

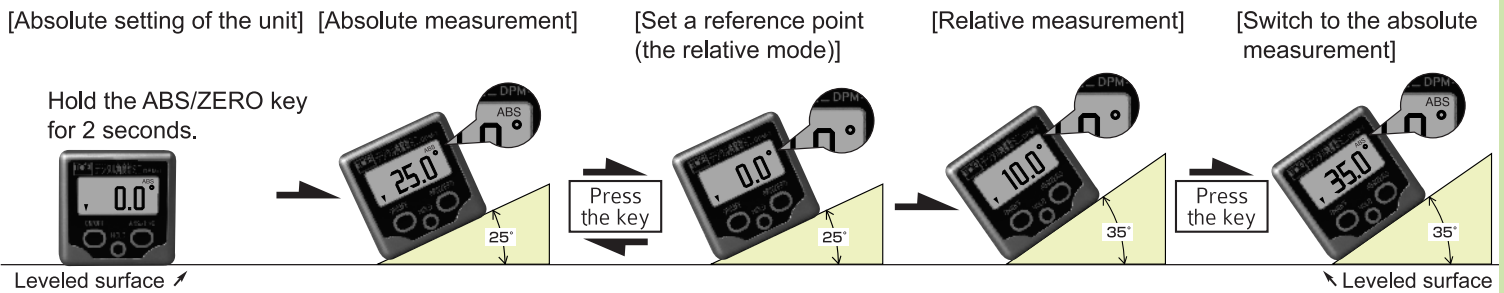
Digital Protractor DPM-1

Set your reference points at any angle.



Features

- Two measurement modes conversion
 - ABS mode (absolute measurements)
 - Relative mode (zero-out the reading at any angle as reference points)
- A hold function to lock the reading
- Magnetic base for hands free use on ferrous metal surfaces



Quality assurance verification

Zero-out the reading to set a reference point

Machine tool set up

Lathe and mill alignment

Sheet metal bending

Check bending angles

Leveling

Use it as a portable level

Specifications

Size / weight	32W x 50.8H x 50.8 L (mm) / 172g
Material	aluminum alloy
Measuring range	$\pm 180^\circ$
Resolution	0.1°
Accuracy	0°, 90°, 180° = $\pm 0.1^\circ$ ($\pm 1.75\text{mm/m}$) Angles not listed above = $\pm 0.2^\circ$ ($\pm 3.5\text{mm/m}$)
Temperature range	0 - 45°C
Power supply	3V CR2032 lithium button cell battery
Battery life	1000 hours
Auto shut-off	After 5 minutes
Protection level	IP54

TOEI 東栄工業株式会社
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Distributor

MINI DIGITAL PROTRACTOR **DPM-2**

The world's first compact digital protractor for the exclusive use of sheet metal bending

Displays real-time bend angle and relative measurement

■ Features

- Two measurement modes for precision bending
 - Bending mode for the bending operation and Reference mode as a regular angle meter
- Alternate reference point setting (0.0°) at any angle
- Reading wait time has reduced to 3 seconds (vs 10 sec.)
- Automatic digit inversion for overhead measurements
- Stores the last reading and mode after power-off
- Powerful magnetic base for attachment flexibility



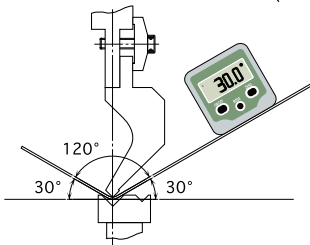
Bend angle mode 180° x 2 α (360°)

Unlike ordinal compact protractors widely used today, DPM-2 has a real-time bend angle display capability.

■ Common protractor

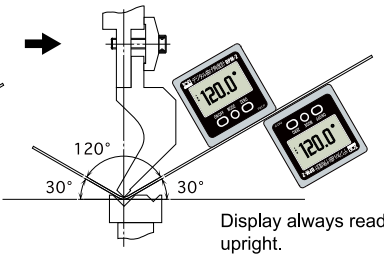
Requires simulated calculation for desired bevel angle

$$120^\circ = 180^\circ - (30^\circ + 30^\circ)$$



■ DPM-2

Real-time bend angle display

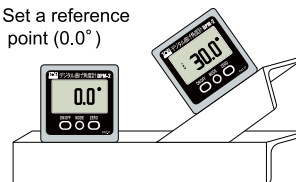


Relative measurement mode 90° x 4 (360°)

You can zero-set any position and use it as a normal protractor. Ideal for quality assurance inspection, metal fabrication, or machine tool alignment and such.

