

EST. 1926

**SAUER**  
SYSTEM

TOOLING GUIDE



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For over 90 years, L.E. Sauer Machine Company has manufactured the highest quality tooling available to the corrugated industry. Our Sauer System product line continues to set the standards for quality and innovation.

Every Sauer System tool is manufactured from purposely selected materials to exacting tolerances. We start with a fundamental understanding of the job our tools must perform. Our designers and engineers incorporate as many value-added features into each tool as possible, all of which contribute to ease of operation, customization, and longevity.

We are pleased to provide you with this guide. As a corrugated converter, tooling is an essential part of your process. We want to be your applications department and your partner. We look forward to talking with you soon.

**Peter Sauer**  
*Vice President of Sales*





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## Our Mission

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Our mission is to provide the corrugated box industry with the solutions needed to increase capabilities and make better boxes. Our promise is to continue to set the standards for performance, quality, excellence, and innovation, without compromise.

For over 90 years, Sauer System has worked on the front lines of the corrugated box industry helping to develop the tooling applications that have brought the industry to where it is today. As pioneers and innovators, we maintain a responsibility to uphold and exceed the very standards we developed.

# Tooling Characteristics & Advantages



## IN-HOUSE PROCESSES

Sauer System tools start out as castings, bars, or plates made from iron, aluminum, steel, or bronze, and we maintain control of all manufacturing processes from start to finish. The ability to manage all manufacturing processes in-house gives us full control over the quality of our finished products.

## APPLICATION KNOWLEDGE

Excellent tool design requires a comprehensive understanding of its application. Every tool is designed to perform a specific task, and only by understanding the task can the tool be designed correctly. Basic design decisions, such as choice of material, and more complex decisions, such as tolerances, are driven by knowledge of the application.



## SUPERIOR DESIGN

Sauer System tools incorporate features that contribute to ease of operation, performance, longevity, and customization. Our designers and engineers are experienced in assessing which of these features can be incorporated into each tool.



# Material Advantages

## CAST IRON

Cast iron is the primary material used to manufacture Sauer System tools. Iron is a strong material, but, unlike steel, will not gall shafts during lateral tool movement. Iron can also be flame-hardened when durability on the outer diameter is desired.



## CONTINUOUSLY CAST IRON BAR

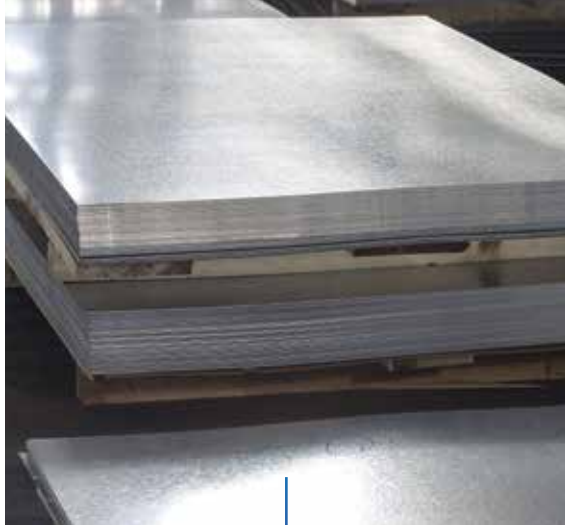
For most tools, Sauer System utilizes Dura-Bar® continuously cast iron bar. A special manufacturing process results in defect-free raw material.

## GREY IRON CASTINGS

For larger heads and tools, or heads and tools requiring specific structural features such as lightening cavities, interlocking lugs or cast bosses, Sauer System utilizes high quality, domestically-sourced grey iron castings.







## ALUMINUM

Aluminum, which provides an optimal balance between weight and durability, is used for attachment heads, certain scorers, knife holders, and other tools designed to be regularly removed and re-installed. Depending on size and configuration, tools may be made from extruded aluminum bar or high-grade aluminum castings.



## APPLICATION-SPECIFIC TOOL STEELS

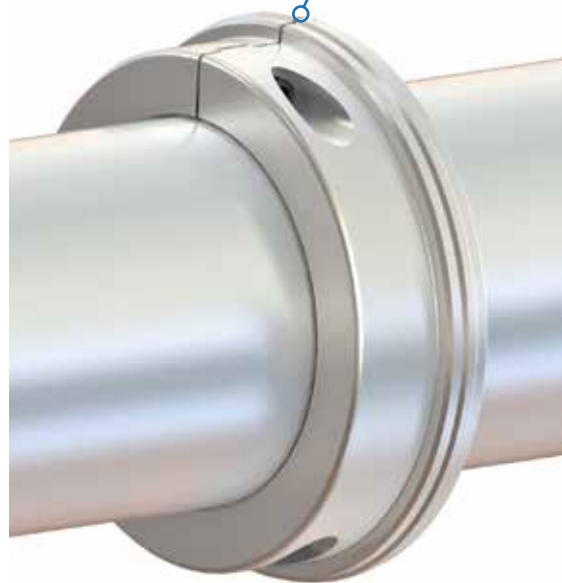
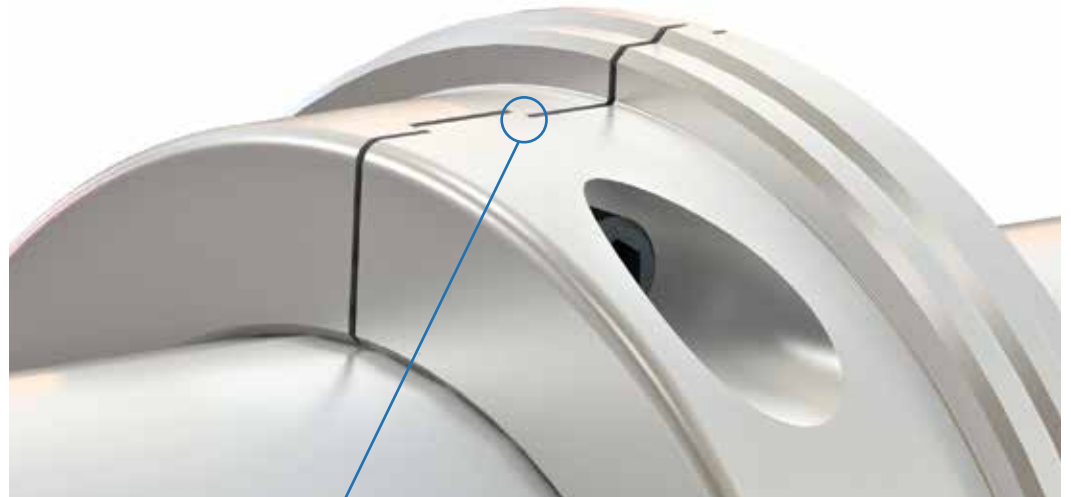
Sauer System uses application-specific tool steels for cutting tools and surface-wear-resistant plates. The advantage of these steels comes from their specific hardnesses, resistance to abrasion and deformation, and ability to hold a cutting edge.



## BRONZE

Bronze is utilized for corrugator and web-driven applications where a free-wheeling cutting or scoring tool is desired. With its low coefficient of friction, bronze acts as a bearing that does not require external lubrication.

# Clamping Styles



## **SINGLE-SCREW-RELEASE**

Many Sauer System heads utilize our proprietary clamping style we call “single-screw-release”. This system allows heads to be repositioned and clamped by loosening and tightening one screw. This design affords ease of operation, positive clamping, and minimal face runout.



## EXPANDABLE SHAFT

Sauer System provides heads designed to go on expandable shafts. These tools are made with extremely tight bore tolerances. The keyway width and depth are also tightly controlled.



## FREE-SLIDING / SET SCREW CLAMPING

Sauer System uses set screw clamping for large diameter heads or when rack wrench positioning is utilized. When installed on the shaft with the set screw loose, the heads will freely slide by hand or with a rack wrench. Tightening the set screw clamps the head in place. Heads are machined with the set screw clamped to a plug that replicates the shaft so that critical tolerances are held when the tool is installed on the shaft.



## KAM-LOK

Sauer System's proprietary Kam-Lok style clamping mechanism provides easy installation, removal, and repositioning of attachment heads. The mechanism ensures positive clamping to the shaft. Kam-Lok attachment heads are loosened for repositioning with a quarter turn of an eccentric clamping shaft. They can be installed or removed in minutes.



## FREE-SLIDING / YOKED

Sauer System yoked heads are designed with tight bore tolerances to ensure a long-lasting, free-sliding part. All yoked heads feature a dowel pin at the split line, which ensures perfect circular bore alignment.



# Scoring Tools

Scoring tools are defined as tools that create score lines against the corrugations, typically on a corrugator or floor slitter.



**Sauer System manufactures scoring heads and rings for all corrugators and floor slitters with an emphasis on tool design, longevity, material selection, and profile selection.**



# Scoring Tools



## AUTO-SET SCORING RINGS

Bolt-on scoring rings are manufactured from high-grade tool steel and are fully heat-treated for longevity. Auto-set scoring rings are available for all corrugator makes and models.



## AUTO-SET SCORING HEADS

Scoring heads designed for robotic setup are manufactured to OEM tolerances or better and include features such as interlocking lugs, brake holes, composite brake strips, and felt wipers.



## MANUALLY-SET SCORING HEADS

Manually set scoring heads feature single-screw-release style clamping to ensure positive clamping and minimal face runout. Scoring heads are flame-hardened for longevity and plated to prevent corrosion.



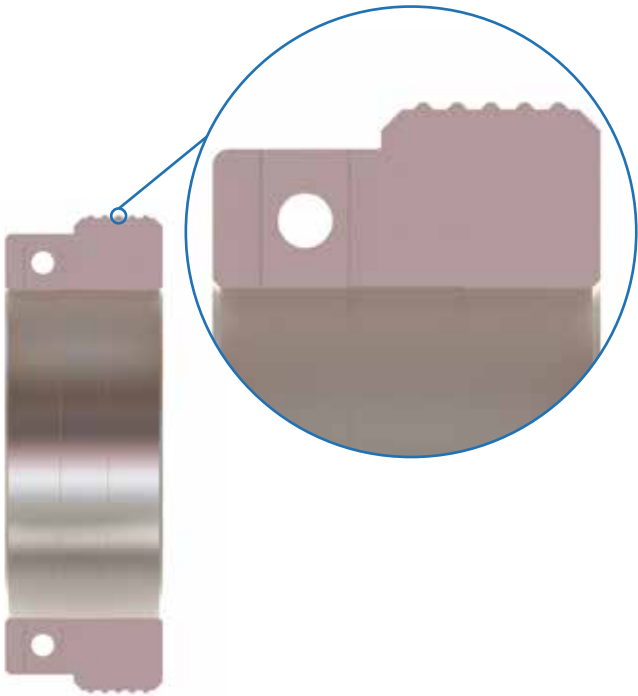
## EXPANDABLE SHAFT SCORING HEADS

Expandable shaft scoring heads are made with extremely tight bore tolerances and feature flame-hardened profile for longevity. The keyway width and depth are also tightly controlled.



## SCORING PROFILE DESIGN

Sauer System has been the market leader in scoring profile design since the early days of the corrugated industry. Scoring profiles can be selected from our extensive library of existing and proven profiles, or they can be designed for specific applications; made to customer specifications; or reverse engineered from existing sheets. There is virtually no limitation to profile design.

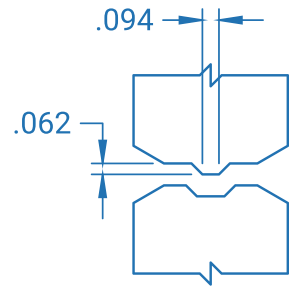


# Scoring Profiles

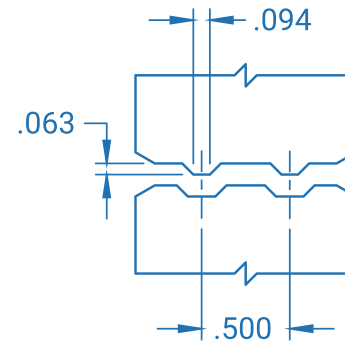
The following is a sample of some of the many hundreds of profiles offered by Sauer System:

## SAUER STANDARD PROFILES

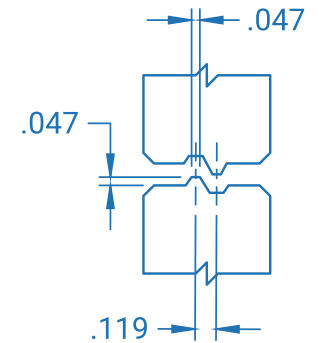
The “SAUER STANDARD” profiles are the proven designs that have been available for many years and are time-tested. They are our best sellers, and many of them are known throughout the industry by their Sauer System profile number.



**M3/F4**



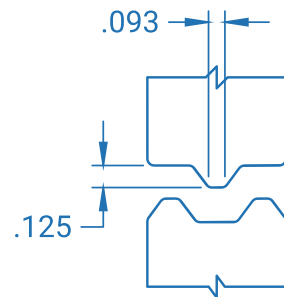
**M389/F383**



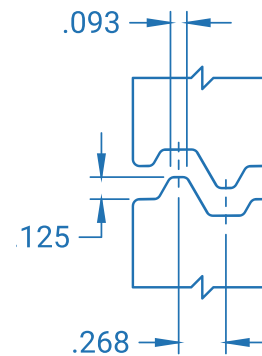
**M191/F179**

## HEAVY DUTY PROFILES

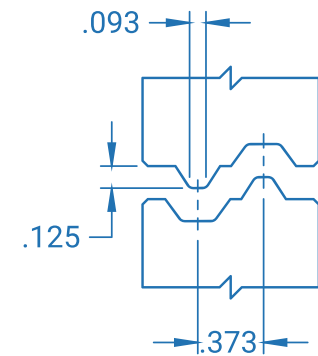
The “HEAVY DUTY” profiles feature taller and wider scoring beads and valleys, and although they were designed with heavy-duty applications in mind, they have also proven to be extremely effective for standard applications.



