

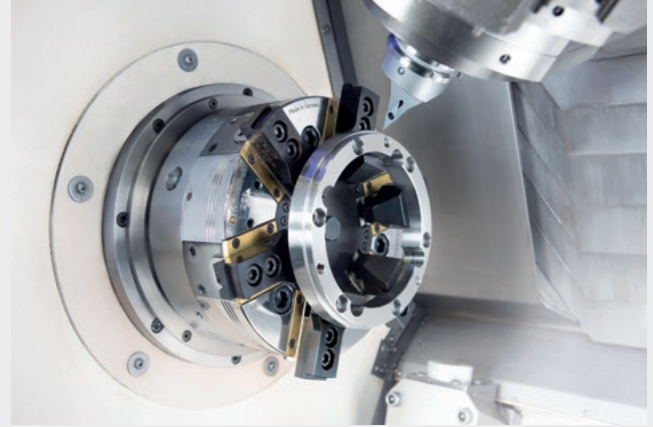


ROTA NCR-A

**Sealed 6-jaw compensation
chuck with pendular
compensation**

Sealed 6-jaw compensation chuck for deformation sensitive clamping of thin-walled workpieces

Sealed 6-jaw compensation chuck for deformation-sensitive clamping of thin-walled workpieces. The sealing system ensures constant clamping forces, minimal maintenance costs and an even wider range of applications, such as the machining of cast-iron parts.



Advantages – Your benefits

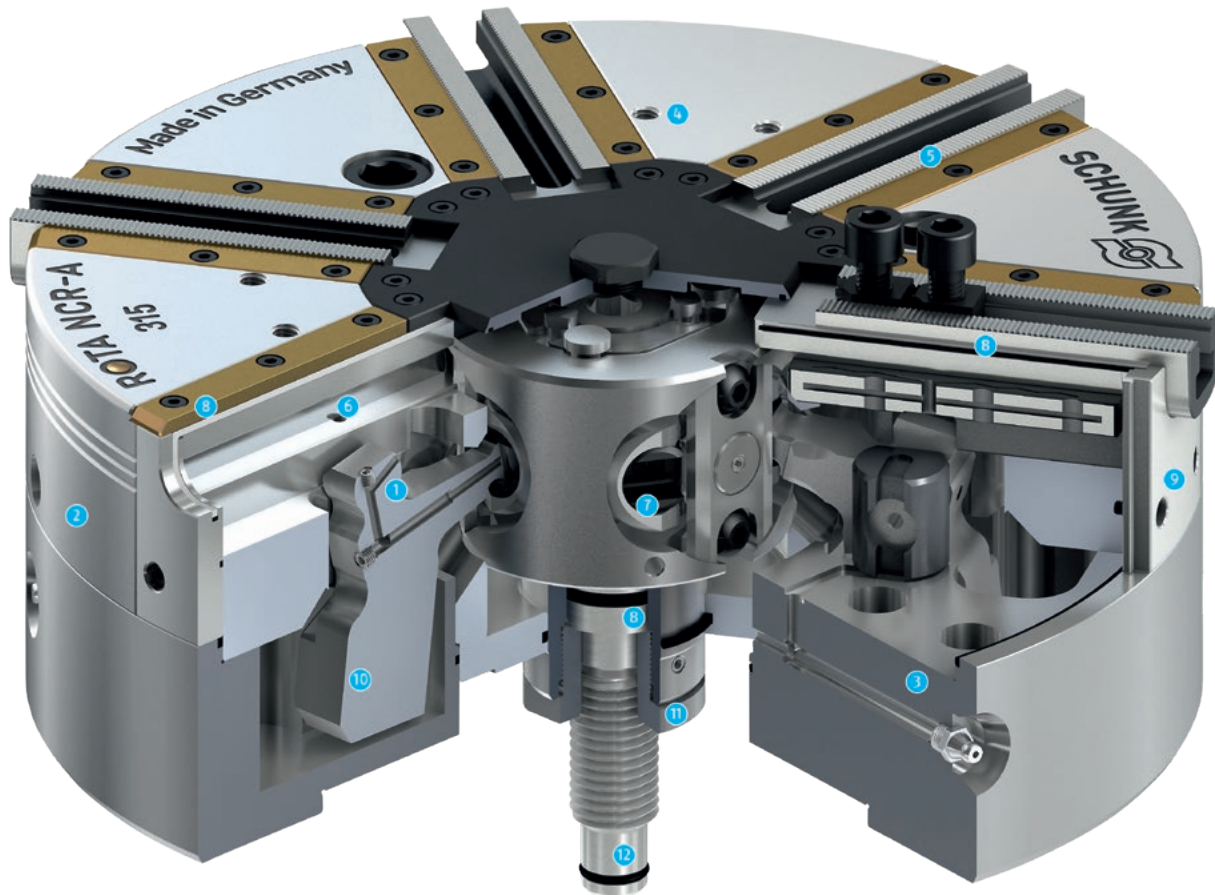
- + Sealed power lathe chuck**
For significantly longer maintenance intervals
- + Precision angle lever power lathe chuck**
Allows excellent machining results
- + High efficiency of the angle lever system**
Process-reliable clamping due to high clamping forces
- + Optimum jaw support for O.D. and I.D. clamping due to a very long base jaw guidance**
Allows high clamping forces at a long service life
- + Optimized lubrication system**
Consistently high clamping forces ensured
- + Media feed-through (coolant or air) integrated in the chuck body**
Flexibility depending on the application
- + Low height design**
For maximum utilization of the machine room
- + Deformation sensitive clamping of thin-walled workpieces**
High degree of roundness of the workpieces
- + Very accurate clamping of non-circular components**
Perfect for castings
- + All sides of the functional parts are hardened and ground**
Ensures a long service life