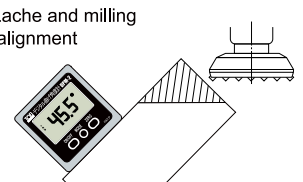
■ As a protractor

Set a reference point (0.0°)



■ Machine tool set up

Lathe and milling alignment



■ Specifications

Model name	DPM-2	
Resolution	0.1°	
Measuring range	Bend angle mode	180° x 2 α (360°)
	Reference mode	90° x 4 (360°)
Accuracy (repeatability)	Bend angle mode	0° ± 5' · 180° ± 5' = ± 0.2° (± 12' · ± 3.5mm/m) other angles: ± 0.4° (± 24' · ± 7mm/m)
	Reference mode	0° ± 5' · 90° ± 5' = ± 0.1° (± 6' · ± 1.75mm/m) other angles: ± 0.2° (± 12' · ± 3.5mm/m)
Dimension weight/material	57L x 57H x 29W(mm) 220g / aluminum alloy plating	
Temperature range	0°C-40°C	
Protection level	IP50	
Power supply	9V alkaline battery (1 pc., battery life: about 70 hours in continuous service)	
Auto power off	After 5 minutes	
Magnets	Neodymium disk magnets (10 φ : 2kg of pull force, 3 pcs.)	



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Distributor:



SQUARE PRECISION LEVEL (JIS CLASS A)

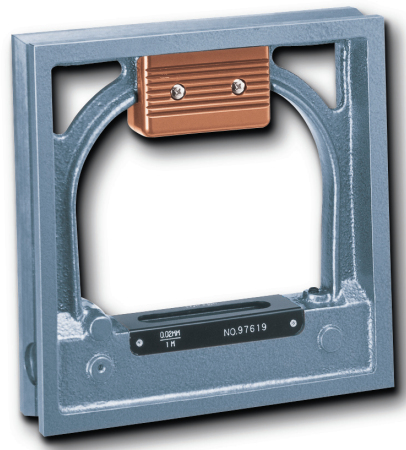


- USE**
 - Bubble tube indicates horizontal and measures small inclination
 - Precision measurement for machine inspection and leveling

- FEATURES**
 - JIS B7510 standard product
 - Special tool steel body (hardened) is lapped and polished
 - Sensitivity : 0.02mm/m
 - Accuracy of the main bubble
 - Full range of the main bubble : less than ± 0.5 graduation
 - Adjacent accuracy : less than 0.2 graduation
 - Perpendicularity of sides and bottom : less than 0.015mm/m
 - Parallelism of V groove and V groove surface : less than 0.5 graduation
 - Parallelism of top and bottom : less than 0.5 graduation
 - Flatness of bottom and sides : less than 0.003mm

Order No.	Model No.	Standard (mm)	Dimensions L × W × H (mm)	Weight
160009	SLA-150002	150	150 × 40 × 150	2.8kg
160010	SLA-200002	200	200 × 43 × 200	4.6kg
160011	SLA-250002	250	250 × 45 × 250	7.2kg
160012	SLA-300002	300	300 × 47 × 300	8.8kg

GENERAL PURPOSE SQUARE PRECISION LEVEL



- USE**
 - Bubble tube indicates horizontal and measures small inclinations
 - Ideal for machine assembly and general purpose use

- FEATURES**
 - Quality cast iron (FC250) with perfect seasoning and lapped to a fine finish to maintain precision
 - Sensitivity : 0.02mm/m

