



Products and Cutting Solutions
for Slitting and Cut-to-Length Systems.



Precision and Perfection: For Optimal Cutting Performance, Surface Consistency and Longevity.

The foundation of our products and cutting solutions for slitting and cut-to-length systems is the knowledge of “cutting” as well as an in-depth understanding of the requirements of various industries.

Whether the parts are made of tool steel, hard metal, special materials or stainless steel, we produce highly efficient products with state-of-the-art technology that prove their merit in precision and cutting edge retention with long-term use.

The focus of our service lies on intensive dialogs at the cutting systems, so that we can meet the demands of our customers and develop the best tools and systems that will be optimally integrated into the cutting and manufacturing processes.

Thanks to uncompromising quality management – from the procurement of raw materials to delivery – we can guarantee that absolutely no tolerance deviations will impair the performance of the tool.

As a consequence, we offer customized solutions with measurable added value. **TKM, The Knife Manufacturers.**

Customer Groups

- Integrated Steel Mills
- Non-Ferrous Metal Processors
- Cold Rolling Mills
- Steel Service Centers
- Pipe and Tube Mills
- Transformer Band Manufacturers
- Surface Profiling Companies
- Packaging Tape Manufacturers
- Metal Packaging Companies
- Steel Grating Manufacturers
- Mechanical Engineering Companies

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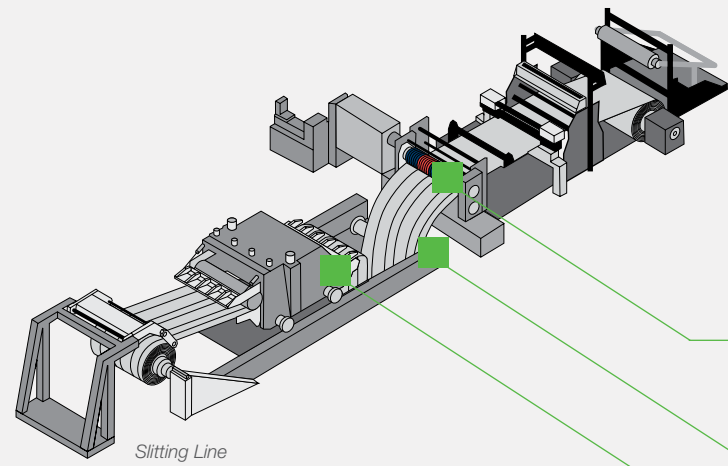
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Applications of Circular and Straight Products



Slitting Line



Rotary Slitter Knives



Rubber Bonded Stripper Rings



Steel Stripper Rings



Loose Rubber Rings



Spacers



Lightweight Spacers



Special Design Spacers



Plastic Shims



Cutting Quills



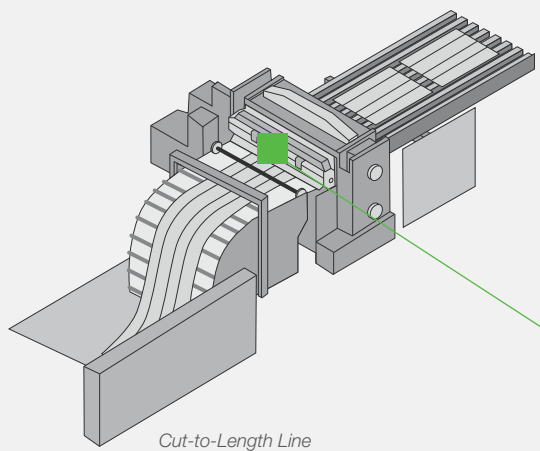
Knife/Blade Holders



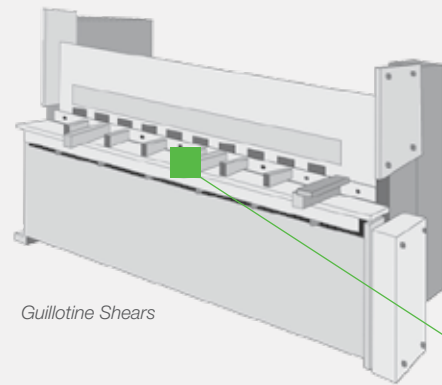
Scrap Chopper Knives



Separating Tools



Cut-to-Length Line



Guillotine Shears



Guillotine Shear Blades

Cut-to-Length Knives

Circular Products

Circular products such as rotary slitter knives, strippers, spacers, etc., are used in slitting lines for cutting and slitting the greatest variety of materials. Dimensions, materials, hardness and rubber coating all depend on the material to be cut.

The precision of the tool with regard to the thickness tolerance, the flatness, parallelism, surface finish on the one hand, and the properties of the material processed, the arbor set up, the configuration parameters of the slitting line on the other hand, as well as, of course, the machine operators, are all crucial factors in the quality of the cutting results.

Straight Products

Scrap chopper knives, used for the shredding of the waste strips caused by trimming, are subjected to very high mechanical stress. As a rule, the strips or bands are cut to length by the cut-to-length system with cut-to-length knives as an operation following slitting.

Guillotine shear blades are used on systems of all reputable manufacturers either in the standard versions or in customized form.



Rotary Slitter Knives

We are constantly working on the development of new knife materials in order to perfect the wear resistance and toughness for specific tasks.

