BOHLER® FLAT

Freeman offers a comprehensive line of flat cutting and creasing rule for a multitude of diecutting applications. These are our most popular and highest quality flat rules offered by Bohler™, Martin Miller/Viking™, and Helmold™.

bohlerstrip voestalpine ONE STEP AHEAD.

Bohler Universal

Thickness	1.5pt, 2pt, 3pt, 4pt
Heights	0.918" – 2.00"
Bendability	2pt bends 60° max w/Radius of 0.3mm

***58 HRC** cutting edge*

***35 HRC** body*

Soft & ductile skin

Bohler Universal cutting rule is Voestalpine's #1 selling rule, featuring a soft bendable body with a hardened knife edge. The excellent bending properties and years of proven long runs on press make this rule your ideal choice for most applications. Available in shaved, ground, and polished.

✓ *Paperboard* ✓ *Corrugated board* ✓ *Labels* ✓ *Postcards*

Bohler Universal 60

Thickness	1.5pt, 2pt, 3pt, 4pt
Heights	0.918" – 3.00"
Bendability	2pt bends 80° max w/Radius of 0.4mm

***58 HRC** cutting edge*

***45 HRC** body*

Soft & ductile skin

Bohler Universal 60 incorporates the harder body of Bohler Top with the proven edge hardness of Bohler Universal. The result is higher rule stability and extended service life. Available in shaved, ground, and polished.

✓ *Thicker materials* ✓ *Puzzles* ✓ *Hard & durable body for tough applications*

Bohler Universal 75

Thickness	2pt, 3pt
Heights	0.918" – 2.00"
Bendability	2pt bends 90° max w/Radius of 1.7mm

***60 HRC** cutting edge*

***51 HRC** body*

Soft & ductile skin

Bohler Universal 75 has a harder body than Universal 60 with the same proven edge hardness of all Universal rules. The 51 HRC body offers even more stability for cutting heavy materials. Available in shaved, ground, and polished.

✓ *Sandpaper* ✓ *Gaskets* ✓ *Plastics* ✓ *Laminates* ✓ *Felt*

STEEL RULE

Bohler Top

Thickness	1.5pt, 2pt, 3pt, 4pt
Heights	0.937" – 2.00"
Bendability	2pt bends 80° max w/Radius of 0.3mm

***45 HRC** edge & body*

Soft & ductile skin

Bohler Top is an economical through-hardened cutting rule that is best suited for shorter runs and clicker die applications. Top offers good bendability and stability of a harder body. Available in shaved bevel finish.

✓ *Clicker dies* ✓ *Paperboard* ✓ *Corrugated board* ✓ *Shorter runs*

Bohler H-75

Thickness	2pt, 3pt
Heights	0.918" – 1.50"
Bendability	2pt bends 85° max w/Radius of 1.7mm

***51 HRC** edge & body*

Soft & ductile skin

Bohler H-75 is through-hardened similar to Top, but even harder at 51HRC throughout. The stiffer body reduces flex and is ideal for use on thicker materials like cork, rubber and felt. Available in shaved bevel finish.

✓ *Rubber* ✓ *Gaskets* ✓ *Felts* ✓ *Reduced flex & increased stability*

Bohler Extra

Thickness	2pt, 3pt
Heights	0.937"
Bendability	2pt bends 90° max w/Radius of 1.7mm

***61 HRC** cutting edge*

***40 HRC** body*

Soft & ductile skin

The secret of this problem-solving rule is an extra-deep hardening just beyond the tip that supports the knife edge, resulting in extremely long runs. The 42° bevel penetrates plastics with ease, yet lasts because of the extra-deep hardening. Available in shaved, GX ground, and polished.