Order No.	Model No.	Standard (mm)	Dimensions L × W × H (mm)	Weight
160013	SLW-150002	150	150 × 40 × 150	2.8kg
160014	SLW-200002	200	200 × 43 × 200	4.6kg
160015	SLW-250002	250	250 × 45 × 250	7.2kg
160016	SLW-300002	300	300 × 47 × 300	8.8kg

DIGITAL PROTRACTOR DP-50



Digital angle measurement. High precision measurement & quick measurement time

- USE**
 - For angle of tilt measurement
- MATERIALS**
 - Body : Aluminum
- FEATURES**
 - Digital angle meter is useful tool for every site
 - Slit encoder ensures accuracy and stability
 - Zero setting not required
 - Zero setting function
 - Display hold function
 - Measuring face : V-Groove (2 sides)
 - Vertical sides are magnetic
 - Display unit : DEG



SPECIFICATIONS

Measuring Range	± 50°
Minimum Reading	0.1°
Accuracy	± 0.1° (0 ~ 50°)
Repeatability	± 0.1°
Operating Temperature	0 ~ 50°C
Display Units	DEG
Dimensions	L141 × W47 × H109mm (excluding protrusions)
M5 Mounting holes	Screw hole spacing- 80mm (distance from end to screw hole -11mm)
Power Source	"9V" type dry cell, 1 pc
Run time (continuous use)	Alkaline dry cell : Approx. 15 hrs ※ May vary depending upon measurement conditions
Accessories	Soft case, Manual, 9V battery

Order No.	Model No.	Weight
010091	DP-50	950g

DIGITAL PROTRACTOR DP-90



Digital angle measurement. High precision measurement & quick measurement time

- USE**
 - Angle of tilt measurement
- MATERIALS**
 - Body: Aluminum
- FEATURES**
 - Wide range of measurement (90°)
 - Automatically reverses display when turned upside down
 - Display options : DEG, mm/m, % slope
 - Notification tones for 0°, 90° and for 0%, 0mm/m
 - Display hold function
 - Measuring surface : V-Groove, with magnet
 - Auto power off function (after 6 min)



SPECIFICATIONS

Measuring Range	± 90°
Minimum Reading	Degree display : 0.05°
	Percent display : 0.1%
	Gradient : 1mm/m
Accuracy	0.0° ~ 90.0° = ± 0.2°
Operating Temperature	0 ~ 50°C
Display Setting Time	Approx. 10 sec
Power Source	"9V" type dry cell, 1 pc
Dimensions	L173 × W47 × H68mm (excluding protrusions)
Accessories	Soft case, Manual, 9V dry cell

Order No.	Model No.	Weight
010092	DP-90	550g



DIGITAL ANGLE GAUGE DP-10XY

New product! This two-axis digital inclinometer takes measurements in X and Y direction at same time With 0 cal., 1/2 cal. features, can also be used as a level



Output from sensors can also be displayed or recorded on PC with dedicated software.

USE • Surface plate and machine tool angle of inclination measurement

MATERIAL

- Case: Aluminum
- Base: Aluminum alloy

FEATURES

- Simultaneously measures angle of inclination in X and Y directions making leveling tasks easier
- Display is switchable to show only X, only Y, or XY measurements
- 0-cal. and 1/2 cal. switches allow calibration at the touch of a button.
- In sensor mode, the measurement range is $\pm 9.998^\circ$ with minimum reading of 0.002° (0-cal. and 1/2 cal. can not be used in this mode)
- Built in output for display of sensor reading on PC
- Back-light display
- Output from sensors can also be displayed or recorded on PC with dedicated software.

SPECIFICATIONS

Measuring range	$\pm 9.99^\circ$
Minimum reading	0.01°
Operating temperature	$0 \sim 40^\circ\text{C}$
Accuracy	$\pm 0.01^\circ$ (for measuring range less than $\pm 2^\circ$) $\pm 0.05^\circ$ (for measuring range greater than $\pm 2^\circ$)
Repeatability	$\pm 0.01^\circ$
XY orthogonal accuracy	1%
Response time (measurement period)	approx. 2.5s
Output signal	Conforms to RS-232C
Power	2x AA cells AC Adapter (3V)
Run time (continuous use)	Alkaline cells approx. 10 hrs. ※ may vary depending on measurement conditions
Dimensions	L88 × W85 × H73mm

Order No.	Model No.	Weight
NEW 010093	DP-10XY	560g



New Products! Wireless 2-axis digital angle gauge with remote display set. Capable of simultaneous X and Y measurements.

