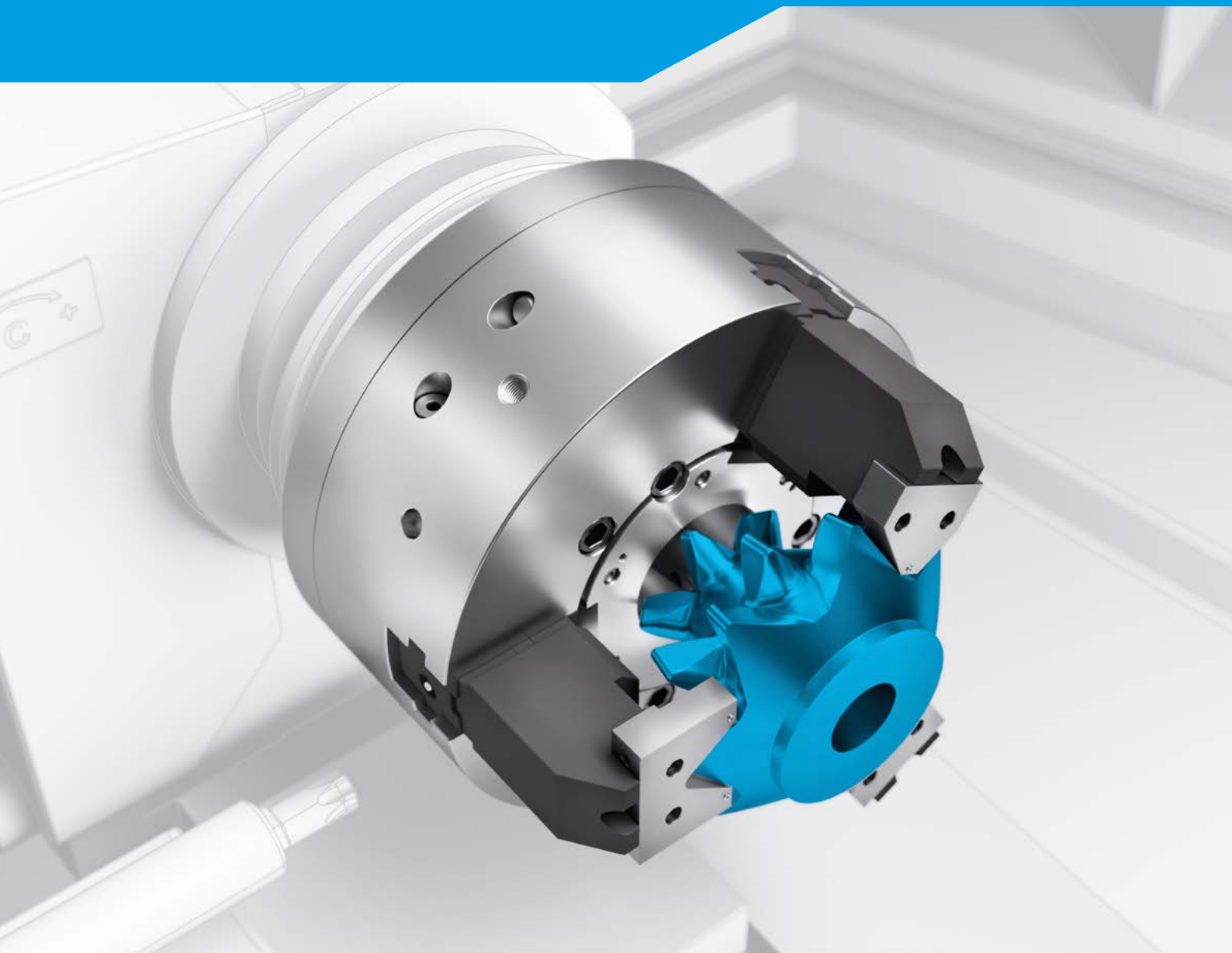
A clamping solution for every workpiece

SCHUNK Engineering

Hand in hand for tomorrow



SCHUNK Engineering Customized components

Our know-how – your competitive edge

As an innovative market leader in toolholding and workholding, SCHUNK has a unique potential for innovative solutions.
We are development partners for a wide variety of industries and specialized in customer-specific clamping technology applications – from individual clamping technology modules to complex functional assemblies using a modular system. Technical creativity, expert competencies, and solid expertise are our success factors for you when it comes to engineering, production, and service. We provide customized solutions. Also in your industry.

Stationary workholding

Page 3

Lathe chucks

Page 14

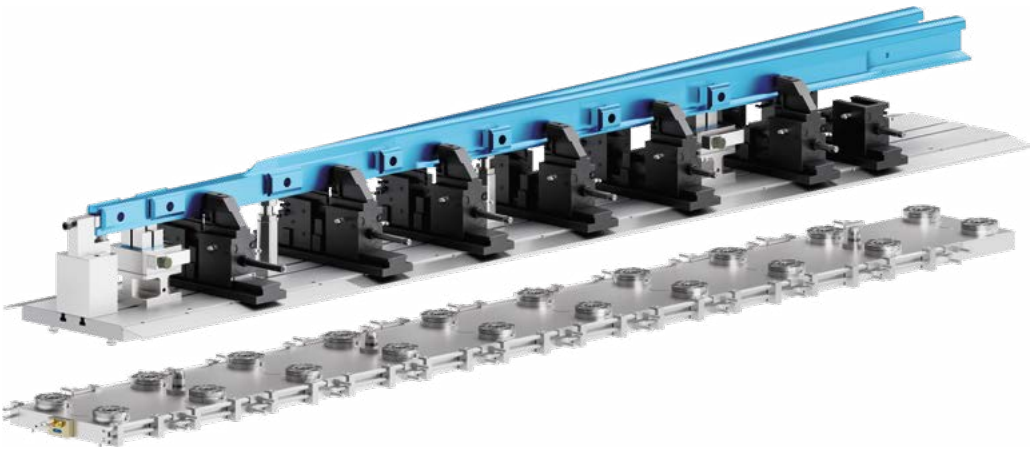
Chuck jaws

Page 28

Engineering
Stationary workholding

KONTEC

Rail clamping



Requirement

- Flexible, fast and automatic clamping of cores in 50 variants at the touch of a button

SCHUNK solution

- Basis: VERO-S as a change system
- KONTEC KSC3 hydraulic, incl. pull-down effect

Application

- Milling of different cores
- Very high cutting forces

Advantages – your benefits

Automatic clamping with hydraulic vises. Moving away from clamping solutions using vises to process-reliable, flexible KONTEC clamping device. VERO-S as the basis for set-ups parallel to production.

