SCHUNK

ROTA NCF *plus* 2

Power lathe chuck with centrifugal force compensation and large through-hole

Hand in hand for tomorrow

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

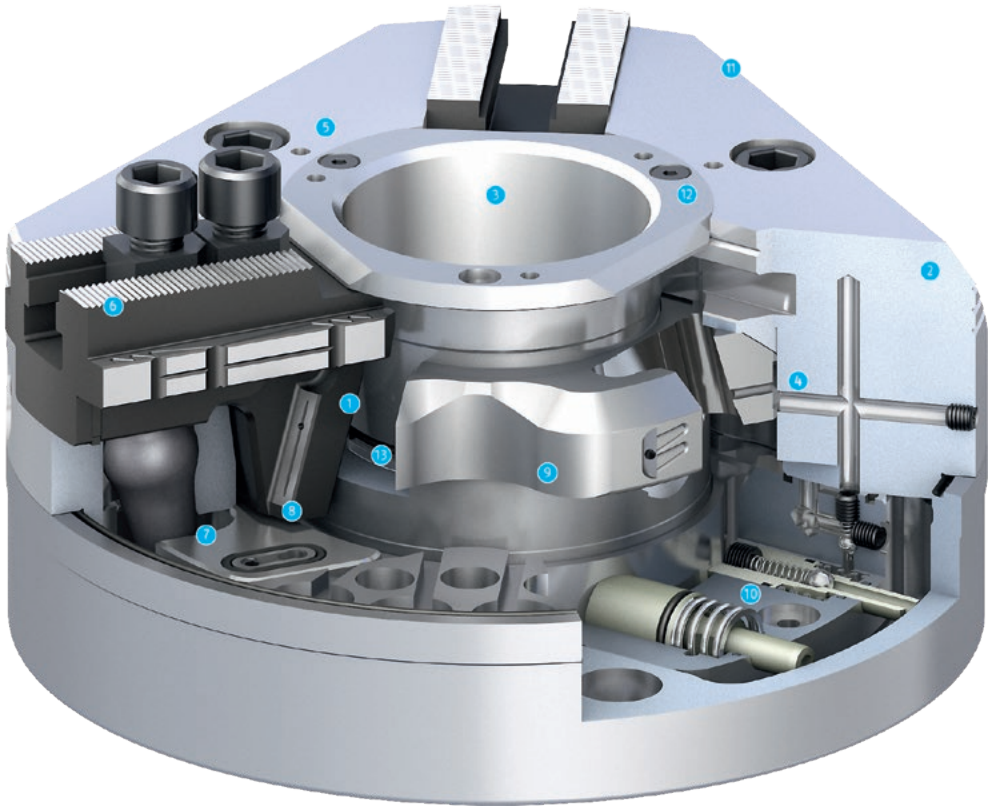
- **Precision wedge-hook power lathe chuck for highest quality requirements**
  Allows excellent machining results
- **Very high RPM without essential clamping force reduction**
  Optimum utilization of the lathe chuck performance due to high economic efficiency
- **With integrated centrifugal force 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.

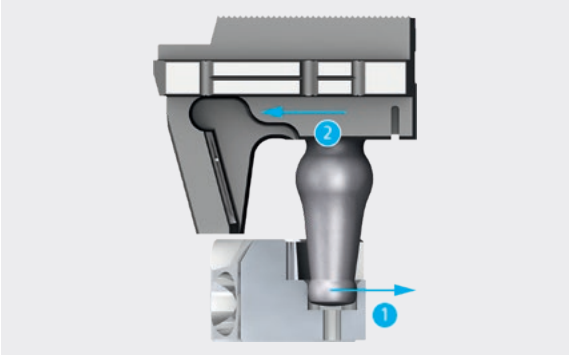


1. **Wedge hook drive**
   Offers constantly high clamping forces in operation
2. **Hardened and extremely rigid base body**
   Therefore a longer service life at highest precision. Even with maximum clamping force
3. **Large through-hole**
   For machining of all standard raw material diameters
4. **Optimized lubrication system**
   For a high level of efficiency
5. **Mounting thread**
   For workpiece stops or cover plates
6. **Base jaw serration**
   Available in inch or metric sizes
7. **Integrated centrifugal force compensation**
   For constant clamping force even at top speeds
8. **Robust and advanced wedge-hook**
   For excellent power transmission
9. **Innovative piston guidance**
   Optimizes the force flow and provides optimal rigidity
10. **Integrated, patented grease pump system**
    For permanent grease circulation during every clamping stroke. Extended maintenance intervals can be realized as a result
11. **Weight-optimized design**
    For great economy in daily use
12. **Modular center sleeve system**
    Therefore optimal adjustment to new clamping tasks
13. **Additional seals**
    For sealing against coolants and chips

