

Superior Clamping and Gripping



## SCHUNK Lathe Chuck Technology

Product Overview 2016





### **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 clamping technology and gripping systems. The top performance of SCHUNK and Jens Lehmann are characterized by dynamics, precision, and reliability.

For more information visit our website: www.gb.schunk.com/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 clamping technology and gripping systems – 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 more than 2,500 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

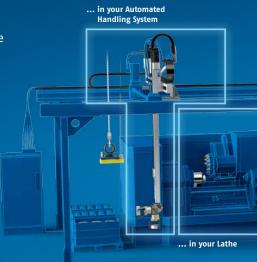
G. Savenon

### The whole World of Lathe Chucks.

From the universal manual chuck to power lathe chucks with jaw quick-change systems and maximum clamping forces, SCHUNK offers the most versatile lathe chucks for every application. They feature outstanding quality based on innovative technology and more than 40 years of experience built up by our highly specialized employees.

Chuck Jaws, steady rests, toolholders and clamping cylinders complete the range of products designed to meet the demanding requirements of modern machining. By continuous development of technology and products as well as by rigorous compliance with the quality management system DIN EN ISO 9001/2000, SCHUNK is your competent partner for high-quality lathe chucks!

Even for customized or complete solutions which are combined with chuck jaws SCHUNK shows highest competence as a "single-source supplier" of effective and economic solutions.





### **Chuck Jaws**

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

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



### **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 of clamping force



**SCHUNK Standard Chuck Jaws** 

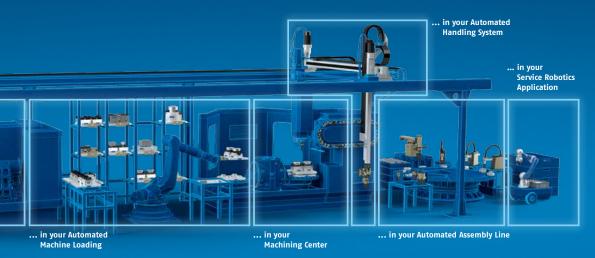


ROTA-S plus 2.0

Manual Lathe Chucks

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

Our superior components can unlock potential you didn't even know you had. In your machine. SCHUNK Synergy – the perfectly harmonized relationship between clamping technology and gripping systems turns our customers into productivity champions ...





### **Steady rests**

A plus for any lathe in shaft machining. Permanently excellent centering and repeat accuracy combined with maximum clamping forces.

• Clamping range 4 - 460 mm



### **Toolholders**

TENDOturn - unique vibration damping for excellent workpiece surfaces.

- Up to 300% improved surface finish
- Run-out and repeat accuracy
   0.003 mm



### **Accessories**

The ideal accessories for every lathe for greater process reliability and efficiency.

- Clamping force tester and control unit
- · Special grease
- Clamping cylinder



ZENTRICO THL plus Steady Rests



T|E|N|D|OTURN
Hydraulic Expansion Technology



OPUS-V
Closed-center Hydraulic Cylinder



### **Chuck Jaws**

	Chuck jaws				
	Soft top jaws	Jaw blanks	Full grip top jaws	Block jaws	
				THE PARTY OF THE P	
Fields of application					
Unfinished part clamping					
Finished part clamping	•	•	•	•	
I.D. Clamping	•	•	•	•	
O.D. Clamping	•	•	•	•	
Compensation of shape tolerances					
Clamping diameter can be adjusted by turning	•	•	•	•	
Low-deformation clamping			•		
Jaw quick change	•		•	•	
Characteristics					
Jaw interface/design (as standard)	Fine serration 90° Fine serration 60° Tongue and groove	Fine serration 90° Fine serration 60°	Fine serration 90° Fine serration 60° Tongue and groove	Straight and diagonal wedge-bar serration	
Available for lathe chuck sizes (as standard)	80 – 1200 mm	160 - 800 mm	80 - 630 mm	140 - 800 mm	
Material	16MnCr5 steel suitable for case hardening or high-tensile aluminum	16MnCr5 steel suitable for case hardening	16MnCr5 steel suitable for case hardening or high-tensile aluminum	C45, tempered, suitable for induction hardening	
Highlights					
	<ul> <li>Depending on version: ground groove and fine serration or finely milled tongue and groove</li> <li>Can be turned to the required clamping diameter</li> </ul>	<ul> <li>Available drilled or undrilled</li> <li>Ground groove and fine serration</li> <li>Can be turned to the required clamping diameter</li> </ul>	The large locating surface ensures that clamping forces are evenly distributed over the workpiece area, thereby reducing deformation of the workpiece	<ul> <li>Inductively hardened serration and guides can increase the life span of the lathe chuck</li> <li>Available in different versions</li> </ul>	

