

ANGLE, STRAIGHTNESS, FLATNESS MEASUREMENT

15



Angle Meters
Page 376



Protractors
Page 376-381



Granite Squares
Page 381-382



Cylinder Squares
Page 382



Perpendicularity Testers
Page 383



Squares
Page 383-389



Straight Edges
Page 389



Straight Edges
Page 390-391



Optical Flats
Page 391



Flatness Measurement Stands
Page 392

**DIGITAL ANGLE METER
CODE 2177-121**



- Clockwise and counter-clockwise operation
- 9 target angle values can be set, with audible and visible alarm:
 - Green LED light on and buzzer sounds when angle value is 80%~99.5% of target angle
 - Both green and red LED light on and buzzer sounds when angle value is over 99.5% of target angle
- Memory of 250 results, can upload to the computer
- Back with magnet
- Power off in 2 minutes automatically

SPECIFICATION

Display range	0~999°
Setting range	1~360° (increment 1°)
Resolution	0.1°
Accuracy	±2° for 90° rotation @30°/sec
Power supply	2×1.5V AAA batteries
Dimension	58×58×41mm
Weight	70g

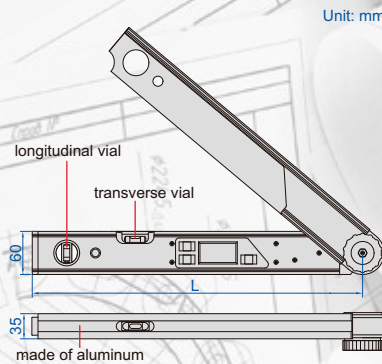


WATERPROOF DIGITAL PROTRACTOR (HEAVY DUTY)

**AUTOMATIC
BACKLIGHT**

**ABSOLUTE
LEVEL**

**IP54
WATERPROOF**

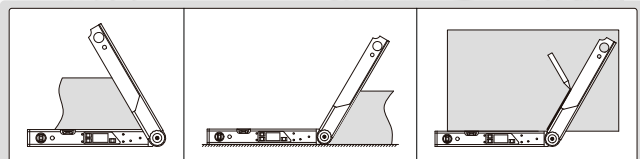


2174-225

15

- Suitable for setting horizontal and vertical mitre angles of cutting machines
- Buttons: ON/OFF, HOLD/SUP, SPR/CNR/MTR/BVL
- IP54 dust/waterproof
- With transverse and longitudinal vials
- 2xAAA batteries
- Absolute level, zero setting is not needed when batteries are replaced
- Backlight turns off in one minute after reading is stable, automatic power off in 5 minutes

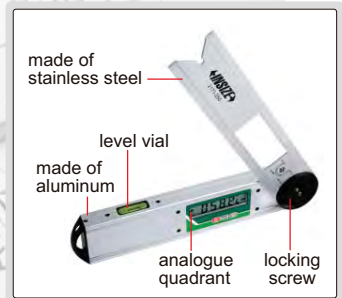
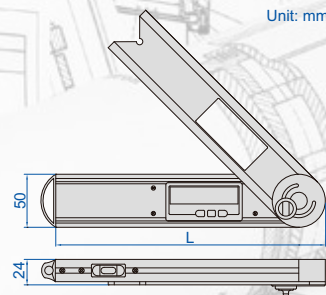
Code	Size (L)	Range	Resolution	Accuracy
2174-225	460mm	0-225°	0.05°	±0.10°



DIGITAL PROTRACTOR

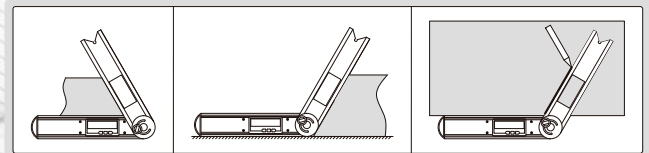


2171-250



- Buttons: on/off, hold (keep the reading), zero, ABS (absolute and incremental measurement)
- Fix the locking screw at 4 positions for different measuring ranges: 0°~225°, -225°~0°, -45°~180°, -180°~45°
- Remove the locking screw for 360° range
- With level vial
- Battery CR2032, automatic power off

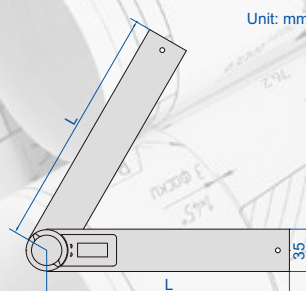
Code	Size (L)	Range	Resolution	Accuracy
2171-250	250mm	0-360°	0.05°	±0.15°



DIGITAL PROTRACTORS

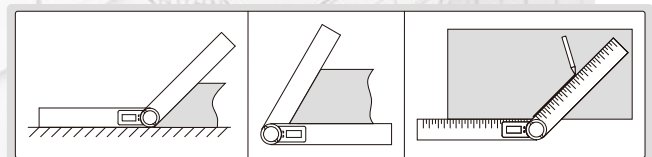


2176-200



- Buttons: on/off, zero
- With clamping screw to lock the blades
- Graduation of blade: 1mm and 1/32"
- Made of stainless steel
- CR2032 battery
- Automatic power off

Code	Size (L)	Range	Resolution	Accuracy
2176-200	200mm	0-360°	0.1°	±0.3°
2176-300	300mm	0-360°	0.1°	±0.3°



REFER TO PAGE
498-500 FOR DETAILS

DIGITAL LEVELS AND SLOPE METERS



2179-360



2175-360



2199-1



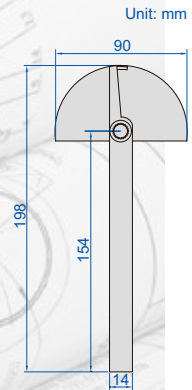
2170-1

PROTRACTOR (ECONOMIC TYPE)