**M684/F632**



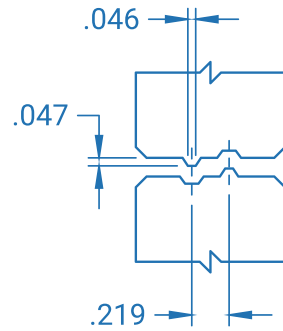
**M707/F648**



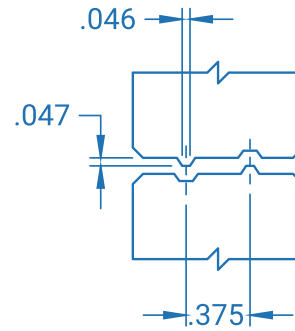
**M743/F673**

## TRAY-MAKING PROFILES

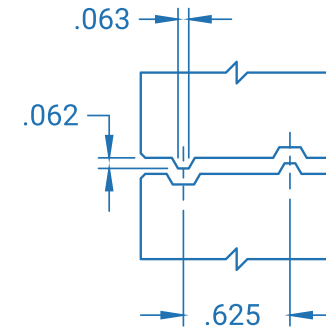
Tray making is a very common application and requires a scoring profile with beads on specific centers.



M142/F134



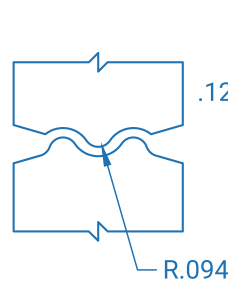
M317/F299



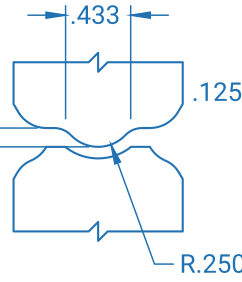
M538/F535

## CRACK-GUARD PROFILES

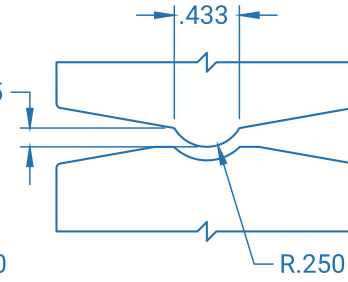
Sauer System's line of "Crack-Guard" profiles is appropriate for applications when preventing liner fracturing is the primary objective.



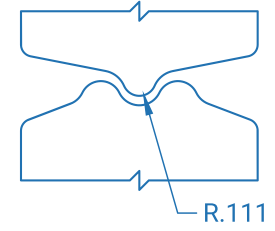
M171/F162



M212/F199



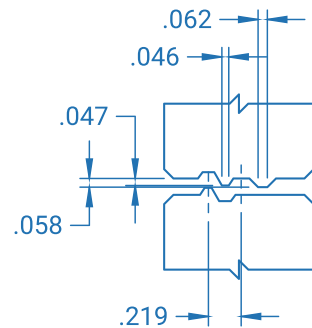
M310/F289



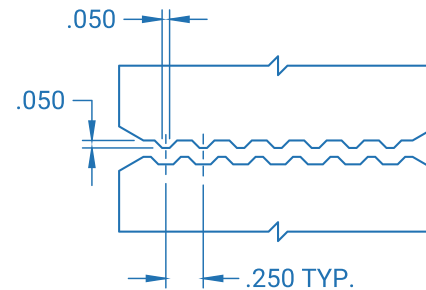
M363/F342

## SPECIALTY PROFILES

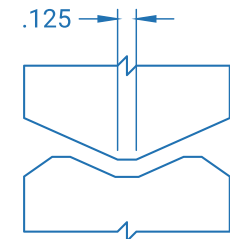
Sauer System offers an extensive library of specialty profiles, or profiles can be made to customer specifications.



M313 / F293



M475 / F471



M724 / F662



# Creasing Heads & Rings

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Creasing tools are defined as tools that create score lines in flute direction, typically on converting machines.



**Creasing tools have been synonymous with Sauer System since the early 1960s when we pioneered the use of polyurethane creasing anvils and designed a three-piece male creaser with a replaceable scoring bead.**

## SUCCESSFUL CREASING

The key to successful creasing is utilizing male and female creasing tools with an optimal male profile design, the best choice of female geometry and polyurethane durometer, and tools that are manufactured with stringent tolerances to maximize concentricity and minimize TIR. The chosen male / female combination must allow the male scoring bead to create an indentation in the board, with the female supporting and assisting in the crushing of the board on either side of the crease line. **Running your finger over the outside liner of an unfolded box and being able to feel that the crease lines have “popped out” is a reliable indicator that the creasing tools are performing as designed.**



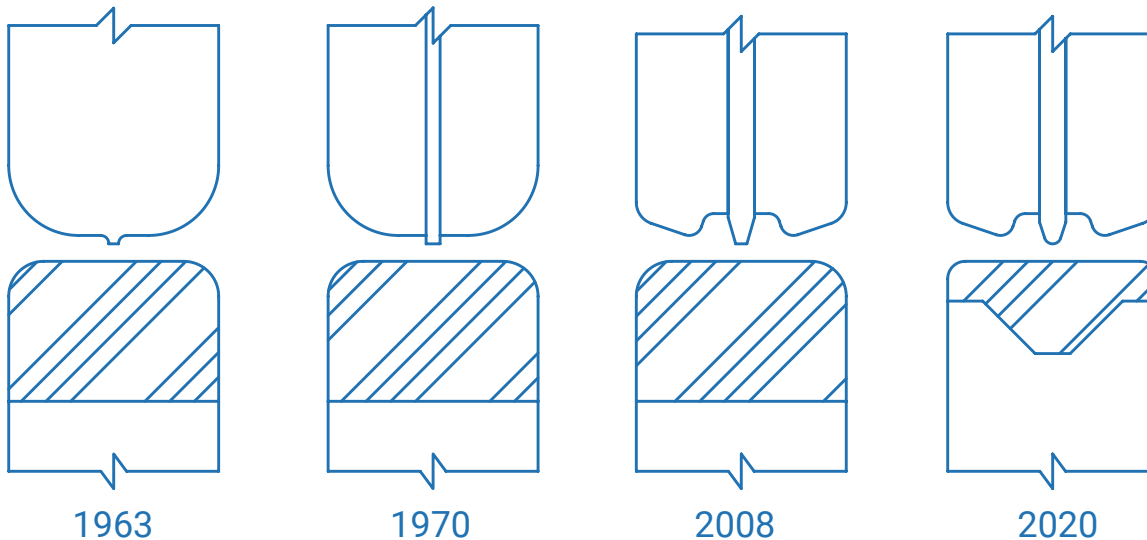
## AN ONGOING PROCESS OF DEVELOPMENT

Sauer System has led the market in developing creasing solutions since the early days of the industry. We are constantly developing new solutions, concepts, and designs.

As the quality and weight of the paper in the corrugated industry continues to decline, and the configuration and construction of board continues to change, the importance of properly designed creasers, featuring the latest creasing profile technology, is more important than ever.



## PROFILE EVOLUTION



BEYOND

# Creasing Heads & Rings

## MALE CREASING TOOLS



### CREASING RINGS AND RING ASSEMBLIES

Sauer System creasing rings can be manufactured to fit OEM heads. Whenever practical, the creasing rings come as a three-piece assembly with a clamp ring, and a hardened replaceable scoring insert.



### MANUALLY SET CREASING HEAD ASSEMBLIES

Manually set creasing head assemblies feature a scorer body with either a hardened replaceable scoring insert and clamp ring, or a fully demountable three-piece scoring ring. The base heads are manufactured from Dura-Bar® Continuously Cast Iron and feature single-screw-release clamping for quick setups and a precisely machined shoulder for the creasing ring assembly.

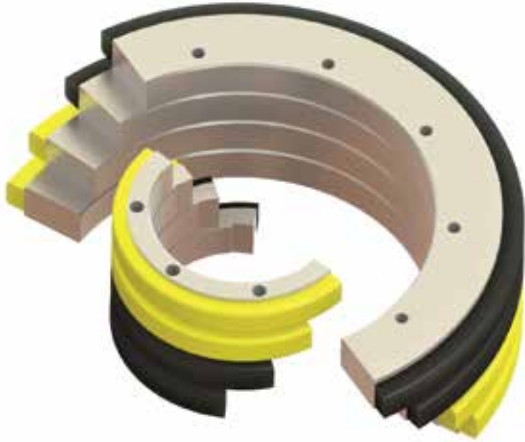


### YOKED CREASING HEADS AND HEAD ASSEMBLIES

Yoked creasing head assemblies feature a body with either a hardened replaceable scoring insert and clamp ring, or a fully replaceable three-piece creasing ring. Replaceable yoke wear plates are incorporated into the design of the assembly when possible. The base heads are manufactured from Dura-Bar® Continuously Cast Iron with extremely tight bore tolerances.

# FEMALE CREASING TOOLS

Female creasing heads, creasing rings, and replaceable polyurethane covers are available from Sauer System in durometers ranging from 60A to 95A. Today's paper typically calls for either 70A or 80A.



## BONDED POLYURETHANE FEMALE CREASING RINGS

Many female creasing rings feature polyurethane that is bonded directly to the steel ring.

Bonded polyurethane is the ideal choice for many applications, including situations where exacting TIR tolerances and diameter consistency are required, or for female creasing rings with wide profiles.



## YOKED FEMALE CREASING HEADS AND HEAD ASSEMBLIES

Yoked female creasing head assemblies feature a body that accepts either a replaceable polyurethane anvil cover and clamp ring, or a bonded polyurethane creasing ring. Yoke wear plates are incorporated into the design of the assembly when possible. The creaser base heads are manufactured from Dura-Bar® Continuously Cast Iron and are manufactured with extremely tight bore tolerances.



## MANUALLY SET FEMALE CREASING HEADS

Manually set creasing head assemblies feature a score body with either a polyurethane cover and clamp ring or a shoulder for a bonded bolt-on female creasing ring. The creaser base heads are manufactured from Dura-Bar® Continuously Cast Iron and feature single-screw-release clamping for quick setups. The base heads feature a precisely machined shoulder for the polyurethane covering.



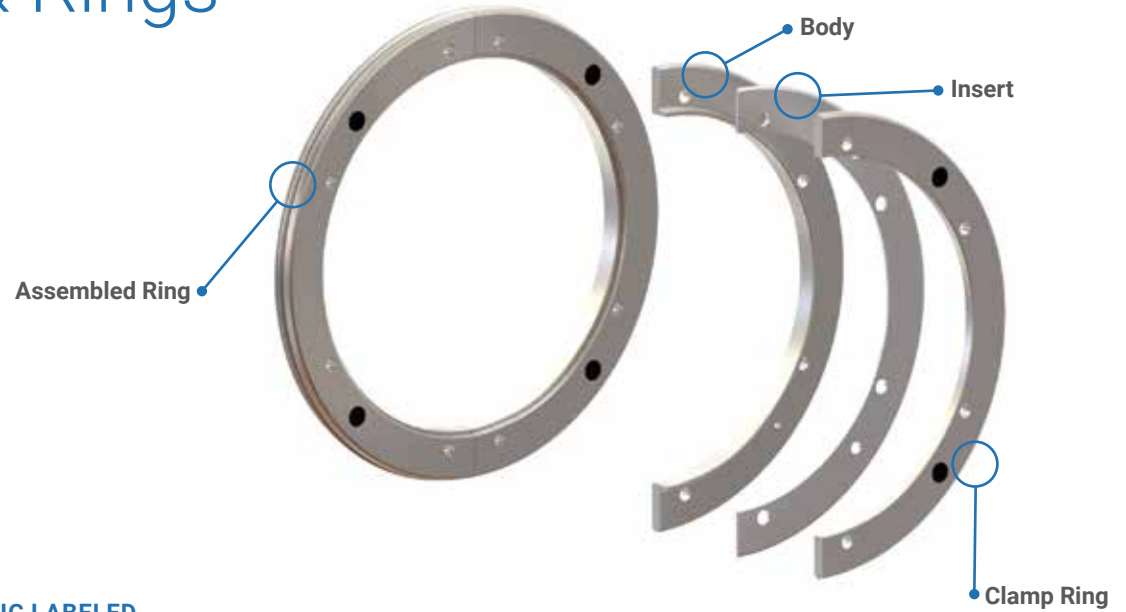
# Creasing Heads & Rings

## THE THREE-PIECE DESIGN ADVANTAGE

The hallmark design advantage of Sauer System male creasing tools is the three-piece design. Featuring a separate body, insert and clamp ring, the design provides several advantages including:

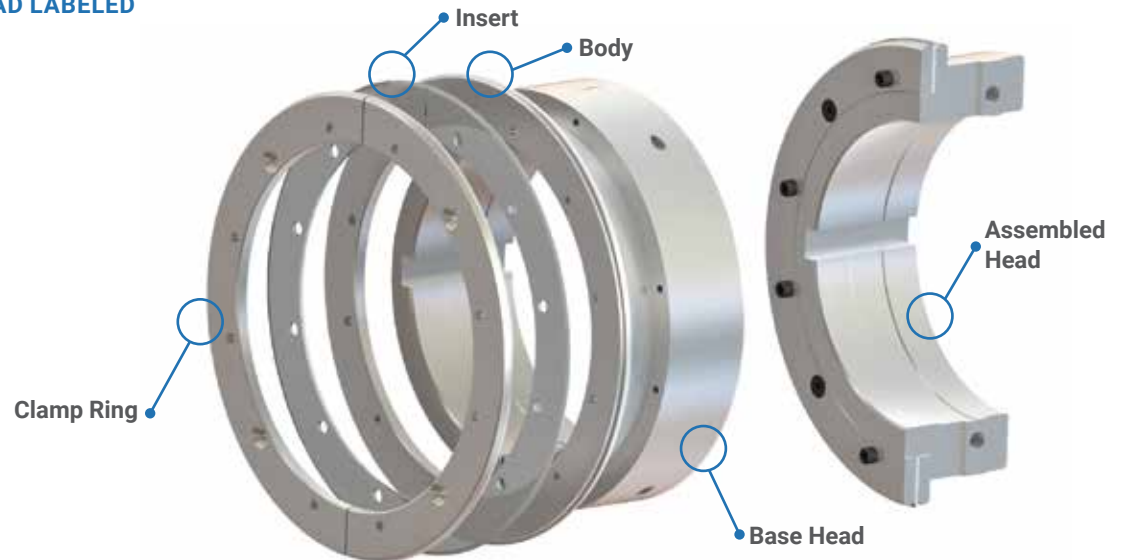
- Lower cost of ownership, as only the insert ring needs to be replaced over time.
- The ability to tweak profiles quickly and easily on the fly by changing the height, width, or shape of the scoring insert.
- The possibility of specific profiles that would otherwise not be possible without a three-piece design.

Complete yoked and manually set Sauer System creasing tool assemblies also feature a base head with a separate demountable ring for additional modularity.