Claw jaws	Stepped top jaws	Stepped block jaws	PRONTO jaw quick- change system	Pendulum jaws	QUENTES fiber glass jaws
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-				•	•
			•	•	•
				•	•
•	•	•	•	•	•
Fine serration 90° Fine serration 60° Tongue and groove	Fine serration 90° Fine serration 60° Tongue and groove	Straight and diagonal wedge-bar serration	Fine serration 90° Fine serration 60° Straight wedge-bar serration	Fine serration 90° Fine serration 60° Straight and diagonal wedge-bar serration	Fine serration 90° Fine serration 60° Tongue and groove
140 - 1000 mm	110 - 1200 mm	160 - 630 mm	200 - 315 mm	200 - 500 mm	160 – 315 mm
16MnCr5 steel, case-hardened	16MnCr5 steel, case-hardened	16MnCr5 suitable for case hardening or 16MnCrS5K steel	Tempered or case-hardened steel	Case-hardened steel	Glass-fiber-reinforced plastic
The claw serration produces a non-positive transmission that also allows for transmission of very high machining forces Available for O.D., I.D., and bar clamping	The diamond serration allows for an initial set-up in which the clamping teeth penetrate only slightly into the workpiece Suitable for O.D., I.D., and bar clamping Variety of large clamping ranges can	<ul> <li>Suitable for O.D., I.D., and bar clamping</li> <li>Variety of large clamping ranges can be implemented</li> </ul>	<ul> <li>Variety of quick-change inserts         available for clamping rough and finished parts</li> <li>700% expansion of clamping range without displacement of the supporting jaws in intervals of 5 seconds per jaw</li> </ul>	<ul> <li>For clamping thin-walled and deformation-sensitive workpieces</li> <li>Shape errors compensated through oscillation</li> <li>Clamping inserts are available in hardened and unhardened versions</li> </ul>	<ul> <li>The lightweight and stable design ensures minimal loss of clamping force</li> <li>No clamping marks, therefore ideal for clamping on highly sensitive, already ground or finished surfaces</li> <li>Low-priced system</li> </ul>

Serrated jaws	Base jaws
Fine serration 90°	Straight and diagonal
Fine serration 60°	wedge-bar serration
125 - 800 mm	125 - 1000 mm
Steel or aluminum	Hardened and precision ground steel
For universal use     Standard length 420 mm     undrilled for custom cutting     For producing long chuck     jaws; this allows any custom     length to be implemented     quickly and economically	<ul> <li>Hardened and precision ground base jaws for top jaws</li> <li>With mount for top jaw with tongue and groove or fine serration</li> </ul>

### **Customized solutions**

Over 30 years of experience developing and manufacturing special chuck jaws make us a sought-after partner for special applications. From modified standard jaws to complex custom designs, our team of experts develops the right solution for every application.

Challenge us - we will win you over!

### **Examples of customized solutions**



- Clamping a lifting hook using a rigid jaw with workpiece stops and a jaw with axial and radially oscillating clamping inserts
- 2 Square clamping on a 2-jaw chuck with two customized prism iaws
- 9 4-point clamping solution for a conrod eye in a 2-jaw chuck with a rigid jaw and a pendulum jaw
- 4 6-point pendulum jaw for conrods in a 3-jaw chuck
- 5 I.D. clamping of a thin-walled ring by a 12-point pendulum jaw with changeable clamping inserts

## SCHUNK Chuck Jaw Quickfinder on the Internet

At www.schunk.com/chuck-jaw-quickfinder, you will recieve an overview on possible chuck jaw solutions, including accessory products such as T-nuts and screws.