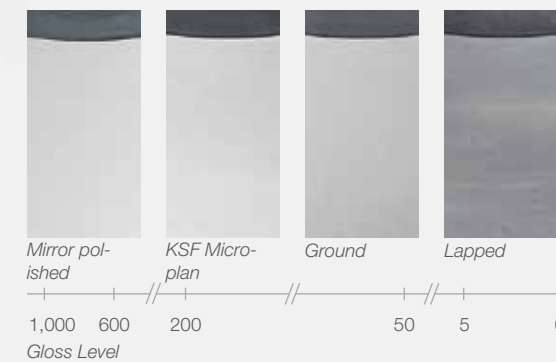
This pride in discovery ensures an optimal balance between the determination of the knife material and the tuned heat treatment

processes. As a result we produce the right “recipe” for your cutting application.

We produce rotary slitter knives in four different tolerance classes to meet the requirements of our customers.

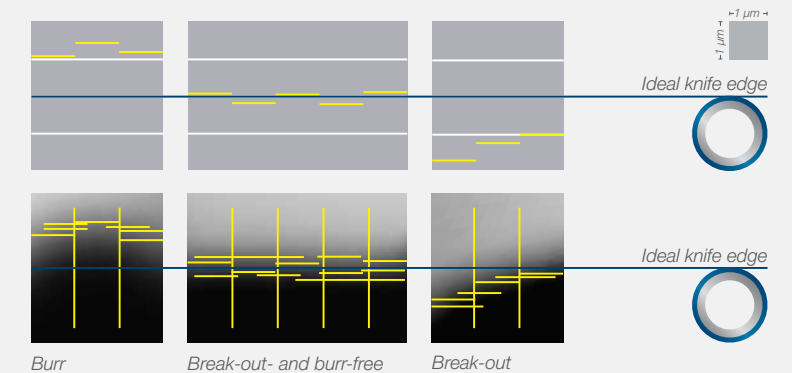
Surface Finishes

We manufacture rotary slitter knives with four surface finishes, depending on the cutting application.



Cutting Edge Quality

Our aim is the continual optimization of the cutting edges with respect to their execution and quality (break-out- and burr-free).



Attainable Production Tolerances

Outer Diameter (mm)	Thickness Tolerance(mm)	Parallelism (mm)	Flatness per Thickness (mm)				
			< 1	< 2	< 3	< 5	> 5
≤ 250	± 0.0005	0.001	0.010	0.003	0.001	0.001	0.001
≤ 420	± 0.0005	0.001	0.020	0.010	0.005	0.002	0.002
≤ 600	± 0.001	0.002			0.010	0.010	0.005
≤ 800	± 0.003	0.005					0.010

Material

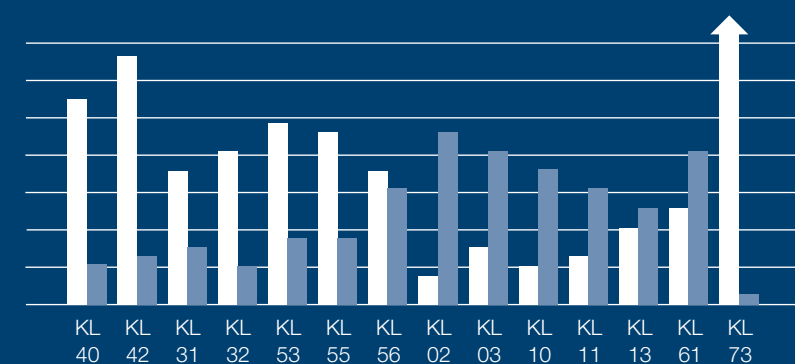
Material to be Cut	Material Thickness				
	< 0.6 mm	< 1.5 mm	< 3.0 mm	< 6.0 mm	> 6.0 mm
Cold Rolled Strip	KL40, KL42	KL31, KL32, KL55	KL31, KL53, KL55	KL13, KL56, KL61	KL10, KL13, KL61
Hot Rolled Strip			KL56	KL10, KL13, KL61	KL02, KL03, KL13
Electrical Steel	KO	KL73	KL42, KL55, KL73		
	NO		KL31, KL53, KL55	KL31, KL53, KL55	KL13
Stainless Steel	KL40, KL55	KL40, KL55	KL56	KL13, KL56	KL02, KL13, KL61
Non-Ferrous Metals	KL32	KL31, KL32	KL31, KL32	KL53, KL56	KL13
Hardened Strip	KL40, KL42	KL40, KL42	KL55, KL56		

Advantages / Characteristics

- Adherence to the smallest possible thickness tolerance down to ± 0.0005 mm
- Subdivision of thickness tolerance in 3 areas (-, 0, +)
- 4 highly precise surface finishes
- Suitable for sheet metal thicknesses from 0.006 to approximately 16 mm and in exceptional cases also to 40 mm
- Rotary slitter knives ground with a single-sided facet and an exact edge

Knife Performance*

* The balance of wear resistance and toughness



Surface Finishes

Surface	Gloss Level [GU(20°)]	Surface finish roughness Ra [μm]
Ground	≈ 50-200	≤ 0.40
Lapped	≈ 0-5	≤ 0.20
KSF Microplan	≈ 50-200	≤ 0.10
Mirror polished	≈ 600-1,100	≤ 0.03

Stripper Rings

Stripper rings assist cutting applications for various tasks:

- Ejecting
- Conveying
- Lifting (protecting the material surface)
- Supporting (stabilizing the material)

TKM produces steel cores made out of hardened alloyed tool steel, also with stainless steel characteristics.

For the bonding, we use vulcanized plastic made of nitrile-butadiene rubber (e.g. Perbunan) and castable polyurethane materials (e.g. Dynaprene).

For the most stringent requirements we use premium materials. All the aforementioned types of plastic are available in various colors and Shore hardnesses – we'll be glad to advise you.