✓ *Composites* ✓ *Plastics* ✓ *Economical alternative to Plast-X*

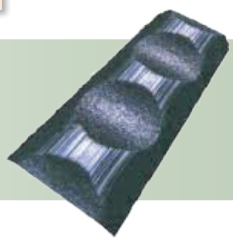
BOHLER PROBLEM-SOLVING RULE

Bohler X-Press Pure

Bohler X-Press Pure is a patented self-leveling rule, designed for quick make-ready, and extremely long runs. The micro-serrated rule back deforms under pressure and self-levels. This reduces wear on the knife edge and improves knife service life.

Hardness	Body 35 HRC, Edge 58 HRC
Thickness	2pt, 3pt
Height	23.8mm
Bevel Angle	53°, 42°
Bevel Finish	Shaved, Polished, Supreme

- ✓ *Patented self-leveling design*
- ✓ *Quicker make ready*
- ✓ *Extremely long runs*



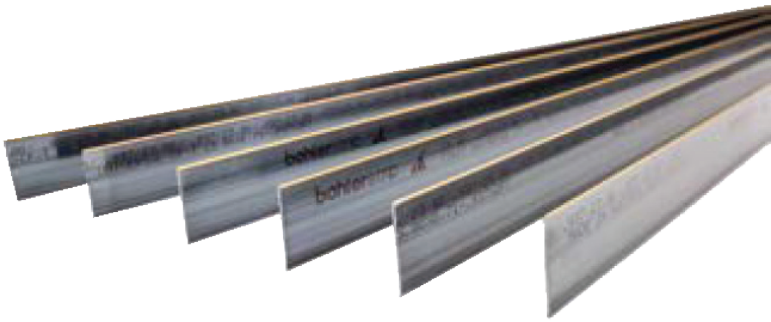
Plast-X

Hardness	Body 40 HRC, Edge 60 HRC
Thickness	2pt, 3pt
Height	23.8mm
Bevel Angle	42°, 53°

Bohler Plast-X was developed for diecutting PET, PE, PVC, PP, Blister Packs and Thermoplastics. Utilizing razorblade technology, the knife edge undergoes a slow-feed wet grind. This results in a razor-sharp rule for plastics that reduces friction and cutting force. The harder body and extra deep hardening underneath the extremely sharp knife edge is why this rule drastically improves diecutting performance on plastics.

- ✓ *Ultimate rule for plastics*
- ✓ *Razorblade technology - slow-feed wet grind*
- ✓ *Extra-deep edge hardening*
- ✓ *Extremely sharp cutting edge*

BOHLER COATINGS



Bohler Universal Supreme Dust Killer Coating

Bohler Universal Supreme features a molybdenum anti-friction coating on the knife edge. This coating fills microscopically small pores which reduces friction and ultimately reduces dusting. Additional benefits include prevention of glue adhering to rule when diecutting labels and extended knife life.

- ✓ *Reduced dusting*
- ✓ *Reduced friction on diecut material*
- ✓ *Label diecutting*
- ✓ *Extended rule life*

Bohler Titanium Nitride (TiN) Coating

Bohler TiNiT rule is coated with a thin layer of Titanium Nitride. Titanium Nitride is a gold colored ceramic material that is 4 times harder than the original steel knife edge. The TiN coating dramatically extends knife life without affecting bendability or cutting profile.

- ✓ *Same bendability*
- ✓ *Increased wear against diecutting abrasives*
- ✓ *Extends knife life*
- ✓ *Offers tremendous productivity gains*

BOHLER CREASING RULE

Folding box design and the precision of final products are becoming more demanding, which requires the application of high quality creasing rules with tight tolerances.

Bohler Single Round Creasing Rule

Bohler Single Round Creasing Profiles have a perfectly radiused profile and very tight tolerances with a flat back.

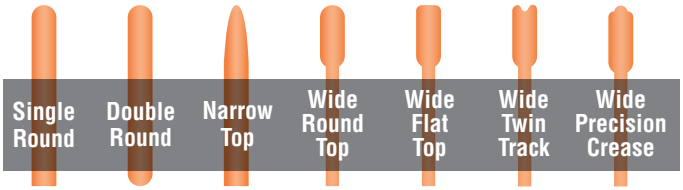
Bohler Double Round Creasing Rule

Bohler Double Round Creasing Profile have a perfectly radiused profile and very tight tolerances.

