SCHUNK

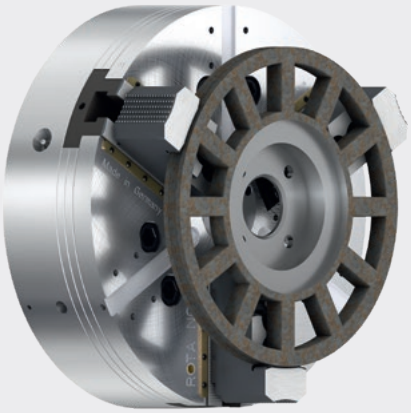
ROTA NCO

Precision power lathe chuck withl long jaw stroke

Hand in hand for tomorrow

A true problem solver with both the longest jaw stroke and the highest jaw clamping force

The ROTA NCO is considered to be a problem solver par excellence on horizontal as well as vertical lathes. The long jaw stroke enables the lathe chuck to clamp over interfering contours of the workpiece. The special feature: Despite a long jaw stroke, the ROTA NCO generates a high clamping force, which means that clamping of these components is also process reliable.



Advantages – Your benefits

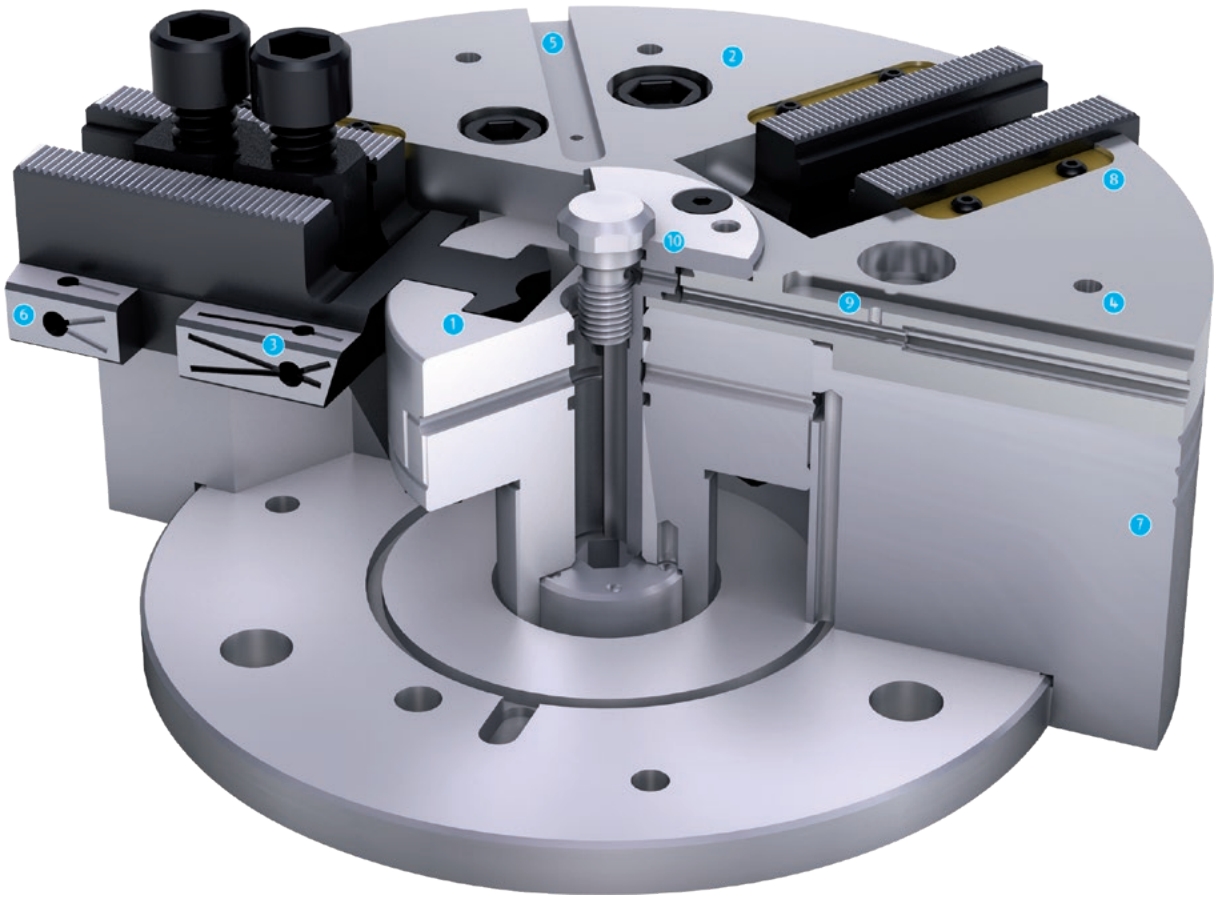
- **Precision wedge-hook power lathe chuck for highest quality requirements**
  Allows excellent machining results
- **High efficiency of the wedge hook system**
  Process-reliable clamping due to high clamping forces
- **Optimum jaw support for O.D. and I.D. clamping due to a very long base jaw guidance**
  Allows high clamping forces at a long service life
- **Optimized lubrication system**
  Consistently high clamping forces ensured
- **Longest jaw stroke at high jaw clamping force**
  Reliable and variable clamping of workpieces over interfering contours
- **Sealed against coolant and chips as standard via wiper strips, seals and sealed through-hole**
  Excellently suitable for the use on vertical lathes
- **Media feed-through (coolant or air) as standard option integrated in the chuck body**
  Flexibility depending on the application
- **Low height design**
  Maximum use of the machine room and maximum rigidity of the system
- **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]	Piston stroke [mm]
ROTA NCO 165	6000	72	30	6.4	24
ROTA NCO 210	5000	95	42	9	27
ROTA NCO 260	4500	150	62	10	30
ROTA NCO 315	3600	190	90	13	40
ROTA NCO 400	2500	270	120	15	45
ROTA NCO 500	2000	330	140	15	45
ROTA NCO 630	1600	330	140	15	45