Model	Sensor:DP-10S Display:DP-10D
Measuring range	± 9.99°
Minimum reading	0.01°
Operating temperature	0 ~ 40°C
Accuracy	± 0.01° (for measuring range less than ± 2°) ± 0.05° (for measuring range greater than ± 2°)
Wireless	Bluetooth Class 1
Communication range	30 ~ 50m
Repeatability	± 0.01°
XY orthogonal accuracy	1%
response time (measurement period)	approx. 2.5s
Output signal	Conforms to RS-232C (DP-10D)
Power	2x AA cells each / AC Adapter (3V)
Run time (continuous use)	DP-10S: approx. 10 hrs. (communicating) approx 4 hrs. (waiting to communicate)
Alkaline cells	DP-10D : About 10 hrs.
Dimensions	DP-10S : L85 × W85 × H73mm DP-10D : L145 × W76 × H30mm
Weight	DP-10S : 540g
(Including battery)	DP-10D : 230g



DP-10S



DP-10D

USE • Surface plate and machine tool angle of inclination measurement

MATERIAL

- DP-10S...Case:Aluminum / Base: Aluminum alloy
- DP-10D...Case: ABS

FEATURES

- Simultaneously measures angle of inclination in X and Y directions making leveling tasks easier
- Display is switchable to show only X, only Y, or XY measurements
- 0-cal. and 1/2 cal. switches allow calibration at the touch of a button.
- In sensor mode, the measurement range is ± 9.998° with minimum reading of 0.002° (0-cal. and 1/2 cal. can not be used in this mode)0-cal. and 1/2 cal. switches allow calibration at the touch of a button.
- In sensor mode, the measurement range is ± 9.998° with minimum reading of 0.002° (0-cal. and 1/2 cal. can not be used in this mode)
- Built in output for display of sensor reading on PC
- Output from sensors can also be displayed or recorded on PC with dedicated software.

Order No.	Model No.
010094	DP-10S • DP-10D SET

DIGITAL LEVEL SENSOR

New Product! Can be used as built in two-axis sensor for OEM equipment.

USE • Sensors for measurement and control of angle of inclination in machine tools, construction machinery, structures, etc.

MATERIAL

- Case : Aluminum

FEATURES

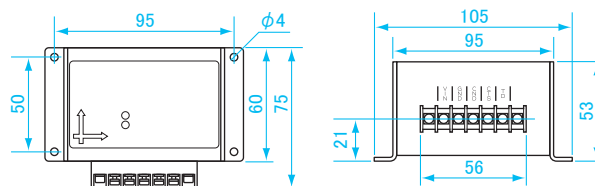
- Simultaneously measures angle of inclination in X and Y directions
- When power applied, angle of inclination is output via RS-232C signal. (Power and output connection via terminal block)
- Output from sensors can also be displayed or recorded on PC with dedicated software.

Measuring Range	± 9.998°
Minimum reading	0.002°
Operating temperature	0 ~ 40°C
Accuracy	± 0.01° (for measuring range less than ± 2°) ± 0.05° (for measuring range greater than ± 2°)
Repeatability	± 0.01°
XY orthogonal accuracy	1%
response time (measurement period)	approx. 2.5s
Output signal	Conforms to RS-232C
Power	DC9 to 15V (approx 70mA)
Dimensions	L105 × W75 × H53mm



DIMENSIONS

Units : mm



Order No.	Model No.	Weight
010096	DP-10M	270g



BEVEL BOX BB-180

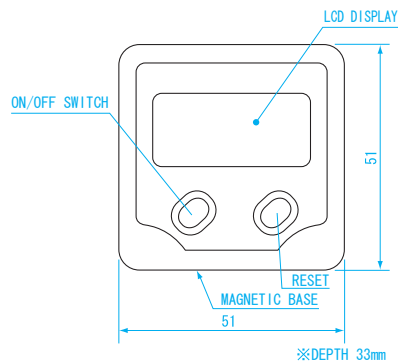


Compact design digital angle meter



DIMENSIONS

Units : mm



USE • For all processes that require precise angle measurement, such as assembly, molding, machining and fixtures.

