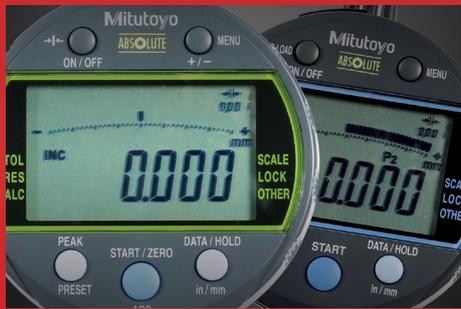


F

DIGIMATIC INDICATORS DIAL INDICATORS DIAL TEST INDICATORS INSTRUMENTS & STANDS

Digimatic Indicators



Dial Indicators



Dial Test Indicators



Instruments & Stands



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Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Solar Indicator ID-SS

- Solar power supply. An environmentally friendly measuring instrument that does not require batteries, eliminating the hassle and cost of battery replacement. Can operate under minimum light conditions of 40 lux – lower than the level of a warehouse.
- Built-in recharger. The large-capacity built-in recharger allows you to use the indicator for long periods of time under light conditions below the minimum level.*
- User-friendly operation. All functions can be accessed by using the large buttons on the front of the indicator.
- Origin recorded even if display disappears. The indicator includes an ABSOLUTE sensor that allows the previously set origin to be stored even if the display disappears due to insufficient light, making it easy to resume measurement. This feature makes ID-SS ideal for long-time or multi-point measurement.

ABSOLUTE



SOLAR



543-501



543-506

ID-SS can be used in standard work environments.

The following is excerpted from JIS Z9110:2010 General rules of recommended lighting levels; 5.4 Factories:

Luminance (lux)	Location (permissible work)
1500	Very detailed visual work
750	Detailed visual work; design and drawing work
500	Regular visual work such as work carried out in a factory; monitoring work such as using instrument panels and control panels
300	Administrative work carried out in a warehouse
200	Control rooms, bathrooms, and places where manual light work is carried out
150	Work such as loading, unloading, and shifting loads
100	Hallways, corridors, entrances and exits, and warehouses
50	Indoor emergency staircases

Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Measuring force:	1.5 N or less
Usable orientation:	All
Power supply:	Solar battery (for indoor use)
Min. operating light:	40 lux*
Max. response speed:	No limit (scanning measurement is not supported)
Stem diameter:	8 mm
Standard contact point:	901312

* A built-in recharger allows a fully charged ID-SS to be used for about 3.5 hours under light conditions below the minimum level. The charging time differs depending on the environment, but it usually takes about 1.5 hours for a fully discharged ID-SS to fully recharge under light conditions of 500 lux.

Functions

Origin set (zero-set), count direction switching, data output, inch / mm reading

Alarm: Counting value composition error, insufficient illumination intensity or charge

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
21EZA198	Plunger lifting lever	£6.10
21EZA105	Plunger lifting knob	£13.20
540774	Plunger lifting cable	£23.60
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Interchangeable backs (refer to page F-41 for details).

Measuring stands (refer to pages F-70 to F-75 for details).

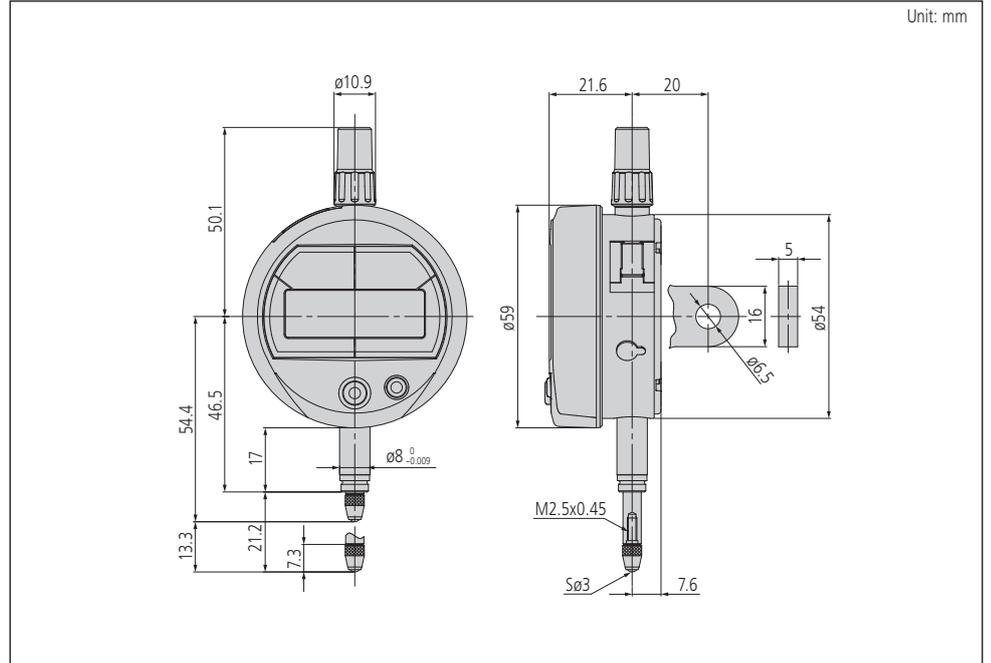


Specifications

Inch/Metric							
Code No.	Resolution	Range	Overall*	Hysteresis*	Repeatability*	Price	
With lug							
543-501	.00005" / 0.001 mm	.5" / 12.7 mm	±.0001" / 0.003 mm	.0001" / 0.002 mm	.0001" / 0.002 mm	£234.00	
543-506	.0005" / 0.01 mm		±.001" / 0.02 mm	.001" / 0.02 mm	.005" / 0.01 mm	£118.00	
Flat							
543-501B	.00005" / 0.001 mm	.5" / 12.7 mm	±.0001" / 0.003 mm	.0001" / 0.002 mm	.0001" / 0.002 mm	£234.00	
543-506B	.0005" / 0.01 mm		±.001" / 0.02 mm	.001" / 0.02 mm	.005" / 0.01 mm	£118.00	

* Quantizing error of ±1 count is excluded.

Dimensions



F

Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Indicators ID-N/B

- Our unique ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on.
- Rated to IP66: can be used satisfactorily even in adverse environments where the indicator is subject to splashing by cutting fluid or coolant.
- Slim body design (body width: only 35 mm) is advantageous in multipoint measurement situations where space is restricted.
- Succeeded in digitalization of the Back Plunger type popular in dial indicators. A 5 mm-stroke plunger with a higher degree of accuracy has been implemented by adopting a direct reading scale for plunger displacement.
- The chance of overspeed errors has been eliminated thanks to the ABSOLUTE sensor.
- Built-in tolerance judgement function provides OK, +NG, or –NG judgement of measurement with respect to the preset upper and lower limit values, indicating the status of a measurement with the appropriate symbol. The symbols can be displayed much larger.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.
- There is a choice of convenient Interface Input Tools which enable the conversion of measurement data to keyboard signals and direct input to cells in off-the-shelf spreadsheet software such as Excel.

Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic line encoder
Max. response speed:	Unlimited (scanning measurement is not supported)
Measuring force:	2.5 N or less (ID-N), 2.0 N or less (ID-B)
Stem diameter:	3/8"
Standard contact point:	21BZA005
Battery:	SR44 (1 pc.), 938882
Battery life:	Approx. 7,000 hours under normal use

Functions

Zero-setting, presetting, direction switching, tolerance judgement, display hold, data output, inch/mm reading (inch/mm models), LCD readout rotation
 Alarm: Low voltage, counting value composition error, overflow error, tolerance limit setting error

ABSOLUTE IP66



543-576



543-586



LCD readout rotation function.



Rated to IP66 water- and dust-proofing standard and oil resistance improved.



Body width 35 mm.

Specifications

Inch/Metric				
Code No.	Resolution	Range	Accuracy*	Price
Slim type ID-N				
543-571	.0005", 0.01 mm	.5", 12.7 mm	.0008", 0.02 mm	£201.00
543-576	.0005" / .00005", 0.01 mm / 0.001 mm		.0004" / .00012", 0.01 mm / 0.003 mm	£283.00
Back plunger type ID-B				
543-581	.0005", 0.01 mm	.2", 5 mm	.0008", 0.02 mm	£214.00
543-586	.0005" / .00005", 0.01 mm / 0.001 mm		.0004" / .00012", 0.01 mm / 0.003 mm	£297.00

* Quantizing error of ±1 count is excluded.

Optional Accessories

Code No.	Description	Price
21EAA194	SPC data cable (1 m)	£46.00
21EAA190	SPC data cable (2 m)	£51.80
02AZD790G	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140G	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
21EAA210	Bifurcated connecting cable with zero-setting terminal (1 m)*	£118.00



21EAA211	Bifurcated connecting cable with zero-setting terminal (2 m)*	£133.00
21EZA146	Lug	£12.10
21EZA150	Lifting knob (ID-N only)	£13.20
02ACA376	Rubber boot for ID-N, NBR	£3.30
125317	Rubber boot for ID-B, NBR	£4.40
238774	Rubber boot for ID-N, silicone	£13.70
21EAA212	Rubber boot for ID-B, silicone	£6.70

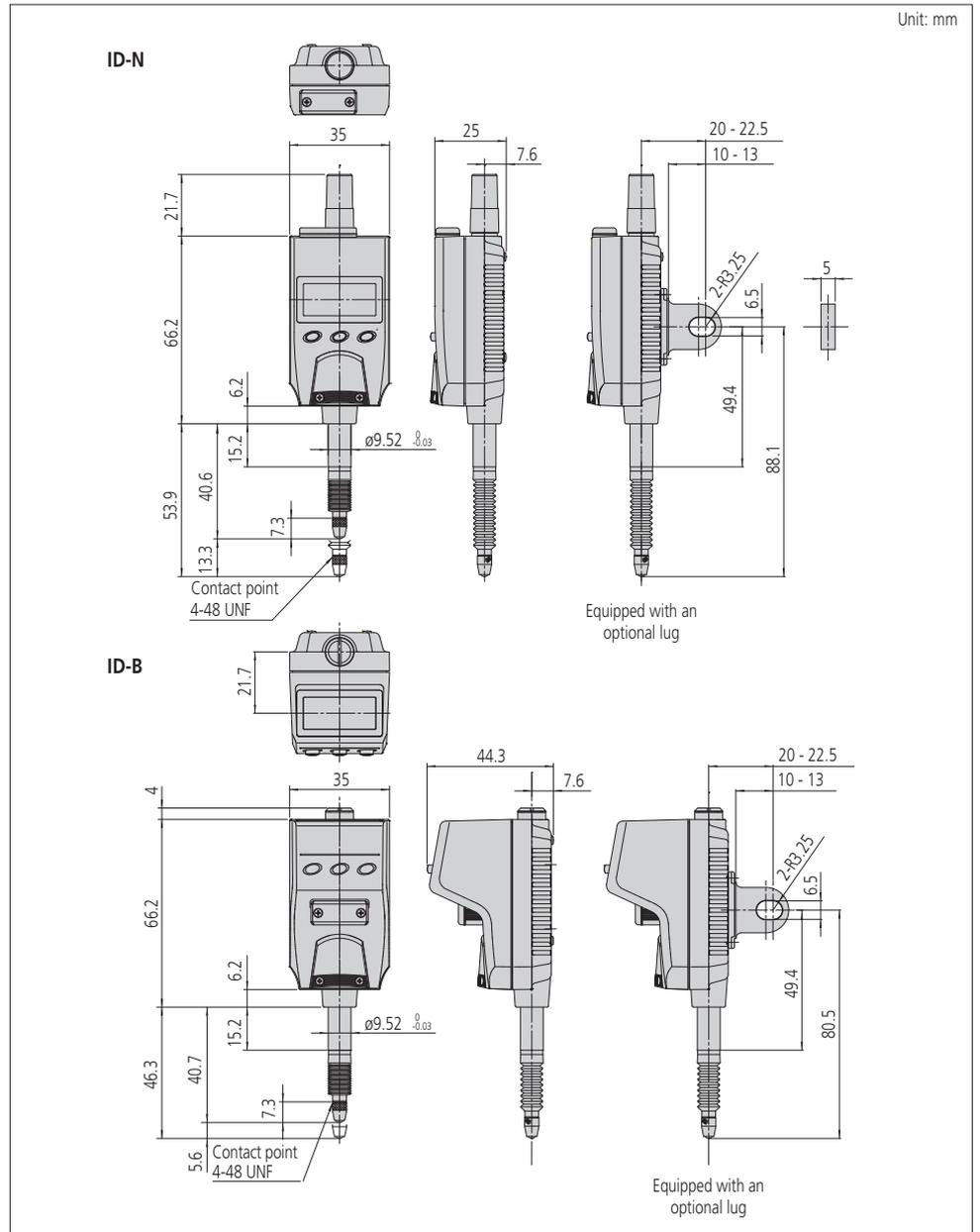
Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

* Two of the wires inside the cable are separated for zero setting without touching the SET switch on the main body. Use these cables in combination with commercially available switches. Zero setting is performed by briefly connecting these two wires together (less than a second), and ABS preset & recall by connecting for a second or more.

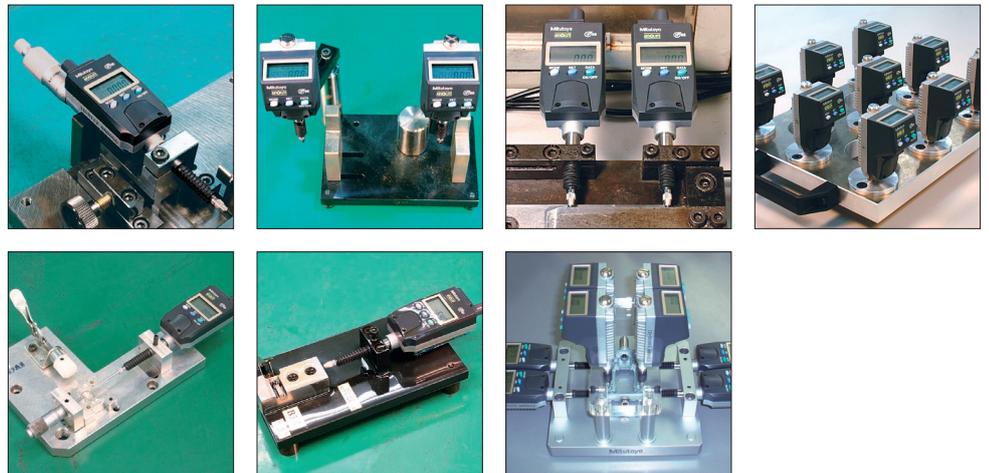


Plunger can be manually lifted. Remove the plunger cap for ID-N and attach the lifting knob to the plunger. Note that water resistance is not maintained in this configuration.

Dimensions



Sample Applications



Digimatic Indicators

SERIES 543 – Digimatic High Accuracy/Functionality Indicator ID-H

- This new-generation digital indicator offers the excellent accuracy and functionality expected from the top class of indicator.
- Take advantage of its high accuracy backed up by $0.5 \mu\text{m} / .00002''$ resolution, remote control functionality via a handheld controller (or an RS-232C interface) and easy runout measurements with the well-established analogue bar display.
- Functionality meets the needs of diverse measurement applications.
- Measuring maximum value, minimum value and runout (difference between a maximum and a minimum value).
- GO/±NG judgement function: If a judgement result shows an out of tolerance condition the display backlighting changes from green to red.
- With the optional remote controller, operations such as zero-setting and presetting can be made without touching the indicator body, thereby avoiding disturbance to the set-up.
- An advanced, remote control system can be implemented with the built-in RS-232 interface and a PC.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.



543-562E

543-564E

Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Measuring force	Price
543-562E	1.2" / 30.4 mm	.00002", .00005", .0001" / 0.0005 mm,	.00006" / 0.0015 mm	2.0N or less	£631.00
543-564E	2.4" / 60.9 mm	0.001 mm	.0001" / 0.0025 mm	2.5N or less	£726.00

* Quantizing error of ±1 count is excluded.

Technical Data

Display:	7-digit LCD, sign, and analogue bar with 2-colour backlight
Power supply:	6V DC (via AC adapter)
Positional detection method:	Photoelectric-type reflection linear encoder
Max. response speed:	1000 mm/sec
Plunger direction:	Up to direction in which plunger is horizontal
Standard contact point:	21BZB005
Lifting lever:	137693

Functions

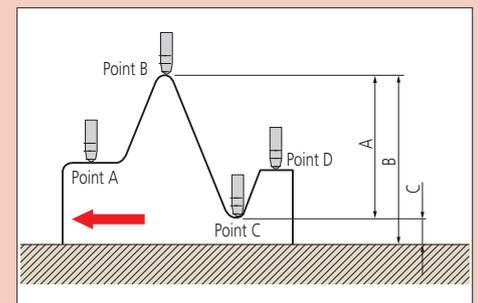
Zero set, preset, GO/±NG judgement, max/min value hold, runout measurement, resolution switching, counting direction switching, data output, data hold, function lock, inch/mm reading (inch/mm models)
 Alarm: Over speed error, setting error, overflow error



Remote controller (optional).

Application

Difference/Runout measurement



Example: Indicator travel from points A to D
 Difference (or Total Runout) is displayed as A. Dimensions B (maximum value) and C (minimum value) can be recalled from memory with a simple pushbutton sequence.

Optional Accessories

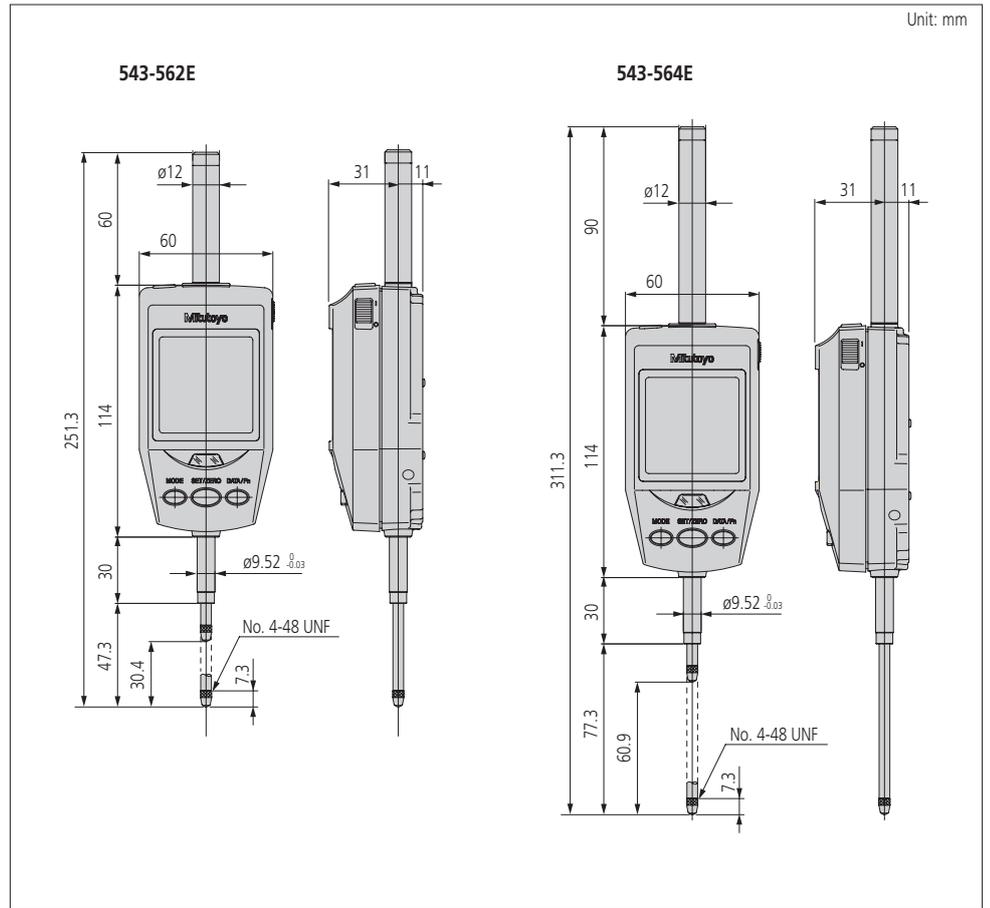
Code No.	Description	Price
936937	SPC data cable (1 m)	£32.90
965014	SPC data cable (2 m)	£45.00
21EAA131	Connecting cable for RS-232 (2 m)	£138.00
02AZD790D	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140D	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
21EZA101	Plunger lifting knob	£18.30
540774	Plunger lifting cable (stroke: 30 mm)	£23.60
101306	Centre-lug back	£3.30
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00
21EZA099	Remote controller	£67.30

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Measuring stands (refer to pages F-70 to F-75 for details).



Dimensions



Tolerance judgement GO/+NG



Analogue bar display



Maximum value / minimum value measurement



Resolution switching



Difference / runout measurement



Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Indicator ID-CX

- Employing the ABSOLUTE Linear Encoder, the ID-CX indicator always displays the absolute position of the plunger from the origin at power-on.
- Thanks to the ABSOLUTE Linear Encoder, reliability has been increased due to elimination of over-speed errors.
- Tolerance-judging measurement is available by setting upper and lower limit values. The tolerance judgement result can be enlarged.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

ABSOLUTE **IP42**



Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Max. response speed:	Unlimited (scanning measurement is not supported)
Stem diameter:	8 mm
Standard contact point:	901312
Battery:	SR44 (1 pc.), 938882
Battery life:	Approx. 7,000 hours under normal use
Dust/water protection level:	IP42

Functions

Preset, zero set, GO/±NG judgement, counting direction switching, Power ON/OFF, simplified calculation, function lock, data hold, data output, inch/mm reading
 Alarm: Low voltage, counting value composition error, overflow error, tolerance limit setting error

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
21EZA198	Plunger lifting lever (12.7 mm / .5" type)* ³	£6.10
21EZA105	Plunger lifting knob (12.7 mm / .5" type)* ³	£13.20
21EZA197	Plunger lifting knob (25.4 mm / 1" type)	£45.50
21EZA200	Plunger lifting knob (50.8 mm / 2" type)	£45.50
540774	Plunger lifting cable (12.7 mm and 25.4 mm)	£23.60
02ACA571	Auxiliary plunger spring (25.4 mm / 1" type)* ⁴	£6.10
02ACA773	Auxiliary plunger spring (50.8 mm / 2" type)* ⁴	£6.50
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Interchangeable backs (refer to page F-41 for details).

Measuring stands (refer to pages F-70 to F-75 for details).

*³ Not available for low measuring force models.

*⁴ Required when orienting the indicator upside down.

Specifications

Inch/Metric							
Code No.	Range	Overall* ¹	Hysteresis* ¹	Repeatability* ¹	Measuring force	Remarks	Price
Resolution: .0005" / .0001" / .00005" / 0.01 mm / 0.001 mm							
543-391B	.5" / 12.7 mm	.0001" / 0.003 mm	.0001" / 0.002 mm	.0001" / 0.002 mm	1.5N or less	Low measuring force	£291.00
543-395B	.5" / 12.7 mm				0.4N - 0.7N		£337.00
543-471B	1" / 25.4 mm				1.8N or less* ²		£419.00
543-491B	2" / 50.8 mm				2.3N or less* ²		£454.00
Resolution: .0005" / 0.01 mm							
543-401B	.5" / 12.7 mm	.001" / 0.02 mm	.001" / 0.02 mm	.0005" / 0.02 mm	0.9N or less	—	£228.00
543-475B	1" / 25.4 mm				1.8N or less* ²	—	£333.00

*¹ Quantizing error of ±1 count is excluded.

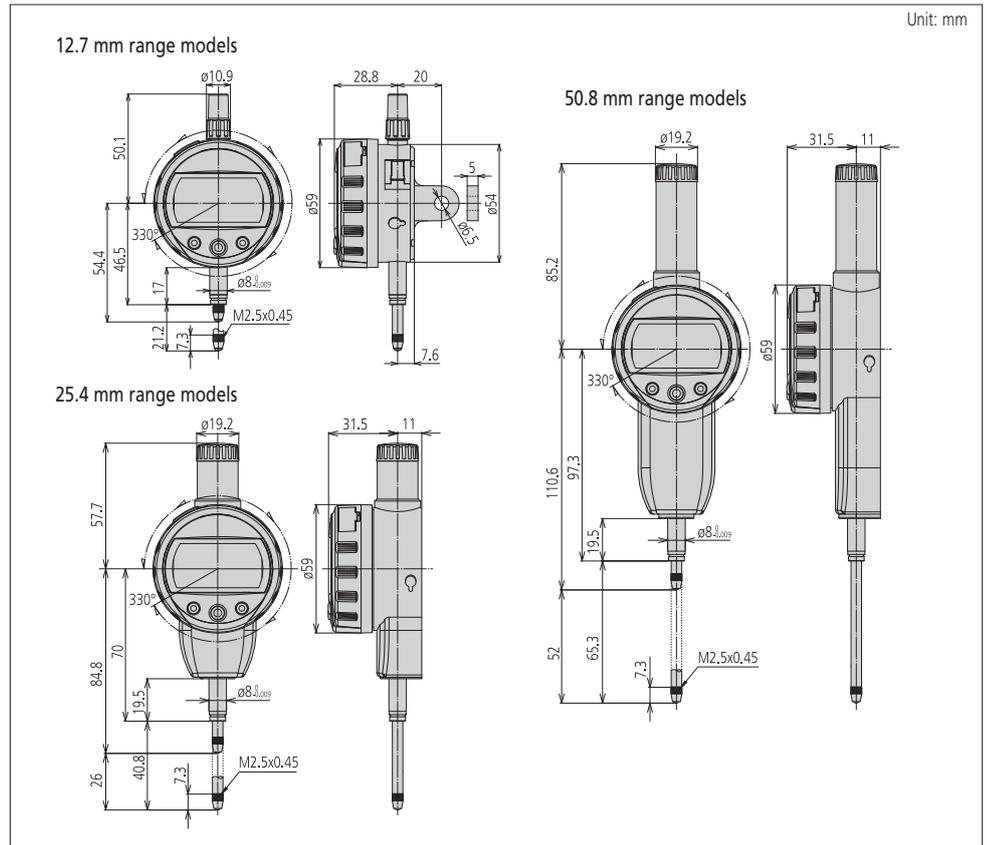
*² Applies up to a horizontal plunger orientation.

Setting Measuring Force on Low Measuring Force Model

Plunger orientation	Spring	Weight (approx. 0.1 N)	Max. measuring force
Pointing vertically downward	Yes	Yes	0.7 N or less
	Yes	No	0.6 N or less
	No	Yes	0.4 N or less
Horizontal	No	No	Not guaranteed

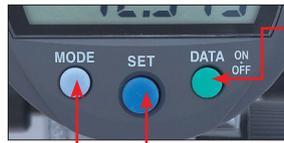
Note: Operation using configurations other than shown above is not guaranteed.

Dimensions



Three large buttons

The popular three-large-button design, which is used in products such as the ABSOLUTE Coolant Proof Digimatic Indicators ID-N/ID-B, makes buttons easier to press and operations easier to perform.



- Parameter setting mode.
- Measuring direction switching, tolerance judgement setting, resolution switching, scale factor setting and function lock setting.
- Inch/mm reading.

- Power switch.
- Data output (when connected to an external device).
- Data hold (when no external device is connected).

