



Superior Clamping and Gripping



## SCHUNK Clamping Technology

Product Overview



## Superior Clamping and Gripping

Jens Lehmann stands for safe, precise gripping and holding. As a brand ambassador of the SCHUNK team, the No. 1 goalkeeper represents our global competence leadership for gripping systems and clamping technology. The top performance of SCHUNK and Jens Lehmann are characterized by dynamics, precision, and reliability.

For more information visit our website:  
[schunk.com/lehmann](http://schunk.com/lehmann)

*J. Lehmann*  
Jens Lehmann





Henrik A. Schunk, Kristina I. Schunk, brand ambassador Jens Lehmann, and Heinz-Dieter Schunk

## Top Performance in the Team

SCHUNK is the world's No. 1 for gripping systems and clamping technology – from the smallest parallel gripper to the largest chuck jaw program.

In order to boost efficiency, SCHUNK customers have bought more than 2,000,000 precision toolholders, 1,000,000 SCHUNK grippers, and 100,000 lathe chucks and stationary workholding systems so far.

This makes us proud and motivates us to attain new top performances.

As a competence leader, we recognize and develop standards with a large potential for the future, which will drive the rapid progress in many industries.

Our customers profit from the expert knowledge, the experience, and the team spirit of about 3,000 employees in our innovative family-owned company.

The Schunk family wishes you improved end results with our quality products.



Heinz-Dieter Schunk



Henrik A. Schunk

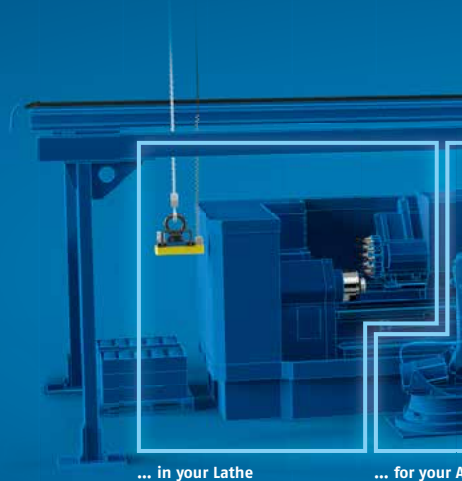


Kristina I. Schunk

## From Standard to High-tech Solutions

At SCHUNK, you will benefit from over 50 years of experience and expertise in tool and workpiece clamping. Whether it's lathe chucks, chuck jaws, toolholders, stationary clamping technology or magnetic and vacuum clamping technology – our components and solutions offer the ideal basis for safe, efficient and highly precise processes. Due to their outstanding quality, they satisfy the highest requirements of modern processing and demanding machining.

We develop, manufacture and optimize powerful, economical products and solutions for the machine table and machine room that are tailored to the individual needs of each customer and application. Moreover, we are setting standards in the ongoing development of clamping technology and customized solutions.



... in your Lathe

... for your A



Page 6

### Chuck Jaws

The SCHUNK range of standard chuck jaws for any conceivable application on lathe chucks delivers maximum safety, functionality and precision.

- More than 1,200 different types
- Over 16 million standard chuck jaws in use worldwide



Page 10

### Lathe Chucks

SCHUNK offers manual and power chucks with or without through-holes for precise and safe clamping of workpieces on your lathe.

- Jaw change < 60 seconds
- Up to 410 kN clamping force



Page 14

### Toolholders

SCHUNK toolholding systems cover the entire range of machining tasks like volume machining, drilling, thread milling, reaming, right up to micromachining.

- More than 2,000,000 sold precision toolholders



SCHUNK Standard Chuck Jaws



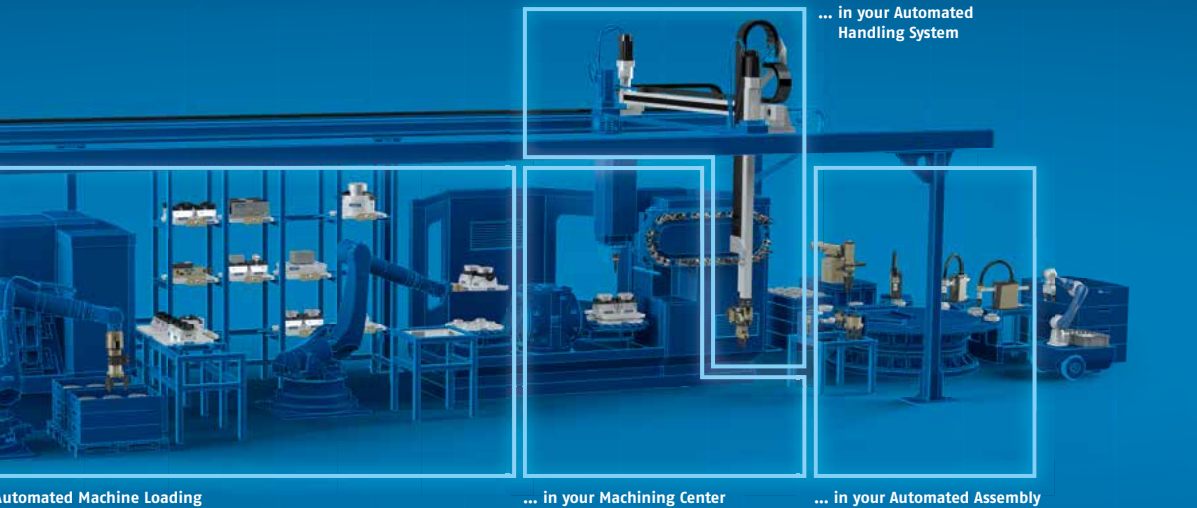
ROTA-S plus 2.0



TENDO SDF INDIVIDUAL

## It's time to use your machine's full potential!

Our superior components, find potentials in your machine, where you would least expect to find them. SCHUNK Synergy – the perfectly harmonized interplay of gripping systems and clamping technology turns our customers into productivity champions ...



Page 18



### Stationary Workholding

Stationary workholding from SCHUNK ensures the micron-precise link between the machine table and the workpiece with complete solutions from the modular system for individualists.

- More than 1,000 possibilities for workpiece clamping
- Up to 90% set-up time reduction



VERO-S NSE plus

Page 22



### Magnetic and Vacuum Clamping Technology


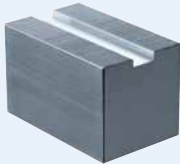


SCHUNK magnetic and vacuum clamping technologies for 5-sided machining in one set-up are impressive due to short retrofitting times, high holding forces, maximum precision and deformation-free clamping.