MATERIALS • Aluminum frame, Plastic face/back, magnet on base

- FEATURES**
- Zero-setting at desired position
 - Auto power off function (after 5 min.)
 - One CR2032 (Lithium) battery included for testing

Order No.	Model No.	Measuring Range	Resolution	Operating Temperature	Accuracy*	Repeatability	Weight
010101	BB-180	± 180.0°	0.1°	5 ~ 45°C	± 0.2°	0.1°	120g

* Quantization Error (± 1 digit) not included

BEVEL BOX BB-180A



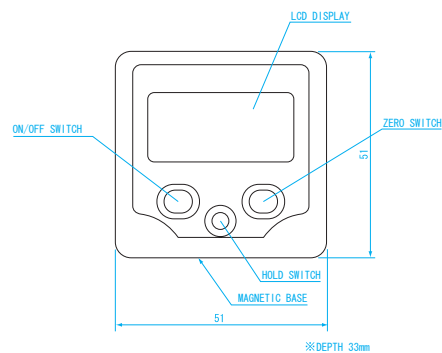
Compact design digital angle meter

Absolute measurement mode stores true horizontal



DIMENSIONS

Units : mm



USE • For all processes that require precise angle measurement, such as assembly, molding, machining and fixtures.

MATERIALS • Body : Aluminum (with magnet on base)

- FEATURES**
- Zero setting at desired position
 - Absolute measurement mode stores true horizontal
 - "Hold" button to fix reading on display
 - Auto power off function (after 5 min.)
 - One CR2032 (Lithium) battery included for testing



Order No.	Model No.	Measuring Range	Resolution	Operating Temperature	Accuracy*	Repeatability	Weight
010102	BB-180A	± 180.0°	0.1°	5 ~ 45°C	± 0.2°	0.1°	170g

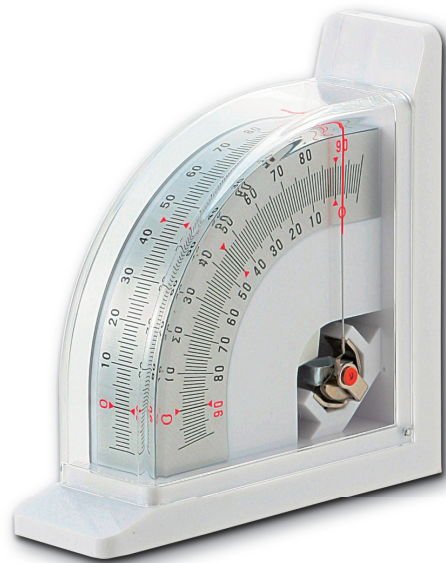
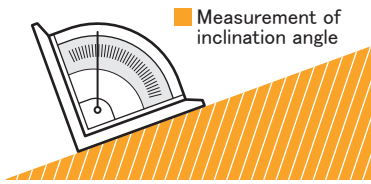
* Quantization Error (± 1 digit) not included

LEVEL METER LM-90



ANGLE

Analog type goniometer with magnetic base



USE • Measurement of inclination angle

MATERIALS

- Plastic

FEATURES

- Analog dial easier to read than bubble tube type meter
- With magnetic base to enables measuring horizontal and vertical angle
- Light weight, easy to use

SPECIFICATIONS

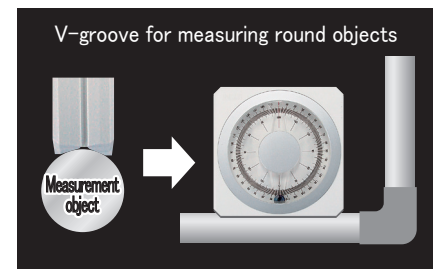
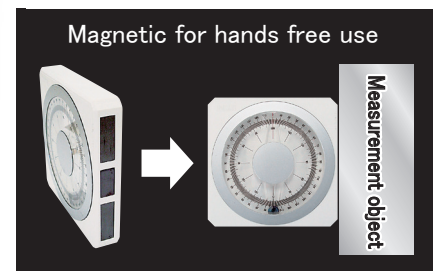
- Measuring range : 0 ~ 90 °
- Graduation : 1 °
- Accuracy : ± 0.5 °

