

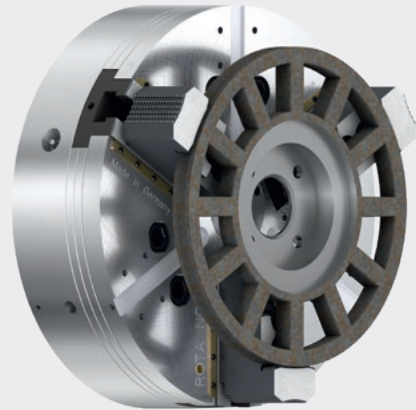


## **ROTA NCO**

**Precision power lathe chuck  
with long jaw stroke**

# 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

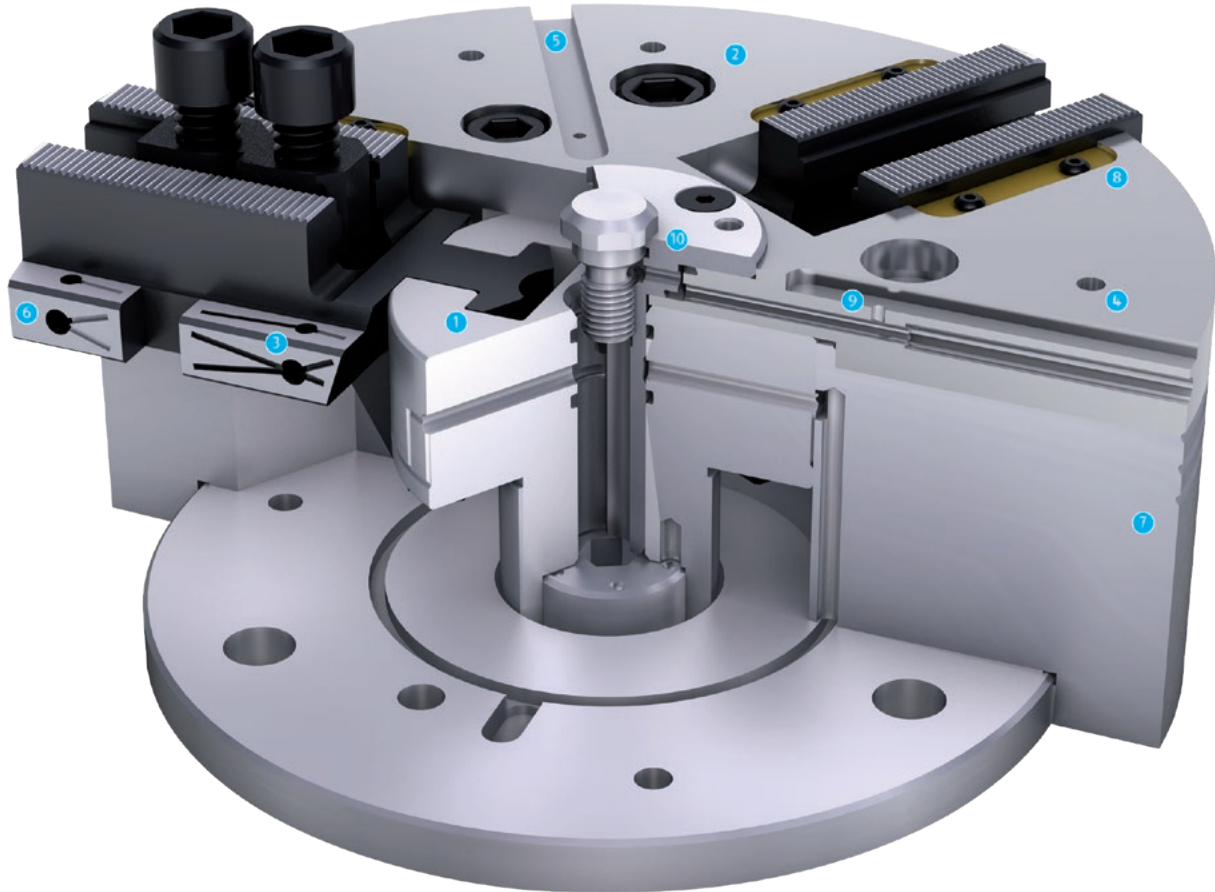
- + Precision wedge-hook power lathe chuck for highest quality requirements**  
Allows excellent machining results
- + High efficiency of the wedge hook system**  
Process-reliable clamping due to high clamping forces
- + Optimum jaw support for O.D. and I.D. clamping due to a very long base jaw guidance**  
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<br>[min <sup>-1</sup> ] | Max. clamping force<br>[kN] | Max. actuating force<br>[kN] | Stroke/jaw<br>[mm] | Piston stroke<br>[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.