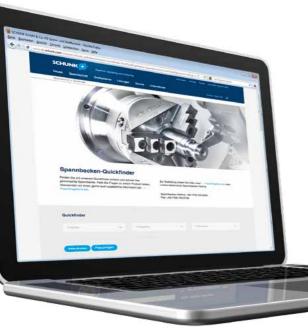
- Faster through guided product searches
   Prescribed selection menus facilitate the search.
- Find the right jaw faster
   In just seconds the suitable chuck jaws with the associated accessory products are presented.
- A faster qualified enquiry

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 all working days 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

   Use onto your desire changes and send them.

Just enter your desire changes and send them. You will then receive an individual quotation within 24 hours.





## The new SCHUNK Chuck Jaw-App - any time available via mobile phone

### Everything under Control - the new Chuck Jaw-App

With our new app for your smartphone, the complete SCHUNK chuck jaw assortment is always available and easy to order.

Downloads at iTunes or Android







### **Lathe Chucks**

	Manual lathe chucks			Power lathe chucks with jaw quick-change system		
	ROTA-S plus 2.0 ROTA-S plus	ROTA-S flex	ROTA-S SPK	ROTA THW plus	ROTA THW vario	
Fields of application						
Large spindle bore	•			•	•	
Max. RPM	•	•		•	•	
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 smallest workpieces	•	•		•	•	
Bar machining				•	•	
Overlap clamping					•	
Wedge-bar power 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						
Characteristics						
Size	160 - 1400	550 - 1400	180 - 260	165 - 315	215	
Design	Wedge-bar power chuck	Wedge-bar power chuck		Wedge-bar power chuck	Wedge-bar power chuck	
Jaw interface	Base jaws with angled serration	Base jaws with straight serration	Base jaws with serration in inches or tongue and groove	Base jaw with straight serration	Base jaw with straight serration	
Highlights						
All lathe chucks can also be used in stationary applications!	• Quick-change jaw chuck	<ul> <li>Quick-change jaw chuck</li> </ul>	<ul><li>Steel body</li><li>Sealed against dirt</li></ul>	<ul> <li>Quick-change jaw chuck</li> </ul>	• Quick-change jaw chuck	
	Large toolholder through bore     Excellent accuracy     Modular centersleeve system (up to size 315)     Can be combined with arbor (up to size 315)	Excellent accuracy     Exchangeable guideway extension     Clamping range 8 – 1422 mm		Large toolholder through bore     High changing repeat accuracy     Modular center sleeve system	Large toolholder through bore     High changing repeat accuracy     Modular center sleeve system     Collet chuck or arbor mountable	

	Power lathe chucks				Power lathe chucks	
	with through-hole				without through-hole	
ROTA NCX	ROTA NCD	ROTA NCF ROTA NCF plus 2	ROTA NC ROTA NC plus 2	ROTA NCK plus	ROTA NCO	
		ROTA NET PIUS 2	NOTA NC plus 2			
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165 - 315	132 - 630	185 - 315/400 - 630	185 - 315/400 - 1000	165 - 315	165 - 1000	
Wedge-bar power chuck	Wedge-bar power chuck	Wedge-hook chuck	Wedge-hook chuck	Wedge-hook chuck	Wedge-hook chuck	
Base jaws compatible	Jaw connection with	Jaw connection with	Jaw connection with	Jaw connection with	Jaw connection with	
with angled serration	serration in metric and	serration in metric and	serration in metric and	serration in metric and	serration in inches or	
	inch units	inch units	inch units	inch units	tongue and groove	
• Quick-change jaw	Very large toolholder	Integrated centrifugal	Very large toolholder	• Jaw connection metric		
<ul><li>chuck</li><li>High changing repeat</li></ul>	through bore • Patented collet jaw	force compensation  • Double base jaw	through bore  • Double base jaw	or inches • Interface 100%	<ul> <li>High clamping force and large jaw stroke</li> </ul>	
accuracy	system	guidance with ROTA	guidance with ROTA NC	compatible with	Additional dirt seal	
Interface compatible	Excellent accuracy	NCF plus	plus	Kitagawa B200 series		
with Kitagawa BB 200 series		<ul> <li>Modular center sleeve system</li> </ul>	<ul> <li>Modular center sleeve system</li> </ul>	<ul> <li>Integrated center sleeve blank</li> </ul>		
Easy replacement of		<ul> <li>Special optimized</li> </ul>	<ul> <li>Special optimized</li> </ul>			
existing chucks with fine serration		pump lubrication	pump lubrication			
ille sellation		system	system			

