

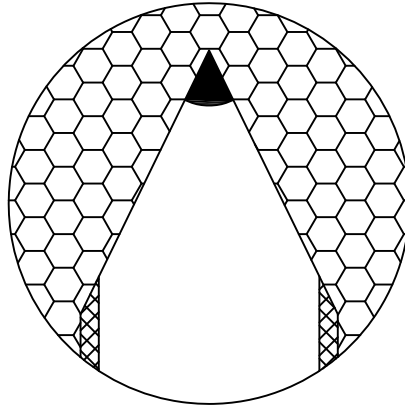
****Features of Armor Steel Rules:***

**** The cutting edge***

is hardened by super high frequency induction machine with 27.12 megahertz frequency which guarantees the excellent quality for the cutting rules.

Its hardness can be up to more than HV 1000. With the modification of the hardness to HV 660, the steel rules can be bent to any degree with minimal bending radius. Therefore the service life and the stability of the cutting rules can be assured.

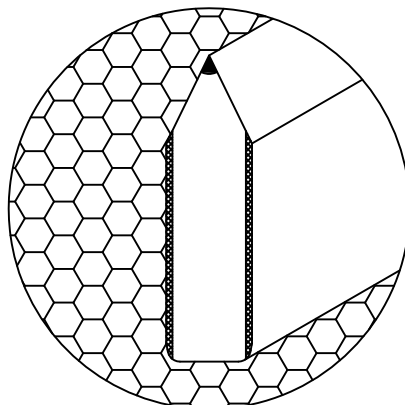
Cutting edge



**** The body of the cutting rules***

is fully hardened by Austempering Heat Treatment, resulting in bainite microstructure. The bainite structure is excellent in ductility and toughness which is fabulous in the application as a cutting rule due to its excellent bendability and stability.

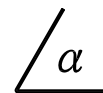
Bainite body



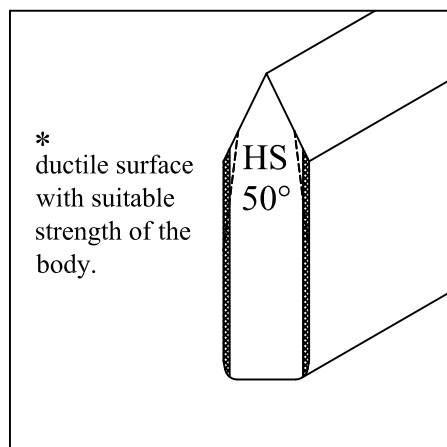
**Through-hardened Cutting Rules:*

The **complete body and cutting edge** are uniformly hardened at the same hardness with bainite microstructure which is very ductile and stable. The outer surface of the body is suitably decarburized to guarantee excellent bendability for all the rules.

These rules are used for cardboard, corrugated board, labels, plastic, gaskets, foils and puzzles etc.



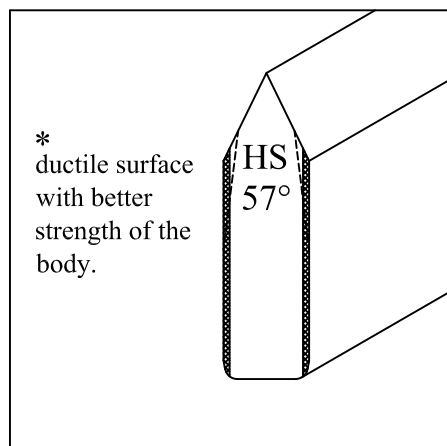
*Dotted lines shown below imply long center bevel for S-series cutting rules.



A48 , S48

is the all-purpose cutting rule which is hardened all through the body but with the decarburization on the both sides of the surface for excellent bendability. It is suitable for low runs, used for cardboard, corrugated board, labels etc.

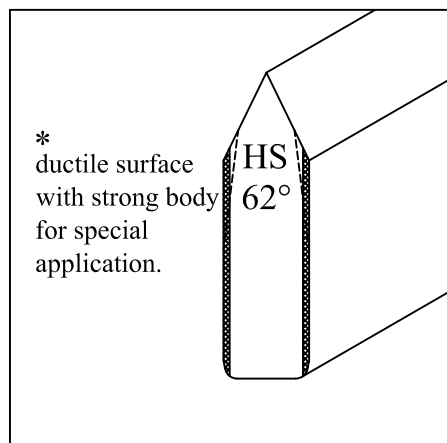
Hardness:	
Body and Edge	~HV360(HRC37)
Bendability:	
(2PT)	∠ 30 ° R=0.20mm
Thickness:	
in point	1.5/ 2/ 3/ 4 pts.
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm



A55 , S55

is the same as A48/S48, but with higher hardness for better stability and longer runs.

