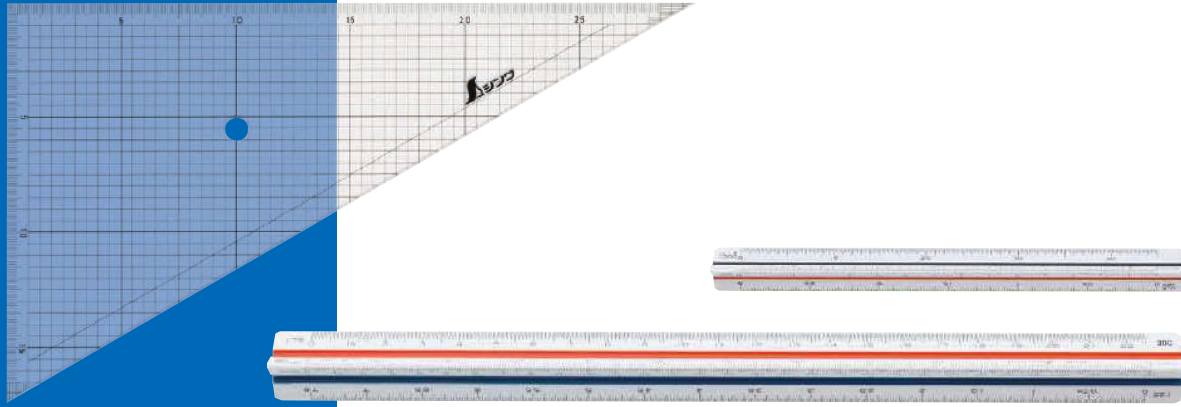


# 19. Drawing Tools

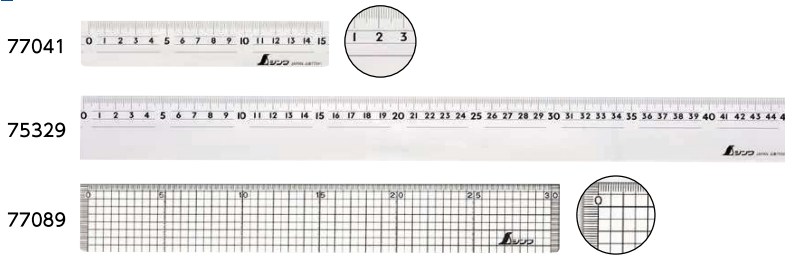
Carpenter's Squares  
Stainless Steel Rules / Machine Scale  
Aluminum Rules  
Resin Folding Bamboo Rules  
Squares / Protractors  
Vernier Calipers / Micrometers  
Tape Measures  
Surveying Products  
Scales  
Levels  
Lasers / Optical Equipment  
Finklines / Chalklines / Plumbholders  
Circular Saw Guides  
Construction Tools  
Industrial Tools  
Thermometers / Hygrometers / Infrared Measuring Instruments  
Outdoor Products  
Magnifying Glasses  
Drawing Tools  
Magnets



Packaging Shrink package Box Vinyl package + header card Card No package  
 Sleeve package Bag Clear package Vinyl package

\*Acrylic resin has high transparency and is easy to clean. However, please do not wipe it off with thinner.

## Acrylic Straight Rule



**Features**

- Improves productivity of layout work and line drawing with grid scale

**Use**

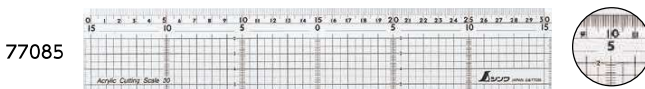
- Ideal for layout work or line drawing with horizontal lines

**Specifications**

Material	Acrylic resin
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
77041	15 cm	160×30×2	11	4 960910 770416	10	
75310	30 cm	309×32×3	33	4 960910 753105		
75329	45 cm	459×43×3	67	4 960910 753297		
77089	30 cm with Grid Scale	311×45×3	48	4 960910 770898		
77097	45 cm with Grid Scale	459×50×3	81	4 960910 770973		

## Acrylic Cutting Rule with Stainless Steel Edge



**Features**

- Cutter edge has a tough stainless steel plate to prevent the blade from cutting in and enable smooth cutting
- Improves productivity of layout work and line drawing with grid scale

With stainless steel plate

**Use**

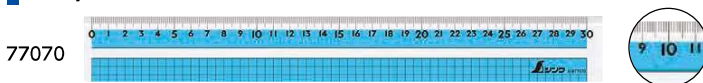
- For line drawing and cutting work

**Specifications**

Material	Body: Acrylic resin Cutter: Stainless steel
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
77085	30 cm	310×55×5	110	4 960910 770850	5	
77086	50 cm	510×60×5	165	4 960910 770867		