Bohler Specialty Profile Crease

Wide variety of crease profiles to solve difficult diecutting applications.

Creasing Rule Profiles



To see all creasing rule heights and types, visit our website at www.DieBoard.com.

BOHLER SPECIALTY RULE

Bohler Perforating Rule (Cut-Skip)

Bohler Perforating Rule offer a wide range of thicknesses and tooth-gap combinations.

Bohler Stripping Rule

Bohler Stripping Rule are the optimum solution for ejecting the waste material after the die-cutting process.

Bohler Combination Rule (Cut-Crease)

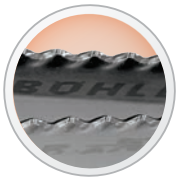
With cut-crease rule, there is no need to insert individual parts of cutting and creasing rule. Bohler Cut-Crease rule are produced in standard punched (CF), or in round machined executions for high-quality jobs (CF / FT and CF / SR).

Bohler Spacer Rule

Spacer Rule fill gaps between steel rule and wider laser cuts within the die board or backfill unwanted laser cuts within an existing die. The rule show a square cross sectional profile. Bohler Spacer Rule are available in all common wood sizes used in the die making industry.

Bohler Wave Edge Rules

The main application for wave edge rule is in the production of safety cutting edges on solid and corrugated board boxes, to avoid injuries during box handling.



SPEEDI-TEAR™ RULE*

Speedi-Tear™ is the absolute best perf rule for knock-out panels on Shelf-Ready Packaging. Scientific principles applied to tooth and gap design results in an easy rip-out panel for shelf displays, yet maintains critical carton strength for shipping pallets of stacked boxes.

- ✓ *#1 Requested Tear-Out rule!*
- ✓ *Scientific tooth/gap design*
- ✓ *Panels rip-out easily and cleanly*
- ✓ *Unopened cartons maintain box strength for stacking*

Speedi-Fold™ solves the problem of difficult to fold box flaps without compromising box strength integrity.

Speedi-Flare™ solves the problems associated with standard ⅛" x ⅛" and ¼" x ¼" perf. It provides a more refined fold and tear.

Speedi-Micro Nick™ is a 2pt rule with .007" nicks. Available in 4, 8, or 16 nicks per inch.

Speedi-Micro Perf™ is the best on the market. Extra deep .030" spaces allow for perforating thicker stocks. Bohler base steel is of highest quality. Available in 15, 25, 30, 36, 50, 60, and 70 teeth per inch.

**Not a voestalpine product.*

MARTIN MILLER RULE

Plasma technology: Martin Miller's secret. A few seconds at a temperature of approximately 10,000°C ensures a precise hardening process, without affecting the body hardness like other methods do. The result: extreme edge hardness for extreme rule lifetime.

Martin Miller Cutting Rules

Martin Miller cutting rules are renowned for bendability and sharpness.

MM Style

- ✓ *Similar to Bohler Top for shorter runs where a stiffer body rule is needed*
- ✓ *Through hardened rule with either 40 or 44 HRC throughout*
- ✓ *Clicker dies*

HF Style

- ✓ *High Frequency edge hardening process mimics Bohler Universal*
- ✓ *34 or 40 HRC body, 57 HRC tip*
- ✓ *Edge hard rule with great bendability*

HP Style

- ✓ *Plasma edge hardening for longer life and great bendability*
- ✓ *34 or 40 HRC body, 60 HRC tip*
- ✓ *Long run diecutting*

HP+ Style

- ✓ *Extra Deep Plasma edge hardening fully supports the rule tip for extreme life*
- ✓ *40 HRC body. 67 HRC tip*
- ✓ *Extremely long runs*

Martin Miller Glue Flap Rule

This unique perf profile roughens the glue flap to achieve better adhesion.