### RING LABELED

### HEAD LABELED



## BONDED FEMALE RECOVER SERVICE

Sauer System provides recover service for all bonded female creasing heads and rings, including OEM and competitors' creasing tools. The recover process includes incoming inspection, removal of the worn polyurethane, molding of new polyurethane to the surface, turning or grinding the polyurethane to the correct form, blasting and re-plating the part, and final inspection. The heads and rings come back looking good as new.



**USED CREASING RINGS SENT IN FOR RECOVER**



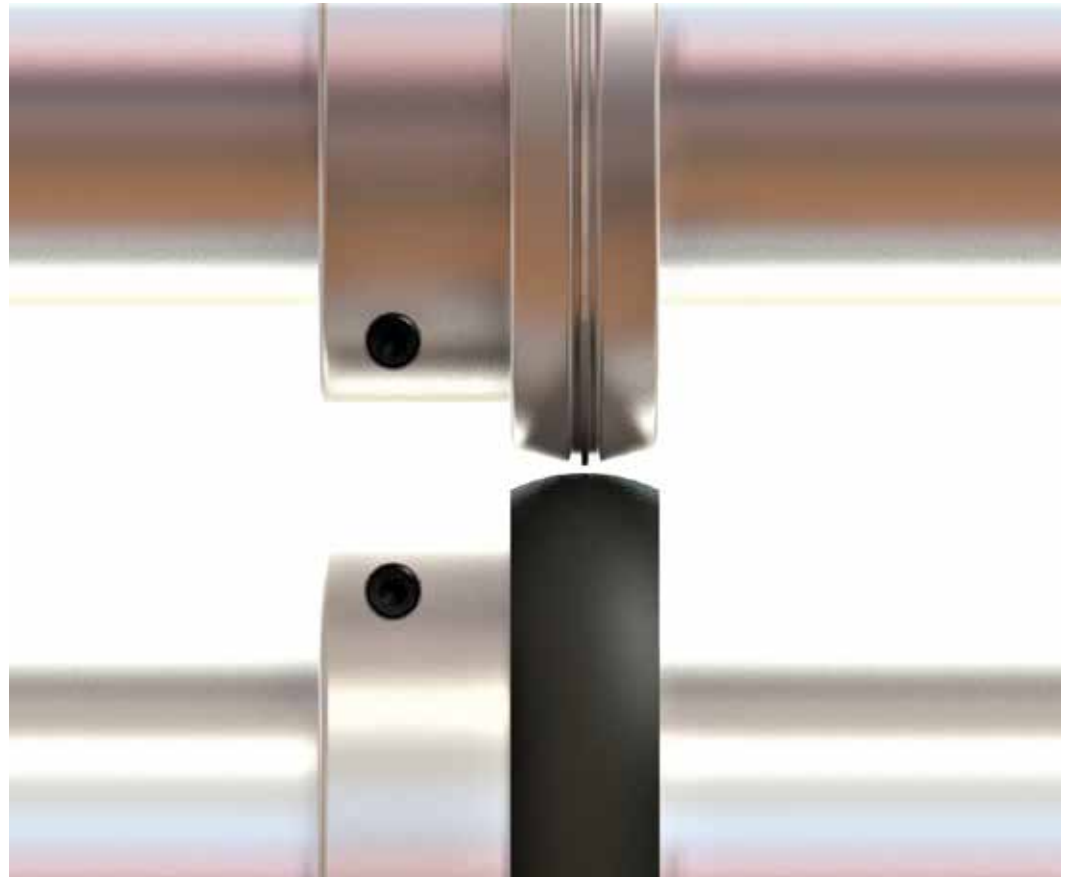
**RECOVERED CREASING RINGS**

# Heavy-Duty Creasing Tools

## A PROVEN SOLUTION FOR CREASING HEAVY BOARD

Sauer System has offered heavy-duty creasing tools for over 50 years. While the fundamental concepts that make all Sauer System creasing tools effective are utilized, the design of the heavy-duty versions call for a wider profile, wider scoring beads, and wider shoulders for added edge crush.

Despite their robust design that caters to effective triple wall creasing, the heavy-duty profile also works well on lighter grades.





A close-up photograph of a curved metal component, likely a part of a mechanical system. The component has a polished, reflective surface. A prominent feature is a wide, curved band with a fine, vertical ribbed texture. On this textured band, the text "SC2086-M761B" and "SAUER SYSTEM" is engraved in a clean, sans-serif font. The text is arranged in two lines. To the left of the textured band, there are two small, circular holes. To the right, there is one larger circular hole and a small screw head. The overall appearance is that of a high-precision, industrial-grade part.

SC2086-M761B  
SAUER SYSTEM



# Crushers

Crushing is an essential part of the converting process, ensuring the glue tab and fourth panel come together as a cohesive joint that does not exceed the thickness of the other panels of the folded box.



**Some machines, by design, incorporate the crushing process into the primary creasing section, necessitating a combined male/female crusher-creaser combination tool that serves to create the glue tab crease line and crush the glue tab. Other machines have separate crushing stations or utilize pull collar stations as crushing stations.**

# CRUSHING TOOL STYLES



## MANUALLY SET CRUSHING TOOLS

Manually set crushing tools function like pull collars but are designed to crush the glue tab and fourth panel. They feature single-screw-release style clamping and are aligned in relationship to the other heads in the setup.



## CRUSHER-CREASER COMBINATION TOOLS

Some machines call for a multi-purpose crusher-creaser tool. The creasing profile will match the profile of the other creasing tools but with a raised area on the outboard side for crushing the glue tab. The mating female creasing tool typically has a wide area of bonded polyurethane to accept both the creasing and crushing operations.



## CRUSHER-TRIMMER COMBINATION TOOLS

Another multi-purpose tool is a head designed to both crush the fourth panel and, with the mounted trim knife, trim it as well.



## YOKED CRUSHING TOOLS

Yoked crushing tools function like their manually set counterparts but have the added benefit of motorized setup. In addition, they may be yoked to other creasers or glue tab heads to ensure they are positioned accurately.

# Slitting & Trimming Hubs

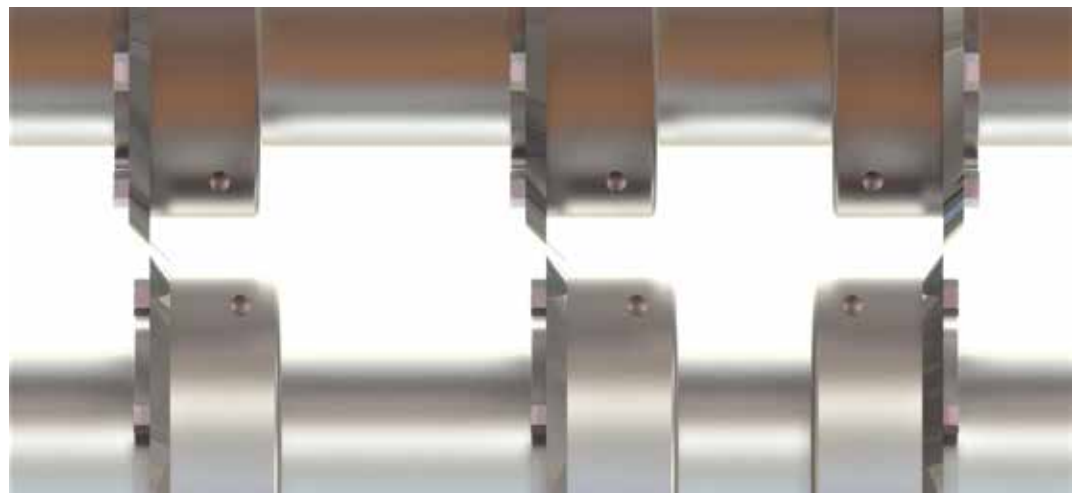
Sauer System manufactures slitting heads and trim knife hubs for corrugators, floor slitters, and converting machines.



Slitting heads and trim knife hubs are generally made from cast iron and are precision machined to ensure minimal face runout which promotes proper slitting and longer knife life. Face runout tolerances are particularly critical for slitting applications. A knife will only run as true as the hub to which it is mounted.

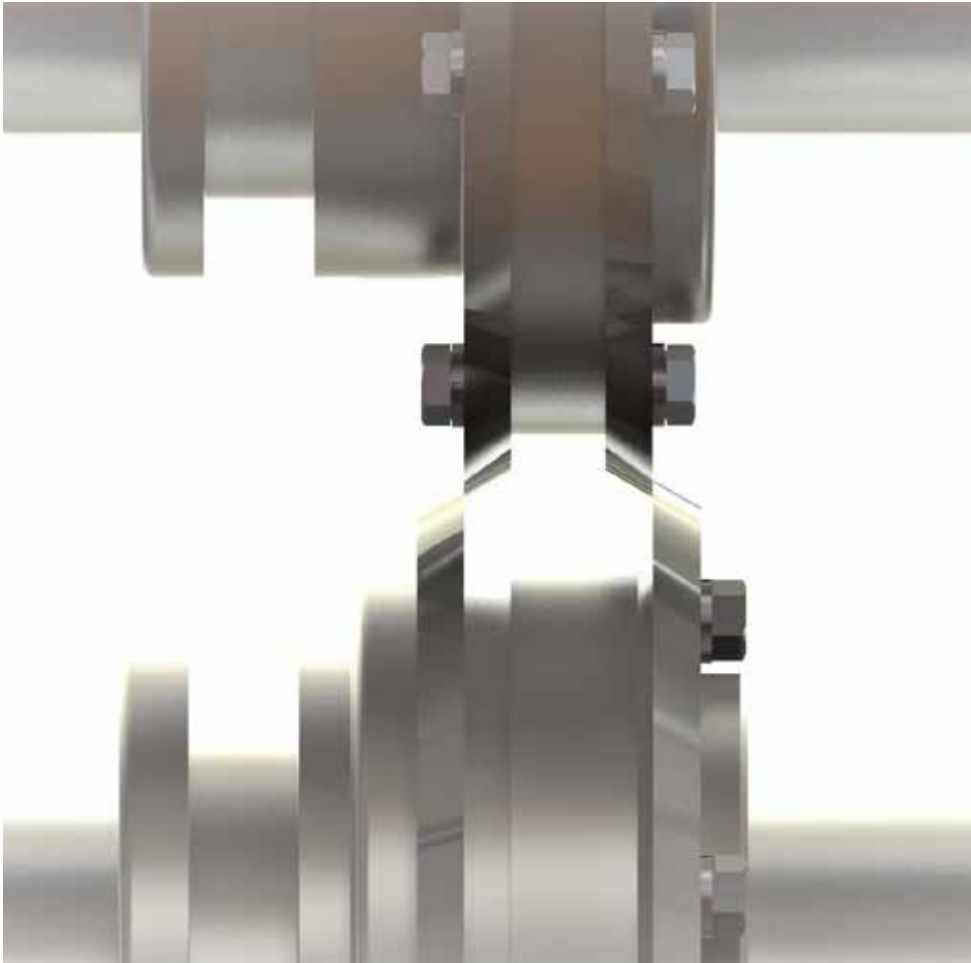
## MANUALLY SET TRIM KNIFE HUBS

Manually set trim knife hubs feature single-screw-release style clamping to ensure the truest running part possible, as well as assuring quick and easy setups. The clamping system prevents the hubs from “walking” on the shaft, allowing the knives to open, resulting in “crow’s feet” and other slitting-related issues.



## YOKED TRIM KNIFE HUBS

Sauer System manufactures yoked trim knife hubs for all motorized machines. When possible, a “double knife” system is incorporated, whereby a second set of upper and lower trim knives hold the main trim knives in constant contact, ensuring clean slitting even when the yokes begin to wear and the heads experience lateral play. A variety of machines have a provision for this feature, or it can be added to machines that were designed with single knife systems.