Integrated centrifugal force compensation

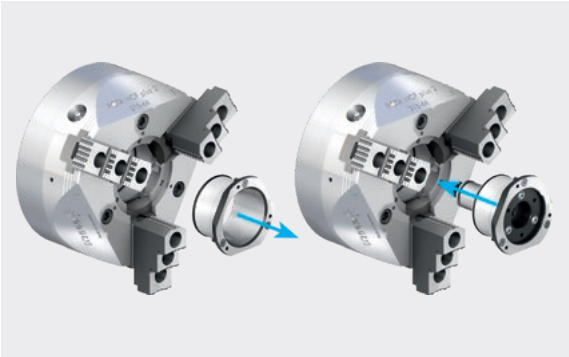
Compared to conventional lathe chucks, the loss of clamping force is compensated by the integrated centrifugal force compensation. Due to the speed, the centrifugal force balancing weight is pressed to the outside. The lever directly transmits the force onto the base jaw.

1. **Centrifugal force via compensation weight**
2. **Clamping force support for O.D. clamping**



Changing the center sleeve

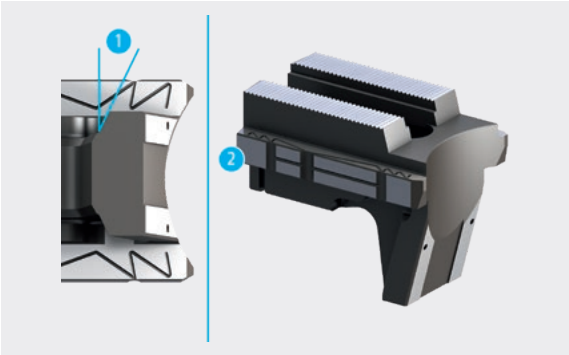
The modular center sleeves can be changed quickly and easily while the chuck remains mounted. When the three screws are undone, all the protection sleeves can be pulled off from the front and replaced.



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°.

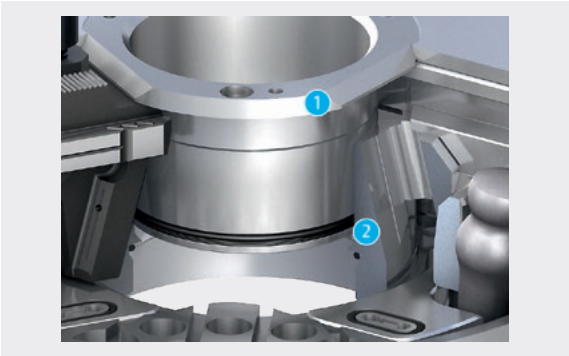
1. **Trapezoidal angle**
   Between the base jaw and piston
2. **Precision flat guidance**



Additional sealing inside of the center sleeve and optimized greasing system

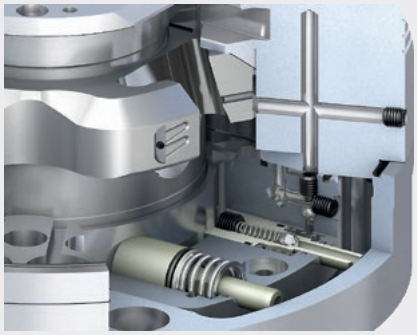
Therefore the maintenance intervals are longer and permanent supply to all function and friction surfaces is ensured.

1. **Modular center sleeve**
   Also exchangeable in built-in condition from the front chuck face
2. **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