	Power lathe chucks without through-hole		Pneumatic power chucks		
ROTA 2B	ROTA NCR	ROTA NCS 3- or 6-jaws	ROTA TP	ROTA TB/TB-LH	ROTA TB2 ROTA TB2-LH
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	•	•			
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125 – 500 Wedge-hook chuck	165 – 1600 6-jaw pendulum compensation chuck, central clamping	175 – 500 Lever chuck (for NCS 3-jaw) pendulum compensation chuck, central clamping (for NCS 6-jaw)	125 – 350 Wedge-hook chuck	400 – 1200 Wedge-hook chuck	400 – 1200 Wedge-hook chuck
Jaw connection with serration in inches or tongue and groove	Jaw connection with serration in inches or tongue and groove	Jaw connection with tongue and groove	Jaw connection with serration in inches	Jaw connection with serration in inches	Jaw connection with serration in inches
. Vom lares in the	· Also positishts to	Active in the second	. With interest	. With interest	. With interest
<ul> <li>Very large jaw stroke</li> <li>Lightweight design</li> <li>Mounting thread for workpiece stops</li> </ul>	<ul> <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> <li>Active jaw pull-down</li> <li>Integrated pendulum compensation</li> <li>Hermetically sealed</li> <li>Low maintenance</li> </ul>	<ul> <li>With integrated pneumatic cylinder</li> <li>Very large throughhole</li> <li>Also for stationary applications</li> </ul>	<ul> <li>With integrated pneumatic cylinder</li> <li>Very large throughhole</li> <li>With fast stroke and clamping stroke</li> </ul>	With integrated pneumatic cylinder Very large throughhole With fast stroke and clamping stroke (TB-LH/EP-LH) Seal of the base jaw guide Chemical coating for corrosion protection Wireless clamping pressure control

## **ROTA FSW** Chuck quick-change system. Complete chuck change in less than three minutes.

### Changing of clamping devices in no time

The patented SCHUNK ROTA FSW quick-change chuck system allows rapid chuck changes up to a size of 630 mm in under three minutes, with excellent repeat accuracy. It can be undone and locked with full process reliability using just one clamping screw. Using a flexible adapter, the draw tube of the lathe can be automatically connected to the lathe chuck, and centered with great precision due to a patented flexible taper. A patented dual stroke system ensures enormous pull-down forces, an optimal flat work surface, and maximum rigidity in the connection.

### Versatile in use and easy to retrofit

The SCHUNK quick-change chuck system can be retrofitted to almost any lathe.

It is suitable for manual as well as power chucks. Their actuating force and maximum rotational speed remain fully preserved.

Due to the low height, there are few restrictions in installation space. With its large through-hole, the SCHUNK ROTA FSW can be also used in modern turning centers. Clamping devices that are already in place can be adapted to the system relatively straightforwardly and continue to be used.

### Your benefits

- High pull-down force for maximum actuating forces
- Low height
- · Form-fit locking with self-locking
- · Patented drive
- Actuation of the entire system by means of one setscrew
- · High rigidity due to flat work surface
- Patented centering via flex cone
- · Locking status indicator
- · Easy to operate
- · Retrofittable for almost every lathe
- Available in three sizes for chucks up to Ø 630 mm





### **Steady Rests**



A plus for any Lathe. Lifelong service! Robust. High-precision.