MAGNOS

# Chuck Jaws

SCHUNK Clamping Technology

	Chuck Jaws				
	Soft Top Jaws	Jaw Blanks	Full Grip Jaws	Monoblock Jaws	
					
<b>Areas of application</b>					
Clamping of raw parts					
Clamping of finished parts	●	●	●	●	
I.D. clamping	●	●	●	●	
O.D. clamping	●	●	●	●	
Compensation of form tolerances					
Adjustable clamping diameter via turning	●	●	●	●	
Low-deformation clamping			●		
Jaw quick change	●		●	●	
<b>Characteristics</b>					
Jaw interface/type (standard design)	90° fine serration 60° fine serration Tongue and groove	90° fine serration 60° fine serration	90° fine serration 60° fine serration Tongue and groove	Straight and angled wedge-bar serration	
Available for lathe chuck sizes (standard design)	80 – 1200 mm	160 – 800 mm	80 – 630 mm	140 – 800 mm	
Material	Steel 16MnCr5 case-hardenable or high-tensile aluminum	Steel 16MnCr5 case-hardenable	Steel 16MnCr5 case-hardenable or high-tensile aluminum	C 45, tempered, inductive hardenable	
<b>Highlights</b>					
	<ul style="list-style-type: none"> <li>Depending on the version: ground groove and fine serration or finemilled tongue and groove</li> <li>Can be turned to the required size of clamping diameter</li> </ul>	<ul style="list-style-type: none"> <li>Available with or without bore holes</li> <li>Ground groove and fine serration</li> <li>Can be turned to the required size of clamping diameter</li> </ul>	<ul style="list-style-type: none"> <li>The large locating surface evenly distributes the gripping forces around the workpiece. Thereby the workpiece deformation is decreasing</li> </ul>	<ul style="list-style-type: none"> <li>Inductive hardened serration and guidances permit a longer tool service life of the lathe chuck</li> <li>Available in various versions</li> </ul>	

Claw Jaws	Stepped Top Jaws	Stepped Block Jaws	Jaw Quick-change System PRONTO	Pendulum Jaws	QUENTES Fiberglass Jaws
					
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
90° fine serration 60° fine serration Tongue and groove	90° fine serration 60° fine serration Tongue and groove	Straight and angled wedge-bar serration	90° fine serration 60° fine serration	90° fine serration 60° fine serration Straight and angled wedge-bar serration	90° fine serration 60° fine serration Tongue and groove
140 – 1000 mm	110 – 1200 mm	160 – 630 mm	200 – 315 mm	200 – 500 mm	160 – 315 mm
Steel 16MnCr5 case-hardened	Steel 16MnCr5 case-hardened	Steel 16MnCr5 case-hardenable or steel 16MnCr5SK	Steel, hardened and tempered or case hardened	Case-hardened steel	Glass fiber reinforced plastic
<ul style="list-style-type: none"> <li>The claw serration allows form-fit clamping, which also enables transmission of very high machining forces</li> <li>Available for O.D., I.D., and bar clamping</li> </ul>	<ul style="list-style-type: none"> <li>The diamond serration enables first set-up, where the clamping teeth penetrate the workpiece only slightly</li> <li>May be used for O.D., I.D., and bar clamping</li> <li>Used for covering large clamping ranges</li> </ul>	<ul style="list-style-type: none"> <li>May be used for O.D., I.D., and bar clamping</li> <li>Used for covering large clamping ranges</li> </ul>	<ul style="list-style-type: none"> <li>Various quick-change inserts for raw and finished parts clamping available</li> <li>Clamping range expansion of 700% without supporting jaw adaptation in 5 seconds per jaw</li> </ul>	<ul style="list-style-type: none"> <li>For clamping thin-walled and deformation-sensitive workpieces</li> <li>Compensation of deviations in shape via pendulum motion</li> <li>Clamping inserts are available in hardened and unhardened versions</li> <li>With soft and hard clamping inserts with diamond serration</li> </ul>	<ul style="list-style-type: none"> <li>The light and stable design enables minimal loss of clamping force</li> <li>No clamping marks, making it ideal for clamping surfaces that are especially sensitive, already ground or even surface-treated</li> <li>Cost-efficient system due to quickly changeable clamping inserts</li> </ul>



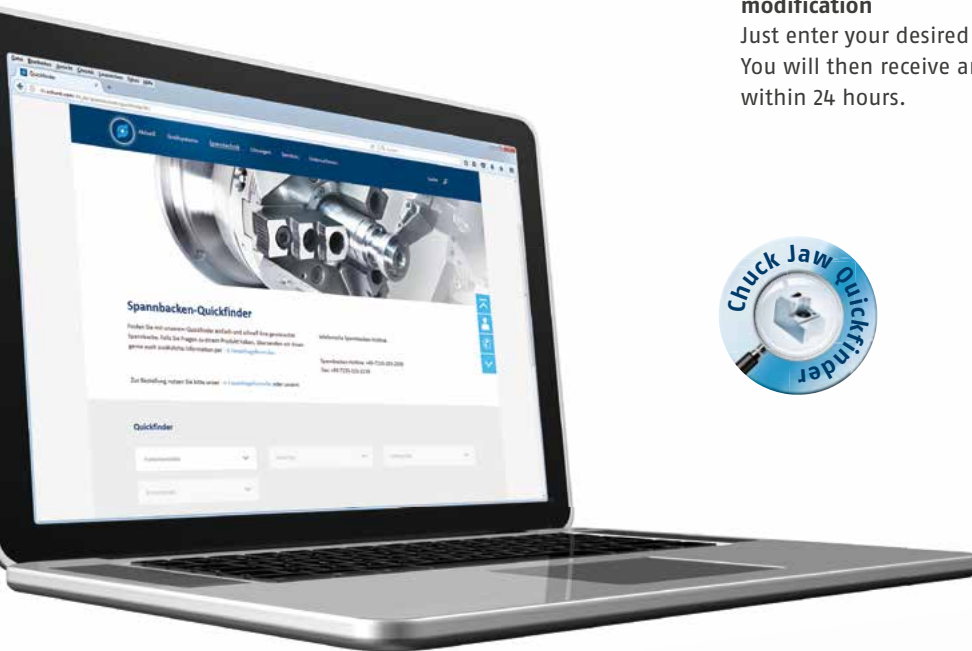


## SCHUNK Chuck Jaw Quickfinder on the Internet

At [schunk.com/chuck-jaw-quickfinder](http://schunk.com/chuck-jaw-quickfinder), you will receive an overview on possible chuck jaw solutions, including accessory products such as T-nuts and screws.

- **Faster through guided product searches**  
Prescribed selection menus facilitate the search.
- **Find the right jaw faster**  
In a few seconds the suitable chuck jaws with the associated accessory products are presented.

- **A faster qualified enquiry**  
An online form enables a clear enquiry.
- **A faster standard chuck jaw quotation**  
Quotations for standard chuck jaws are guaranteed within 55 minutes after receipt of the enquiry on every working day between 7 a.m. and 5 p.m.
- **Faster – around the clock**  
Information retrieval and requests are possible online 24 hours a day.
- **Faster, individual product configuration and modification**  
Just enter your desired changes and send them. You will then receive an individual quotation within 24 hours.



## Take Advantage of the mobile and flexible SCHUNK Chuck Jaw App

**Everything at a glance – the chuck jaw app**  
The SCHUNK chuck jaw range is always at hand: You can quickly order with our app directly from your smart phone.