## Acrylic Rule



**Features**

- Colored bar makes it easier to read data

**Use**

- For line drawing and data reading

**Specifications**

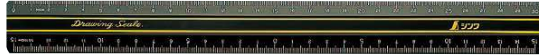
Material	Acrylic resin
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
77070	30 cm	316×40×3	42	4 960910 770706	10	

JIS JIS mark With red numbers cm/shaku (Upper side (or front) metric / Lower side (or back) shaku) With magnet Vial with luminous sheet Thermometer Double-sided tape Letters in Japanese With stopper Oil Glass lens With edge  
 Japanese zodiac signs With battery shaku/cm (Upper side (or front) shaku / Lower side (or back) metric) With non-slip pad Thermometer/Hygrometer Hygrometer Vibrating tool Letters in English With direction arrow With grid scale Plastic lens

## Black Drawing Scale

77038



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
77038	30 cm	310×30×3	27	4 960910 770386	10	

### Features

- Upper Graduation: Left base point with 0 - 30 cm straight graduation
- Lower Graduation: Center base point with divided graduation of 15 cm to each side

### Use

- For drawing lines

### Specifications

Material	Vinyl chloride resin
Elasticity Ratio	5 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change

## Acrylic Dot-line Drawing Rule

70726



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
70734	15 cm	200×45×3	23	4 960910 707344	10	
70726	30 cm	321×51×5	67	4 960910 707269		

### Features

- Easily draw a dotted line and dot-dash line

### Use

- For drawing lines, dotted lines and dot-dash lines

### Specifications

Material	Acrylic resin
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change

## Acrylic Scale Reduction Rule

70769



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
70750	15 cm	210×64×4	39	4 960910 707504	10	
70769	30 cm	370×64×5	80	4 960910 707696		

### Features

- Scale with triangular-scale functions
- See through the flat transparent surface while drawing

### Use

- For drawing lines and reading sketches

### Specifications

Material	Acrylic resin
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change
Contraction Scale	1/100, 1/200, 1/250 1/300, 1/500, 1/600

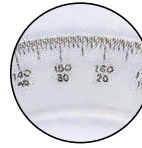
## Acrylic Protractor



74918



74926



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
74918	180-degree Semicircle 15 cm	152×98×2	16	4 960910 749184	10	
74926	360-degree Circle 15 cm	φ152×2	25	4 960910 749269		

### Features

- Measures angles to semicircle or full circle

### Use

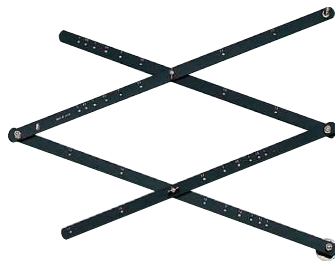
- For measuring angle of sketches

### Specifications

Material	Acrylic resin
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## Pantagraph

75426



Replacement Lead 2 mm

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
75426	Aluminum Pantagraph 5x	423×55×35	211	4 960910 754263	5	

### Features

- Enlarges an original drawing five times or shrinks it by one fifth
- To start, decide desired magnification of enlargement or reduction, then just simply trace the original drawing to make an enlarged or reduced version

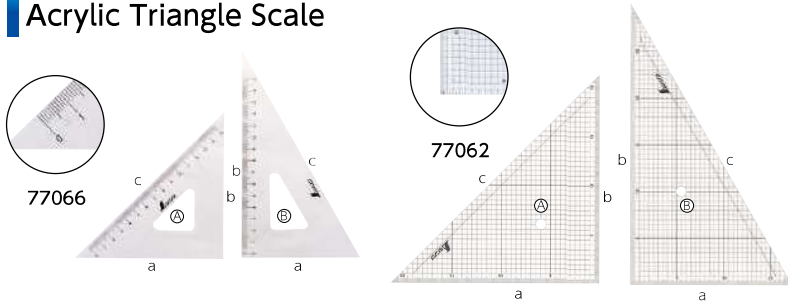
### Use

- For enlargement and reduction of illustration, photo, painting, sketch, etc.