Martin Miller Stripping Rules

Stripping rule is used in place of stripping pins. The high rule has tiny teeth that grab the scrap for dynamic stripping.

Did You Know?

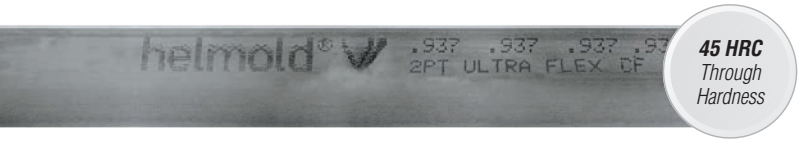
Voestalpine (Bohler/Martin Miller) manufactures their own steel and controls the process from iron ore to steel rule. This ensures the absolute highest quality and consistency, and why Voestalpine rule is the market leader worldwide.

The in-house R&D center includes state-of-the-art production technology and expert staff. This ensures you receive the best problem-solving steel rule solutions for your applications.

HELMOLD RULE

Helmold Flat 65 Hard, Ultraflex, and Helmex Rule

These through-hardened cutting rule have the same body and edge hardness. They are all made with a specially formulated steel to produce an extremely durable cutting edge and enough ductility to create sharp bends. They offer good life and are an excellent all-purpose utility rule. Available with bevels of 42, 53, or 60 and shaved edge, ground edge, or buffed edge.



45 HRC *Through Hardness*

Helmold Flat 70 Hard Rule

This rule is made with a specially formulated steel to produce an extremely durable cutting edge and enough ductility to create sharp bends. Available with bevels of 42, 53, or 60 and shaved edge, ground edge, or buffed edge.

50 HRC *Through Hardness*

Helmold Flat 80 Hard & 85 Hard Rule

These products are used in applications where no bending is needed. These though-hard cutting rule have excellent wearability and are mostly used as slitter blades and where other straight cuts are needed. Available with bevels of 42, 53 and 60 and shaved edge, ground edge, or buffed edge.

80 Hard **54 HRC** *Through Hardness*

85 Hard **54 HRC** *Through Hardness*

Helmold Flat Lazer Blade Rule

This premium rule offers a softer body with a hardened edge, a great combination for many Kiss Kut applications for cutting paper or other substrates. They all offer good bendability as well as long wearing edge sharpness, which allows for less down time on the press. Available with bevels of 42, 53, or 60 and shaved edge, ground edge, or buffed edge.

Lazer Blade *Good for long runs*

57 HRC *Cutting Edge*

34 HRC *Body*

Lazer Blade H *Good for harder materials*

57 HRC *Cutting Edge*

45 HRC *Body*

Lazer Blade D *Deeper edge hardening, good for long runs*

57 HRC *Cutting Edge*

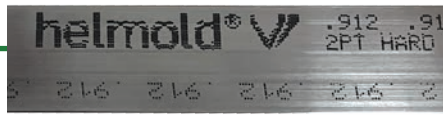
34 HRC *Body*

Lazer Blade HD *Good for harder materials and long runs*

57 HRC *Cutting Edge*

45 HRC *Body*

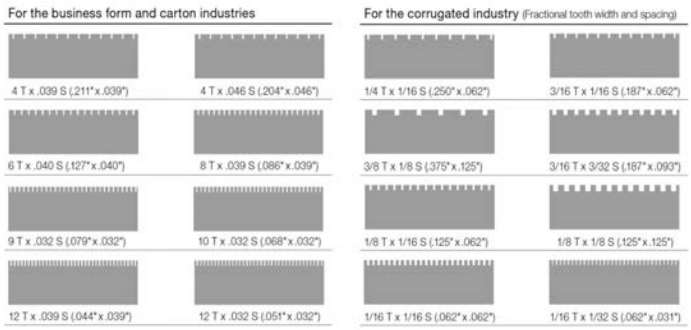
Helmold Creasing Rule



Helmold Creasing Rule is available in both double round or single round. The smooth radiused top produces well defined scores and inhibits board cracking. High-quality height tolerances also mate perfectly with matrix and counterplates to ensure perfect folds in paperboard and corrugated packaging. Helmold Illinois is able to manufacture custom heights of crease that may not be stocked in our Bohler line.