Order No.	Model No.	Dimensions (H) × (W) × (T) (mm)	Weight
011010	LM-90	95 × 95 × 30	120g

LEVEL MATE LM-360



Analog type goniometer With magnet for vertical surfaces



USE

- Angle of tilt measurement
- Mechanical assembly, installation
- Setting angles for machine work
- Miscellaneous plumbing work
- Construction and related work

MATERIALS

- Plastic

FEATURES

- V groove on bottom, magnet for vertical surface

SPECIFICATIONS

- Measurement range : 0 ~ 360 °
- Graduation : 1 °
- Reading accuracy : ± 0.5 °

Order No.	Model No.	Dimensions (H) × (W) × (T) (mm)	Weight
011030	LM-360	110 × 110 × 20	140g

ANGLE

LEVELNIC

PRECISION LEVEL

ANGLE LEVEL

LEVEL

PROTRACTOR

DIAL SLANT RULE

Analog dial angle meter



DSR-ST

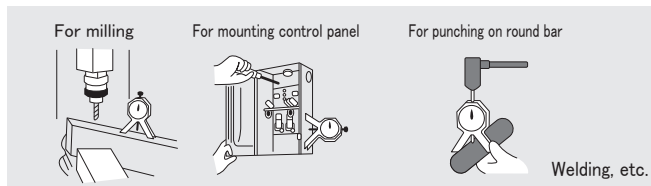


DSR-MG
(with magnet)

- USE** • Measurement of inclination angle
- MATERIALS** • Plastic
- FEATURES** • Analog dial easier to read than bubble tube type meter
• Light weight and easy to use
- SPECIFICATIONS** • Measuring Range : 0 ~ 180 °
• Graduation : 1 °
• Accuracy : ± 0.5 °

Order No.	Model No.	Dimensions (L) × (H) × (W) (mm)	Weight
011000	DSR-ST	182 × 92 × 20	80g
011001	DSR-MG	182 × 92 × 20	90g

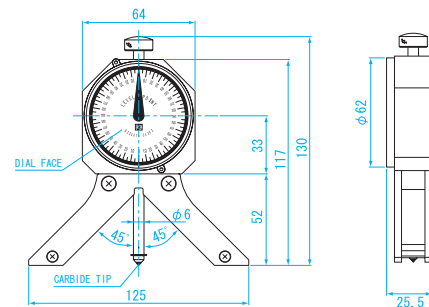
LEVEL POINT GAUGE



- USE** • Measure angle of round bar, or center punch at exact angle
- MATERIALS** • Body : Aluminum • Leg : Steel
- FEATURES** • One touch direct angle reading
• You can quickly and accurately measure any angle from horizontal to vertical
• Punch end is carbide tipped
• Magnetic feet
- SPECIFICATIONS** • Measuring Range : 0 ~ 360 ° • Accuracy : within 1 °
• Graduation : 1 ° • Applicable diameter for V base : φ20 ~ 100mm

DIMENSIONS

Units : mm



Order No.	Model No.	Dimensions (H) × (W) × (T) (mm)	Weight
011022	LP-360	130 × 125 × 25	400g



Horizontal, vertical, and 45° measurements in one level
Magnetic measuring surface (ALM series)



ALM-600

USE • Horizontal, vertical, and 45° measurements

MATERIAL

- Aluminum

FEATURES

- V-grooved measuring surface for convenient measurement on round objects
- Can measure 1/100 and 2/100 gradient.
- Magnifying lens on horizontal bubble tube for easy reading
- ALM type with magnet
- With scale on both sides