- Switches between the ABS (origin set) and INC (zero set) measurement modes.

Large LCD

The large LCD incorporates 11 mm characters giving 1.5 times the character area of existing products (which display 8.5 mm characters) making measurement values much easier to read.



330° rotary display

The display can be rotated 330°, allowing use at a position where you can easily read the measurement value.



Calculation: $f(x) = Ax$

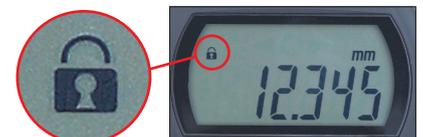
Mounting the ID-C on a measuring jig and setting the multiplying factor 'A' (to any value) allows direct measurement without using a conversion table and improves measurement efficiency.



Application example

Function locking

Ensures reliability of measurement by locking the settings to prevent preset function settings from being changed by mistake.



Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Peak Value Hold Indicator ID-C

- The maximum, minimum, or runout value can be measured and displayed during measurement.
- The ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on. It also realizes high reliability by eliminating over-speed errors.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.
- User friendly, battery-operated type.

ABSOLUTE **IP42**



543-301B

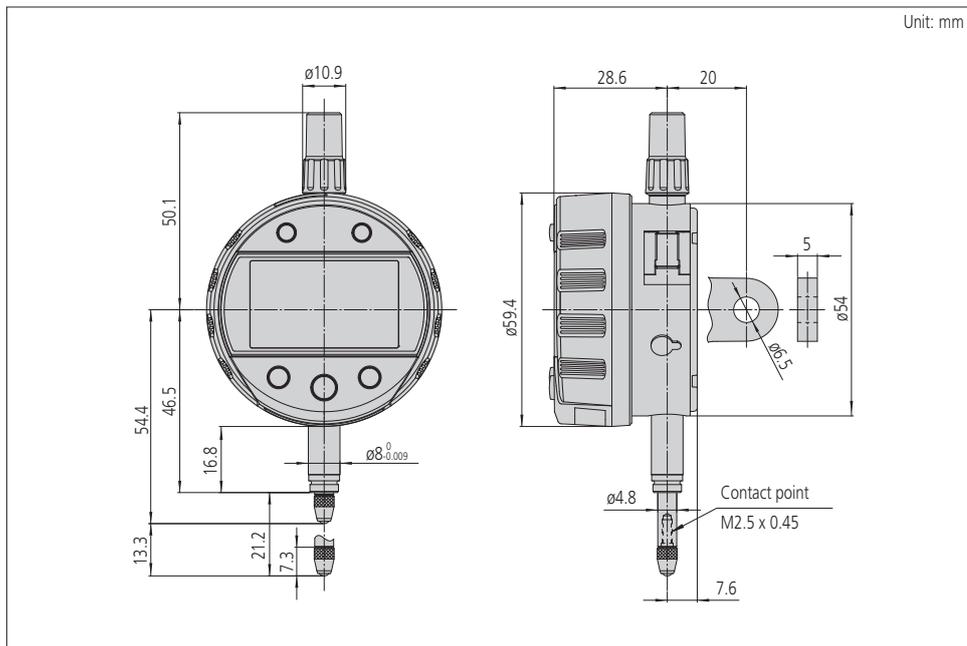
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*1	Measuring force	Price
543-301B	.5" / 12.7 mm	.00005" / 0.001 mm	.00012" / 0.003 mm	1.5 N or less	£352.00

*1 Quantizing error of ±1 count is excluded.

Dimensions



Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Stem diameter:	8 mm
Standard contact point:	901312
Battery:	CR2032 (055AA217)
Battery life:	6 months under normal use*2
Dust/water protection level:	IP42
*2 Operation time per day: 8 hours	

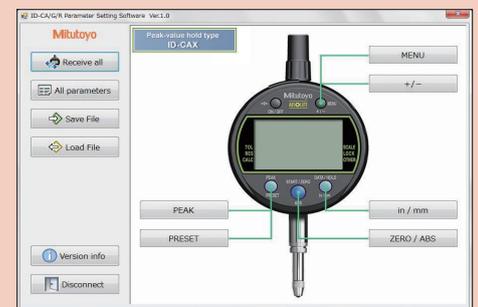
Functions

Preset, zero set, max/min value hold, run out value hold, GO/±NG judgement, counting direction switching, power ON/OFF, data output, inch/mm reading
 Alarm: Low voltage, Counting value composition error, overflow error, tolerance limit setting error

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
902011	Plunger lifting lever	£3.30
540774	Plunger lifting cable	£23.60
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).
 Interchangeable backs (refer to page F-41 for details).
 Measuring stands (refer to pages F-70 to F-75 for details).



Parameter setting software.

Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Stem diameter:	8 mm
Standard contact point:	901312
Battery:	CR2032 (055AA217)
Battery life:	1 year under normal use*2
Dust/water protection level:	IP42
*2 Operation time per day: 8 hours	

Functions

Origin-set/preset, zero set, GO/±NG judgement, power ON/OFF, data output, inch/mm reading (inch/mm models), max/min value holding, function lock, data hold

Alarm: Low voltage, counting value composition error, overflow error, tolerance limit setting error

Optional Accessories

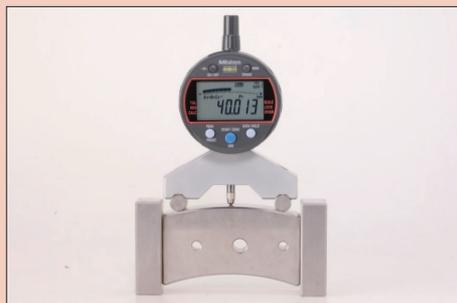
Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
902011	Plunger lifting lever	£3.30
540774	Plunger lifting cable	£23.60
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00
Measuring bridges*3		
21FAJ394	Radius: 25-70 mm	£481.00
011394	Radius: 50-100 mm	POA
011395	Radius: 100-200 mm	POA
21FAJ395	Radius: 45-140 mm (outside) / 65-100 mm (inside)	£547.00

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Interchangeable backs (refer to page F-41 for details).

Measuring stands (refer to pages F-70 to F-75 for details).

*3 The accuracy of a radial measurement using the measuring bridges depends on the size of the radius to be measured and the form error of the workpiece.



Various fixtures suited for individual workpieces can be prepared. Measuring accuracy is subject to fixture accuracy.

SERIES 543 – ABSOLUTE Digimatic Calculating Indicator ID-C

- This indicator incorporates an internal calculation function that operates from plunger displacement. Using dedicated fixtures, measurements of outside and inside diameter and radius of curvature can easily be made without needing to use conversion tables or manual calculations, and requiring access to only one side of the component to be measured.
- The ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on.
- The chance of over-speed error has been avoided thanks to the ABSOLUTE sensor.
- Tolerance judgement is available by presetting upper and lower limit values.
- Large, easy-to-read LCD 7-digit readout with a character height of 8 mm. Can be rotated up to 330° to achieve the optimum reading position.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

ABSOLUTE **IP42**



543-341B

Calculation function: $f(x) = Ax + B + C/x$

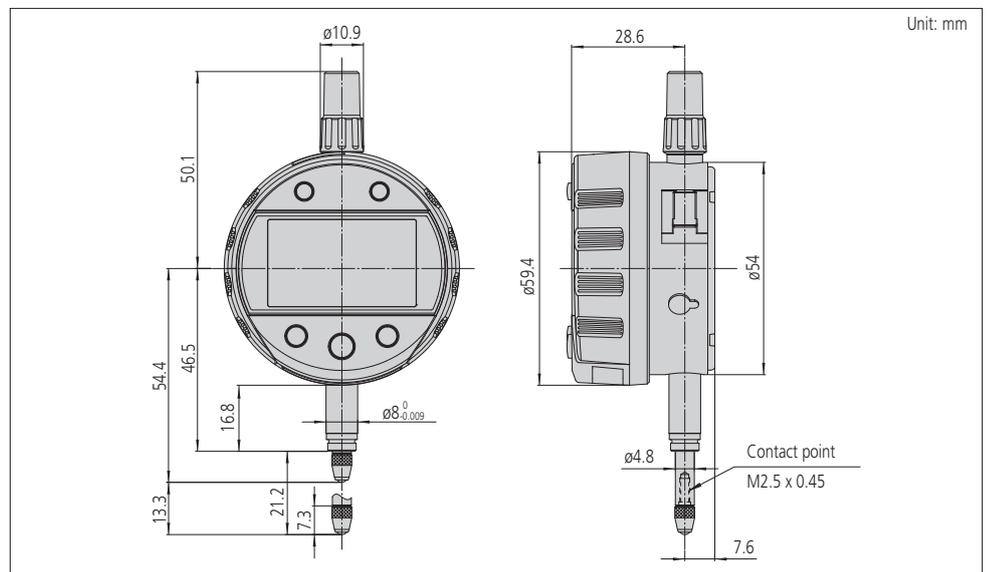
x = plunger movement
A, B and C are user definable over a wide range

Specifications

Inch/Metric					
Code No.	Range	Resolution (switchable)	Accuracy*1	Measuring force	Price
543-341B	.5" / 12.7 mm	.00001" - .05" / 0.0002 - 1 mm	.00012" / 0.003 mm	1.5 N or less	£390.00

*1 Quantizing error of ±1 count is excluded.

Dimensions



Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Signal Output Indicator ID-C

- With the MAX/MIN value holding function, this indicator can output the signal of a GO/±NG judgement result against the peak value set.
- Electronic processing provides high reliability and accuracy. The seven-core flying lead cable can be used by the customer to connect to external equipment as required. (See the I/O Specifications table for signal output and power supply details, and the Output/Input circuit diagrams for typical interface details.)
- The ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on. It also realizes high reliability by eliminating over-speed errors.
- Provided with a 4 m cable.
- External power 12–24VDC required.



543-281B

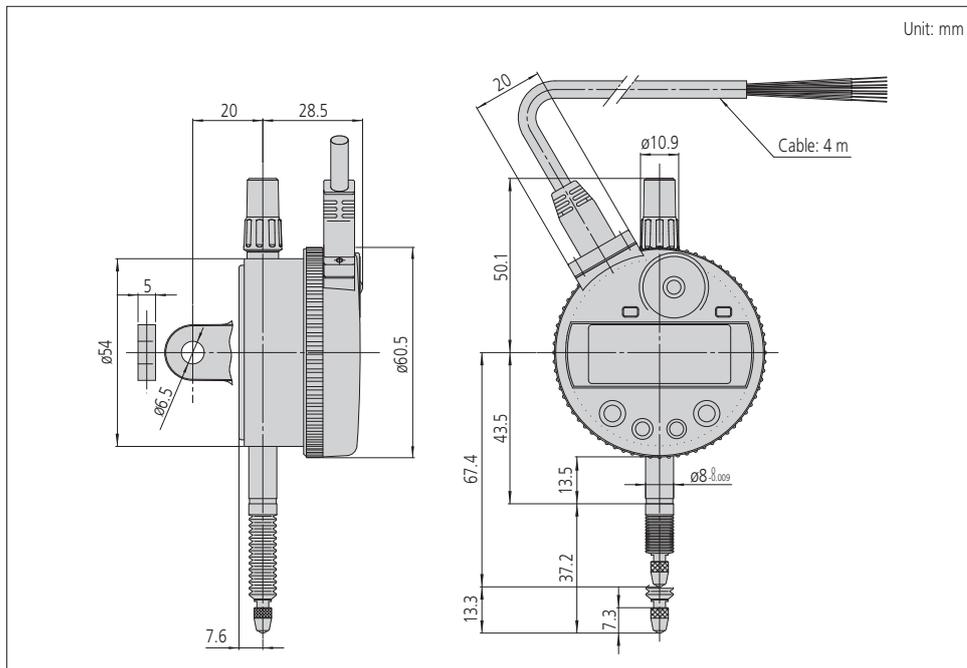


Specifications

Inch/Metric					
Code No.	Range	Resolution	Accuracy*	Measuring force	Price
543-281B	.5" / 12.7 mm	.00005" / 0.001 mm	.00012" / 0.003 mm	2.0 N or less	£483.00

* Quantizing error of ±1 count is excluded.

Dimensions



Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Stem diameter:	8 mm
Standard contact point:	901312
Dust/water protection level:	IP54

Functions

Signal output (–NG/OK+NG, NPN open collector), remote control (hold-reset, preset-recall, zero-set), preset, zeroset, GO/±NG judgement, max/min/runout value holding, counting direction switching, Power ON/OFF, inch/mm reading.
Alarm: Counting value composition error, overflow error, tolerance limit setting error

Optional Accessories

Code No.	Description	Price
902011	Plunger lifting lever	£3.30
540774	Plunger lifting cable	£23.60

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Interchangeable backs (refer to page F-41 for details).

Measuring stands (refer to pages F-70 to F-75 for details).

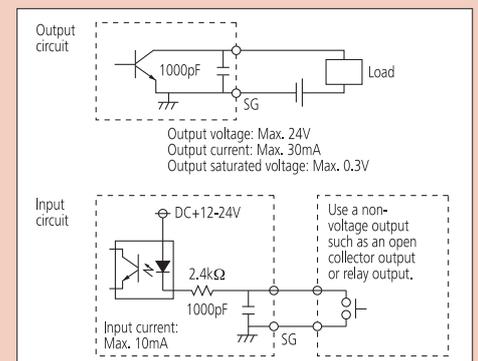
Output Pattern

Wire	– NG	OK	+ NG	Composition error
Orange (– NG)	Low	High	High	High
Green (OK)	High	Low	High	High
Brown (+ NG)	High	High	Low	High
LED	Red	Green	Red	Red (blinking)
LCD	<	0	>	"x.xx"E" indication

I/O Specifications

Wire	Signal	I/O	Description
Black	– V (GND)	—	Connected to minus (–) terminal
Red	+ V	I	Power supply (12–24VDC)
Orange	– NG	O	Tolerance judgement result output: Only the terminal corresponding to a judgement result is set to the low level.
Green	OK	O	
Brown	+ NG	O	
Yellow	PRESET_RECALL ZERO	I	External input terminal: If the relevant terminal is set to the low level, its signal becomes true.
Blue	HOLD_RESET	I	
Shield	FG	—	Connected to GND

Note: Measurement data cannot be output.



Technical Data

Display:	6-digit LCD and sign
Scale type:	ABSOLUTE electrostatic linear encoder
Stem diameter:	8 mm
Standard contact point:	901312
Battery:	SR44 (2 pcs.) 938882
Battery life:	9 months under normal use*2
Dust/water protection level:	IP42
*2 Operation time per day: 8 hours	

Functions

Presetting, power on/off, inch/mm conversion (inch/mm type only), 3 sets of master value and tolerance value memory, GO/±NG tolerance judgement, min value holding, data hold.

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00



ABSOLUTE Digimatic Bore Gauges, which integrate the display with a bore gauge measuring unit, are also available.

Example of bore gauge (optional) equipped with an ID-C Digimatic Indicator.

SERIES 543 – ABSOLUTE Digimatic Bore Gauge Indicator ID-C

- Exclusively designed for Bore Gauges: this ID-C series indicator has the minimum value holding and GO/±NG judgement functions.
- Employing an ABSOLUTE Linear Encoder, the Bore Gauge ID-C always displays the absolute position of the plunger from the origin at power-on. Also, the reliability has been increased due to elimination of over-speed errors.
- An analogue bar indication is integrated to provide the advantages of analogue display for minimum value measurements.
- Up to three sets of reference diameter and upper/lower tolerance values can be stored to simplify the start-up key operation in repetitive hole inspection of mixed-diameter holes.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

ABSOLUTE

IP42



543-311B

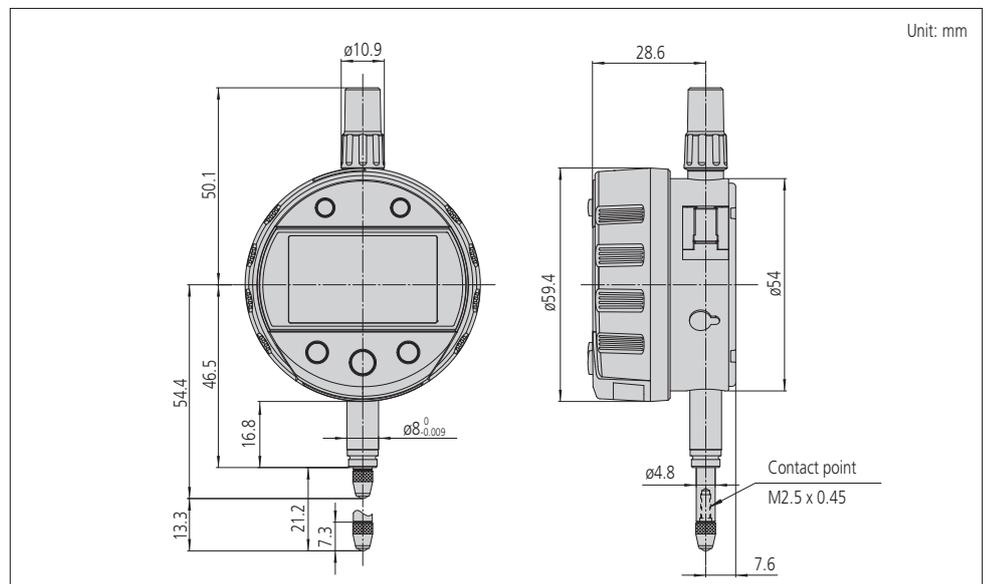
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*1	Measuring force	Price
543-311B	.5" / 12.7 mm	.00005" / 0.001 mm	.00012" / 0.003 mm	1.5 N or less	£404.00

*1 Quantizing error of ±1 count is excluded.

Dimensions



Unit: mm

Technical Data

Display:	LCD, 8.5 mm character height
Scale type:	ABSOLUTE electrostatic linear encoder
Max. response speed:	Unlimited (scanning measurement is not supported)
Stem diameter:	8 mm
Standard contact point:	901312
Battery:	SR44 (1 pc.) 938882
Battery life:	Approx. 20,000 hours under normal use
Dust/water protection level:	IP42

Functions

Origin-set (zeroset), counting direction switching, Power ON/OFF, data output, inch/mm reading	
Alarm:	Low voltage, Counting value composition error

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
06ADV380C	USB Input Tool Direct USB-ITN-C (2 m)	£105.00
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
21EZA198	Plunger lifting lever	£6.10
540774	Plunger lifting cable	£23.60
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00
02ACB610	Post-type back	£17.00
02ACB630	Adjustable back	£17.00
02ACB640	Offset-lug back	£17.00
02ACB650	Magnetic back	£31.40
02ACB670	Screw-mount back	£17.00
02ACB680	Adjustable-bracket back	£49.70

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Measuring stands (refer to pages F-70 to F-75 for details).

SERIES 543 – ABSOLUTE Digimatic Economical Indicator ID-S

- Cost-effective and user-friendly type which is equipped with the basic functions necessary.
- Dust/water protection level: IP42.
- The ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on. It also realizes high reliability by eliminating over-speed errors.
- Battery life of 20,000 hours in continuous use has been achieved.
- Easy-to-read large LCD readout with a character height of 8.5 mm.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

ABSOLUTE **IP42**



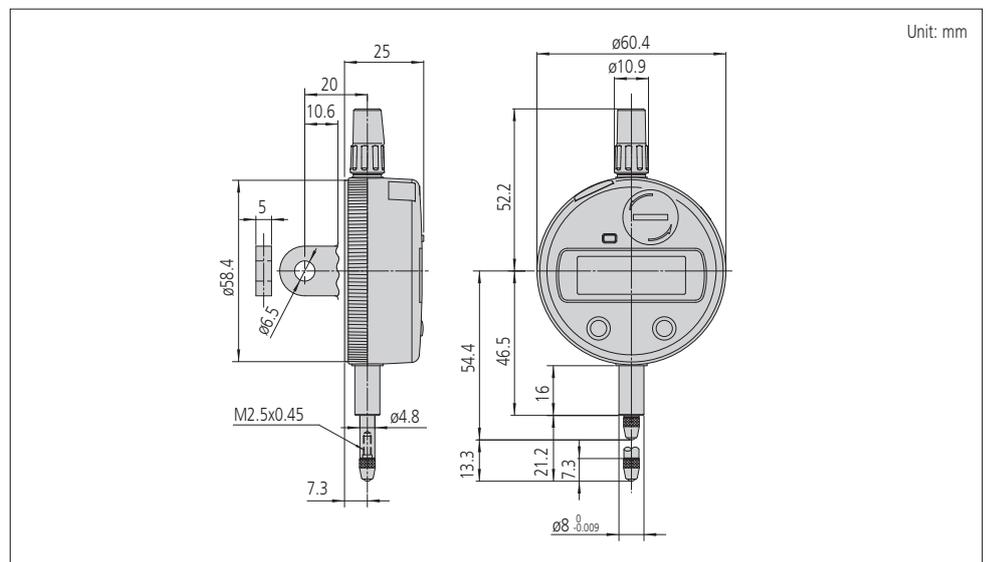
543-782

Specifications

Inch/Metric					
Code No.	Range	Resolution	Accuracy	Measuring force	Price
543-782	.5" / 12.7 mm	.0005" / 0.01 mm	.0008" / 0.02 mm	2.0N or less	£118.00

* Quantizing error of ± 1 count is excluded.

Dimensions



Digimatic Indicators

SERIES 543 – ABSOLUTE Digimatic Slim Body Economical Indicator ID-U

- General purpose indicator with the measuring range of 25.4 mm / 1".
- Cost-effective and user-friendly type which is equipped with the basic functions necessary.
- The ABSOLUTE sensor restores the last origin position automatically when the indicator is turned on, and realizes high reliability by eliminating over-speed errors.
- Battery life of 20,000 hours in continuous use has been achieved.
- Easy-to-read large LCD readout with a character height of 8 mm.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

ABSOLUTE IP42



575-123

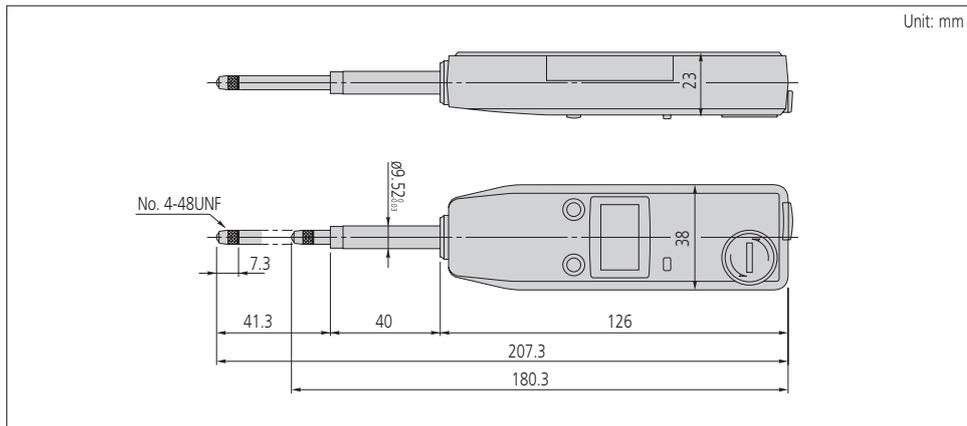
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Measuring force	Price
575-123	1" / 25.4 mm	.0005" / 0.01 mm	.0008" / 0.02 mm	1.8N or less	£158.00

* Quantizing error of ±1 count is excluded.

Dimensions



Unit: mm

Technical Data

Display:	LCD, 8.5 mm character height
Scale type:	ABSOLUTE electrostatic linear encoder
Max. response speed:	Unlimited (scanning measurement is not supported)
Stem diameter:	3/8"
Standard contact point:	21BZB005
Battery:	SR44 (1 pc.) 938882
Battery life:	Approx. 20,000 hours under normal use
Lifting lever:	137693
Dust/water protection level:	IP42

Functions

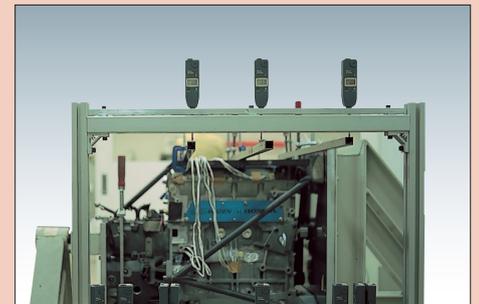
Origin-set (zeroset), counting direction switching, power ON/OFF, data output, inch/mm reading
 Alarm: Low voltage, counting value composition error

Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
06ADV380C	USB Input Tool Direct USB-ITN-C (2 m)	£105.00
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140F	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00
540774	Plunger lifting cable	£23.60
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00

Contact points for Mitutoyo's dial indicators (refer to pages F-37 to F-40 for details).

Measuring stands (refer to pages F-70 to F-75 for details).



Application example.

Optional Accessory

SERIES 542 – EC Counter, Low-Cost Modular Display Unit

- 3 sets of limit setting value can be displayed.
- Can be set to produce either tolerance judgement output or Digimatic output.
- Small size (96 x 48 mm) which conforms to DIN standards.