Typical application
- Complex geometry
- Railway

Typical machining
- Milling

Requirement
- Custom manufacturing
- High flexibility

VERO-S / TANDEM

Gripper manufacturing

Requirement

- Fast pallet change of workpiece-specific clamping devices
- Clamping multiple parts. Automated workpiece loading

SCHUNK solution

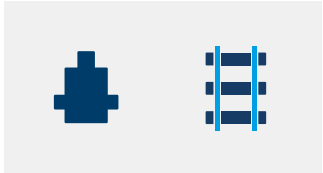
- Pallet change via VERO-S quick-change pallet system
- Hydraulic or pneumatic control of the clamping devices using the machine control system

Application

- Small-parts machining of large quantities with automated loading

Advantages – your benefits

- Loading in parallel to the machining time via robot on machine with pallet changer



Typical application
- Complex geometry
- High volume

Typical machining
- Milling

Requirement
- Custom manufacturing
- Automation
- High precision

TANDEM tombstone

Valve clamping

Requirement

- High part density and minimum set-up time

SCHUNK solution

- Tombstone with TANDEM KSF3 spring vise
- For different workpiece sizes and types

Application

- Production of different valve designs and sizes

Advantages – your benefits

- Quick and easy loading and unloading
- Quick and easy set-up, consistent clamping ratios thanks to spring-actuated clamping force blocks

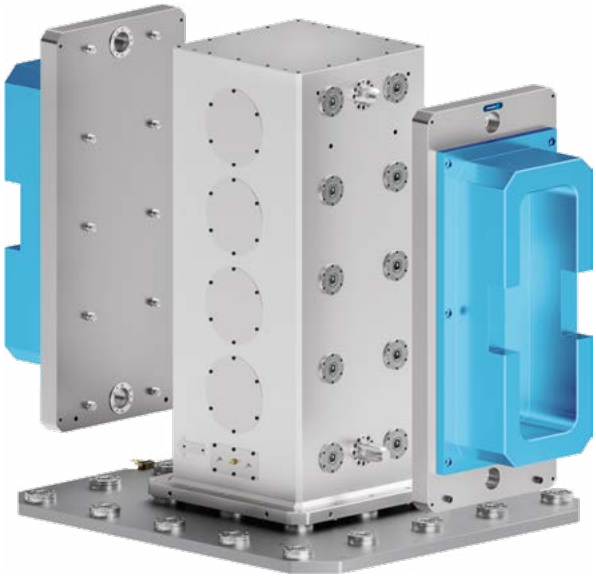
Typical application
- Complex geometry

Typical machining
- Milling

Requirement
- Custom manufacturing
- High precision

VERO-S tombstone

Housing clamping



Requirement

- Quick change of workpiece-specific devices, including quick change of the tombstone

SCHUNK solution

- Machine-specific VERO-S tombstone
- Height 2,000 mm on VERO-S clamping station

Application

- Finishing of housings. The housings are screwed to existing holes on a VERO-S clamping pallet.

Advantages – your benefits

- Set-up for finishing without an additional device
- Set-up of workpieces parallel to machining time

Typical application
- Cast iron and forged workpieces

Typical machining
- Milling

Requirement
- Custom manufacturing
- High flexibility

VERO-S clamping station

Ring clamping

Requirement

- Fast changeover of clamping devices on the mill/turn machine including monitoring of the clamping situation (contact monitoring/clamping slide monitoring open and closed)

Application

- Milling and turning of cast-iron and forged parts

SCHUNK solution

- Machine-specific VERO-S clamping station
- Extremely flexible workpiece clamping via clamping jaw boxes

Advantages – your benefits

- Set-up in parallel to the machining time
- Maximum flexibility for workpiece clamping

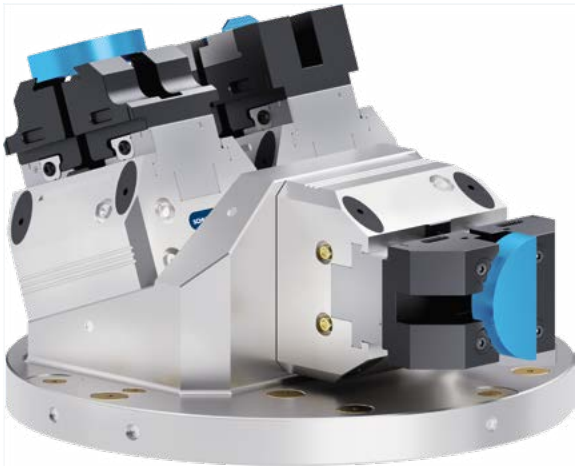
Typical application
- Cast iron and forged workpieces

Typical machining
- Milling
- Turning

Requirement
- Custom manufacturing
- High flexibility

TANDEM clamping pyramid

Clamping of a knee implant



Requirement

- Actuation via rotary feed-through on the machine side
- Workpiece-specific special jaws with jaw quick change

SCHUNK solution

- Machine-specific clamping pyramid and workpiece-specific chuck jaws
- Optimized accessibility for the machine concept for OP10, 20 and 30 in a clamping device

Application

- Set-up and machining of knee implants in numerous variants and different sizes

Advantages – your benefits

- Fully automated loading. Quick jaw change in three clamping positions with three different set-ups

Typical application
- Small workpieces

Typical machining
- Milling

Requirement
- Custom manufacturing
- High flexibility
- High precision

VERO-S / TANDEM

Stator clamping

Requirement

- Automated workpiece and pallet loading. First the workpiece is clamped automatically, then the complete clamping device is loaded into the machine.

SCHUNK solution

- VERO-S clamping station as a basis
- TANDEM special size 315-650 with special chuck jaws with pendulum compensation

Application

- Finishing electric motors in just one clamping set-up

Advantages – your benefits

- Fully automated loading and manufacturing of different workpieces in batch size 1

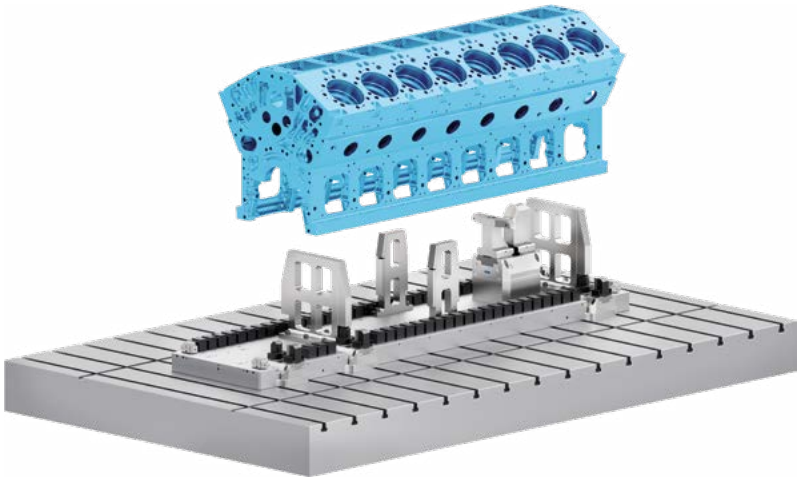
Typical application
- Large workpieces

Typical machining
- Milling

Requirement
- Custom manufacturing
- Automation
- High precision

VERO-S / TANDEM

Hybrid clamping device



Requirement

- Quick and easy set-up of 16/20 cylinder engine blocks for finishing

SCHUNK solution

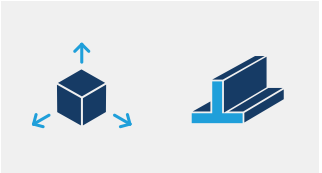
- Setup-optimized loading. Workpiece alignment via TANDEM
- Workpiece clamping with MAGNOS

Application

- Finishing (milling) engine blocks with maximum accuracy and shortest set-up times

Advantages – your benefits

- Fast, repeatable and distortion-free clamping of engine blocks



Typical application
- Large workpieces
- Cast-iron workpieces

Typical machining
- Milling

Requirement
- Custom manufacturing
- High precision

KONTEC / MAGNOS

Hybrid tombstone

Requirement

- Complete processing of strips in various designs and lengths

SCHUNK solution

- Machine-specific tombstone with hybrid clamping technology: OP 10 KONTEC KSC3 80; OP 20 MAGNOS. Magnetic clamping technology

Application

- Finish milling of strips

Advantages – your benefits

- Complete machining in two set-ups
- Optimal workpiece accessibility
- Deformation-free clamping thanks to magnetic clamping technology for maximum accuracy on the component.

