










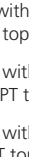


Steel Rule General Data

Thickness: 1 PT .014" (0.36 mm) 1-1/2 PT .021" (0.53 mm) 2 PT .028" (0.71 mm) 3 PT .042" (1.07 mm) 4 PT .056" (1.42 mm) 6 PT .084" (2.13 mm) 8 PT .112" (2.84 mm)

Cutting Rule Profiles available in ground or shaved edge in several bevel angles.

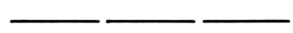
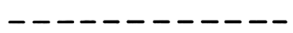
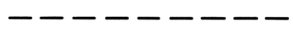
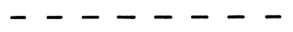
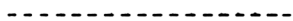

	Known as:	Typical uses:
 Center Bevel	Center Bevel, Standard Bevel, Double Bevel, Center Face or A Bevel.	This is by far the most popular bevel for conventional paperboard cutting. Approximately 85% of all paperboard cutting is done with a Center Bevel rule.
 Single Bevel	Side Bevel, Single Bevel, Side Face, B Bevel or Flush Bevel	Single Bevel rule produces a square finish. It's also used to produce tighter bends, compared to Center Bevel rule.
 Long Center Bevel	Long Center Bevel, Double Double Bevel, Center Face Double Bevel, Facet Bevel or AA Bevel Standard length of Bevel: 2 pt. - 1/8" long 3 pt. - 3/16" long, 4 pt. - 1/8" or 3/16" long	This rule is especially effective when cutting hard and/or thick materials. It helps reduce cutting pressure by deflecting pressure with the first bevel supported by the second bevel.
 Long Single Bevel	Long Side Bevel, Long Single Bevel, Side Face Double Bevel, Side Facet Bevel or BB Bevel. Standard length of Bevel: 2 pt. - 1/8" long 3 pt. - 3/16" long, 4 pt. - 1/8" or 3/16" long	Also used for cutting thicker and/or harder materials. The Long Single Bevel design reduces the crush to the finish die cut product when the bevel faces away from the piece.

Creasing Rule Profiles designed to make an impression in the die cut product for folding.

 <p>2 PT and 3 PT Standard Double Round</p>	 <p>4, 6 and 8 PT Single Round</p>	 <p>2 PT body with a 3 or 4 PT top</p>	 <p>3 PT body with a 4, 6 or 8 PT top</p>	 <p>4 PT body with a 6 or 8 PT top</p>	 <p>2 PT body with a 1 or 1.5 PT top</p>
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Other creasing rule profiles are available, like Tru-Fold, Positive Score and MicroTrak.

Perforating Rule available from 2 teeth per inch to 100 teeth per inch (TPI).

 <p>2 teeth per inch</p>	 <p>3/32" tooth x 1/32" space</p>
 <p>6 teeth per inch</p>	 <p>3/32" tooth x 3/32" space</p>
 <p>12 teeth per inch</p>	 <p>3/16" tooth x 1/16" space</p>

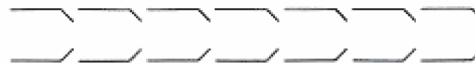
Above is a limited sample of typical tooth and space configurations, many other configurations are available from our extensive inventory.

Wave Rule available in edge wave or full body wave, depending on wave required.

 <p>Corrugated edge wave</p>	 <p>Medium fine edge wave</p>	 <p>Medium angle full body wave</p>
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Patterns are not actual size, contact Wagner Die Supply for a full listing of exact sizes and styles.

Tear Edge also known as zipper rule.



Pattern is not actual size, contact Wagner Die Supply for a full listing of sizes and styles.

Rotary & Serrated Rule used in cylinder and flat bed cutting.

Rotary rule available in 8, 10, 12 and 13 serrated teeth per inch in curved and straight styles.

Serrated rule is designed for cutting foams, films and other materials that are difficult to cut. Available in a wide variety of teeth per inch configurations.

Contact Wagner Die Supply for a complete listing of National Steel Rule products.

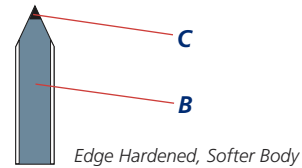
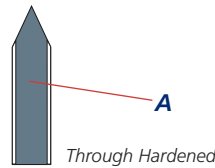




Steel Rule General Data (continued)

Cutting Rule -

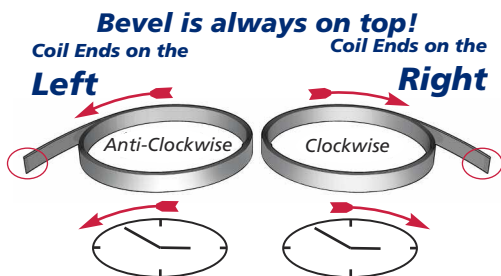
Manufacturers and their products with specifications and applications.