- Graduation: 1°
- Made of stainless steel
- With clamping screw

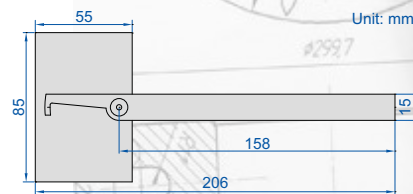


4780-85A



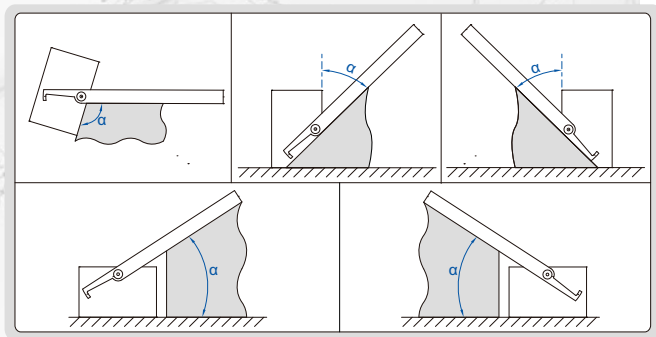
Code	Size	Range	Accuracy
4780-85A	90x154mm	0-180°	±0.5°

PROTRACTOR



4781-85A

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw



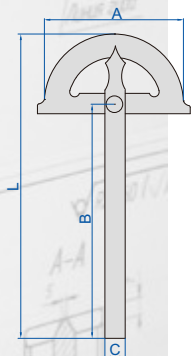
Code	Size	Range	Graduation	Accuracy
4781-85A	85x158mm	0-180°	1°	±0.3°

PROTRACTORS

- Graduation: 1°
- Made of stainless steel (4799-1300 is made of carbon steel)
- Satin chrome plated scale
- With clamping screw



4799-180



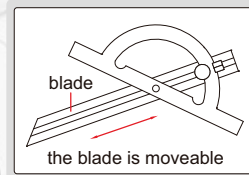
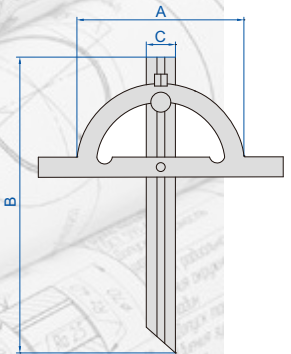
Code	Size (AxB)	Range	Accuracy	L	C
4799-180	80x120mm	0-180°	±0.3°	168mm	11mm
4799-1120	120x150mm	0-180°	±0.3°	220mm	14mm
4799-1150	150x200mm	0-180°	±0.3°	285mm	16mm
4799-1200	200x300mm	0-180°	±0.3°	413mm	20mm
4799-1300	300x500mm	0-180°	±0.3°	675mm	30mm

PROTRACTORS

- Graduation: 1°
- Made of carbon steel
- Satin chrome plated
- With clamping screw
- The blade is moveable

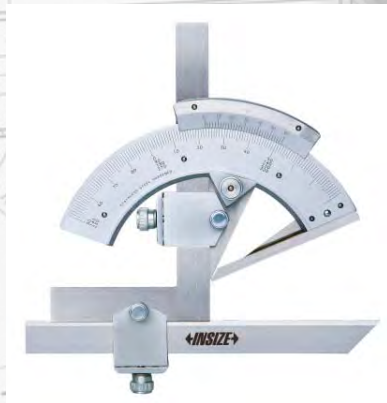


4797-100

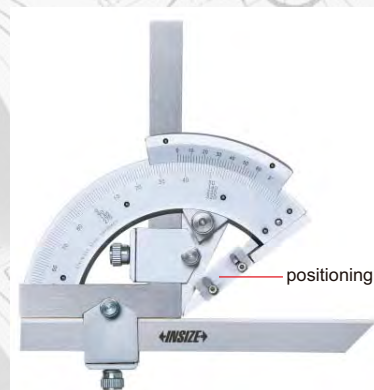


Code	Size (AxB)	Range	Accuracy	C
4797-100	100x150mm	10-170°	±0.3°	18mm
4797-150	150x300mm	10-170°	±0.3°	22mm
4797-200	200x400mm	10-170°	±0.3°	24mm
4797-250	250x500mm	10-170°	±0.3°	28mm
4797-300	300x600mm	10-170°	±0.3°	32mm

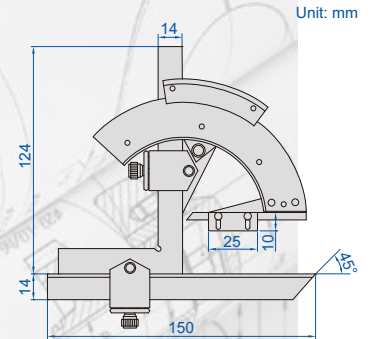
PROTRACTORS



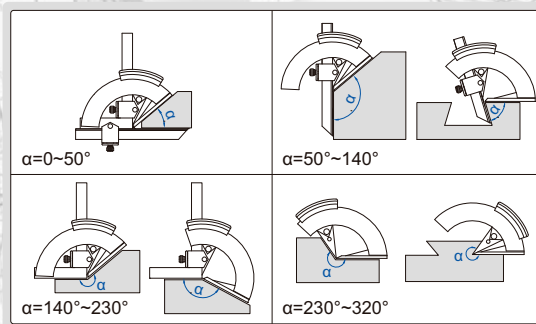
2374-320



2374-320D



Unit: mm



application of 2374-320D



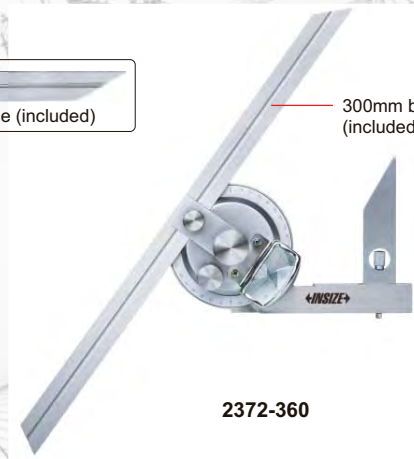
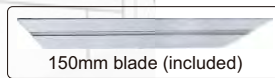
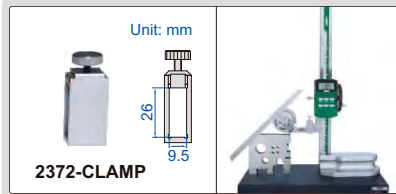
the positioning block can be moved down for positioning, and moved up when not in use