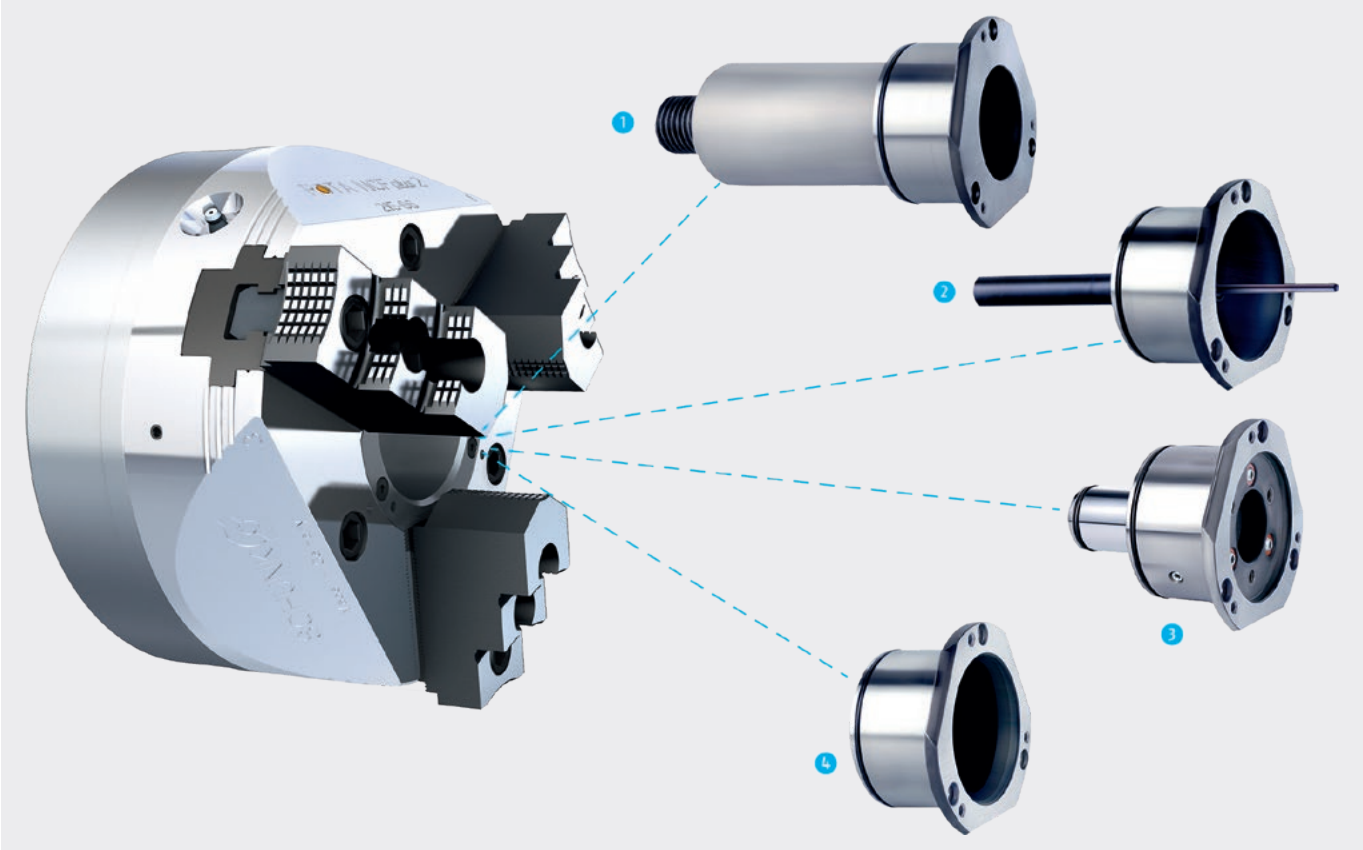


Very rigid and hardened chuck body

With direct short taper mounting without intermediate flange.

