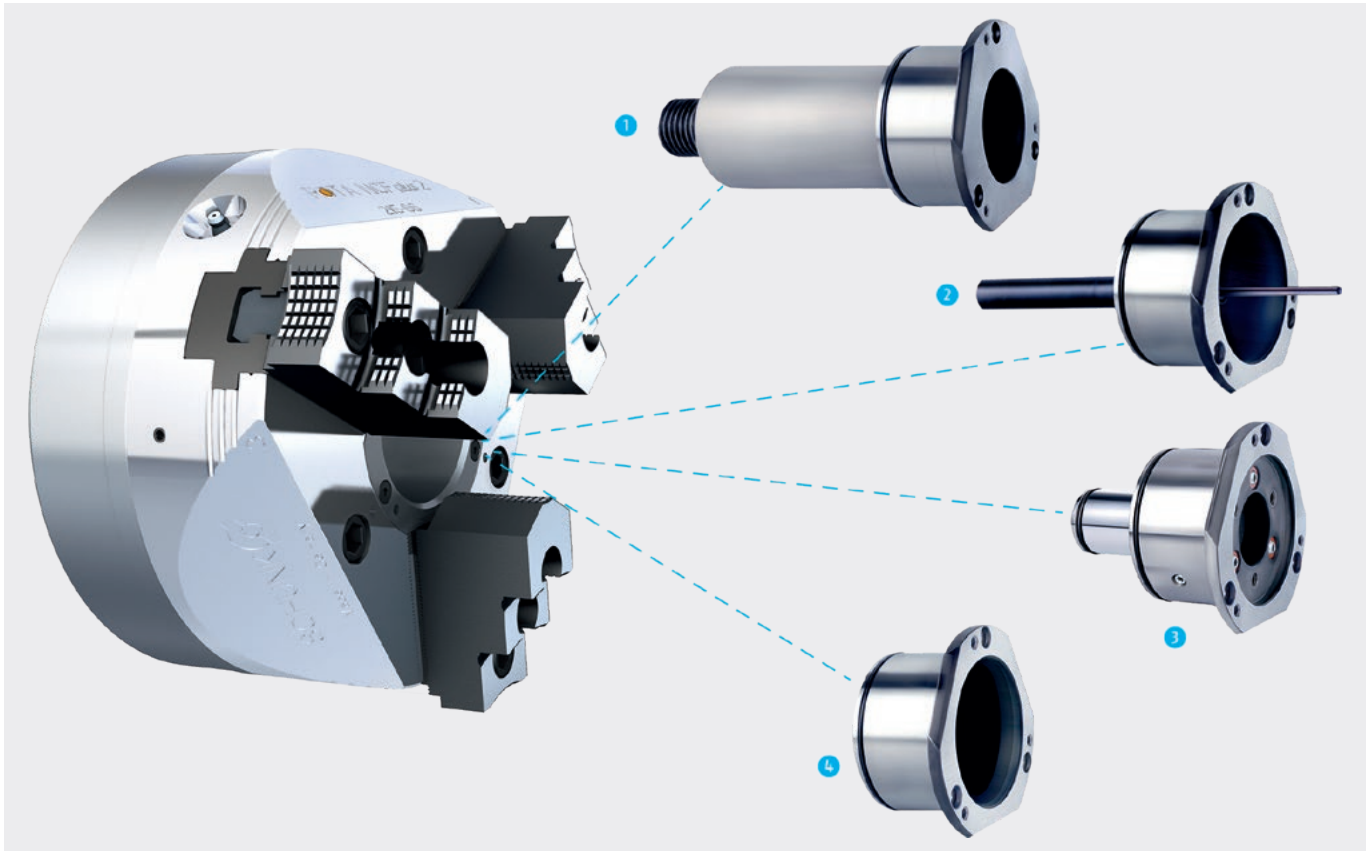
Very rigid and hardened chuck body

With direct short taper mounting without intermediate flange.

- ① Chuck body
- ② Piston



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.