Hardness:	
Body and Edge	~HV420(HRC43)
Bendability:	
(2PT)	∠ 60 ° R=0.25mm
Thickness:	
in point	1.5/ 2/ 3/ 4 pts.
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm



A60 , S60

is with the hardness over HS62 for good stability and longer run. It is still bendable in suitable degree for difficult cutting operations, used for plastics, rubber, gaskets, thin foils etc.

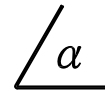
Hardness:	
Body and Edge	over HV460(HRC46)
Bendability:	
(2PT)	∠ 90 ° R=0.30mm
Thickness:	
in point	1.5/ 2/ 3/ 4 pts.
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm

***Edge-hardened Cutting Rules:**

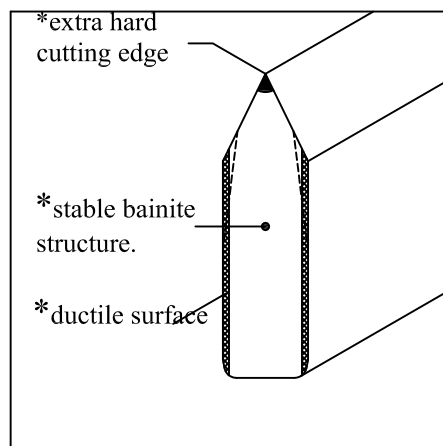
The **cutting edge** is extra hardened by super high-frequency induction machine which can provide an excellent wear resistance and long service life.

The **body** is with uniform bainite microstructure and the outer surface is suitably decarburized which guarantees excellent bendability and good stability.

These rules are widely used for cardboard, corrugated board, labels, plastic, gaskets, foils and puzzles etc.



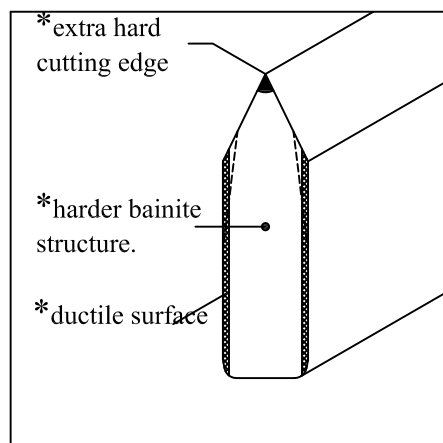
*Dotted lines shown below imply long center bevel for S-series cutting rules.



A80 , S80 **(A48x80) , (S48x80)**

is the most widely used cutting rules which is with excellent bending properties and long service life, suitable for cardboard, corrugated board, labels etc.

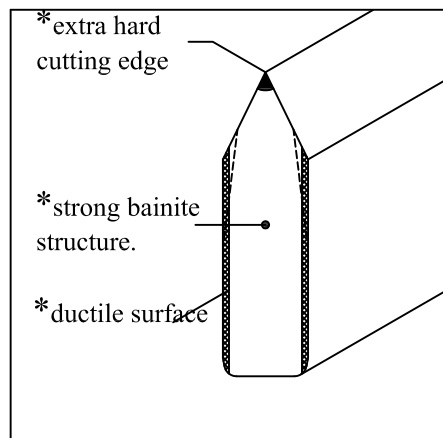
Hardness:	
Body	~HV360(HRC37)
Edge	~HV640(HRC57)
Bendability:	
(2PT)	$\angle 30^\circ$ $R=0.20mm$
Thickness:	
in point	1.5/ 2/ 3/ 4 pts .
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm



A55x80 , S55x80

is reinforced in body hardness for better stability which is still good in bending properties, and its service life is excellent too, suitable for plastics, gaskets, puzzles, cardboard, corrugated board etc.