App download is available under **iTunes** or **Android**









# Lathe Chucks

SCHUNK Clamping Technology

	Manual Lathe Chucks			Power Lathe Chucks with Jaw Quick-change System	
	ROTA-S plus 2.0 ROTA-S plus	ROTA-S flex	ROTA SPK	ROTA THW plus ROTA THW	ROTA THW vario
					
<b>Fields of application</b>					
Light and versatile		•			
Large through-hole	•			•	•
Max. speed	•	•		•	•
Modular center sleeve system	•			•	•
Large jaw stroke	•	•		•	
Jaw quick-change system	•	•		•	•
High jaw change repeat accuracy	•	•		•	•
High clamping repeat accuracy	•	•		•	•
Centrifugal force compensation					•
Media feed-through				•	
Clamping of small workpieces	•	•		•	•
Bar machining				•	•
Overlap clamping					•
Wedge bar chuck	•	•		•	•
Wedge hook chuck					
Fine serration in inches 1/16" x 90°/3/32" x 90°			•		
Serration, metric 1.5 mm x 60°/3.0 mm x 60°					
Tongue and groove	•	•	•	•	•
Tube ends machining					
Lever chuck					
Active jaw pull-down function					
Hermetically sealed					
<b>Characteristics</b>					
Sizes	160 – 315 400 – 1000	550 – 1400	180 – 260	165 – 315 400 – 630	215
<b>Highlights</b>					
All lathe chucks can also be used in stationary applications!	<ul style="list-style-type: none"> <li>• Jaw quick-change chuck</li> <li>• Large through-hole</li> <li>• High accuracy</li> <li>• Modular center sleeve system (up to size 315)</li> <li>• Can be combined with arbor (size 200 and 250)</li> </ul>	<ul style="list-style-type: none"> <li>• Jaw quick-change chuck</li> <li>• High accuracy</li> <li>• Exchangeable guideway extension</li> <li>• Clamping range 8 – 1422 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Steel body</li> <li>• Sealed against dirt</li> <li>• Variable gauge clearance</li> <li>• High clamping forces</li> </ul>	<ul style="list-style-type: none"> <li>• Jaw quick-change chuck</li> <li>• Large through-hole</li> <li>• High jaw change repeat accuracy</li> <li>• Modular center sleeve system</li> </ul>	<ul style="list-style-type: none"> <li>• Jaw quick-change chuck</li> <li>• Large through-hole</li> <li>• High jaw change repeat accuracy</li> <li>• Modular center sleeve system</li> <li>• Collet chuck or arbor mountable</li> </ul>

		Power Lathe Chucks with Through-hole					Power Lathe Chucks without Through-hole	
ROTA NCX	ROTA NCE	ROTA NC plus 2 ROTA NC	ROTA NCF plus 2 ROTA NCF	ROTA NCD	ROTA NCK plus	ROTA NCO		
								
•	•							
•	•	•	•	•	•			
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•							•	
165 – 315	165 – 260	185 – 315 400 – 1000	185 – 315 400 – 630	132 – 630	165 – 315	165 – 1000		
<ul style="list-style-type: none"> <li>Jaw quick-change chuck</li> <li>High jaw change repeat accuracy</li> <li>Interface compatible with Kitagawa BB200 series</li> <li>Easy replacement of existing chucks with fine serration</li> </ul>	<ul style="list-style-type: none"> <li>Extremely weight-reduced power chuck</li> <li>Minimum acceleration and braking times</li> <li>Modular center sleeve system</li> <li>Simplest handling</li> </ul>	<ul style="list-style-type: none"> <li>Very large through-hole</li> <li>Modular center sleeve system</li> </ul>	<ul style="list-style-type: none"> <li>Integrated centrifugal force compensation</li> <li>Modular center sleeve system</li> <li>Special optimized pump lubrication system</li> </ul>	<ul style="list-style-type: none"> <li>Very large through-hole</li> <li>Patented collet jaw system available upon request</li> <li>High accuracy</li> </ul>	<ul style="list-style-type: none"> <li>Jaw connection metric or inches</li> <li>Interface 100% compatible with Kitagawa B200 series</li> <li>Integrated blank draw nut</li> </ul>	<ul style="list-style-type: none"> <li>Very small chuck size</li> <li>High clamping force and large jaw stroke</li> <li>Additional dirt sealing</li> </ul>		

			Pneumatic Power Chucks		
ROTA 2B	ROTA NCR	ROTA NCS 3 ROTA NCS 6	ROTA TP	ROTA TB ROTA TB-LH	ROTA TB2 ROTA TB2-LH
					
			•	•	•
•	•	•		•	•
	•	•			
•	•	•			
			•	•	•
•			•	•	•
•	•		•	•	•
•					
•	•	•	•	•	•
		•			
		•			
		•			
125 – 400	165 – 1600	175 – 500	125 – 350	400 – 1000	470 – 1000
<ul style="list-style-type: none"> <li>• Very large jaw stroke</li> <li>• Weight-optimized design</li> <li>• Mounting thread for workpiece stops</li> </ul>	<ul style="list-style-type: none"> <li>• Also available with centrifugal force compensation</li> <li>• Deformation sensitive clamping of thin-walled workpieces</li> <li>• Compensating or central clamping</li> </ul>	<ul style="list-style-type: none"> <li>• Active jaw pull-down</li> <li>• Integrated pendulum compensation</li> <li>• Hermetically sealed</li> <li>• Low maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• With integrated pneumatic cylinder</li> <li>• Very large through-hole</li> <li>• Also for stationary applications</li> </ul>	<ul style="list-style-type: none"> <li>• With integrated pneumatic cylinder</li> <li>• Very large through-hole</li> <li>• With dual stroke system (LH version)</li> </ul>	<ul style="list-style-type: none"> <li>• With integrated pneumatic cylinder</li> <li>• Very large through-hole</li> <li>• With dual stroke system (LH version)</li> <li>• Seal of the base jaw guide</li> <li>• Chemical coating for corrosion protection</li> <li>• Wireless clamping pressure control</li> </ul>

## ZENTRICO THL plus Steady Rests

Due to optimized lever kinematics, central lubrication, integrated roller rinsing, and dirt guard, the new SCHUNK ZENTRICO THL plus steady rest achieves maximum clamping forces per roller and excellent centering and repeat accuracies.

### Your benefits:

- **High centering** and **repeat accuracy** due to optimized lever kinematics
- **Much lower contamination, less chip nesting**
- **Simple attachment**, fits on almost every machine
- Existing steady rests **can be replaced easily**, no special parts required
- **Slim cylindrical design, no interfering contour** on the steady rest
- **Easy supply** and **long lifetime**
- **Process reliable** operation and **longer maintenance intervals**
- **High process** and **operating safety**



- 1 Steady rest open with retractable lever arm
- 2 Steady rest open (standard)
- 3 Steady rest closed

## Equipment and Options

### Standard version:





- Cylindrical rollers
- Roller rinsing
- Central lubrication
- Rear and side hydraulic connections at the cylinder
- Mounting dimensions are compatible to competitive products
- Very effective dual chip protection at the rollers
- Non-return valve inside the cylinder
- Air purge connection
- Stroke control (without end switch)

### Optional:

- Swing-out lever arm
- Spherical rollers (without additional charges)
- Manual lubrication
- Pneumatic version
- Side mounted cylinder
- Adapter plates for fastening the steady rest

# Toolholders

SCHUNK Clamping Technology

	Hydraulic Expansion Toolholders			
	TENDO SDF INDIVIDUAL	TENDO E compact	TENDO Slim 4ax	TENDOzero
				