Refer to "Hardness" column for individual (HRC) Rockwell readings.

Manufacturer	Product	Hardness	Special Characteristics	Product Application
böhlerstrip	Top	A = 45 HRC	-	- Cardboard, corrugated, labels.
	H-75	A = 51 HRC	-	- Gaskets, rubber, cork, felt.
	Universal	B = 35 HRC, C = 57 HRC	-	- Cardboard, corrugated, labels.
	Universal 40	B = 40 HRC, C = 57 HRC	-	- Cardboard, corrugated, labels.
	Universal 60	B = 45 HRC, C = 57 HRC	-	- Plastics, thin gaskets, foils.
	Universal 75	B = 51 HRC, C = 58 HRC	-	- Metal foils, gaskets, plastics.
	Extra	B = 40 HRC, C = 59 HRC	-	- Gaskets, plastics, composites.
	Supreme	Universal, Universal 60	-	- Labels, dust control.
	Tinit	Universal	-	- Long die life.
	Label-X	B = 45 HRC, C = 58 HRC	- Tin coated, Long life	- Label cutting, foils, films.
	Plast-X	B = 35 HRC, C = 53 HRC	- Designed for plastics	- Plastics, PET, PE, PP, PVC, foils.
X-Press	B = 35 HRC, C = 57 HRC	- Self-levelling	- Solid board, corrugated.	
eis	TopDurFlex®	B = 35 HRC, C = 53 HRC	- Shaved edge rule	- Cardboard, labels, corrugated.
	TopDurFlex S®		- Ground rule, edge hardened	-
	Special 60W		- Micro-ground rule	- Coated materials, foils.
	TIN		- Tin coated	- Fast food, pharmaceutical.
	Brilliant		- Hardened tip, slim bevel	- Coated boards, foils, plastics.
helmold	Helmold 65 Ultraflex	A = 45 HRC	- All purpose utility rule	-
	Helmold 70	A = 50 HRC	- Hard rule, longer runs	-
	Helmold 80	A = 54 HRC	- 80S and 80M for long life	-
	Helmold 85	A = 58 HRC	- Straight work	-
	Helmold Lazer Blade	B = 34 HRC, C = 57 HRC	- Edge hardened	- Packaging, kiss-cut, folding carton.
	Helmold Lazer Blade H	B = 45 HRC, C = 57 HRC	-	-
	Helmold Lazer Blade D	B = 34 HRC, C = 57 HRC	- Extra deep edge hardened	- Abrasive materials
Helmold Lazer Blade HD	B = 34 HRC, C = 57 HRC	- Extra deep edge hardened	- Abrasive materials	
martin miller	HP 34	B = 34 HRC, C = 60 HRC	- Plasma beam hardened	- Recycled and virgin paperboard.
	HP 40	B = 39 HRC, C = 67 HRC	- Plasma beam hardened	- Recycled and virgin paperboard.
	HP 44	B = 46 HRC, C = 61 HRC	- Plasma beam hardened	-
	HP 51	B = 51 HRC, C = 61 HRC	-	-
	MM 40	A = 40 HRC	-	-
	MM 44	A = 44 HRC	-	- Paperboard, corrugated.
	MM 52	A = 52 HRC	-	-
	Supra Z	B = 40 HRC, C = 60 HRC	- Fine ground edge bevel	- Plastic, blister, laminated boards, labels.
National Steel Rule	Premium	B = 38 HRC, C = 54 HRC	- Induction hardened edge	- Solid fiber and corrugated.
	Nataloy	A = 41-44 HRC	- Shaved or ground edge	- Corrugated
	Nataloy EH		- Edge hardened	- Corrugated, folding carton.

Coil Direction Information for Auto Benders & Rule Processors:



Note: Rules are also available in Dispenser Coils that are wound in a clockwise direction.

Manufacturer	Coil Direction: Anti-Clockwise (or Counter-Clockwise)	Coil Direction: Clockwise
böhlerstrip	RU - Anti-Clockwise	R - Clockwise
helmold	⤵ Anti-Clockwise	⤴ Clockwise
martin miller	⤵ Anti-Clockwise	R - Clockwise
National Steel Rule	AC (21" O.D.), AB (18-3/8" O.D.)	DP (21" O.D.), KX (18-3/8" O.D.)
eis	Customer Specified.	Customer Specified.