Hardness:	
Body	~HV420(HRC43)
Edge	~HV640(HRC57)
Bendability:	
(2PT)	$\angle 60^\circ$ $R=0.25mm$
Thickness:	
in point	1.5/ 2/ 3/ 4 pts.
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm



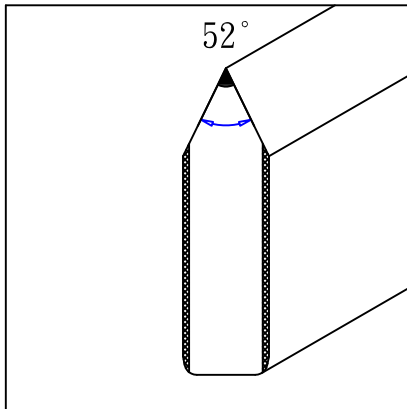
A60x80 , S60x80

is a tailor-made rules which are with the hardness over HV460 in body and HV640 in cutting edge, offering excellent stability and wear resistance, suitable for special requirements.

Hardness:	
Body	over HV460(HRC46)
Edge	~HV640(HRC57)
Bendability:	
(2PT)	$\angle 90^\circ$ $R=0.30mm$
Thickness:	
in point	1.5/ 2/ 3/ 4 pts.
in mm	0.53/0.71/1.05/1.42mm
Height:	
in mm	20~50mm

**Bevels of Cutting Rules:*

We offer the complete bevel ranges, like Center bevel, long center bevel, side bevel, long side bevel etc. The standard edge angle is 52°, others like 42°, 54°, 55° and 60° on request.



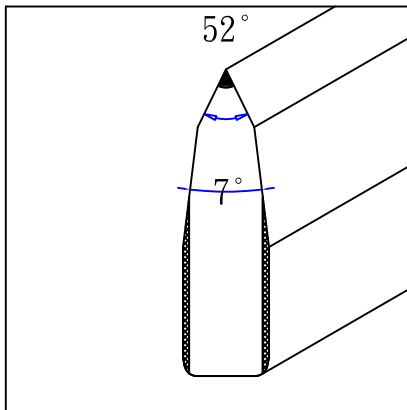
A type: Center bevel

The center bevel is commonly used for cutting standard cardboards. Its standard cutting tip angle is 52°. 42°, 54°, 55° and 60° are also available.

The most common items supplied:

A48, A55, A60;

A80 (A48x80), A55x80, A60x80.



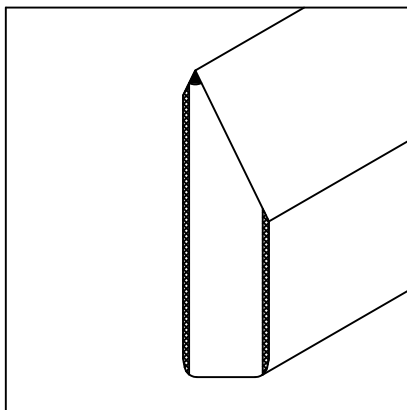
S type: Double long center bevel

This type of cutting edge which can reduce the cutting force required, is very popular especially for cutting hard, thick materials like plastics, rubber, plywood, leather, corrugated board etc.

The most common items supplied:

S48, S55, S60;

S80 (S48x80), S55x80, S60x80.

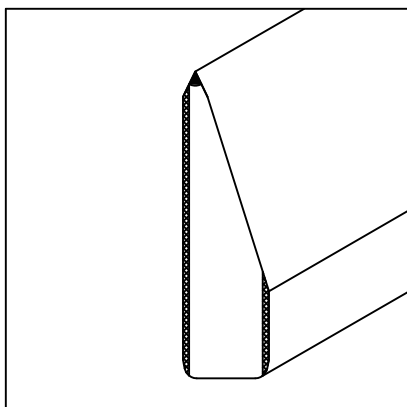


B type: Side bevel

This type of cutting edge is suitable for cutting harder materials, which can minimize the counter bevel especially in a right and straight angle.

The most common items supplied:

A80(A48x80), A55x80.



C type: Long side bevel

This type of cutting edge is similar to the long center bevel which can reduce the cutting force required.

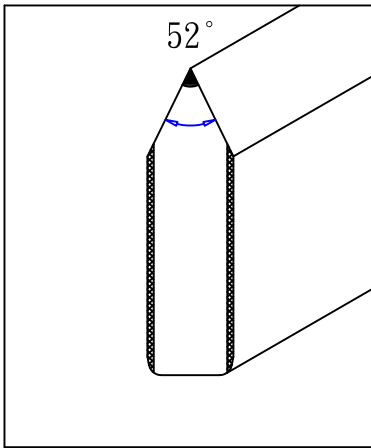
The most common items supplied:

S48, S55, S60;

S80 (S48x80), S55x80, S60x80.