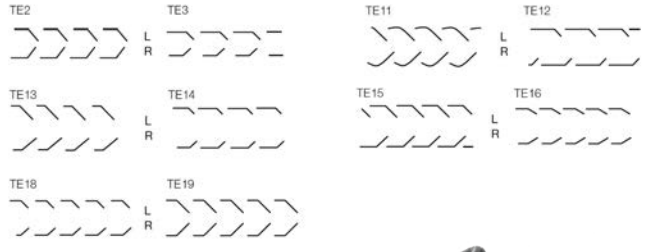
Helmold Perf Rule

Freeman stocks over 100,000 ft. of Helmold perf rule in a wide variety of tooth configurations. This high-quality rule is used in folding carton, corrugated, business forms, and label industries. The superior high-carbon steel results in longer press life, and an advanced manufacturing process produces a clean precise space or crease. Helmold can manufacture almost any configuration of perf. *To see our vast inventory of in-stock perf, visit our website, www.DieBoard.com.*



Helmold Tear-Edge Zipper Rule

Tear-edge, also known as Zipper rule, is used to produce the "zipper opening" in packaging like facial tissue, aluminum foil, and plastic garbage bags. Helmold Zipper rule is bent from the bevel to the base, making it extremely strong. *For full dimensions and a printable actual size PDF, visit our website, www.DieBoard.com.*



Specialty Helmold Wave Rule

Helmold's Wave Rules feature a wave shape over the complete height of the rule, giving it a very exact form and a very precise line in the center and a much higher stability.

BOHLER® ROTARY

Converters love the cut quality and long life of Bohler rotary rule. The thermal and mechanical stress relief process during manufacturing prevent fatigue cracks. The Bohler-produced steel, special edge hardening options, and fine tooth grinding make these problem-solving rotary rule the best in the industry. Freeman's deep inventories mean you can get what you need when you need it.

bohlerstrip® voestalpine ONE STEP AHEAD

Bohler USC 8/10

✓ *USC 10 – most versatile 10 tooth*

✓ *USC 8 – for tough, thick board*

USC 10 is our most popular and versatile cutting rule. The 10-tooth geometry cuts extremely well on a variety of corrugated materials.

USC 8 has a slightly more aggressive tooth geometry, that permits minimal cutting pressure on thicker board and doublewall. The barbed tips and sharp gullets ensure easy penetration of the toughest materials.

Bohler US 8/10

✓ *Leaves clean cut on product edge*

✓ *True center bevel for dimensional accuracy*

US 10 is most commonly known as "Clean Cut". US 10 was designed to leave a very clean cut on the product. One side is shaved smooth, and the other side has ground tooth geometry. Bohler's clean cut is still a true center bevel for accurate diecutting and dimensionally accurate boxes on multi-out dies.

US 8 offers the same clean-cut geometry as US 10 but in an 8-tooth for heavy test board. Even though this rule has a different geometry on each side, the tip is still precisely centered, which enables dimensional accuracy when cutting multiple out designs.

Bohler SWC 8/10

✓ *Euro Cut geometry for minimal pressure*

✓ *Reduced gullet and anvil wear*

SWC 10 has a European tooth geometry commonly called Euro Cut. The shallow gullet and radiused tip performs superbly on singlewall corrugated, (especially on long lead and trail edge knives), and reduces anvil wear.

SWC 8 offers the same Euro Cut tooth design for cutting heavyweight double and triplewall corrugated with minimal pressure. The shallow gullet reduces pressure and ultimately anvil wear.