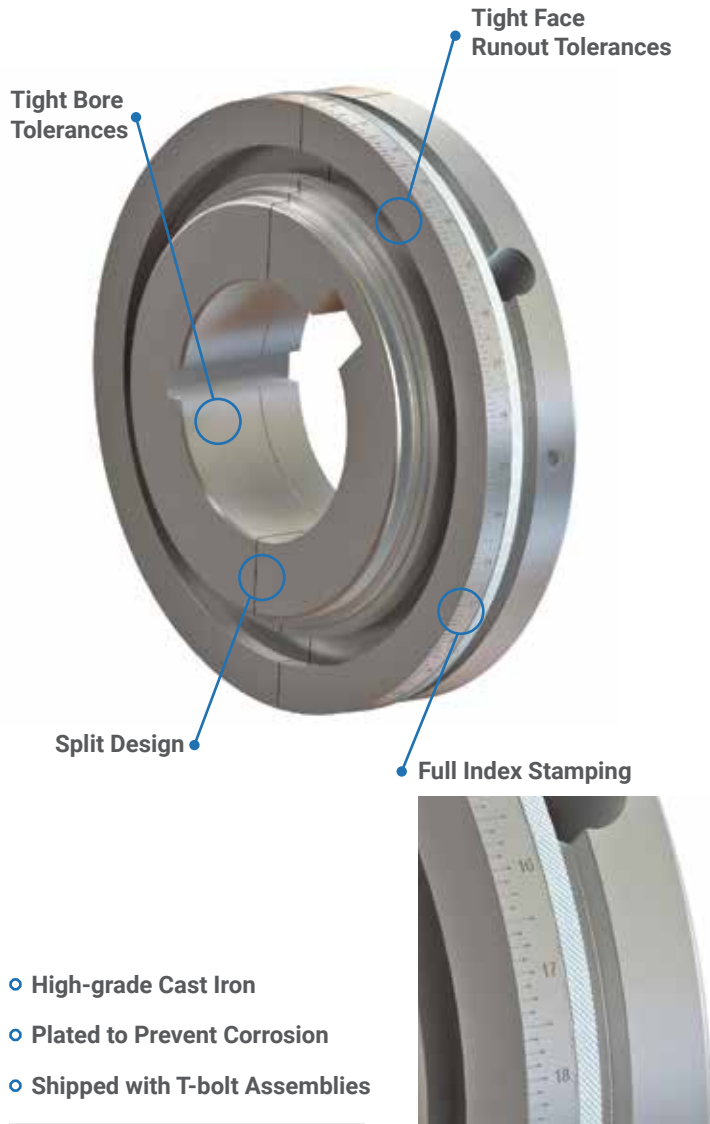


# Slotter Heads

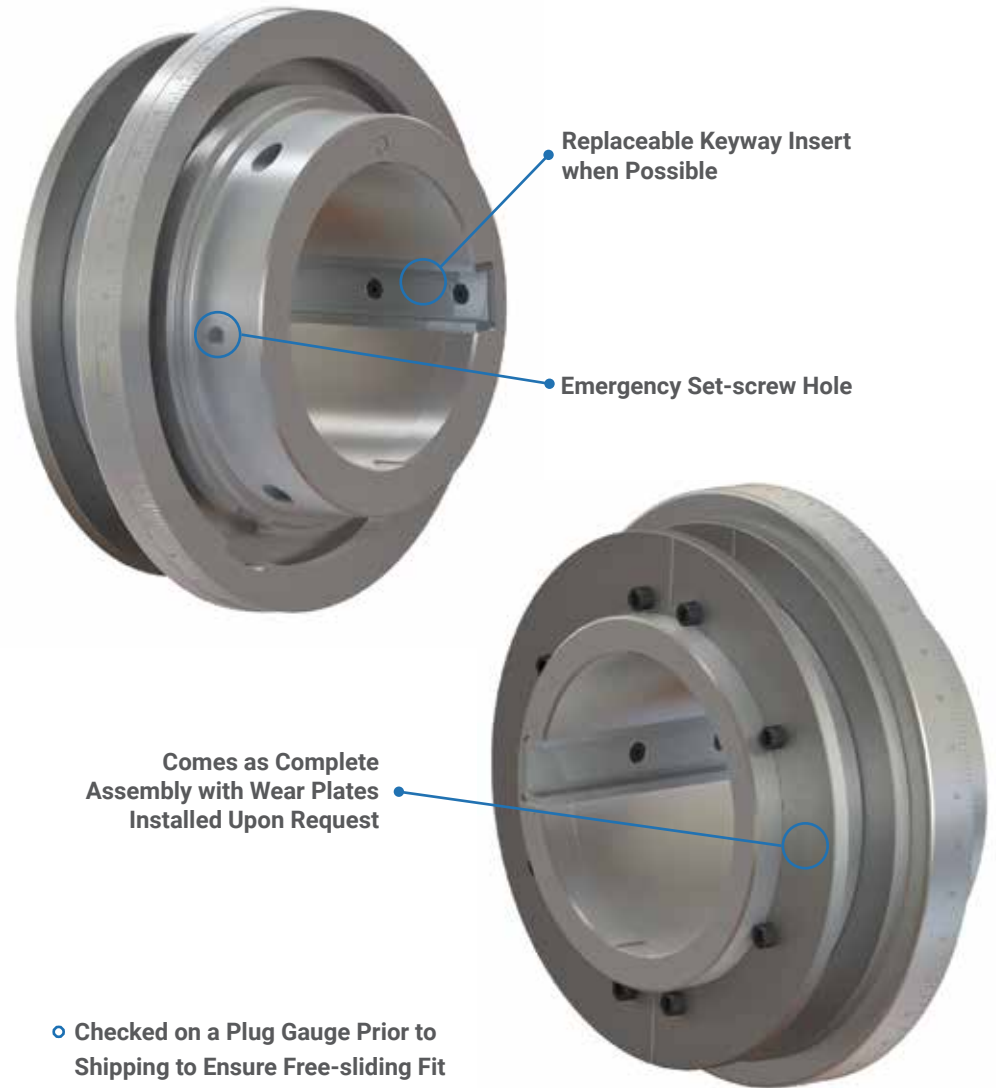
Sauer System slotter heads are manufactured from high-grade cast iron and feature a split design with a dowel pin at the split line to ensure perfect circular bore alignment. Integral index stamping around the circumference is a standard feature. All Sauer System slotter heads are machined with tight bore tolerances and stringent face runout tolerances to ensure true running parts. When possible and applicable, heads ship as complete assemblies ready for installation. These assemblies may include blades, spacers, yoke wear plates, and keyway inserts.



# SLOTTER HEAD FEATURES FOR ALL HEADS



# FOR YOKED HEADS



# Slotter Heads

## SLOTTER HEAD STYLE EXAMPLES



**MANUALLY SET MINI HEADS**



**MANUALLY SET JUMBO HEAD**



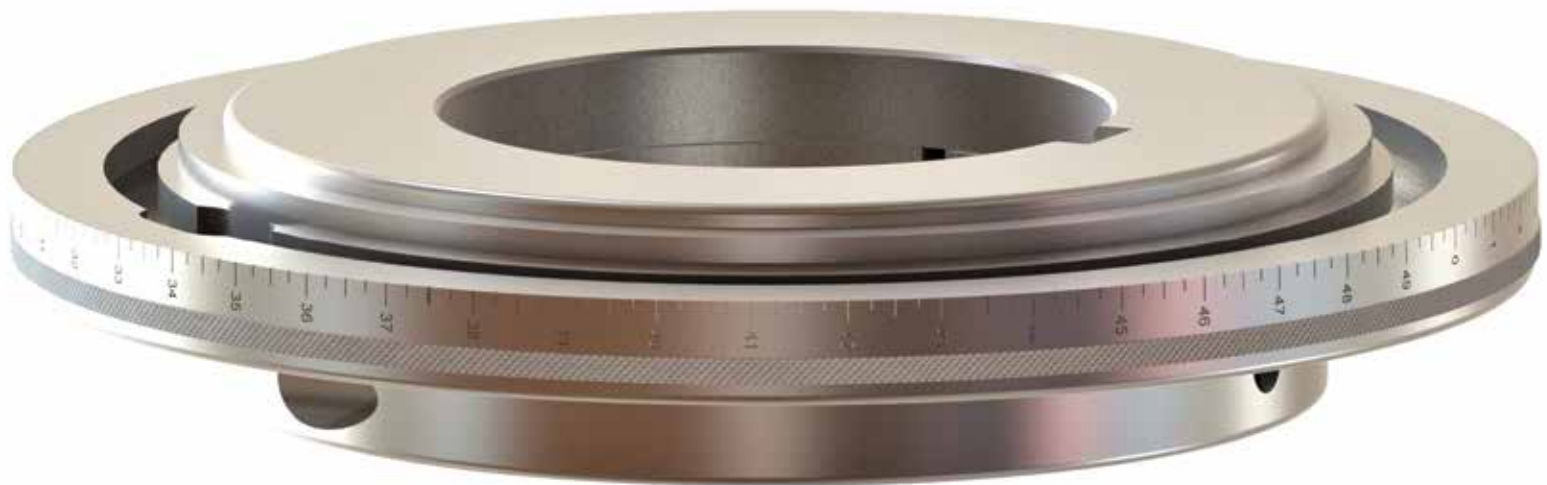
**YOKED UPPER SLOTTER  
HEAD ASSEMBLY**



**YOKED LOWER SLOTTER  
HEAD ASSEMBLY**



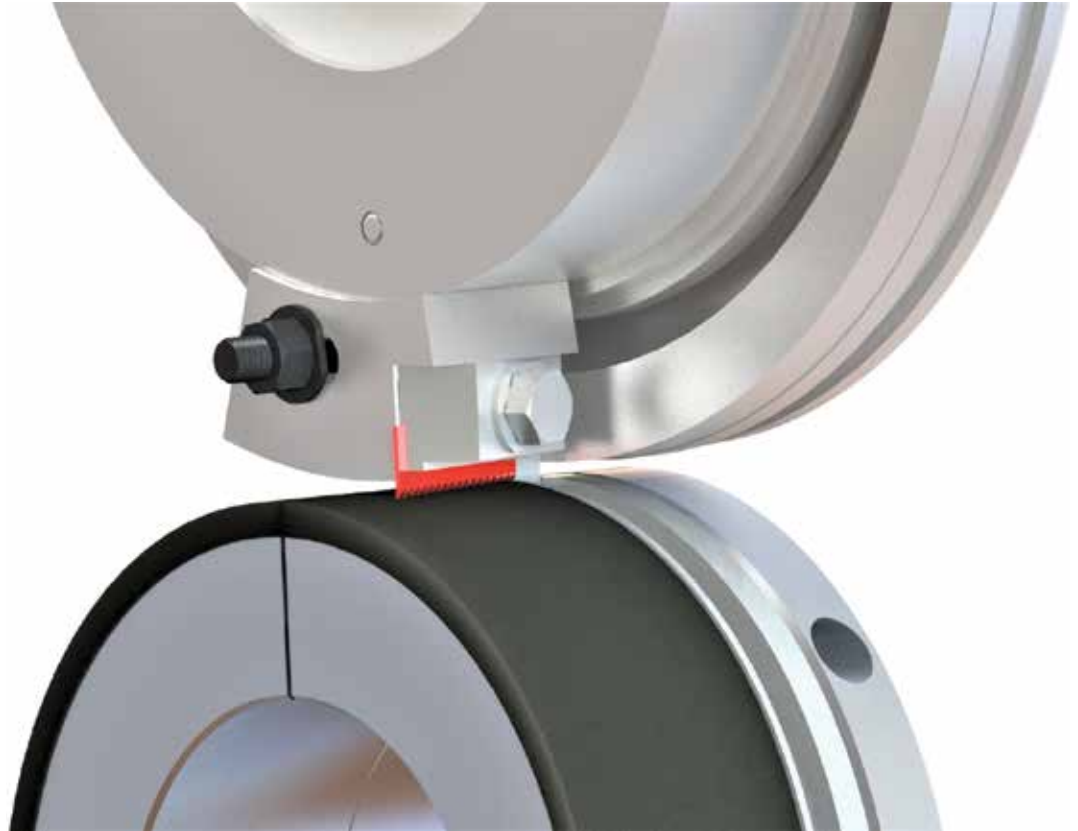
**YOKED UPPER SLOTTER HEAD  
ASSEMBLY WITH INTERNAL RING  
GEAR AND SPLINE CLEARANCE**





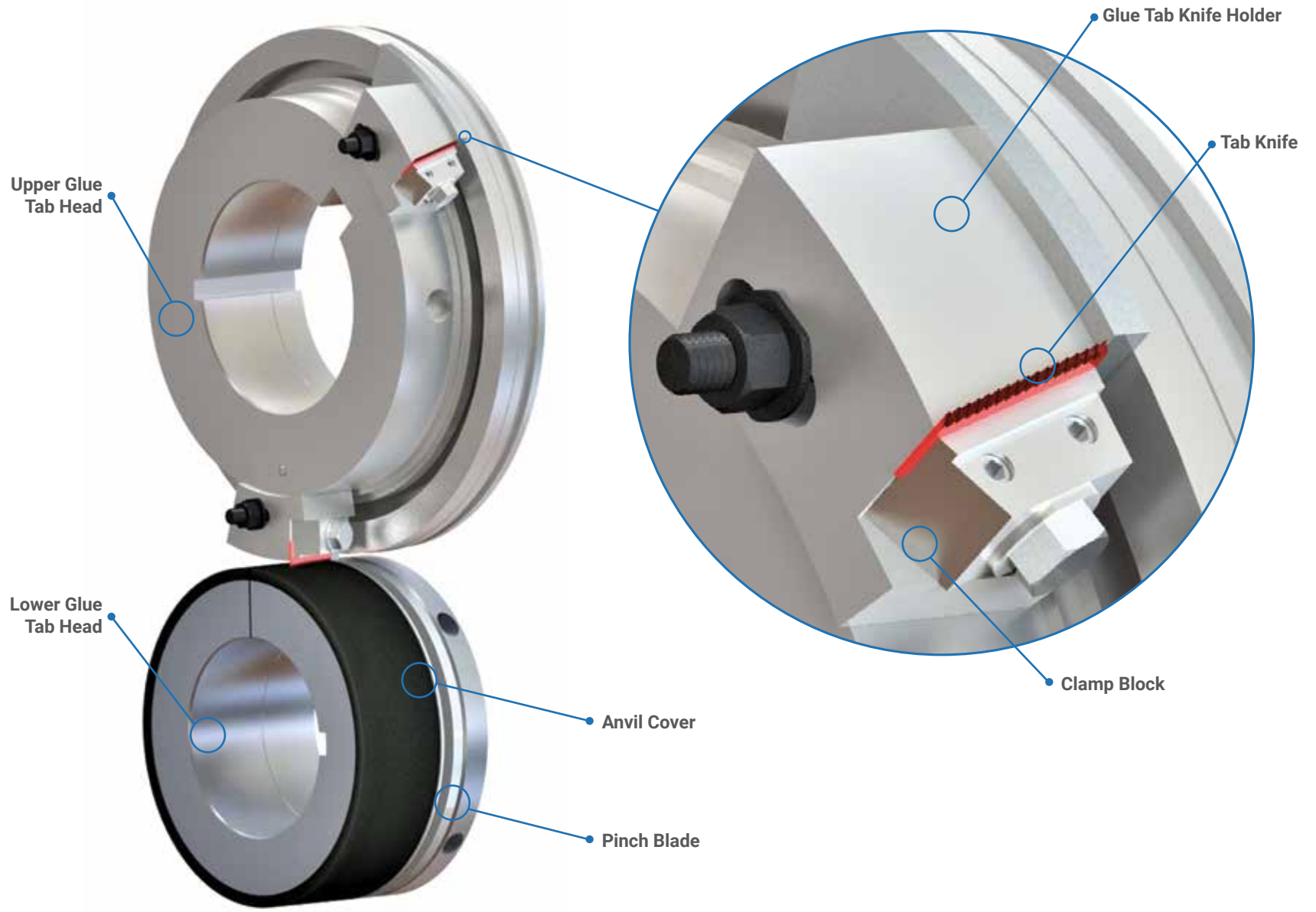
# Glue Tab Cutting Tools

Over 60 years ago, Sauer System pioneered a polyurethane anvil “soft cut” method of glue tab cutting that remains the industry standard today.



When installed correctly and used properly, the system is designed to remove 100% of glue tabs while protecting the machine from potential damage caused by steel-to-steel tab cutting.

# SYSTEM COMPONENTS



# Glue Tab Cutting Tools

## THE TAB KNIFE

Proper glue tab cutting starts with a well-designed and manufactured glue tab knife.

### ROCKWELL HARDNESS

Sauer System tab knives are hardened to ensure longevity.