1. **Chuck body**
2. **Piston**

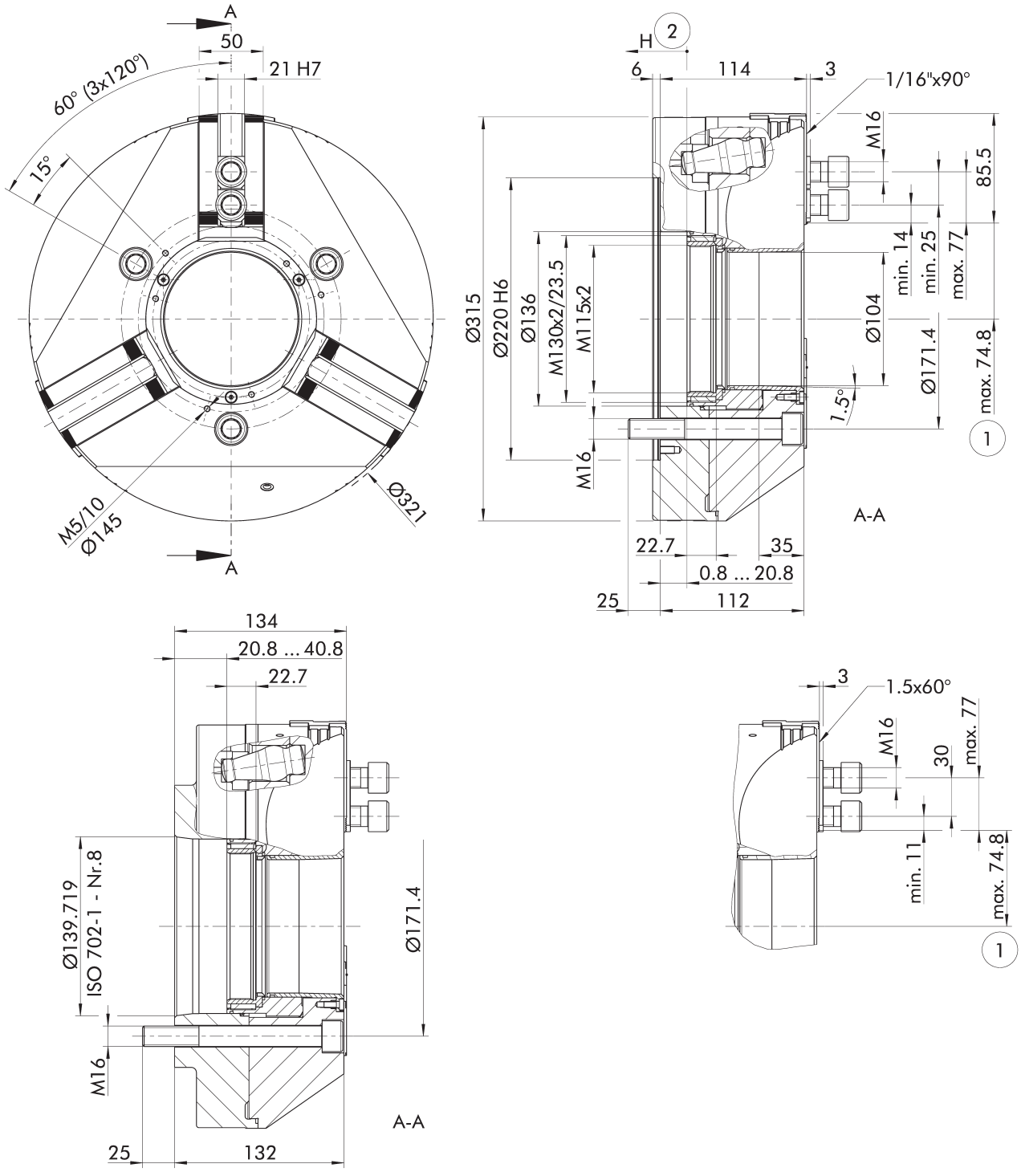
Modular center sleeve system



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.

ⓘ 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 [kgm²]	Weight [kg]
ISO 702-4	Nr. 8 (Z220)	*0854136*	1/16" x 90°	4000	160	70	0.61	47
ISO 702-1	Nr. 8	*0854137*	1/16" x 90°	4000	160	70	0.63	49
ISO 702-4	Nr. 8 (Z220)	*0854138*	1.5 mm x 60°	4000	160	70	0.61	47
ISO 702-1	Nr. 8	*0854139*	1.5 mm x 60°	4000	160	70	0.63	49

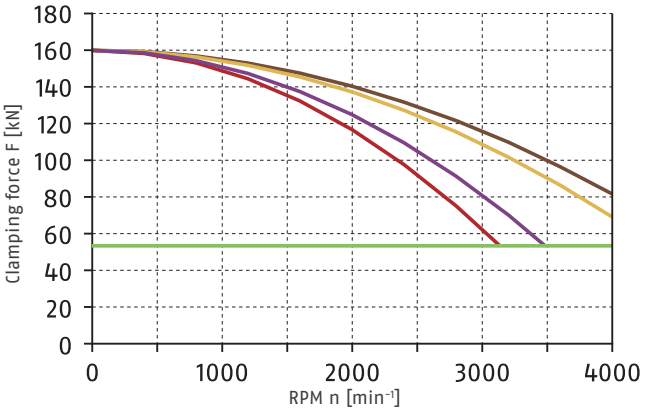
Scope of delivery

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 plus 2 315-104	104	5.3	20	58