### **ZENTRICO THL plus Steady Rests**

Due to optimized lever kinematics, central lubrication, integrated roller rinsing, and stopping contamination, the new SCHUNK ZENTRICO plus steady rest achieves maximum clamping forces for each roller, as well as constantly excellent centering and repeat accuracy.



Clamping range 4 – 460 mm

### **Equipment and options**

### Standard design:

- · Cylindrical rollers
- · Roller rinsing
- Central lubrication
- Hydraulic connections on the side and rear on the cylinder
- Payload compatible with competing products
- · Extra stable double chip protection on rollers
- Check valve in the cylinder
- · Air purge connection
- Stroke monitoring (without limit switch)

### Optional:

- Swing-out lever arm
- · Spherical rollers (no surcharge)
- Manual lubrication
- Pneumatic version
- · Side cylinder
- Adapter plates for fastening the steady rests

### Your advantages:

- 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 build, no interfering contour on the steady rest
- Easy supply and long lifetime
- Process reliable operation and longer maintenance intervals
- High process and operating safety







## Low-vibration! Improved of surface finish by up to 300%

### **TENDOturn**

With TENDOturn, you benefit from the advantages of the innovative hydraulic expansion toolholder technology – even with applications on lathes/milling centers.

Along with highlights such as the versatile clamping range by virtue of intermediate sleeves, the run-out and repeat accuracy of < 0.003 mm (DSE double clamping insert), and the easy handling, TENDOturn convinces primarily through its unique vibration damping. This helps you to realize excellent workpiece surfaces.

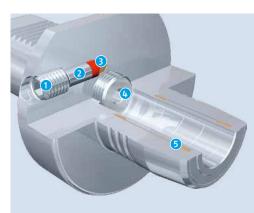
TENDO hydraulic expansion toolholders with CAPTO mountings for turning/milling centers and milling/turning centers.



### Your benefits

- All TENDOturn versions have an axial lengthadjustment screw
- All shank types can be clamped, including Weldon and Whistle Notch
- Improvement of vibration damping and thus visible improvement in the surface finish by up to 300%







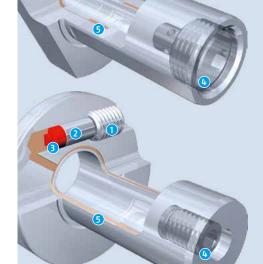
- Piston
- Seal
- 4 Length-adjustment screw
- 5 Expansion chamber



The compact solution for direct use in the turret of a lathe. Suitable for internal coolant supply and additionally equipped with axial length-setting screw for comfortable pre-setting outside the machine.



Increase the productivity of your existing equipment by using the DKE lathe clamping insert. TENDOturn DKE does not require any specific interface and can be held in any customary VDI bore rod holders in order to absorb vibrations.



### **TENDOturn DSE double clamping insert**

Modular insert for driven tools, for perfect performance on existing equipment. Maximum run-out quality and great vibration damping ensure optimal results. The uniform internal/external clamping force centers the insert providing maximum holding forces and correct and precise clamping of your tool.

### Exact measurement for process-reliable workpiece clamping.



### **GFT-X** clamping force tester

Clamping force tester for static and dynamic measurement of clamping forces

### **Your benefits**

- Easy measurement of clamping forces on lathe chucks in rest position (static) or during dynamic operation via non-contact data transmission.
- The clamping force behavior of 2-, 3- 4-jaw chucks can be checked
- If necessary, the measured clamping force and speed values can be analyzed via a laptop or PC (see "Technical data" for information)
- Scope of delivery: control unit with all accessories and attachments, including software, in a dirt-resistant case for immediate use

### Extension solutions for every lathe.



### Flanges and draw tube adapters

Lathe chucks, flanges and draw tube adapters – all from a single source. So you can begin production right away.

### For use under extreme conditions.



LINOMAX is a homogeneous, water-resistant grease based on a particularly selected mineral oil-/synthetic oil combination with a high proportion of matched, very efficient micro-white solid lubricant.

### Your benefits

- Ideal in the boundary- and mixed friction ranges, especially with oscillating, vibrating movements
- Extremely high capability of pressure absorption
- Minimizes the risk of frictional corrosion and improves lubrication characteristics

### Large Control Range, extremely short Switching Times.

### **OPUS-V | OPUS-H hydraulic cylinders**

SCHUNK hydraulic solid and through-hole cylinders for actuation of power chucks.