Technical Data

Functions: Preset, GO/±NG judgement, output (selectable)
 Tolerance judgement: -NG, OK, +NG (open collector)
 Data: Digimatic code
 External control signal input: Preset, data hold
 Power supply: Via AC adapter

Optional Accessories

Code No.	Description	Price
214938	DC plug PJ-2	£4.60
C162-155	I/O cable	£45.00



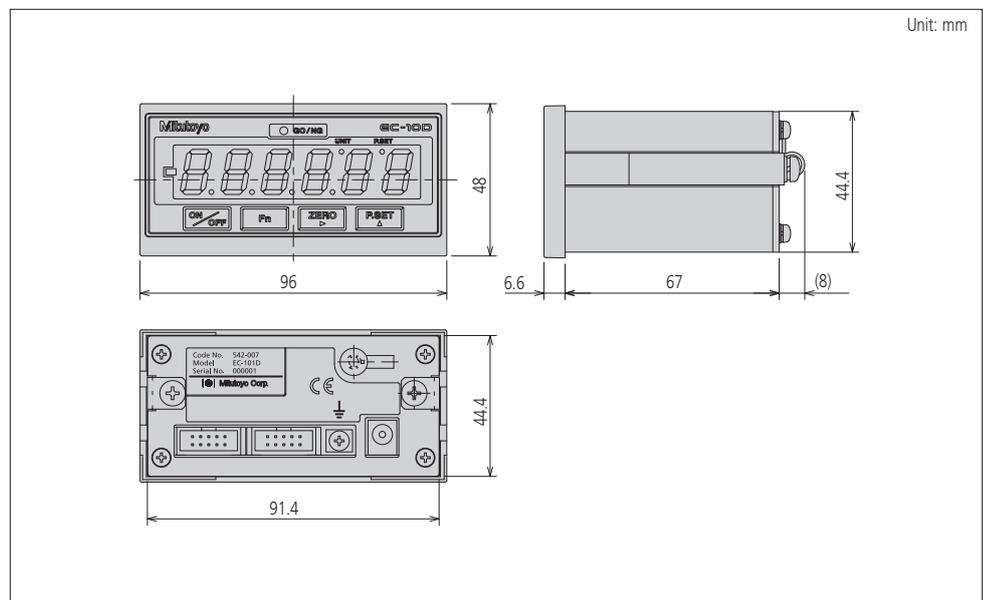
542-007E



Specifications

Code No.	542-007E
Applicable input	Digimatic code (SPC)
Number of gauge inputs	1
Resolution	0.01, 0.001 mm (automatically set depending on the gauge)
Display	6-digit and a negative [-] sign LED (amber, green, red)
Price	£249.00

Dimensions



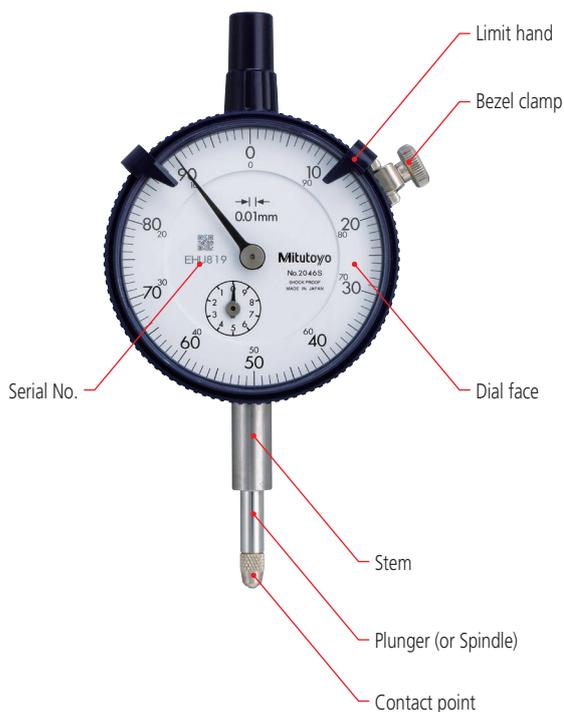
Dial Indicators

Mitutoyo's dial indicators have long been used by many of our customers. In full recognition of their needs, we have devoted ourselves to the research and development necessary to produce high-quality and high-accuracy dial indicators. Due to the recent re-acknowledgement of the importance of measurement technologies, the demands on dial indicators are many and varied: installation in measuring jigs, mounting in countless types of precision equipment, etc. We offer numerous models with various dial faces, measuring ranges, graduation styles and environmental resistance ratings. The stems, which ensure the fixture reliability, and the plungers, which are the basis of accuracy, have excellent resistance against hard use thanks to the hardened stainless steel construction. 0.01 mm resolution dial indicators have a grand gear made of stainless steel with high resistance to wear and deformation. 0.001 mm resolution dial indicators employ a sector gear made of a special alloy in order to further increase the resistance to wear.

F- and S-type dial indicators employ an O-ring to ensure air tightness between the outer frame and the crystal case in order to prevent water or oil penetration.

Important factors in choosing a dial indicator: the size (bezel diameter), resolution (graduation) and measuring range. Use the table on the right to help choose a suitable model for your application.

Parts of a Dial Indicator



Feature Icons

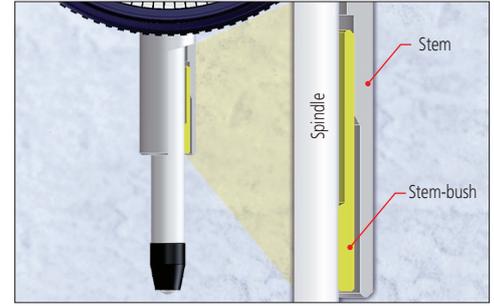
Icon	Feature description
	Reverse reading type. Suitable for depth and step measurement.
	One revolution type for easy and error-free reading.
	Double scale spacing type, easy-on-the-eyes.
	Shockproof type.
	Waterproof type (IP63).
	Waterproof type (IP64).
	With damper at lowest rest point.
	Jewelled bearing type.
	Peak retaining type.
	Dustproof type.
	With coaxial revolution counter.
	Back plunger type.
	Adjustable hand type.

Note: Mitutoyo produces ASME-compatible products. Contact us for details.

Features: S Series (Series 2, 3, 4)



- No through screw-holes on the frame for high oil- and dust-resistance. The bezel clamp can be attached either to the right or left side.
- Improved Impact- and oil-resistant materials are employed in the outer frame. Easier reading is due to the improved shape of the crystal face.



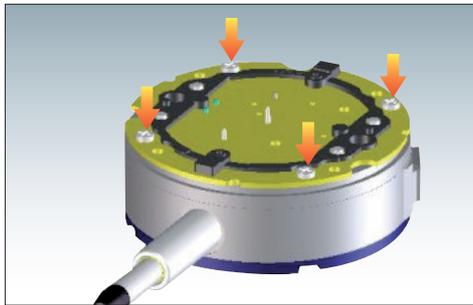
- Revolutionary stem-bush design for trouble-free stem clamping (longer clamping range; maximum tightening torque at the clamping point with M5 screw: 150N-cm).



- The plunger lifting lever (optional: 21AZB149) can be attached to either the right or left side providing high operability and smooth movement. This lever can be easily installed and removed without tools.



- Limit markers ① can be moved without interfering with the clamp ②.



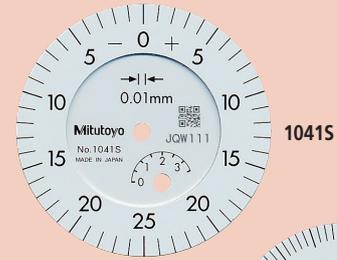
- Greater rigidity in the bearing plate for reduced retrace error (20%) and 4-screw mounting for increased impact resistance.

F

Dial Indicators

SERIES 1 – Compact Dial Indicators

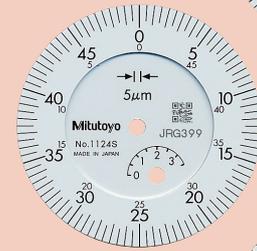
- Compact dial indicators with outer bezel diameters of 31, 36 and 40 mm for restricted-space applications in gauging fixtures.



1041S



1045S



1124S

1013S-10



Specifications

Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
1013S-10	0.002 mm	1 mm (0.2 mm)	6 µm	2.5 µm	2.5 µm	5 µm	1 µm	0-100-0	1.5 N or less	£104.00
1040S	0.01 mm	3.5 mm (0.5 mm)	13 µm	4 µm	8 µm	11 µm	3 µm	±0-50	1.4 N or less	£69.00
1041S	0.01 mm							0-25-0		£69.00
1044S	0.01 mm	5 mm (1 mm)	13 µm	4 µm	8 µm	11 µm	3 µm	±0-100	0.4 N or less*1	£48.30
1044S-15	0.01 mm							±0-100		£66.70
1044S-60	0.01 mm							±0-100		£80.50
1045S	0.01 mm							0-50-0		£52.90
1124S	0.005 mm	3.5 mm (0.5 mm)	12 µm	3.5 µm	6 µm	10 µm		±0-50	1.4 N or less	£80.50

*1 Use in a vertical orientation only (contact point downward).

Inch

Code No.	Graduation	Range (range/rev)	Accuracy		Repeat-ability	Scale	Measuring force	Price
			First 1 rev / 2.5 rev / 10 rev	Retrace				
1923B*2	.0005"	.05" (.02")	±.0005" / ±.005" / —	.0016"	±.0001"	0-10-0	1.8 N or less	£89.50
1925T-10	.0001"	.025" (.01")	±.0002" / ±.0002" / —	.0001"	±.00003"	0-5-0		£103.00
1410S	.001"	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-100	1.4 N or less	£70.80
1411S						0-50-0		£70.80
1780S						0-50		£70.80
1781S						0-25-0		£70.80
1506S	.0005"	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-50	1.4 N or less	£73.00
1507S						0-25-0		£73.00
1670S						0-40		£70.80
1671S						0-20-0		£70.80
1802S-10	.0001"	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	1.5 N or less	£99.60
1803S-10						0-5-0		£99.60

*2 Flat-back type.

Features

Metric				
Code No.				
1013S-10	—	✓	—	—
1040S	✓	—	—	—
1041S	✓	—	—	—
1044S	—	—	—	—
1044S-15	—	✓	—	—
1044S-60	—	—	✓	—
1045S	—	—	—	—
1124S	—	—	—	—

Inch				
Code No.				
1923B	—	—	—	—
1925-10	—	✓	—	—
1410S	—	—	—	—
1411S	—	—	—	—
1780S	—	—	—	—
1781S	—	—	—	—
1506S	—	—	—	—
1507S	—	—	—	—
1670S	—	—	—	—
1671S	—	—	—	—
1802S-10	—	✓	—	✓
1803S-10	—	✓	—	✓

Dimensions

Unit: mm

ANSI/AGD type

Note 1: Dimensions of the inch (ANSI/AGD type) dial indicator partly differ from those of the metric (ISO/JIS type) indicator.

Note 2: Inch (ANSI/AGD type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

ISO/JIS type

Code No.	A	B	C	D	E	F	G	H	I
ISO/JIS type									
1013S-10	32.5	49	40	14.5	20	13.8	15.2	38	6.6
1040S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
1041S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
1044S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1044S-15*	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1044S-60	32.5	57	40	14.5	20	12.2	24.8	38	6.6
1045S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1124S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
ANSI/AGD type									
1923	15.5	38.3	31	12.5	19	15	7.8	30	7
1925-10	15.5	37.5	31	12.5	19	15	7	30	7
1410S	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1411S	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1780S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1781S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1506S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1507S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1670S	32.5	43.4	40	14.5	19	12.8	10.6	38	6.6
1671S	32.5	43.4	40	14.5	19	12.8	10.6	38	6.6
1802S-10	32.5	41.3	40	14.5	19	12.5	8.5	38	6.6
1803S-10	32.5	41.3	40	14.5	19	12.5	8.5	38	6.6

F

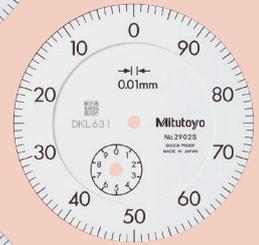
Dial Indicators

SERIES 2 – 0.01 mm Graduation Dial Indicators

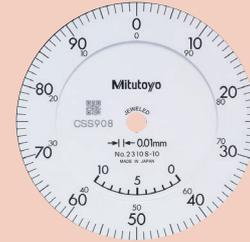
- Standard 0.01 mm graduation dial gauges having a bezel with an outside diameter of 57 mm. All types come with limit markers and a bezel clamp as standard.
- The bezel clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secure adhesion between the bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The stem and plunger are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- The grand gear is made of stainless steel with high resistance to wear and deformation.
- Application of a hard coating on the surface of the crystal makes it highly resistant to scratching and chemical attack.



2047S



2902S



2310S-10



2044S

Specifications

Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price						
			Overall	Retrace	1/10 rev	1 rev										
2046S	0.01 mm	10 mm (1 mm)	13 µm	3 µm	5 µm	10 µm	3 µm	±0-100	1.4 N or less	£36.40						
2046S-60									2.5 N or less	£89.70						
2047S								0-50-0	£52.90							
2902S								100-0	£55.20							
2310S-10								5 mm (1 mm)	12 µm	3 µm	5 µm	10 µm	3 µm	±0-100	1.4 N or less	£56.40
2044S															2.5 N or less	£50.60
2044S-60		1.4 N or less	£80.50													
2044S-09		2.5 N or less	£52.40													
2045S		0-50-0	1.4 N or less	£51.80												

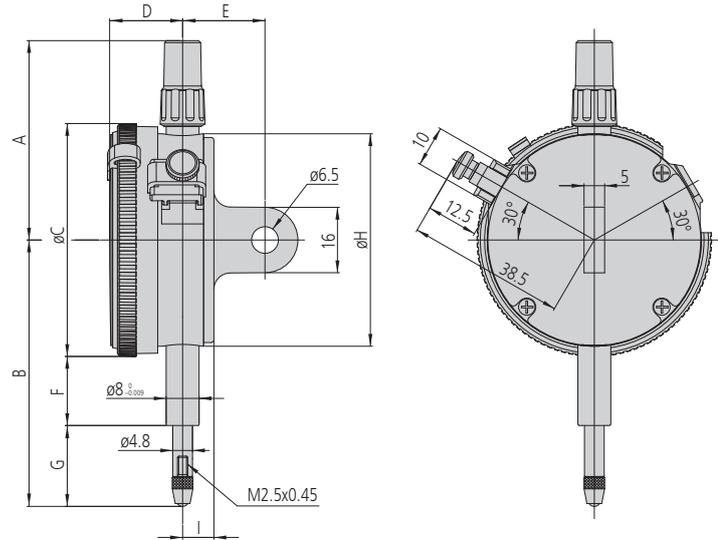
Features

Metric					
Code No.					
2046S	—	—	—	—	—
2046S-60	—	✓	—	—	—
2047S	—	—	—	—	—
2902S	—	—	—	—	✓
2310S-10	—	—	✓	✓	—
2044S	—	—	—	—	—
2044S-60	—	✓	—	—	—
2044S-09	✓	—	—	—	—
2045S	—	—	—	—	—

Dimensions

Unit: mm

ISO/JIS type



Note 1: Dimensions of the inch (ANSI/AGD type) dial indicator partly differ from those of the metric (ISO/JIS type) indicator.

Note 2: Inch (ANSI/AGD type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

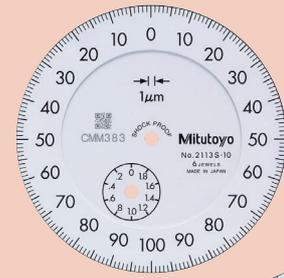
Code No.	A	B	C	D	E	F	G	H	I	
2046S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6	
2046S-60		70				12.3	29.2			
2047S		65.2				16.9	19.8			
2902S										
2310S-10		65.2				70	12.3			29.2
2044S										
2044S-60										
2044S-09										
2045S	65.2	16.9	19.8							

F

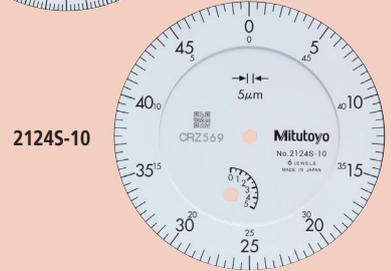
Dial Indicators

SERIES 2 – 0.001 mm and 0.005 mm Graduation Dial Indicators

- Standard 0.001 mm and 0.005 mm graduation dial indicators having a bezel with an outside diameter of 57 mm. All types come with limit markers and a bezel clamp.
- The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secure adhesion between the bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The plunger is made of high-strength quench hardened stainless steel which resists arduous use.
- A carbide contact point is used.
- A special alloy is used for the sector gears to provide improved wear resistance.
- The indicator uses jewelled bearings, providing excellent indication sensitivity and durability.
- Application of a hard coating on the surface of the crystal makes it highly resistant to scratching and chemical attack.



21135-10



21245-10



21105-10



21095-10



21195-10

Specifications

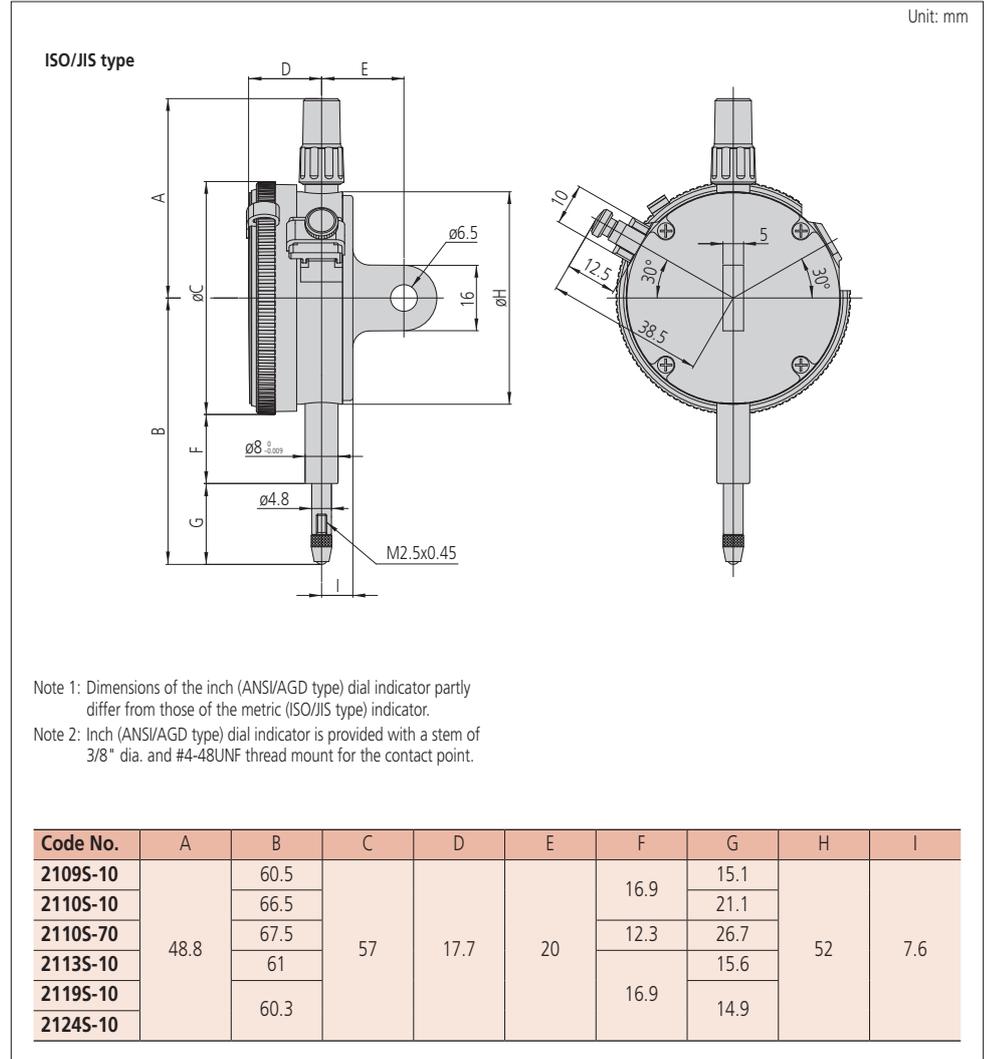
Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
21095-10	0.001 mm	1 mm (0.2 mm)	5 µm	2 µm	2 µm	4 µm	0.5 µm	0-100-0	1.5 N or less	£77.70
21105-10		1 mm (0.1 mm)						£95.30		
21105-70		2 mm (0.2 mm)	7 µm	5 µm	£122.00					
21135-10		5 mm (0.2 mm)	10 µm	3 µm	3.5 µm	6 µm	1 µm	0-100-0	1.5 N or less	£86.10
21195-10		5 mm (0.5 mm)	12 µm	5 µm	9 µm	3 µm	±0-50	£107.00		
21245-10	0.005 mm	5 mm (0.5 mm)	12 µm	5 µm	9 µm	3 µm	±0-50	£73.60		

Features

Metric				
Code No.				
2109S-10	✓	—	✓	—
2110S-10	✓	—	✓	✓
2110S-70	✓	✓	✓	✓
2113S-10	✓	—	✓	—
2119S-10	—	—	✓	—
2124S-10	—	—	✓	—

Dimensions

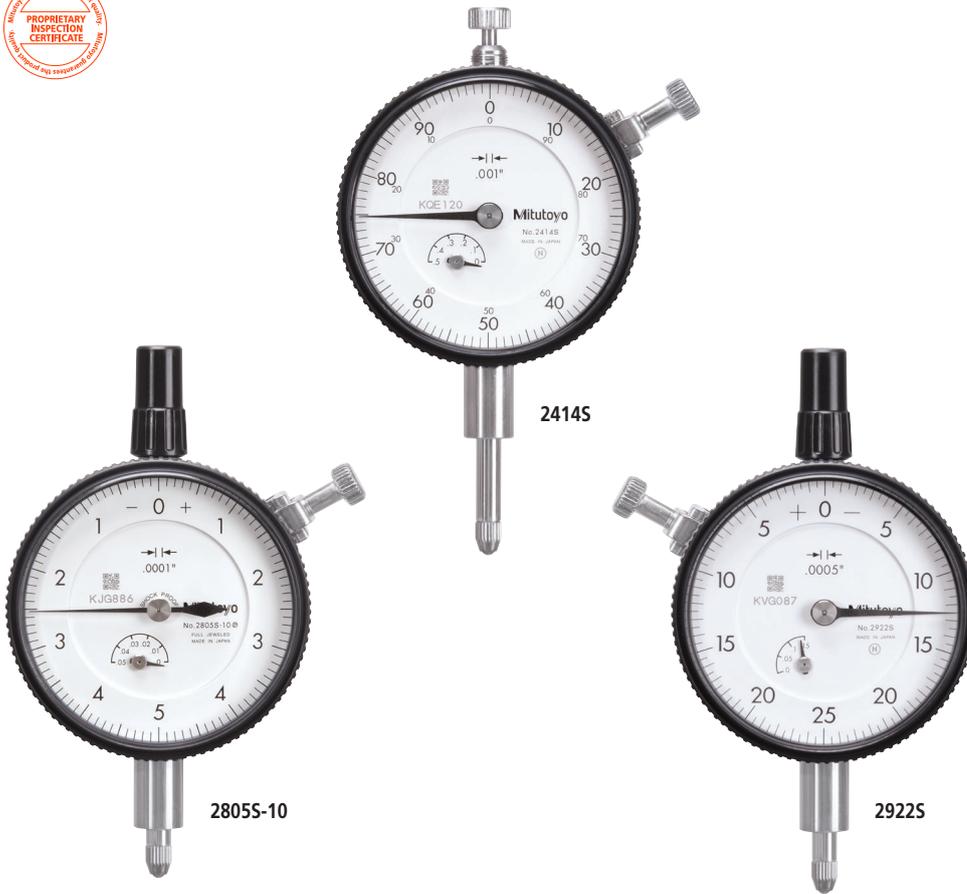


F

Dial Indicators

SERIES 2 – Inch Reading Dial Indicators

- Standard .0001" to 0.001" graduation dial indicators having a bezel with an outside diameter of 57 mm.
- The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secure adhesion between the bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- A carbide contact point is used.
- The stem and plunger are made of high-strength quench-hardened stainless steel which resists arduous use.
- A special alloy is used for the sector gears to provide improved wear resistance.
- The indicator uses jewelled bearings, providing excellent indication sensitivity and durability.
- Application of a hard coating on the surface of the crystal makes it highly resistant to scratching and chemical attack.



Features

Inch			
Code No.			
2414S	—	—	—
2415S	—	—	—
2922S	—	—	✓
2358S-10	—	✓	—
2802S-10	✓	✓	—
2803S-10	✓	✓	—
2804S-10	✓	✓	—
2805S-10	✓	✓	—
2923S-10	✓	✓	✓

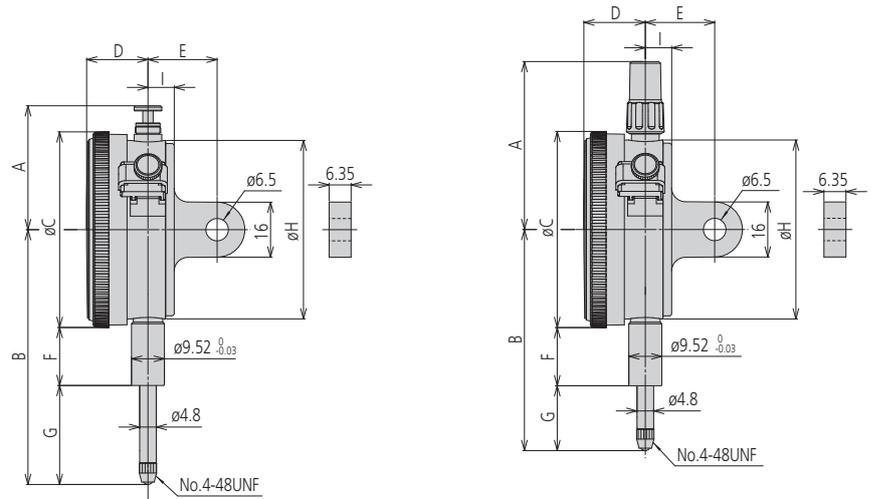
Specifications

Inch								
Code No.	Graduation	Range (range/rev)	Accuracy		Repeatability	Scale	Measuring force	Price
			First 1 rev / 2.5 rev / 10 rev	Retrace				
2414S	.001"	.5" (.1")	±.001" / ±.001" / ±.001"		.0002"	±.0002"	±0-100	£68.20
2415S			0-50-0	1.8 N or less				£68.20
2922S	.0005"	.125" (.05")	±.0005" / ±.0005" / —		.00016"	±.0001"	0-25-0	£65.60
2358S-10	.0001"	.5" (.01")	±.0002" / .0002" / ±.0003"		.00015"	±.00003"	0-10	£129.00
			±.0004" (first 20 rev) / ±.0008" (over 20 rev)					
2802S-10		.025" (.01")	±.0001" / ±.0001" / —		.0001"	±.00003"	0-5-0	£107.00
2803S-10								
2804S-10		.05" (.01")	±.0001" / ±.0001" / —		.0001"	±.00003"	0-10	£114.00
2805S-10								£114.00
2923S-10	±.0002"			0-5-0			£104.00	

Dimensions

Unit: mm

ANSI/AGD type



Code No.	A	B	C	D	E	F	G	H	I
2414S	38.9	64.1	57	17.7	19	13.6	52	7.6	
2415S									
2922S	48.8	54.3							
2358S-10	38.9	63.6							
2802S-10	48.8	51.4							
2803S-10									
2804S-10									
2805S-10									
2923S-10		51.7							

Dial Indicators

SERIES 1 and 2 – One Revolution Dial Indicators

- Mitutoyo's unique shock-proof mechanism is incorporated, providing improved resistance to shock due to sudden plunger retraction caused by impact.
- This series has been developed to eliminate the possibility of reading errors due to miscounting multiple revolutions.
- The dead zone in red indicates "accuracy not guaranteed".
- One revolution type Back plunger dial gauges are also available. (Refer to page F-36 for details.)

2970 Series:

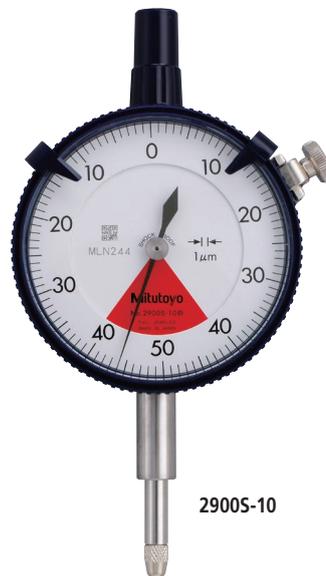
- Excellent water- and drip-proof characteristics (IP43).
- Smooth movement thanks to the improved design of bush and stem.
- Application of a hard coating on the surface of the crystal makes it highly resistant to scratching and chemical attack.
- Lightweight (75 g).