Clamping force-RPM-diagram



Required minimum clamping force F_{spmin} 33%

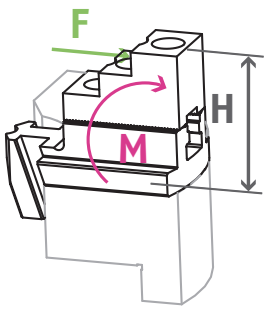
SHB 250
3.5 kg

SWB 250
9.2 kg

SHB-J 126
5.15 kg

KM-WB 126
7.56 kg

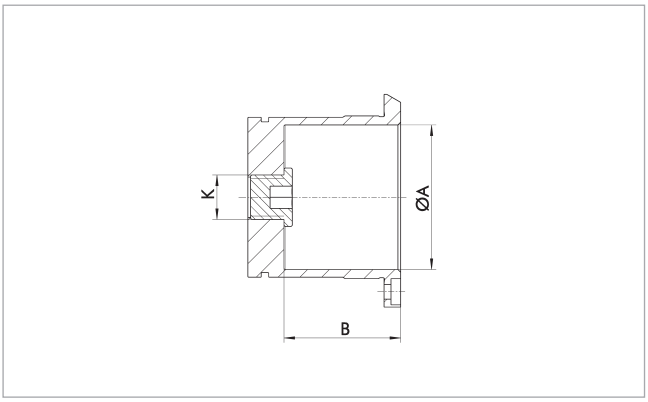
Load of base jaw guidance

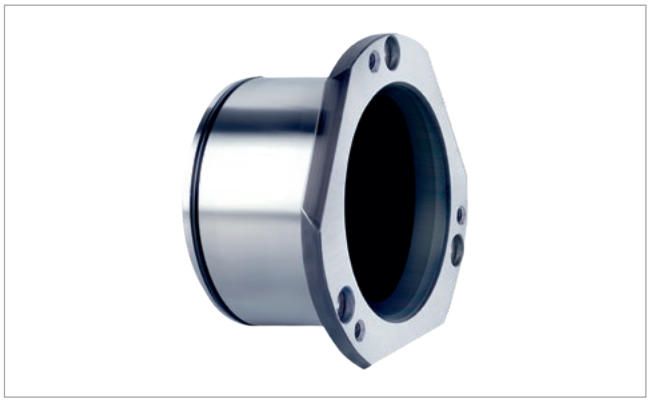


M_{max} = 3973 Nm

Center sleeves

Center sleeve closed

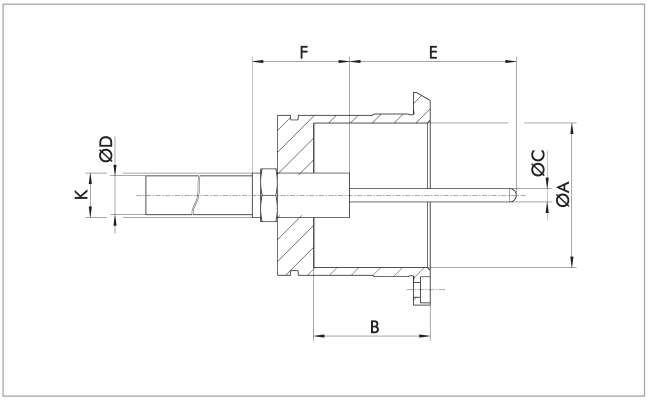


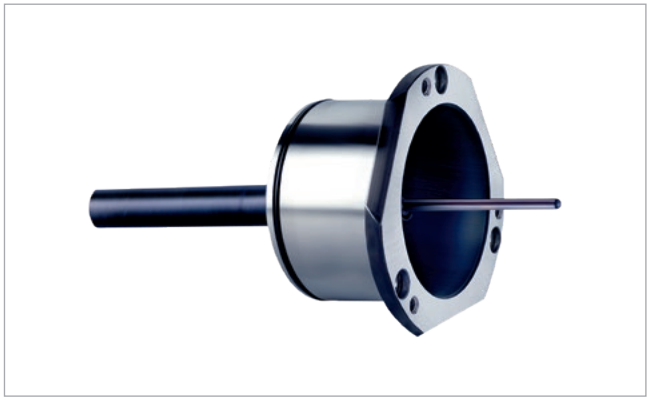


Technical data

Description	ID	Suitable for	ØA [mm]	B [mm]	K	Weight [kg]
SBS-G-C2 315	*8705198*	ROTA NCF plus 2 315-104	104	44	M16x1.5	1.6

Protection sleeve with ejector



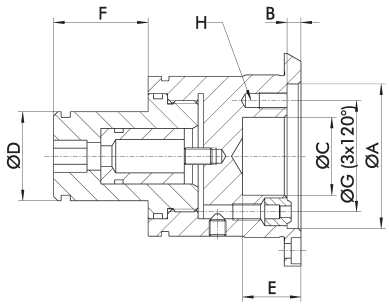


Technical data

Description	Suitable for	ØA [mm]	B [mm]	ØC [mm]	ØD [mm]	E [mm]	F [mm]	K
SBS-A-C2 315	ROTA NCF plus 2 315-104	104	44	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

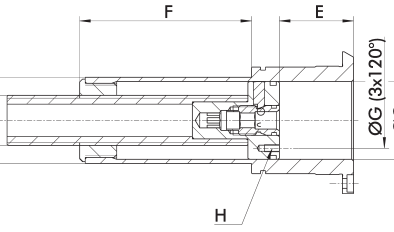
Protection sleeve with spray nozzles



Technical data

Description	ID	Suitable for	ØA [mm]	B [mm]	ØC [mm]	ØD [mm]	F [mm]	ØG [mm]	H	Weight [kg]
SBS-S-C2 315	8705196	ROTA NCF plus 2 315-104	104	5	48	32	47	76	M6x10	4.2