<b>Fields of application</b>				
Light milling	•	•	•	•
Medium milling	•	•	•	
Heavy milling		•		
HPC/HSC	•	•	•	•
Drilling	•	•	•	•
Reaming	•	•	•	•
Tapping	•	•	•	
Thread milling	•	•	•	
Grinding				
<b>Characteristics</b>				
Run-out accuracy [mm]	< 0.003	< 0.003	< 0.003	< 0.003*
Max. speed [1/mm]	50000	50000	50000	25000
Torque [Nm]	min. 650 (Ø 32)	max. 900 (Ø 20)	min. 650 (Ø 32)	min. 330 (Ø 20)
Tool change	Allen key	Allen key	Allen key	Allen key
<b>Highlights</b>				
	<ul style="list-style-type: none"> <li>• Tool change within seconds</li> <li>• For highly precise tolerances on the workpiece</li> </ul>	<ul style="list-style-type: none"> <li>• Hydraulic expansion technology price optimized</li> <li>• High radial rigidity</li> <li>• High holding forces</li> <li>• Universally usable precision toolholders</li> </ul>	<ul style="list-style-type: none"> <li>• 1:1 interchangeable with heat shrinking toolholder</li> <li>• Excellent vibration damping</li> <li>• Tool change within seconds</li> <li>• &lt; 0.003 mm run-out and repeat accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• The perfect solution when dimensional accuracy and quality have got to be convincing</li> <li>• Perfect run-out accuracy (adjustable to 0.000 mm)</li> </ul>

\* adjustable to 0.000 mm using Torx Plus key







\*\* Run-out tolerance measured in the clamping bore

## Mechanical Toolholders

With ER collet chucks, Weldon end mill holders, combination shell end mill adapters, face mill arbors, as well as CNC short drill chucks, SCHUNK is offering an extensive range of mechanical toolholders.

- 1 ER collet chucks
- 2 Weldon end mill holders
- 3 Face mill arbors
- 4 Combination shell end mill adapters
- 5 CNC short drill chucks









					Polygonal Toolholder	
TENDO ES	TENDO LSS	TENDOturn DSE/DKE	TENDO WZS	TENDO SVL	TRIBOS-R	
						
•	•	•		•	•	
•		•			•	
•					•	
•	•	•		•	•	
•	•	•		•	•	
•	•	•		•	•	
•					•	
			•			
< 0.003	< 0.006	< 0.003	< 0.003	< 0.006	< 0.003	
50000	25000	10000		10000	55000	
min. 330 (Ø 20)		min. 220 (Ø 20)	min. 250 (Ø 32)	min. 300 (Ø 20)	min. 350 (Ø 32)	
Allen key	Allen key	Allen key	Allen key	Allen key	Clamping device SVP	
<ul style="list-style-type: none"> <li>Extremely short design for additional space in the machine room</li> <li>Flexible clamping range by using intermediate sleeves</li> </ul>	<ul style="list-style-type: none"> <li>For interfering contour-optimized applications</li> <li>Perfect vibration damping</li> </ul>	<ul style="list-style-type: none"> <li>Modular usage for driven tools</li> <li>For use in turn/mill centers</li> <li>Best vibration damping</li> </ul>	<ul style="list-style-type: none"> <li>For use in tool sharpening and grinding machines</li> <li>Extremely large clamping depth for special tools with large shank lengths</li> </ul>	<ul style="list-style-type: none"> <li>Can be used in nearly every precision toolholder irrespective of the spindle interface</li> <li>Convenient tool change due to radially operated clamping screw</li> </ul>	<ul style="list-style-type: none"> <li>High radial rigidity with excellent vibration damping</li> <li>Ultimate dynamic true run-out properties</li> </ul>	

## Gripper with Shaft Interface

For fully automatic loading and unloading of machine tools through its own axis

- 2- or 3-finger gripper GSW-B for toolholder (Ø 20 mm)
- Compensation unit GSW AGE for reduced spindle load
- Vacuum gripper GSW-V for handling flat components
- Magnetic gripper GSW-M for handling metals, bearing rings or workpieces with complex contours



				Expansion Toolholder	Heat Shrinking Technology
TRIBOS-S	TRIBOS-RM	TRIBOS-Mini	TRIBOS SVL	SINO-R	CELSIO
					
•	•	•	•	•	•
•	•			•	•
•	•	•		•	•
•	•	•	•	•	•
•	•	•	•	•	•
				•	•
				•	•
< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.003 **
85000	85000	85000	20000	40000	50000
min. 280 (Ø 32)	min. 50 (Ø 16)	min. 3.5 (Ø 5)	min. 150 (Ø 20)	min. 800 Nm (Ø 32)	min. 750 (Ø 32)
Clamping device SVP	Clamping device SVP/ SVP-RM	Clamping device SVP/ SVP-Mini	Clamping device SVP	Hook wrench/roller bearing wrench	Inductive shrinking device
<ul style="list-style-type: none"> <li>• Optimum for difficult to access workpiece contours</li> <li>• High run-out and repeat accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Compact design for micro-cutting</li> <li>• High radial rigidity</li> </ul>	<ul style="list-style-type: none"> <li>• For micro tools from clamping diameter 0.3 mm</li> <li>• Economical for filigree machining operations without special tools</li> </ul>	<ul style="list-style-type: none"> <li>• Extension for interfering contour-optimized applications</li> <li>• Flexible application possibility</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• High radial rigidity</li> <li>• High torque</li> </ul>	<ul style="list-style-type: none"> <li>• High radial rigidity</li> </ul>

## Cleaning Unit RGG

Suitable for cleaning workpieces and machine interiors.

- Automated cleaning device (Ø 20 mm)
- Works with air or cooling lubricant
- Reduced idle times
- Increased operator safety





## GZB-S Intermediate Sleeves

### Flexible clamping areas through intermediate sleeves

SCHUNK intermediate sleeves allow clamping of several, different shank diameters with just one toolholder. The universal intermediate sleeves GZB-S are available in two versions: coolant-proof, tested and with innovative peripheral coolant channels. And both can be used in the SCHUNK toolholding systems TENDO, TRIBOS, SINO-R, and all standard hydraulic expansion toolholding systems.



### Your benefits:

- **Maximum versatility** with optimum cost control: one chuck, several clamping diameters
- **Versatile length preadjustment** due to movable limit stop
- **More metal cutting volume** than direct clamping, due to higher torque
- **Two versions:** Coolant-proof up to 80 bar or with peripheral cooling
- **Run-out accuracy <math>< 3 \mu</math>**



The tool length  $L$  of every intermediate sleeve can be adjusted flexibly via a movable limit stop.

- 1 Coolant-proof up to 80 bar
- 2 With peripheral cooling

## Clamping Device TRIBOS SVP

### For safe and quick tool change

The TRIBOS SVP clamping devices from SCHUNK clamp tools quickly and evenly.

**TRIBOS SVP-2, the clamping device with a hand pump** offers fast actuation for frequent tool changes. The desired clamping pressure can be built up exactly and quickly with the hand pump and the pressure gauge which is fitted as standard.

**TRIBOS SVP-4, the automatic clamping device** offers maximum ease of use and process reliability through an integrated hydraulic unit for applying pressure, a mount for a length measuring system for tool presetting, as well as an operator display.

### TRIBOS Fixscanner

Intelligent clamping pressure adjustment for accelerated tool changing. This means that manual data entry errors and damage to the toolholder as a result of excessive clamping pressure are therefore excluded. Fast and simple retrofitting of the clamping fixtures TRIBOS SVP-2D, SVP-2D/H and SVP-4.