Steel Stripper Rings

Steel stripper rings made of hardened alloyed tool steel are used for thin materials and the narrowest strips, provided the design of the slitting line permits such use.

Polyurethane-bonded steel stripper rings can be delivered as a special version for cutting sensitive material.



Rubber Bonded Stripper Rings

For easy differentiation, the different female and male sets and their various outer diameters are color coded. TKM rubber bonded spacers have excellent physical properties such as tensile strength, breaking elongation and tear strength.

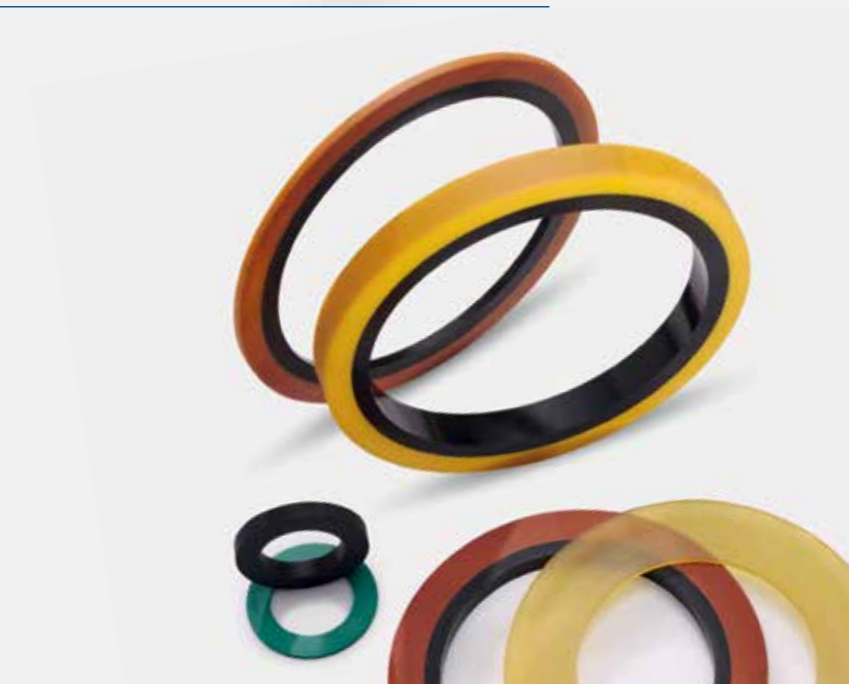
Advantages / Characteristics

- Graduated in thickness from 3 to 100 mm (in exceptional cases up to 250 mm)
- Hardness 60 to 95 Shore A
- Different colors
- Special dimensions of steel cores for trimming systems
- Divided spacers
- Special weight saving models
- Excellent oil and abrasion resistance
- Highly resistant to cleaning alcohol
- High precision with thickness tolerances up to ± 0.0005 mm

Loose Rubber Rings

Loose rubber rings, e.g. made of Perbunan or Dynaprene, for example, are available in various colors and one or two hardness zones (Duo Rings).

The possible shore hardness can lie between 60 and 90 shore A.



Attainable Production Tolerances (Rubber Bonded and Steel Stripper Rings)

Outer Diameter (mm)	Thickness Tolerance (mm)	Parallelism (mm)	Flatness per Thickness (mm)				
			< 1	< 2	< 3	< 5	> 5
≤ 250	± 0.0005	0.001	0.010	0.003	0.001	0.001	0.001
≤ 420	± 0.0005	0.001	0.020	0.010	0.005	0.002	0.002
≤ 600	± 0.001	0.002			0.010	0.010	0.005
≤ 800	± 0.003	0.005					0.010

Recommendations for Applications of Rubber Bonded Stripper Rings

Material to be Cut	Type of Bonding			
	e.g. Dynaprene Premium	e.g. Dynaprene	e.g. Perbunan	
Cold Rolled Strip	x	x	xx	xx Recommended
Hot Rolled Strip	x	x	xx	x Possible
Electrical Steel	xx	xx	x	- Not recommended
Stainless Steel	xx	xx	x	
Non-Ferrous Metals	xx	xx	-	

Spacers

TKM offers spacers made of hardened alloyed tool steel or with stainless steel characteristics. The spacers are used together with the stripper rings for the exact positioning of rotary slitter knives on the

slitter arbor and for precisely adjusting the knife clearance. For use with automatic assembly systems, we provide tools with special edge dimensions.

Standard Models

Advantages / Characteristics

- Graduated in thickness from 0.1 to 100 mm (in exceptional cases up to 250 mm)
- Lateral surfaces are lapped, ground and polished
- Burnished
- Special edge dimensions
- High precision with thickness tolerances up to ± 0.0005 mm
- Special feed and ejector rings

Lightweight Spacers

Apart from the standard versions, TKM offers, among other items, lightweight spacers with a weight saving of up to 70% – as specially designed lightweight spacers or with a deeper milling recess.

Advantages / Characteristics

- High precision with thickness tolerances up to ± 0.0005 mm
- Tool steel or stainless steel quality
- Utilization of ergonomic advantages

Special Design

TKM has a large range of special design spacers – either divided or as hinged rings.

Advantages / Characteristics

- Divided spacers for subsequent knife clearance corrections
- Quick changing of special gauge spacers



Plastic Shims

Plastic foils in various colors and in pre-defined material thicknesses as plastic shims facilitate adjustment of the knife clearance.