STEEL RULE

Bohler STC 8/10/12

- ✓ *STC 8 – deep V tooth penetrates tough board*
- ✓ *STC 10 Martin Miller – heavier singlewall board*
- ✓ *STC 12 – standard 12T for lightweight board & foam*

STC 8 has a very sharp V tooth that easily penetrates doublewall and heavy test board.

STC 10 from Martin Miller is for heavier singlewall.

STC 12 is a standard center bevel cutting rule. This rule provides an enhanced finished product edge appearance for both light-weight singlewall and microflute corrugated board. This profile is also recommended for cutting a variety of foam materials.

Bohler ProCut

- ✓ *Proven USC tooth geometry – sharp but not too aggressive*
- ✓ *Harder body to prevent cracking and rollover*
- ✓ *Designed for produce boxes and heavy test board*
- ✓ *ProCut 10T –35 HRC body, 49 HRC edge*
- ✓ *ProCut 8T – 40 HRC body, 49 HRC edge*

ProCut was developed specifically to solve problems associated with diecutting produce boxes. Utilizing the proven USC 10 tooth geometry, with fine ground bevels and radiused gullets, Bohler strengthened the rule with a harder body, to prevent roll-over and cracking. ProCut is the industry's go-to problem-solving rule for heavy test corrugated. Available in 10 tooth and 8 tooth.

Speedi-Tear™ Products*

A FREEMAN EXCLUSIVE!

- ✓ *#1 Requested Tear-Out rule!*
- ✓ *Scientific tooth/gap design*
- ✓ *Panels rip-out easily and cleanly*
- ✓ *Unopened cartons maintain box strength for stacking*

Speedi-Tear™ is the absolute best perf rule for knock-out panels on Shelf-Ready Packaging. Scientific principles applied to tooth and gap design results in an easy rip-out panel for shelf displays, yet maintains critical carton strength for shipping pallets of stacked boxes.

Speedi-Fold™ solves the problem of difficult to fold box flaps without compromising box strength integrity.

Speedi-Flare™ solves the problems associated with standard 1/8" x 1/8" and 1/4" x 1/4" perf. It provides a more refined fold and tear.

Speedi-Break™ is a Superior Bundle Breaker Rule for high-speed corrugated box makers. Replaces common rule between multi-outs.

**Not a voestalpine product.*

BOHLER ROTARY CUTTING RULE

Bohler SFST 12

SFST 12 is the original 12-tooth side face rule profile for rotary diecutting. It is recommended for cutting lightweight singlewall and microflute. SFST 12 has also improved stripping on high-speed EVOL dies.

- ✓ *Side bevel 12-tooth*
- ✓ *Lightweight board*
- ✓ *Improves stripping on EVOL dies*

Bohler SFST 8/10

SFST 8 cuts heavier corrugated stock and SFST 10 cuts medium corrugated stock. Both rule can be used in slots or tight areas allowing more room for ejection rubber, as well as scrap knifes or lead edge as the bevel helps the product release easier for the die. They can also be used with EVOL dies on higher test boards.

- ✓ *8-tooth or 10-tooth*
- ✓ *Medium & Heavy Corrugated*
- ✓ *Improves stripping on EVOL dies*

BOHLER ROTARY CREASING RULE

Folding box design and the precision of final products are becoming more demanding, which requires the application of high quality creasing rules with tight tolerances. These rule offer very smooth crease head surfaces, perfectly radiused profiles, smooth transitions from radiused profile to side faces, minimum eccentricity, and minimum height and thickness tolerances.

Bohler Single Round Crease

- *Perfectly radiused profile*
- *Superior height tolerances*

WFT Wide Flat Top

- *Flat Top provides crisp scores and rollovers*
- *3/6, 3/8, 4/6, 4/8*

WTT Wide Twin Track

- *Creates a double score on E-Flute*
- *Solves problems with Litho Labels*
- *3/8, 4/8*

WRT Wide Round Top

- *Round Top less prone to cracking*
- *6/3, 8/3, 6/4, 8/4*

WPC Wide Precision Crease

- *Beaded top excellent with corrugation direction*
- *3/8, 4/8*

Bohler's unique 14/4 crease has proven excellent on doublewall and triplewall corrugated. It scores deep and wide without cracking, and it greatly helps with folding.