SVP-2D with Fixscanner

SVP-4




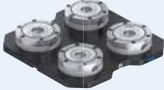


### TRIBOS SVP-Mini and TRIBOS SVP-RM

The newly developed clamping devices SVP-Mini and SVP-RM allow you to change tools in a matter of seconds. Attach the clamping device to TRIBOS-Mini or TRIBOS-RM, insert the tool, clamp to dead stop – finished! Due to the preset pressure, the tool is clamped quickly and process reliably, saving time and significantly reducing set-up costs.



# Stationary Workholding

SCHUNK Clamping Technology

	VERO-S Quick-change Pallet System						VERO-S Automation
	NSE plus NSE 3	NSE mini	NSE mikro	NSL plus NSL 3	NSL turn	NSA plus	
							
<b>Actuation</b>							
Pneumatic	•	•	•	•	•	•	
Hydraulic							
Manual	•	•					
<b>Characteristics</b>							
Clamping force	2.5 – 40 kN pull-down force	0.5 – 6 kN pull-down force	150 – 400 N pull-down force	7.5 – 64 kN pull-down force	75 – 125 kN pull-down force	10 – 30 kN pull-down force	
Clamping range/stroke							
Application pressure/torque	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar	
Sizes	90 – 176	90	49	150 – 800	450, 570	120 – 160	
<b>Highlights</b>							
	<ul style="list-style-type: none"> <li>• Positioning/ mounting and clamping in a single operation</li> <li>• Workpiece/tool change in a matter of seconds</li> <li>• Uniform interface for all machines</li> <li>• Repeat accuracy &lt; 0.005 mm</li> <li>• Uniform clamping pins for all module sizes</li> <li>• Corrosion-free design</li> </ul>	<ul style="list-style-type: none"> <li>• Positioning/ mounting and clamping in a single operation</li> <li>• Very flat design (height 20 mm)</li> <li>• For workpiece direct clamping</li> <li>• Clamping pin size 20 mm</li> <li>• Corrosion-free design</li> <li>• Ideal for smaller machines and light machining</li> </ul>	<ul style="list-style-type: none"> <li>• Positioning, mounting and clamping in a single operation</li> <li>• Tool change in a matter of seconds</li> <li>• Repeat accuracy 0.005 mm</li> <li>• Corrosion-free design</li> <li>• Ideal for smaller machines and light machining</li> </ul>	<ul style="list-style-type: none"> <li>• Universally applicable regardless of the machine manufacturer</li> <li>• Modules are permanently installed</li> <li>• Quick and easy assembly</li> <li>• High accuracy</li> <li>• High level of flexibility</li> <li>• Modular system</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for milling and lathe machines</li> <li>• For rotational speeds up to 2000 RPM</li> <li>• Repeat clamping accuracy &lt; 0.01 mm</li> <li>• Maximum safety due to positive self-locking</li> <li>• For manual lathe chucks up to size 630 mm (ROTA-S plus 2.0)</li> </ul>	<ul style="list-style-type: none"> <li>• Positioning/ mounting and clamping in a single operation</li> <li>• Tool change in a matter of seconds</li> <li>• Repeat accuracy &lt; 0.005 mm</li> <li>• Query Options: <ul style="list-style-type: none"> <li>• Modules open/ closed</li> <li>• Pallet put down</li> </ul> </li> <li>• Cleaning the end contact surface</li> <li>• Lifting force 120 kg for each module</li> <li>• Corrosion-free design</li> </ul>	



## Tombstones









Extremely compact tombstones, ideally adjusted to the selected SCHUNK clamping device. Tombstone design from cast iron or upon request aluminum.

### Basic data

- Three different shapes (rectangle, triangle, octagon)
- For pallets 400 mm and 500 mm

### Design

- Very finely milled with through-hole grid 50 mm
- Very finely milled, with reduced drilling grid, especially for SCHUNK clamping devices
- Rough clamping surfaces without bore holes for finishing by customer

NSR	TANDEM Force and Manual Clamping Blocks				ROTA Manual and Power Chucks/Jaw Boxes		
	KSP plus KSP-LH plus KSP-F plus	KSH plus KSH-LH plus KSH-F plus	KSA plus KSA-LH plus KSA-F plus	KSF plus KSF-LH plus KSF-F plus	ROTA NCK-S plus	ROTA TPS	ROTA-S plus 2.0
							
•	•	•	•	•	•	•	•
4 – 50 kN pull-down force	4.5 – 55 kN	4.5 – 60 kN	18 – 45 kN	4.5 – 55 kN	57 – 144 kN	22 – 80 kN	6 – 18 kN
	2 – 15 mm	2 – 15 mm	2 – 8 mm	2 – 8 mm	2.75 – 5.3 mm	3 – 5 mm	6.5 – 9.7 mm
6 bar	6 – 9 bar	60 bar	8 – 15 Nm	6 – 9 bar	120–195 bar	6 bar	
100 – 220	64 – 250	64 – 250	100 – 160	100–250	165 – 315	125 – 315	160 – 1000
<ul style="list-style-type: none"> <li>• Robot interface for pallet handling</li> <li>• Completely sealed</li> <li>• All queries integrated</li> <li>• Compact and extremely light design (NSR mini 0.4 kg, NSR 1.6 kg, NSR maxi 21 kg)</li> <li>• For pallet handling up to 1000 kg (800 x 800)</li> <li>• No oiled air required</li> </ul>	<ul style="list-style-type: none"> <li>• Compact design allows for maximum utilization of the machining area</li> <li>• Best lateral access</li> <li>• Two integrated standard jaw interfaces</li> <li>• High clamping forces for milling machining</li> <li>• Pressure maintenance possible during machining</li> <li>• The square design makes it ideal for 6-sided machining in two set-ups</li> <li>• Lubrication of all functional areas via two grease nipples or on the floor</li> <li>• Jaw quick-change available upon request</li> <li>• Sensor scanning available upon request</li> <li>• Design <ul style="list-style-type: none"> <li>• pneumatic</li> <li>• hydraulic</li> <li>• manual</li> <li>• Spring actuated</li> </ul> </li> <li>• Each with <ul style="list-style-type: none"> <li>• Standard stroke</li> <li>• Long stroke</li> <li>• Fixed jaw</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Extremely low chuck height</li> <li>• Integrated hydraulic cylinder</li> <li>• One-piece, hardened chuck body</li> <li>• Long guides in pistons and base jaws</li> <li>• High clamping forces</li> <li>• High clamping repeat accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Large through-hole</li> <li>• Available with base plate or with straight recess mount</li> <li>• Integrated pneumatic cylinder</li> <li>• Also available as 2-jaw chuck</li> <li>• High clamping forces</li> </ul>	<ul style="list-style-type: none"> <li>• Jaw quick-change system</li> <li>• Available with base plate or with straight recess mount</li> <li>• Low installation height</li> <li>• High clamping forces</li> <li>• Large jaw program</li> </ul>			

### Optimum machine spindle accessibility



Coordinated and optimized for many horizontal machining centers.

### Product-optimized designs

Ideal tombstone solutions for all SCHUNK clamping devices including SCHUNK VERO-S quick-change clamping system. Universal application possibilities independent of the clamping device used.