Technical data

Description	Max. rotational speed	Max. clamping force	Max. actuating force	Stroke/jaw	Piston stroke	Pendulum compensation
	[min ⁻¹]	[kN]	[kN]	[mm]	[mm]	[mm]
ROTA NCR-A 190	4000	36	22	6	13.5	±1
ROTA NCR-A 250	3000	64	38	8	18.5	±2
ROTA NCR-A 315	2500	80	40	8	20	±2
ROTA NCR-A 400	1400	100	54	12	30	±2.5
ROTA NCR-A 500	1200	125	65	12	30	±2.5
ROTA NCR-A 630	1000	160	80	16	40	±3.5
ROTA NCR-A 800	700	160	80	16	40	±3.5
ROTA NCR-A 1000	600	300	150	25	60	±6

Function of ROTA NCR-A

The axially movable piston transfers the force to the base jaws via angle levers mounted in the base body, and generates a radial jaw movement synchronized with the rotation axis.



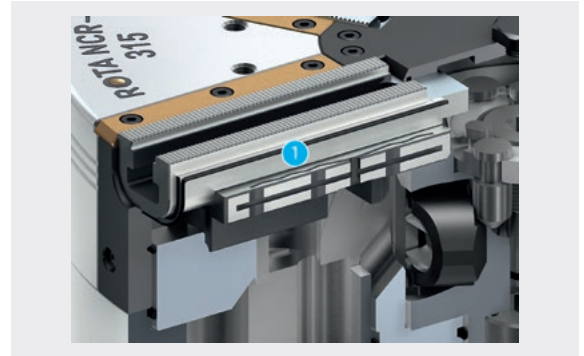
- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Angle lever drive
Offers constantly high clamping forces in operation 2 Hardened and extremely rigid base body
Therefore a longer service life at highest precision. Even with maximum clamping force 3 Optimized lubrication system
For a high level of efficiency 4 Mounting thread
For workpiece stops or cover plates 5 Base jaw serration
Size 190 with tongue and groove and available in inches for size 250 and larger 6 Long jaw guidance
Offers optimal support for O.D.- and I.D. clamping | <ul style="list-style-type: none"> 7 Internal pendulum body
Connection with one each base jaw pair 8 Sealing of the lathe chuck
Consists of a gasket and O-rings for the initial tension 9 Cover element
Serves to seal the lining and additionally protects the base jaw 10 Integrated centrifugal force compensation as an option
For constant clamping force even at top speeds 11 Optimized piston mount
For easy and fast chuck assembly 12 Central media supply
Available on request for air control or coolant |
|--|---|

Innovative sealing system starting from size 250

An innovative sealing system – consisting of a specially designed gasket – prevents grease from being rinsed out during machining. This in turn prevents a gradual loss of clamping force. Advantage: The chuck is additionally protected against the penetration of dirt and chips.

1 Gasket

Guarantees a smooth pendulum mechanism



Advantages of the 6-point clamping

The inner pendulum mechanism evenly transmits the clamping force to all six jaws. Thin-walled workpiece are then clamped with minimal deformation. The deformation in the case of a ring-shaped workpiece is therefore reduced up to a factor of 10 as opposed to a comparable clamping set-up in a 3-jaw chuck.