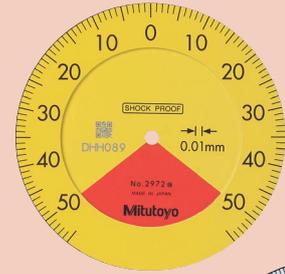
2971TB



1929S



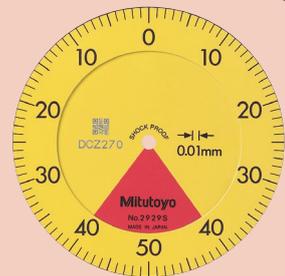
2900S-10



2972



2901S-10



2929S

Specifications

Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
Series 1										
1929S	0.01 mm	1 mm (1.4 mm)	11 µm	4 µm	7 µm	—	3 µm	50-0-50	1.4 N or less	£74.80
Series 2										
2929S	0.01 mm	0.8 mm (1 mm)	8 µm	3 µm	5 µm	—	3 µm	40-0-40	1.4 N or less	£74.80
2929S-62									2.0 N or less	£106.00
2900S-10	0.001 mm	0.08 mm (0.1 mm)	3 µm	2 µm	2 µm	—	0.5 µm	80-0-80	1.4 N or less	£107.00
2900S-72									2.0 N or less	£114.00
2901S-10									0.16 mm (0.2 mm)	4 µm
2971TB	0.01 mm	0.5 mm (0.7 mm)	8 µm	3 µm	5 µm	—	3 µm	25-0-25	1.4 N or less	£48.50
2972TB									1 mm (1.4 mm)	—

Inch

Code No.	Graduation	Range (range/rev)	Accuracy		Repeat-ability	Scale	Measuring force	Price	
			First 1 rev / 2.5 rev / 10 rev	Retrace					
Series 2									
2910S-10	.0001"	.008" (.01")	±.0001" / — / —		.0001"	±.00003"	4-0-4	1.8 N or less	£95.80
2978	.001"	.06" (.079")	±.001" / — / —		.0002"	±.0002"	30-0-30	1.4 N or less	£40.00
2976TB	.0005"	.02" (.028")	±.0005" / — / —		.00016"	±.0001"	10-0-10	1.4 N or less	£42.40

Features

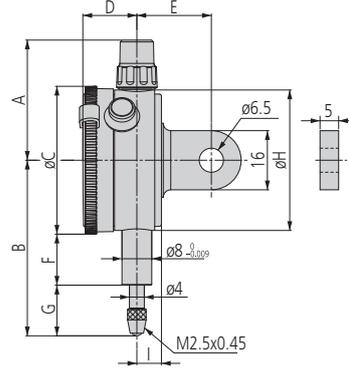
Metric			
Code No.			
1929S	✓	—	—
2929S	✓	—	—
2929S-62	✓	✓	—
2900S-10	✓	—	✓
2900S-72	✓	✓	✓
2901S-10	✓	—	✓
2971TB	✓	✓	—
2972TB	✓	✓	—

Inch			
Code No.			
2910S-10	✓	—	✓
2978	✓	✓	—
2976TB	✓	✓	—

Dimensions

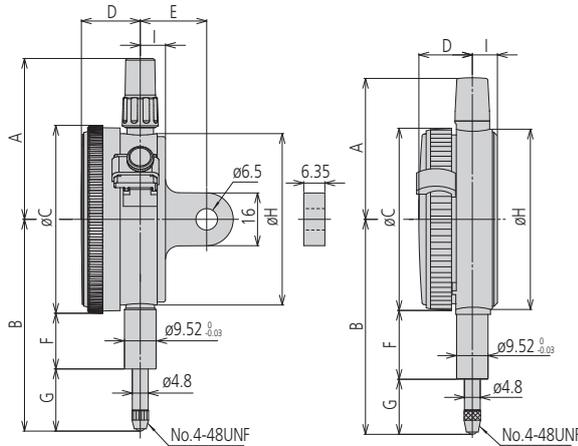
Unit: mm

1929S

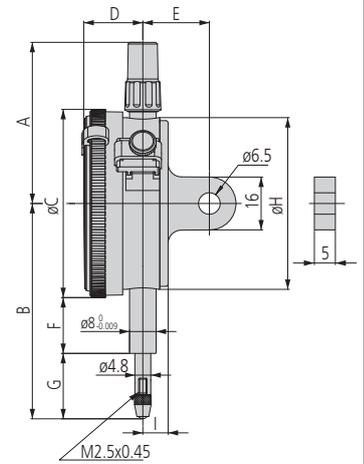


Note 1: Dimensions of the inch (ANSI/AGD type) dial indicator partly differ from those of the metric (ISO/JIS type) indicator.
 Note 2: Inch (ANSI/AGD type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

ANSI/AGD type



ISO/JIS type



Code No.	A	B	C	D	E	F	G	H	I	
ISO/JIS type										
1929S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6	
2929S	48.8	65.2	57	17.7		16.9	20.6	19.8	52	7.6
2929S-62		66						20.7		
2900S-10		66.1						16.8		
2900S-72		65.6						17.2		
2901S-10		66						16.8		
2971TB*	43.2	65.6	55.6	16.2	—	21	16.8	55	7.6	
2972TB*	43.2	66	55.6	16.2	—	21	17.2	55	7.6	
ANSI/AGD type										
2910S-10	48.8	51.2	57	17.7	19	13.6	9.1	52	7.6	
2978*	43.2	65.3	55.6	16.2	—	21	16.5	55		
2976TB*		64.7					15.9			

* Plain back

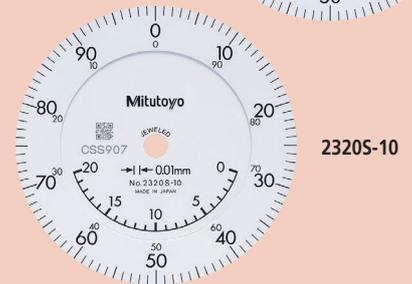
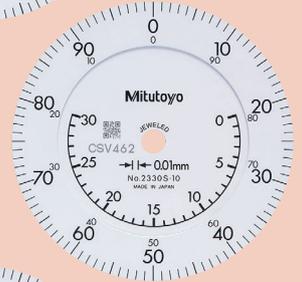
Dial Indicators

SERIES 2 – Long Stroke Dial Indicators

- Long stroke dial indicators with a $\varnothing 57$ mm outer frame. All models are equipped with limit markers and a bezel clamp as standard.
- An O-ring is employed to ensure air-tightness between the outer frame and the crystal case to prevent water or oil penetration.
- Both the stem and the plunger are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide-tipped contact point is employed.
- The grand gear is made of stainless steel with high resistance to wear and deformation.
- Application of a hard coating on the surface of the crystal makes it highly resistant to scratching and chemical attack.
- The bezel clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.



2330S-10



Specifications

Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
2050S	0.01 mm	20 mm (1 mm)	20 μ m	5 μ m	8 μ m	15 μ m	4 μ m	$\pm 0-100$	2.0 N or less	£70.20
2320S-10			25 μ m	7 μ m	10 μ m	15 μ m	5 μ m	$\pm 0-100$	2.5 N or less	£70.20
2052S		30 mm (1 mm)	25 μ m	7 μ m	10 μ m	15 μ m	5 μ m	$\pm 0-100$	2.5 N or less	£85.80
2330S-10			25 μ m	7 μ m	10 μ m	15 μ m	5 μ m	$\pm 0-100$	2.5 N or less	£92.00

Inch

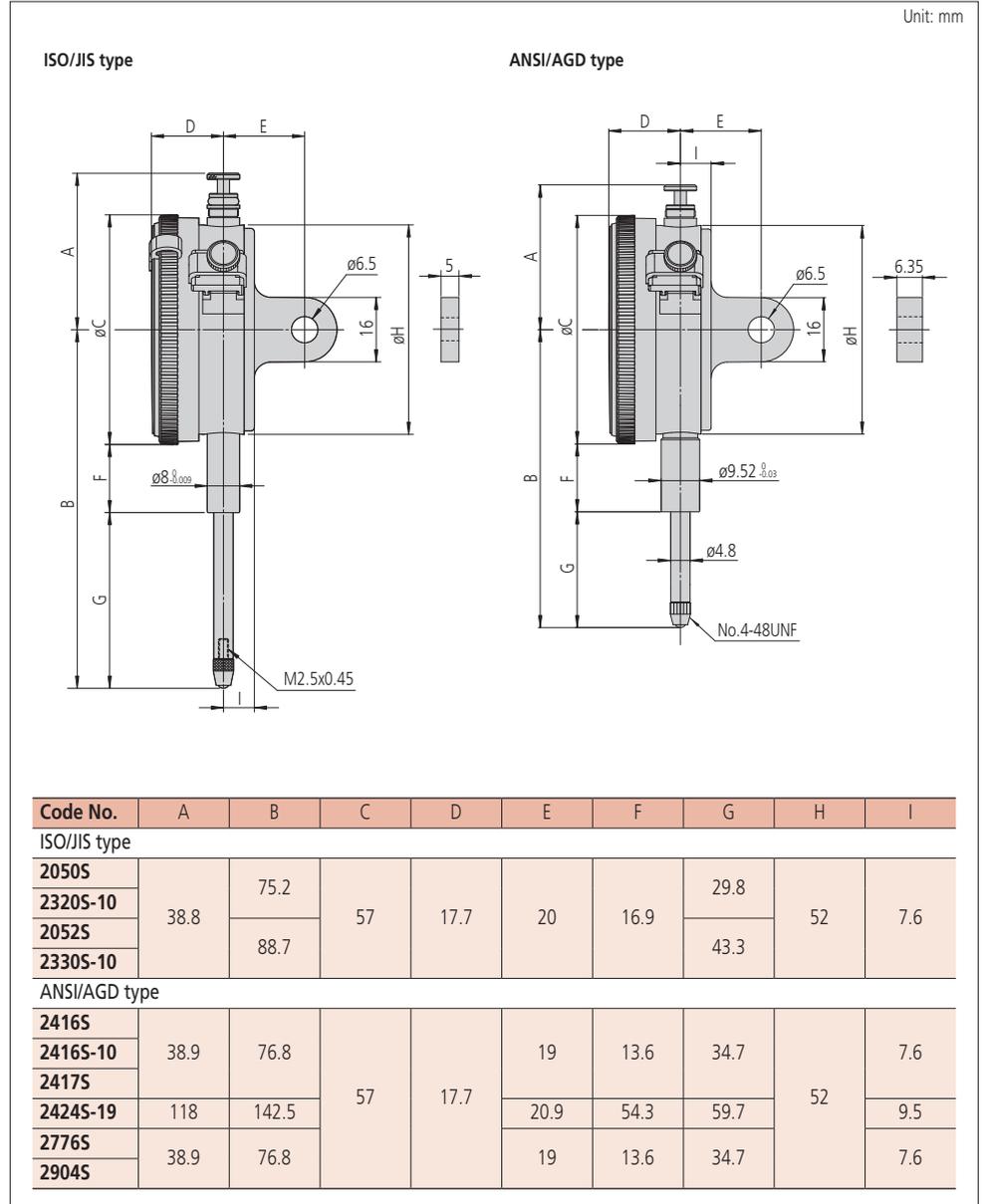
Code No.	Graduation	Range (range/rev)	Accuracy		Repeat-ability	Scale	Measuring force	Price
			First 1 rev / 2.5 rev / 10 rev	Retrace				
2416S	.001"	1" (.1")	$\pm .001$ " / $\pm .001$ " / $\pm .002$ "	.0002"	$\pm .0002$ "	$\pm 0-100$	1.8 N or less	£68.20
2416S-10			$\pm .001$ " / $\pm .001$ " / $\pm .002$ " / $\pm .003$ " (first 20 rev)	.00033"		0-50-0		£80.90
2417S		2" (.1")	$\pm .001$ " / $\pm .001$ " / $\pm .002$ " / $\pm .003$ " (first 20 rev)	.00033"	$\pm .0002$ "	$\pm 0-100$	2.5 N or less	£127.00
2424S-19			$\pm .001$ " / $\pm .001$ " / $\pm .002$ " / $\pm .003$ " (first 20 rev)	.00033"		$\pm 0-100$		£127.00
2776S	.0005"	1" (.05")	$\pm .0005$ " / $\pm .0005$ " / $\pm .0015$ "	.0002"	$\pm .0001$ "	$\pm 0-50$		£78.20
2904S	.001"	1" (.1")	$\pm .001$ " / $\pm .001$ " / $\pm .002$ "	.0002"	$\pm .0002$ "	100-0	1.8 N or less	£70.80

Features

Metric					
Code No.					
2050S	—	✓	—	—	—
2320S-10	—	✓	✓	✓	—
2052S	—	✓	—	—	—
2330S-10	—	✓	✓	✓	—

Inch					
Code No.					
2416S	—	—	—	—	—
2416S-10	—	—	✓	—	—
2417S	—	—	—	—	—
2424S-19	✓	—	✓	✓	—
2776S	—	—	—	—	—
2904S	—	—	—	—	✓

Dimensions



F

Dial Indicators

SERIES 3 and 4 – Long Stroke Large Dial Indicators

- Dial indicators with a large-diameter dial face for easy reading.
- Models with longer measuring ranges are also available.
- Both the stem and the plunger are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- All types are supplied with limit markers and a bezel clamp as standard.
- The bezel clamp and lifting lever (optional)*1 can be attached to either the right or left side. These parts can be easily installed and removed without tools.

*1: Can be attached only to Code No. 3046S, 3047S, 3050S, 3109S-10 and 4046S.



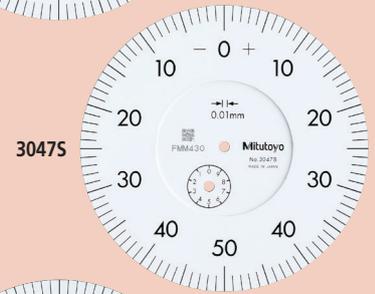
3109S-10



4046S



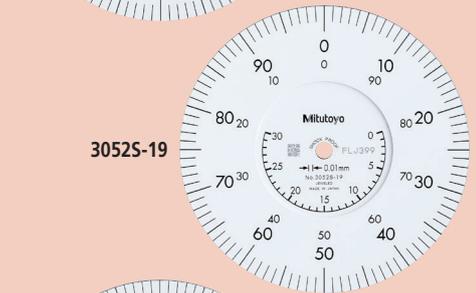
3046S



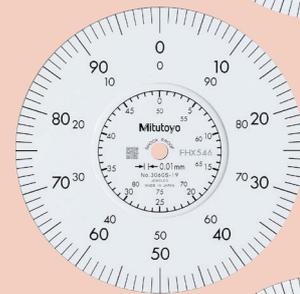
3047S



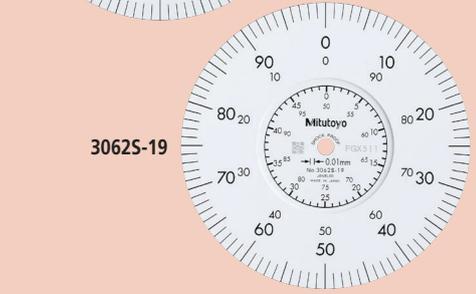
3050S



3052S-19



3060S-19



3062S-19

Specifications

Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
3046S	0.01 mm	10 mm (1 mm)	15 µm	3 µm	5 µm	10 µm	3 µm	±0-100	1.4 N or less	£97.80
3047S								0-50-0		£97.80
3050S								±0-100		£121.00
3052S-19								2.0 N or less		£133.00
3058S-19								2.5 N or less		£145.00
3060S-19* ²								3.0 N or less		£191.00
3062S-19* ²								3.2 N or less		£307.00
3109S-10	0.001 mm	1 mm (0.2 mm)	5 µm	2 µm	2 µm	4 µm	0.5 µm	0-100-0	1.5 N or less	£134.00
4046S	0.01 mm	10 mm (1 mm)	15 µm	3 µm	5 µm	10 µm	3 µm	±0-100	1.4 N or less	£135.00

Inch

Code No.	Graduation	Range (range/rev)	Accuracy		Repeat-ability	Scale	Measuring force	Price
			First 1 rev / 2.5 rev / 10 rev	Retrace				
3414S	.001"	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	±0-100	1.8 N or less	£78.80
3415S						0-50-0		£78.80
3416S						±0-100		£97.50
3417S						0-50-0		£97.50
3424S-19						2" (.1")		±.001" / ±.001" / ±.002" / ±.003" (20 rev)
3426S-19* ²	3" (.1")	±.001" / ±.001" / ±.002" / ±.003"	£182.00					
3428S-19* ²	4" (.1")	(20 rev) / ±.005" (over 20 rev)	£228.00					
3802S-10	.0001"	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	2.0 N or less	£115.00
3803S-10						0-5-0		£110.00
4887S-19* ²	.001"	3" (.1")	±.001" / ±.001" / ±.002" / ±.003" (20 rev) / ±.005" (over 20 rev)	.00033"	±.0002"	±0-100	3.0 N or less	£182.00

*² Use in a vertical orientation only (contact point downward).

Features

Metric				
Code No.				
3046S	—	—	—	—
3047S	—	—	—	—
3050S	—	✓	—	—
3052S-19	✓	—	✓	✓
3058S-19	✓	—	✓	✓
3060S-19	✓	—	✓	✓
3062S-19	✓	—	✓	✓
3109S-10	✓	—	✓	—
4046S	—	—	—	—

Inch				
Code No.				
3414S	—	—	—	—
3415S	—	—	—	—
3416S	—	—	—	—
3417S	—	—	—	—
3424S-19	✓	—	✓	✓
3426S-19	✓	—	✓	✓
3428S-19	✓	—	✓	✓
3802S-10	✓	—	✓	—
3803S-10	✓	—	✓	—
4887S-19	✓	—	✓	✓

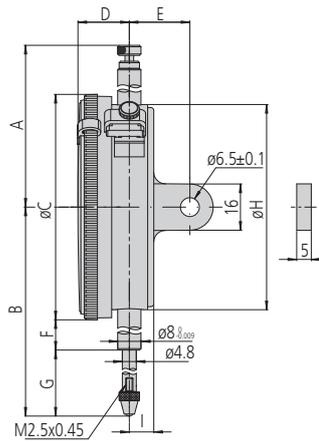


3058S-19

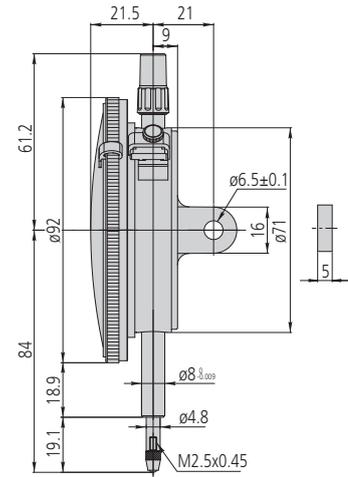
Dimensions

Unit: mm

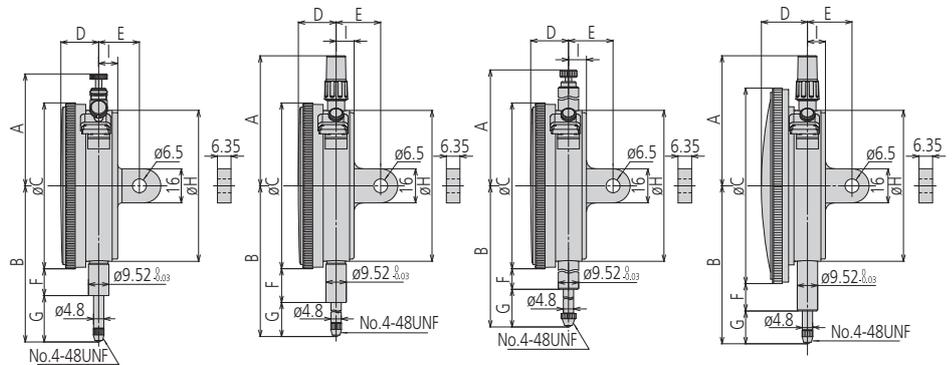
ISO/JIS type



4046S



ANSI/AGD type



Code No.	A	B	C	D	E	F	G	H	I
ISO/JIS type									
3046S	61.2	75.5				15.9	20.6		
3047S									
3050S	52.6	94	78	17.7	21	25.9	29.1	71	9
3052S-19	72.9	104.3							
3058S-19	81.9	142.3							
3060S-19	120.9	202.3							
3062S-19	141.9	243.3							
3109S-10	61.2	79							
ANSI/AGD type									
3414S	52.6	73.4	78	17.7	19	12.6	21.8	71	9
3415S		86.1							
3416S									
3417S									
3424S-19	84	149.3	78	17.7	19	50.6	59.7	71	9
3426S-19	123	198.1							
3428S-19	144	244.5							
3803S-10	61.2	59.7							
3802S-10			78	17.7	19	12.6	8.1	71	9
3052S-11	72.9	102.4							
3058S-11	81.9	147.1							
4887S-19	123	198.1							

Dial Indicators

SERIES 2 – Special Purpose Dial Indicators

Adjustable-hand dial gauge

- The hand position can be adjusted independently of the position of the plunger by rotating the top knob.

Peak-hold dial gauge

- A mechanism holds the pointer and the plunger at the position of maximum depression and hence displays the maximum value.*

* Clearance of peak hold: push the nut in the direction of the arrow indicated in the dimensions diagram for 2046S-80.



2048S-10



2046S-80

Specifications

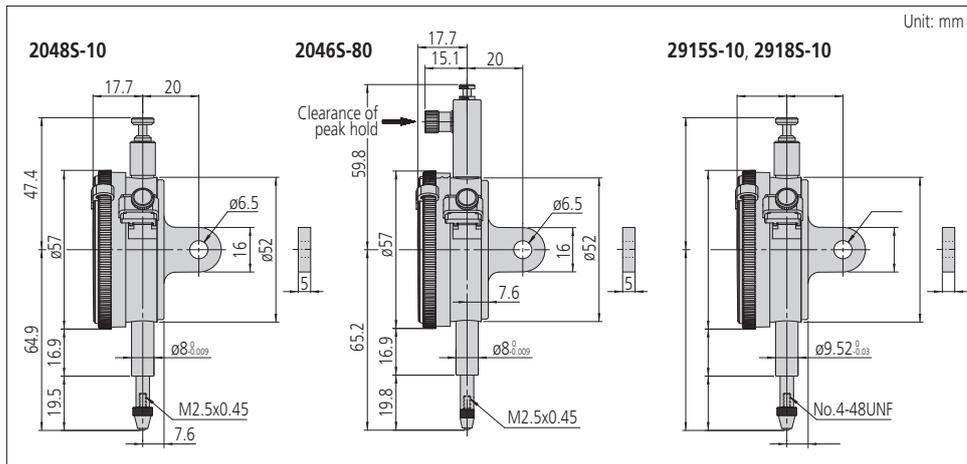
Metric

Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
2048S-10	0.01 mm	10 mm (1 mm)	15 μ m	3 μ m	5 μ m	10 μ m	3 μ m	0-100	1.4 N or less	£64.90
2046S-80	0.01 mm	10 mm (1 mm)	15 μ m	3 μ m	5 μ m	10 μ m	3 μ m	0-100	5.0 N or less	£92.00

Inch

Code No.	Graduation	Range (range/rev)	Accuracy		Repeat-ability	Scale	Measuring force	Price
			First 1 rev / 2.5 rev / 10 rev	Retrace				
2915S-10	.001"	.5" (.1")	\pm .001" / \pm .001" / \pm .001"	.0002"	\pm .0002"	0-100	1.8 N or less	£85.60
2918S-10	.001"	.5" (.1")	\pm .001" / \pm .001" / \pm .001"	.0002"	\pm .0002"	0-50-0	1.8 N or less	£85.60

Dimensions



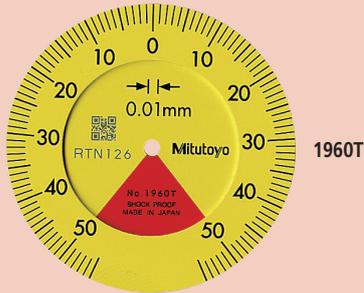
Features

Metric			
Code No.			
2048S-10	✓	—	✓
2046S-80	—	✓	—

Inch			
Code No.			
2915S-10	✓	—	✓
2918S-10	✓	—	✓

Features

Metric			
Code No.			
1960T	✓	✓	✓
1160T	✓	—	—
2960T	✓	✓	✓



1960T



SERIES 1 and 2 – Back Plunger Dial Indicators

- Back plunger type dial gauges are suitable for mounting onto levelling machine tool tables or inspection jigs, and for use in situations where standard dial gauges are difficult to read.
- Models 1960T and 2960T, which use Mitutoyo's proprietary shock-proofing mechanism, have excellent durability and shock resistance.



1160T



2960T

Specifications

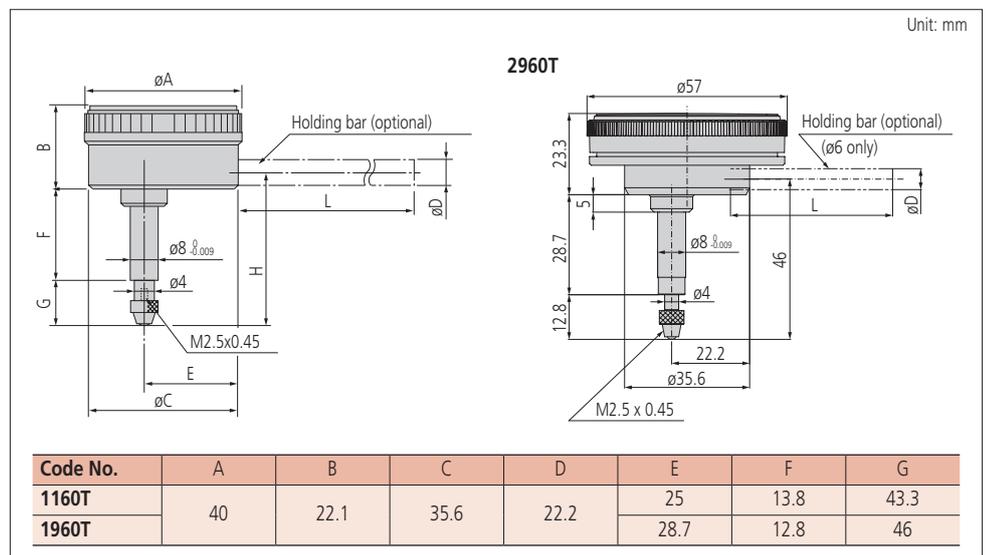
Metric										
Code No.	Graduation	Range (range/rev)	Accuracy				Repeat-ability	Scale	Measuring force	Price
			Overall	Retrace	1/10 rev	1 rev				
1960T	0.01 mm	1 mm (1.27 mm)	14 μm	4 μm	8 μm	—	3 μm	50-0-50	1.4 N or less	£104.00
1160T		5 mm (1 mm)	16 μm			14 μm		0-100		£94.30
2960T		1 mm (1.27 mm)	14 μm			—		50-0-50		£104.00

Holding Bar (optional)

Code No.	øD	L	Price
21AAA166	6 mm	42 mm	£2.70
136567	6 mm	81 mm	£2.70
124625	6.35 mm	81 mm	£2.70
21AAA167	6.35 mm	42 mm	£2.70
21AAA168	8 mm	42 mm	£2.70
136568	8 mm	81 mm	£2.70

Note: øD and L are as in diagram on right.