Function of ROTA NCO

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

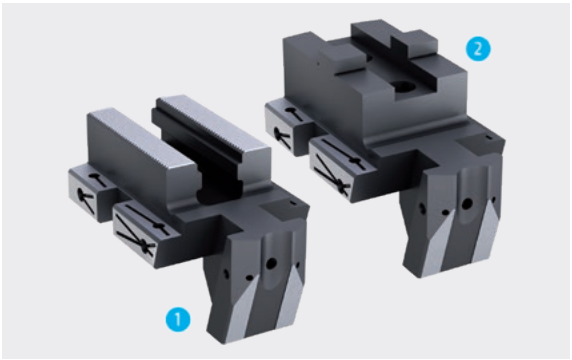


1. **Wedge hook drive**
   Offers constantly high clamping forces in operation
2. **Hardened and extremely rigid base body**
   Therefore a longer service life at highest precision. Even with maximum clamping force
3. **Optimized lubrication system**
   For consistently high clamping forces
4. **Mounting thread**
   For workpiece stops or cover plates
5. **Additional slot guidance on the chuck face**
   For workpiece stops or cover plates
6. **Long jaw guidance**
   Offers optimal support for O.D.- and I.D. clamping
7. **Low height design**
   Expands your machine's workspace
8. **Wiper strips**
   Seal the base jaw guidances and offer a good protection against coolant and chips
9. **Integrated air supply with mounting holes**
   For mounting an air monitoring system
10. **Central media supply**
    Available on request for air control or coolant

Three standardized jaw interfaces available

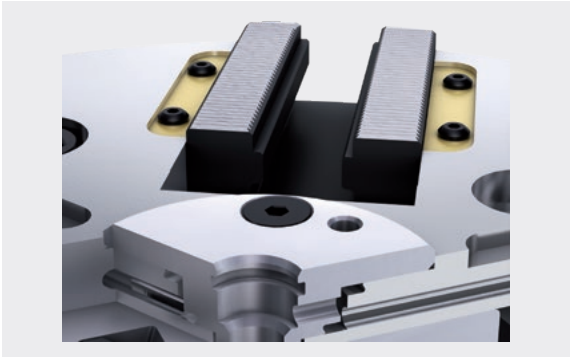
Select one standardized jaw interface from the 3 standardized versions and benefit from the fact that existing top jaws can also be used on the new SCHUNK lathe chuck.