1 Clamping of a ring in the 6-jaw pendulum compensation chuck ROTA NCR-A with 20 kN total clamping force

Diameter: Ø 114 mm

Wall thickness: 6 mm

Material: Steel

Deformation: approx. 0.035 mm

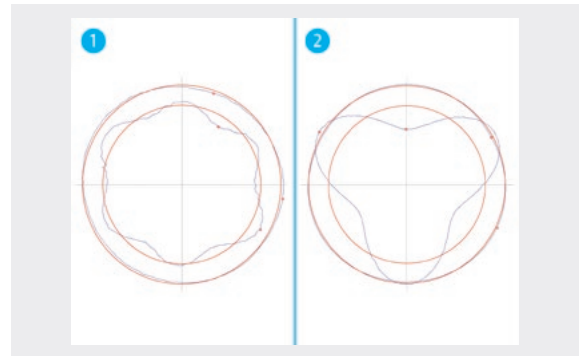
2 Clamping of a ring in the 3-jaw power lathe chuck with a total clamping force of 20 kN

Diameter: Ø 114 mm

Wall thickness: 6 mm

Material: Steel

Deformation: approx. 0.32 mm



Easy actuation

The centric, six-point workpiece clamping uses two base jaws linked by a compensation piece. The internal mechanics is contamination-free and very smoothly running. The lathe chuck actuation is also possible with very low clamping forces.

1 Pendulum bodies

2 Angle lever

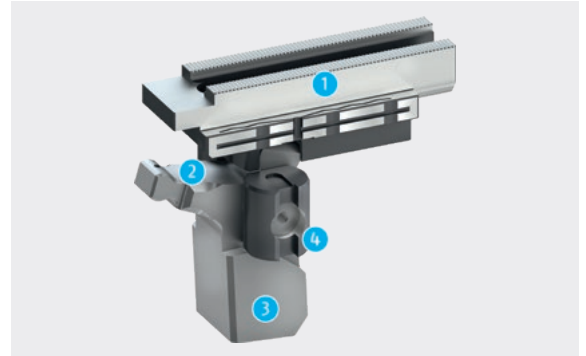
3 Chuck piston



Force transmission

The force is transmitted via extremely rigid angle levers that ensures a long service life.

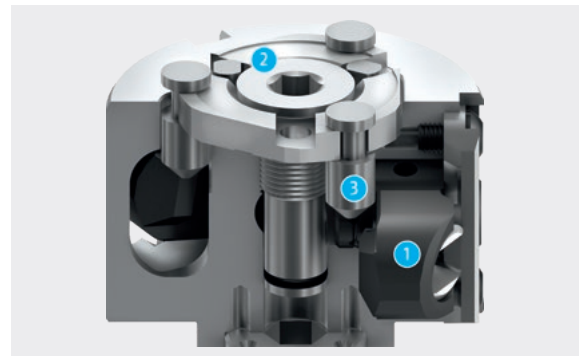
- 1 **Base jaw**
With jaw interface for standard top jaws by SCHUNK
- 2 **Angle lever**
Transfers the axial piston movement onto the jaw
- 3 **Optional with centrifugal force compensation**
For less clamping force loss
- 4 **Lever bearing**



Compensating workpiece clamping

The compensating workpiece clamping is achieved by using a floating compensation piece. The oscillating clamp is retracted completely, releasing all three compensation pieces. This allows a compensating clamping of the workpiece.

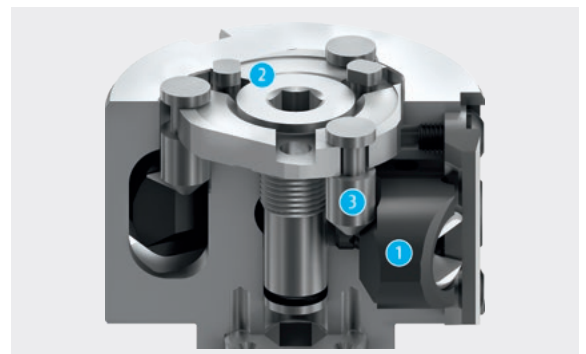
- 1 **Pendulum body loose**
- 2 **Adjusting screw**
- 3 **Pendulum locking open**