SPECIFICATIONS

- Horizontal bubble tube Sensitivity: 0.35mm/m=0.0201°
 Accuracy: ± 1.00mm/m= ± 0.0573°
- Vertical bubble tube Sensitivity: 0.50mm/m=0.0286°
 Accuracy: ± 1.50mm/m= ± 0.0859°

Order No.	Model No.	Type	Bubble tube type	Length (mm)	Height (mm)	Thickness (mm)	Weight
111200	ALM-150	with magnet	Horizontal	150	56	25	164g
111201	ALM-230	with magnet	Horizontal vertical	230	56	25	220g
111202	ALM-300	with magnet	Horizontal Vertical 45°	300	56	25	340g
111203	ALM-380	with magnet	Horizontal Vertical 45°	380	56	25	380g
111204	ALM-450	with magnet	Horizontal Vertical 45°	450	56	25	410g
111205	ALM-600	with magnet	Horizontal Vertical 45°	600	56	25	500g
111206	ALM-750	with magnet	Horizontal Vertical 45°	750	56	25	630g
111207	ALM-900	with magnet	Horizontal Vertical 45°	900	56	25	770g
111208	ALM-1200	with magnet	Horizontal Vertical 45°	1200	56	25	930g
111209	ALM-1500	with magnet	Horizontal Vertical 45°	1500	56	25	1200g
111210	ALM-1800	with magnet	Horizontal Vertical 45°	1800	56	25	1340g
111211	ALS-150	—	Horizontal	150	56	25	100g
111212	ALS-300	—	Horizontal Vertical 45°	300	56	25	194g
111213	ALS-380	—	Horizontal Vertical 45°	380	56	25	234g
111214	ALS-450	—	Horizontal Vertical 45°	450	56	25	270g
111215	ALS-600	—	Horizontal Vertical 45°	600	56	25	345g
111216	ALS-900	—	Horizontal Vertical 45°	900	56	25	492g
111217	ALS-1200	—	Horizontal Vertical 45°	1200	56	25	622g

ANGLE

LEVELNIC

PRECISION LEVEL

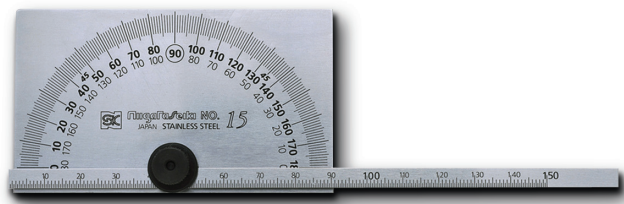
ANGLE LEVEL

LEVEL

PROTRACTOR



PROTRACTOR No.15



MATERIALS • Stainless steel (SUS420J2)

FEATURES

- Graduation on blade
- With rectangle head
- The blade is firmly set on the center of the protractor by a knurled nut and adjustable to any desired angle for use as a protractor
- Also can measure depth

SPECIFICATIONS

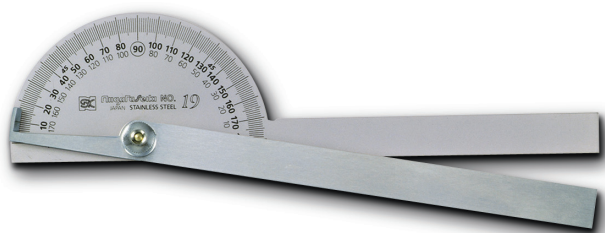
- Protractor size: (H)52mm × (W)90mm × (T)1.2mm
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : ± 20'
- Blade size : (L)177mm × (T)1.2mm
150mm scale (Graduation: 0.5mm)

Order No.	Model No.	Weight
008000	PRT-15	80g

PROTRACTOR No.19



No.19 with two blades



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

- With 2 blades
- Can measure acute angle down to 10°
- Satin finish

SPECIFICATIONS

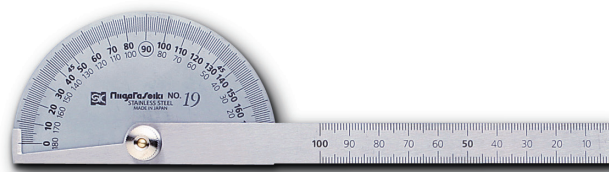
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : ± 20'
- Size: φ 90mm × (T)1.2mm
- Blade size: (L)204 × (T)1.2mm