Attainable Production Tolerances (Standard Models, Lightweight Spacers and Special Design Spacers)

Outer Diameter (mm)	Thickness Tolerance (mm)	Parallelism (mm)	Flatness per Thickness (mm)				
			< 1	< 2	< 3	< 5	> 5
≤ 250	± 0.0005	0.001	0.010	0.003	0.001	0.001	0.001
≤ 420	± 0.0005	0.001	0.020	0.010	0.005	0.002	0.002
≤ 600	± 0.001	0.002			0.010	0.010	0.005
≤ 800	± 0.003	0.005					0.010

Separator Tools



The following parts ensure clean separation and guidance of the cut material strips and smooth winding of the strips onto the recoiler of the slitting line:

- Separator discs made of chrome alloy tool steel
- Separator spacer rings made of polyamide
- Special versions in steel/aluminum with polyurethane coating

Scrap Chopper Knives

Trimming of the material coils allows discharge of the resulting waste strips by various methods.



The most efficient and reliable solution is shredding or chopping of the waste strips with scrap chopper knives made of high quality alloy tool steel.

A number of different dimensions – also with spiral sharpening – are available.

Cutting Quills

Cutting quills are complete cutting units for defined strip widths, for which the tools are pre-mounted on sleeves. Minimal set-up times increase efficiency for repeated cutting applications.

Advantages / Characteristics

- The TKM guide system maintains the narrowest knife clearance
- Repeat accuracy of the strip widths
- Minimized set-up times
- Our clamping system guarantees the smallest possible axial run-out



Attainable Production Tolerances (Cutting Quills)

Outer Diameter (mm)	Thickness Tolerance (mm)	Parallelism (mm)	Flatness per Thickness (mm)				
			< 1	< 2	< 3	< 5	> 5
≤ 250	± 0.0005	0.001	0.010	0.003	0.001	0.001	0.001
≤ 420	± 0.0005	0.001	0.020	0.010	0.005	0.002	0.002
≤ 600	± 0.001	0.002			0.010	0.010	0.005
≤ 800	± 0.003	0.005					0.010

Cut-to-Length Knives / Guillotine Shear Blades

For cut-to-length lines and for guillotine shears, we produce highly precise knives and shear blades with a length of up to 6000 mm.

Production, including heat treatment, is completely in-house. We accordingly guarantee consistently high quality of the knives and shears with the best microstructure and the best mechanical properties.

Depending on the requirements, either special tool steel or a special nickel-based alloy is used. In particular, we can handle, as a single source, system-related requirements as well as specific manufacturing processes at the customer's end, thanks to our in-house production depth.

Advantages / Characteristics

- Knife material and heat treatment are keyed to the material to be cut
- Cross, radial and peripheral grinding possible
- Highest accuracies maintained
- Ground radii for V-shape blades
- Blades for all guillotine shear types



Design

Incremental Pitch Tolerance	± 0.6 mm/1000 mm
Hardness	Dependent on material, ± 1 HRC, ± 2 HRC
Parallelism	Up to 0.005 mm on request
Surface	Standard Ra up to 0.4 µm, Ra 0.03 µm on request

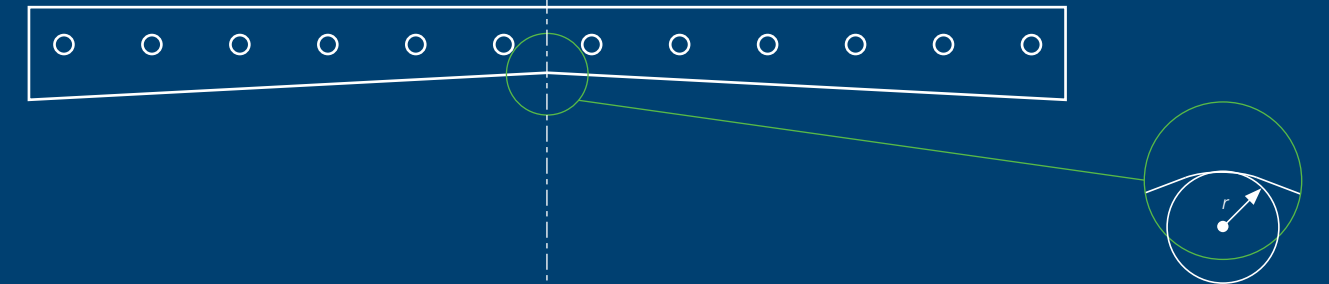
Single Blade



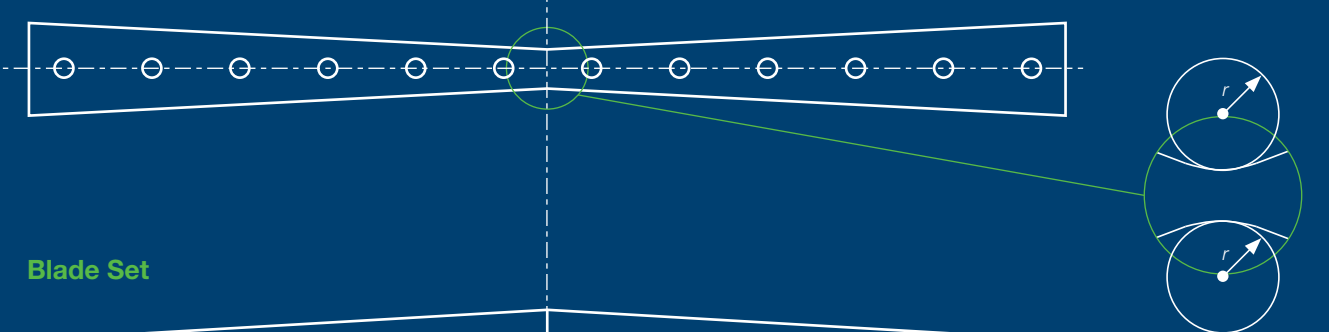
Blade Set



Single Blade



Single Blade



Blade Set



Additional Products

Storage Systems

TKM offers professional space-saving storage systems for protecting and securely storing tools. This can increase the life of your tools and aid in the production process.