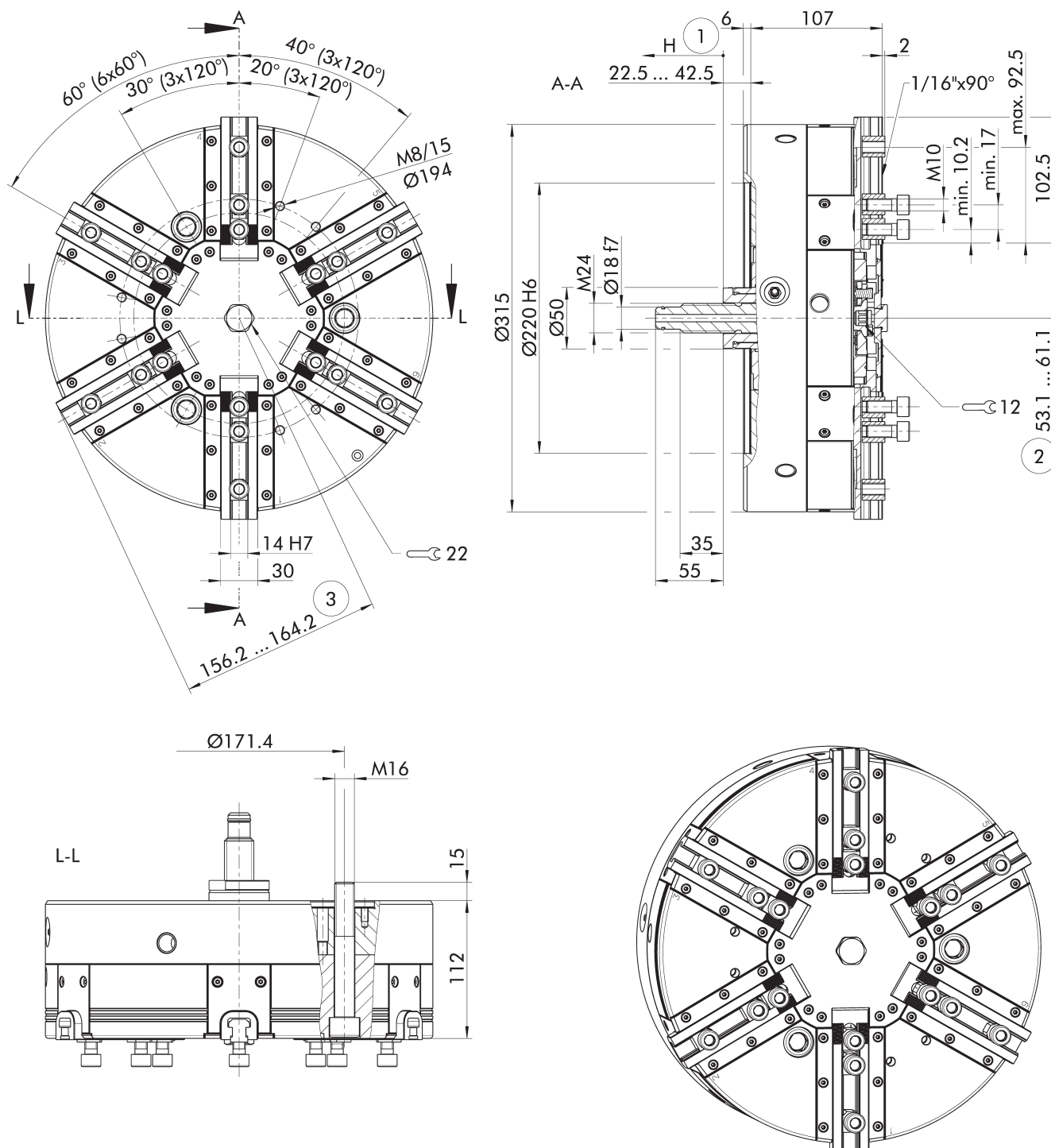


Centric workpiece clamping

The centric workpiece clamping is achieved using a fixed compensation piece. The oscillating clamp is moved all the way to the bottom so that all three compensation pieces are clamped. As a result, all six jaws clamp centrically.

- 1 **Pendulum body locked**
- 2 **Adjusting screw**
- 3 **Pendulum clamping locked**





Chuck for shaft clamping drawn in open position.
Pendulum compensation shown in center position.
Subject to technical changes.