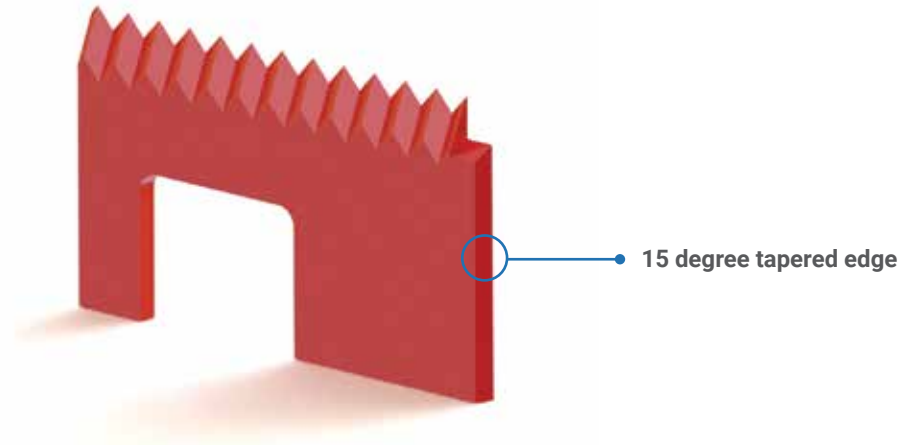
### COLOR-CODED HEIGHT SYSTEM

Allows operators to easily distinguish the knife height for proper selection of tab knife for board grade.



### PROPRIETARY 8 PITCH DESIGN

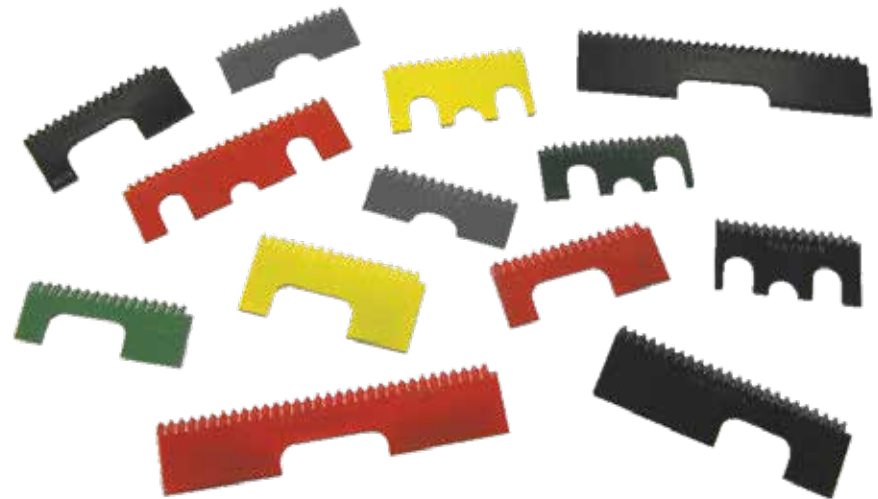
Allows for minimal cutting pressure and precise cutting depth into the polyurethane anvil for a cleaner cut.



### PRECISION MACHINED NOTCH

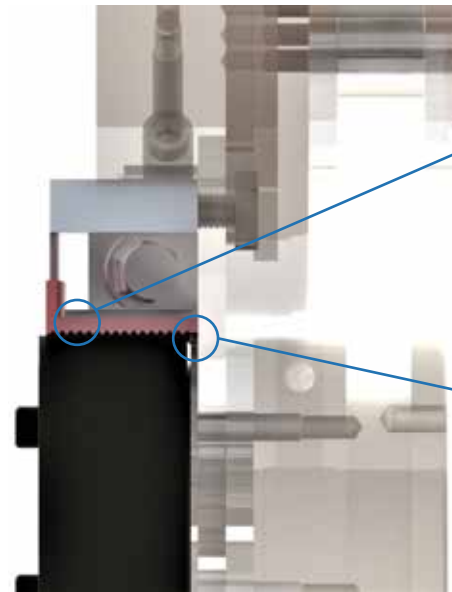
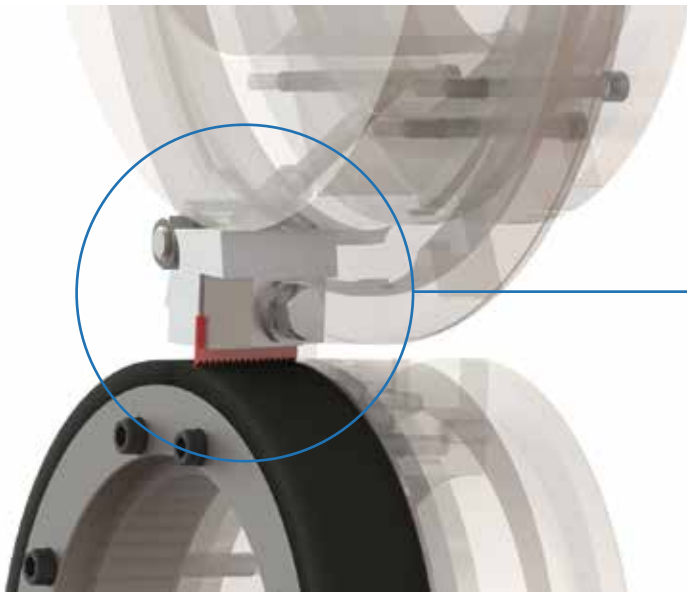
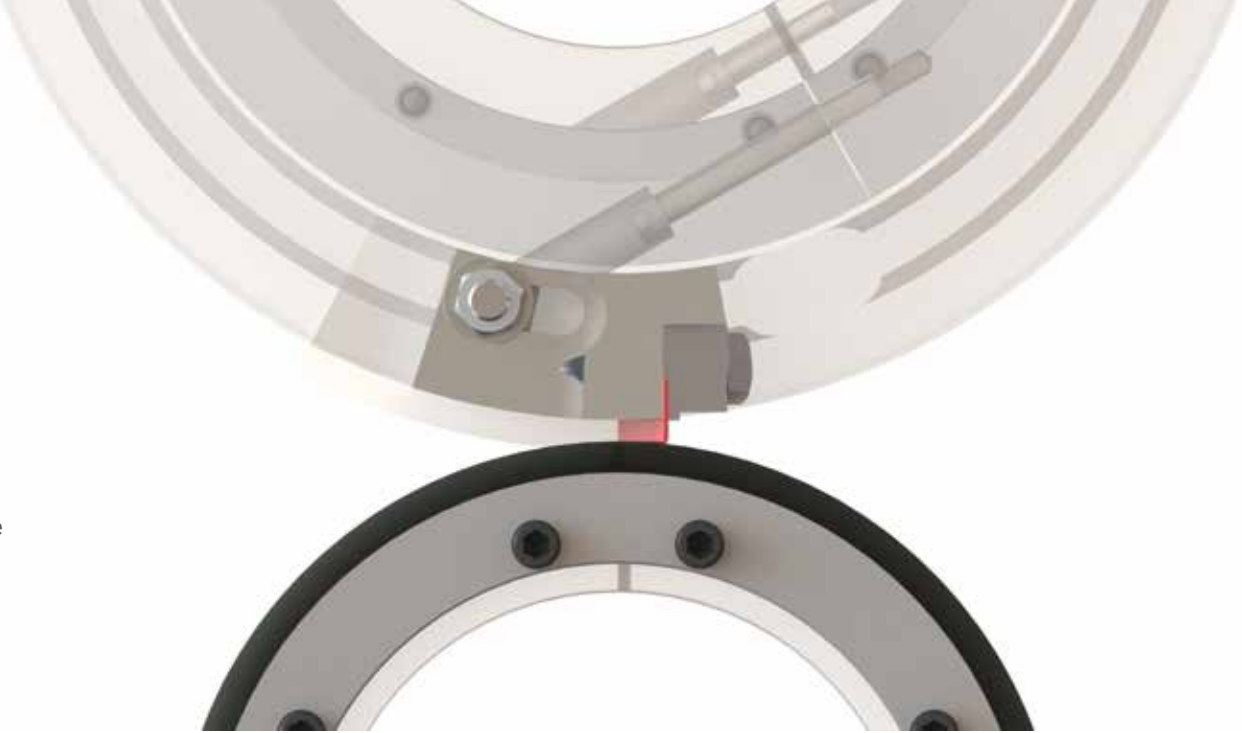
Sauer System tab knives have a machined notch that performs a pinch cut against the pinch blade.

Competitors' knives have flat notches that smash and tear rather than cut cleanly. The height of the machined notch is precisely controlled to provide thorough cutting and ensure tabs are removed.



## HOW THE SYSTEM WORKS

The glue tab cutting system allows the tab knife to simultaneously cut the glue tab across its width while making a pinch cut against the pinch blade. When the tab knife height is set correctly, the tab knife teeth will penetrate 1/8" (3.175mm) into the anvil cover, and the precision machined notch on the knife will "kiss" the pinch blade, resulting in a clean cut.



1/8" (3.175mm")  
tooth penetration  
into anvil cover

Pinch cut



# Female Slotting Blades & Spacers

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Sauer System manufactures female slotting blades from the finest available materials to the most exacting tolerances in the industry.

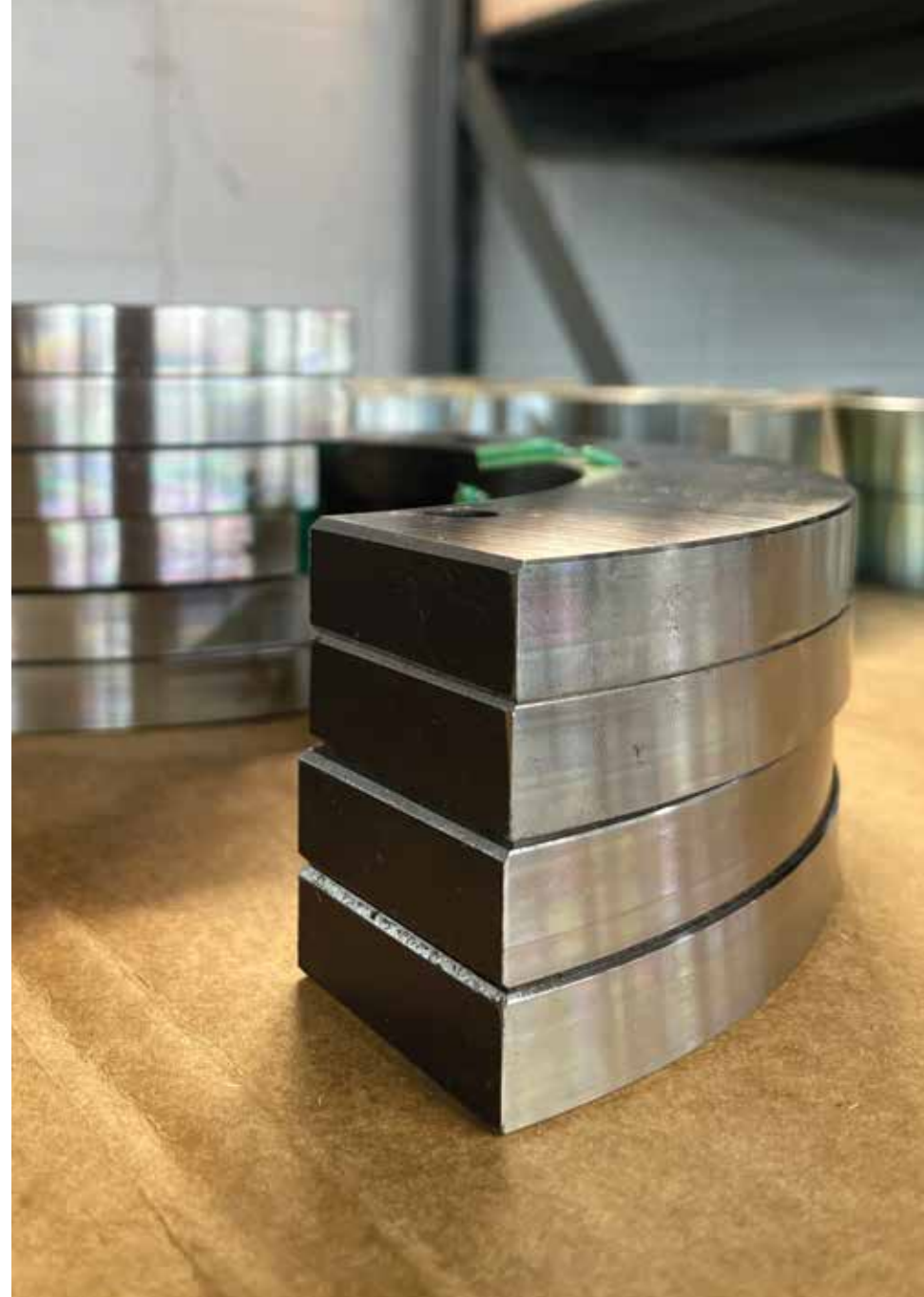
- Our blades are made from the high-grade 52100 tool steel. This leads to a sharper, longer lasting blade.
- The blades are manufactured to exacting tolerances in terms of both diameter and face runout, which affects both male and female slotting knife life as well as slot quality.
- All processes, from raw material to finished part, are completed in house, including laser cutting, heat treating, turning, grinding.



# Yoke Wear Plates & Spacers

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Yoke wear plates are also made from 52100 tool steel and hardened to 58-60 Rc Rockwell hardness. In many cases, the wear plate between the yoke groove and the slotting knives or scoring rings can be made thinner so replacement is less costly. Yoke wear plate and yoke spacer thicknesses are held extremely tight, and when possible, feature a chamfered edge for increased safety.