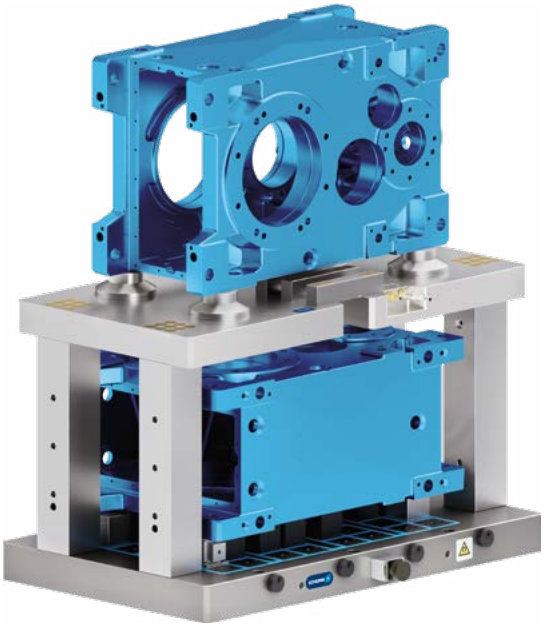
Typical application
- Profile clamping

Typical machining
- Milling

Requirement
- Custom manufacturing
- High flexibility
- High precision

VERO-S / MAGNOS

Hybrid clamping device



Requirement

- Complete workpiece machining in a clamping device

SCHUNK solution

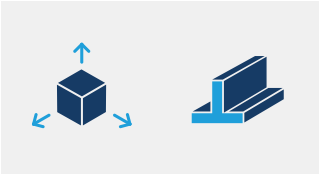
- Clamping device on two levels. OP 10 MAGNOS, OP 20 VERO-S direct clamping

Application

- Milling (complete machining) of gray cast-iron housings in two set-ups

Advantages – your benefits

- Two set-ups in one clamping device. Deformation-free clamping in the OP 10 thanks to magnetic clamping technology
- Optimal accessibility OP 20 for finishing on all sides

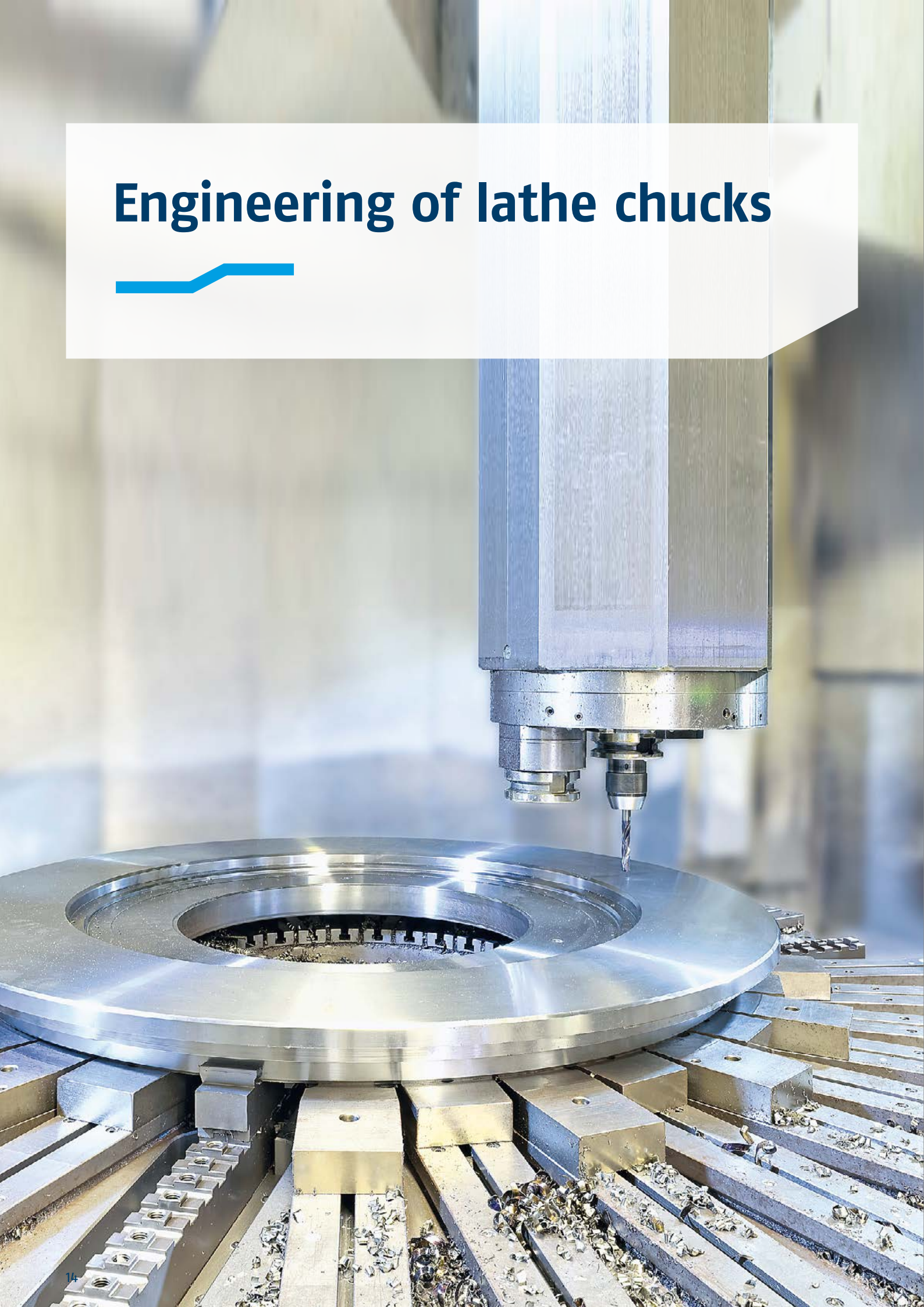


Typical application
- Large workpieces
- Cast-iron workpieces

Typical machining
- Milling

Requirement
- Custom manufacturing
- High precision

Engineering of lathe chucks



Your requirements – our problem-solving competence

Process requirements

- Clamping
- Supporting (steady rests)
- Changing
- Setting-up
- Individual, small series or serial production
- Automated jaw change

Machining requirements

- Excellent clamping force/speed of rotation behaviour
- Low-maintenance/maintenance-free clamping devices
- Avoidance of clamping contours
- Reduction in set-up times especially for small batch sizes
- Rough machining
- Precision machining
- Deformation-free clamping
- Free access to workpiece

Workpiece requirements

- Sensitive
- Asymmetrical
- Light
- Heavy
- Small
- Large
- Quality

Lathe chucks for customized solutions

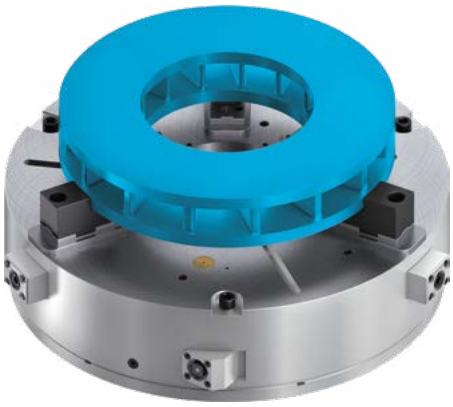
Technical diversity – securely clamp the most demanding workpieces