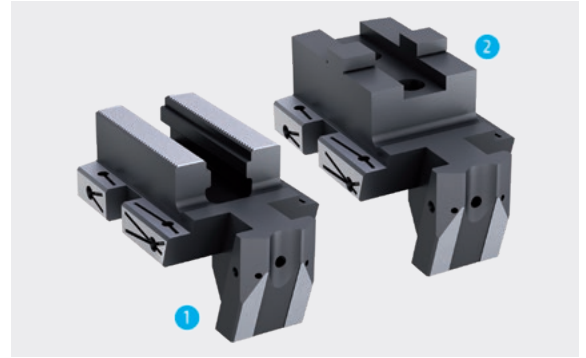


- 1 Wedge hook drive**  
Offers constantly high clamping forces in operation
- 2 Hardened and extremely rigid base body**  
Therefore a longer service life at highest precision.  
Even with maximum clamping force
- 3 Optimized lubrication system**  
For consistently high clamping forces
- 4 Mounting 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

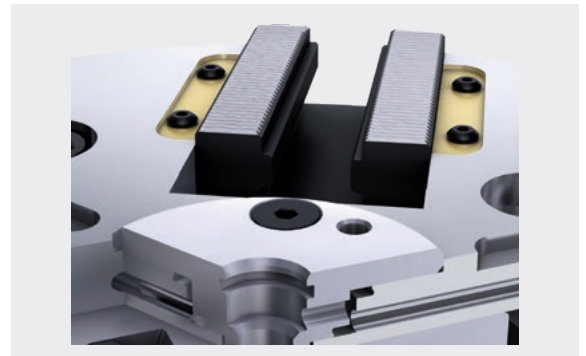
Select one standardized jaw interface from the 3 standardized versions and benefit from the fact that existing top jaws can also be used on the new SCHUNK lathe chuck.