We analyze your processes, advise you on the optimal storage of tools and offer a wide variety of storage solutions.

- Mandrel storage (movable carts, fixed wall installations)
- Storage in extractable storage cabinets (pharmacist's cabinet)
- Paternoster cabinet system storage
- Storage on shelves and in cabinets
- Storage and transportation in crates and steel containers
- Felt and wood intermediate layers, to prevent the tools from touching

Microplan Polishing Machine

The polishing machine "Microplan" with the CE label removes deposits such as galling and rust spots as well as polishes and cleans plane-parallel surfaces. Microplan significantly extends the service life of tools through continual polishing.

The following products can be polished with a diameter of up to 500 mm, efficiently and with no loss in tool thickness:

- Rotary Slitter Knives
- Stripper Rings
- Spacers

Accessories

Hydraulic Lock Nuts

Old-fashioned mechanical lock nuts can be replaced by efficient hydraulic lock nuts/clamping systems for tightly locking the installed cutting tools locked onto the slitter arbor.

Advantages are variable clamping pressures from 80 to 300 bar, which can be monitored at a pressure gauge or indicator. The contact pressure is adapted to the material to be cut and its thickness. Together with highly precise cutting tools, these hydraulic lock nuts achieve

the smallest axial runout. These hydraulic locking nuts have the following essential functions and substantial advantages:

- Optimal pressure distribution
- Guaranteed reproducible settings
- Shortened set-up times
- Easy to operate
- Better dimensional accuracy

Knife / Blade Holders

Knife/blade holders in various versions facilitate the fast setup of variable strip widths.

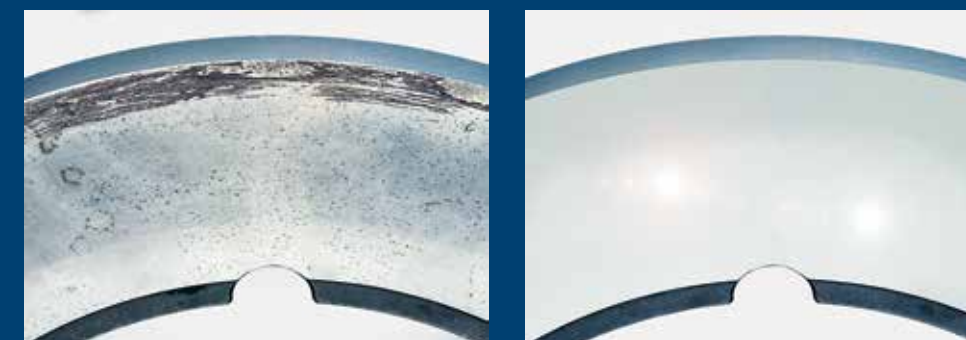


Maintenance for Longevity and Cutting Edge Retention

Cutting in particular of soft materials, such as non-ferrous metals and zinc-plated materials, can lead to deposits accumulating on the lateral surfaces of the cutting tools. These adhesions, as well as rust spots, on the lateral

surfaces of the tool cause variations in the knife clearance and thereby negatively affect the cutting process.

Comparison of Before and After Polishing



Example of a comparison of two rotary slitter knives after the cutting process and after polishing.

Tool Design Software and CASKA Arbor Set Up Software

We use the TKM Tool Design Software to calculate on a mathematical basis the necessary tools for your peripheral equipment. Given your machine-specific information and cutting tasks, you'll receive a tool set optimized in terms of quantity and dimensions for guaranteeing all defined thicknesses and strip widths.

CASKA (Computer Aided Slitter Knife Assembly) completes efficient tool utilization. Developed ourselves, this software provides a solution for the simple and fast determination of optimal arbor set up for various cutting applications on slitting lines.

To minimize the checksum errors in the arbor set up, CASKA takes into account the classification of the tools according to the thickness tolerance range (-, 0, +) and uses the fewest possible components for the assembly, for significantly better quality of the cutting results. Fewer tools reduce the setup time and thus reduce the risk of set up errors.