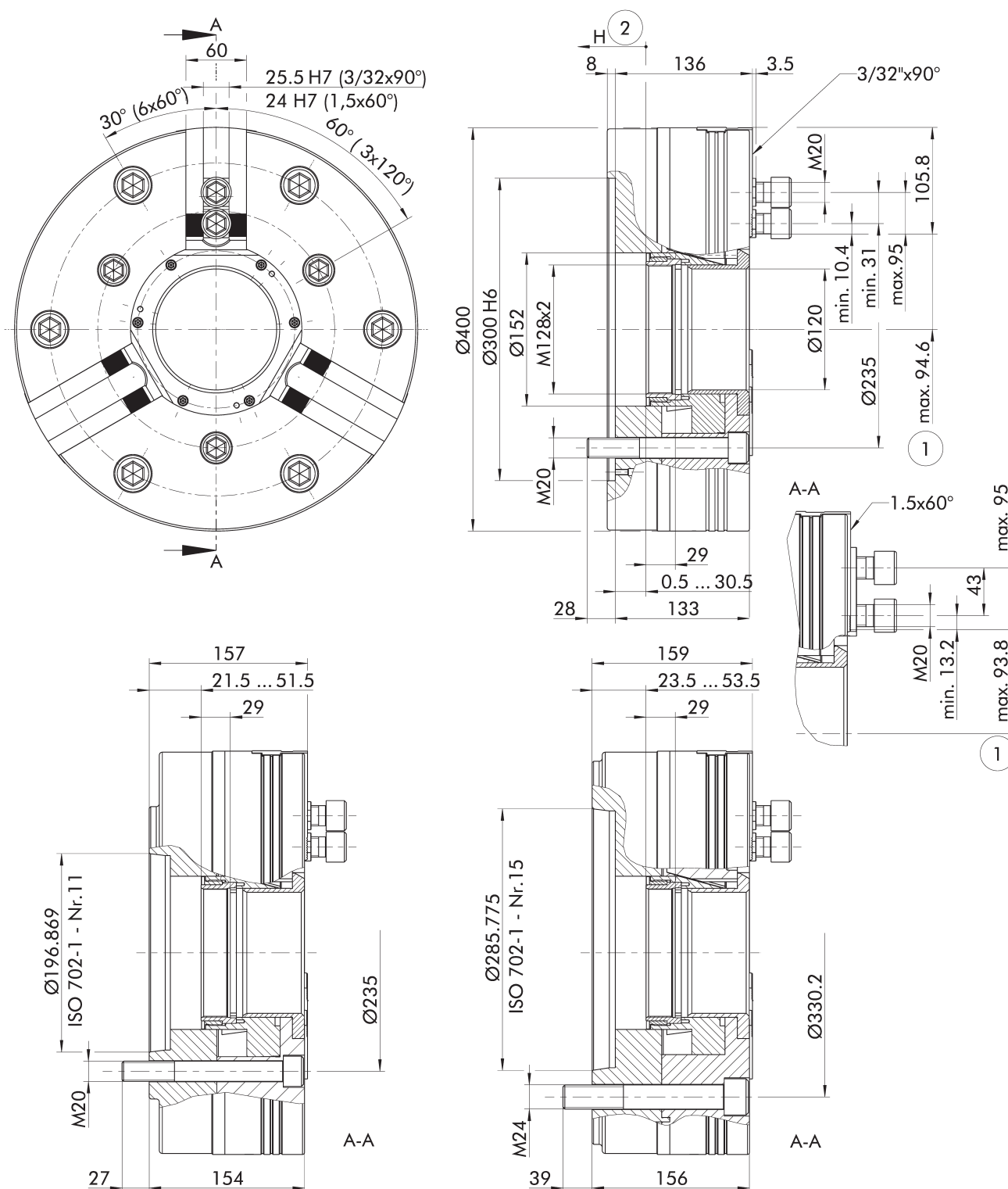
3 Coolant nozzles in the center sleeve

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.

① Modular center sleeve system up to size 315 possible.



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

① Distance to center of first tooth

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]
ISO 702-4	Nr. 11 (Z300)	0854040	3/32" x 90°	3300	187.5	77	2.3	110
ISO 702-1	Nr. 11	0854041	3/32" x 90°	3300	187.5	77	2.3	114
ISO 702-1	Nr. 15	0854042	3/32" x 90°	3300	187.5	77	2.3	117
ISO 702-4	Nr. 11 (Z300)	0854043	1.5 mm x 60°	3300	187.5	77	2.3	110
ISO 702-1	Nr. 11	0854044	1.5 mm x 60°	3300	187.5	77	2.3	114

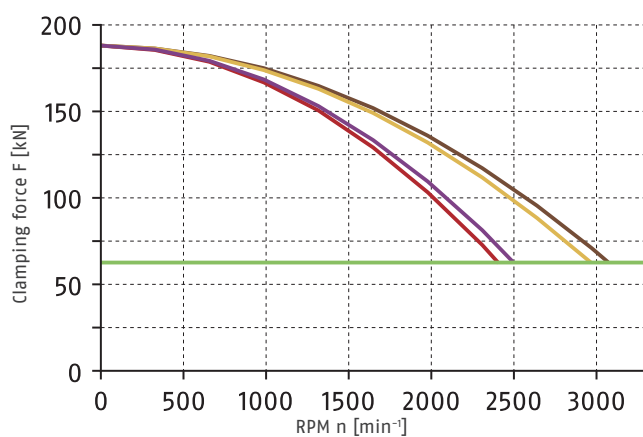
Scope of delivery

Chuck, T-nuts with screws, chuck mounting screws, mounting wrench for turnable threaded ring, 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 NCF 400-120	120	8	30	106