- Made of stainless steel
- Satin chrome plated scale

Code	Range	Graduation	Accuracy	Remark
2374-320	0-320°	2'	±2'	without positioning block
2374-320D	0-320°	2'	±2'	with positioning block

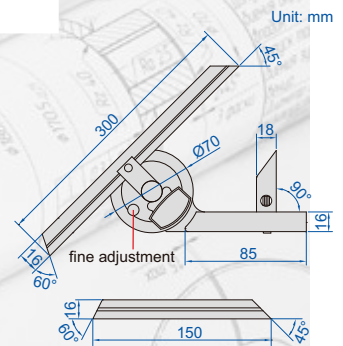
UNIVERSAL PROTRACTOR

clamp for height gages (optional)



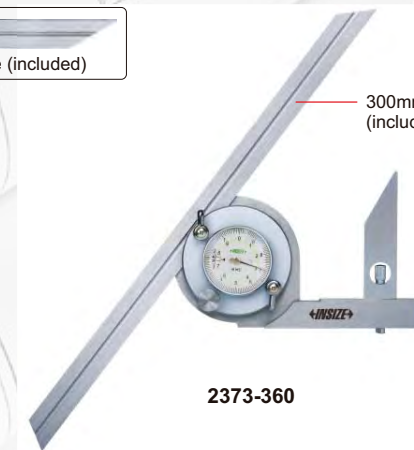
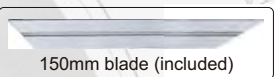
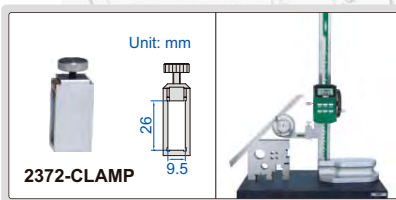
- Parallax-free reading
- Made of stainless steel
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gages **1156**, **1150-300**, **1351**, **1250** and **1151**

Code	Range	Graduation	Accuracy
2372-360	0-360°	5'	±5'



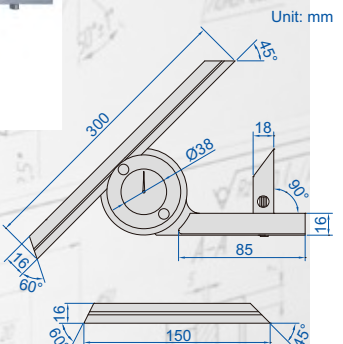
DIAL PROTRACTOR

clamp for height gages (optional)



- Made of stainless steel
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gages **1156**, **1150-300**, **1351**, **1250** and **1151**

Code	Range	Graduation	Accuracy
2373-360	0-360°	5'	±5'



DIGITAL PROTRACTOR

DATA OUTPUT

ABSOLUTE ZERO

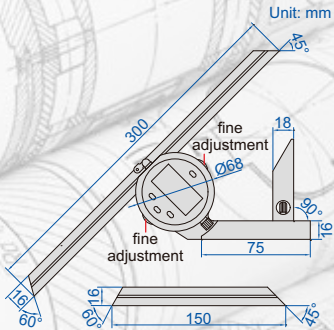
POPULAR MODEL

150mm blade (included)

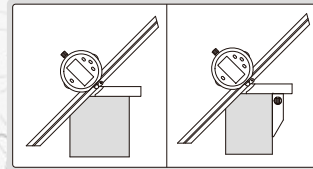
300mm blade (included)



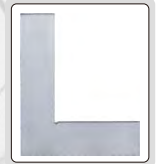
2771-360



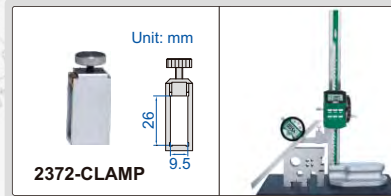
- Absolute zero, zero setting is not needed when batteries are replaced
- Button function: choose 0-90°, 0-180° or 0-360° display, change resolution, display flips over, data hold, zero, on/off supplementary angle measurement
- Battery CR2032, automatic power off, data output
- Made of stainless steel
- Optional square for zero setting
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gages **1156, 1150-300, 1351, 1250** and **1151**, data output cable (code **7315-2771** need receiver page 6, **7302-50M** page 13)



square (optional)



clamp for height gages (optional)



2372-CLAMP

Square (for zero setting, optional)

Code
2771-S90

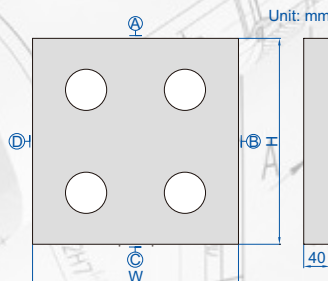
Code	Range	Resolution	Accuracy
2771-360	0-360°	1/0.01°	±5'

GRANITE SQUARE

CUSTOM-MADE SUPPLY SPECIAL SIZES ACCORDING TO CUSTOMER'S REQUEST



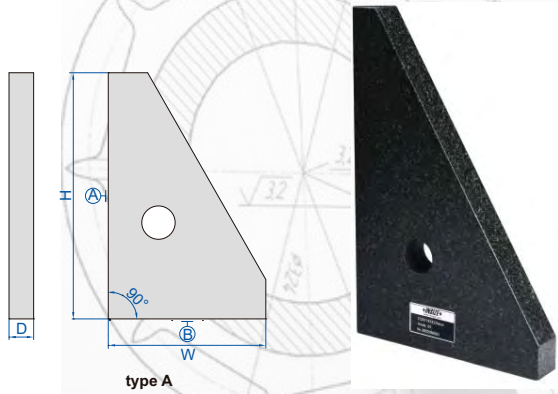
4144-315



Code	Size (HxW)	Flatness of A, B, C and D	Squareness and parallelism between A, B, C and D
4144-315	315x315mm	1.1µm	2.6µm