- 1 Double angle tombstone
- 2 Triangle tombstone
- 3 Octangle tombstone
- 4 Tombstones with clamping devices



		KONTEC Manual Clamping Systems			
ROTA-S flex	ROTA SPK	KSG KSX KSX-C	KSO KSC-F	KSC KSC2	KSD KSM2 KSC-D
					
•	•	•	•	•	•
100 – 270 kN	55 – 75 kN	4 – 40	7 – 50	7 – 50	4 – 30
7 – 15 mm	75 – 100 mm	0 – 491	0 – 352	0 – 461	8 – 571
550 – 1400	180 – 260	100 – 160	40 – 160	40 – 125	90 – 125
<ul style="list-style-type: none"> <li>• Jaw quick-change system</li> <li>• High clamping forces</li> <li>• Maximum flexibility due to extended guideways</li> <li>• Smallest chuck weight, meaning higher workpiece loading possible</li> <li>• Large jaw program</li> </ul>	<ul style="list-style-type: none"> <li>• Base body made of steel</li> <li>• Sealed against dirt</li> <li>• Variable gauge clearance</li> <li>• Base jaws with tongue and groove or with fine serration for use of standard top jaws</li> <li>• High clamping forces</li> <li>• Easy assembly</li> <li>• Simple handling</li> </ul>	<p>KSG</p> <ul style="list-style-type: none"> <li>• 160° quick clamping</li> <li>• Simple handling</li> <li>• Clamping force pre-setting</li> </ul> <p>KSX   KSX-C</p> <ul style="list-style-type: none"> <li>• Lever quick clamping</li> <li>• Complete encapsulation and quick adjustment of the clamping range</li> <li>• Clamping force pre-setting</li> <li>• Can be combined with VERO-S quick-change pallet system</li> </ul> <p>KSX-C</p> <ul style="list-style-type: none"> <li>• Individual adjustment of the clamping center</li> </ul>	<p>KSO</p> <ul style="list-style-type: none"> <li>• Encapsulated spindle</li> <li>• Clamping range adjustment</li> <li>• Ideal for pallets used in workpiece storage units</li> </ul> <p>KSC-F</p> <ul style="list-style-type: none"> <li>• Clamping against fixed jaw</li> <li>• Quick clamping</li> <li>• Large clamping range</li> <li>• Interface for VERO-S quick-change pallet system</li> <li>• Clamping by traction</li> </ul>	<p>KSC</p> <ul style="list-style-type: none"> <li>• Double encapsulated spindle</li> <li>• Drainage grooves</li> <li>• Thread for stops</li> <li>• Interface for VERO-S quick-change pallet system</li> <li>• Clamping by traction</li> </ul> <p>KSC2</p> <ul style="list-style-type: none"> <li>• Jaw quick-change system</li> <li>• Encapsulated spindle</li> <li>• Adjustable clamping center</li> <li>• Interface for VERO-S quick-change pallet system</li> </ul>	<p>KSD</p> <ul style="list-style-type: none"> <li>• Third hand function</li> <li>• Usable as centric or double vise</li> </ul> <p>KSM2</p> <ul style="list-style-type: none"> <li>• Multiple clamping system</li> <li>• Jaw quick-change system</li> <li>• Extremely high loading density</li> <li>• Interface for VERO-S quick-change pallet system</li> </ul> <p>KSC-D</p> <ul style="list-style-type: none"> <li>• Third hand function</li> <li>• VERO-S interface</li> <li>• Completely encapsulated</li> <li>• Low height</li> </ul>



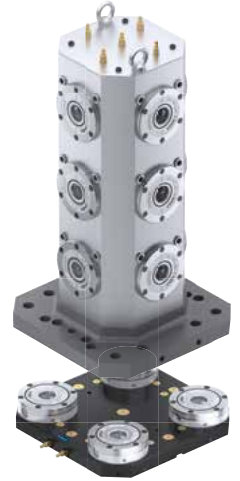
## Modular System for Individualists

### The largest Modular System – more than 1,000 Variants for Workpiece Clamping

Use the VERO-S in combination with the comprehensive range of stationary clamping devices from SCHUNK for a quick and efficient set-up, even with a batch size of 1.

#### VERO-S quick-change pallet modules

The productivity boosters from SCHUNK offer the decisive competitive advantage due to their versatility and can no longer be done without in modern production lines.



#### VERO-S Clamping Pallet

For fastening workpiece clamping devices. For very fast and very accurate conversion.



#### KONTEC Manual Clamping Systems

For quick and safe clamping. High clamping forces, easy presetting. Optimum for clamping raw and finished parts.



#### VERO-S Tombstones

As a basis for numerous clamping possibilities with manual or automatic clamping devices – ideal for 4-axis horizontal machining centers.

#### TANDEM Clamping Force Blocks

Compact powerhouses for use in confined spaces. Pneumatic, manual or hydraulic.



#### MAGNOS Magnetic Clamping Technology

Electric permanent magnetic clamping technology for the highest level of retention force and flexibility in the clamping area.



#### ROTA-S flex Lightweight Chuck

Increases the machine capacity through weight-reduced lathe chuck by up to 60%.



#### VERO-S WDB

##### Modular system for direct workpiece clamping

The modular VERO-S WDB system brings the efficiency of the SCHUNK VERO-S quick-change pallet system to direct workpiece clamping. Freely molded parts and other workpieces can be directly clamped in seconds without interfering contours due to modular clamping pillars.

The clamping pillars ensure collision-free operation, a defined clamping application, and reliable simulation of machining.


#### Your benefits:

- Clamping of **freely molded parts**
- Clamping **without interfering contour**
- Pull-down forces of up to **25 kN**
- **Integrated air feed-through** to the clamping module
- **Form-fit, self-locking** connections



# Magnetic Clamping Technology

SCHUNK Clamping Technology

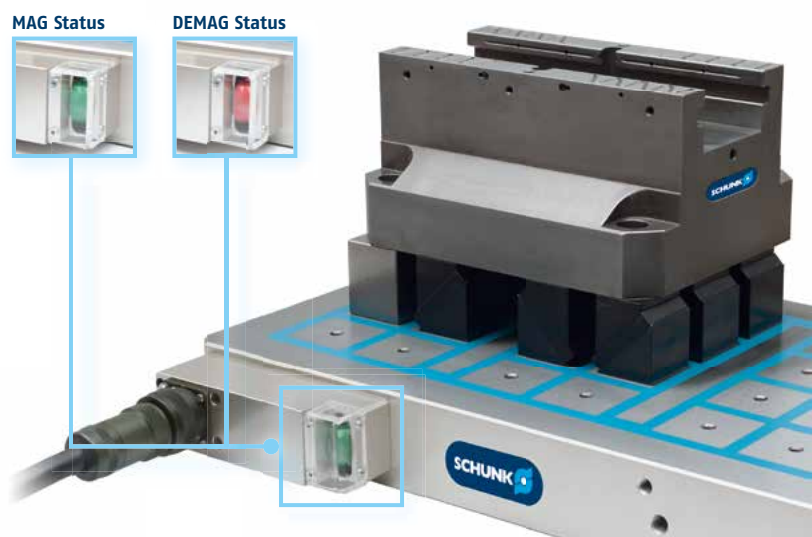
	MAGNOS Magnetic Technology				
	Square Pole Technology	Parallel Pole Technology	Radial Pole Technology	ROTA NCM	Lifting Technology
					