Clamping force-RPM-diagram



Required minimum clamping force F_{spmin} 33%

SHB 400
7.8 kg



SWB 400
16 kg



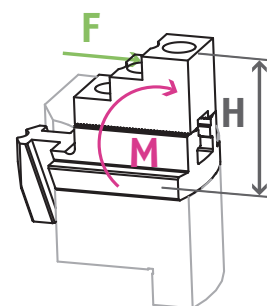
SHB-J 150
8.64 kg



KM-WB 153
15.51 kg



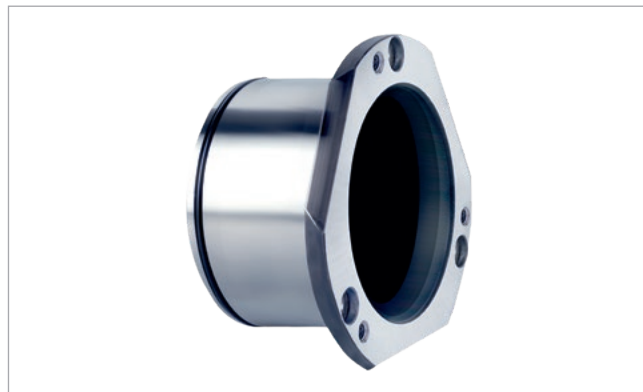
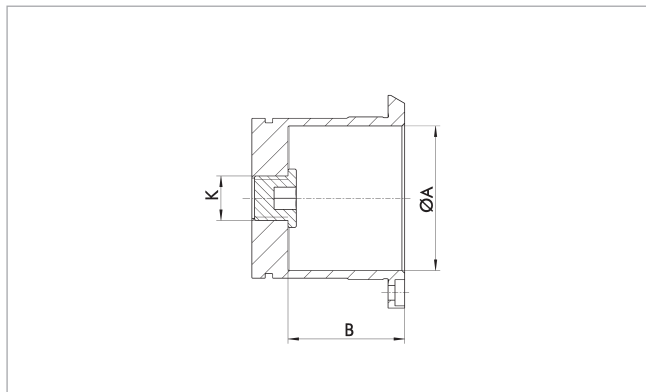
Load of base jaw guidance



$$M_{\max} = 6607 \text{ Nm}$$

Center sleeves

Center sleeve closed

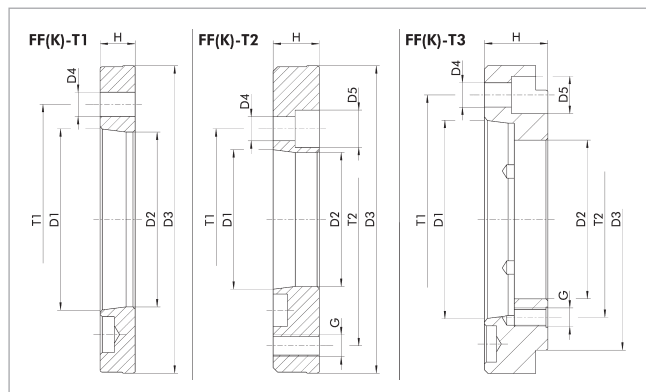


Technical data

Description	ID	Suitable for	$\varnothing A$ [mm]	B [mm]	K	Weight [kg]
SBS-G-C 400	8704560	ROTA NCF 400-120	120	41	-	4

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-T2 Z300-A6	FF-T2	0805004	ROTA NCF 400-120	Nr. 6	103.2	Z300	14 (6x60°)	20	M20 (6x60°) M20 (3x120°)	30	133.4	235
FF-T2 Z300-A8	FF-T2	0805005	ROTA NCF 400-120	Nr. 8	136.2	Z300	17 (6x60°)	26	M20 (6x60°) M20 (3x120°)	30	171.4	235
FF-T1 Z300-A11	FF-T1	0803004	ROTA NCF 400-120	Nr. 11	192.9	Z300	22 (6x60°) 22 (3x120°)			21	235	
FF-T3 Z300-A15-1	FF-T3	0803005	ROTA NCF 400-120	Nr. 15	190	Z300	26 (6x60°)	38	M20 (6 x 60°)	55	330.2	235
FF-T3 Z300-A15-2	FF-T3	0803022	ROTA NCF 400-120	Nr. 15	190	Z300	23 (6x60°)	35	M20 (6 x 60°)	55	330.2	235