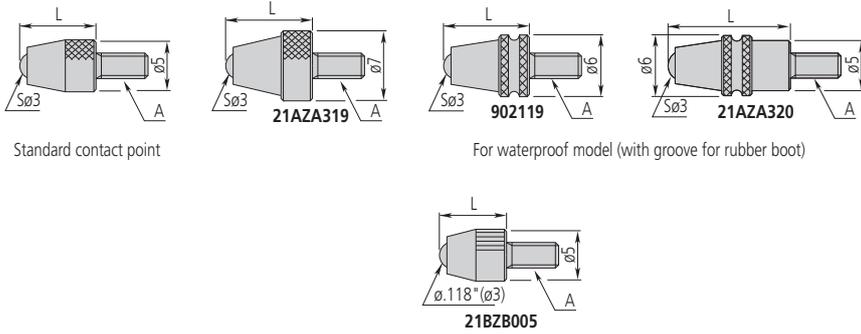
Dimensions



Optional Accessories

Contact Points for Digimatic and Dial Indicators and Linear Gauges

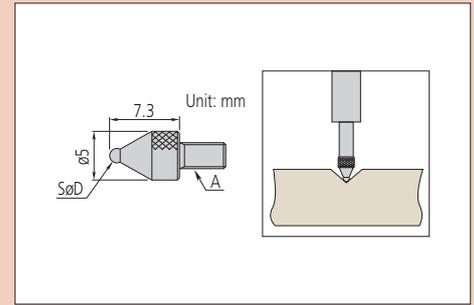
Ball Point



Unit: mm

Ball Point

Optimal for workpieces with deep indentations.

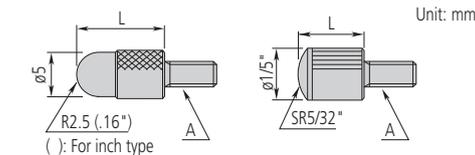


Code No.	Material	L	Price
A: M2.5x0.45			
901312	Carbide without groove	7.3	£6.10
120047	Ruby without groove		£11.80
901994	Plastic without groove		£10.10
21AZA319	Carbide without groove	8.3	£3.20
902119	Carbide with groove (waterproof type)		£13.50
21AZA320	Carbide with groove (waterproof type)	12.1	£3.20
21JAA225	Carbide without groove	14	£3.60
120049		15	£19.00
120051	Ruby without groove	17	£15.50
21JAA224	Carbide without groove		£3.20
120053	Ruby without groove	25	£19.00
120055			£15.50
A: 4-48UNF			
21BZB005	Carbide	1/4"	£6.80

Code No.	SøD	Price
A: M2.5x0.45		
21AAA349	1 mm, carbide	£46.40
21AAA350	1.5 mm, carbide	£39.00
101122	1.8 mm, steel	£4.90
21AAA351	2.5 mm, carbide	£39.00
21AAA352	4 mm, carbide	£46.70

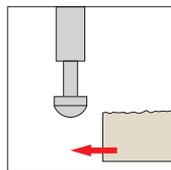
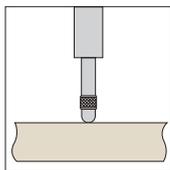
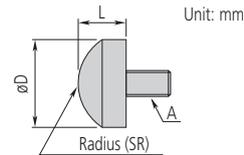
Shell Type Point

Contact point with a large radius. Optimal for use on flat surfaces.



Spherical Point

A large radius makes this contact point optimal for use where the workpiece needs to slide from the side.

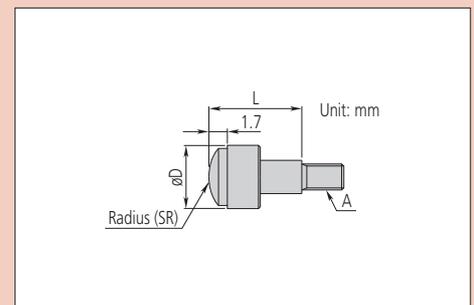


Code No.	L	Price
A: M2.5x0.45		
101386	5	£4.90
101118	10	£4.90
137393	15	£4.90
101387	20	£4.90
101388	25	£4.90
A: 4-48UNF		
101184	5/32"	£4.90
21AAA031	1/4"	£4.10
101185	1/2"	£4.90
101186	3/4"	£4.90
21AAA034	7/8"	£4.10
101187	1"	£4.90

Code No.	D	L	SR	Price
A: M2.5x0.45				
111460	5.5	3	5	£5.70
125258	7.9	5	5	£5.70
101119	10	5	7	£4.90
A: 4-48UNF				
101205	1/2"	1/8"	.35"	£4.90
101204	3/8"	3/32"	.28"	£4.90

Spherical Point (Carbide)

A large radius makes this contact point optimal for use where the workpiece needs to slide from the side.

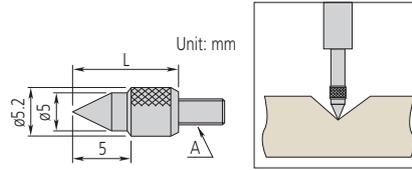


Code No.	D	L	SR	Price
A: M2.5x0.45				
120058	5.2	5	5	£49.00
120059	7.5	10	7	£56.20
120060	10.5	10	10	£67.20

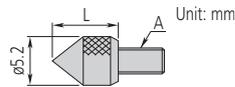


Conical Point

Used for positioning the measurement point. Since it can damage a workpiece easily, it is not suitable for use on soft materials.



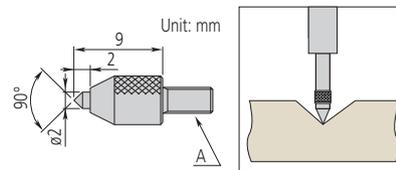
Code No.	Tip angle	L	Price
A: M2.5x0.45			
101120	60°	10	£4.90
A: 4-48UNF			
101190	60°	1/2"	£4.90



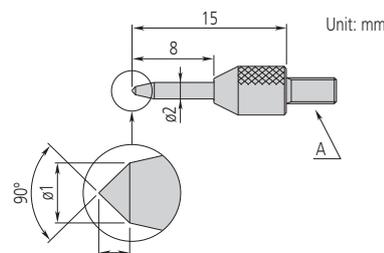
Code No.	Tip angle	L	Price
A: M2.5x0.45			
101385	90°	5	£4.90
A: 4-48UNF			
101191	90°	1/4"	£4.90

Conical Point (Carbide)

Used for positioning the measurement point. Since it can damage a workpiece easily, it is not suitable for use on soft materials.



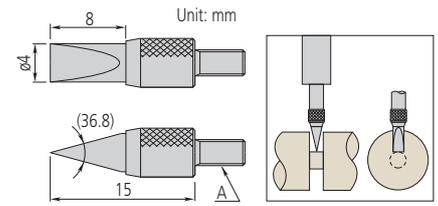
Code No.	Price
A: M2.5x0.45	
120057	£34.70



Code No.	Price
A: M2.5x0.45	
120068	£63.20

Knife Edge Point (Carbide)

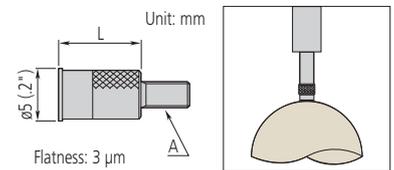
Suitable for measuring narrow groove diameter, etc.



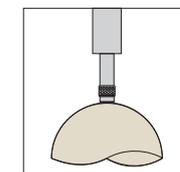
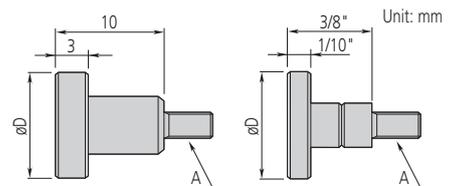
Code No.	Price
A: M2.5x0.45	
120067	£64.70

Flat Point

Optimal for use on convex surfaces.



Code No.	L	Price
A: M2.5x0.45		
131365	8	£6.90
21AAA340	10	£38.10
A: 4-48UNF		
133017	5/16"	£6.90
21AAA043	1/2"	£6.30
21AAA044	3/4"	£7.60
21AAA045	1"	£7.60



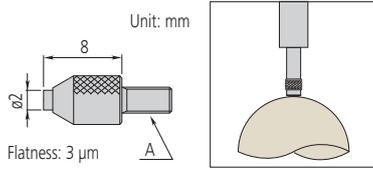
Code No.	D	Price
A: M2.5x0.45		
101117	10	£8.30
21AAA341	15	£38.10
21AAA342	20	£53.80
21AAA343	25	£69.00
21AAA344	30	£76.90
A: 4-48UNF		
101188	1/2"	£8.70
101189	3/8"	£8.70

Optional Accessories

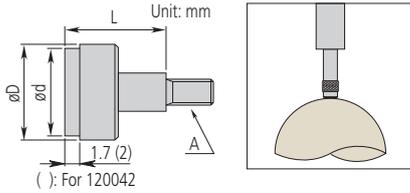
Contact Points for Digimatic and Dial Indicators and Linear Gauges

Flat Point

Optimal for use on convex surfaces.

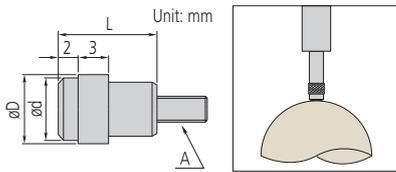


Code No.	Price
A: M2.5x0.45	
120056	£14.30



Code No.	D	d	L	Price
A: M2.5x0.45				
120041	5.2	4.3*	5	£39.30
120042	7	6.5*	10	£43.60
120043	10.5	9.5*	10	£52.60
21AAA345	17	15**	10	£92.00
21AAA346	22	20**	10	£106.00

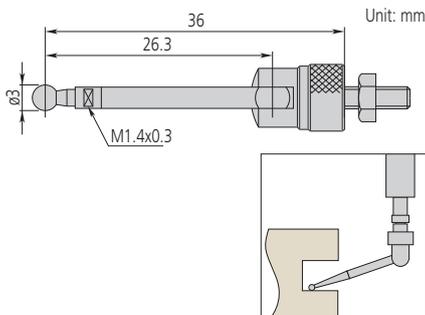
Flatness: *3 µm, **5 µm



Code No.	D	d	L	Price
A: M2.5x0.45				
137255	7	6.4	10	£64.90
137399	9	8	10	£69.20

Lever Point

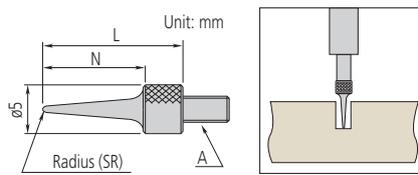
Suitable for use on perpendicular faces, such as those within mould cavities. Lever can be adjusted to the required angle.



Code No.	Price
A: M2.5x0.45	
900391	£12.80
A: 4-48UNF	
900393	£19.00

Needle Point

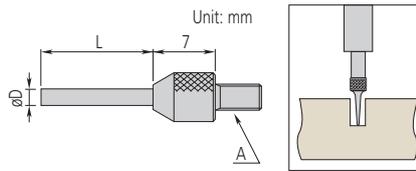
Suitable for probing the bottom of a groove or hole.



Code No.	N	L	SR	Price
A: M2.5x0.45				
101121	11	15	0.4	£4.90
137413	13	17	0.2	£4.90
21AAA255	21	25	0.4	£5.70
21AAA256	31	35	0.4	£7.20
A: 4-48UNF				
21AAA030	.27"	.6"	.016"	£5.10
21AAA046	.52"	1"	.016"	£5.70

Needle Point (Carbide)

Suitable for probing the bottom of a groove or hole.



Code No.	D	L	Price
A: M2.5x0.45			
120066	0.45	3	£30.40
21AAA329	0.45	5	£121.00
120065	1	3	£22.20
21AAA330	1	5	£85.40
21AAA331	1	8	£89.40
21AAA332	1	10	£97.20
21AAA335	1.5	5	£81.60
21AAA336	1.5	10	£121.00
120064	1.5	13	£24.00
21AAA337	1.5	20	£92.40
21AAA338	1.5	40	£109.00
137257	2	8	£35.20
21AAA257	2	18	£55.50
21AAA258	2	28	£48.30
21AAA339	2	40	£118.00



120056



120043



137255



101121



137257



900391



120062



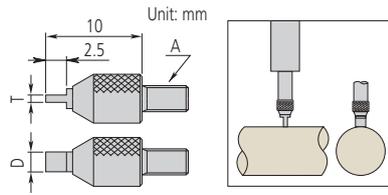
901954



303613

Blade Point (Carbide)

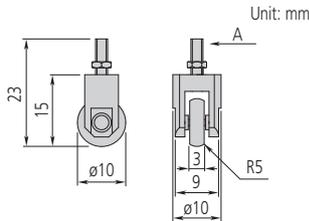
Suitable for use on convex surfaces, especially those with shallow grooves.



Code No.	T	W	Price
A: M2.5x0.45			
120061	0.4	2	£42.50
120062	0.6	2	£42.50
120063	1	4	£49.50

Roller Point

Suitable for use on a moving workpiece surface, or where the workpiece needs to slide from the side.



Code No.	Price
A: M2.5x0.45	
901954	£35.20
A: 4-48UNF	
901991	£35.20

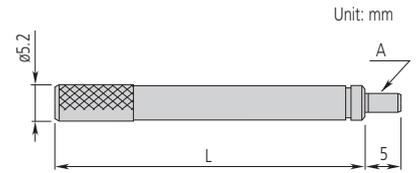
Interchangeable Contact Point Set

This set consists of six types of popular contact point for extending the use of an indicator to many applications.



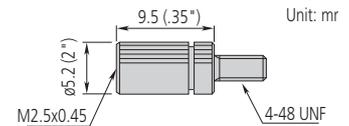
Code No.	Contact points included	Price
A: M2.5x0.45		
7822	Flat point (131365, ø5 mm)	£29.60
	Flat point (101117, ø10 mm)	
	Needle point (101121)	
	Spherical point (101119)	
	Shell type point (101118)	
	Shell type point (101387)	

Extension Rod

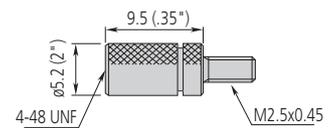


Code No.	L	Price
A: M2.5x0.45		
303611	10	£1.10
21AAA259A	15	£2.50
303612	20	£2.60
21AAA259B	25	£2.60
303613	30	£3.30
21AAA259C	35	£2.80
21AAA259F	50	£6.50
304146	60	£6.90
21AAA259J	70	£5.90
21AAA259L	75	£7.00
21AAA259M	80	£7.50
304147	90	£10.40
303614	100	£10.90

A: 4-48UNF		
139167	1/2"	£6.50
301655	1"	£2.90
301657	2"	£5.60
301659	4"	£10.90



Code No.	Price
21AAA011	£8.00



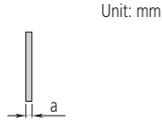
Code No.	Price
21AAA012	£8.90

Optional Accessories

Interchangeable Backs for Digimatic and Dial Indicators

A dial or Digimatic indicator may be held in position by clamping on either the stem or the lug on the back of the indicator. The back of the indicator may need to be interchanged with another type for special applications. A wide variety of backs are available for Mitutoyo Digimatic and dial indicators.

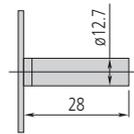
Flat Back



Unit: mm

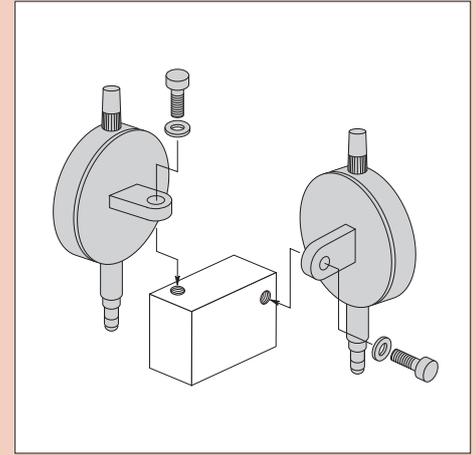
Code No.	Series	Remarks	Price
101211	1 (ø41 mm)	a = 2.2	£1.40
101039	1 (ø41 mm)	a = 2.5	£1.40
192910	2 (ø57 mm)	(F type waterproof model)	£3.60
100836	3, 4 (ø78, 91 mm)	a = 3.0	£2.10

Back with Post



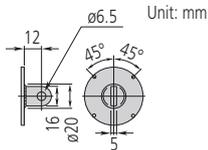
Unit: mm

Code No.	Series	Remarks	Price
193172	1 (ø41 mm)	—	£23.40
101169	2 (ø57 mm)	—	£8.30
100839	3, 4 (ø78, 91 mm)	—	£42.10



Application.

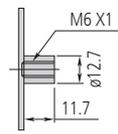
Lug-On-Centre Back



Unit: mm

Code No.	Series	Remarks	Price
101210	1 (ø41 mm)	metric type	£4.20
101040	1 (ø41 mm)	metric type	£4.20
101306	2 (ø57 mm)	inch type	£3.30
100691	3, 4	metric type	£5.60
100797	(ø78, 91 mm)	inch type	£5.60

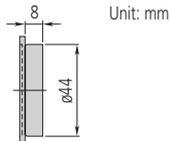
Back with Screw Mount



Unit: mm

Code No.	Series	Remarks	Price
193173	1 (ø41 mm)	M6x1	£22.90
136023	2 (ø57 mm)	M6x1	£8.30
101170	2 (ø57 mm)	1/4-28UNF	£8.30
136024	3, 4	M6x1	£42.10
100840	(ø78, 91 mm)	1/4-28UNF	£42.10

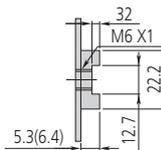
Magnetic Back



Unit: mm

Code No.	Series	Remarks	Price
900928	2 (ø57 mm)	—	£26.30
900929	3, 4 (ø78, 91 mm)	—	£42.10

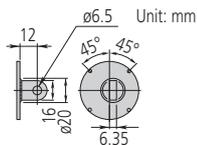
Flat Adjustable Back



Unit: mm

Code No.	Series	Remarks	Price
136025	1 (ø41 mm)	M6x1	£15.30
136026	2 (ø57 mm)	M6x1	£8.30
101168	2 (ø57 mm)	1/4-20UNF	£8.30
136027	3, 4	M6x1	£42.10
100838	(ø78, 91 mm)	1/4-20UNF	£42.10

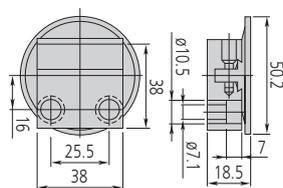
Back with Offset Lug



Unit: mm

Code No.	Series	Remarks	Price
101167	2 (ø57 mm)	—	£8.30
100837	3, 4 (ø78, 91 mm)	—	£42.10

Back with Adjustable Bracket



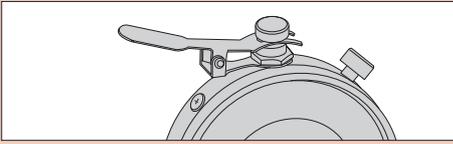
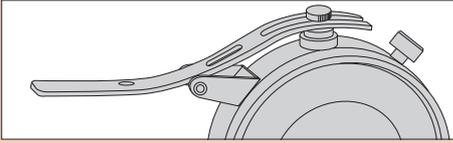
Unit: mm

Code No.	Series	Remarks	Price
901963	2 (ø57 mm)	—	£49.50

Plunger Lifting Aids for Digimatic and Dial Indicators

Plunger Lifting Lever

The Plunger Lifting Lever is attached to the top end of the plunger for improved inspection efficiency when using a dial indicator mounted on a stand.



Application.



902100



21BZA205
(900527: Lever, 101171: Screw)



21AZB149



902011



21AZB150



903424
(903307: Lever, 192686: Screw)

Code No.	Remarks	Price
902100	Use for S type Series 1 and F type Series 2 (up to 10 mm/.4" range) dial indicators.	£6.60
21AZB149	Use for S type Series 2, 3, and 4 dial indicators (up to 10 mm/.4").	£3.00
21AZB150	Use for S type Series 2 and 3 dial indicators (from 10 mm/.4" up to 20 mm/.8").	£3.40
21BZA205	Use for F type Series 1 dial indicators.	£5.30
902011	Use for F type Series 2 dial indicators (up to 10 mm/.4" range).	£3.30
903424	Use for F type Series 2 dial indicators (up to 20 mm/.8" range) and Series 3 and 4 dial indicators (up to 10 mm/.4" range).	£4.00

Plunger Lifting Cable

With auto-stop function.



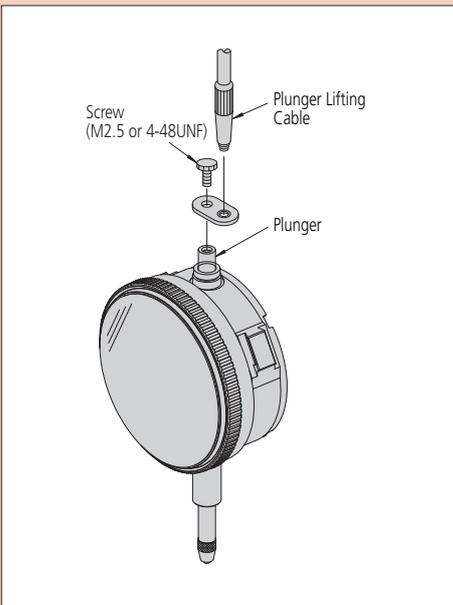
Code No.	Remarks	Price
901975	For Series 2 only	£14.70

Plunger Lifting Knob

Suitable for 4.8 mm plunger diameter.



Code No.	Price
137693	£1.00



Application.

Optional Accessories

Limit Stickers

- These are stuck onto the dial face or crystal of a Series 2 dial indicator (55.6 mm or 57 mm bezel diameter) to indicate tolerance limits.
- 10 pieces per set.



Application.

Code No.	Remarks	Price
136420	Red (10 sheets)	£6.60
136421	Green (10 sheets)	£6.60
136422	Yellow (10 sheets)	£6.60

Plunger Caps

- Plunger caps are available for dial indicators with a range of 10 mm or less.



Code No.	Remarks	Price
193051	Standard	£1.00
193595	Waterproof	£1.00

Note: This accessory is not applicable to 1003, 1911, 1913-10, and 2971 to 2973.

Application.

Note: When attaching to small dial indicators, the overall height will be 8 mm taller.

Dial Test Indicators

SERIES 513 – Lever Dial Test Indicators

Feature Icons

Icon	Feature description
	With revolution counter type.
	Long stylus type.
	Jewelled bearing type.
	Double scale spacing type, easy-on-the-eyes.
	Dustproof type.
	Anti-magnetic type.

- Designed to probe surfaces that cannot be reached with a normal dial gauge. Useful both for alignment and for measurement purposes.
- Mitutoyo's proprietary new design permits smooth pointer operation.
- Strong frame provides excellent rigidity and durability.
- Non-magnetic pointer and contact point permit reliable operation even in magnetic environments.
- Clear and concise wide dial face allows excellent visibility.
- Flat crystal makes graduations easy to read. Moreover, the O-ring sealing method used for the bezel prevents water or oil penetration. (Note that this model is NOT waterproof.)
- The surface of the crystal is hard-coated for excellent scratch resistance.
- Five types are available: horizontal, vertical, parallel, universal, and pocket, allowing users to select the model most suited to their needs. Each type is supplied as a set that includes several accessories and there is a choice of the set contents, which provides an opportunity for the user to match the indicator to the target application in a cost-effective manner.

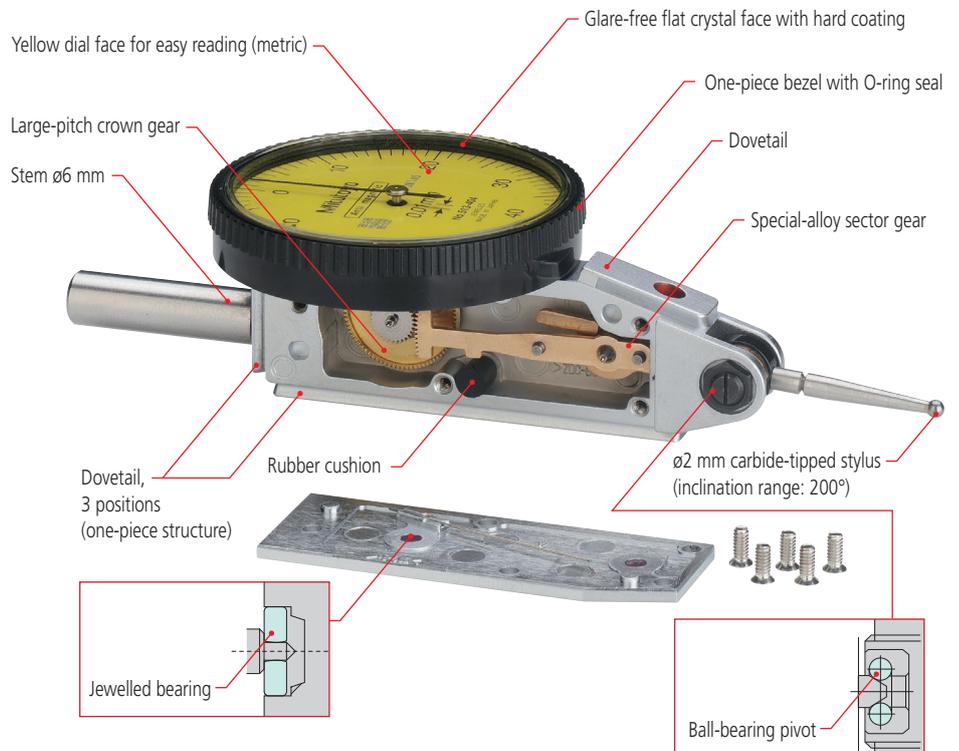
Horizontal: The standard configuration.

Vertical: Best suited for centering a hole under the spindle of a machine tool.

Parallel: The scale can be read from the front, with the stylus pivoting in a plane parallel to that of the dial face.

Universal: The direction of the stylus movement can be freely changed.

Pocket: Compact type.



Features of Dial Test Indicators with a Ruby Contact Point

- Dial test indicators with a ruby contact point are available in the horizontal (standard) type.
- Benefits of ruby contact points:
 - Several times more resistant to wear than carbide.
 - Can be used on electrical discharge machines without special precautions.
 - Will not pick up ferrous swarf.



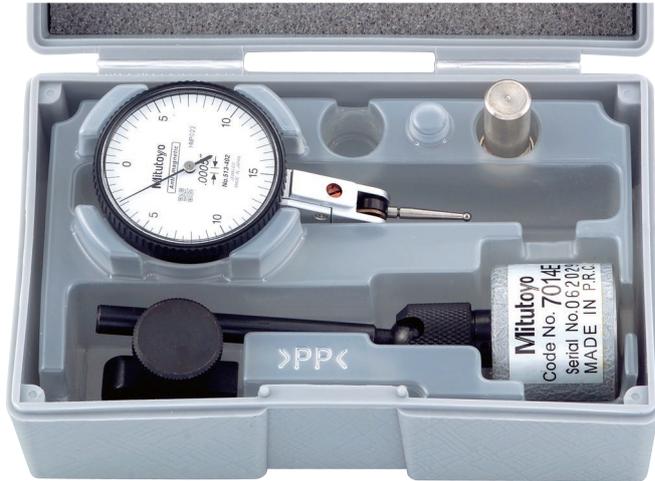
Dial Test Indicators

SERIES 513 – Horizontal Dial Test Indicator

- Provides easy access to shrouded surfaces that cannot be reached with conventional dial indicators.
- No-clutch structure for automatic reversal of measuring direction.
- Resistant to water and dust thanks to the one piece bezel and O-ring seal for the crystal.
- The glare-free flat crystal face has a scratch resistant coating.
- High sensitivity and quick response due to low-friction jewelled bearings.