			Options						
	Lathe chucks		Long jaw stroke	2-jaw version	3-jaw version	4-jaw version	2+2 jaw clamping	6-jaw version	Individual jaw adjustment
Manual lathe chuck	ROTA-S plus sealed			●	●			●	●
Manual lathe chuck	ROTA-S plus individual jaw adjustment				●			●	●
Power lathe chucks	ROTA DFF			●	●	●			
Power lathe chucks	ROTA HSA			●	●				
Power lathe chucks	ROTA HSA-NZ			●	●				
Power lathe chucks	ROTA diagonal pin chuck			●	●				
Power lathe chucks	ROTA console chuck			●					
Power lathe chucks	ROTA NCM hybrid chuck		●	●					
Power lathe chucks	ROTA HSH		●	●	●		●		
Power lathe chucks	ROTA 2+2 jaw power chuck					●			

Options									Sizes	Page
Additional sealing	Axial clamping	Console clamping	Pancake cylinder	Active jaw pull-down	Combined solutions	Solenoid clamping	Compensational clamping	Centrifugal force compensation		
●									250 – 1400	18
									400 – 1400	19
●	●			●					250 – 1000	20
							●		170 – 1000	21
	●			●			●		170 – 315	22
●	●			●					160 – 630	23
		●							200 – 800	24
●	●				●	●			500 – 1600	25
●								●	160 – 1200	26
							●	●	200 – 630	27

ROTA -S plus

Sealed 3-jaw manual lathe chuck



Requirement

A sealed lathe chuck is required in case of increased contamination (grinding application)

SCHUNK solution

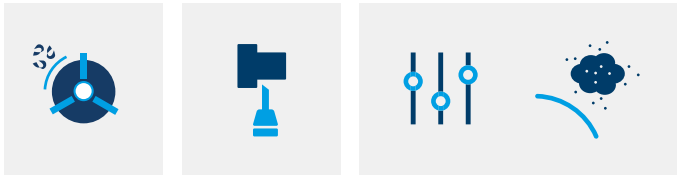
ROTA-S plus in a sealed design for process-reliable clamping even under increased dirty conditions

Application

- Use on grinding machines
- Suitable for cast-iron machining
- Use under heavily ditry conditions

Advantages – your benefits

- Process-reliable clamping even with increased dirty conditions



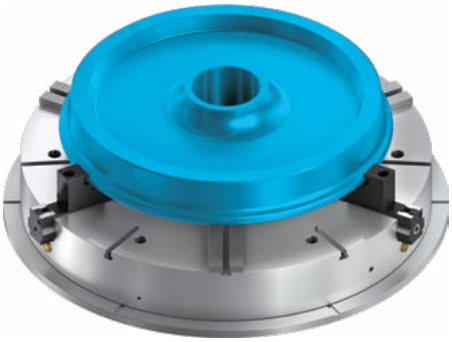
Typical application
- Cast-iron machining

Typical machining
- Turning

Requirement
- High flexibility
- Dirt protection

ROTA -S plus

3-jaw power lathe chuck with individual jaw adjustment



Requirement

The inaccurate clamping surface does not match the diameter to be machined

SCHUNK solution

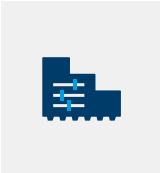
ROTA-S plus with individual jaw adjustment enables additional alignment of the workpiece

Application

- Clamping of irregularly shaped workpieces
- Clamping of asymmetrical workpieces

Advantages – your benefits

- Additional individual jaw adjustment makes workpiece alignment possible



Typical application
- Individual jaw adjustment

Typical machining
- Milling
- Turning

Requirement
- High flexibility
- Dirt protection

ROTA DFF

Rotary finger chuck for axial workpiece clamping

Requirement

Either the contour of the workpiece does not allow radial clamping, or radial deformation is not permitted

SCHUNK solution

ROTA DFF rotary finger chuck for axial workpiece clamping

Application

- Clamping of workpieces that must not be clamped or deformed radially

Advantages – your benefits

- No radial deformation and plane-parallel clamping of the workpiece

Typical application
- Complex geometry

Typical machining
- Turning

Requirement
- Custom manufacturing
- Powerful

ROTA

Compensation chuck for clamping workpieces between centers

Requirement

The workpiece reference lies in the axis of rotation of the workpiece. Outer diameter does not run to the axis of rotation.

SCHUNK solution

The workpiece is picked up between the centers (chuck and tailstock)

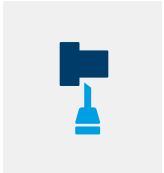
Application

- Clamping of shafts where the reference is the centering bore

Advantages – your benefits

- The outer diameter is clamped to compensate for the torque transmission

Typical application
- Compensational clamping
- Bars



Typical machining
- Turning

Requirement
- Custom manufacturing
- High precision

ROTA

Compensation chuck for clamping workpieces between centers

Requirement

The workpiece reference lies in the axis of rotation of the workpiece. Outer diameter does not run to the axis of rotation. The diameter to be machined requires good parallelism to the clamping diameter and the contact surface.

SCHUNK solution

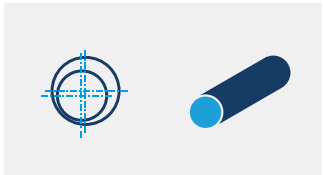
Workpiece clamping between centers. Inclined base jaw guidances to prevent the workpieces from lifting off

Application

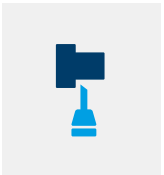
- Centering on reference diameter of shaft-type components

Advantages – your benefits

- No lifting of the workpiece due to inclined base jaw guidances



Typical application
- Compensational clamping
- Bars



Typical machining
- Turning

Requirement
- Custom manufacturing
- High precision

ROTA diagonal pin chuck SK

Active jaw pull-down

Requirement

The diameter to be machined requires a high degree of perpendicularity to the contact surface

SCHUNK solution

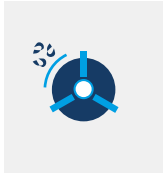
Diagonal pin chuck with active pull-down

Application

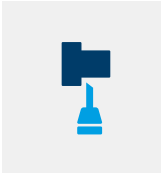
- Clamping of workpieces with the highest requirements for parallelism

Advantages – your benefits

- Workpiece is clamped radially and actively pulled axially against the stop surface



Typical application
- Cast-iron machining



Typical machining
- Turning

Requirement
- Custom manufacturing
- Powerful

ROTA console chuck

Console chuck with one fixed jaw

Requirement

The diameter to be machined should be clamped parallel to the reference surface

SCHUNK solution

Console chuck with a fixed jaw for workpieces that have to be clamped firmly to a reference surface