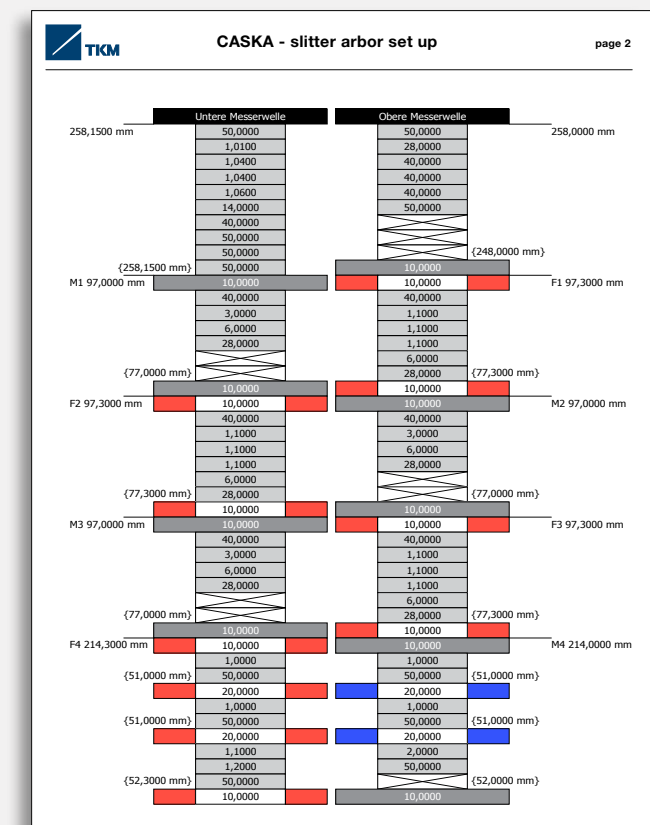
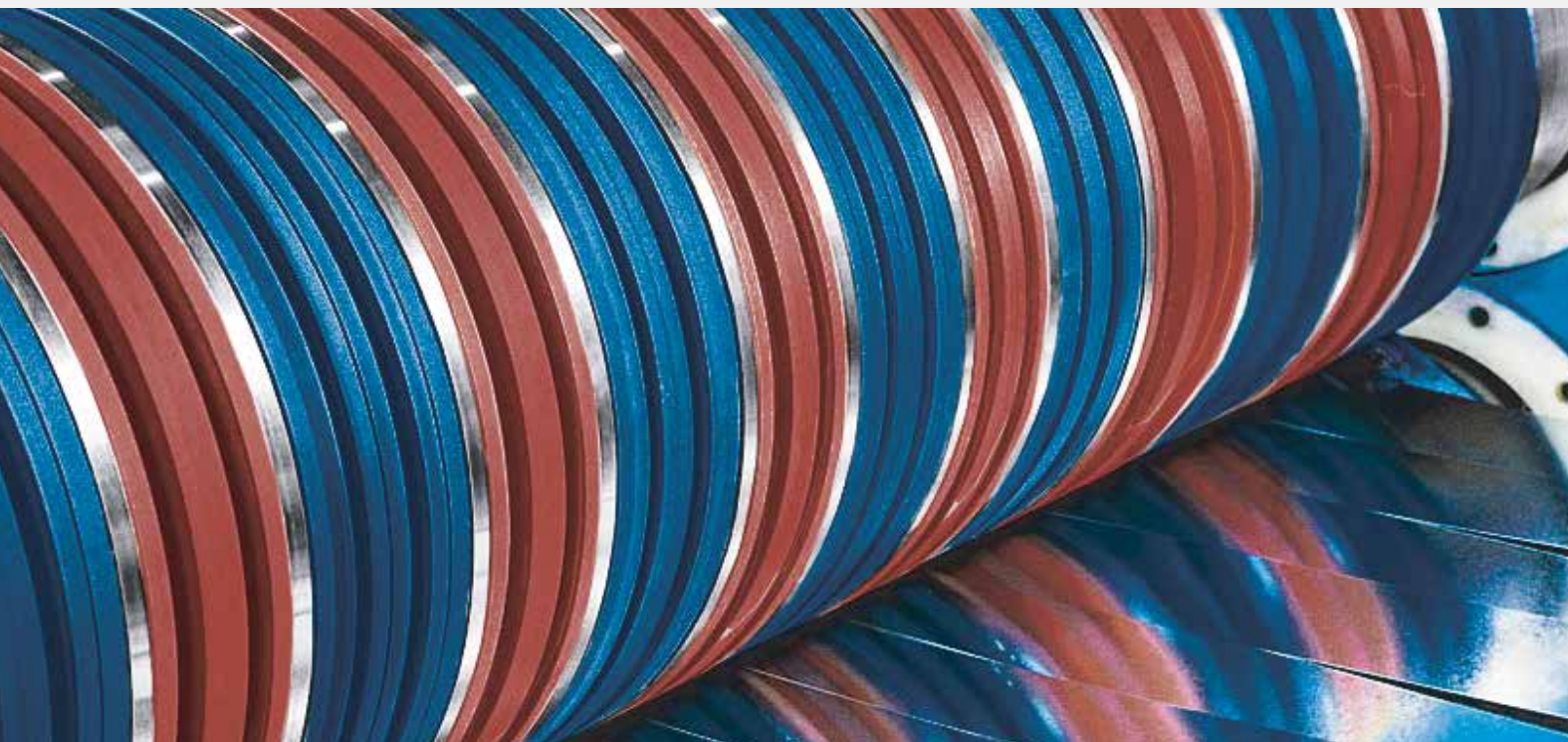
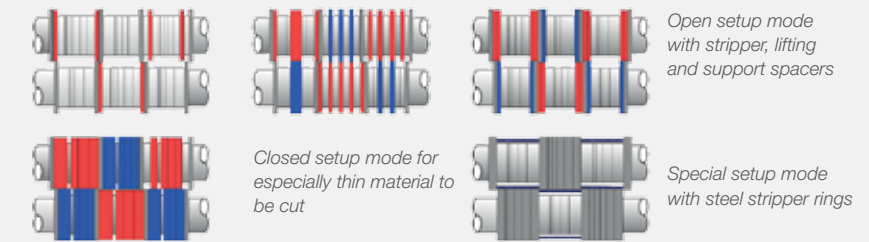
CASKA can determine the assembly of up to six cutting frameworks and up to eight separator arbors simultaneously. Per cutting framework, up to nine independent slitting jobs (multiple setups) can be performed. This

considerably speeds up arbor set up, since multiple (residual) coils can be cut from different materials and in different widths, with diverse cutting parameters – with no modifications required. Thanks to the wide variety of the predefined set up modes that have been proven their merit in many cutting companies around the world, special cutting tasks can be performed with CASKA (with the use of steel strippers, for example).