### Specifications

Material	Arm: Aluminum Fixing: Brass, iron
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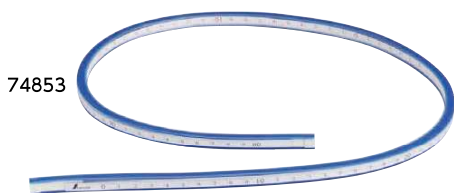
## Acrylic Triangle Scale



Features				
● Improves productivity of layout work and line drawing with grid scale				
Use				
● For drafting and line drawing				
Specifications				
	77066	75256	75264	77062
Material	Acrylic resin			
Elasticity Ratio	7 - 8 × 10 <sup>-5</sup> mm elastic per 1 mm in 1°C change			
Length of Each Sides	(A)			
	a: 128 mm b: 128 mm c: 180 mm	a: 171 mm b: 171 mm c: 240 mm	a: 213 mm b: 213 mm c: 300 mm	a: 213 mm b: 213 mm c: 300 mm
	(B)			
	a: 104 mm b: 180 mm c: 208 mm	a: 140 mm b: 240 mm c: 277 mm	a: 174 mm b: 300 mm c: 348 mm	a: 174 mm b: 300 mm c: 348 mm

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
77066	18 cm 2 pc-pack	(A)128×128×2 (B)180×104×2	(A)17 (B)19	4 960910 770669	10	
75256	24 cm 2 pc-pack	(A)171×171×2 (B)240×140×2	(A)31 (B)33	4 960910 752566		
75264	30 cm 2 pc-pack	(A)213×213×2 (B)300×174×2	(A)46 (B)54	4 960910 752641		
77062	30 cm 2 pc-pack with Grid Scale	(A)213×213×2 (B)300×174×2	(A)53 (B)63	4 960910 770621		

## Flexible Rule



Features		
● Flexible rule that can be bent in any shape		
● Convenient to use with a bow pen or pen with ink edge		
Use		
● For making a mold by matching the shape		
● For drafting and making a graph		
Specifications		
	74845	74853
Material	Outside Pipe, Side Cap: Vinyl chloride resin Scale Plate: Iron Middle Plate: Lead	

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
74845	40 cm with Scale	465×7×10	84	4 960910 748453	5	
74853	80 cm with Scale	865×7×10	164	4 960910 748538		

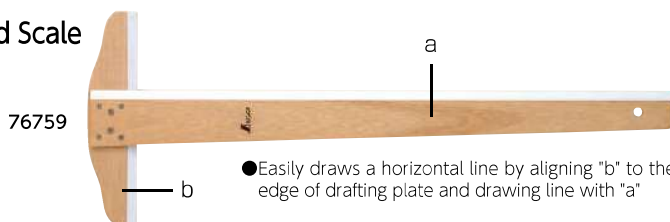
## Curved Rule



Features		
● Draws various curved lines		
● Draw a curve by freehand in advance, then match the appropriate curve of the Curved Rule to finish the curved line		
Use		
● For drawing and checking curved lines		
Specifications		
	77003	70947
Material	Vinyl chloride resin	Acrylic resin

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
77003	6 pc-pack	180×58×1	38	4 960910 770034	10	
70947	Middle-size	165×85×2	15	4 960910 709478		

## T-shaped Scale



Features	
● Ideal as teaching material	
Use	
● For drawing a horizontal line on drafting	
Specifications	
Material	Body: Wood

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
76759	Wood 60 cm	a: 655×65(45)×6 b: 240×55×9	184	4 960910 767591	5	

## Drawing Compass

75396

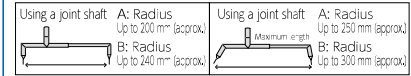


Replacement Lead 2 mm

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
75388	A 115 mm	120×13×10	47	4 960910 753884	10	
75396	B 155 mm	150×13×10	60	4 960910 753969	10	

### Features

- Draws a large circle by using a joint shaft
- Joint shaft and replacement lead are included (both A and B)



### Use

- For drawing circles

### Specifications

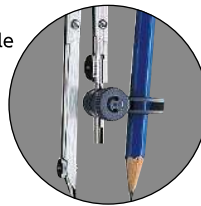
Material	Brass	
Body	Joint's shaft	Tip

## Compass Attachment

70920



Usage Example



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
70920	Compass Attachment	42×47×11	6	4 960910 709201	10	

### Features

- Uses compass with a pencil, pen, brush, or cutter
- Use by attaching to a drawing compass

### Use

- For installing a pencil, pen, brush or cutter, etc. on a compass

### Specifications

Usable Size	Maximum diameter of 11.5 mm
Material	Body: ABS resin

## Drawing Divider

75450



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
75442	A 115 mm	124×13×10	46	4 960910 754423	10	
75450	B 155 mm	154×13×10	59	4 960910 754508	10	