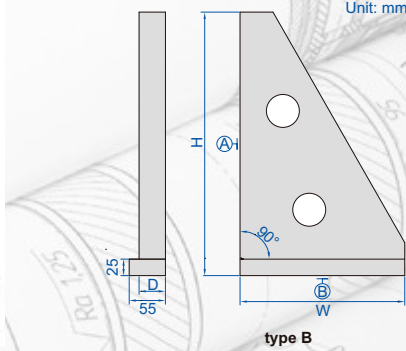
GRANITE SQUARES

CUSTOM-MADE
SUPPLY SPECIAL SIZES ACCORDING
TO CUSTOMER'S REQUEST



type A

4141-250



type B

4141-400B

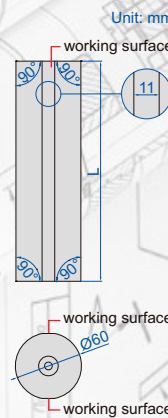
Code	Size (HxW)	Type	Flatness of A	Flatness of B	Squareness of A to B	D
4141-250	250x160mm	A	1µm	1µm	2µm	25mm
4141-400	400x250mm	A	1.5µm	1µm	3µm	40mm
4141-630	630x400mm	A	2µm	1.5µm	4µm	63mm
4141-400B	400x250mm	B	1.5µm	1µm	3µm	40mm

CYLINDER SQUARES

**INSPECTION
CERTIFICATE**



4710-200



inspect 90° internal and external angles

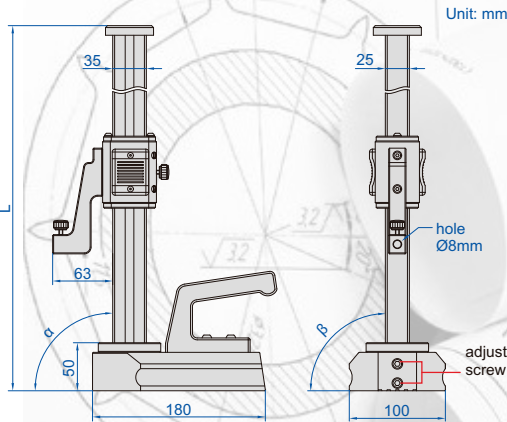


- Made of special alloy steel, hardness HRC58~60
- The handle can be removed

Code	Length (L)	Squareness
4710-200*	200mm	1µm
4710-300*	300mm	2µm

* Supplied with manufacturer inspection certificate

PERPENDICULARITY TESTERS



dial test indicator is optional



4770-300



- Optional accessory: dial test indicators (graduation: 1µm or 2µm)

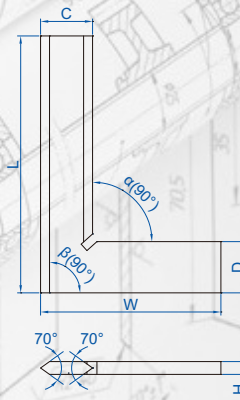
Code	Range (H)	Perpendicularity (α)	Side perpendicularity (β)	L
4770-300	0-300mm	3µm	10µm	460mm
4770-600	0-600mm	5µm	20µm	760mm

90° BEVELED EDGE SQUARES

- Satin chrome plating
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel



4790-0100



DIN875 grade 00 (mm)

Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4790-050	50x40mm	2.4µm	2.5µm	13	13	4
4790-075	75x50mm	2.6µm	2.8µm	15	15	4
4790-0100	100x70mm	2.8µm	3.0µm	20	20	5
4790-0150	150x100mm	3.2µm	3.5µm	30	30	6
4790-0200	200x130mm	3.7µm	4.0µm	34	34	7
4790-0250	250x165mm	4.2µm	4.5µm	35	35	7
4790-0300	300x200mm	4.6µm	5.0µm	40	40	8

DIN875 grade 0 (mm)

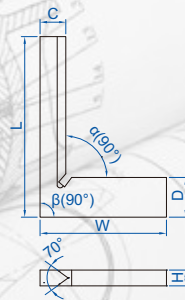
Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4790-500	50x40mm	6µm	6µm	13	13	4
4790-750	75x50mm	6µm	7µm	15	15	4
4790-1000	100x70mm	7µm	7µm	20	20	5
4790-1500	150x100mm	7µm	8µm	30	30	6
4790-2000	200x130mm	8µm	9µm	34	34	7
4790-2500	250x165mm	9µm	10µm	35	35	7
4790-3000	300x200mm	10µm	11µm	40	40	8

90° TOOL MAKER SQUARES

- DIN875 grade 00
- Beveled edge for inside measurement
- Made of hardened stainless steel



4794-040



(mm)

Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4794-025	25x20mm	2.2 μ m	2.3 μ m	4	6.5	3.5
4794-040	40x28mm	2.3 μ m	2.4 μ m	5.5	8.5	3.5

90° FLAT EDGE SQUARES

- Made of hardened stainless steel

DIN875 grade 0

(mm)

Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4791-50	50x40mm	6 μ m	6 μ m	15	15	4
4791-75	75x50mm	6 μ m	7 μ m	15	15	4
4791-100	100x70mm	7 μ m	7 μ m	20	20	5
4791-150	150x100mm	7 μ m	8 μ m	30	30	6
4791-200	200x130mm	8 μ m	9 μ m	30	30	7
4791-250	250x165mm	9 μ m	10 μ m	35	35	7
4791-300	300x200mm	10 μ m	11 μ m	40	40	8

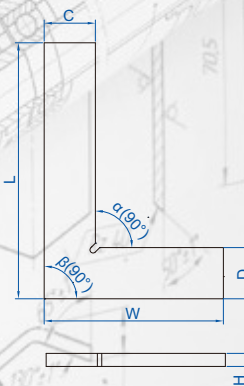


4791-100

DIN875 grade 1

(mm)

Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4791-501	50x40mm	12 μ m	13 μ m	15	15	4
4791-751	75x50mm	13 μ m	14 μ m	15	15	4
4791-1001	100x70mm	14 μ m	15 μ m	20	20	5
4791-1501	150x100mm	16 μ m	18 μ m	30	30	6
4791-2001	200x130mm	19 μ m	20 μ m	30	30	7
4791-2501	250x165mm	21 μ m	23 μ m	35	35	7
4791-3001	300x200mm	23 μ m	25 μ m	40	40	8



DIN875 grade 2

(mm)