Prior to delivery, CASKA is configured with the key data on the particular slitting line and the corresponding tool stock. Any necessary customer-specific adjustments are made pertaining to individual tool sets, specific material data and processing parameters for the material to be cut, for example.

CASKA affords convenient management of slitting jobs and includes an interface for the automated import of data from other IT systems.

Operation of CASKA is very easy and can be learned in no time at all.



Example of arbor setup printout

Advantages / Characteristics

- Optimal arbor set up for the highest cutting quality
- Reduction of setup time
- Improvement of service life of knives
- Prevention of set up errors
- Easy operation
- Interface with customer systems
- Efficient (residual) coil processing
- Several languages are available (expandable)

System Requirements

- MS Windows XP (SP3) or higher
- Usual hardware for Office applications
- Printer (color printer) recommended

Quality

Constantly increasing quality requirements for cutting edges and the tolerances of the slitting dimensions necessitate the smallest possible production tolerances for the tools used in the cutting process. TKM addressed this problem very early on.

Fully automatic production steps as well as complete machining processes ensure ultimate precision and short delivery times for our tools. The finish machining and final inspection are carried out at a temperature of 20° C, under standardized conditions.

Production Tolerances

With the most modern production for rotational symmetrical cutting tools worldwide, we achieve process-ensured guaranteed thickness tolerances of ± 0.0005 mm and a drilling accuracy up to H3.

To minimize checksum errors in arbor set up, we divide the thickness tolerance into three areas (-, 0, +) upon request, and we label each tool accordingly.

Surface Finishes

Depending on the requirements, TKM offers tool surfaces that are ground up to the level of mirror polishing. With proven measurement technology from the automobile industry,

we verify average roughness values (Ra) $\leq 0.03 \mu\text{m}$ and gloss levels $> 1000 \text{ GU (20}^\circ\text{)}$ of tool surfaces.

Tolerance Classes

The division of tools according to tolerance classes offers you a high degree of flexibility. Depending on the cutting task, we are capable of offering, through four tolerance classes,

profitable tool solutions for the operation of the slitting line.

Surface Finishes


Surface	Gloss Finishes [GU(20°)]	Surface finish roughness Ra [μm]
Ground	$\approx 50 - 200$	≤ 0.40
Lapped	$\approx 0 - 5$	≤ 0.20
KSF Microplan	$\approx 50 - 200$	≤ 0.10
Mirror polished	$\approx 600 - 1,100$	≤ 0.03

Certificates

- DIN EN ISO 9001:2008
- DIN EN ISO 14001:2009
- DIN EN ISO 50001:2012

Attainable Production Tolerances

Outer Diameter (mm)	Thickness Tolerance (mm)	Parallelism (mm)	Flatness per Thickness (mm)				
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≤ 250	± 0.0005	0.001	0.010	0.003	0.001	0.001	0.001
≤ 420	± 0.0005	0.001	0.020	0.010	0.005	0.002	0.002
≤ 600	± 0.001	0.002			0.010	0.010	0.005
≤ 800	± 0.003	0.005					0.010



For the efficient use of our tools, we always stand at the side of our customers not only as a supplier and consultant, but as a reliable partner, through all phases of their daily business.

Collaborative thinking and support:
Perfect consulting and accompaniment
are obvious for us.

Application Consulting

Through extensive consultation with our specialists, you'll receive the support you need in determining the necessary tools for your cutting applications.

You'll determine the right cutting tools and cutting parameters through our close cooperation.

We'll point out alternative solutions and approaches, in order to identify the optimal tool requirements for your slitting line on the basis of a mathematical model.

Services

- Regrinding Service
- Tool Maintenance
- Training
- Seminars and Cutting Symposiums

Regrinding Service and Tool Maintenance



Regrinding Service

Rotary slitter knives and straight knives lose their sharpness with time and the length of use. Dull knives have a negative effect on the cutting result and the quality of the cutting edge of the material strips. In extreme cases rounded knife edges could lead to non-compliance with the required knife clearance.

We advise you to have our specialists regrind your cutting tools at regular intervals.

Tool Maintenance

In order to maintain a constantly high cutting edge quality, cutting tools must be routinely overhauled.

Likewise, tools must be modified when the cutting requirements and parameters have changed.

In both of the above cases, TKM will support you with the most modern technology and experienced experts.

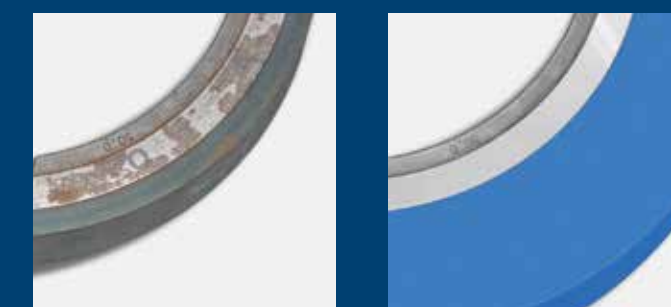
Regrinding Services

- Regrinding/Polishing of Rotary Slitter Knives
- Regrinding of Rubber Bonded Stripper Rings
- Regrinding of Edge Trimmer Knives
- Regrinding of Straight Knives
- OEM Quality Level

Maintenance Tool Services

- Rebonding of Bonded Stripper Rings
- Reworking of tools according to Customer Requirements
- Reconditioning of Cutting Tools (Removal of Galling)
- OEM Quality Level

Comparison of Before and After Rubber Replacement



Training, Seminars and Cutting Symposiums

Training and Seminars

On request we can also carry out application-specific training and technical cutting seminars at your place of business. In addition to the basics of cutting technology, material science technology and the product applications, we take into account your special application cases. Allow us to actively support you in improving the quality, efficiency and profitability of your cutting processes.