### Features

- Gear type opens both shafts equally

### Use

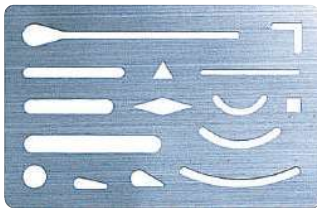
- For dividing lines and copying any dimensions

### Specifications

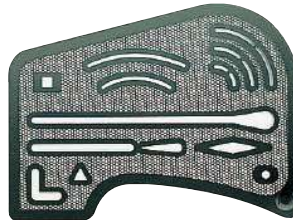
Material	Brass
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## Erasing Shield

70963



70961



Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
70963	Stainless Steel Erasing Shield	93×60×0.1	4	4 960910 709638	10	
70961	Stainless Steel Mesh Erasing Shield	80×60×0.1	2	4 960910 709614	10	

### Features

- Erases only desired area
- Easily see where to erase by looking through the shield (70961)

### Use

- For intricate erasing

### Specifications

	70963	70961
Material	Stainless steel	

## Triangle Scale

Carpenter's Squares

Stainless Steel Ruler/Machine Scale

Aluminum Rulers

Resin Folding Ruler/Bamboo Ruler

Squares/Protractors

Vernier Calipers/Micrometers

Tape Measures

Surveying Products

Scales

Levels

Laser/ Optical Equipment

Lines/ Chalklines/ Plumblines

Circular Saw Guides

Construction Tools

Industrial Tools

Thermometers/ Hygrometers/ Humidity Meters

Outdoor Products

Magnifying Glasses

Drawing Tools

Magnets



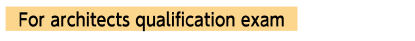
70777



74969



74950



74961

For architects qualification exam



74962



70802



70803



74987



74988

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Packaging
70777	A-10 10 cm	Length: 120 Cross section: 16x16x16	9	4 960910 707771	10	
74969	A-15 15 cm for Real-estate Surveyors	Length: 170 Cross section: 16x16x16	13	4 960910 749696	10	
74950	A-30 30 cm for Real-estate Surveyors	Length: 326 Cross section: 25x25x25	58	4 960910 749504	5	
74961	B-15 15 cm for Architects	Length: 170 Cross section: 16x16x16	13	4 960910 749610	10	
74962	B-30 30 cm for Architects	Length: 326 Cross section: 25x25x25	58	4 960910 749627	5	
70802	C-15 15 cm for Microcopy	Length: 170 Cross section: 16x16x16	13	4 960910 708020	10	
70803	C-30 30 cm for Microcopy	Length: 326 Cross section: 25x25x25	58	4 960910 708037	5	
74987	D-30 30 cm for Architects, Shipbuilders	Length: 327 Cross section: 25x25x25	60	4 960910 749870	5	
74988	E-30 30 cm for Shipbuilders	Length: 327 Cross section: 25x25x25	60	4 960910 749887	5	

JIS JIS mark With red numbers cm/shaku (Upper side for Front metric / Lower side for Back shaku) With magnet Vial with luminous sheet Thermometer Double-sided tape Letters in Japanese With stopper Oil Glass lens With edge  
 Japanese zodiac signs With battery shaku/cm (Upper side for Front shaku / Lower side for Back metric) With non-slip pad Thermometer/Hygrometer Hygrometer Vibrating tool Letters in English With direction arrow With grid scale Plastic lens

### Features

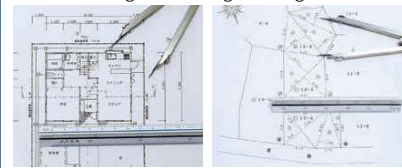
- Convenient for drawing and reading measurements
  - 30 cm models comes with a plastic case
  - A-10
  - Convenient pocket size for portability
  - A-15/A-30
  - Convenient for drawing and reading required material during a registration process such as an acreage survey map or a building ground plan
  - B-15/B-30
  - Shows the most essential scales for architectural design
  - Most essential drawing and reduction scale for architectural design
- |   |
|---|
| City Plan/Area Measurement                  |
| 1/250                                       |
| Arrangement Plan/Ground Plan/Elevation Plan |
| 1/100, 1/200, 1/300                         |
| Sectional Detail Drawing/Detail Drawing     |
| 1/20, 1/30 (double in 1/300), 1/50          |
- C-15/C-30
  - Reads a reduced copy drawing as a stencil size
  - Reduction Scale
  - A format → A format A format → B format
  - (70.7%) (86.6%)
- A3

A4
- A3

B4
- D-30
  - Convenient for drawing and reading required material in architecture or shipbuilding
  - E-30
  - Convenient for drawing and reading required material in shipbuilding