# Attachment Heads & Holders

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**Sauer System attachment heads, known throughout the industry as “Sauer Heads” or “T-Slot Heads and Anvils,” allow for rotary die cutting on converting machines not equipped with die cut sections. Sauer System revolutionized the corrugated industry in the early 1960s with the introduction of this system.**





# HAND HOLE CUTTING PACKAGE COMPONENTS



T-SLOT HEAD



ANVIL



HAND HOLE HOLDER

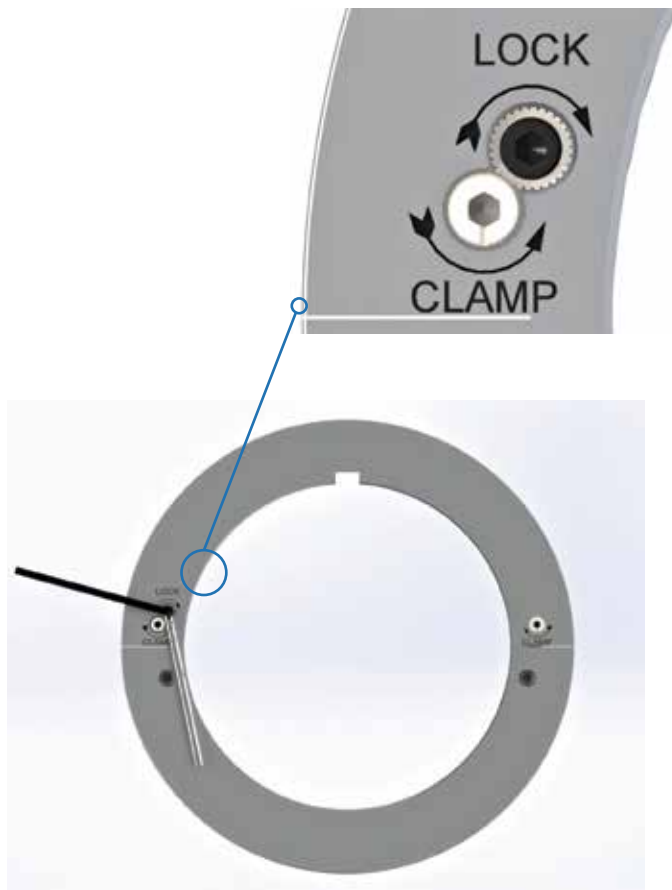




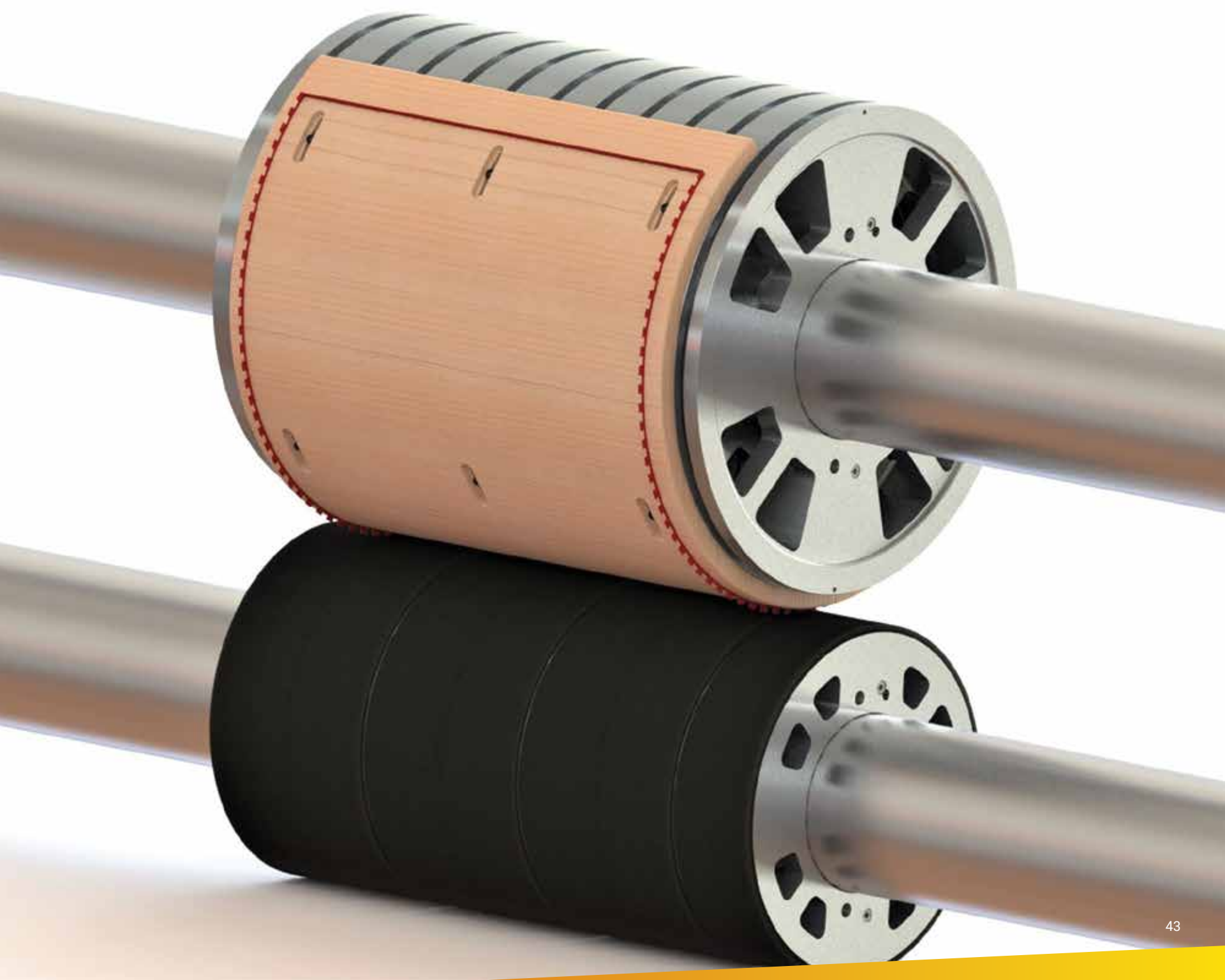
# Attachment Heads & Holders

## KAM-LOK CLAMPING MECHANISM

Quick set-ups are ensured by Sauer System's Kam-Lok clamping mechanism, which provides easy installation, removal, and repositioning of the die cut attachment heads. Kam-Lok heads can be installed or removed in a matter of minutes and loosened for repositioning on the shaft with a quarter turn of a clamping shaft.



TYPICAL ATTACHMENT HEAD FIVE-PANEL-FOLDER SETUP



# Anvil Covers

Sauer System anvil covers are made from Dynasauer® polyurethane and are available from stock for glue tab cutting, attachment head die cutting, slit-scoring, creasing, and other applications.



## ANVIL COVER STYLES



**JP COVERS**



**LP COVERS**



**METAL BACKED COVERS**



# Scrap Chop Tools

## TRIM SCRAP CHOP TOOLS

Trimming the 4th panel during converting often creates long scrap pieces that are prone to clogging scrap systems.

Sauer System scrap chop tools cut this scrap into small pieces that are more manageable. The tools consist of a male hub designed to hold knives and a female polyurethane-covered anvil.

Scrap chop heads can be mounted on either the slotting shaft or scoring shaft and are available in yoked and manually set designs.



**TRIM SCRAP CHOP SYSTEM**



**MANUALLY SET MALE SCRAP CHOP HEAD**



**YOKED MALE SCRAP CHOP HEAD**

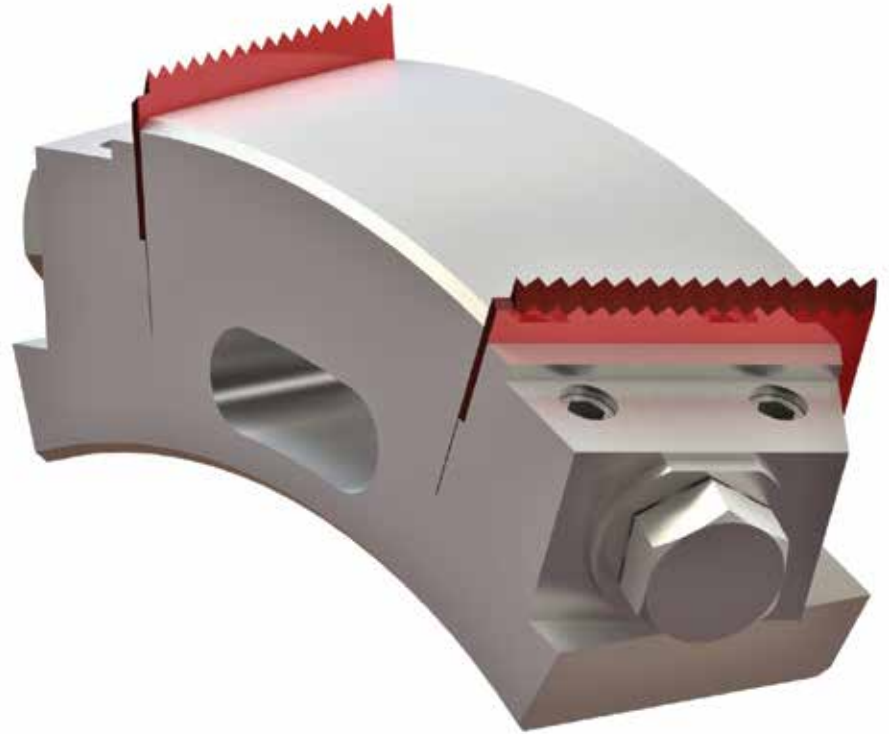
## GLUE TAB SCRAP CHOP TOOLS

Glue tab cutting can also create scrap issues, especially on high-speed flexo folder-glueers, where scrap pieces can project past the slotter section into the die cut or folding sections.

Sauer System offers a complete line of dual cut tab knife holders that cut the glue tab scrap into smaller more manageable pieces.

### SOFT ANVIL DUAL CUT TAB KNIFE HOLDER

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### HARD ANVIL DUAL CUT TAB KNIFE HOLDER

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# Pull Collars

Sauer System offers both yoked and manually set pull collars. Yoked pull collars are designed to freely slide on the shaft, driven by a yoke mechanism. Manually set pull collars feature Sauer System single-screw-release style clamping for ease of movement and tight O.D. concentricity.



We engineer our pull collars to precise surface speed diameters to ensure proper registration. Worn or incorrectly sized collars can lead to print and slot registration problems and skewed sheets. Our pull collars are made from high quality cast iron, not steel, so they will not stretch or gall shafts, and are plated to prevent corrosion.

Special designs are available including extra wide collars, non-knurled collars, and polyurethane covered collars.

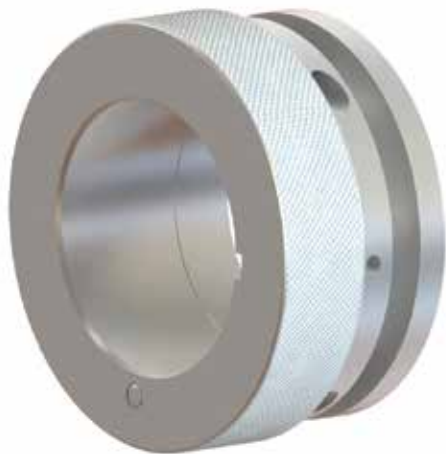
## PULL COLLAR STYLES



**KNURLED FEED STYLE**



**CRUSH STYLE**



**YOKED STYLE**

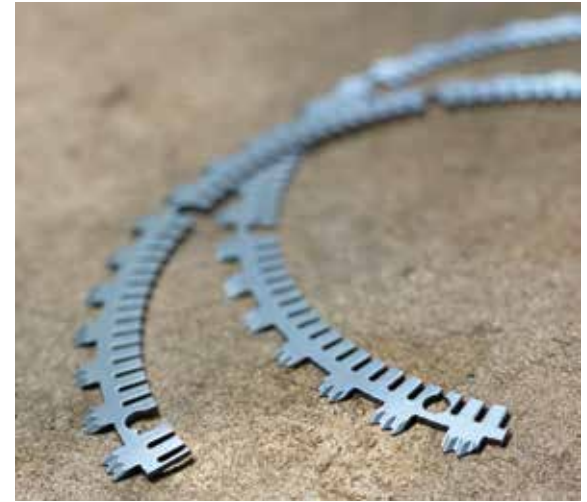


**POLYURETHANE BONDED**

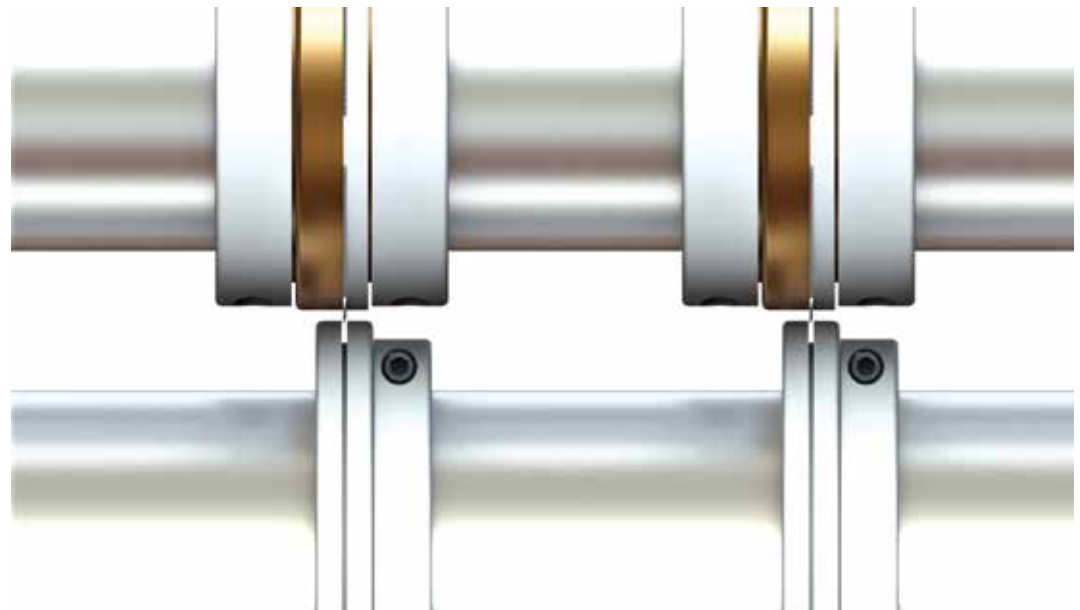


# Perforating Tools

Perhaps the most common specialty application that can be achieved on the auxiliary shafts of a corrugator is perforating. A hub holding a perforating knife mounted to a free-wheeling bronze ring is driven at the speed of the web, cutting through the corrugated medium into a grooved anvil. The pattern remains consistent as the web speeds up or slows down. Perforating knives are available in almost any pattern. Perforating tools are also available for floor slitters and converting machines.