Application

- Turning of components with a flat surface as a reference

Advantages – your benefits

- The workpiece is clamped with the movable jaw against the fixed jaw

Typical application
- Complex geometry

Typical machining
- Milling
- Turning

Requirement
- Custom manufacturing
- Powerful

ROTA NCM

Hybrid chuck for low-deformation clamping

Requirement

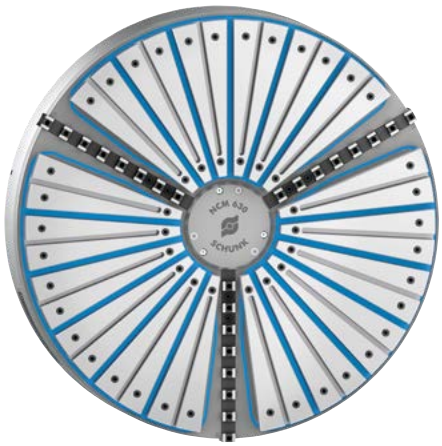
The diameter to be machined should have an excellent concentricity to the clamping diameter and the bearing surface

SCHUNK solution

Hybrid chuck for low-deformation clamping of rings and disks

Application

- Suitable for grinding and turning applications
- Fully automatable



Advantages – your benefits

The workpiece is centered with the centering chuck and clamped axially with the magnetic chuck

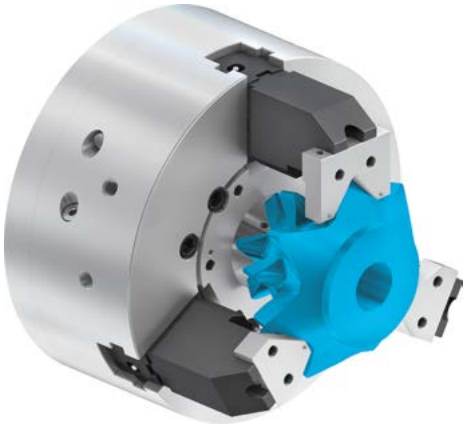
Typical application
- Thin-walled workpieces

Typical machining
- Grinding
- Turning

Requirement
- Custom manufacturing
- High precision

ROTA

Lever chuck with extra long jaw stroke



Requirement

In order to be able to clamp the clamping diameter, it is necessary to traverse an interfering contour of the workpiece

SCHUNK solution

Lever chuck with very long jaw stroke

Application

- Universally applicable

Advantages – your benefits

Due to the lever mechanism, lever chucks allow a very large jaw stroke compared to the cylinder stroke

Typical application
- Complex geometry

Typical machining
- Grinding
- Turning

Requirement
- Custom manufacturing
- Large clamping path

ROTA 2+2

2+2 jaw compensating central clamping

Requirement

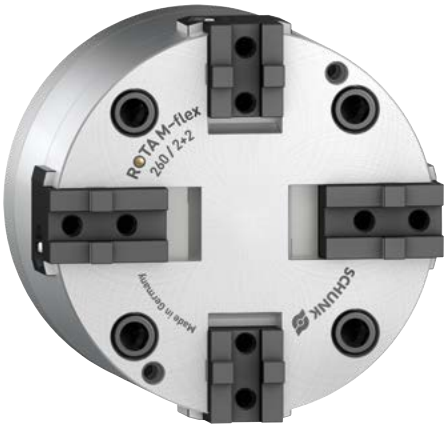
The bore to be machined should be precisely positioned in relation to the clamping area and another reference diameter

SCHUNK solution

2+2 compensating chucks, each with 2-jaw pairs, which clamp centrically to each other in a compensating manner

Application

- Clamping of cylindrical, rectangular and irregular workpieces

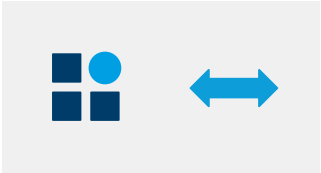


Advantages – your benefits

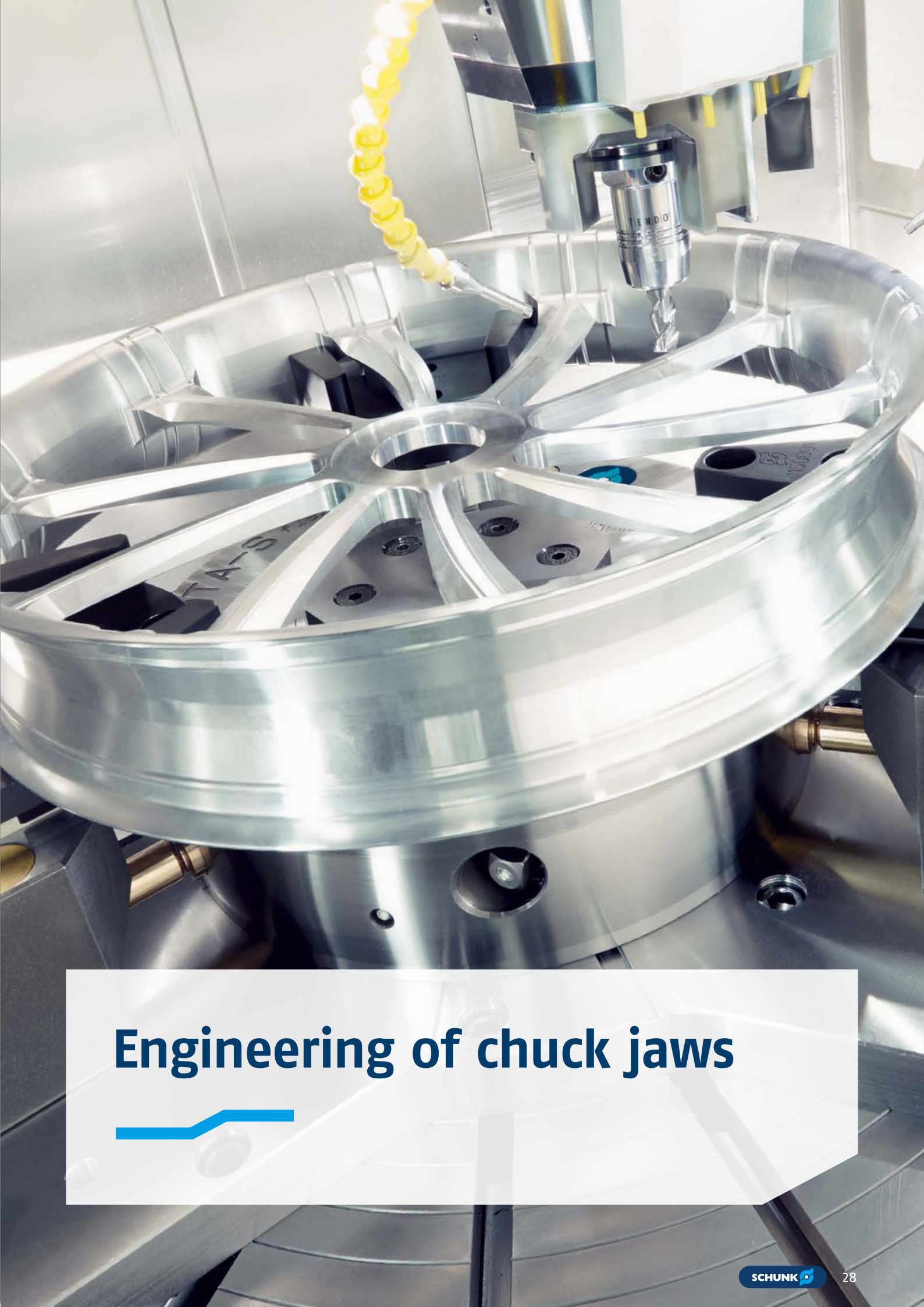
- The workpiece is clamped radially centric and the compensation prevents overdetermination

Typical application
- Compensational clamping

Typical machining
- Grinding
- Turning



Requirement
- Custom manufacturing
- Large clamping path



Engineering of chuck jaws

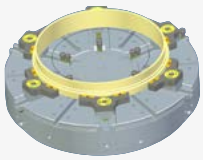
A firm plus in productivity.