1. **Fine serration**
   - 1/16" x 90°
   - 3/32" x 90°
2. **Metric tongue and groove**



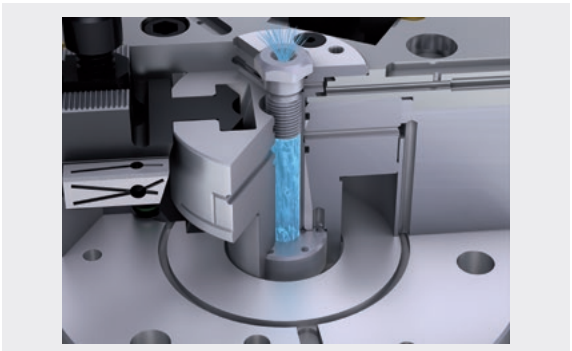
Adjustable brass wiper bars

Adjustable brass wiper bars seal the base jaws to give protection against coolant and chips.



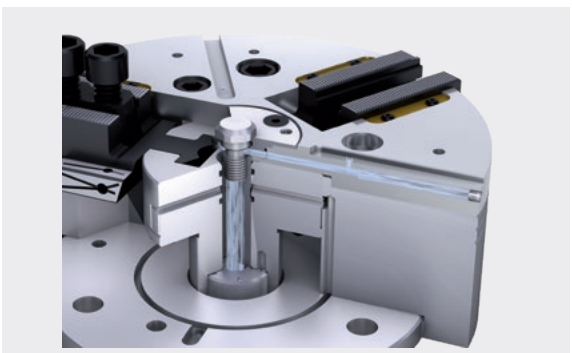
Modification coolant supply

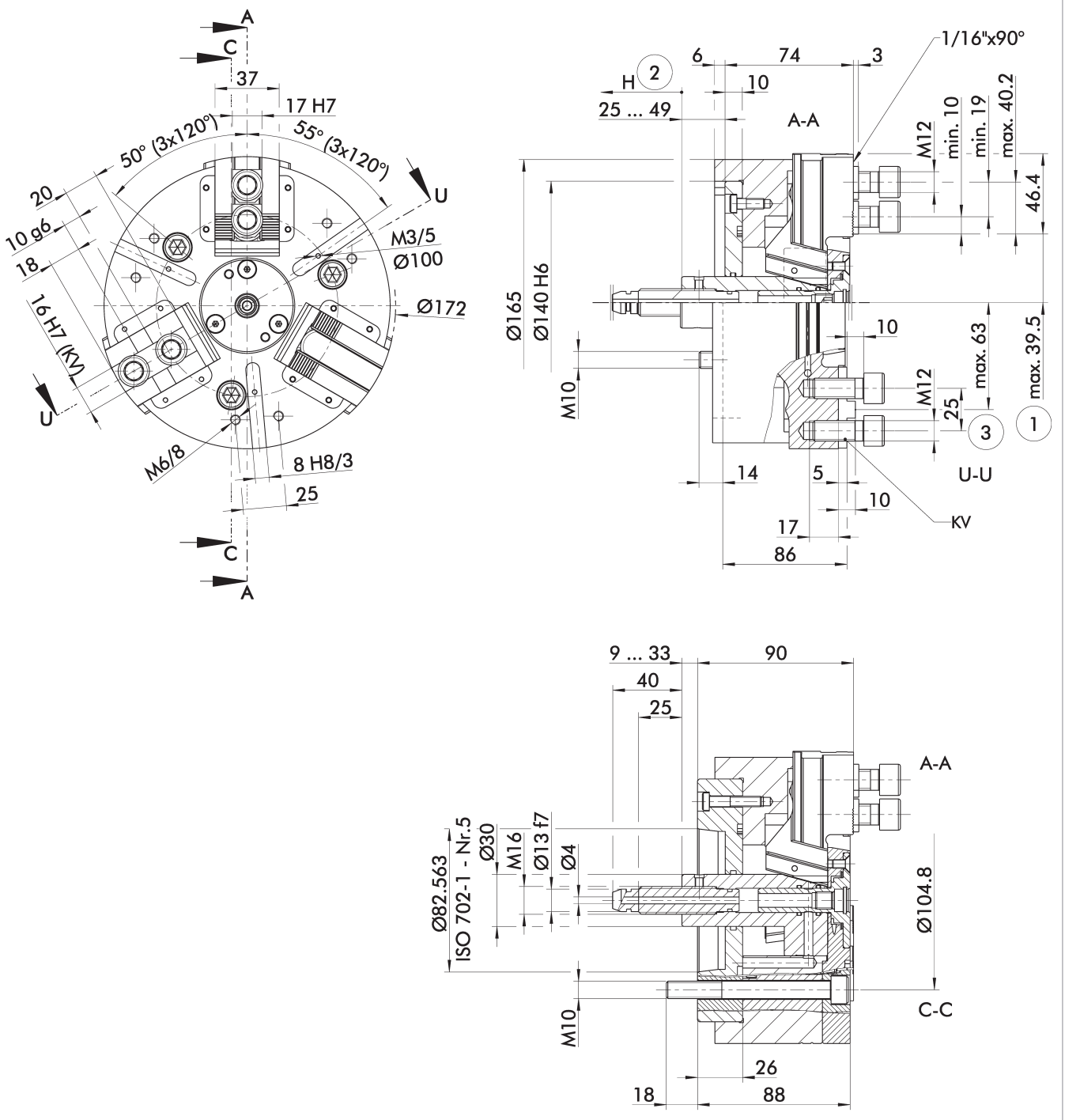
The lathes with integrated coolant supply via the spindle can be directly fed to the workpiece through the lathe chuck.