Cutting Symposiums

We conduct external cutting symposiums at regular intervals, bringing together users from diverse metal processing industries. Practically oriented technical presentations discuss new trends and future-directed topics.

We use these events for reciprocal exchanges of experiences, and they serve as the basis for discussions of customer-specific cutting topics. The interactions of different application groups from diverse industries afford synergies and developmental perspectives.



Training and Seminar Topics

- Theoretical Basics of Cutting Technology
- Knife Materials
- Tool Tolerances and set up modes
- Types of Rubber Bonding
- Storage and Care of Tools
- Application of the CASKA Arbor Set Up Software

Close By – Worldwide

The TKM group forms a system of cutting expertise. We create additional value – far beyond cutting.

Throughout the world, we share together the consistently pursued aim of innovation and new technologies, as is reflected by the abilities of our workers.

As a network, we utilize the potential of our local companies, which lay the foundations for our first-class service, high flexibility and personal consulting on site.

As developers and manufacturers of products and systems, we will passionately look for the optimal solution for you.



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TKM, the internationally leading corporate group, manufactures and sells high-quality industrial knives, saws, doctor blades and precision consumable parts for industrial applications.

Our technologies, products and industrial services are applied and appreciated worldwide across many industries. As an independent family company, we have been

setting the standards in quality and innovation, technical expertise and close cooperation for over 100 years.

Reliability, integrity and commitment are the hallmarks of our collaboration. We define our claims to excellence in terms of these fundamental values by being:

Innovative, precise and close by.

Innovative:

We strive for new technology and continuously develop products and processes, in order to produce the highest performing Industrial machine knives and cutting tools.

Precise:

Our Products, Services and Technical ability all help benefit our customers processes, productivity and finally finished product to assist in their operational development.

Close by:

Our Philosophies are sustainable and stand for a balance between environmental measures, economic development and social engagement.

No Matter where you are in the world a TKM subsidiary or partner is never far away.

TKM Geringswalde

The Metal Expertise for Circular Products

In Geringswalde we concentrate on the development and production of tools for cutting applications in the metal and paper industries. We create customized tools and solutions for systems, machines and services over production and storage areas totaling around 6,500 m².

On the basis of innovative ideas and consistent standards around the world, we strive

for innovative development together with our customers – down to the last detail.

The high number of trainees provides an important foundation for our corporate development. By opening perspectives to young people and promoting their talents, we afford professional and international development opportunities for their future and for TKM.



TKM Geringswalde

- 135 workers – 10% trainees
- 74 machine tools (70% CNC machines)
- 6,500 m² total production and storage area
- Main areas of production: 90% metal, 10% paper
- Production batch sizes: 1 to 2,500
- Production volume: 250,000 to 300,000 precision parts per year

TKM Austria

The Metal Expertise for Straight Products

At our Austrian production site, in Böhlerwerk, we develop and produce products for cutting applications for the metal, paper, wood, stone, rubber and plastic industries.

In the last couple of years, we have developed the Böhlerwerk site into a competent partner for the production of complex components for mechanical engineering.

Equipped with state-of-the-art machinery, we design and deliver all industrial knives and machine elements required for current applications. In this way, we can ensure the efficiency of your systems.

With our know-how and substantial in-house production depth, we'll find the right solutions for your manufacturing processes.

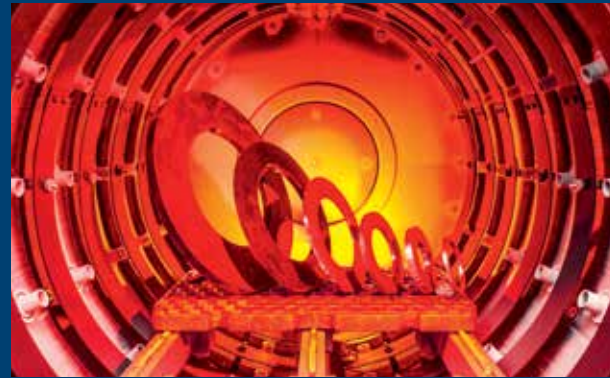


TKM Austria – Böhlerwerk

- 180 workers – 10% trainees
- 75 machine tools, including: 5-axis milling, precision grinding, chamber, inductive and vacuum heat treatment ovens, straightening shop
- 11,000 m² total production and storage area
- Main areas of production: metal, wood, paper, machine elements, plastics/recycling
- Production batch sizes: 1 to 500

TKM. Made in Germany

Optimal Processes for High-End Tools



4. Heat Treatment



7. Inner Diameter Circular Grinding



10. Outer Diameter Circular Grinding



11. Quality Control



1. Raw Materials



3. Soft Machining



5. Surface Pre-Grinding



8. Surface Grinding



12. Packaging



2. Sawing



6. Straightening



9. Rubber Bonding

Twelve.

Each step is a clever combination of automated production, handcraft and precision.

In twelve basic production steps, we ensure high quality industrial knives by means of a

consistent quality management process. We thereby lay the foundation for the flawless and profitable operation of our customers' systems.

Our technological roots go back to the beginnings of industrial tool development.

Thanks to continual further development, we can guarantee what our customers want today: efficient cutting solutions, standardized or customized for specific applications.



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