513-474E:

- Ruby contact point model.
- Higher resistance to wear.
- Non-magnetic, non-conductive tip allows use in EDM processes.



513-907



513-424E



513-474E



513-414E

Features

Metric					
Code No.					
513-424E	✓	✓	—	✓	—
513-414E	✓	✓	✓	✓	—
513-404E	✓	—	—	✓	—
513-474E	✓	—	—	✓	—
513-415E	✓	—	✓	✓	—
513-426E	✓	✓	—	✓	✓
513-405E	✓	—	—	✓	—
513-425E	✓	—	—	✓	✓
513-401E	✓	—	—	✓	—

Inch					
Code No.					
513-402	✓	—	—	✓	—
513-412	✓	—	✓	✓	—
513-403	✓	—	—	✓	—

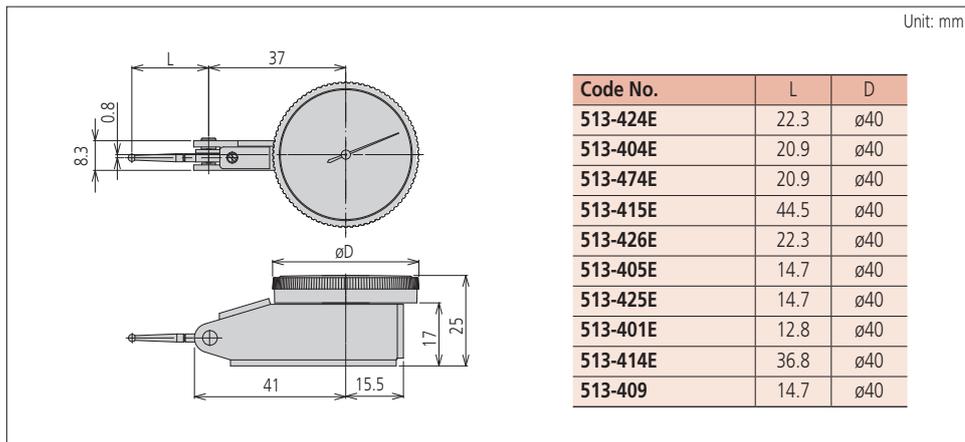
Metric/inch					
Code No.					
513-409T	✓	—	—	✓	—

Inch/metric					
Code No.					
513-406T	✓	—	—	✓	—



513-908

Dimensions



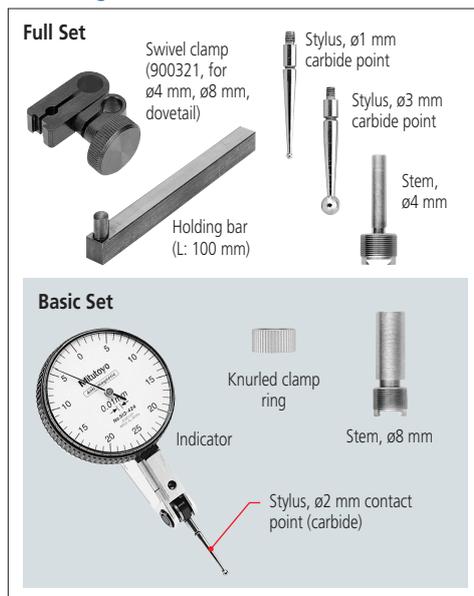
Set Configuration: Metric



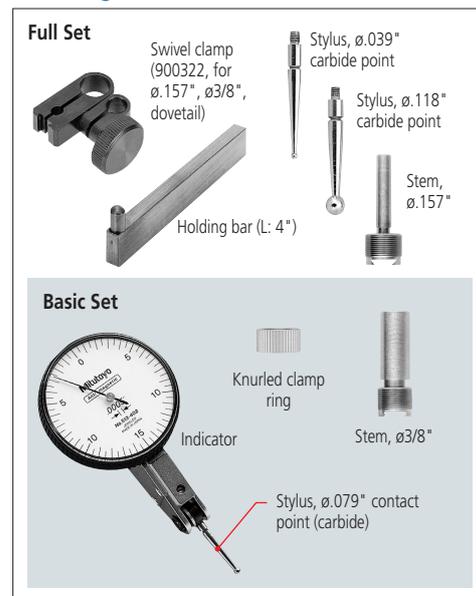
Set Configuration: Inch



Set Configuration: Metric and Metric/Inch



Set Configuration: Inch and Inch/Metric



Specifications

Metric						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Basic Set						
513-424E	0.01 mm	0.5 mm	5 μ m	0-25-0	0.3 N or less	£93.10
513-414E	0.01 mm	0.5 mm	10 μ m	0-25-0	0.2 N or less	£94.50
513-404E	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£83.20
513-474E*	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£96.40
513-415E	0.01 mm	1 mm	10 μ m	0-50-0	0.2 N or less	£103.00
513-426E	0.01 mm	1.5 mm	8 μ m	0-25-0	0.4 N or less	£95.80
513-405E	0.002 mm	0.2 mm	3 μ m	0-100-0	0.3 N or less	£101.00
513-425E	0.002 mm	0.6 mm	6 μ m	0-100-0	0.4 N or less	£118.00
513-401E	0.001 mm	0.14 mm	3 μ m	0-70-0	0.3 N or less	£101.00
Full Set						
513-424T	0.01 mm	0.5 mm	5 μ m	0-25-0	0.3 N or less	£115.00
513-414T	0.01 mm	0.5 mm	10 μ m	0-25-0	0.2 N or less	£134.00
513-404T	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£101.00
513-415T	0.01 mm	1 mm	10 μ m	0-50-0	0.2 N or less	£125.00
513-405T	0.002 mm	0.2 mm	3 μ m	0-100-0	0.3 N or less	£122.00
Special Set						
513-908	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£145.00
Inch						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Basic Set						
513-402	.0005"	.03"	± 0.0005 "	0-15-0	0.3 N or less	£86.00
513-412	.0005"	.03"	± 0.0005 "	0-15-0	0.2 N or less	£120.00
513-403	.0001"	.008"	± 0.0001 "	0-4-0	0.3 N or less	£109.00
Full Set						
513-402T	.0005"	.03"	± 0.0005 "	0-15-0	0.3 N or less	£118.00
513-412T	.0005"	.03"	± 0.0005 "	0-15-0	0.2 N or less	£144.00
513-403T	.0001"	.008"	± 0.0001 "	0-4-0	0.3 N or less	£144.00
Special Set						
513-907	.0005"	.03"	± 0.0005 "	0-15-0	0.3 N or less	£145.00
Metric/inch						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Full Set						
513-409T	0.002 mm / .0001"	0.2 mm / .0075"	3 μ m	0-10-0/0-3.8-0	0.3 N or less	£133.00
Inch/metric						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Full Set						
513-406T	.0005" / 0.01 mm	.03" / 0.7 mm	± 0.0005 "	0-15-0/0-35-0	0.3 N or less	£125.00

* Provided with a $\varnothing 2$ mm ruby contact point as a substitute for $\varnothing 2$ mm carbide contact point.

Dial Test Indicators

SERIES 513 – Vertical and Parallel Face Dial Test Indicators

- The vertical face indicator is useful for centering holes under a machine tool spindle using the universal holder mounted in the spindle chuck. (See page F-54.)
- The parallel face indicator is convenient to use when the application calls for stylus movement in a plane parallel to that of the dial face.



513-454E



513-452



513-455E

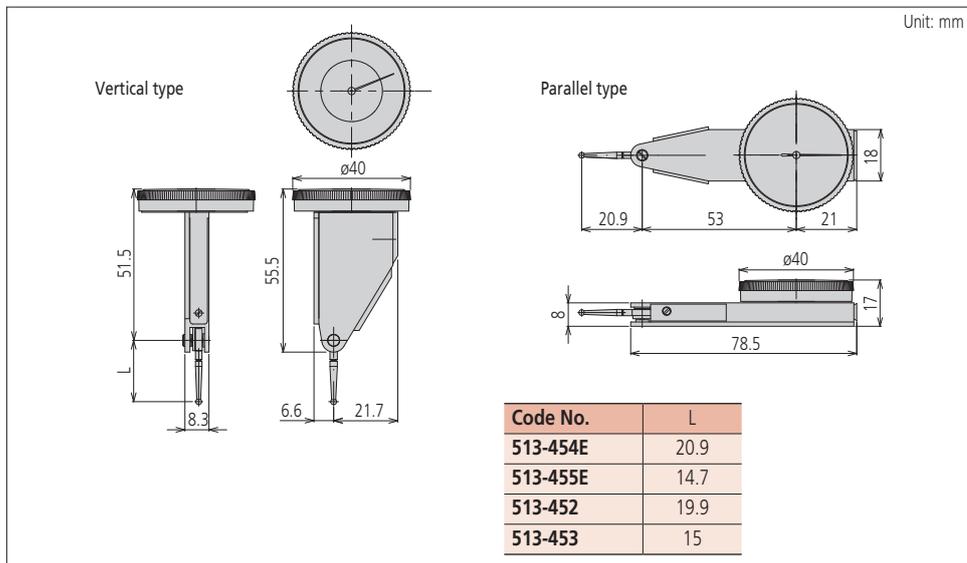


513-284GE



513-282GT

Dimensions



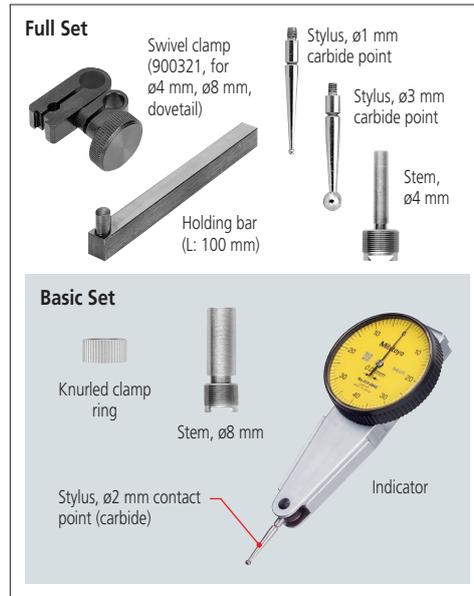
Features

Metric		
Code No.		
513-454E	✓	✓
513-455E	✓	✓
513-284GE	—	✓
Inch		
Code No.		
513-452	✓	✓
513-453	✓	✓
513-282GT	—	✓

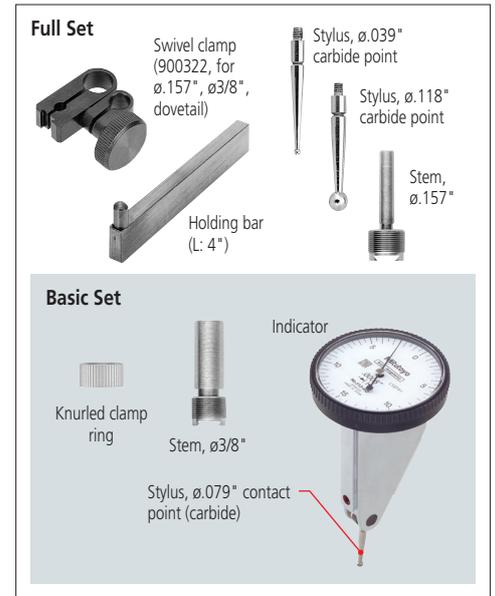
Optional Accessories

Swivel clamps, holding bars, stems and styli (refer to pages F-52 to F-54 for details).

Set Configuration: Metric



Set Configuration: Inch



Specifications

Metric

Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Vertical type, basic set						
513-454E	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£86.10
513-455E	0.002 mm	0.2 mm	3 μ m	0-100-0	0.3 N or less	£135.00
Vertical type, full set						
513-454T	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£134.00
513-455T	0.002 mm	0.2 mm	3 μ m	0-100-0	0.3 N or less	£145.00
Parallel type, basic set						
513-284GE	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£92.70
Parallel type, full set						
513-284GT	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3 N or less	£107.00

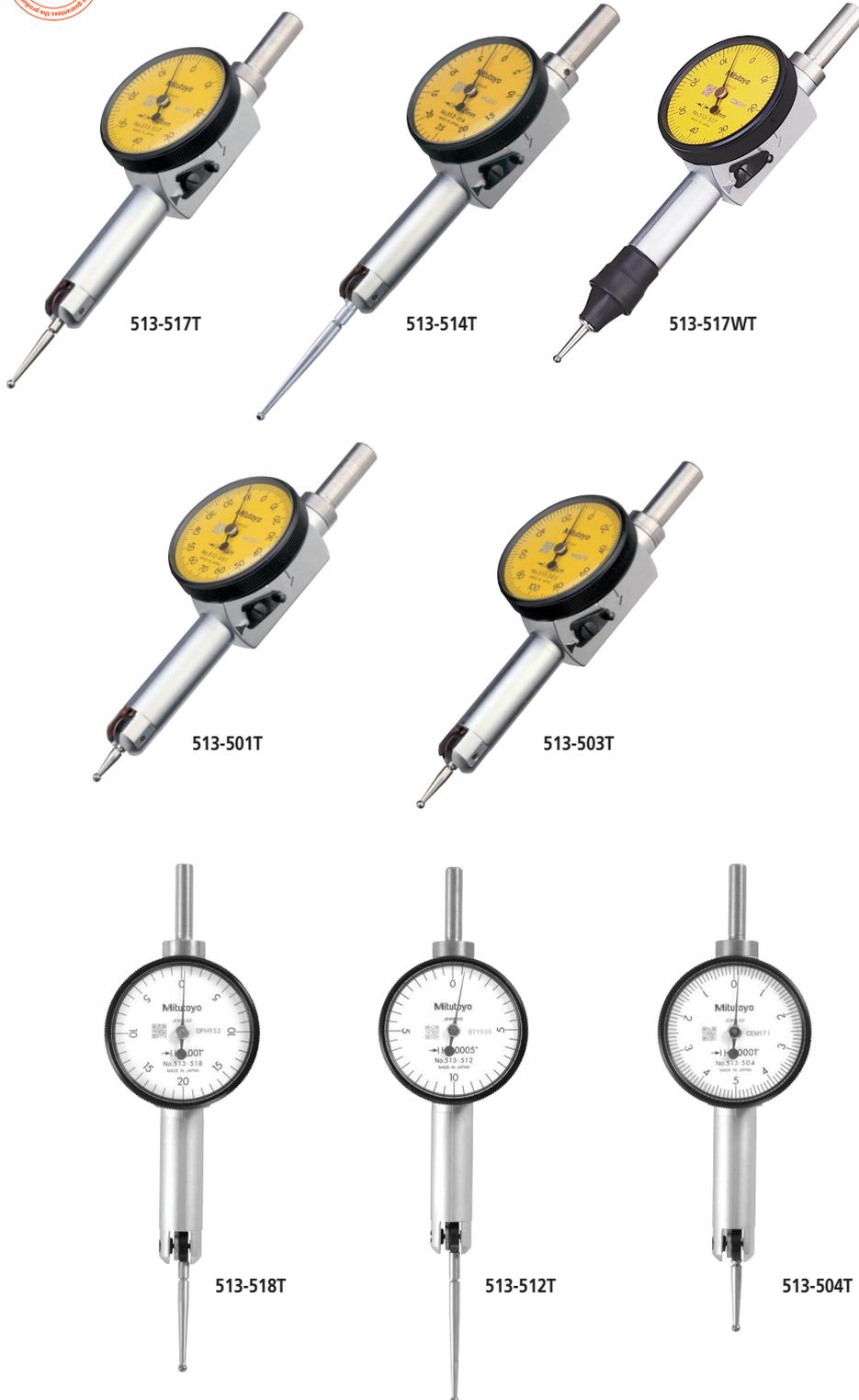
Inch

Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
Vertical type, basic set						
513-452	.0005"	.03"	$\pm .0005''$	0-15-0	0.3 N or less	£99.40
513-453	.0001"	.008"	$\pm .0001''$	0-4-0	0.3 N or less	£118.00
Vertical type, full set						
513-452T	.0005"	.03"	$\pm .0005''$	0-15-0	0.3 N or less	£107.00
513-453T	.0001"	.008"	$\pm .0001''$	0-4-0	0.3 N or less	£145.00
Parallel type, full set						
513-282GT	.0005"	.03"	$\pm .0005''$	0-15-0	0.3 N or less	£107.00

Dial Test Indicators

SERIES 513 – Pocket Dial Test Indicator

- Jewelled bearings assure higher sensitivity and accuracy. Indicator can be mounted by clamping the stem or the body (except for 513-517WT).
- Reversible measuring direction.
- Two holding bars are supplied. (Full sets only.)
- Fully adjustable bezel/dial face.
- Stylus is adjustable within 220°.
- Bezel is sealed with an O-ring to keep out water and oil.



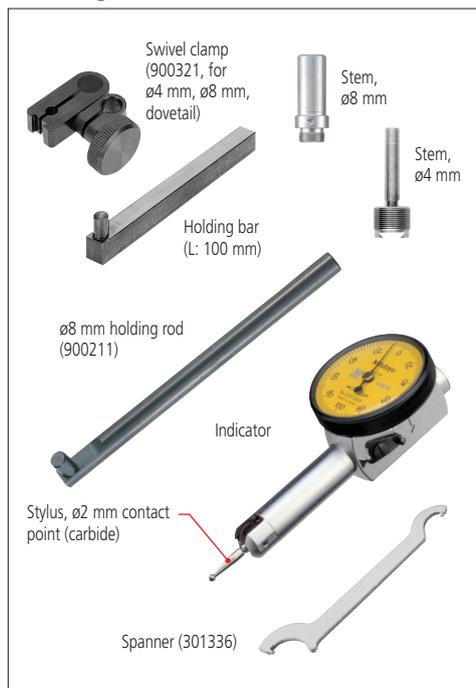
Features

Metric			
Code No.			
513-514T	✓	✓	—
513-517T	—	✓	—
513-517WT	—	✓	✓
513-503T	—	✓	—
513-501T	—	—	—
Inch			
Code No.			
513-518T	—	✓	—
513-512T	✓	✓	—
513-504T	—	✓	—

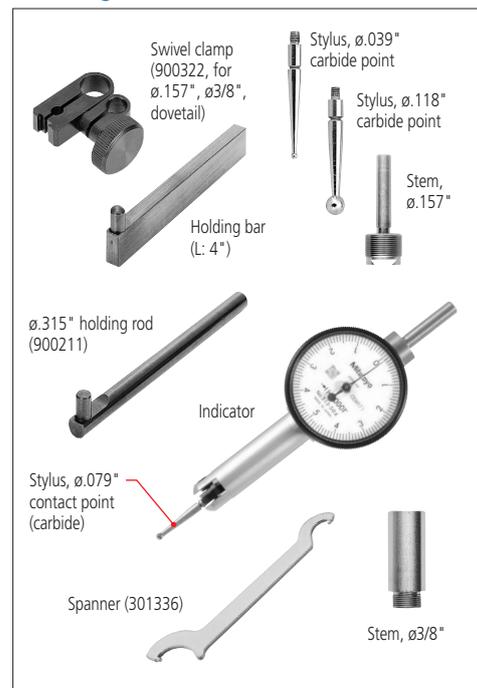
Optional Accessories

Swivel clamps, holding bars, stems and styli (refer to pages F-52 to F-54 for details).

Set Configuration: Metric



Set Configuration: Inch



Specifications

Metric						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
513-514T	0.01 mm	0.5 mm	10 µm	0-25-0	0.3 N or less	£112.00
513-517T	0.01 mm	0.8 mm	8 µm	0-40-0	0.3 N or less	£101.00
513-517WT	0.01 mm	0.8 mm	8 µm	0-40-0	0.3 N or less	£123.00
513-503T	0.002 mm	0.2 mm	3 µm	0-100-0	0.3 N or less	£123.00
513-501T	0.001 mm	0.14 mm	3 µm	0-70-0	0.4 N or less	£151.00

Inch						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
513-518T	.001"	.04"	±.001"	0-20-0	0.3 N or less	£99.50
513-512T	.0005"	.02"	±.0005"	0-10-0	0.3 N or less	£112.00
513-504T	.0001"	.01"	±.0002"	0-5-0	0.3 N or less	£117.00

Dimensions

Unit: mm

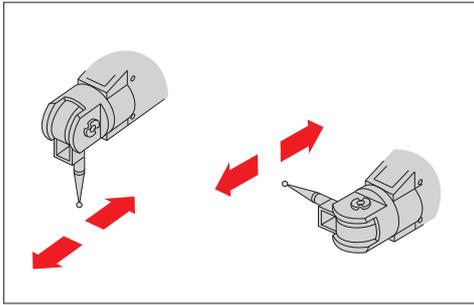
Code No.	L
513-514T	36.8
513-517T	20.9
513-503T	14.7
513-501T	12
513-517WT	20.9

The rubber boot on 513-517WT restricts stylus movement to an inclination range of $\pm 30^\circ$, and also prevents mounting this indicator by the body in a $\phi 9.5$ ($\phi 3/8$ ") clamping hole (as on the **900322** Swivel Clamp).

Dial Test Indicators

SERIES 513 – Universal Dial Test Indicator

- Universal application to all directions. (Not only the direction of the contact point, but also the direction of measurement itself can be adjusted 360 degrees without moving the indicator.)



513-304GT



Specifications

Metric						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
513-304GT	0.01 mm	0.8 mm	8 μ m	0-40-0	0.3N or less	£347.00

Inch						
Code No.	Graduation	Range	Accuracy	Scale	Measuring force	Price
513-302GT	.0005"	.03"	\pm .0005"	0-15-0	0.3N or less	£347.00

Features

Metric	
Code No.	
513-304GT	✓

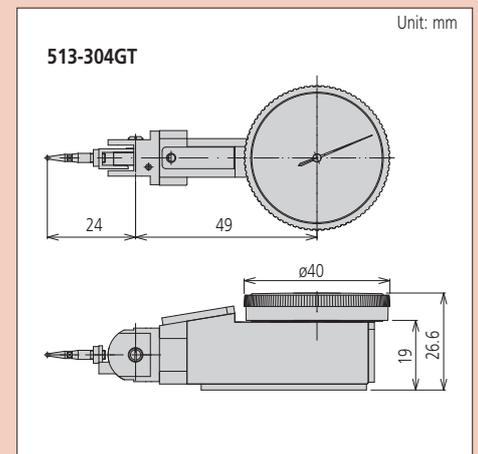
Inch	
Code No.	
513-302GT	✓

Optional Accessories

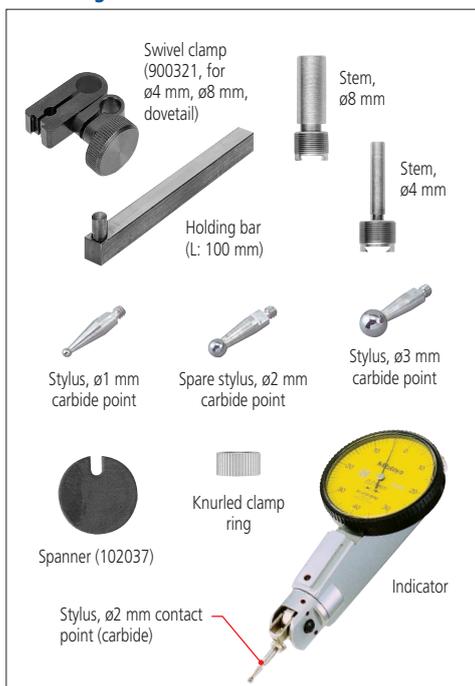
Code No.	Description	Price
102824	Stylus, ϕ 1 mm ball contact (carbide)	£4.90
102825	Stylus, ϕ 2 mm ball contact (carbide)	£8.30
102826	Stylus, ϕ 3 mm ball contact (carbide)	£4.90

Swivel clamps, holding bars, stems and styli (refer to pages F-52 to F-54 for details).

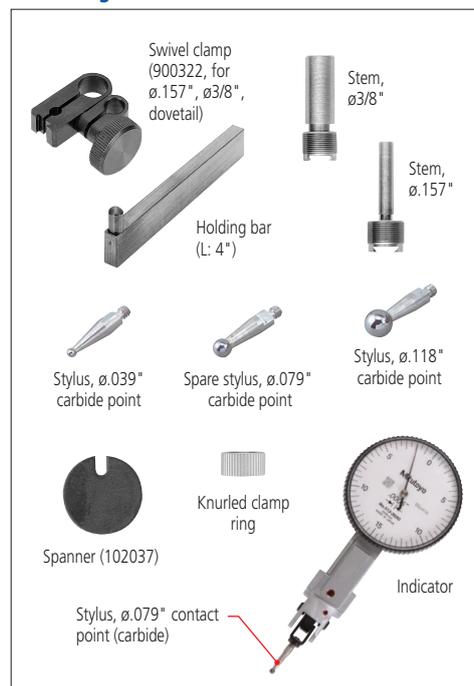
Dimensions



Set Configuration: Metric



Set Configuration: Inch



Optional Accessories

Styli for Metric Dial Test Indicators

- Stylus length affects the scale factor of an indicator. The styli provided as standard give a scale factor of unity, as do the optional styli for the corresponding models listed in the table below.

ø0.5 mm ball-point



ø0.7 mm ball-point



ø1 mm ball-point (Carbide)



ø2 mm ball-point (Carbide)



ø2 mm ball-point (Ruby)



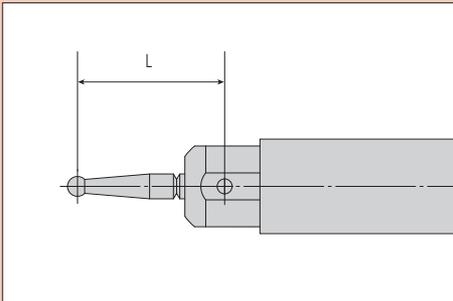
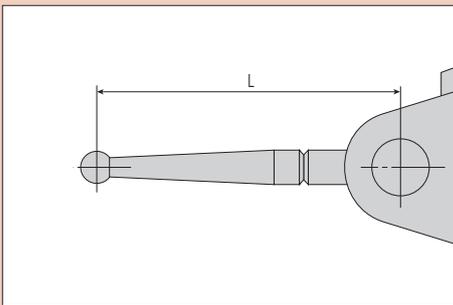
ø3 mm ball-point (Carbide)



Specifications

Metric

Code No.	L	To suit models	Price
ø0.5 mm ball-point			
190547	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£15.30
190549	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£15.30
190654	22.3 mm	513-424E, 513-426E	£10.30
190656	44.5 mm	513-415E	£10.40
ø0.7 mm ball-point			
190548	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£13.30
190550	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£13.30
190653	22.3 mm	513-424E, 513-426E	£10.40
190655	44.5 mm	513-415E	£9.80
ø1 mm ball-point (Carbide)			
136756	12.1 mm	513-501T	£3.20
21CZA044	12.8 mm	513-401E	£6.70
103017	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£4.90
103013	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£4.90
137558	22.3 mm	513-424E, 513-426E	£4.90
137746	36.8 mm	513-414E, 513-514T	£4.90
136235	44.5 mm	513-415E	£3.30
ø2 mm ball-point (Carbide)			
136104	12.1 mm	513-501T	£5.60
21CZA036	12.8 mm	513-401E	£5.90
103010	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£8.30
103006	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£8.30
137557	22.3 mm	513-424E, 513-426E	£8.30
129949	36.8 mm	513-414E, 513-514T	£9.10
136013	44.5 mm	513-415E	£9.10
ø2 mm ball-point (Ruby)			
21CZA212	12.8 mm	513-401E	£12.10
21CZA209	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£12.10
21CZA201	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£18.30
21CZA210	22.3 mm	513-424E, 513-426E	£12.10
21CZA211	44.5 mm	513-415E	£12.60
ø3 mm ball-point (Carbide)			
136758	12.8 mm	513-401E	£3.20
103018	14.7 mm	513-405E, 513-425E, 513-409, 513-455E, 513-503T	£4.90
103014	20.9 mm	513-404E, 513-474E, 513-454E, 513-517T, 513-284GE	£4.90
137559	22.3 mm	513-424E, 513-426E	£4.90
137747	36.8 mm	513-414E, 513-514T	£4.90
136236	44.5 mm	513-415E	£3.30



Optional Accessories

Styli for Imperial Dial Test Indicators

- Stylus length affects the scale factor of an indicator. The styli provided as standard give a scale factor of unity, as do the optional styli for the corresponding models listed in the table below.