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



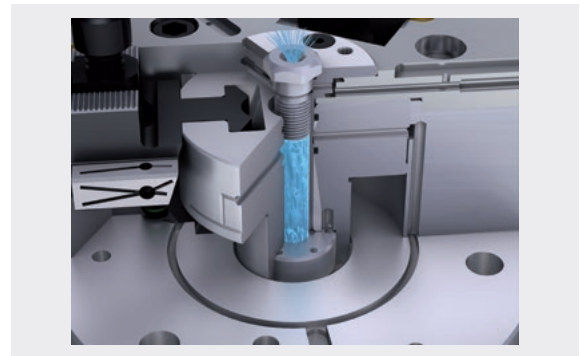
### Adjustable brass wiper bars

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



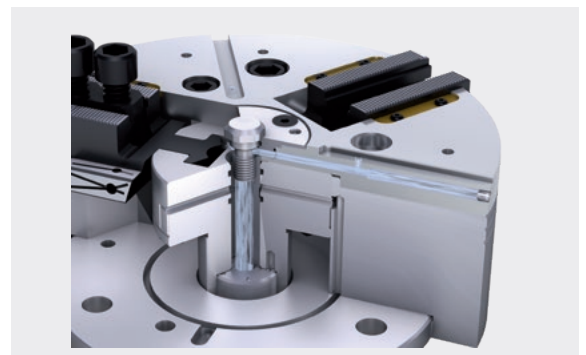
### Modification coolant supply

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

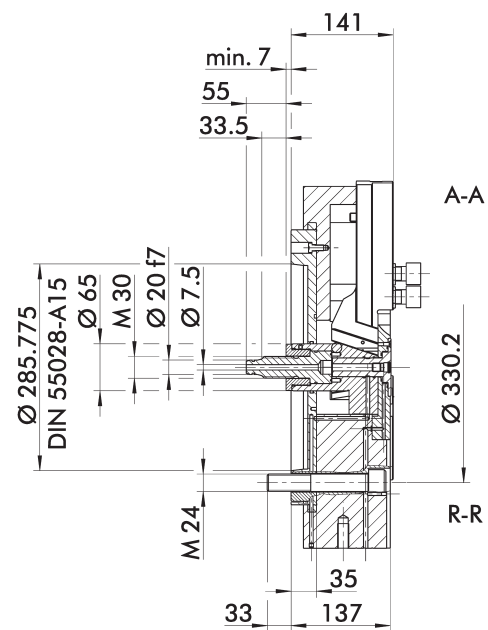
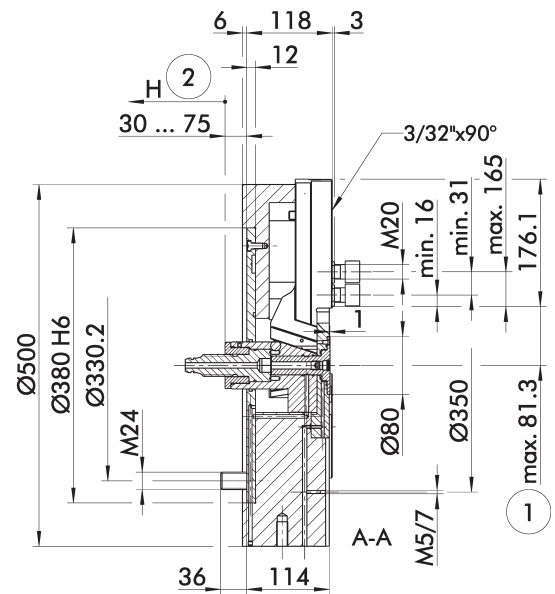
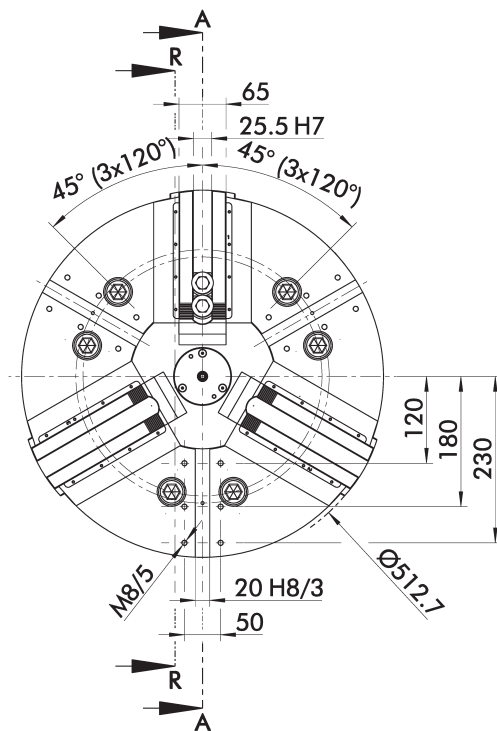


### Modification air control

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

## Technical data

| Spindle type | Spindle size  | ID      | Serration   | Max. rotational speed<br>[min <sup>-1</sup> ] | Max. clamping force<br>[kN] | Max. actuating force<br>[kN] | Moment of inertia<br>[kgm <sup>2</sup> ] | Weight<br>[kg] |
|--------------|---------------|---------|-------------|-----------------------------------------------|-----------------------------|------------------------------|------------------------------------------|----------------|
| ISO 702-4    | Nr. 15 (Z380) | 0856050 | 3/32" x 90° | 2000                                          | 330                         | 140                          | 5.3                                      | 164            |
| ISO 702-1    | Nr. 15        | 0856051 | 3/32" x 90° | 2000                                          | 330                         | 140                          | 5.6                                      | 172            |

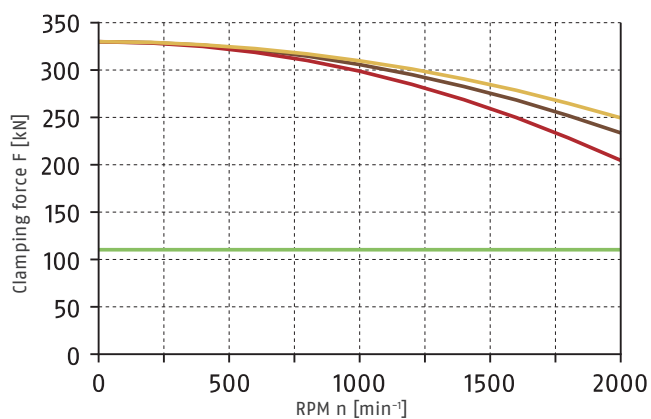
## Scope of delivery

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

## Further technical data

| Chuck type   | Stroke/jaw<br>[mm] | Piston stroke (H)<br>[mm] | Center jaw height<br>[mm] |
|--------------|--------------------|---------------------------|---------------------------|
| ROTA NCO 500 | 15                 | 45                        | 110                       |