14/4 Wide Round Top & 14/4 Wide Flat Top

- *Developed for double wall and triple wall*
- *No cracking*
- *Available in straight and curved*

8/4 RWC Rotary Wave Crease

- *Improves folds w corrugation*
- *Less costly*
- *8/4*

BOHLER ROTARY SPECIALTY RULE

Bohler ST 5

ST 5 is a 5-tooth rule with a non-ground side that improves scrap ejection. It is most often used to accurately cut honeycomb and foam. The profile is precision ground for easy penetration. It can also be used for nicking and removable windows in corrugated containers.

- ✓ *5-tooth side bevel improves scrap ejection*
- ✓ *Ideal for honeycomb & foam*
- ✓ *Can be used for nicking & tear-out windows*

Bohler ST 20

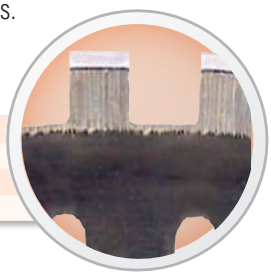
ST 20 is a 20-tooth rule designed for cutting E flute and microflute corrugated board. The 20 teeth per inch profile provides a very clean product edge.

- ✓ *20-tooth for E & F flute*
- ✓ *Leaves very clean product edge*

BOHLER ROTARY PERFORATING RULE

Bohler Non-Serrated Perforating Rule

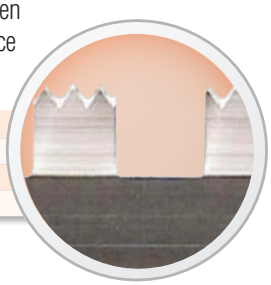
Bohler Non-Serrated Perforating Rule are made from center bevel rule with a wide variety of tooth/gap configurations. Each tooth is non-serrated, meaning the cutting rule does not have small teeth.



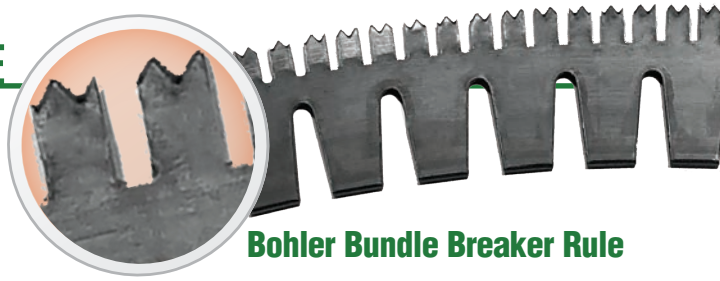
Thickness	4pt
Height	0.937" – 1.00"
Configuration	1/4" x 1/4", 3/8" x 3/8", 1/2" x 1/2"
Gap Depths	3/16" & 1/8"

Bohler Serrated Perforating Rule

This profile offers STC 12 teeth per inch. Serrated perforation is recommended for soft anvil diecutting and when the tooth is 6mm (1/4") or larger. This helps reduce crushing and flaking on the finished product.



Thickness	4pt
Height	0.937" – 1.00"
Configuration	1/4" x 1/4", 3/8" x 3/8", 1/2" x 1/2"
Gap Depths	3/16" & 1/8"



Bohler Bundle Breaker Rule

Bohler Bundle Breaker Rule is a pre-nicked rotary rule that reliably holds multiple outs together. Available in Fine, Standard, Strong, and Heavy.