### **OPUS-V** closed-center hydraulic cylinder

- Large pressure range of 7 70 bar
- Through-hole for coolant, oil or air with thread for rotary supply
- · Quick actuation through large oil feeding channels
- Smooth rotation due to axial non moving distribution unit and long piston guidance
- · Mounting from the rear or from the front side
- A 10 µm filter in pressure line is requested
- Use oil HM32 ISO 3448

### OPUS-H open-center hydraulic cylinder

- Pressure range of 7 45 bar
- · Short design/low mass
- Large through-hole
- Two safety valves, two max. pressure valves and piston stroke control
- · Low power consumption
- · Mounting from the rear side with bolts
- A 10 µm filter in pressure line is requested
- Use oil HM32 ISO 3448





### Your benefits

- For actuation of power chucks
- For assembly with closed or open center

### Your benefits

- For actuation of clamping devices with through-hole
- · For machining of bars and tubes
- For machining of long workpieces

### **Application Examples**

**Turning Technology** 





## Set-up time optimized for clamping of unmachined parts

### Task

Different unmachined parts need to be clamped on a multitasking machine (turning and milling) for an automation production line.

### **SCHUNK solution**

A ROTA THW plus 185–52 jaw quick-change chuck with claw jaws is used for this application. This clamping device meets all the requirements of state-of-the-art production technologies. Due to its jaw quick-change system, it enables faster retooling for flexible and fully automated production of small batch sizes and a large variety of parts. The claw jaws transmit high torques, allowing for cost-effective machining at high cutting speeds.

### Efficient clamping of easily deformed parts

### Task

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

### **SCHUNK solution**

The ideal solution for this task is the ROTA NCD 255–86 power chuck, which allows for maximum speeds with excellent centrifugal force and hysteresis behavior. This universal high-performance chuck is a multifunctional solution for everyday use. The SCHUNK PRONTO jaw quick-change system expands the clamping range by up to 300% without having to reset the supporting jaws. Due to a change-over time of less than 5 seconds per jaw, faster set-up times for small batches and recurring parts are enssured.

### **SCHUNK products**



**ROTA THW** <u>plus</u> Power chuck



Claw jaw

### **SCHUNK products**



**ROTA NCD**Wedge-bar power chuck







### Flexible clamping of individual components

### Task

Faster set-up times for clamping in single-item production.

### **SCHUNK solution**

A ROTA-S plus 250-52 3-jaw manual chuck with jaw quick-change system and claw jaws is used for this application. The ROTA-S plus delivers maximum clamping forces and maximum precision and is the flexible solution for minimizing set-up times for production of single items on conventional lathes. The claw jaws transmit high torques.

### Safe clamping of long components

### Task

Long components need to be clamped safely and precisely on a lathe.

### **SCHUNK solution**

The solution is a ROTA THW 630 power chuck along with a self-centering, hydraulic ZENTRICO THL plus steady rest that supports the long components. The steady rest features optimized interfering contours and a large clamping range and is equipped with options like central lubrication, built-in KSS roller rinsing and stopping contamination. Maximum clamping forces combined with continuously excellent centering and repeat accuracy are achieved with this solution. The THL plus is also available with spherical and cylindrical rollers as well as a side cylinder.

### **SCHUNK products**



ROTA-S <u>plus</u> 2.0 Manual lathe chucks



Claw jaw

### **SCHUNK products**



ROTA THW <u>plus</u> Power chuck



**ZENTRICO THL plus** Steady rests

## **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

- · List of contact persons
- Online product search based on product descriptions
- Product news and trends
- Data sheets
- · Order forms for easy and convenient ordering
- Free download area for pages from our product catalogs and technical data, for software and calculation programs for your gripping and rotary modules
- Free 2D/3D CAD design models, provided in a wide range of different CAD formats – for easy integration into your design!



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Highlights New Products



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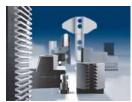
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