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

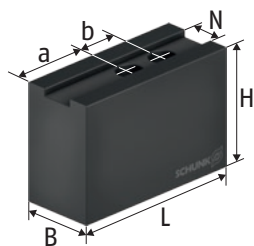
Reduction adapter plates are used if the mounting bolt circle of the spindle is smaller than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Expansion adapter plates FF-T3

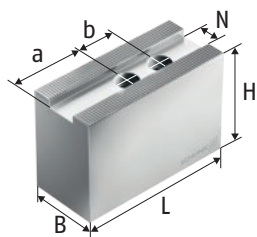
Expansion adapter plates are used if the mounting bolt circle of the spindle is larger than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Soft top jaws

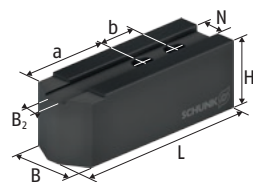
with fine serration 60°



KM-WB
Soft top jaws



KM-WBAL
Soft top jaws



KM-WBL
Soft top jaws

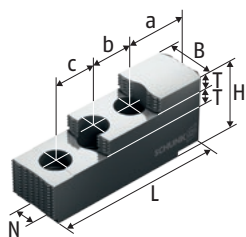
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCF 400-120	KM-WBL 150	0132605	22	60	60	185	112	43	M20	12.6
ROTA NCF 400-120	KM-WB 153	0132132	22	60	80	165	85	43	M20	15.5
ROTA NCF 400-120	KM-WB 155	0132156	22	60	120	165	85	43	M20	23.3
ROTA NCF 400-120	KM-WBAL 150	0132526	22	60	80	145	72	43	M20	4.8

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws

with fine serration 60°



SHB-J
Hard stepped top jaws

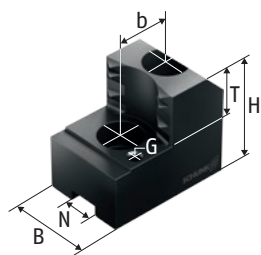
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA NCF 400-120	SHB-J 150	0133114	22	60	86	143	20	27	43	43	M20	8.6

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Claw jaws

with fine serration 60°



SZAJ
Claw jaws

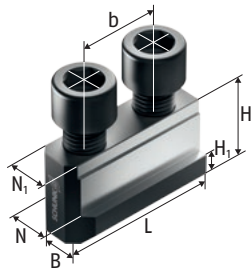
Technical data

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 NCF 400-120	46 - 141	424	SZAJ 38-1	0138135	22	60	85	155.5	33	M8	43	M20	10.6
ROTA NCF 400-120	102 - 198	429	SZAJ 38-2	0138136	22	60	85	135	33	M8	43	M20	9.2
ROTA NCF 400-120	161 - 258	429	SZAJ 38-3	0138137	22	60	85	108	33	M8	43	M20	7.5
ROTA NCF 400-120	222 - 320	450	SZAJ 38-4	0138138	22	60	85	109.5	33	M8	43	M20	7.5
ROTA NCF 400-120	282 - 380	467	SZAJ 38-5	0138139	22	60	85	118.5	33	M8	43	M20	8.2
ROTA NCF 400-120	342 - 400	478	SZAJ 38-6	0138140	22	60	85	139.5	33	M8	43	M20	9.5

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T-nut

with fine serration 60°



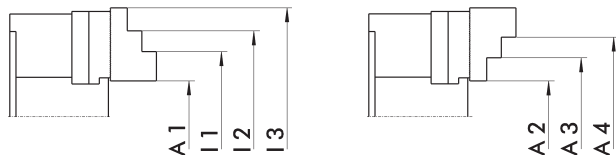
NJ
T-nut

Chuck type	Description	ID	N	B	H	H1	L	b	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA NCF 400-120	NJ 152	0146125	24	33.5	45.5	16.5	80	43	M20 x 60	300

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Hard stepped top jaws

with fine serration 60°



Jaw position I

Jaw position II

O.D. clamping

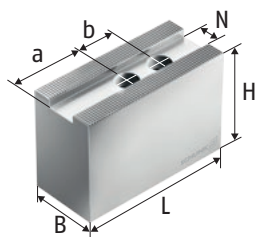
Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA NCF 400-120	SHB-J 150	0133114	55 - 234	35 - 166	159 - 233	226 - 400