**Specifications of Cutting Rules:*

A-series



A series: Center Bevel

The center bevel is commonly used for cutting standard cardboards.

The cutting tip angles of 42°, 52°, 54°, 55° and 60° are available.

Angle: 42°,

52°= standard.

54°, 55°, 60°.

Pieces: 1m long,

100pieces per box for 2 pt.

Coils: clockwise or counterclockwise

100m long for 0.71mm (2pt)

70m long for 1.05mm (3pt)

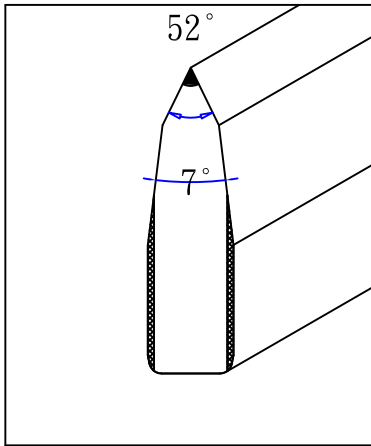
50m long for 1.42mm (4pt)

Items	Points	Thickness (in mm)	Height (in mm)	Hardness	
				Body	Cutting edge
A48	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS50° (HV360°) (HRC36.6°)	~HS50° (HV360°) (HRC36.6°)
A55	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS57° (HV420°) (HRC43°)	~HS57° (HV420°) (HRC43°)
A60	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS62° (HV460°) (HRC46°)	~HS62° (HV460°) (HRC46°)
A48x80 (A80)	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS50° (HV360°) (HRC37°)	~HS76° (HV640°) (HRC57°)
A55x80	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS57° (HV420°) (HRC43°)	~HS76° (HV640°) (HRC57°)
A60x80	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS62° (HV460°) (HRC46°)	~HS76° (HV640°) (HRC57°)

Specifications other than those specified above can be tailor-made.

*Specifications of Cutting Rules:

S-series



S-series: Long Center Bevel

This type of cutting edge which can reduce the cutting force required, is very popular especially for cutting hard , thick materials like plastics, rubber, plywood, leather, corrugated board etc.

Angle: 42°,

52°= standard.

54°, 55°, 60°.

Pieces: 1m long,

100pieces per box.

Coils: clockwise or counterclockwise

100m long for 0.71mm (2pt)

70m long for 1.05mm (3pt)

50m long for 1.42mm (4pt)

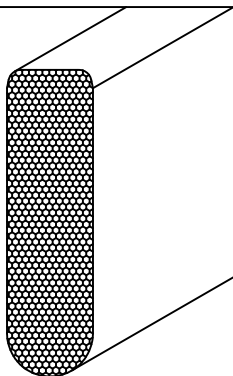
Items	Points	Thickness (in mm)	Height (in mm)	Hardness	
				Body	Cutting edge
S48	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS50° (HV360°) (HRC36.6°)	~HS50° (HV360°) (HRC36.6°)
S55	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS57° (HV420°) (HRC43°)	~HS57° (HV420°) (HRC43°)
S60	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80.	~HS62° (HV460°) (HRC46°)	~HS62° (HV460°) (HRC46°)
S48x80 (S80)	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS50° (HV360°) (HRC37°)	~HS76° (HV640°) (HRC57°)
S55x80	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS57° (HV420°) (HRC43°)	~HS76° (HV640°) (HRC57°)
S60x80	1.5, 2, 3, 4.	0.53, 0.71, 1.05, 1.42.	23.60, 23.80, 30.00, 32.00, 40.00, 50.00.	~HS62° (HV460°) (HRC46°)	~HS76° (HV640°) (HRC57°)

Specifications other than those specified above can be tailor-made.

*Creasing Rules:

We offer various Creasing profiles with many specifications to meet the customers' requirements in the Creasing field.