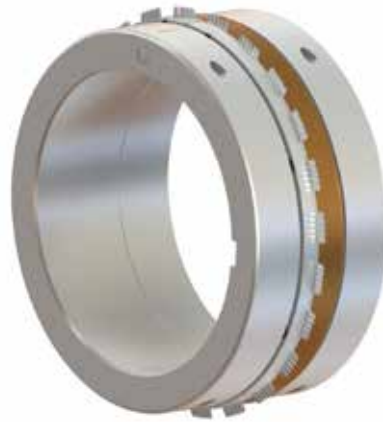
**Perforating Knives**



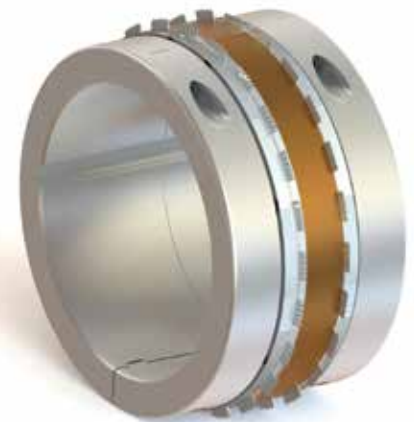
# PERFORATING TOOL EXAMPLES



**MALE PERFORATING TOOL  
CROSS SECTION**



**MALE PERFORATING TOOL**



**DOUBLE MALE PERFORATING TOOL**



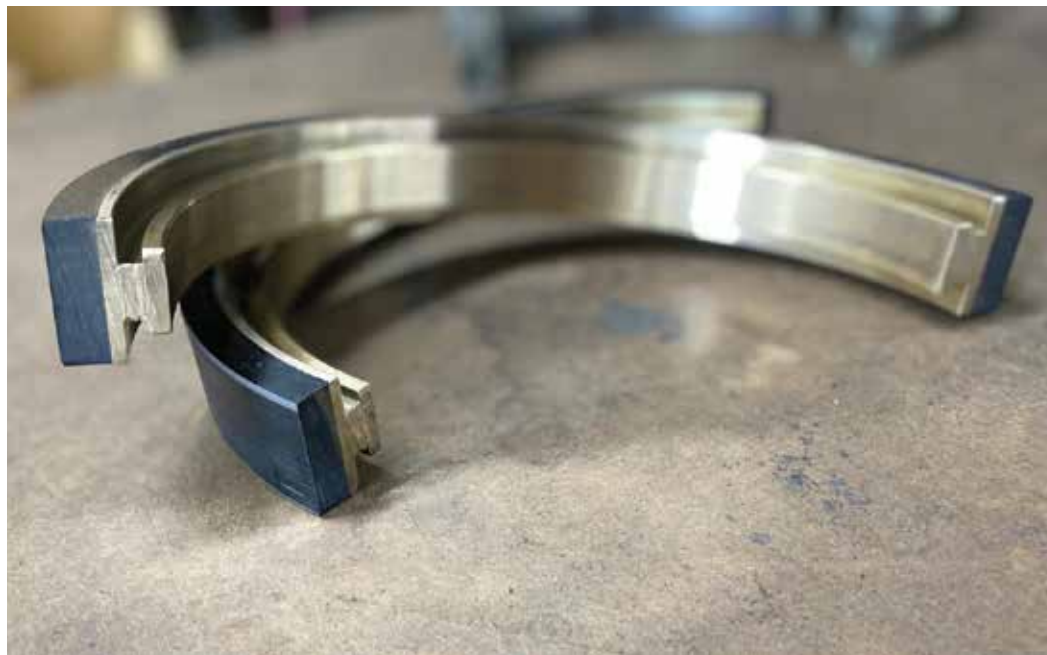
**QUAD MALE PERFORATING TOOL**



**FEMALE PERFORATING ANVIL**

# Slit-Score Tools

Slit-scoring, an alternative to traditional scoring, is particularly useful for manufacturing wraps and certain internal packaging.



## **POLYURETHANE COVERED FREE-WHEELING BRONZE INSERTS**

On a floor slitter or converting machine, slit-scoring can be achieved with a slit-score knife, installed on a male hub, and a polyurethane female anvil. The polyurethane is typically tapered on the outer diameter to allow for fine adjustment of the knife depth.

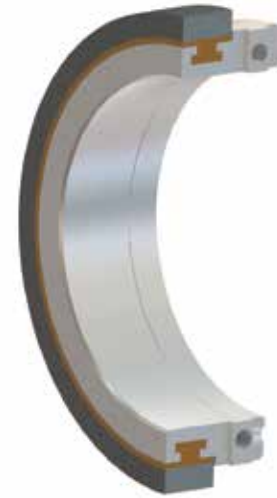
Slit-scoring can be achieved on a corrugator with a slit-score knife run, with overspeed, cutting into a free-wheeling bronze-ring-backed polyurethane anvil. The free-wheeling nature of the female anvil prevents tearing caused the speed mismatch between the male and female tools.



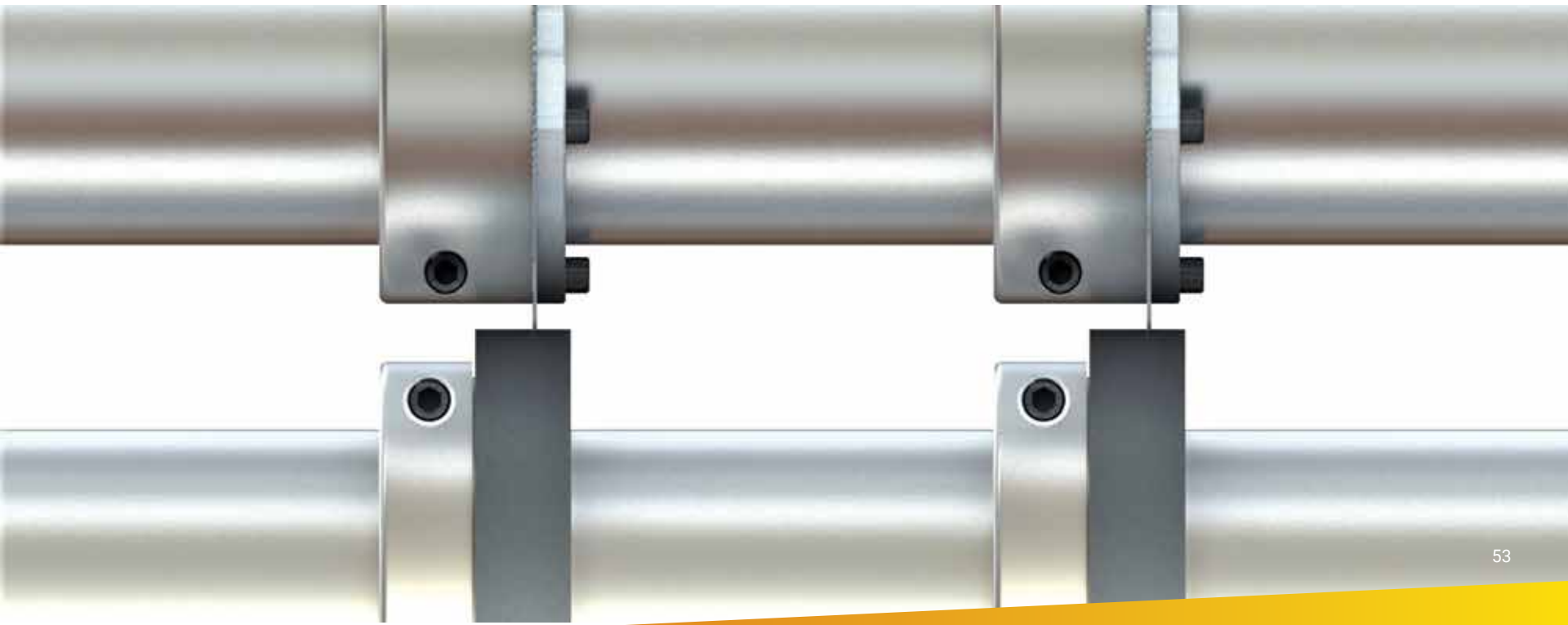
**SLIT-SCORE MALE**



**SLIT-SCORE FEMALE**



**SLIT-SCORE FEMALE CROSS SECTION**





# Band Print Scoring Systems

Converters may face a problem when boxes have print requirements near a corrugator score line.

Traditional 3-point or offset point-to-point scoring profiles distort the board's outside liner. Ink does not properly adhere to the distortion and results in a blank spot. One common strategy is to revert to a point-to-flat profile arrangement, which minimizes outside liner distortion but leaves a weak score line.

The best of both worlds can be achieved with Sauer System's proprietary "band print" scoring system. The system utilizes a steel ring acting as a flat male score blade that embeds into a free-wheeling, bronze-ring-backed polyurethane-covered score anvil. The flat male score blade embeds into the female, creating sufficient definition for the panels to fold properly, while affecting only the inside liner and medium. The free-wheeling property of the bronze-ring female ensures an anvil surface that helps prevent burnishing of the board or any other issues related to a mismatch between the speed of the web and the speed of the shafts driving the scoring tools.

This proven application has been in use for over 50 years and is the industry-standard solution for high-performing sheet feeders and other sheet-making operations where quality is paramount.



**BAND PRINT MALE SCORER**



**BAND PRINT FEMALE SCORER**



**ASSEMBLED FEMALE BAND  
PRINT SCORER**



**BAND PRINT MALES**

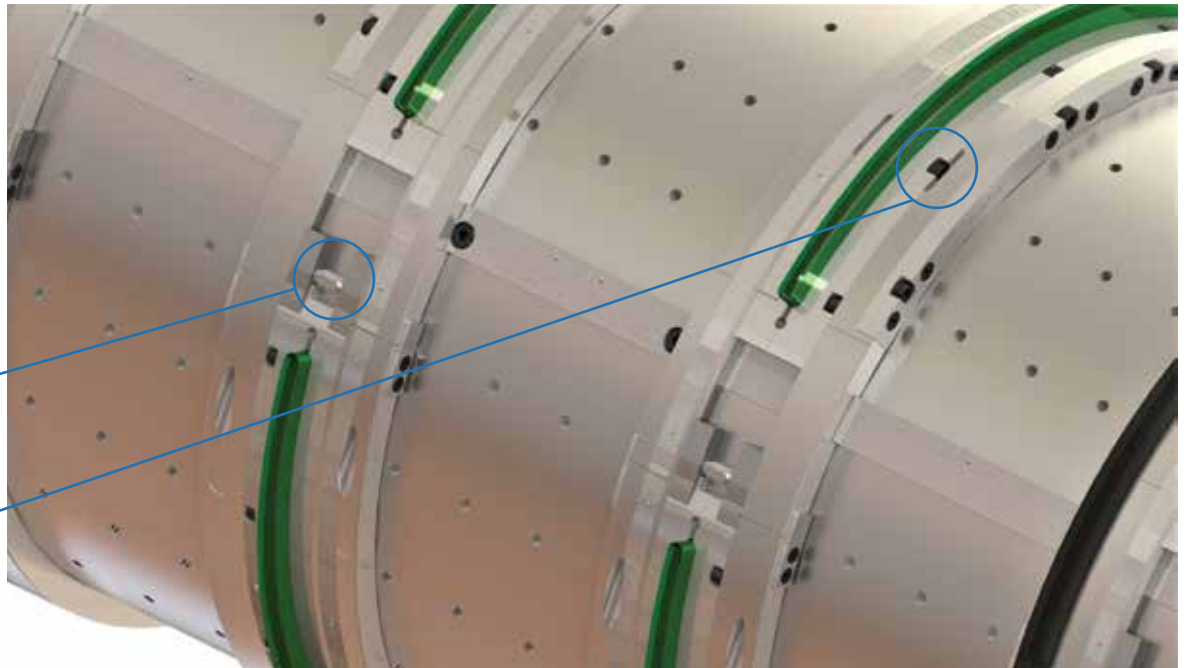
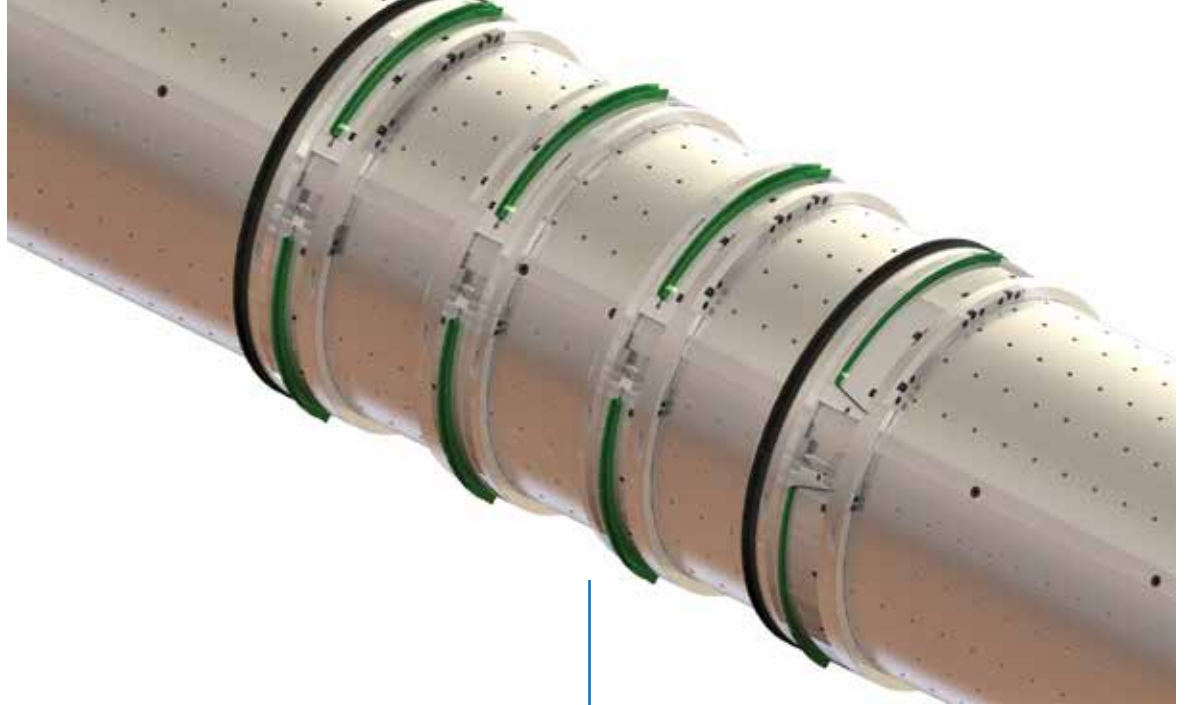


# RSC Ring Systems

Sauer System RSC ring systems are used to produce regular slotted cartons on a rotary die cutter, equipped with a scoring section, eliminating the expense of wood dies for every size RSC.

The tooling set includes four single-screw-release rings that mount directly to the die cylinder, knife holders (three each lead and trail slot knife holders, and one each lead and trail glue tab knife holders), knives, and adjustment tools. In addition, a scaled index key is included for proper registration of the rings and to assist with setting up panel sizes laterally.