Center sleeve with adjustable stop



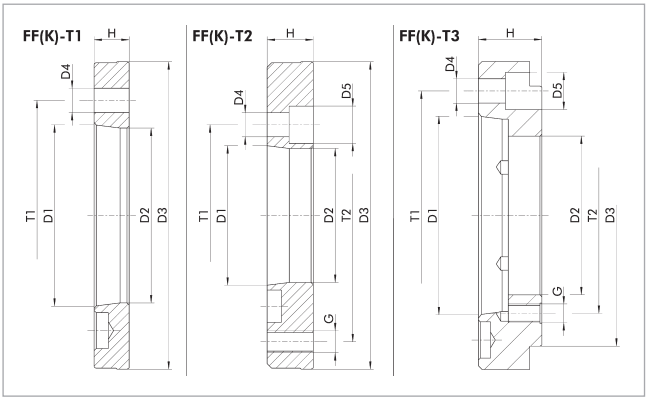
Technical data

Description	ID	Suitable for	ØC [mm]	ØD [mm]	E [mm]	F [mm]	ØG [mm]	H	K	Weight [kg]
SBS-T-C2 315	8705192	ROTA NCF plus 2 315-104	75	80.5	0 - 110.8	104.8	50	M6x12	M27	4.9

- Important: Check the spindle/draw tube through-hole
- The spindle through-hole must be at least Ø D + 0.5 mm

Adapter plates

Z-mount on short taper ISO 702-1



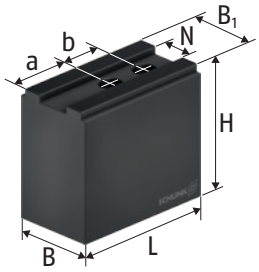
Technical data

Description	Adapter plate type	ID	Suitable for	D1	D2 [mm]	D3	D4 [mm]	D5 [mm]	G	H [mm]	T1 [mm]	T2 [mm]
FF-T2 Z220-A5	FF-T2	*0805002*	ROTA NCF plus 2 315-104	Nr. 5	79.6	Z220	11 (6x60°)	17	M16 (6x60°) M16 (2x180°)	28	104.8	171.4
FF-T2 Z220-A6	FF-T2	*0805003*	ROTA NCF plus 2 315-104	Nr. 6	103.2	Z220	13 (6 x 60°)	20	M16 (6x60°) M16 (2x180°)	28	133.4	171.4
FF-T1 Z220-A8	FF-T1	*0803002*	ROTA NCF plus 2 315-104	Nr. 8	136.2	Z220	17 (6x60°) 17 (2x180°)			19	171.4	
FF-T3 Z220-A11	FF-T3	*0803003*	ROTA NCF plus 2 315-104	Nr. 11	130	Z220	21 (6x60°)	32	M16 (12 x 30°)	50	235	171.4
FF-T3 Z220-A15-1	FF-T3	*0803020*	ROTA NCF plus 2 315-104	Nr. 15	145	Z220	26 (6x60°)	38	M16 (6x60°)	55	330.2	171.4
FF-T3 Z220-A15-2	FF-T3	*0803021*	ROTA NCF plus 2 315-104	Nr. 15	145	Z220	23 (6x60°)	35	M16 (6x60°)	55	330.2	171.4

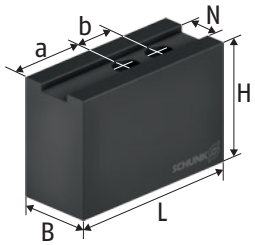
Direct adapter plates
Direct adapter plates are used if the spindle mounting bolt circle has the same size as the lathe chuck mounting bolt circle. The adapter plate has to be mounted on to the spindle together with the lathe chuck. The adapter plate is preassembled on the lathe chuck.
Reduction adapter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

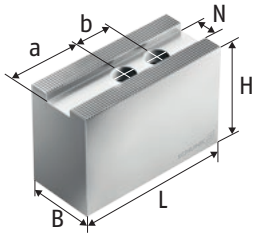
with fine serration 60°



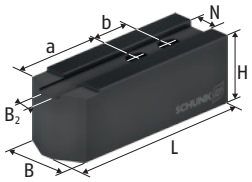
SKN
Soft top jaws



H-WB
Soft top jaws



KM-WBAL
Soft top jaws



KM-WBL
Soft top jaws

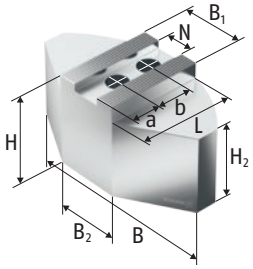
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	B1 [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCF plus 2 315-104	KM-WBL 121	*0132604*	21	50		50	145	85	30	M16	6.9
ROTA NCF plus 2 315-104	KM-WBL 125	*0132618*	21	50		100	145	85	30	M16	13.9
ROTA NCF plus 2 315-104	H-WB 125	*0130124*	21	50		60	111	51	35	M16	6.2
ROTA NCF plus 2 315-104	KM-WB 126	*0132131*	21	50		60	129	60	30	M16	7.6
ROTA NCF plus 2 315-104	KM-WB 127	*0132148*	21	50		100	140	71	30	M16	13.8
ROTA NCF plus 2 315-104	KM-WB 128	*0132154*	21	50		80	129	60	30	M16	10.1
ROTA NCF plus 2 315-104	KM-WBAL 121	*0132525*	21	50		80	130	60	30	M16	3.8
ROTA NCF plus 2 315-104	SKN 350	*0127107*	21	50	49	80	120	67	28	M16	9.1