Modification air control

In automated series production, air control can be used to check whether the workpiece is in contact and can be clamped securely.





Lathe chuck drawn in opened position
Subject to technical changes.

① Distance to center of first tooth
② Piston stroke direction
③ Distance to center of tongue and groove

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. 5 (Z140)	*0856000*	1/16" x 90°	6000	72	30	0.04	11
ISO 702-1	Nr. 5	*0856001*	1/16" x 90°	6000	72	30	0.04	13
ISO 702-4	Nr. 5 (Z140)	*0856002*	Tongue and groove	6000	72	30	0.04	11
ISO 702-1	Nr. 5	*0856003*	Tongue and groove	6000	72	30	0.04	13

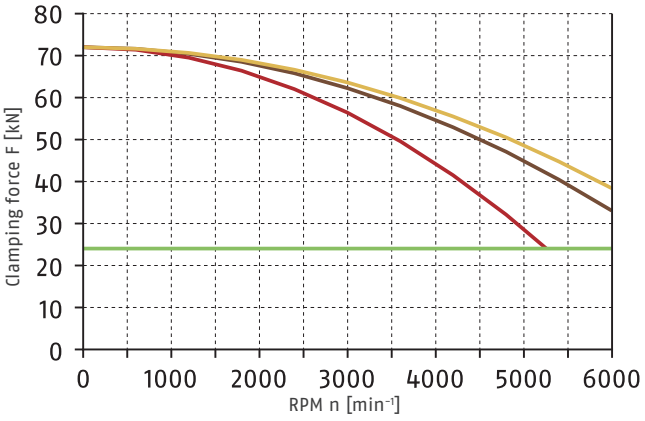
Scope of delivery

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

Further technical data

Chuck type	Stroke/jaw [mm]	Piston stroke (H) [mm]	Center jaw height [mm]
ROTA NCO 165	6.4	24	68

Clamping force-RPM-diagram



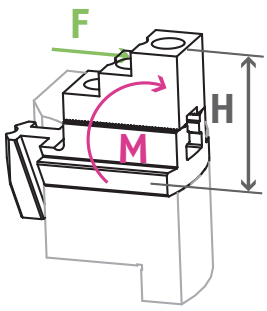
Required minimum clamping force F_{spmin} 33%