Wagner refers to Anti-Clockwise as "AB" or "RW" for reverse wound.






WARNING: Dispenser Coils should never be used to load automated benders.

More Steel Rule next page...








Steel Rule General Data (continued)

Creasing Rule

Manufacturer	Product	Hardness / Details	Special Characteristics	Product Application
 böhlerstrip	Bohlerstrip HT Bohlerstrip HR	A = 39 HRC	- Hardened and tempered - Hard rolled	- Recommended on rules 3 pt. and less. - Recommended on rules 4 pt. and greater.
 e+s	Creasing Rule Laser Crease Facet Creasing Rule	P-Crease Rule Double Creasing Rule Half Crease Rule	- - -	
 helmold	Creasing Rule Reverse Laser Crease	1.5 pt. A = 45 HRC, 2 - 3 pt. A = 40 HRC, 4 - 6 pt. A = 35 HRC		- Single Round (SR) or Double Round (DR). - Wider scoring edge using a 2 pt. die slot.
 martin miller	Standard Creasing Rule Tapered Creasing Rule	Standard Creasing Rule HW Heavy Top Creasing Rule	- -	- HW hardness achieved through cold-rolling. -
 National Steel Rule	Rotary Laser Crease Tru Fold Laser Crease MicroTrak Crease I-Crease	Wave Score Duo-Score MicroTrak Laser Crease	- - -	- MicroTrak can be added to creasing rules. - -

Cut-Crease, Wave, Tear Edge, Zipper & Stripping Rules

Manufacturer	Product	Details	Characteristics	Product Application
 böhlerstrip	Top & Universal Cut-Crease Top & Universal Glue Flap Top & Universal Wave Edge & Deckle Edge Rules Top 36 Zipper Edge Rules Top 36 Stripping Rules Top 36 Sure-Strip	- Bevels: CF, CFDDDB - Bevels: CF - Bevels: CF, CFDB - Bevel: CF - Flat top - Bevel: CF	- 2, 3, 4 pt. - 2 pt. - 2, 3 pt. - 2, 3 pt. - 3 pt. - 3 pt.	- HS - cutting part height, HR - creasing part height. - Used to prep cardboard for adhesive. - For production of safety cutting edges on corrugated. - Tear open solution for shelf-ready packaging. - Used for ejecting waste material after diecutting. - Used for ejecting waste material after diecutting.
 helmold	Combination Cut and Crease Rule Wave Rule Steel Spacing Leads Tear Edge (Zipper) Rule	- 1.5, 2, 3, 4 pt. - 1.5, 2, 3, 4 pt. - 1, 1.5, 2, 3, 4, 6 pt. - 8" lengths, 2 pt. body		
 e+s	Crease/Cutting Rule with Flat Crease Crease/Cutting Rule with Round Crease Speedi Products Glue Flap Rule	Zipper Rule Tissue Perforating Rule Stripping Rule Esopick Stripping Rule Stripping Rule with Perf	Speed Stripping Rule Waved Stripping Rule Waved Esopick Rule Waved Stripping Rule with Perf	
 martin miller	MM44 Combination Cut/Crease Rule HW Spacing Rule HW, MM34, MM40 Stripping Rule	MM40, HP40 Wave Edge Rule MM44 Glue Flap Rule MM34 Zipper Rule		
 National Steel Rule	Combination Cut/Crease Radius Gullet Combination Cut Crease Rule Platinum Combo Score Bundle Breaker Rule	PERFormaX Rule 8-Tooth EZ Strip Rule 10-Tooth Prenick Rule Tear Edge (Zipper) Rule		

More Steel Rule next page...