Code	Size (LxW)	Squareness		C	D	H
		Inside (α)	Outside (β)			
4791-502	50x40mm	24 μ m	25 μ m	15	15	4
4791-752	75x50mm	26 μ m	28 μ m	15	15	4
4791-1002	100x70mm	28 μ m	30 μ m	20	20	5
4791-1502	150x100mm	33 μ m	35 μ m	30	30	6
4791-2002	200x130mm	38 μ m	40 μ m	30	30	7
4791-2502	250x165mm	43 μ m	45 μ m	35	35	7
4791-3002	300x200mm	47 μ m	50 μ m	40	40	8

MACHINIST SQUARES (ECONOMIC TYPE)

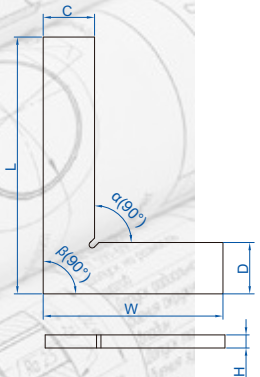
ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

Code	Size (LxW)	Squareness		C	D	H	(mm)	
		Inside (α)	Outside (β)					
4796-50	50x30mm	24 μ m	25 μ m	12	12	3		
4796-75	75x50mm	26 μ m	28 μ m	16	16	3		
4796-100	100x70mm	28 μ m	30 μ m	19	19	5		
4796-125	125x80mm	30 μ m	33 μ m	22	22	5		
4796-150	150x100mm	33 μ m	35 μ m	25	25	6		
4796-200	200x130mm	38 μ m	40 μ m	25	25	6		
4796-250	250x165mm	43 μ m	45 μ m	25	25	6		
4796-300	300x200mm	47 μ m	50 μ m	30	30	6		
4796-350	350x200mm	51 μ m	55 μ m	38	38	6		
4796-400	400x200mm	56 μ m	60 μ m	38	38	9		
4796-450	450x250mm	58 μ m	65 μ m	38	38	9		
4796-500	500x300mm	69 μ m	70 μ m	38	38	9		



4796-150



90° FLAT EDGE SQUARES WITH WIDE BASE

- Made of hardened stainless steel

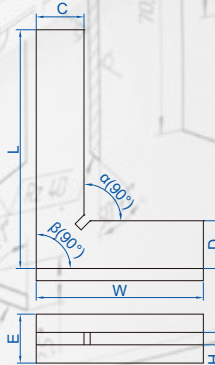
Code	Size (LxW)	Squareness		C	D	H	E	(mm)	
		Inside (α)	Outside (β)						
4793-50	50x40mm	6 μ m	6 μ m	15	15	4	13		
4793-75	75x50mm	6 μ m	7 μ m	15	15	4	15		
4793-100	100x70mm	7 μ m	7 μ m	20	20	5	20		
4793-150	150x100mm	7 μ m	8 μ m	30	30	6	30		
4793-200	200x130mm	8 μ m	9 μ m	30	30	7	30		
4793-250	250x165mm	9 μ m	10 μ m	35	35	7	35		
4793-300	300x200mm	10 μ m	11 μ m	40	40	8	40		



4793-100

Code	Size (LxW)	Squareness		C	D	H	E	(mm)	
		Inside (α)	Outside (β)						
4793-501	50x40mm	12 μ m	13 μ m	15	15	4	13		
4793-751	75x50mm	13 μ m	14 μ m	15	15	4	15		
4793-1001	100x70mm	14 μ m	15 μ m	20	20	5	20		
4793-1501	150x100mm	16 μ m	18 μ m	30	30	6	30		
4793-2001	200x130mm	19 μ m	20 μ m	30	30	7	30		
4793-2501	250x165mm	21 μ m	23 μ m	35	35	7	35		
4793-3001	300x200mm	23 μ m	25 μ m	40	40	8	40		

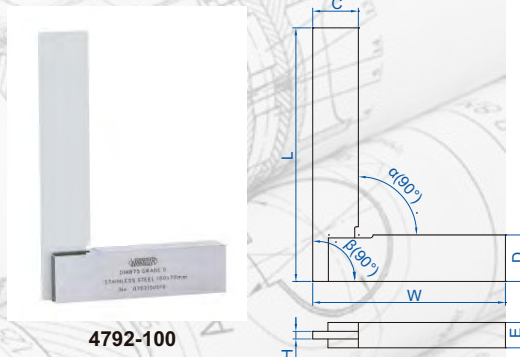
Code	Size (LxW)	Squareness		C	D	H	E	(mm)	
		Inside (α)	Outside (β)						
4793-502	50x40mm	24 μ m	25 μ m	15	15	4	13		
4793-752	75x50mm	26 μ m	28 μ m	15	15	4	15		
4793-1002	100x70mm	28 μ m	30 μ m	20	20	5	20		
4793-1502	150x100mm	33 μ m	35 μ m	30	30	6	30		
4793-2002	200x130mm	38 μ m	40 μ m	30	30	7	30		
4793-2502	250x165mm	43 μ m	45 μ m	35	35	7	35		
4793-3002	300x200mm	47 μ m	50 μ m	40	40	8	40		



90° FLAT EDGE SQUARES WITH WIDE BASE

- DIN875 grade 0
- Made of hardened stainless steel

Code	Size (LxW)	Squareness		C	D	H	E
		Inside (α)	Outside (β)				
4792-50	50x40mm	6 μ m	6 μ m	12	12	3	10
4792-75	75x50mm	6 μ m	7 μ m	14	14	3	10
4792-100	100x70mm	7 μ m	7 μ m	18	18	3	10
4792-150	150x100mm	8 μ m	8 μ m	22	22	4	12
4792-200	200x130mm	9 μ m	9 μ m	25	25	4	12



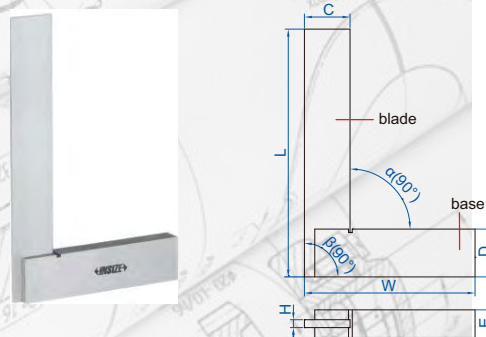
4792-100

MACHINIST SQUARES WITH WIDE BASE (ECONOMIC TYPE)

ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

Code	Size (LxW)	Squareness		C	D	H	E
		Inside (α)	Outside (β)				
4707-50	50x40mm	24 μ m	25 μ m	16	12	3	9
4707-75	75x50mm	26 μ m	28 μ m	16	16	3	9
4707-100	100x70mm	28 μ m	30 μ m	19	19	3	12
4707-150	150x100mm	33 μ m	35 μ m	25	25	3	16
4707-200	200x130mm	37 μ m	40 μ m	30	32	4	16
4707-250	250x165mm	42 μ m	45 μ m	30	32	4	19
4707-300	300x200mm	47 μ m	50 μ m	32	32	4	19
4707-400	400x250mm	56 μ m	60 μ m	38	38	5	22
4707-500	500x300mm	65 μ m	70 μ m	45	50	6	25
4707-600	600x350mm	75 μ m	80 μ m	50	50	6	30
4707-750	750x400mm	90 μ m	95 μ m	55	55	6	50
4707-900	900x500mm	103 μ m	110 μ m	65	75	9	50
4707-1000	1000x550mm	113 μ m	120 μ m	65	75	9	50



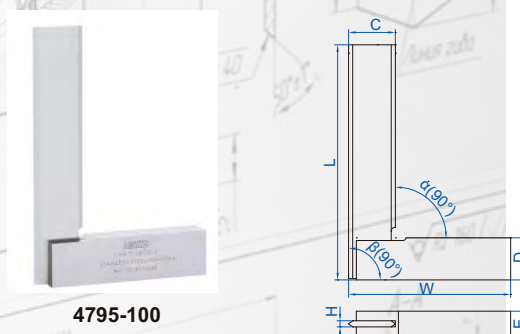
4707-100

90° BEVELED EDGE SQUARES WITH WIDE BASE

15

- DIN875 grade 0
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel

Code	Size (LxW)	Squareness		C	D	H	E
		Inside (α)	Outside (β)				
4795-50	50x40mm	6 μ m	6 μ m	12	12	3	10
4795-75	75x50mm	6 μ m	7 μ m	14	14	3	10
4795-100	100x70mm	7 μ m	7 μ m	18	18	3	10
4795-150	150x100mm	8 μ m	8 μ m	22	22	4	12
4795-200	200x130mm	9 μ m	9 μ m	25	25	4	12



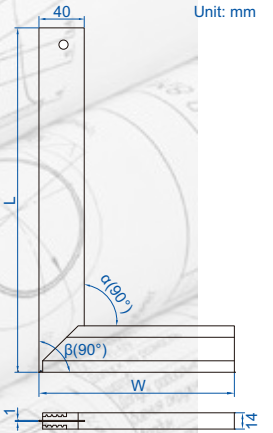
4795-100

TRY SQUARE

- Graduation: 1mm
- Stainless steel blade, aluminum base



2275-300



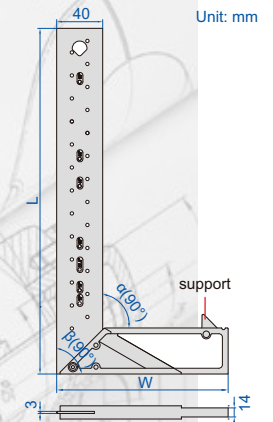
Code	Size (LxW)	Squareness	
		Inside (α)	Outside (β)
2275-300	300x170mm	0.5mm	0.5mm

TRY SQUARE

- Graduation: 1mm
- Aluminum blade and base
- 4 milled surfaces
- Retractable metal ledge support
- Etchings and holes for beveling and framing: 10°, 15°, 22.5°, 30°, 45°, 50° and 60°
- Etchings and holes every cm for fluid pencil marking



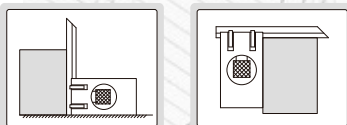
2280-300



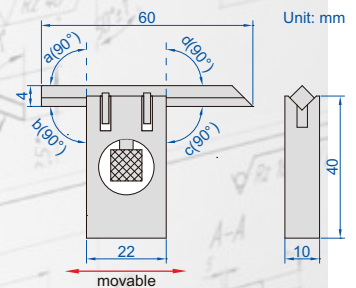
Code	Size (LxW)	Squareness	
		Inside (α)	Outside (β)
2280-300	300x150mm	0.5mm	0.5mm

ADJUSTABLE SQUARE

- The straight edge can move and can be locked by the clamping screw
- Made of hardened stainless steel



4701-1



Code	Squareness (a, b, c, d)
4701-1	7 μ m

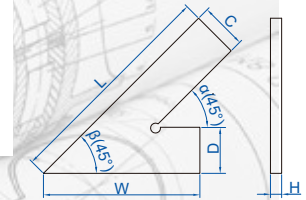
45° SQUARES

- Made of hardened stainless steel

Code	Size (LxW)	Accuracy		C	D	H
		Inside (α)	Outside (β)			
4745-1120	120x80mm	29 μ m	32 μ m	20	20	5
4745-1150	150x100mm	32 μ m	35 μ m	20	20	5
4745-1200	200x130mm	36 μ m	40 μ m	25	25	5



4745-1120



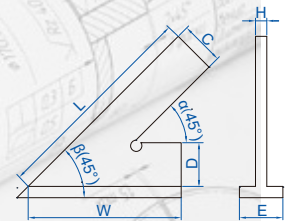
45° SQUARES WITH WIDE BASE

- Made of hardened stainless steel

Code	Size (LxW)	Accuracy		C	D	H	E
		Inside (α)	Outside (β)				
4747-120	120x80mm	29 μ m	33 μ m	20	20	5	20
4747-150	150x100mm	32 μ m	36 μ m	20	20	5	20
4747-200	200x130mm	36 μ m	41 μ m	25	25	5	25



4747-120



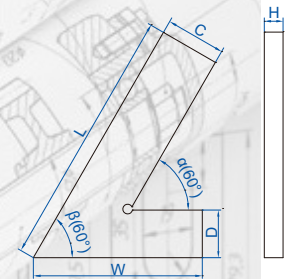
60° SQUARES

- Made of hardened stainless steel

Code	Size (LxW)	Accuracy		C	D	H
		Inside (α)	Outside (β)			
4760-1120	120x80mm	30 μ m	32 μ m	20	20	5
4760-1150	150x100mm	32 μ m	35 μ m	20	20	5
4760-1200	200x130mm	37 μ m	40 μ m	25	25	5