I.D. clamping

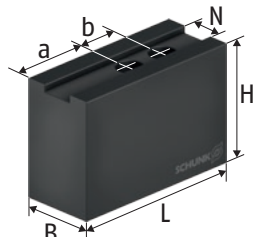
Chuck type	Description	ID	I1 [mm]	I2 [mm]
ROTA NCF 400-120	SHB-J 150	0133114	146 - 219	212 - 401

Soft top jaws

with fine serration 90°



SWB-AL
Soft top jaws



SWB
Soft top jaws

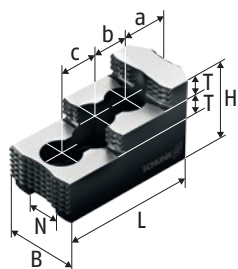
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCF 400-120	SWB-AL 400	0168103	25.5	60	100	155	90	35	M20	6.4
ROTA NCF 400-120	SWB 400	0120107	25.5	60	90	155	90	35	M20	16.0
ROTA NCF 400-120	CWB 400	0100008	25.5	60	80	140	75	35	M20	12.6

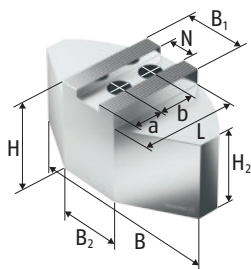
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

Hard stepped top jaws, Full grip jaws

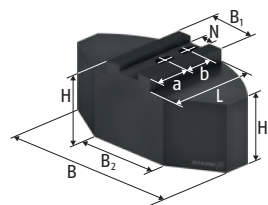
with fine serration 90°



SHB
Hard stepped top jaws



SWB-SA
Full grip jaws



SWB-SM
Full grip jaws

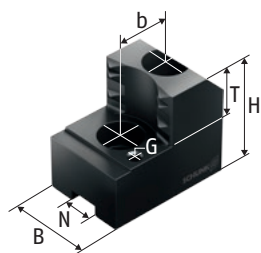
Technical data

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 NCF 400-120	SWB-SA 400	0170105	25.5	330	150	98	68	160		84.5	35		M20	24.4
ROTA NCF 400-120	SWB-SM 400	0169105	25.5	330	60	85	55	155		83.5	35		M20	53.8
ROTA NCF 400-120	SHB 400	0121107	25.5	60		75		140	18	53	31	31	M20	7.8

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Claw jaws

with fine serration 90°



SZA
Claw jaws

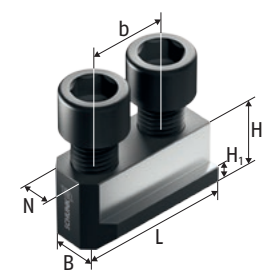
Technical data

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 NCF 400-120	70 - 169	433	SZA 40-11	0138300	25.5	60	78	149.3	33	M8	35	M20	8.0
ROTA NCF 400-120	144 - 244	469	SZA 40-13	0138302	25.5	60	78	131	33	M8	35	M20	8.0
ROTA NCF 400-120	227 - 320	449	SZA 40-14	0138303	25.5	60	78	131	33	M8	35	M20	8.0
ROTA NCF 400-120	298 - 392	487	SZA 40-15	0138304	25.5	60	78	150	33	M8	35	M20	9.3

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T-nut

with fine serration 90°



NK
 T-nut



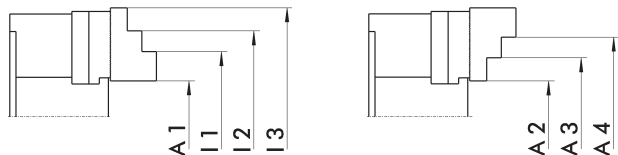
NS
 T-nut

Chuck type	Description	ID	N	B	H	H1	L	b	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA NCF 400-120	NK 200	0145102	25.5	36	29	11	63	35	M20 x 40	220
ROTA NCF 400-120	NS 200	0140103	25.5	35.8	29	11	27.8		M20 x 40	220

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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 NCF 400-120	SHB 400	0121107	30 - 214	83 - 192	185 - 294	287 - 400

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCF 400-120	SHB 400	0121107	105 - 214	207 - 315	308 - 480

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 NCF 400-120	IFT Set	1404235

Extension set for large chucks

For use as an extension of the IFT measuring head for measuring the jaw clamping force of large chucks of Ø 400 mm and more.



Suitable for	Description	ID
ROTA NCF 400-120	IFT adapter set	1498512

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

Mounting wrench

For power lathe chucks with turnable threaded rings as wrench design with driving pins that snap into the threaded ring.



Suitable for	Description	ID
ROTA NCF 400-120	SSH-MN Ø120-228	8700302

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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