SCHUNK Engineering clamping solutions for chuck jaws. Designed to perfectly fit your application.

1. Your workpiece

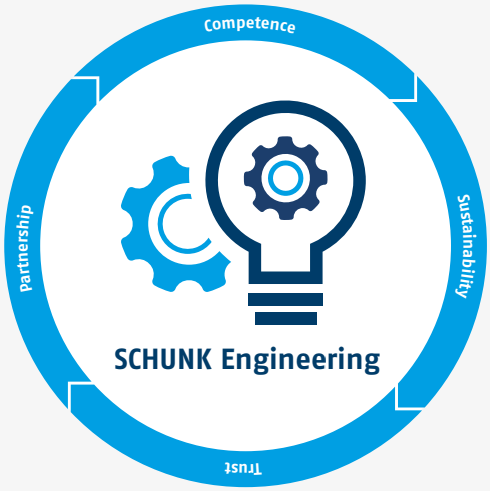
Your request with workpiece drawing will be checked by SCHUNK.

2. Your machining process

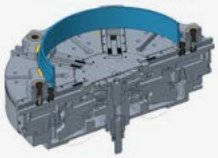


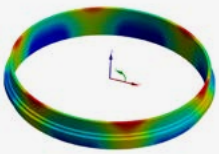
5. Your clamping solution

Finished clamping solution tailored to customer requirements.



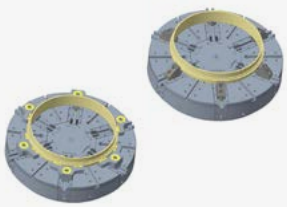
3. Evaluation

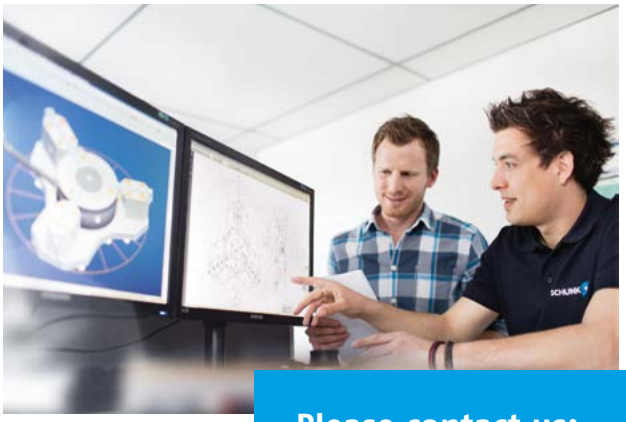




4. Your offer

After the evaluation, you will receive an offer for your clamping jaw solution from SCHUNK.

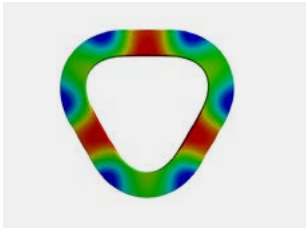
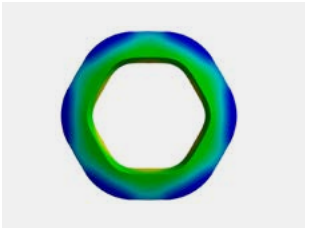
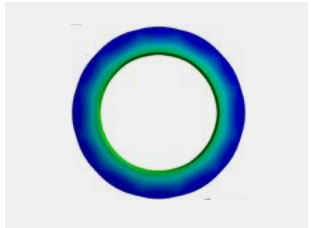




Please contact us:
Tel. +49-7572-7614-1302
cmm@de.schunk.com

Our performance promise – your benefits

- More than 1,200 jaw types of the world's largest standard chuck jaw program
- More than 16 million sold chuck jaws
- More than 60,000 customized chuck jaw solutions in conjunction with lathe chucks and stationary workholding

	3-point clamping	6-point clamping	12-point clamping
Components			
Analysis			

Pendulum jaws

for 12-point clamping

Requirement

- Turning with low component deformation

SCHUNK solution

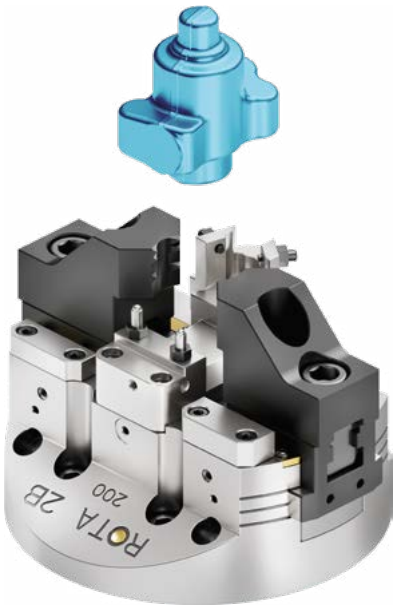
- Pendulum jaws for 12-point clamping with radial pendulum function

Advantages – your benefits

- Low deformation
- Excellent machining results are achieved

Claw jaws

for cast or forged parts



Requirement

- Raw parts clamping of cast or forged parts
- Clamping on the outer diameter of the forged blank
- Machining with high cutting forces and positional orientation of the component

SCHUNK solution

- Claw jaws with optimized clamping contour
- With external adjustable workpiece stop for position orientation
- With additional balancing weights for balancing quality 6.3

Advantages – your benefits

- Optimized jaw serration for the best possible holding forces
- Repeat accuracy due to adjustable stops
- Excellent tool accessibility; increased service life of the machine's spindle bearing due to compensation of the imbalance

Radial-axial pendulum jaws

for 24-point clamping

Requirement

- Low component deformation of <0.05 mm when machining car rims

SCHUNK solution

- Pendulum jaws for 24-point clamping with radial and axial pendulum function. This results in low component deformation of <0.05 mm.

Advantages – your benefits

- Low deformation
- Compensation of axial run-out errors thanks to the stop with pendulum function

Pull-down jaws

Requirement

- Low-deformation clamping of a delicate 3D printed implant for medical technology with a honeycomb structure

SCHUNK solution

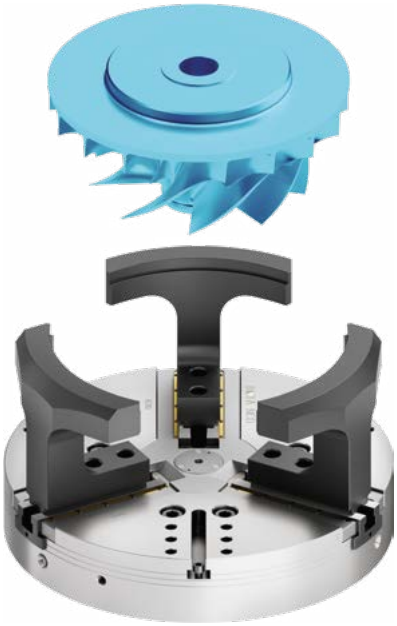
- Fully compensating, deformation-free clamping with active pull-down due to solid-state joint