SHB 200
1.6 kg

SWB 160
3.1 kg

SWB-AL 160
1.09 kg

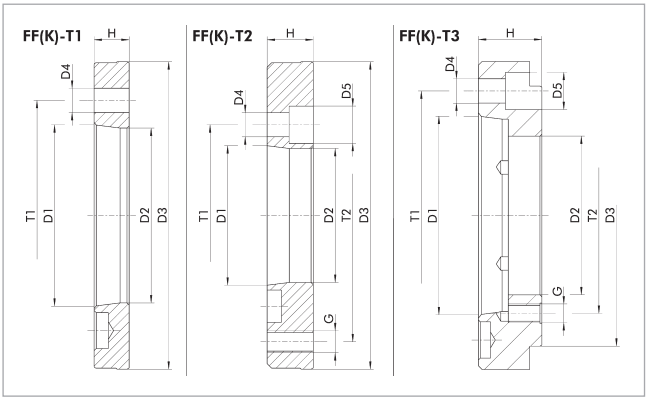
Load of base jaw guidance



M_{max} = 1632 Nm

Adapter plates

Z-mount on short taper ISO 702-1



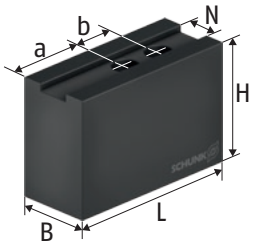
Technical data

Description	Adapter plate type	ID	Suitable for	D1	D2 [mm]	D3	D4 [mm]	D5 [mm]	G	H [mm]	T1 [mm]	T2 [mm]
FF-T2 Z140-A4	FF-T2	*0805000*	ROTA NCO 165	Nr. 4	61	Z140	11 (6x60°)	17	M10 (6x60°)	21	82.6	104.8
FF-T1 Z140-A5	FF-T1	*0803000*	ROTA NCO 165	Nr. 5	79.6	Z140	11 (6x60°)			16	104.8	
FF-T3 Z140-A6	FF-T3	*0801000*	ROTA NCO 165	Nr. 6	85	Z140	13 (6 x 60°)	20	M10 (6x60°)	34	133.4	104.8

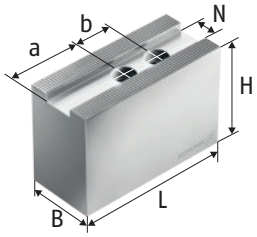
Direct adapter plates
Direct adapter plates are used if the spindle mounting bolt circle has the same size as the lathe chuck mounting bolt circle. The adapter plate has to be mounted on to the spindle together with the lathe chuck. The adapter plate is preassembled on the lathe chuck.
Reduction adapter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

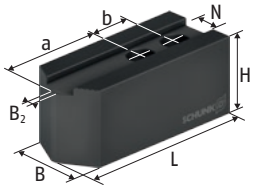
with fine serration 90°



CWB
Soft top jaws



SWB-AL
Soft top jaws



SWBL
Soft top jaws

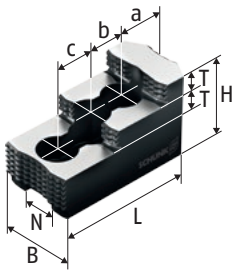
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA NCO 165	SWBL 160	*0120151*	17	35	40	78	41	22	M12	1.9
ROTA NCO 165	CWB 160	*0100005*	17	35	40	70	33	22	M12	1.7
ROTA NCO 165	SWB 160	*0120102*	17	40	60	70	33	22	M12	3.1
ROTA NCO 165	SWB-AL 160	*0168100*	17	40	60	70	33	22	M12	1.1

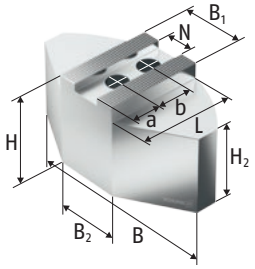
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws, Full grip jaws