<b>Actuation</b>					
Manual		●	●	●	●
Pneumatic				●	●
Electrical	●	●	●	●	●
<b>Characteristics</b>					
Clamping/ lifting technology	24 kN – 555 kN*	up to 100 N/cm <sup>2</sup>	up to 160 N/cm <sup>2</sup>	on request	up to 2000 kg
Control pressure/ supply voltage	400 V/50 Hz	400 V/50 Hz	400 V/50 Hz	on request	
Sizes	Pole sizes 32 x 32/ 50 x 50/75 x 75 and round version	in rectangular or round version	∅ 150 – 4000 mm	∅ 400 – 2500 mm	5 size
<b>Highlights</b>					
	<ul style="list-style-type: none"> <li>• For high-precision milling and grinding</li> <li>• Energy-efficient clamping</li> <li>• Low-deformation clamping</li> <li>• No loss of clamping force in case of a power failure</li> <li>• Compensation of unevenness using variable polar extensions</li> <li>• 5-sided machining</li> <li>• Shortest possible set-up times and a resulting increase in productivity</li> </ul>	<ul style="list-style-type: none"> <li>• For high-precision grinding</li> <li>• Energy-efficient clamping</li> <li>• No loss of clamping force in case of a power failure</li> <li>• Shortest possible set-up times and a resulting increase in productivity</li> <li>• Various pole pitch variants for a wide variety of machining</li> <li>• Multi-stage holding force regulation</li> <li>• De-magnetization cycle for reducing the residual magnetism in the workpiece</li> </ul>	<ul style="list-style-type: none"> <li>• For cylindrical grinding and turning</li> <li>• Energy-efficient clamping</li> <li>• Low-deformation clamping</li> <li>• No loss of clamping force in case of a power failure</li> <li>• Shortest possible set-up times and a resulting increase in productivity</li> <li>• Clamping with low level of deformation due to use of fixed and variable pole extensions</li> <li>• De-magnetization cycle for reducing the residual magnetism in the workpiece</li> </ul>	<ul style="list-style-type: none"> <li>• Large jaw stroke</li> <li>• Optimum jaw quick-change repeatability</li> <li>• High clamping repeat accuracy</li> <li>• Centrifugal force compensation</li> <li>• Media feed-through</li> <li>• Active jaw pull-down (magnet)</li> </ul>	<ul style="list-style-type: none"> <li>• One-handed operation possible</li> <li>• Maintenance-free</li> <li>• Low weight at a maximum lifting performance</li> <li>• Minimal magnetization and de-magnetization times</li> <li>• No external energy supply</li> </ul>



\* for covering all poles and air gap 0 mm

## Patented Status Display helps to avoid Accidents!

### Exclusive and only from SCHUNK: Status display MAG/DEMAG

The patented MAG/DEMAG status display for the operating condition of square pole plates allows users to see at a glance whether MAGNOS magnetic chucks are active or not. This allows accidents to be avoided. The continuous display of the magnetizing state enables reliable clamping and does not depend on the power supply.



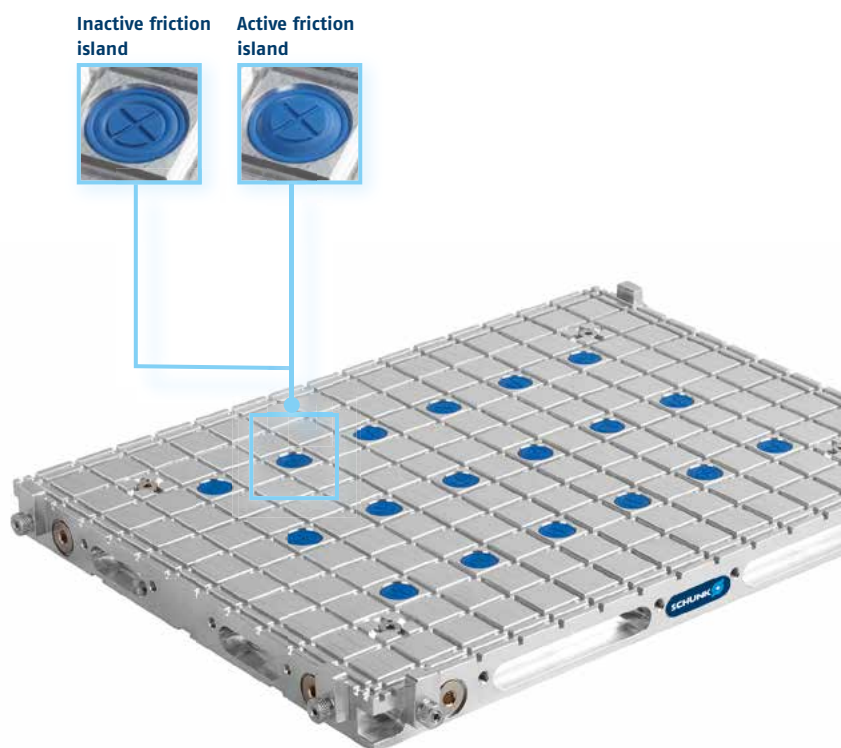
PLANOS Vacuum Clamping Technology		
	Matrix Plates	Aggregate
		
<b>Actuation</b>		
Pneumatic	•	
Vacuum pump	•	
<b>Characteristics</b>		
Clamping/lifting force	up to 8 N/cm <sup>2</sup>	
Actuation pressure/ Supply voltage	400 V/50 Hz (aggregate)	
Sizes	300 x 200, 400 x 300, 600 x 400	
<b>Highlights</b>		
	<ul style="list-style-type: none"> <li>• 5-sided machining and workpiece through bore with base plate and cups possible</li> <li>• Up to 30% higher lateral force mounting with patented friction islands</li> <li>• Powerful aggregate</li> <li>• Simple handling</li> <li>• Modular design</li> </ul>	<ul style="list-style-type: none"> <li>• Automatic emergency-off function (coupled to the machine)</li> <li>• Integrated pressure gauge, vacuum switch, and alarm device</li> <li>• Sight glass with electronic float switch and alarm device</li> <li>• Additional digital output warns of loss of the operating vacuum or a critical fill level during machining</li> <li>• Mobile use possible</li> <li>• Energy saving device in automatic mode at 80% vacuum</li> </ul>

## Maximum Holding Forces for reliable Clamping

### Unique – the PLANOS Friction Islands

#### Your benefits:

- Up to **30%** higher shearing force absorption\*
- Friction islands exert **no** additional force on the workpiece
- **Oil- and ozone-resistant**, can be replaced individually when worn out
- **Automatic** activation and deactivation via vacuum supply



# Applications

SCHUNK Clamping Technology



## Efficient Clamping of Individual Pieces and small Batches

### Task

Clamping solution for the production of individual parts and small batches of various sizes in quick succession.

### SCHUNK solution

The optimum solution for this task is provided by the SCHUNK VERO-S clamping device assembly with over 1,000 variants. The basis are SCHUNK VERO-S clamping pyramids with VERO-S NSE plus 138 clamping modules, which enable multi-sided machining as quadruple clamping systems. Pre-equipped, they can be substituted in within a minute and in so doing save 20 minutes of set-up time per change. With a SCHUNK VERO-S collet chuck even allows its fifth side to be equipped. For optimum accessibility, the VERO-S clamping pyramid is combined with flat SCHUNK KONTEC KSC clamping blocks. The highly efficient all-rounders unit high clamping forces of up to 35 kN, convenient operation and short set-up times. A slim vibration-reducing SCHUNK hydraulic expansion toolholder TENDO Slim 4x ensures economic machining on five sides.