ø.04" ball-point



ø.08" ball-point (Carbide)



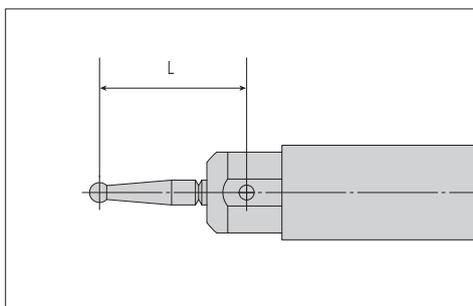
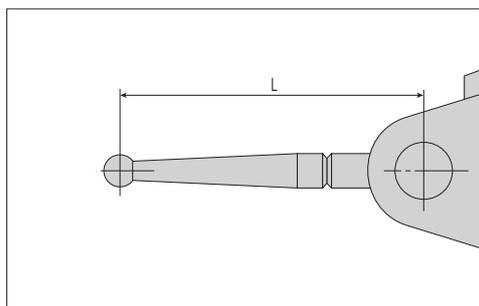
ø.12" ball-point



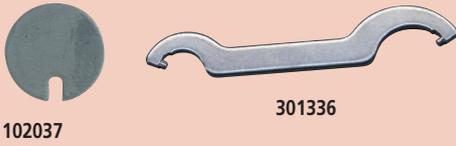
Specifications

Inch

Code No.	L	To suit models	Price
ø.04" ball-point			
136076	.59"	513-403, 513-453	£3.20
131314	.74"	513-504T	£5.60
133196	.78"	513-402, 513-452, 513-282GT	£4.90
102824	.9"	513-302GT	£4.90
103008	1.04"	513-518T	£4.90
136291	1.33"	513-412	£3.30
131316	1.47"	513-512T	£4.90
ø.08" ball-point (Carbide)			
136075	.59"	513-403, 513-453	£5.60
103011	.74"	513-504T	£8.30
133195	.78"	513-402, 513-452, 513-282GT	£8.30
102825	.9"	513-302GT	£8.30
103007	1.04"	513-518T	£4.90
136290	1.33"	513-412	£5.60
131324	1.47"	513-512T	£4.90
ø.12" ball-point			
136077	.59"	513-403, 513-453	£3.20
131315	.74"	513-504T	£5.60
133197	.78"	513-402, 513-452, 513-282GT	£4.90
102826	.9"	513-302GT	£4.90
103009	1.04"	513-518T	£4.90
136292	1.33"	513-412	£3.30
131317	1.47"	513-512T	£4.90



Spanner



Code No.	Remarks	Price
102037	For Dial Test Indicators	£1.10
301336	For Pocket Dial Test Indicators	£1.50

For Dial Test Indicators

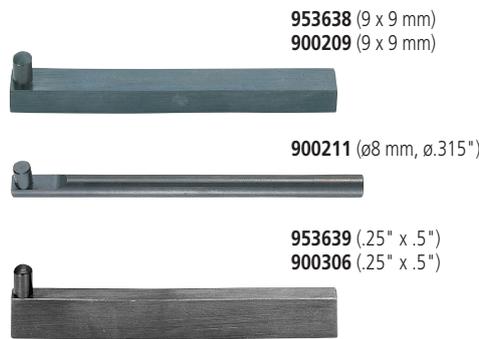
Swivel Clamps

- Can be used with Holding Bars.



Code No.	Remarks	Price
900321	For $\varnothing 4$ mm stem, $\varnothing 8$ mm stem, and dovetail	£14.80
900322	For $\varnothing .157$ " stem, $\varnothing 3/8$ " stem (or body) and dovetail	£14.80

Holding Bars



Code No.	Stem	Length	Price
953638	$\varnothing 6$ mm	50 mm	£10.90
900209		100 mm	£9.60
900211		115 mm	£9.60
953639	$\varnothing .236$ "	2"	£11.10
900306		4"	£9.60

Stems with Knurled Clamp Ring



Code No.	Diameter	Price
902802	4 mm / .157"	£9.10
902804	8 mm	£7.50
902805	3/8"	£9.10

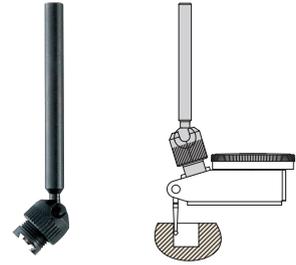
Stems for Pocket Types



Code No.	Diameter	Price
102389	4 mm / .157"	£3.30
102822	8 mm	£3.30
102081	3/8"	£3.30

Universal Holder

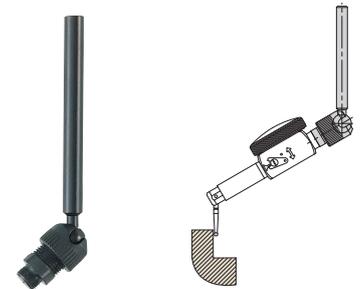
- Allows the indicator to be set at the desired attitude to the workpiece. (Not for Pocket type - see below.)



Code No.	Stem	Price
21CZA233	$\varnothing 8$ mm	£37.20
21CZA231	$\varnothing .25$ "	£27.20
21CZA229	$\varnothing 6$ mm	£27.20

Universal Holder for Pocket Type

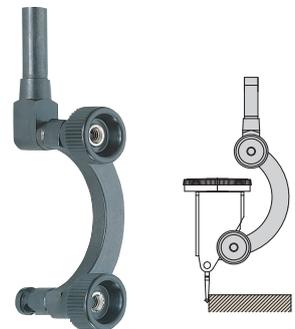
- Allows the indicator to be set at the desired attitude to the workpiece.



Code No.	Stem	Price
21CZA234	$\varnothing 8$ mm	£37.20
21CZA232	$\varnothing .25$ "	£27.20
21CZA230	$\varnothing 6$ mm	£27.20

Centering Holder

- Allows large diameter cylinders or holes to be centered on a machine tool.



Code No.	Stem	Price
901959	$\varnothing 8$ mm	£85.40
901997	$\varnothing .25$ "	£84.80

Instruments

SERIES 170 – i-Checker

- The i-Checker is specially designed to calibrate all types of indicators and electronic gauges with a stroke of up to 100 mm (4").
- $\pm(0.2+L/100)$ μm indication accuracy, where L = indicator stroke (mm).
- Directly inspects an indicator with a stroke of up to 100 mm (4"). Dial test indicators, bore gauges and lever-type inductive heads can be inspected with optional accessories, such as the test indicator attachment set (02ASK000).
- Adjustment of the measurement position is very easily accomplished because of semi-automatic measurement and fully automatic measurement functions.
- Creates and prints out a simple inspection certificate.
- Saves inspection results as a CSV file for analysis by software.



Specifications

Code No.	Remarks	Price
170-321E	With $\varnothing 8$ mm bush	£8860.00
170-403E	With $\varnothing 3/8$ " bush	£8860.00

Technical Data

Measuring range:	100 mm/4"
Resolution:	0.02 μm /0.8 μin
Accuracy:	$\pm(0.2+L/100)$ μm in vertical position (at 20°C) $\pm(0.3+2L/100)$ μm in lateral position L = arbitrary length (mm)
Drive method:	Electric motor
Measuring unit:	Reflective-type glass linear encoder
Thermal expansion coefficient:	$(8\pm 1)\times 10^{-6}/\text{K}$
Measurement method:	Automatic/semi-automatic*
Dimensions:	184 x 225 x 532 mm (W x D x H)
Operating temperature range:	20°C \pm 3°C
Power supply:	100VAC to 240VAC \pm 10%, 50/60 Hz
Mass:	20 kg

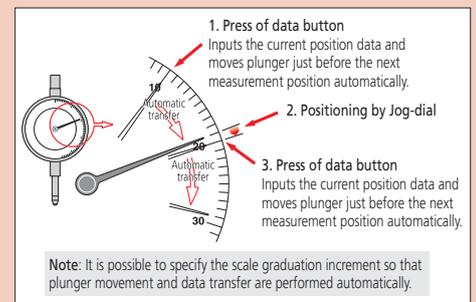
* Consult your local Mitutoyo Sales Office for advice on your particular application.

Functions



Inspect your analogue indicator semi-automatically:

The pointer of the analogue indicator is positioned just before the measuring point automatically via Mitutoyo's Semi-automatic Measurement function. After that, inspection begins simply by adjusting the pointer position with the jog-dial. Because of this function, measurement time is reduced and user fatigue is practically eliminated. Additionally all functions necessary for inspection are combined in the control box so that the operator need not rely on excessive eye movement to adjust the pointer.



Fully automatic inspection of digital indicator:

The Automatic Measurement function, in tandem with a digital indicator makes the plunger move so that measurement data is acquired automatically. Therefore, manual adjustment to the measurement position is unnecessary and the efficiency of every inspection is enhanced.

Create and print out a simplified inspection certificate:

It is possible to create, edit and print out your own inspection certificate. Furthermore, that data can be saved as a CSV file.

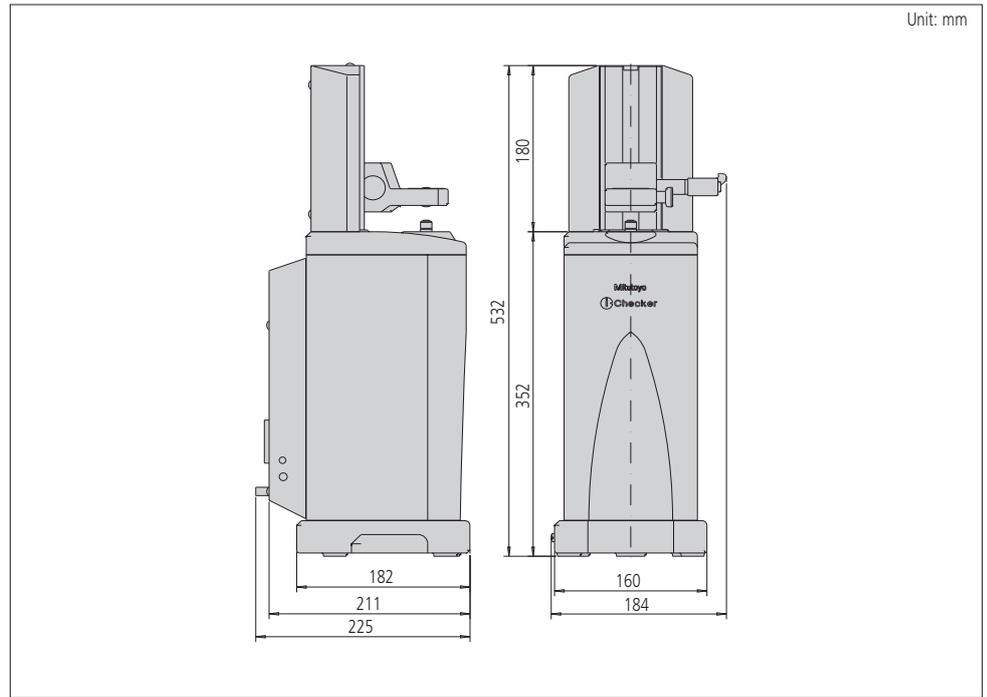
Optional Accessories

Code No.	Description	Price
02ASJ856	Stem bush ø8 mm	£141.00
02ASK000	Test indicator attachment set (ø6 mm stem)	£1090.00
02ASK040	Stem bush ø6 mm	£141.00
02ASK050	Bush ø9.5 (requires 02ASK070)	£84.00
02ASK060	Stem bush ø12 mm	£141.00
02ASK070	Stem bush ø15 mm	£141.00
02ASK080	Stem bush ø20 mm	£141.00
02ASK090	Stem bush 3/8"	£141.00
02ASK130	Stem bush case	£141.00
02ASK150	Stem bush ø8 mm, short	£141.00
02ASK180	Test indicator attachment set (ø8 mm stem)	£1090.00
02ASK370	Test indicator holder (ø6 mm stem)	£237.00
02ASK380	Test indicator holder (ø8 mm stem)	£237.00
02ASK710	Stem bush ø28 mm	£138.00
02ASK730	Reflector	£105.00
02ASL150	Stem bush ø10 mm, short	£138.00
902803	ø6 mm dovetail grooved stem	£7.90
902804	ø8 mm dovetail grooved stem	£7.90
937179T	Footswitch	£45.30



Using test indicator attachment set (02ASK000)

Dimensions



Instruments that can be tested with the i-Checker



- Dial indicator
- Hicator
- Digimatic indicator*³
- Dial Test indicator*¹
- Bore gauge*²
- Linear gauge

*¹ Requires optional test indicator attachment set. Contact the nearest Mitutoyo sales office for testable indicators.

*² Requires optional bore gauge accessory.

*³ Requires optional SPC data cable for fully automatic measurement.

Instruments

SERIES 170 – UDT-2 Dial Indicator Tester

- UDT-2 is an accuracy tester for 0.01 mm resolution dial indicators, dial test indicators and bore gauges.
- Accepts $\varnothing 6$ mm and $\varnothing 8$ mm stems.



170-102-12

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
170-102-12	0-25 mm	0.001 mm	$\pm 2 \mu\text{m}$	£1260.00

Inch				
Code No.	Range	Graduation	Accuracy	Price
170-101-10	0-1"	.0001"	$\pm .0001$ "	£1260.00

Optional Accessory

Code No.	Description	Price
12AAK824	Stand for bore gauge inspection	£179.00



Can be used for the inspection of bore gauges 511 series standard type and micrometer heads up to 400 mm.



Calibrating a bore gauge.



Calibrating a lever indicator.

SERIES 521 – Calibration Tester

- The Calibration Tester is specially designed to calibrate short range dial indicators, dial test indicators, and electronic gauge heads.
- Universal bracket accepts any dial indicator, dial test indicator or electronic gauge without any additional accessory.
- Clamping capacity: \varnothing 4 mm to \varnothing 10 mm.



521-105

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
521-103	0 - 1 mm	0.0002 mm	$\pm 0.2 \mu\text{m}$	£3760.00
521-105	0 - 5 mm		$\pm 0.8 \mu\text{m}$	£3990.00
Inch				
Code No.	Range	Graduation	Accuracy	Price
521-104	0 - .05"	.00001"	$\pm .00001"$	£3760.00
521-106	0 - .2"		$\pm .00003"$	£3990.00



Calibrating a lever indicator.



Calibrating a probe head.



Calibrating a lever probe head.

Instruments

SERIES 547 – ABSOLUTE Digimatic Thickness Gauges

- Dial thickness gauges can quickly measure the thickness of thin products such as paper and felt.
- Integrated moulding of the bezel and crystal ensures protection against water and oil penetration via the front face.
- Data output port that enables incorporation into measurement networking and statistical process control systems.

Tube thickness measurement type

- Pipe wall thickness and the thickness of curved boards can be measured.

Lens thickness measurement type

- Thickness of concave-convex lenses and surfaces can be measured.
- Anvils and contact points are interchangeable to enable concave surfaces to be measured.
- Provided with a ball point.

Groove depth measurement type

- Suitable for measuring narrow grooves.
- Measuring face of the contact point and anvil are blade-shaped (thickness: 1 mm).



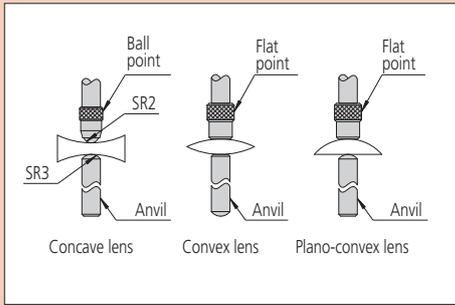
Optional Accessories

Code No.	Description	Price
905338	SPC data cable (1 m)	£32.90
905409	SPC data cable (2 m)	£36.80
02AZD790F	SPC data cable for U-WAVE-T (160 mm)	£60.10
264-504-5E	Digimatic Mini-Processor DP-1VR	£394.00

Convenient Interface Input Tools which enable the conversion of measurement data to keyboard signals and directly input them to cells in off-the-shelf spreadsheet software such as Excel are also available.*

* Consult your local Mitutoyo Sales Office for advice on your particular application.



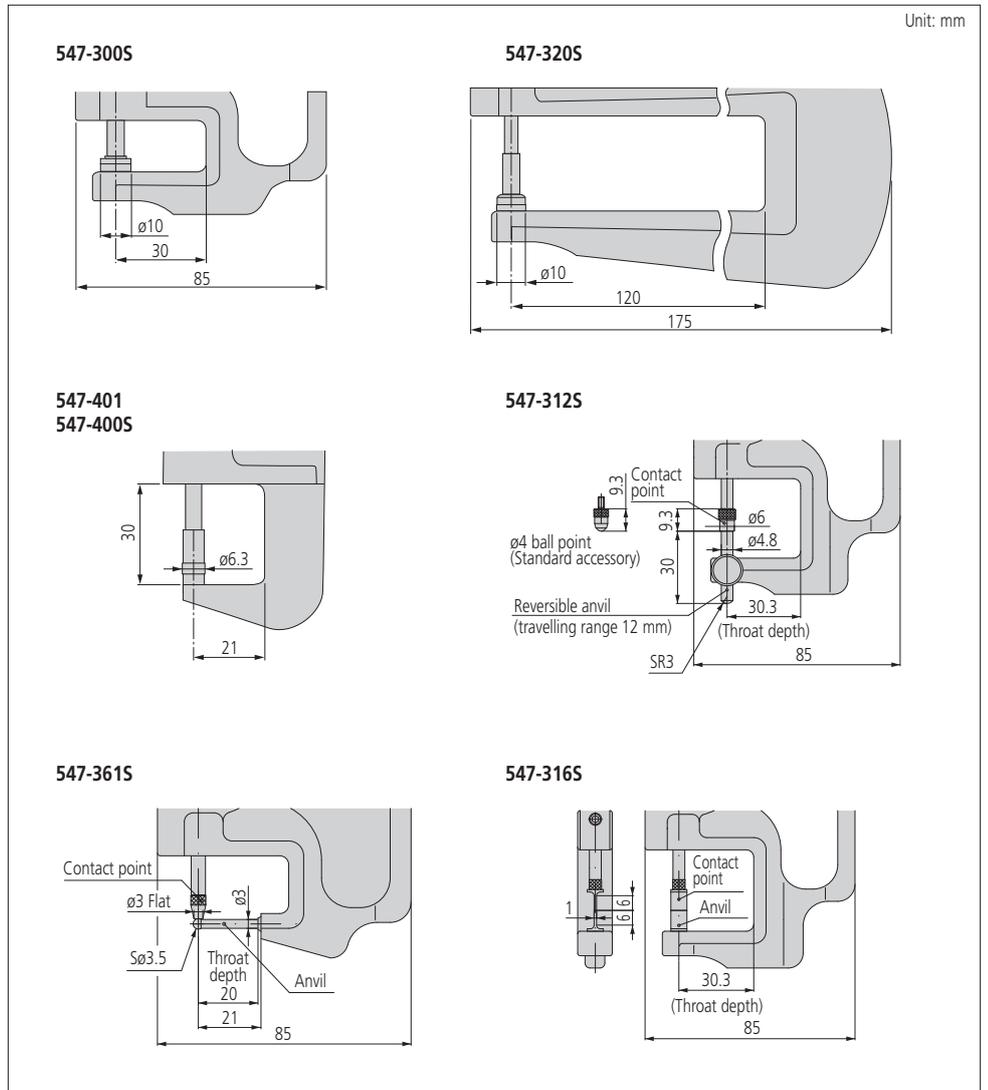


Lens thickness measurement application examples.
Note: Parallelism between the flat point and anvil is 10 µm.

Specifications

Metric					
Code No.	Range	Resolution	Accuracy	Measuring force	Price
High accuracy, carbide plunger/anvil					
547-401	0 - 12 mm	0.001 mm	±3 µm	3.5 N or less	£575.00
Inch/Metric					
Code No.	Range	Resolution	Accuracy	Measuring force	Price
High accuracy, carbide plunger/anvil					
547-400S	0 - 12 mm / 0 - .47"	.00005" / 0.001 mm	±.0001" / ±3 µm	3.5 N or less	£575.00
Standard, ceramic plunger/anvil					
547-300S	0 - 10 mm / 0 - .4"	.0005" / 0.01 mm	±.001" / ±20 µm	1.5 N or less	£357.00
Deep throat, ceramic plunger/anvil					
547-320S	0 - 10 mm / 0 - .4"	.0005" / 0.01 mm	±.001" / ±20 µm	1.5 N or less	£310.00
Lens thickness					
547-312S	0 - 10 mm / 0 - .4"	.0005" / 0.01 mm	±.001" / ±20 µm	1.5 N or less	£357.00
Groove depth					
547-316S	0 - 10 mm / 0 - .4"	.0005" / 0.01 mm	±.001" / ±20 µm	1.5 N or less	£368.00
Tube thickness					
547-361S	0 - 10 mm / 0 - .4"	.0005" / 0.01 mm	±.001" / ±20 µm	1.5 N or less	£334.00

Dimensions



F

Instruments

SERIES 7 – Dial Thickness Gauges

- Dial thickness gauges can quickly measure the thickness of thin products such as paper and felt.
- Integrated moulding of the bezel and crystal ensures protection against water and oil penetration via the front face.

Tube thickness measurement type

- Pipe wall thickness and the thickness of curved boards can be measured.

Lens thickness measurement type

- Thickness of concave-convex lenses and surfaces can be measured.
- Anvils and contact points are interchangeable to enable concave surfaces to be measured.
- Provided with a ball point.

Groove depth measurement type

- Suitable for measuring narrow grooves.
- Measuring face of the contact point and anvil are blade-shaped (thickness: 1 mm).



7301



7321



7360



73265



7313



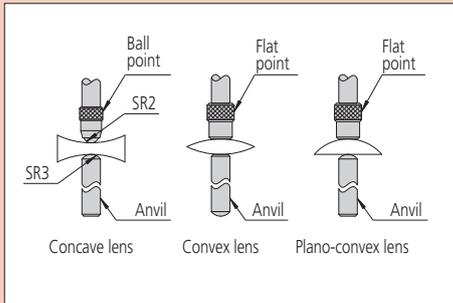
7315



Measuring paper thickness.



Measuring thickness of a human hair.

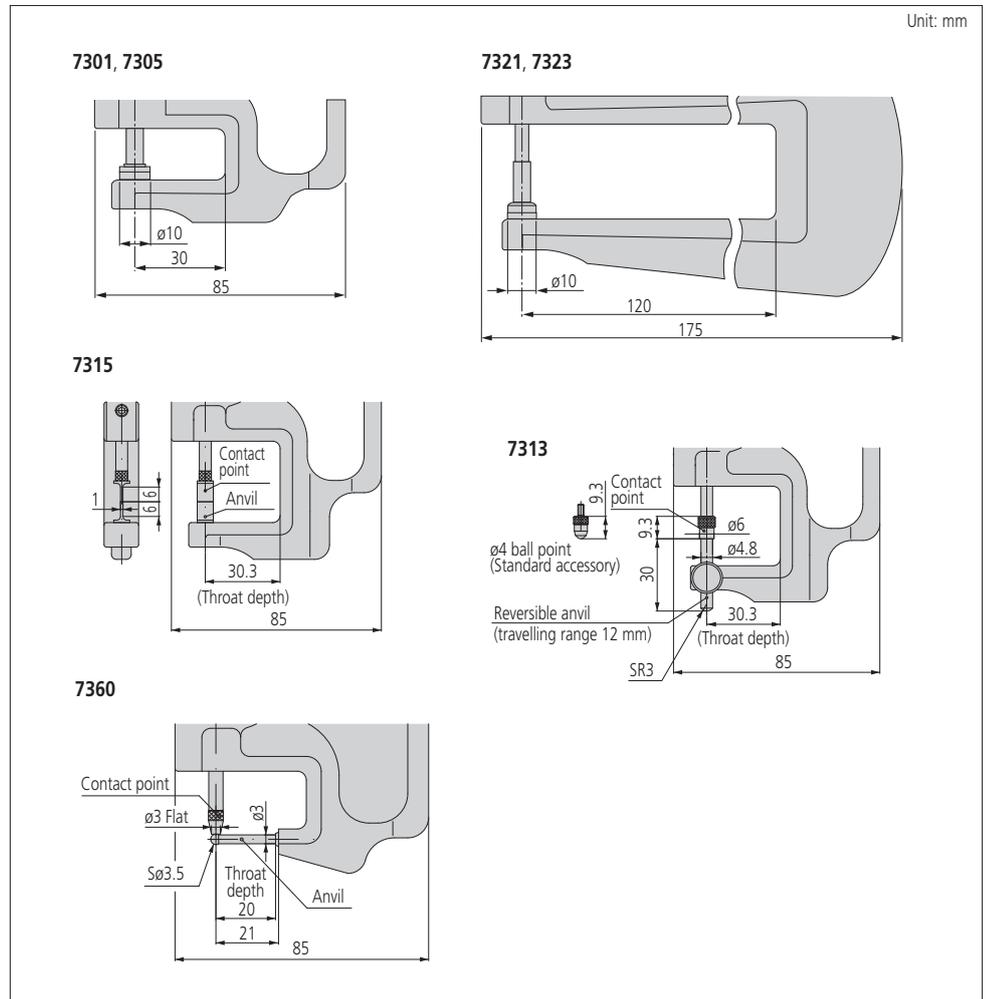


Lens thickness measurement application examples.
 Note: Parallelism between the flat point and anvil is 5 µm.