SR



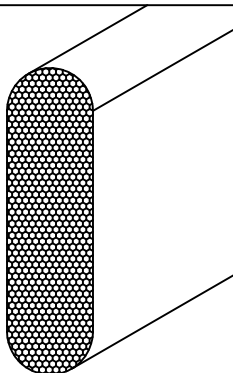
Single Round Rules: (Standard)

<u>Points</u>	<u>mm</u>	<u>Height in mm</u>
<u>1.5</u>	<u>0.53</u>	<u>21.00~23.60</u>
<u>2</u>	<u>0.71</u>	<u>21.00~23.60</u>
<u>3</u>	<u>1.05</u>	<u>21.00~23.60</u>
<u>4</u>	<u>1.42</u>	<u>21.00~23.60</u>

Common height used:

22.00, 22.50, 22.80,
23.00, 23.10, 23.20,
23.30, 23.40, 23.50 etc.

DR



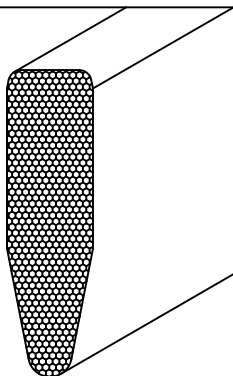
Double Round Rules: (American Style)

<u>Points</u>	<u>mm</u>	<u>Height in mm</u>
<u>1.5</u>	<u>0.53</u>	<u>21.00~23.60</u>
<u>2</u>	<u>0.71</u>	<u>21.00~23.60</u>
<u>3</u>	<u>1.05</u>	<u>21.00~23.60</u>
<u>4</u>	<u>1.42</u>	<u>21.00~23.60</u>

Common height used:

22.00, 22.50, 22.80,
23.00, 23.10, 23.20,
23.30, 23.40, 23.50 etc.

TR



Tapered Creasing Rules:

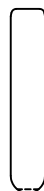
<u>Points</u>	<u>mm</u>	<u>Height in mm</u>
<u>2</u>	<u>0.71</u>	<u>0.50</u>
<u>2</u>	<u>0.71</u>	<u>0.35</u>

Common height used:

23.10, 23.30 etc.

PR

*Ideal Creasing Rules for Plastics
to prevent from warping.*



pitch=0.65mm

Plastic Creasing Rules:

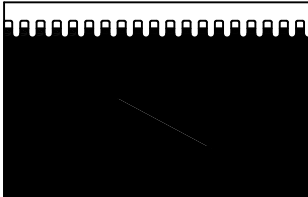
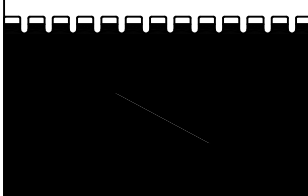
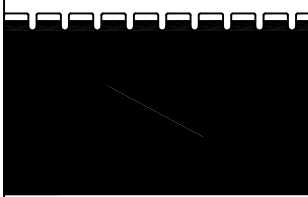
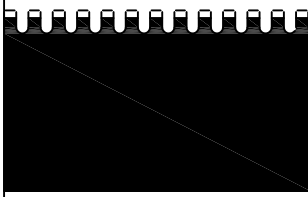
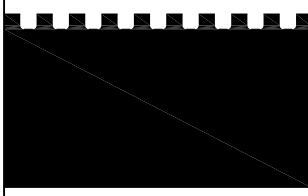
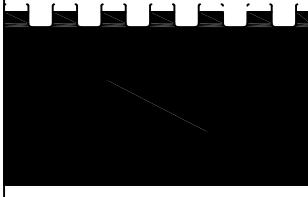
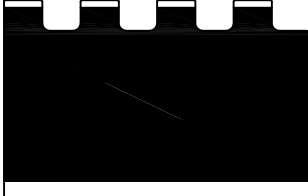
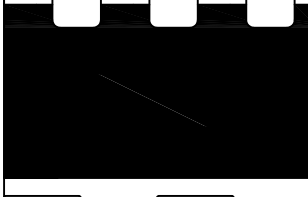
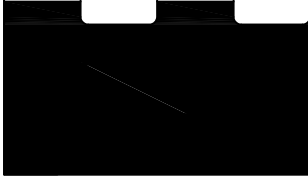
<u>Points</u>	<u>mm</u>	<u>Height in mm</u>
<u>2</u>	<u>0.71</u>	<u>23.10~23.70</u>

Common height used:

23.50, 23.70 etc.