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Steel Rule General Data (continued)

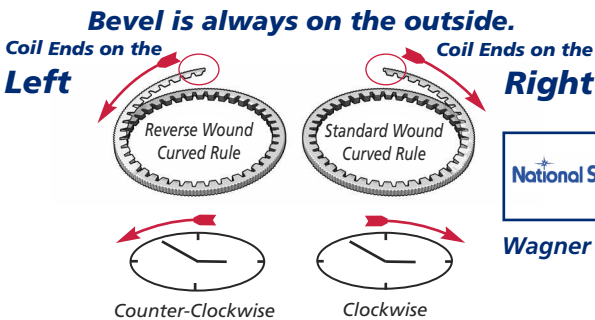
Perforating Rule

Manufacturer	Product	Hardness	Heights	Product Application
böhlerstrip	Top Universal	A = 45 HRC B = 35 HRC, C = 57 HRC	- 2, 3, 4 pt. - 2, 3, 4 pt.	- Bevels: CF, CFDDDB - Bevels: CF, CFDDDB
eis	Perforating Rule Asymmetrical Perf Rules Special-Micro Perf Rules			- Bevels: CB - Bevels: CB, LCB, SB, ISB - Bevels: LCB
helmold	Perforating Rule	A = 50 - 70 HRC	- 1.5, 2, 3, 4 pt.	- A wide range of tooth configurations for the corrugated, folding carton and business form industries.
martin miller	MM44 HP40	A = 40 HRC B = 39 HRC, C = 67 HRC	- 2, 3, 4 pt. - 2, 3, 4 pt.	- All common tooth/gap configurations available.
National Steel Rule	Rotary Perforating Rule Prism Perf Micro-Perf Invisible Perf			- Serrated perf recommended for tooth sizes above 1/4" - Alternative to serrated perf. - Used in business forms, fine perf rule. - Ultra-fine

Rotary Rule Cutting Rule

National Steel Rule	Product	Special Characteristics	Product Application
12 Tooth	12 Tooth	- Shaved edge.	- Minimizes dust, cuts a wide variety of materials.
10 Tooth	10 Tooth	- Shaved bevel	- Reduces edge crush, can be edge hardened.
8 Tooth	8 Tooth	- Shaved bevel, "V" ground teeth	- Cuts with minimal pressure.
Euro-Cut	Euro-Cut	- Shaved edge, edge hardened	- Cuts with reduced penetration, saves die rubber.
10 Tooth Euro-Cut	10 Tooth Euro-Cut	- Shaved edge, edge hardened	- Minimal penetration, increases blank & anvil life.
12 Toto Euro-Cut	12 Toto Euro-Cut	- Shaved edge, edge hardened	- Excellent for E Flutes and other light grade board.
Kleen Kut	Kleen Kut	- Hard alloy steel, unique bevel	- Excellent for lead edge knife, or long horizontal cuts.
10 Tooth Kleen Kut	10 Tooth Kleen Kut	- Hard alloy steel, shallow gullet	- Low cutting pressure, good on plastic corrugated.
13 Tooth Kleen Kut	13 Tooth Kleen Kut	- Edge hardened, shallow gullet	- Excellent on plastics and micro flute corrugated.
Scalloped	Scalloped	- Center bevel, edge hardened	- Excellent for cutting rubber, fiber and plastics.
16 Tooth	16 Tooth	- Available symmetrically ground	- Excellent for displays or for a superior edge.
20 Tooth	20 Tooth	- Edge hardened or standard	- Good for cutting light board and micro flutes.
SuperCut	SuperCut	- Multi-purpose, avail. in 10 tooth	- Creates a safety edge, provides excellent anvil life.
Extreme 9	Extreme 9	- Teeth slant at a downward angle	- Cuts heavy board. For long, across the cylinder cuts.
Super Six	Super Six	- Ground from one side	- Improves stripping and cuts with less pressure.
Arrowhead	Arrowhead	- Long shaved bevel, edge hardened	- Reduces edge crush, perfect for power flute.
10 Tooth Arrowhead	10 Tooth Arrowhead	- Symmetrical ground, hardened edge	- Longer anvil life, for medium to lighter board weights.
RP8	RP8	- Symmetrical ground, shallow gullet	- Longer production runs, excellent bendability.
10 Tooth NZ Style Kleen Kut	10 Tooth NZ Style Kleen Kut	- Side bevel, shallow gullet	- Perfect for difficult scrap areas, improves anvil life.
13 Tooth Shallow Profile	13 Tooth Shallow Profile	- Radius tooth, hardened edge	- Ideal for flat applications.
14 Tooth Shallow Profile	14 Tooth Shallow Profile	- Center bevel, ground on one side	- Cuts with minimal pressure, good for fabrics, rubber.

National Rotary Rule - General Coil Information:



National Steel Rule	Coil Direction: Anti-Clockwise (or Counter-Clockwise)	Coil Direction: Clockwise
		AC (21" O.D.), AB (18-3/8" O.D.)

Wagner refers to Anti-Clockwise as "AB" or "RW" for reverse wound.

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