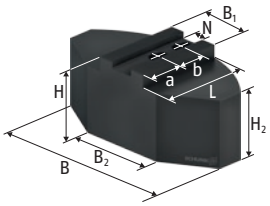
with fine serration 90°



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 NCO 165	SWB-SA 160	*0170100*	17	120	40	58	48	59.5		22	22		M12	2.2
ROTA NCO 165	SWB-SM 160	*0169100*	17	120	40	60	50	59.5		24.5	22		M12	5.7
ROTA NCO 165	SHB 200	*0121104*	17	40		49		72.5	12	18	19	19	M12	1.6

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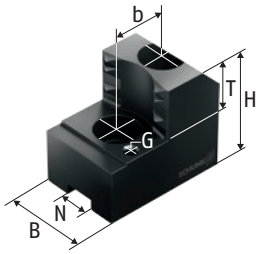
Claw jaws

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 NCO 165	40 - 69	184	SZA 16-30	*0122110*	17	35	50	66.2	20	M5	19	M12	1.3
ROTA NCO 165	59 - 88	184	SZA 16-31	*0122111*	17	35	50	57.2	20	M5	19	M12	1.2
ROTA NCO 165	81 - 111	184	SZA 16-32	*0122112*	17	35	50	52.4	20	M5	19	M12	1.1
ROTA NCO 165	99 - 129	189	SZA 16-33	*0122113*	17	40	50	52.4	20	M5	19	M12	1.2
ROTA NCO 165	121 - 151	211	SZA 16-34	*0122114*	17	40	50	63.5	20	M5	19	M12	1.6

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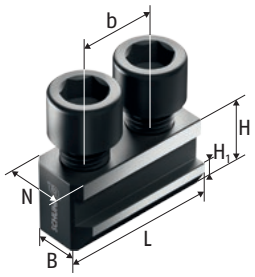
T-nut

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 NCO 165	NKA 2	*0145104*	17	19	20.5	7.5	42	22	M12 x 25	70
ROTA NCO 165	NKS 2	*0143106*	17	19	20.5	7.5	19		M12 x 25	70

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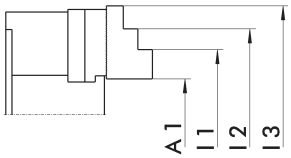
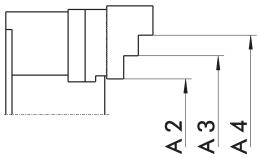
Hard stepped top jaws

with fine serration 90°



Jaw position I



Jaw position II

O.D. clamping

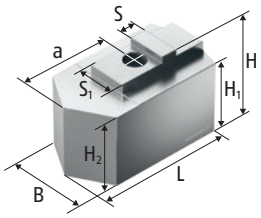
Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA NCO 165	SHB 200	*0121104*	13 - 69	25 - 80	73 - 122	115 - 165

I.D. clamping

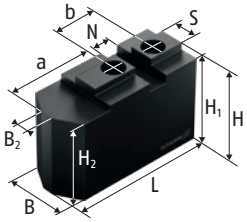
Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA NCO 165	SHB 200	*0121104*	67 - 115	109 - 161	155 - 210

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 NCO 165	SRK 160	*0136105*	10	16	40	60	55.5	54	76	35.5	25	M12	2.9
ROTA NCO 165	SRKL 160	*1496965*	10	16	40	60	55.5	54	88	35.5	25	M12	3.5
ROTA NCO 165	SRKL-AL 160	*1496969*	10	16	40	60	55.5	54	88	35.5	25	M12	1.3

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Accessories

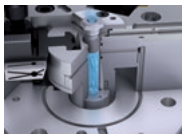
Clamping force tester

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

Suitable for	Description	ID
ROTA NCO 165	IFT Set	*1404235*

Modification coolant supply

Coolant through feeding with integrated non-return valve and spray nozzle.



Suitable for	Description	ID
ROTA NCO 165	ROTA NCO-K 165	*0856202*

Modification air control

Transfer of the medium via threaded holes at the face of the groove which is integrated in the chuck body.

Suitable for	Description	ID
ROTA NCO 165	ROTA NCO-L 165	*0856201*

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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