Advantages – your benefits

- Maximum process reliability with the highest component quality

Full grip jaws

for comprehensive, low-deformation clamping



Requirement

- Low-deformation O.D. clamping of compressor wheels

SCHUNK solution

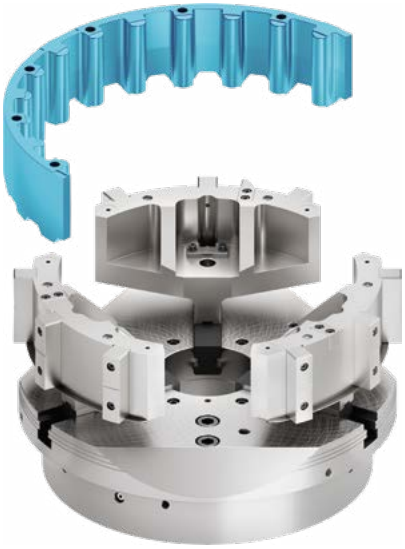
- Workpiece-specific full grip jaws due to clamping force transmission via large enclosing surfaces

Advantages – your benefits

- Very high run-out accuracy when drilling the clamping surfaces on the toolholder used
- Chuck jaws made of aluminum. This minimizes clamping marks on the workpiece and reduces jaw centrifugal forces

Full grip jaws

with position orientation and clamping inserts



Requirement

- Turning on the outer diameter of the housing ring with high cutting speed and position orientation of the component

SCHUNK solution

- Weight-optimized full grip jaws with clamping inserts for I.D. clamping with radial position orientation with Poka-Yoke system

Advantages – your benefits

- Weight-optimized chuck jaws for better centrifugal force behavior
- Reduced workpiece deformation even at high speeds
- Long service life of the chuck jaws due to replaceable clamping inserts

Radial-axial pendulum jaws

for compensating tolerances of unmachined parts

Requirement

- High precision stator housing clamping of the two bearing seats
- Automated workpiece loading

SCHUNK solution

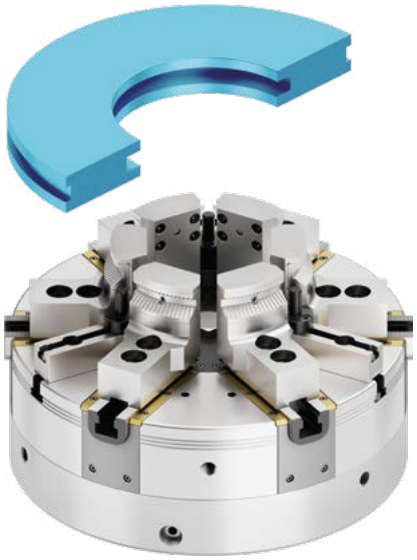
- Customized radial-axial pendulum jaw clamps against fixed jaw to compensate for blank tolerances
- Additional friction-optimized clamping inserts with tungsten carbide coating

Advantages – your benefits

- Compensation of all unmachined parts tolerances
- Maximum accessibility enables maximum precision
- High shear force absorption due to coating of the clamping inserts

Chuck jaws

for 3-side machining



Requirement

- High radial and axial run-out for turning brake disks
- Absorption of high cutting forces through rough machining
- Optimal accessibility of the tools

SCHUNK solution

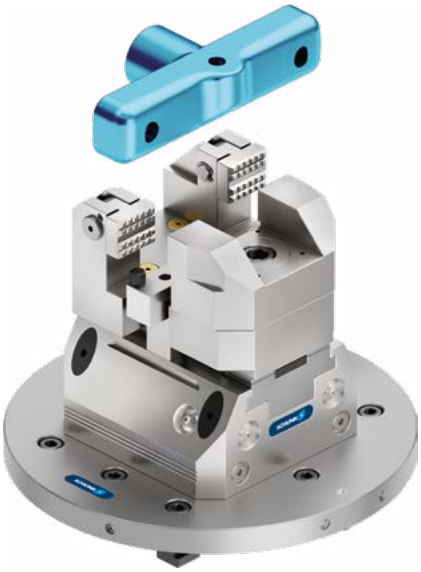
- Workpiece-specific chuck jaws with clamping inserts for 3-side machining in the cooling fin; with external workpiece support for a wide range of component diameters

Advantages – your benefits

- Transmission of high torques due to adapted clamping geometry in the clamping insert
- Maximum accessibility due to lifting clamping method
- Low operating costs due to exchangeable clamping inserts

Fully flexible pendulum jaws

with radial-axial compensation



Requirement

- Clamping system for fitting components
- Adaptation to the blank geometry
- No deformation due to overdetermination

SCHUNK solution

- Fully flexible special jaws; designed as radial-axial jaw pairing for deformation-free clamping
- Clamping contour with diamond serration

Advantages – your benefits

- Deformation-free, precise clamping
- Maximum process reliability with the highest component quality

Full grip jaws

for comprehensive, low-deformation clamping

Requirement

- Highest precision requirements for the internal clamping of driving mechanism parts

SCHUNK solution

- Workpiece-specific special jaws transmitting the clamping force via large enclosing surfaces

Advantages – your benefits

- Low-deformation set-up of sensitive components
- Enables precise machining and compliance with the highest quality standards

Molding jaws

with adapted workpiece geometry

Requirement

- Processing of connection blocks in large quantities
- High cutting forces when drilling
- Manual workpiece loading

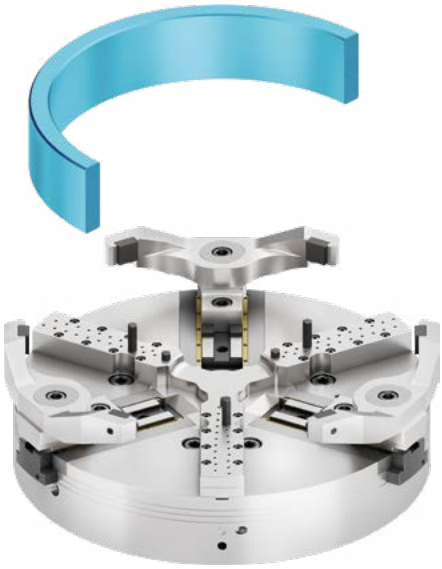
SCHUNK solution

- Special molding jaws adapted to the workpiece geometry
- Maximum force transmission through form-fit locking in all machining directions
- Easy to use due to the Poka-Yoke system

Advantages – your benefits

- Increased efficiency through maximum power absorption
- Seamless component insertion due to the Poka-Yoke system

Pendulum jaws + external workpiece stop with component monitoring



Requirement

- Turning and milling of thin-walled rings in various sizes

SCHUNK solution

- Pendulum jaws with 6-point clamping with exchangeable pendulum bodies
- Workpiece stop for a wide range of component diameters
- Additional integrated air system control for workpiece monitoring

Advantages – your benefits

- Significant reduction in workpiece deformation due to evenly distributed clamping areas
- High flexibility due to simple conversion of the pendulum bodies
- Process reliability through component monitoring

The right solution for every clamping task

Chuck jaws from SCHUNK

Chuck jaws are the interface between workpiece and lathe chuck, making them a critical component for increased productivity. Use of the correct chuck jaw ensures not only perfect power transmission but also reliable workpiece clamping and optimal utilization of machine and tool potentials.