## Clamping force-RPM-diagram



Required minimum clamping force F<sub>spmin</sub> 33%

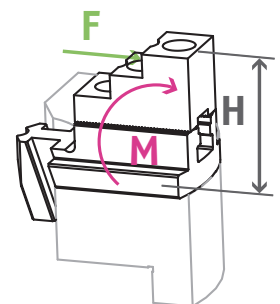
SHB 400  
7.8 kg

SWB 400  
16 kg

SWB-AL 400  
6.4 kg



## Load of base jaw guidance



$$M_{\max} = 12100 \text{ Nm}$$

## 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 Z380-A8    | FF-T2              | <a href="#">0805010</a> | ROTA NCO 500 | Nr. 8  | 136.2 | Z380 | 17 (6x60°) | 26   | M24 (12 x 30°)<br>M24 (6x60°) | 38   | 171.4 | 330.2 |
| FF-T2 Z380-A11   | FF-T2              | <a href="#">0803006</a> | ROTA NCO 500 | Nr. 11 | 192.9 | Z380 | 21 (6x60°) | 32   | M24 (3x120°)                  | 38   | 235   | 330.2 |
| FF-T1 Z380-A15-1 | FF-T1              | <a href="#">0803023</a> | ROTA NCO 500 | Nr. 15 | 281.5 | Z380 | 26 (6x60°) |      |                               | 47   | 330.2 |       |

#### 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.

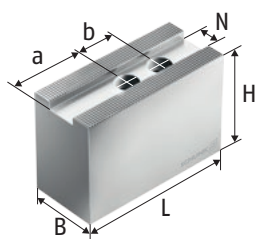
#### Expansion adapter plates FF-T3

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-AL  
Soft top jaws



SWB  
Soft top jaws

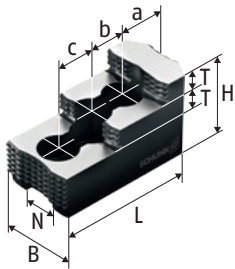
## Technical data

| Chuck type   | Description | ID                      | N<br>[mm] | B<br>[mm] | H<br>[mm] | L<br>[mm] | a<br>[mm] | b<br>[mm] | Screws | m/SET<br>[kg] |
|--------------|-------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------------|
| ROTA NCO 500 | SWB-AL 400  | <a href="#">0168103</a> | 25.5      | 60        | 100       | 155       | 90        | 35        | M20    | 6.4           |
| ROTA NCO 500 | SWB 400     | <a href="#">0120107</a> | 25.5      | 60        | 90        | 155       | 90        | 35        | M20    | 16.0          |
| ROTA NCO 500 | SP-WB 400   | <a href="#">0124105</a> | 25.5      | 60        | 100       | 155       | 80        | 40        | M18    | 18.6          |
| ROTA NCO 500 | SP-WB 500   | <a href="#">0124106</a> | 25.5      | 60        | 100       | 195       | 118       | 40        | M18    | 24.0          |
| ROTA NCO 500 | CWB 400     | <a href="#">0100008</a> | 25.5      | 60        | 80        | 140       | 75        | 35        | M20    | 12.6          |

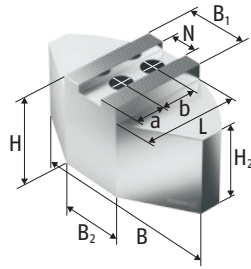
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