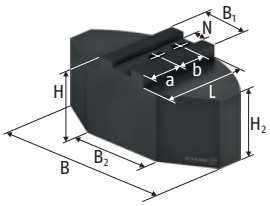
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws, Full grip jaws

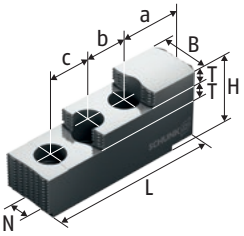
with fine serration 60°



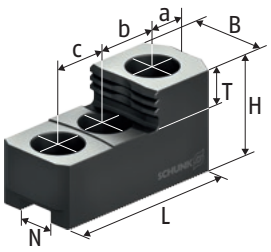
KMWB-SA
Full grip jaws



KMWB-SM
Full grip jaws



SHB-J
Hard stepped top jaws



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 NCF plus 2 315-104	KMWB-SA 301	*0132804*	21	240	50	78	63	117		45	30		M16	10.9
ROTA NCF plus 2 315-104	KMWB-SM 301	*0132704*	21	240	50	70	55	110		45	30		M16	26.4
ROTA NCF plus 2 315-104	SHB-J 126	*0133105*	21	50		62		128	14	46	30	30	M16	5.2
ROTA NCF plus 2 315-104	SHB-J 122	*0133113*	21	50		52		104	18	20	30	30	M16	3.3

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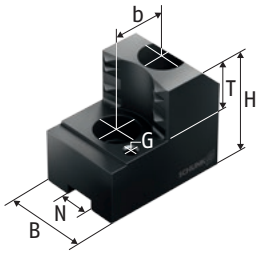
Claw jaws

with fine serration 60°



SZAJ
Claw jaws

Technical data

Chuck type	Clamping range ØD [mm]	Swing diameter SDmax [mm]	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	G	b [mm]	Screws	m/SET [kg]
ROTA NCF plus 2 315-104			SZAJ 30-5	*0138131*	21	50	65	120	25	M8	30	M16	3.8
ROTA NCF plus 2 315-104	118 - 194	364	SZAJ 30-6	*0138132*	21	50	65	100.5	25	M8	30	M16	4.1
ROTA NCF plus 2 315-104	185 - 261	353	SZAJ 30-7	*0138133*	21	50	65	79.5	25	M8	30	M16	3.4
ROTA NCF plus 2 315-104	249 - 326	397	SZAJ 30-8	*0138134*	21	50	65	109.5	25	M8	30	M16	4.8

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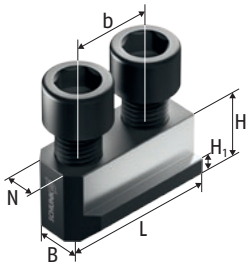
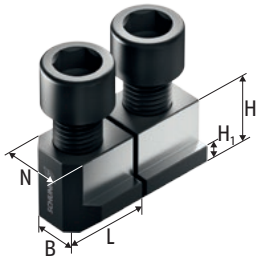
T-nut

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 NCF plus 2 315-104	NJ 124 gesägt/sawn	0146000	21	29.4	28	11.5	24.7		M16 x 40	150
ROTA NCF plus 2 315-104	NJ 124	0146123	21	29.4	28	11.5	55.2	30	M16 x 40	150

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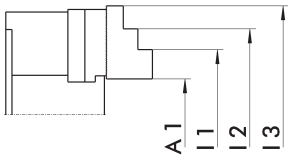
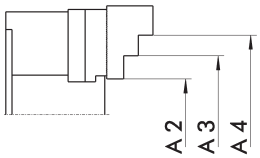
Hard stepped top jaws

with fine serration 60°



Jaw position I



Jaw position II

O.D. clamping

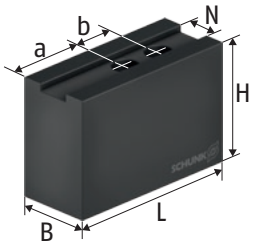
Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA NCF plus 2 315-104	SHB-J 126	*0133105*	16 - 149	51 - 148	143 - 240	235 - 315