4760-1120



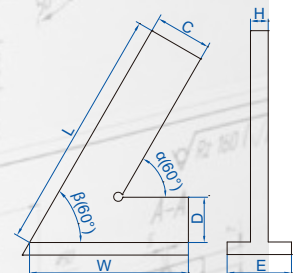
60° SQUARES WITH WIDE BASE

- Made of hardened stainless steel

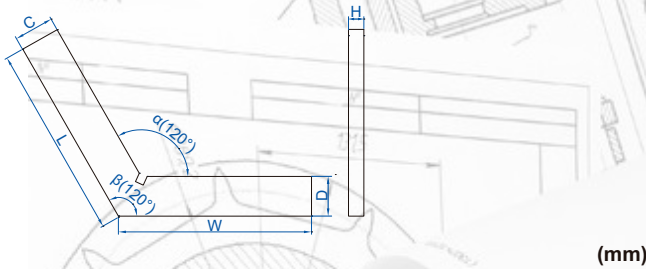
Code	Size (LxW)	Accuracy		C	D	H	E
		Inside (α)	Outside (β)				
4762-120	120x80mm	30 μ m	33 μ m	20	20	5	20
4762-150	150x100mm	33 μ m	36 μ m	20	20	5	20
4762-200	200x130mm	37 μ m	41 μ m	25	25	5	25



4762-120



120° SQUARES



(mm)

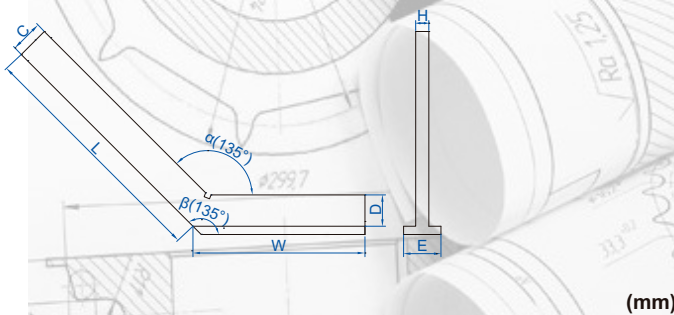
Code	Size (LxW)	Accuracy		C	D	H
		Inside (α)	Outside (β)			
4706-150	50x50mm	24 μ m	25 μ m	15	15	5
4706-175	75x75mm	26 μ m	28 μ m	20	20	5
4706-1100	100x100mm	29 μ m	30 μ m	20	20	5
4706-1150	150x150mm	34 μ m	35 μ m	25	25	5
4706-1200	200x200mm	38 μ m	40 μ m	30	30	7



4706-1100

- Made of hardened stainless steel

135° SQUARES WITH WIDE BASE



(mm)

Code	Size (LxW)	Accuracy		C	D	H	E
		Inside (α)	Outside (β)				
4754-3120	120x80mm	31 μ m	33 μ m	20	20	5	20
4754-3150	150x100mm	34 μ m	36 μ m	20	20	5	20
4754-3200	200x130mm	39 μ m	41 μ m	30	30	7	30



4754-3120

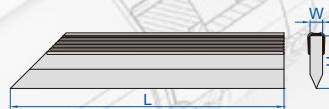
- Made of hardened stainless steel

Code	Size (L)	Straightness	W	H
4700-50	50mm	2.2 μ m	5mm	20mm
4700-75	75mm	2.3 μ m	5mm	25mm
4700-100	100mm	2.4 μ m	5mm	25mm
4700-125	125mm	2.5 μ m	6mm	30mm
4700-150	150mm	2.6 μ m	6mm	30mm
4700-200	200mm	2.8 μ m	6mm	30mm
4700-250	250mm	3.0 μ m	8mm	40mm
4700-300	300mm	3.2 μ m	8mm	40mm
4700-400	400mm	3.6 μ m	10mm	50mm
4700-500	500mm	4.0 μ m	10mm	50mm

STRAIGHT EDGES



4700-100



- DIN874
- Beveled edge
- Made of hardened stainless steel
- Satin chrome plating

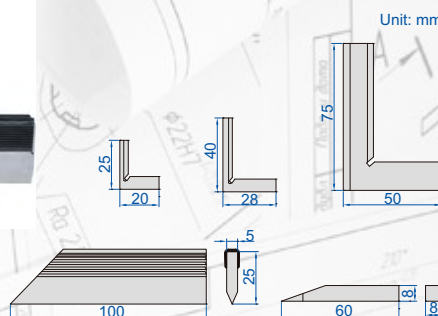
15

SQUARE SET



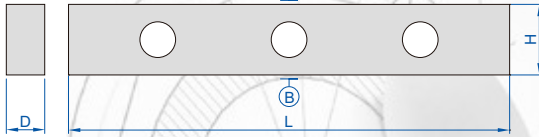
4702-1

Code
4702-1



- Includes:
 - 90° tool maker square 25x20mm DIN875 grade 00 (code 4794-025)
 - 90° tool maker square 40x28mm DIN875 grade 00 (code 4794-040)
 - 90° beveled edge square 75x50mm DIN875 grade 00 (code 4790-075)
 - straight edge 100mm DIN874 (code 4700-100)
 - scriber
- Made of hardened stainless steel

GRANITE STRAIGHT EDGES



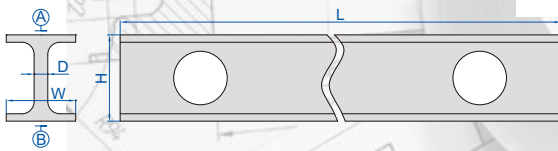
4147-500A

Code	Length (L)	Flatness of A and B	Parallelism between A and B	D	H
4147-500A	500mm	2.1µm	3.2µm	50mm	80mm
4147-1000A	1000mm	3.0µm	4.5µm	60mm	120mm