** Other heights are available
on request.*

****Perforating Rules***

<i>prototype</i>	<i>Items</i>	<i>Cut in mm</i>	<i>Gap in mm</i>	<i>Depth in mm</i>	<i>Teeth (per inch)</i>	<i>Point (mm)</i>	<i>Height in mm</i>
	<i>P1x1</i>	<i>1.1</i>	<i>1.1</i>	<i>2.2</i>	<i>12t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P2x1</i>	<i>2.1</i>	<i>1.1</i>	<i>2.2</i>	<i>8t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P3x1</i>	<i>3.1</i>	<i>1.1</i>	<i>2.2</i>	<i>6t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P1.5x1.5</i>	<i>1.6</i>	<i>1.6</i>	<i>3.0</i>	<i>8t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P2x2</i>	<i>2.1</i>	<i>2.1</i>	<i>3.0</i>	<i>6t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P3x3</i>	<i>3.2</i>	<i>3.2</i>	<i>3.0</i>	<i>4t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P5x5</i>	<i>5.0</i>	<i>5.0</i>	<i>2.0 or 4.0</i>	<i>2.5t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P6x6</i>	<i>6.3</i>	<i>6.3</i>	<i>4.0</i>	<i>2t</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>
	<i>P10x10</i>	<i>10.0</i>	<i>10.0</i>	<i>2.0 or 4.0</i>	<i>*</i>	<i>2 (0.71)</i>	<i>23.60/23.80</i>

***Bendability of Steel Rules:**

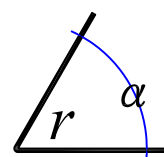
We offer all the cutting rules with such an excellent quality that you can almost bend any degrees desired in a suitable bending radius in practical applications.

That's due to:

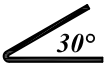


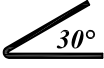

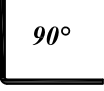
** excellent raw material heat-treated by Modified Austempering resulting in quality Bainite microstructure with excellent ductility.*

** decarburized outer surface from 0.01mm to 0.10mm in depth as required.*

** high-tech new Super High-frequency induction machine to treat the cutting edge with excellent martensite microstructure, the grain size being as fine as #14.*



***Bendability against Hardness**

Items	Hardness		Bending angle α	Bending radius r (mm)			
	Body	Edge		1.5 pt (0.53mm)	2pt (0.71mm)	3pt (1.05mm)	4 pt (1.42mm)
A48, S48	~HV360(HRC36.6)			0.15	0.20	0.30	0.60
A55, S55	~HV420(HRC43)			0.20	0.25	0.50	0.80
A60, S60	~HV460(HRC46)			0.25	0.30	0.60	1.00
A48x80 (A80) S48x80 (S80)	~HV360 (HRC37)	~HV640 (HRC57)		0.15	0.20	0.30	0.60
A55x80 S55x80	~HV420 (HRC43)	~HV640 (HRC57)		0.20	0.25	0.50	0.80
A60x80 S60x80	~HV460 (HRC46)	~HV640 (HRC57)		0.25	0.30	0.60	1.00

*Tolerances of Steel Rules:

*Dimensional Tolerances:

Thickness Tolerances:

Rule thickness <i>t</i>		Thickness tolerance	
<i>in PT</i>	<i>in mm</i>	<i>in mm</i>	<i>in inch</i>
1.5	0.53	±0.015	±0.0006"
2	0.71	±0.015	±0.0006"
3	1.05	±0.020	±0.0008"
4	1.42	±0.020	±0.0008"

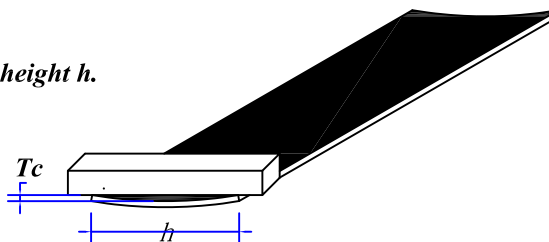
Height Tolerances:

Rule height <i>h</i>		Height tolerance	
<i>in mm</i>	<i>in inch</i>	<i>in mm</i>	<i>in inch</i>
22.00~ 25.40	0.866"~ 1"	±0.020	±0.0008"
>25.40~ 50.80	>1.000"~ 2"	±0.025	±0.0010"

*Form Tolerances:

Cross Camber:

$T_c = \text{max. } 1\mu\text{m per } 1\text{mm of rule height } h.$



Straightness along Cutting side:

$T_s = \text{max. } 0.5\text{mm per } 1\text{m of rule length.}$

Flatness along Bending side:

$T_f = \text{max. } 5\text{mm per } 1\text{m of rule length.}$

** T_f is only applicable to the Rules in pieces, not in coils.*