## Hard stepped top jaws, Full grip jaws

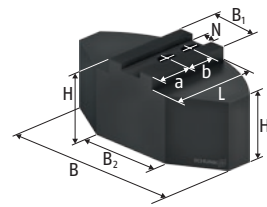
with fine serration 90°



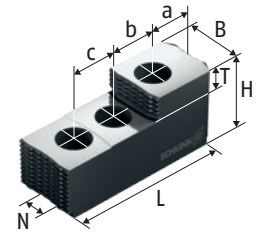
SHB  
Hard stepped top jaws



SWB-SA  
Full grip jaws



SWB-SM  
Full grip jaws



SP-HB  
Hard stepped top jaws

### Technical data

| Chuck type   | Description   | ID                      | N<br>[mm] | B<br>[mm] | B1<br>[mm] | H<br>[mm] | H2<br>[mm] | L<br>[mm] | T<br>[mm] | a<br>[mm] | b<br>[mm] | c<br>[mm] | Screws | m/SET<br>[kg] |
|--------------|---------------|-------------------------|-----------|-----------|------------|-----------|------------|-----------|-----------|-----------|-----------|-----------|--------|---------------|
| ROTA NCO 500 | SWB-SA 400    | <a href="#">0170105</a> | 25.5      | 330       | 150        | 98        | 68         | 160       |           | 84.5      | 35        |           | M20    | 24.4          |
| ROTA NCO 500 | SWB-SM 400    | <a href="#">0169105</a> | 25.5      | 330       | 60         | 85        | 55         | 155       |           | 83.5      | 35        |           | M20    | 53.8          |
| ROTA NCO 500 | SHB 400       | <a href="#">0121107</a> | 25.5      | 60        |            | 75        |            | 140       | 18        | 53        | 31        | 31        | M20    | 7.8           |
| ROTA NCO 500 | SP-HB 400-500 | <a href="#">0125105</a> | 25.5      | 57.5      |            | 73        |            | 160       | 22        | 43.1      | 42        | 42        | M18    | 9.8           |

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

## 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 NCO 500 | 73 – 243          | 593                  | SZA 40-12   | <a href="#">0138301</a> | 25.5 | 60   | 78   | 188.3 | 33   | M8 | 35   | M20    | 11.5  |
| ROTA NCO 500 | 120 – 343         | 569                  | SZA 40-13   | <a href="#">0138302</a> | 25.5 | 60   | 78   | 131   | 33   | M8 | 35   | M20    | 8.0   |
| ROTA NCO 500 | 203 – 428         | 549                  | SZA 40-14   | <a href="#">0138303</a> | 25.5 | 60   | 78   | 131   | 33   | M8 | 35   | M20    | 8.0   |
| ROTA NCO 500 | 273 – 499         | 593                  | SZA 40-15   | <a href="#">0138304</a> | 25.5 | 60   | 78   | 150   | 33   | M8 | 35   | M20    | 9.3   |
| ROTA NCO 500 | 350 – 540         | 640                  | SZA 40-16   | <a href="#">0138305</a> | 25.5 | 60   | 78   | 178.6 | 33   | M8 | 35   | M20    | 11.0  |

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°



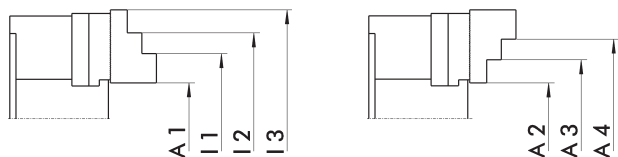
NS  
T-nut

| Chuck type   | Description | ID                      | N    | B    | H    | H1   | L    | Cyl.-screw | Max. adm. tightening torque |
|--------------|-------------|-------------------------|------|------|------|------|------|------------|-----------------------------|
|              |             |                         | [mm] | [mm] | [mm] | [mm] | [mm] |            | [Nm]                        |
| ROTA NCO 500 | NS 201      | <a href="#">0142103</a> | 25.5 | 32.5 | 33.7 | 15.5 | 28   | M20 x 45   | 300                         |

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<br>[mm] | A2<br>[mm] | A3<br>[mm] | A4<br>[mm] |
|--------------|-------------|-------------------------|------------|------------|------------|------------|
| ROTA NCO 500 | SHB 400     | <a href="#">0121107</a> | 22 - 328   | 53 - 170   | 156 - 272  | 257 - 500  |

### I.D. clamping

| Chuck type   | Description | ID                      | I1<br>[mm] | I2<br>[mm] | I3<br>[mm] |
|--------------|-------------|-------------------------|------------|------------|------------|
| ROTA NCO 500 | SHB 400     | <a href="#">0121107</a> | 97 - 213   | 199 - 314  | 300 - 606  |

## 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 500 | IFT Set     | <a href="#">1404235</a> |

### 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 NCO 500 | IFT adapter set | <a href="#">1498512</a> |

## 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 | <a href="#">1342585</a> |
| Can       | LINOMAX plus can       | <a href="#">1342586</a> |
| Bucket    | LINOMAX plus bucket    | <a href="#">1342587</a> |

### Modification air control

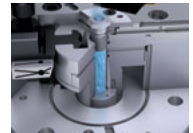
Transfer of the medium via threaded holes at the face of the groove which is integrated in the chuck body.



| Suitable for | Description    | ID                      |
|--------------|----------------|-------------------------|
| ROTA NCO 500 | ROTA NCO-L 400 | <a href="#">0856241</a> |

### Modification coolant supply

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



| Suitable for | Description    | ID                      |
|--------------|----------------|-------------------------|
| ROTA NCO 500 | ROTA NCO-K 400 | <a href="#">0856242</a> |

### 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  | <a href="#">9900543</a> |



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