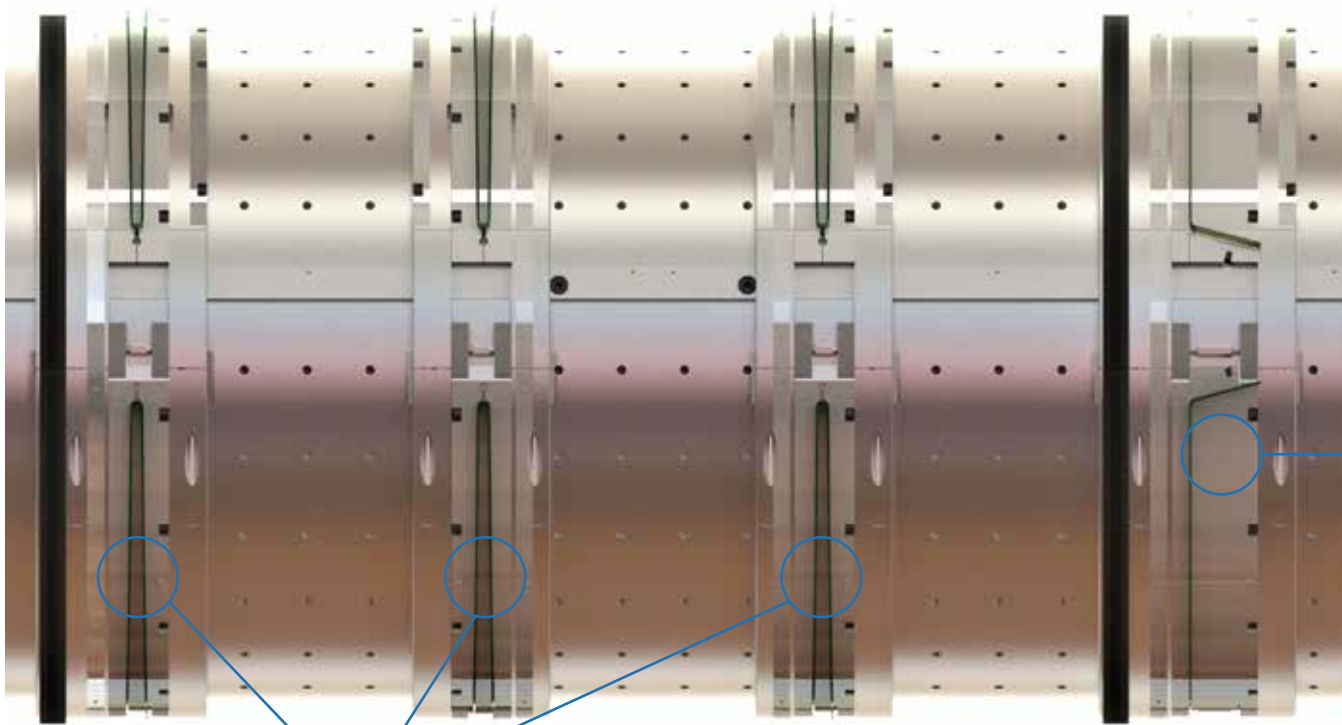
When not in use the rings can be moved to the ends of the shaft. This minimizes installation and remounting time when needed again.



**Trail (Adjustable) Holders**

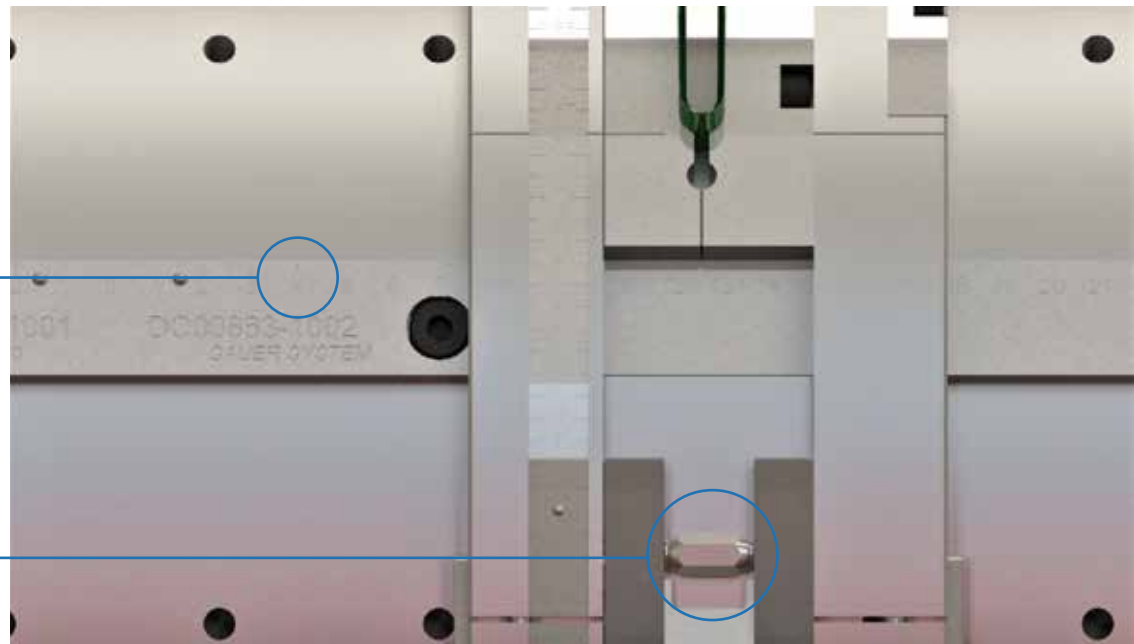
**Lead (Stationary) Holders**





Glue Tab  
Knife Holders

Vertical Slot Knife Holders



Indexed Shaft Key

Skate Key for Adjusting  
Trail Holders



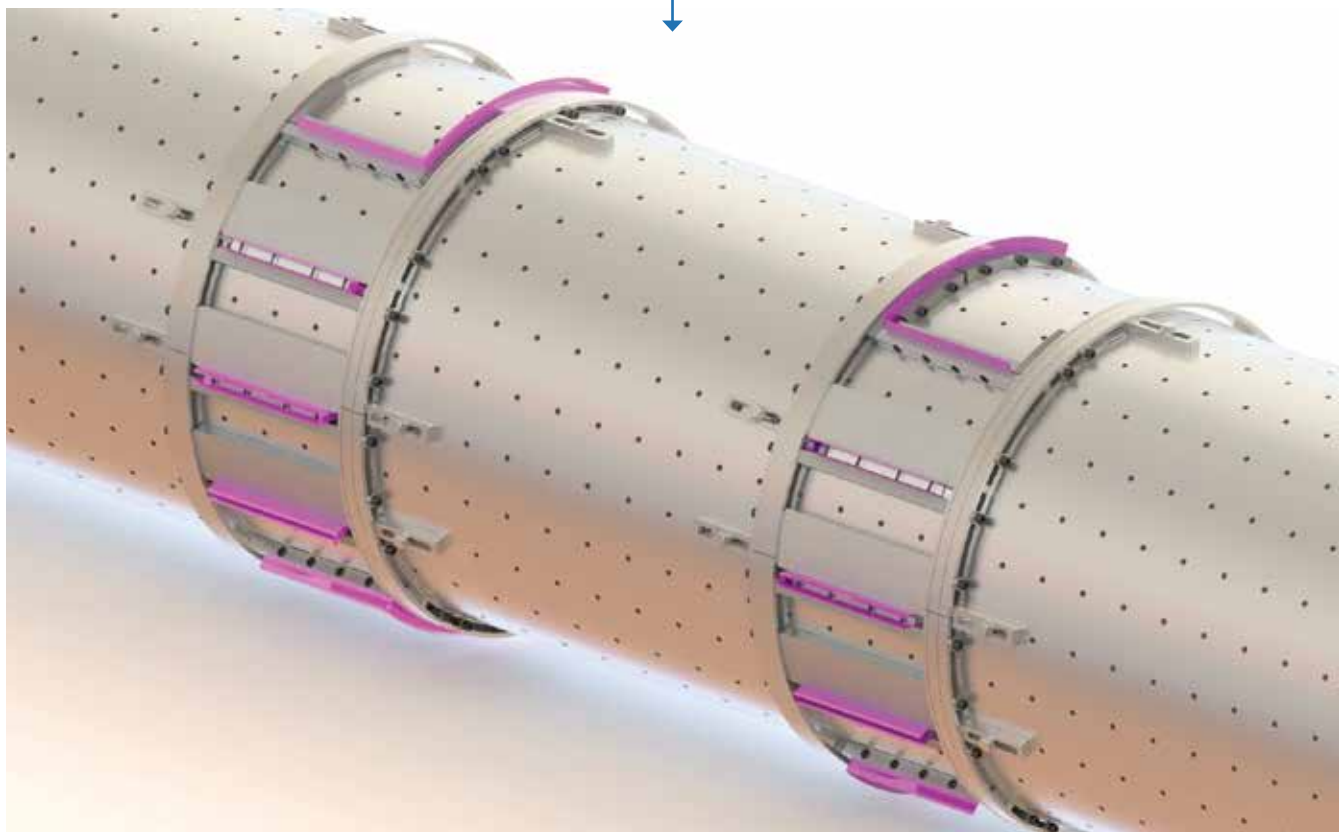
# Five-Panel-Folder Ring Systems

## FIVE-PANEL-FOLDER RING SYSTEM

Sauer System offers a flexible system for cutting five-panel-folders and one-piece folders on rotary die cutters equipped with a scoring section. The system features calibrated, adjustable die mounting brackets which provide maximum versatility. Virtually any size five-panel-folder or one-piece-folder can be cut.

Horizontal and vertical elongated slots in the die mounting brackets allow for universal positioning on the die cylinder. The minimum panel length between end slots is 2" with 3-1/2" on the next panel. Lok-Bottom boxes with different panel depths can also be run using a single set of dies.

A calibrated shrink scale is mounted on the outer diameter of the die mounting rings. This scale permits "off the machine" set-ups, which reduce machine downtime.



# FIVE-PANEL-FOLDER RING ASSEMBLY

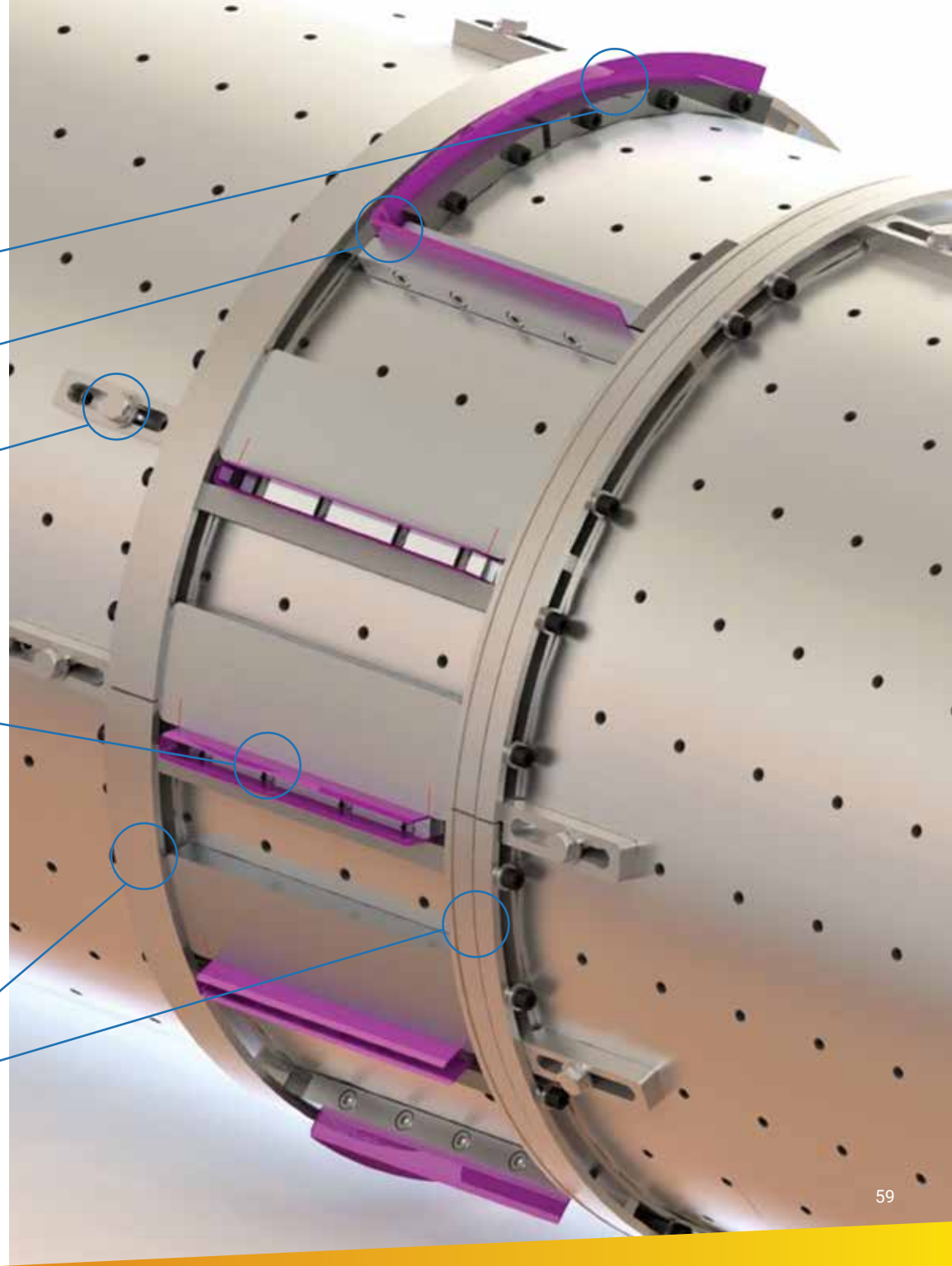
Vertical Extension Holder

Corner Cut Holder

Mounting Lugs

End Slot Holder

Die Mounting Rings



A photograph of a dark, modern industrial building with the word "SAUER" visible on its side. An American flag flies on a tall pole in front of the building. The scene is set against a clear blue sky with green trees in the foreground.

# Contact Us

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**Phone:** 636-861-9500

**Fax:** 636-861-2347

**Email:** [sales@sauersystem.com](mailto:sales@sauersystem.com)

**Hours:** Monday-Friday,  
7:00 a.m. CST to 4:30 p.m. CST

## BUSINESS ADDRESSES:

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**Regular Mail:**

Sauer System  
3565 Tree Court Industrial Blvd  
Saint Louis, MO 63122

**Recovers & Returns:**

Sauer Machine Company  
3535 Tree Court Industrial Blvd  
Saint Louis, MO 63122

**[www.sauersystem.com](http://www.sauersystem.com)**