MAGNALIUM STRAIGHT EDGES

LIGHT WEIGHT

- Made of magnalium, light weight, non-deform, no rusty



4180-1500

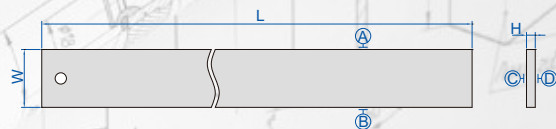
Code	Length (L)	Flatness of A and B	Parallelism between A and B	H	W	D	Weight
4180-500	500mm	3µm	4µm	60mm	30mm	5mm	1kg
4180-1000	1000mm	5µm	8µm	60mm	30mm	5mm	1.5kg
4180-1500	1500mm	15µm	22µm	100mm	40mm	7mm	4.5kg
4180-2000	2000mm	18µm	27µm	100mm	40mm	7mm	6kg
4180-2500	2500mm	22µm	33µm	100mm	40mm	7mm	7.5kg
4180-3000	3000mm	48µm	72µm	150mm	80mm	8mm	21kg

PRECISION STRAIGHT EDGES

15

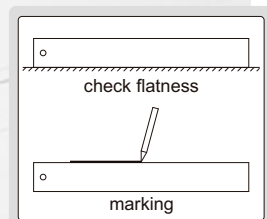


7117-300



- Check flatness and for marking
- Made of tool steel

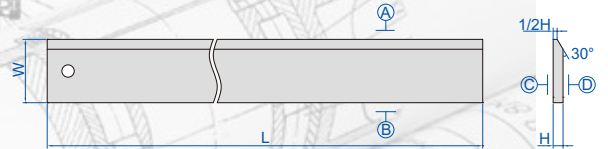
Code	Range (L)	Flatness of A and B	Flatness of C and D	W	H
7117-300	305mm	0.005mm	0.05mm	41mm	6.3mm
7117-600	610mm	0.006mm	0.06mm	51mm	7.9mm
7117-900	914mm	0.007mm	0.06mm	64mm	9.5mm



PRECISION STRAIGHT EDGES WITH BEVELED EDGE

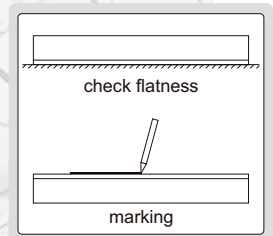


7118-300



- Check flatness and for marking
- Made of tool steel

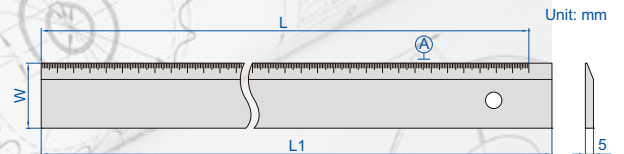
Code	Range (L)	Flatness of A and B	Flatness of C and D	W	H
7118-300	305mm	0.005mm	0.05mm	41mm	6.3mm
7118-600	610mm	0.006mm	0.06mm	51mm	7.9mm
7118-900	914mm	0.007mm	0.06mm	64mm	9.5mm



STRAIGHT EDGES

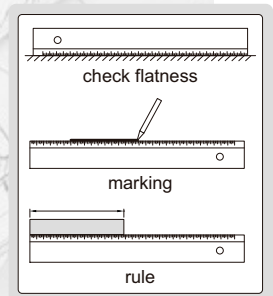


7111-300A



- Check flatness and straightness, as well as for marking
- Graduation on the beveled edge
- Made of hardened tool steel
- Chrome plated
- Graduation: 1mm

Code	Range (L)	Straightness of A	L1	W
7111-300A	300mm	0.02mm	310mm	40mm
7111-500A	500mm	0.03mm	510mm	40mm
7111-1000A	1000mm	0.04mm	1010mm	50mm

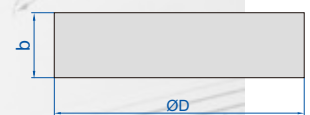


OPTICAL FLATS

- Check flatness
- Single working face, the arrow indicates the working face



4191-45B



Code	b	ØD	Flatness
4191-45A	12mm	45mm	0.03µm
4191-60A	15mm	60mm	0.03µm

Code	b	ØD	Flatness
4191-45B	12mm	45mm	0.1µm
4191-60B	15mm	60mm	0.1µm

STRAIGHTNESS/FLATNESS GAGE



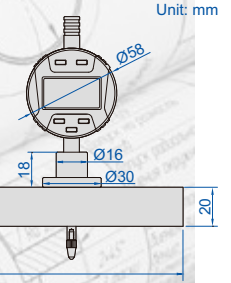
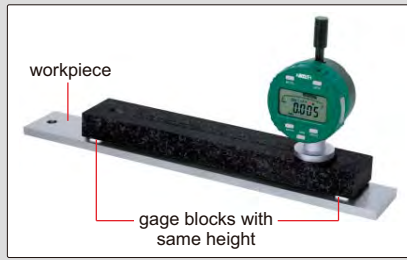
GRANITE HOLDER CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

DATA OUTPUT

- Optional accessory: data output cable (code 7315-50M need receiver page 5, 7302-40M page 13)



application

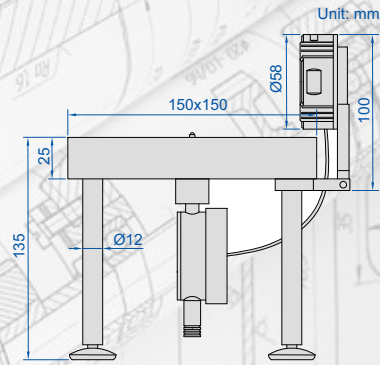


Code	Range	Digital indicator resolution	Straightness measurement accuracy	Parallelism of top and bottom surfaces of granite holder	Flatness of top and bottom surfaces of granite holder
2144-200	200mm	0.001mm/0.00005"	3µm	2µm	1.5µm

FLATNESS MEASUREMENT STAND

DATA OUTPUT

GRANITE PLATE CAN BE CUSTOMIZED ACCORDING TO WORKPIECES



application



- Optional accessory: data output cable (code 7315-50M need receiver page 5, 7302-40M page 13, 7305-40M page 9)

Code	Digital indicator resolution	Flatness measurement accuracy	Flatness of granite plate
6852-150	0.001mm/0.00005"	2µm	2µm