Order No.	Model No.	Weight
008002	PRT-19SW	110g

PROTRACTOR No.19



No.19 Graduation on blade



For angle measurement

MATERIALS

- Stainless steel (SUS420J2)

FEATURES

- Graduation on blade
- Polished finish



SPECIFICATIONS

- Protractor size : φ 90mm × (T)1.2mm
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : ± 20'
- Blade size : (L)204mm × (T)1.2mm
100mm scale (Graduation: 1mm)

Order No.	Model No.	Weight
008001	PRT-19	81g

PROTRACTOR No.19



No. 19 Satin finish



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

- Graduation on blade
- Satin finish

SPECIFICATIONS

- Graduation: 1°
- Maximum angle : 180°
- Accuracy : ± 20'
- Size: φ 90mm × (T)1.2mm
- Blade size: (L)204mm × (T)1.2mm
100mm scale (Graduation: 1mm)

Order No.	Model No.	Weight
008003	PRT-19S	81g

PROTRACTOR No.19A



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

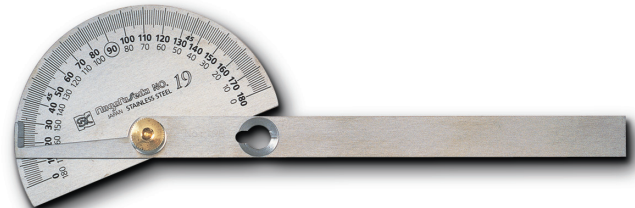
- Cutout for measuring small angle
- Polished finish

SPECIFICATIONS

- Protractor size : ϕ 90mm \times (T)1.2mm
- Graduation: 1°
- Maximum angle : 90°
- Accuracy \pm 20'
- Blade : (L)204mm \times (T)1.2mm

Order No.	Model No.	Weight
008004	PRT-19A	90g

PROTRACTOR No.19B



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

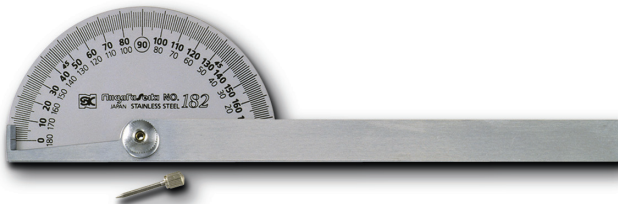
- Protractor blade contains stop for setting a baseline angle and measuring against that set point
- Polished finish

SPECIFICATIONS

- Protractor size : ϕ 90mm \times (T)1.2mm
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : \pm 20'
- Blade : (L)204mm \times (T)1.2mm

Order No.	Model No.	Weight
008005	PRT-19B	90g

PROTRACTOR No.182



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

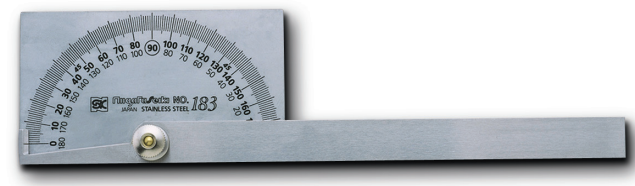
- Center lock nut has a built in needle for marking center point
- Satin finish

SPECIFICATIONS

- Protractor size : ϕ 90mm \times (T)1.2mm
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : \pm 20'
- Blade : (L)204mm \times (T)1.2mm

Order No.	Model No.	Weight
008182	PRT-182S	155g

PROTRACTOR No.183



MATERIALS

- Stainless steel (SUS420J2)

FEATURES

- With rectangle head
- Satin finish

SPECIFICATIONS

- Protractor size:(H)52mm \times (W)90mm \times (T)1.2mm
- Graduation : 1°
- Maximum angle : 180°
- Accuracy : \pm 20'
- Blade : (L)204mm \times (T)1.2mm

Order No.	Model No.	Weight
008183	PRT-183S	90g