### Use

- For drawing and taking readings



### Specifications

	70777	74969	74950
Reduction Scale	1/100, 1/200, 1/300 1/400, 1/500, 1/600	1/100, 1/200, 1/250 1/300, 1/500, 1/600	1/100, 1/200, 1/250 1/300, 1/500, 1/600
Length Tolerance	±0.2 mm	±0.3 mm	±0.4 mm
Material	ABS resin		

	74961	74962
Reduction Scale	1/20, 1/50, 1/100 1/200, 1/250, 1/300	
Length Tolerance	±0.3 mm	±0.4 mm
Material	ABS resin	

	70802	70803
Reduction Scale	A format → A format A format → B format	1/50, 1/100, 1/200 1/50, 1/100, 1/200
Material	ABS resin	

A format means paper size such as A4, A3, A2, etc.  
B format means B5, B4, etc.

	74987
Reduction Scale	1/20, 1/25, 1/50 1/75, 1/100, 1/125
Length Tolerance	±0.4 mm
Material	ABS resin

	74988
Reduction Scale	1/10, 1/15, 1/20 1/25, 1/50, 1/75
Length Tolerance	±0.4 mm
Material	ABS resin

\*Length tolerance is the accuracy measured at 20°C.

## Triangle Rotation Scale



74980



74979



74940

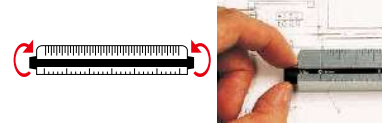


74941

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
74980	15 cm	Length: 185 Cross section: 22.5×22.5×12	61	4 960910 749801	6	
74979	15 cm/shaku	Length: 185 Cross section: 22.5×22.5×12	61	4 960910 749795	6	
74940	30 cm	Length: 335.5 Cross section: 22.5×22.5×12	115	4 960910 749405	6	
74941	30 cm/shaku	Length: 335.5 Cross section: 22.5×22.5×12	115	4 960910 749412	6	

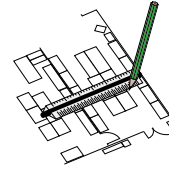
### Features

- Choose six sizes of reduction simply by positioning the unit and turning the knobs located on both sides. No need to turn the unit itself.



### Use

- For drawing and reading required material during a registration process such as an acreage survey map or a building ground plan



### Specifications

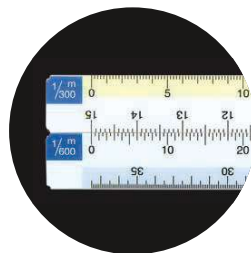
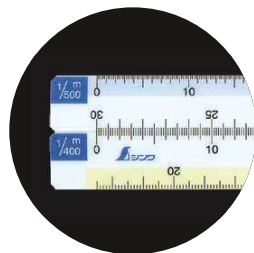
	74980	74979	74940	74941
Length Tolerance	15 cm: ±0.16 mm		30 cm: ±0.19 mm	
Reduction Scale	Upper row	Upper row	Upper row	Upper row
	1/50, 1/100	1/20, 1/50	1/100, 1/200	1/20, 1/50
	1/200, 1/250	1/100, 1/200	1/250, 1/500	1/100, 1/200
	1/500	1/250	1/250	1/250
	Lower row	Lower row	Lower row	Lower row
	1/300	1/30	1/300, 1/600	1/30
Material	Body: Aluminum		Knob: Rubber	

## Folding Scale 8-scales



75746

75745

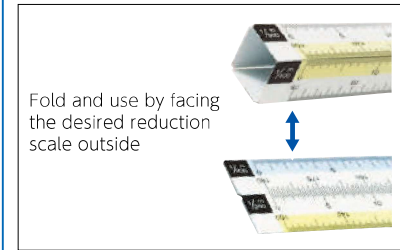


### Features

- Folds flat for carrying
- Laminate keeps from fading

### Use

- For drawing and reading required material during a registration process such as an acreage survey map or a building ground plan



### Specifications

	75745	75746
Length Tolerance	15 cm: ±0.10 mm	30 cm: ±0.15 mm
Reduction Scale	1/100, 1/150, 1/200, 1/250 1/300, 1/400, 1/500, 1/600	
Material	PET resin	

Item Code	Description	Body Size (mm)	Weight (g)	JAN Code	Packing Unit	Package
75745	15 cm	170×25×0.9	5	4 960910 757455	10	
75746	30 cm	320×32×0.9	11	4 960910 757462	10	