### SCHUNK products



**VERO-S**  
NSL plus  
clamping station



**TENDO Slim 4x**  
Hydraulic expansion  
toolholder



**KONTEC**  
KSC clamping  
force block



## Maximal Use of Space for Minimal Weight for Clamping HD Rims

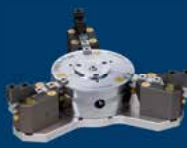
### Task

Creation of space in the machine room of the Hermle C 42 5 axis milling center for workpieces with larger clamping diameters.

### SCHUNK solution

The flexible lightweight SCHUNK ROTA-S flex is made for this task. Thanks to the extended guide tracks, the tried-and-tested lathe chuck becomes a large chuck with flexible application possibilities. In comparison to conventional lathe chucks for large clamping diameters, the ROTA-S flex is up to 60% lighter, which is particularly important for combined work. Thanks to the low construction height, there is still enough room for the Harley Davidson rim and the tools. Compared to conventional large chucks, workpieces can be reached significantly more easily. For machining small parts, the extended guide tracks can be dismantled. The accuracy of the 315 chuck combined with a 700 clamping are the basis for the removal of the range of parts on the Hermle C 42 5-axis milling center.

### SCHUNK products



**ROTA-S flex**  
Manual  
lathe chuck



**TENDO SDF INDIVIDUAL**  
Hydraulic expansion  
toolholder





## Maximal Efficiency when Clamping large Ranges of Parts

### Task

Over 600 different gear parts are to be produced on pick-up lathes with maximum efficiency.

### SCHUNK solution

The suitable solution allows highly precise quick-change solution with a SCHUNK ROTA NCO power chuck. It unites the highest clamping forces with longest jaw stroke and lowest height at the same time. For the lathe chuck, a jaw quick-change system was developed, which enables a process-reliable, toolless retrofitting of all three chuck jaws in under a minute. Due to the part spectrum, the ROTA NCO is used in the special size 280. Together with the sophisticated clamping concept, the complex lathe chuck change could be completely eliminated.

## Efficient Clamping of easily deformed Parts

### Task

Clamping solution for small batches of easily deformed parts or recurring components.

### SCHUNK solution

Torsion-free clamping of deformation-sensitive parts – no problem with MAGNOS clamping technology. Torsion-free set-up of rough and flame-cut parts, free access to the workpieces from five sides and short set-up times are decisive advantages. The patented MAG/DEMAG status display for the operating condition of square pole plates allows users to see at a glance whether MAGNOS magnetic chucks are active. The continuous display enables reliable clamping and does not depend on the power supply. The movable pole extensions can be adapted to the workpiece contour. Due to the raised position, workpieces are optionally accessible for 5-axis machining.

### SCHUNK products



**ROTA NCO**  
Power  
lathe chuck

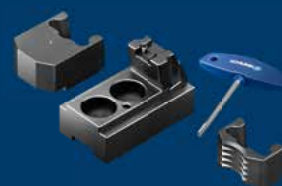


Chuck jaws  
Customized solutions

### SCHUNK products



**ROTA NCD**  
Wedge bar lathe chuck



**PRONTO**  
Jaw quick-change  
system

## SCHUNK Service



Competent and skilled personnel ensure optimal availability of your SCHUNK products, and make sure that their value will be maintained.

### Your advantage:

- Fast supply of original spare parts
- Reduction of down-times
- The complete spectrum of components from one source
- Quality and availability that can only be guaranteed by the original manufacturer
- 12-month warranty



### Initial operation

- Professional assembly
- Fast and trouble-free



### Inspection

- Inspection is carried out by skilled service engineers
- Avoiding unplanned failures of workholding and toolholding equipment



### Maintenance

- Regular maintenance carried out by skilled service engineers
- Increasing and ensuring the availability of your workholding and toolholding equipment



### Repairs

- Short down-times due to fast intervention of the SCHUNK service engineers
- Spare parts and accessories

## Training

- Fast and practical training
- Efficient use of your SCHUNK products by training of the operating personnel
- The basis for proper machining of workpieces
- Ensures longevity of your SCHUNK products

## Individual service – for better results

- Hotline to our inside technical consultants weekdays from 7 a.m. to 6 p.m.
- Project-oriented and on-site technical advice at your location
- Training on innovations and SCHUNK products – across the world in our local subsidiaries

## Online service – for a fast overview

All information in digital form, clearly structured and up-to-date on our website at [www.schunk.com](http://www.schunk.com)

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Quantity

### Highlights New Products

Current innovations in SCHUNK Gripping Systems

### Complete Program Gripping Systems

Catalogs SCHUNK Grippers, Rotary Modules, Linear Modules, Robot Accessories

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The compact SCHUNK Gripping Competence on over 1,760 pages

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The optimum interaction between the robot arm and gripper

### Product Overview SCHUNK Grippers

SCHUNK Grippers at a glance

### Product Overview Rotary Modules

SCHUNK Rotary Modules at a glance

### Product Overview Linear Modules

SCHUNK Linear Modules at a glance

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SCHUNK Robot Accessories at a glance

### Product Overview Modular Assembly Automation

Comprehensive range from the modular system

### Product Overview Mechatronics<sup>3</sup>

Alternative – Adaptable – Intelligent

## Depanelling Machine

### Product Overview Depanelling Machine

Solutions for the complete spectrum of depanelling technology

## Clamping Technology

Quantity

### Highlights New Products

Current innovations in SCHUNK Clamping Technology

### Complete Program Clamping Technology

Catalogs Toolholders, Stationary Workholding, Lathe Chucks, Chuck Jaws

### Catalog Toolholders

The complete precision toolholder range for perfect machining on around 520 pages

### Catalog Lathe Chucks

Lathe chucks for sophisticated machining of world-renowned quality on 650 compact pages

### Catalog Chuck Jaws

With 1,200 types – the world's largest chuck jaw program on over 720 pages

### Catalog Stationary Workholding

The largest modular system for individualists with more than 500 variants for workpiece clamping on around 830 pages

### Product Overview Lathe Chuck Technology

The whole World of Lathe Chucks

### Product Catalog MAGNOS Magnetic Clamping Technology

5-sided workpiece machining in one set-up

### Product Catalog PLANOS Vacuum Clamping Technology

The universal, modular designed clamping system with high holding forces

### Catalog Hydraulic Expansion Technology

More than 75,000 implemented customized clamping solutions for tool and workpiece

### Product Catalog TRIBOS Micromachining

The No. 1 in Micromachining

## Synergy SCHUNK

### Competence Catalog Clamping Technology | Gripping Systems

The SCHUNK No. 1 service provider for your processing machines and automated production processes

Company

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# No. 1

for safe, precise gripping  
and holding.



*J. Lehmann*

Jens Lehmann, German goalkeeper legend,  
SCHUNK brand ambassador since 2012  
for safe, precise gripping and holding.  
[schunk.com/lehmann](http://schunk.com/lehmann)

**852** minutes without a  
goal against him in the  
Champions League

**681** minutes without a goal  
against him in the national team

**2** intercepted penalties  
in the 2006 World Cup

**1** headed goal as a goalie

**0** defeats English Soccer Champion

and

More than **2,000,000**  
sold precision toolholders

About **1,000,000**  
delivered SCHUNK grippers

More than **100,000**  
lathe chucks and stationary  
workholding systems are in use  
worldwide

More than **16,000,000**  
sold standard chuck jaws

More than **75,000**  
implemented hydraulic expansion  
customer-specific solutions

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