I.D. clamping

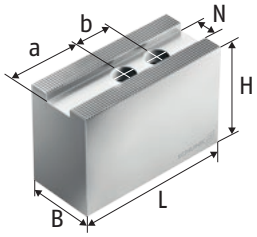
Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCF plus 2 315-104	SHB-J 126	*0133105*	88 - 185	180 - 276	271 - 380

Soft top jaws

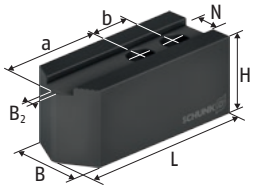
with fine serration 90°



CWB
Soft top jaws



SWB-AL
Soft top jaws



SWBL
Soft top jaws

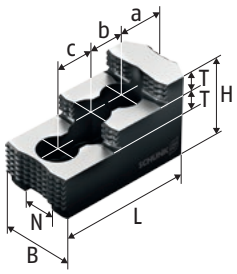
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCF plus 2 315-104	SWBL 250-21	*0120155*	21	50	50	120	72	28	M16	5.4
ROTA NCF plus 2 315-104	CWB 251	*0100012*	21	50	60	95	52	28	M16	5.2
ROTA NCF plus 2 315-104	SWB 250	*0120105*	21	50	80	120	62	28	M16	9.2
ROTA NCF plus 2 315-104	SWB-AL 250	*0168102*	21	50	80	120	62	28	M16	3.3

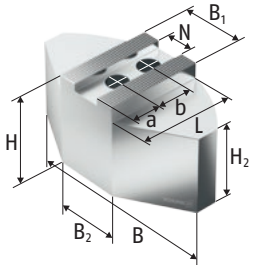
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws, Full grip jaws

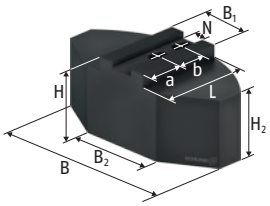
with fine serration 90°



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 plus 2 315-104	SWB-SA 315	*0170104*	21	240	50	78	63	117		70	28		M16	11.0
ROTA NCF plus 2 315-104	SWB-SM 315	*0169104*	21	240	50	70	55	110		60	28		M16	26.6
ROTA NCF plus 2 315-104	SHB 250	*0121105*	21	50		58		103.5	14	34	25	25	M16	3.5
ROTA NCF plus 2 315-104	SHB 315	*0121111*	21	50		58		128	14	46	30	30	M16	4.6

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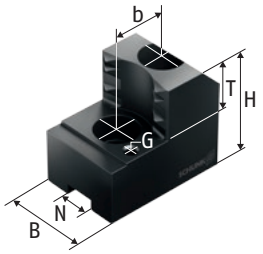
Claw jaws

with fine serration 90°



SZA
Claw jaws

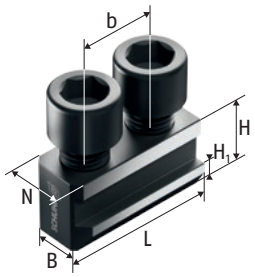
Technical data

Chuck type	Clamping range ØD [mm]	Swing diameter SDmax [mm]	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	G	b [mm]	Screws	m/SET [kg]
ROTA NCF plus 2 315-104	59 - 136	341	SZA 31-10	*0138184*	21	50	58	115.4	25	M8	28	M16	3.4
ROTA NCF plus 2 315-104	117 - 194	343	SZA 31-11	*0138185*	21	50	58	92.1	25	M8	28	M16	3.4
ROTA NCF plus 2 315-104	183 - 260	341	SZA 31-12	*0138186*	21	50	58	87.3	25	M8	28	M16	3.2
ROTA NCF plus 2 315-104	246 - 324	401	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

T-nut

with fine serration 90°



NKA
T-nut

NKS
T-nut

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	H1 [mm]	L [mm]	b [mm]	Cyl.-screw	Max. adm. tightening torque [Nm]
ROTA NCF plus 2 315-104	NKA 3	*0145105*	21	25	26.5	10	54	28	M16 x 35	150
ROTA NCF plus 2 315-104	NKS 3	*0143107*	21	25	26.5	10	25		M16 x 35	150

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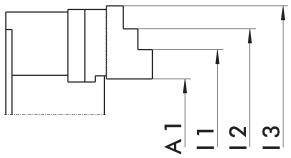
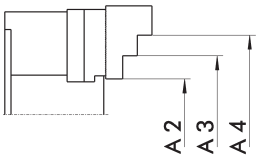
Hard stepped top jaws

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 NCF plus 2 315-104	SHB 250	*0121105*	44 - 183	69 - 156	151 - 229	224 - 315

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCF plus 2 315-104	SHB 250	*0121105*	97 - 175	170 - 255	250 - 380

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 plus 2 315-104	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 NCF plus 2 315-104	SSH-MR Ø104-150-3	*8703808*

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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