- ① Piston stroke direction
- ② Distance to center of first tooth

- ③ Swing diameter radius

Technical data

Spindle type	Spindle size	ID	Serration	Centrifugal force compensation	Max. rotational speed [min ⁻¹]	Max. clamping force [kN]	Max. actuating force [kN]	Weight [kg]
ISO 702-4	Nr. 8 (Z220)	1339987	1/16" x 90°		2500	80	40	55
ISO 702-4	Nr. 8 (Z220)	1339988	1/16" x 90°	●	2500	80	40	61

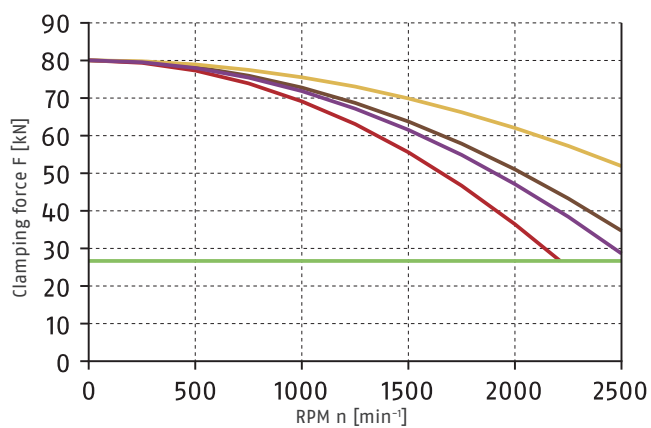
Scope of delivery

Chuck, T-nuts or mounting screws for top jaws, chuck mounting screws, eye bolt, and operating manual

Further technical data

Chuck type	Stroke/jaw [mm]	Pendulum compensation [mm]	Piston stroke (H) [mm]	Center jaw height [mm]
ROTA NCR-A 315	8	±2	20	53

Clamping force-RPM-diagram



Required minimum clamping force F_{spmin} 33%

SHB 165
1.3 kg



SWB 165
2.5 kg



SHB 165*
1.3 kg

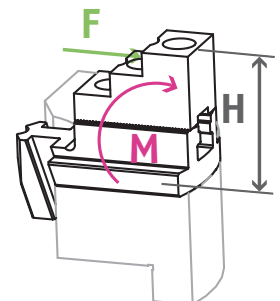


SWB 165*
2.5 kg



*with centrifugal force compensation

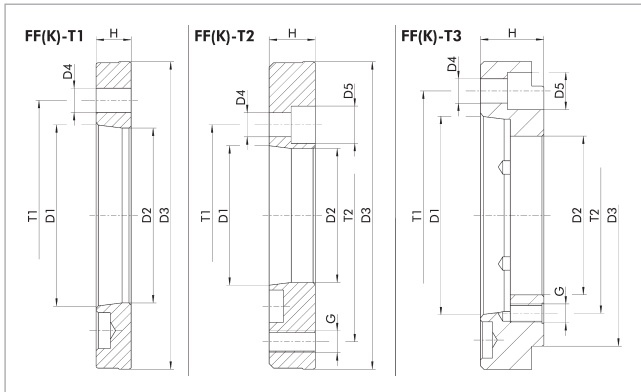
Load of base jaw guidance



$$M_{max} = 707 \text{ Nm}$$

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 Z220-A5	FF-T2	0805002	ROTA NCR-A 315	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 NCR-A 315	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 NCR-A 315	Nr. 8	136.2	Z220	17 (6x60°) 17 (2x180°)			19	171.4	
FF-T3 Z220-A11	FF-T3	0803003	ROTA NCR-A 315	Nr. 11	130	Z220	21 (6x60°)	32	M16 (12 x 30°)	50	235	171.4
FF-T3 Z220-A15-1	FF-T3	0803020	ROTA NCR-A 315	Nr. 15	145	Z220	26 (6x60°)	38	M16 (6x60°)	55	330.2	171.4
FF-T3 Z220-A15-2	FF-T3	0803021	ROTA NCR-A 315	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

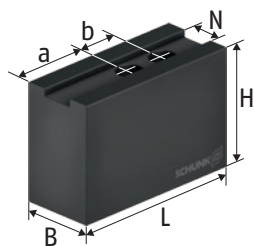
Reduction adapter plates are used if the mounting bolt circle of the spindle is smaller than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Expansion adapter plates FF-T3

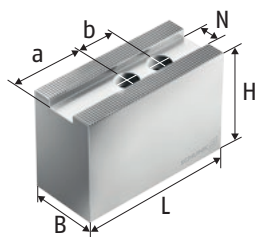
Expansion adapter plates are used if the mounting bolt circle of the spindle is larger than the one of the lathe chuck mounting bolt circle. The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Soft top jaws