Fine Bundle Breaker
- ✓ *0.045" nick every 1/4"*
- ✓ *18% hold is the lightest hold configuration*

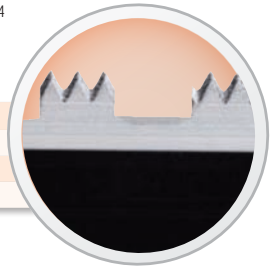
Standard Bundle Breaker
- ✓ *0.055" nick every 1/4"*
- ✓ *22% hold for a wide range of corrugated materials*

Strong Bundle Breaker
- ✓ *0.045" nick every 1/8"*
- ✓ *36% hold for shorter common knives and heavier board*

Heavy Bundle Breaker
- ✓ *0.055" nick every 1/8"*
- ✓ *44% hold provides a firm hold on any job*

Bohler Cut Crease Rule

This rule is made from 12-tooth rotary like cut/skip, except with a shallow depth of gap. The shallow gap is crease height, so it scores the board in the gaps between the teeth for a better fold, i.e. 1/4" x 1/4" 0.970" cut / 0.860" crease. It improves folding when perforating in the corrugated flute direction.

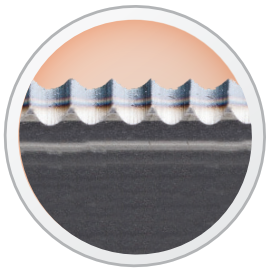


Thickness	4pt
Height	0.937" – 1.00"
Configuration	1/4" x 1/4", 3/8" x 3/8", 1/2" x 1/2"
Cut & Crease heights	vary by corrugated board

MARTIN MILLER ROTARY RULE

Martin Miller CF/CC 14

Commonly known as Clean-Cut and similar to Bohler US 10 CF/CC 14. This 14 tooth was designed to leave a very clean cut on the product. One side is shaved smooth, and the other side is ground tooth geometry. This rule is a true center bevel for accurate diecutting and dimensionally accurate boxes on multi-out dies.

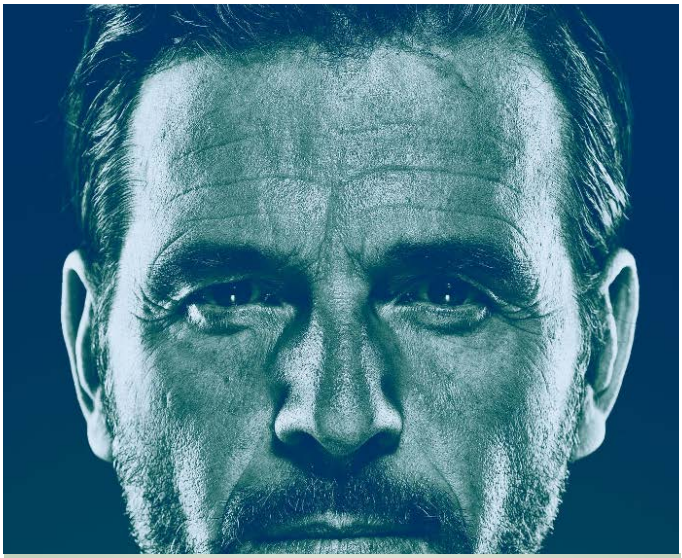


- ✓ *Leaves clean cut on product edge*
- ✓ *True center bevel for dimensional accuracy*
- ✓ *Superior Voestalpine steel doesn't crack like other rule brands*

Shallow Profile

Also known as Martin Miller 14T Fine Cut, this rule has a shallow gullet. It is renowned for its problem-solving ability on many substrates, including foam, plastic corrugated, automotive liners and carpets, and more. It may be used in flat diecutting on roller-bed presses.

- ✓ *Requires less impression to cut*
- ✓ *Ideal for foam, plastic corrugated, automotive materials*
- ✓ *Also great for flat dies on flat-bed roller presses*



Did You Know?

Bohler / Martin Miller rotary rule undergoes a thermal and mechanical stress relief to avoid fatigue cracks?

Combined with Bohler-produced steel, special edge hardening, and fine tooth grinding, it's easy to see why Bohler /Martin Miller is the absolute best rotary rule you can buy.