Engineered
Customized

Special chuck jaws. For complex machining tasks, our experts will develop tailor-made clamping solutions for you.
- Suitable for all lathe chuck manufacturers
- Maximum performance
- Ensuring the right clamping

Tech Line
Modified

Tech jaws. Claw jaws with active pull-down, standardized pendulum jaws and Quentes fiberglass jaws from SCHUNK enable gentle and secure clamping of thin-walled workpieces that are at risk of deformation.
- Secure clamping with low clamping force
- High coefficient of friction
- Exchangeable inserts

Flexible
Jaw quick-change systems

Quick-change systems. SCHUNK jaw quick-change systems excel with their easy handling and reduce set-up times by changing jaws within seconds.
- Simple set-up
- Jaw change in a matter of seconds
- Suitable for automated solutions

Aggressive grip
Raw parts machining

Raw parts clamping. SCHUNK provides a wide range of hard chuck jaws for machining raw material in the first set-up.
- Maximum holding force
- Available for I.D., O.D. and bar clamping
- Increased productivity

Soft grip
Finished parts machining

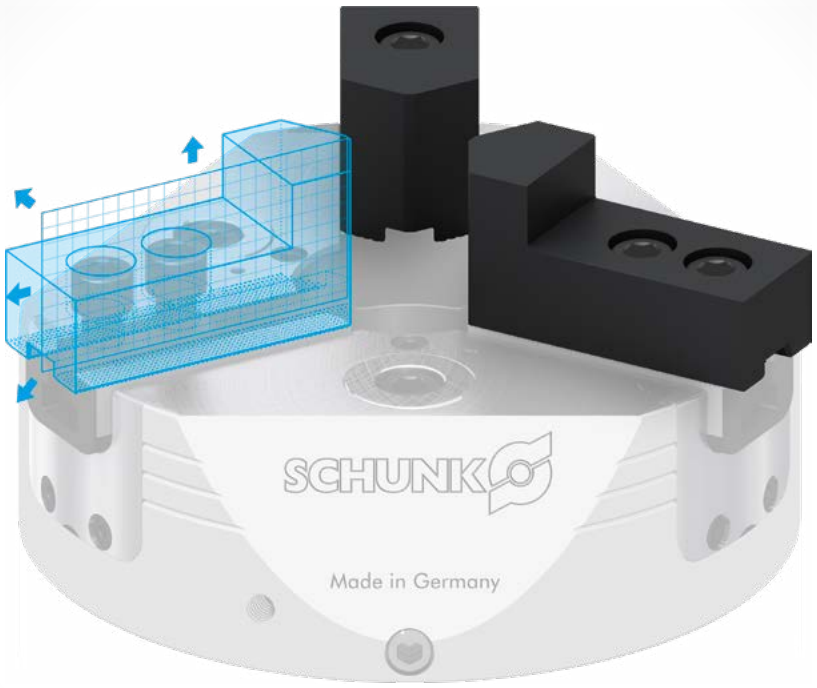
Finished parts clamping. Chuck jaws made of a resistant material with ground serration ensure a long service life and high precision of the chuck jaws.
- High-quality steel and aluminum
- Hardenable steel
- Ground serration
- High-precision interfaces

easyJAW

Individual chuck jaws delivered in two weeks

With the easyJaw chuck jaw configurator, we are adding the individuality component to our standard chuck jaw program. From selected standard variants, geometries can be adapted to customized and application-specific use.

Now also configurable for RAPIDO



Configure online now:

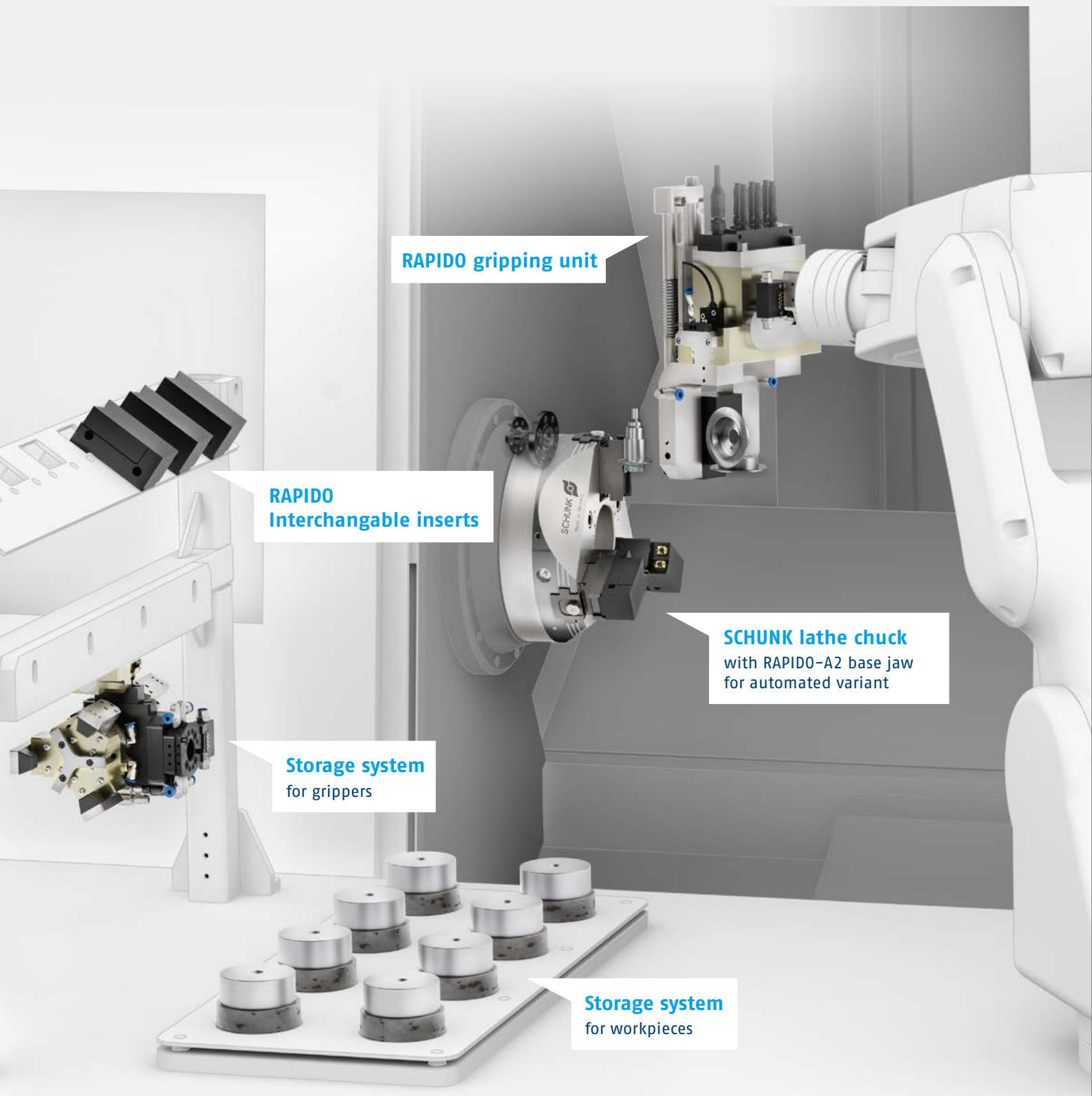
schunk.com/easyjaw

GERMAN INNOVATION AWARD '23 SPECIAL

Made easy in four steps

1. Select chuck jaws at **schunk.com/easyjaw**
2. Configure individually
3. Enter contact details
4. Check and complete configuration

RAPIDO-A2 lathe chuck jaw quick-change system – tool-free and fully automated.



SCHUNK

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