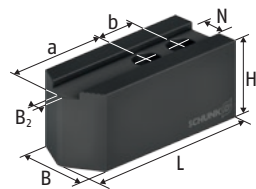
with fine serration 90°



SWB
Soft top jaws



SWB-AL
Soft top jaws



SWBL
Soft top jaws

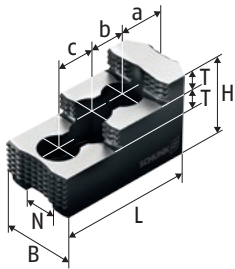
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCR-A 315	SWBL 165	0120152	14	35	40	80	45	20	M10	2.1
ROTA NCR-A 315	SWB 165	0120101	14	35	60	68	33	20	M10	2.5
ROTA NCR-A 315	SWB-AL 165	0168105	14	35	60	80	45	20	M10	1.2

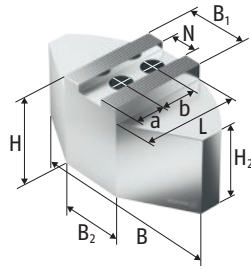
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws, Full grip jaws

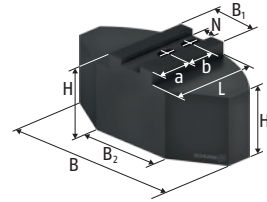
with fine serration 90°



SHB
Hard stepped top jaws



SWB-SA
Full grip jaws



SWB-SM
Full grip jaws

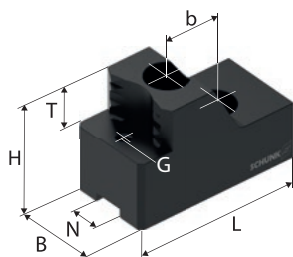
Technical data

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 NCR-A 315	SWB-SA 165	0170099	14	120	40	58	48	59.5		25	20		M10	2.2
ROTA NCR-A 315	SWB-SM 165	0169099	14	120	40	60	50	59.5		24.5	20		M10	6.0
ROTA NCR-A 315	SHB 165	0121101	14	30		46		79.7	11	16.6	22	22	M10	1.3

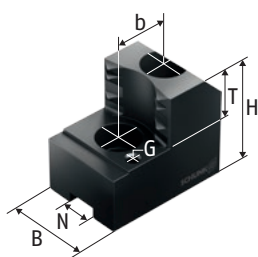
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Claw jaws

with fine serration 90°



SZA
Claw jaws



SZA
Claw jaws

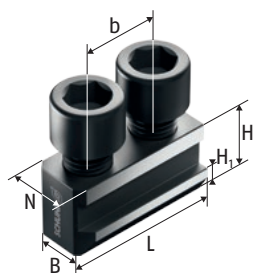
Technical data

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 NCR-A 315	72 – 207	331	SZA 17-1	0122260	14	30	47	71.5	20	M6	20	M10	1.2
ROTA NCR-A 315	95 – 230	333	SZA 17-2	0122261	14	30	47	61.9	20	M6	20	M10	1.0
ROTA NCR-A 315	121 – 257	334	SZA 17-3	0122262	14	30	47	58.7	20	M6	20	M10	1.0
ROTA NCR-A 315	147 – 283	342	SZA 17-4	0122263	14	35	47	60.3	20	M6	20	M10	1.2

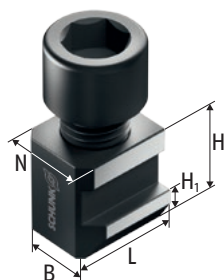
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T-nut

with fine serration 90°



NKA
T-nut



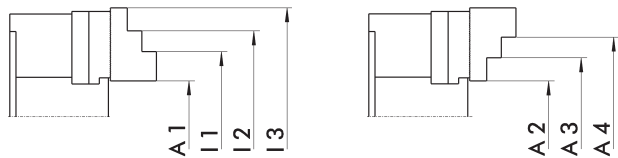
NKS
T-nut

Chuck type	Description	ID	N	B	H	H1	L	b	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA NCR-A 315	NKA 1	0145103	14	17	18.5	6.5	36	20	M10 x 25	50
ROTA NCR-A 315	NKS 1	0143104	14	17	18.5	6.5	16		M10 x 25	50

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

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 NCR-A 315	SHB 165	0121101	50 - 231	44 - 101	94 - 145	138 - 315

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCR-A 315	SHB 165	0121101	116 - 167	160 - 217	210 - 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 NCR-A 315	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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