Specifications

Metric					
Code No.	Range	Graduation	Accuracy	Measuring force	Price
Standard, ceramic plunger/anvil					
7301	0 - 10 mm	0.01 mm	±15 µm	1.4 N or less	£83.20
7305	0 - 20 mm		±20 µm	2.0 N or less	£102.00
Deep throat, ceramic plunger/anvil					
7321	0 - 10 mm	0.01 mm	±15 µm	1.4 N or less	£100.00
7323	0 - 20 mm		±22 µm	2.0 N or less	£117.00
Lens thickness					
7313	0 - 10 mm	0.01 mm	±15 µm	1.4 N or less	£91.10
Groove depth					
7315	0 - 10 mm	0.01 mm	±15 µm	1.4 N or less	£113.00
Tube thickness					
7360	0 - 10 mm	0.01 mm	±15 µm	1.4 N or less	£81.50
Inch					
Code No.	Range	Graduation	Accuracy	Measuring force	Price
Fine dial reading, ceramic plunger/anvil					
7326S	0 - .05"	.0001"	±.0002"	1.4 N or less	£135.00
Standard, ceramic plunger/anvil					
7300S	0 - .5"	.001"	±.001"	1.4 N or less	£87.40
7304S	0 - 1"		±.002"	2.0 N or less	£102.00
Deep throat, ceramic plunger/anvil					
7322S	0 - 1"	.001"	±.002"	2.0 N or less	£117.00
Groove depth					
7316S	0 - .5"	.001"	±.001"	1.4 N or less	£113.00
Tube thickness					
7361S	0 - .5"	.001"	±.001"	1.4 N or less	£113.00

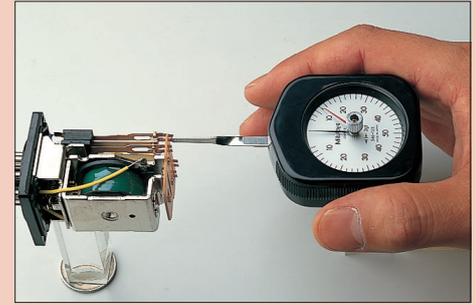
Dimensions



Instruments

SERIES 546 – Contact Force Gauge

- Contact Force Gauges are widely used to determine the measuring force applied by an instrument to a workpiece, as well as contact forces of electrical relays, micro-switches, valves and precision springs.
- Thanks to the miniature anti-friction bearing in the fulcrum, stable measurement is guaranteed.
- Two types are available: Standard and peak hold.



Measuring contact force on a relay.



546-114

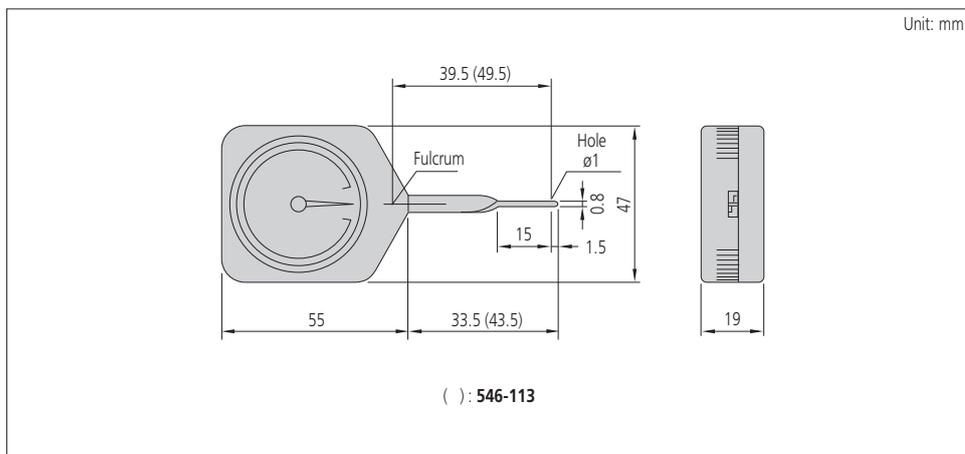


546-138

Specifications

Code No.	Graduation	Range	Accuracy	Price
Standard type				
546-113	5 mN	10 mN - 100 mN	±0.5 (division)	£118.00
546-114	10 mN	30 mN - 300 mN		£113.00
546-118	0.1 N	0.3 N - 3 N		£104.00
Peak hold type				
546-138	0.1 N	0.3 N - 3 N	±0.5 (division)	£173.00

Dimensions



Functions

Mode key, SET key, DATA key, ON/OFF/0-preset, max. reading, min. reading, ABS/INC switchable, display hold, data output, direction switching, tolerance LED (green/red), tolerance judgement.

Optional Accessories

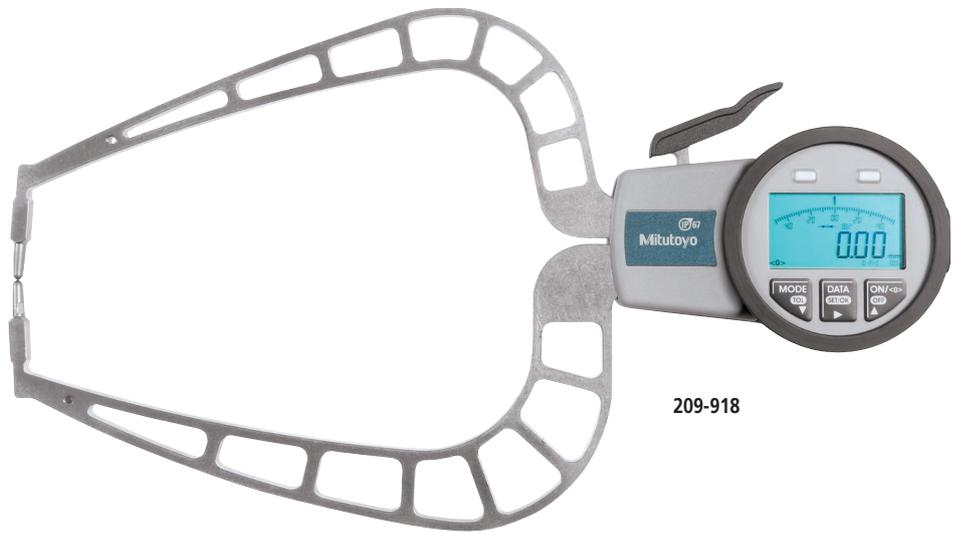
Code No.	Description	Price
937387	SPC data cable (1 m)	£37.90
965013	SPC data cable (2 m)	£45.00
02AZD790E	SPC data cable for U-WAVE-T (160 mm)	£60.10
06ADV380E	USB Input tool direct cable (2 m)	£105.00
011551	Interface adaptor	£95.50

SERIES 209 – Digimatic Coolant Proof Outside Caliper Gauge

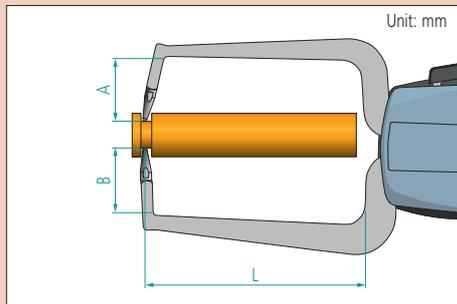
- Versatile gauge with a choice of arm configurations suitable for measuring grooves and other hard-to-measure features in addition to rapid measurement of flat stock at some distance from an edge.
- IP67 rating provides maximum confidence for use in adverse environments where the gauge is subject to splashing by cutting fluid or coolant.
- Bargraph provides a quick analogue view of the result of measurement.
- GO/±NG judgement function: an in-tolerance judgement result is indicated by the green LED and an out-of-tolerance judgement by the red.
- Data output port that enables incorporation into measurement networking and statistical process control systems.



209-572



209-918



L : Maximum reach of contact arms over workpiece.
A : Maximum penetration depth of upper contact.
B : Maximum penetration depth of lower contact.

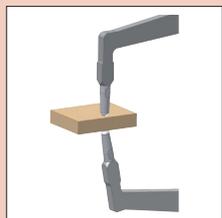


Figure 1.

Specifications

Inch/Metric

Code No.	Range	Measuring force	Resolution	Accuracy	A	B	L	Type	Price
Measuring contacts: Carbide ball ϕ 1.5 mm									
209-572	0-20 mm	1.1/1.6 N	0.01 mm	0.03 mm	24.7	24.6	85	Fig. 1	£772.00
Measuring contacts: Carbide ball ϕ 5 mm									
209-918	0-50 mm	0.8/1.7 N	0.02 mm	0.06 mm	30	30	167	Fig. 1	£794.00

Instruments

SERIES 209 – Coolant Proof Outside Dial Caliper Gauge

- Versatile gauge with a choice of arm configurations suitable for measuring external groove diameter and other hard-to-measure features in addition to rapid measurement of flat stock thickness at some distance from an edge.
- IP65 rating provides good protection in adverse environments where the gauge is subject to splashing by cutting fluid or coolant.



209-402



209-406



209-405

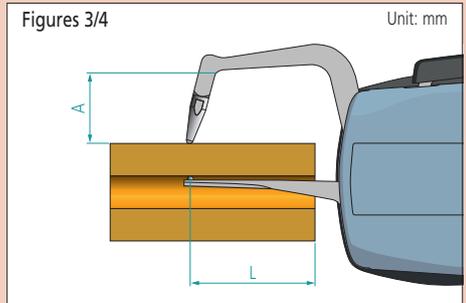
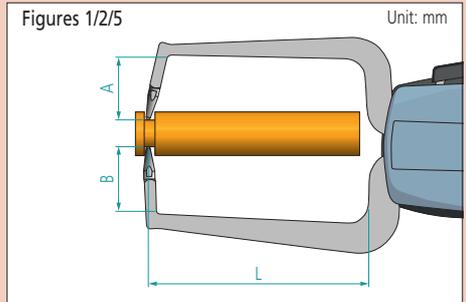
Specifications

Metric

Code No.	Range	Measuring force	Graduation	Accuracy	A	B	L	Contact radii	Type	Price
Measuring contacts: Carbide bevel										
209-405	0-20 mm	1.1/1.6 N	0.01 mm	0.03 mm	24.7	24.6	81	0.4/0.4 mm	Fig. 1	£498.00
Measuring contacts: Carbide ball ø1.5/2 mm										
209-402	0-10 mm	0.8/1.2 N	0.005 mm	0.015 mm	19.1	18.6	35	0.75/0.75 mm	Fig. 2	£541.00
209-404	0-20 mm	1.1/1.6 N	0.01 mm	0.03 mm	24.7	24.6	85			£541.00
209-911	0-50 mm	0.8/1.7 N	0.05 mm	0.05 mm	30	30	167	3/3 mm		£711.00
209-407	0-20 mm	1.1/1.6 N	0.01 mm	0.03 mm	24.7	—	85	0.75/0.75 mm	Fig. 4	£498.00
Measuring contacts: Carbide ball/bevel										
209-406	0-20 mm	1.1/1.6 N	0.01 mm	0.03 mm	24.7	—	80	0.4/0.75 mm	Fig. 3	£498.00
Measuring contacts: Carbide ball ø2 mm										
209-843	0-10 mm	0.3/1.3 N	0.1 mm	0.1 mm	5	5	35	2/2 mm	Fig. 5	£142.00

Inch

Code No.	Range	Measuring force	Graduation	Accuracy	A	B	L	Contact radii	Type	Price
Measuring contacts: Carbide bevel										
209-454	0-.8"	1.1/1.6 N	.0005"	.0015"	24.7	24.6	81	.02/.02"	Fig. 1	£646.00
Measuring contacts: Carbide ball ø.059"										
209-456	0-.8"	1.1/1.6 N	.0005"	.0015"	24.7	—	84	.06/.06"	Fig. 3	£592.00
209-450	0-.4"	1.2/1.6 N	.0002"	.0008"	8.9	19	35		Fig. 2	£610.00
209-455	0-.8"	1.1/1.6 N	.0005"	.0015"	24.7	24.6	81		Fig. 2	£592.00
Measuring contacts: Carbide ball ø.118"										
209-916	0-2"	0.8/1.7 N	.001"	.002"	30	30	167	.118/.118"	Fig. 2	£711.00
209-917					—	169	Fig. 4		£711.00	



L : Maximum reach of contact arms over workpiece.
 A : Maximum penetration depth of upper contact.
 B : Maximum penetration depth of lower contact.

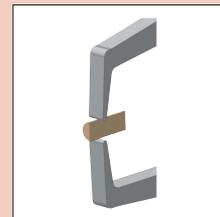


Figure 1.

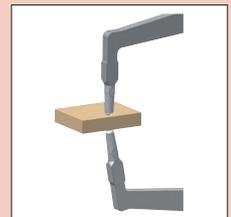


Figure 2.

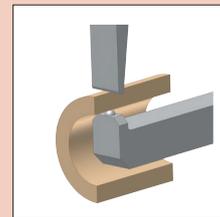


Figure 3.

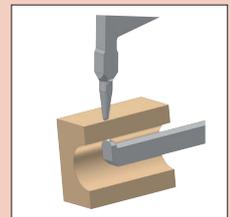


Figure 4.



Figure 5.

Functions

Mode key, SET key, DATA key, ON/OFF/0-preset, max. reading, min. reading, ABS/INC switchable, display hold, data output, direction switching, tolerance LED (green/red), tolerance judgement.

Optional Accessories

Code No.	Description	Price
937387	SPC data cable (1 m)	£37.90
965013	SPC data cable (2 m)	£45.00
02AZD790E	SPC data cable for U-WAVE-T (160 mm)	£60.10
06ADV380E	USB Input tool direct cable (2 m)	£105.00
011551	Interface adaptor	£95.50

SERIES 209 – Digimatic Coolant Proof Inside Caliper Gauge

- Versatile gauge for measuring internal groove diameter.
- IP67 rating provides maximum confidence for use in adverse environments where the gauge is subject to splashing by cutting fluid or coolant.
- Bargraph provides a quick analogue view of the result of measurement.
- GO/±NG judgement function: an in-tolerance judgement result is indicated by the green LED and an out-of-tolerance judgement by the red.
- Data output port that enables incorporation into measurement networking and statistical process control systems.

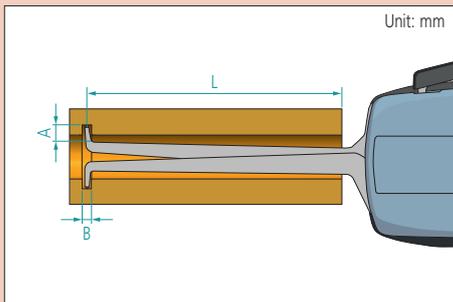
IP67



209-551



209-558



L : Maximum reach of contact arms inside workpiece.

A : Maximum groove depth.

B : Maximum groove width.

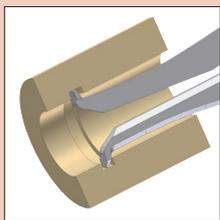


Figure 1.

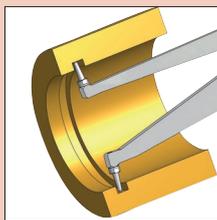


Figure 2.

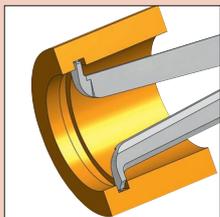


Figure 3.

Specifications

Inch/Metric

Code No.	Range	Measuring force	Resolution	Accuracy	A	B	L	Type	Price
Measuring contacts: Carbide ball $\phi 0.6$ mm									
209-551	5 - 15 mm	0.8/1.2 N	0.005 mm	0.015 mm	2.3	0.8	35	Fig. 3	£633.00
Measuring contacts: Carbide ball $\phi 1$ mm									
209-552	10 - 30 mm	1.1/1.6 N	0.01 mm	0.03 mm	5.2	1.2	85	Fig. 3	£633.00
209-904	13 - 43 mm	1.2/1.7 N	0.02 mm	0.04 mm	5.9	5.9	127	Fig. 1	£646.00
209-556	50 - 70 mm	1.1/1.6 N	0.01 mm	0.03 mm	8.3	1.2	85	Fig. 2	£633.00
209-558	70 - 90 mm								£633.00

Instruments

SERIES 209 – Coolant Proof Inside Dial Caliper Gauge

- Versatile gauge for measuring internal groove diameter.
- IP65 rating provides good protection in adverse environments where the gauge is subject to splashing by cutting fluid or coolant.

IP65



209-300



209-305

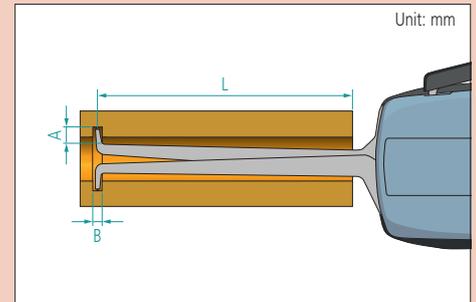
Specifications

Metric

Code No.	Range	Measuring force	Graduation	Accuracy	A	B	L	Type	Price
Measuring contacts: Carbide bevel									
209-300	2.5 - 12.5 mm	0.8/1.2 N	0.005 mm	0.015 mm	0.7	0.4	12	Fig. 1	£541.00
Measuring contacts: Carbide ball $\phi 0.6$ mm									
209-301	5 - 15 mm	0.8/1.2 N	0.005 mm	0.015 mm	2.3	0.8	35	Fig. 4	£541.00
Measuring contacts: Carbide ball $\phi 1$ mm									
209-302	10 - 30 mm	1.1/1.6 N	0.01 mm	0.03 mm	5.2	1.2	85	Fig. 4	£610.00
209-303	20 - 40 mm				7			Fig. 2	£610.00
209-304	30 - 50 mm				8.3			Fig. 3	£610.00
209-305	40 - 60 mm								£529.00
209-306	50 - 70 mm								£529.00
209-307	60 - 80 mm								£611.00
209-308	70 - 90 mm				£648.00				
209-309	80 - 100 mm								

Inch

Code No.	Range	Measuring force	Graduation	Accuracy	A	B	L	Type	Price
Measuring contacts: Carbide bevel									
209-350	.1 - .5"	0.8/1.2 N	.0002"	.0008"	0.9	0.5	35	Fig. 1	£592.00
209-351	.2 - .6"				4.6	0.8			£592.00
Measuring contacts: Carbide ball $\phi 0.0394$ "									
209-352	.4 - 1.2"	1.1/1.6 N	.0005"	.0015"	5.3	1.8	84	Fig. 1	£592.00
209-354	.8 - 1.6"				7.4	3.3		Fig. 2	£498.00
209-356	1.6 - 2.4"				12.2	1.8		Fig. 3	£592.00



Unit: mm
 L : Maximum reach of contact arms inside workpiece.
 A : Maximum groove depth.
 B : Maximum groove width.

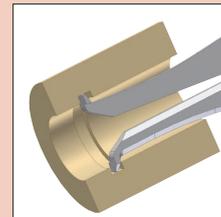


Figure 1.

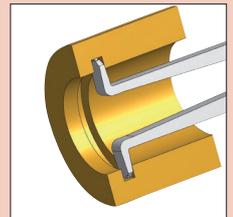


Figure 2.

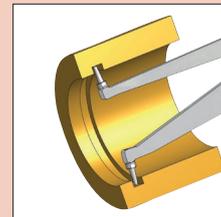


Figure 3.

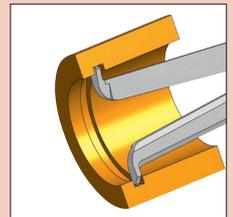
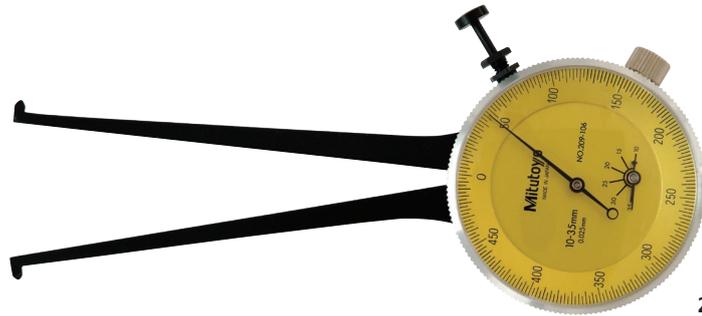


Figure 4.

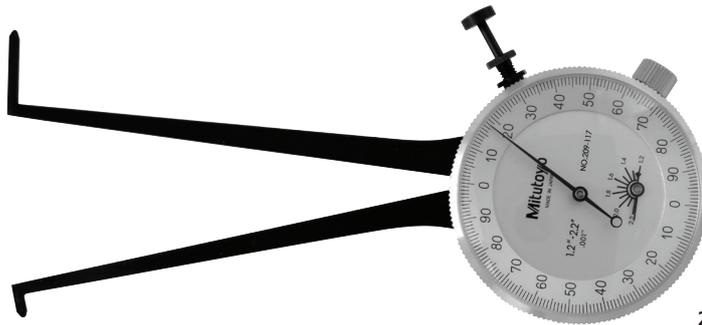
Instruments

SERIES 209 – Inside Dial Caliper Gauge

- Dial caliper gauges are inside diameter measurement tools that have a broad range of application including the measurement of hole diameter and the diameter of internal detail such as grooves.



209-106

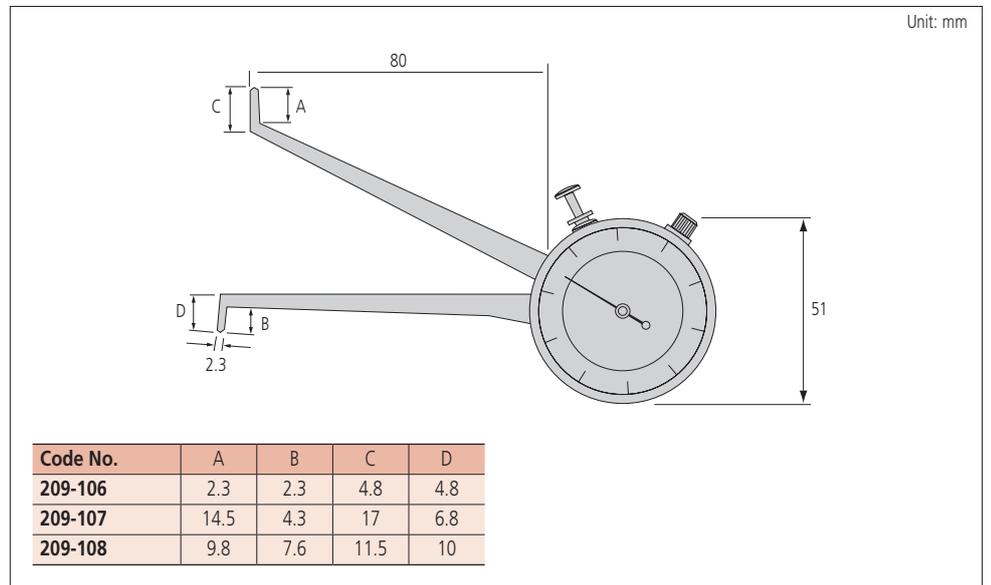


209-117

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
209-106	10-35 mm	0.025 mm	0.075 mm	£173.00
209-107	30-55 mm			£210.00
209-108	50-75 mm			£250.00
Inch				
Code No.	Range	Graduation	Accuracy	Price
209-116	.4-1.4"	.001"	.003"	£173.00
209-117	1.2-2.2"			£240.00
209-118	2-3"			£250.00

Dimensions



Instruments

SERIES 201 – Dial Snap Gauges

- Designed for quick GO/NG judgement of diameters of cylinders and shafts in machining processes.
- Wide (13.5 x 12 mm / 1.53 x 47"), flat carbide anvils.
- Indicator-anvil retraction stroke: 2 mm / .080".
- Anvil positioning range: 25 mm / 1".
- Adjustment nut: adjusts the setting anvil to the nominal size required within the measuring range.
- Clamp: clamps the setting anvil at the required position.
- Flatness of measuring face: 1 µm.
- Repeatability of indication: 2 µm or less (repeatability of indicators is not included).
- The dial indicator and protection cover are optional. Also, some dial indicators and protection covers cannot be used with the dial snap gauge. Consult Mitutoyo before using dial indicators which are not recommended.



201-101

Note: The dial indicator and protection cover are optional.

Specifications

Metric

Code No.	Range	Parallelism	Measuring force	Recommended dial indicator (optional)	Price
201-101	0 - 25 mm	5 µm	15N±3N	2046SB (0.01 mm reading), 2109SB-10 (0.001 mm reading)	£329.00
201-102	25 - 50 mm				£340.00
201-103	50 - 75 mm				£356.00
201-104	75 - 100 mm				£366.00
201-105	100 - 125 mm				£382.00
201-106	125 - 150 mm				£398.00
201-107	150 - 175 mm				£419.00
201-108	175 - 200 mm				£435.00
201-109	200 - 225 mm				£458.00
201-110	225 - 250 mm				£480.00
201-111	250 - 275 mm				£491.00
201-112	275 - 300 mm				£512.00

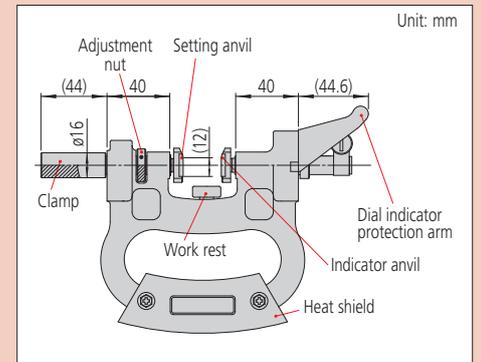
Inch

Code No.	Range	Parallelism	Measuring force	Recommended dial indicator (optional)	Price
201-151	0 - 1"	.0002"	15N±3N	2803SB-10 (.0001" reading)	£329.00
201-152	1 - 2"				£340.00
201-153	2 - 3"				£356.00
201-154	3 - 4"				£366.00
201-155	4 - 5"				£382.00
201-156	5 - 6"				£398.00
201-157	6 - 7"				£419.00
201-158	7 - 8"				£435.00
201-159	8 - 9"				£458.00
201-160	9 - 10"				£480.00
201-161	10 - 11"				£491.00
201-162	11 - 12"				£512.00

Optional Accessories

Code No.	Description	Price
21DZA000	Dial protection cover	£8.70
2046SB	Dial indicator (graduation: 0.01 mm)	£36.40
2109SB-10	Dial indicator (graduation: 0.001 mm)	£77.70
2803SB-10	Dial indicator (graduation: .0001")	£107.00

Dimensions



Stands

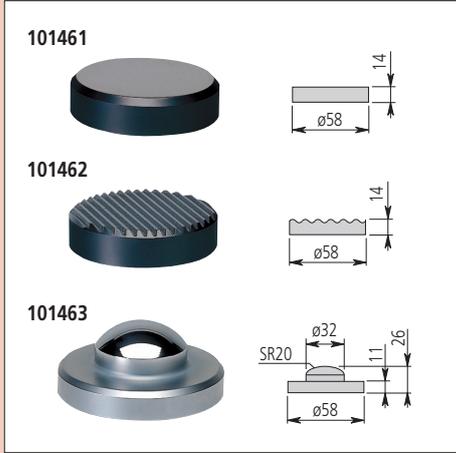
SERIES 7 – Dial Gauge Stands

- Dial Gauge Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.
- Vertical fine adjustment is available with one-touch control thanks to the parallel spring suspension.

Optional Accessories

Code No.	Description	Price
101461	Hardened steel flat anvil	£44.10
101462	Hardened steel serrated anvil	£48.20
101463	Hardened steel domed anvil*	£61.80

* Not available for 7007-10.



7001-10

7002-10

7007-10

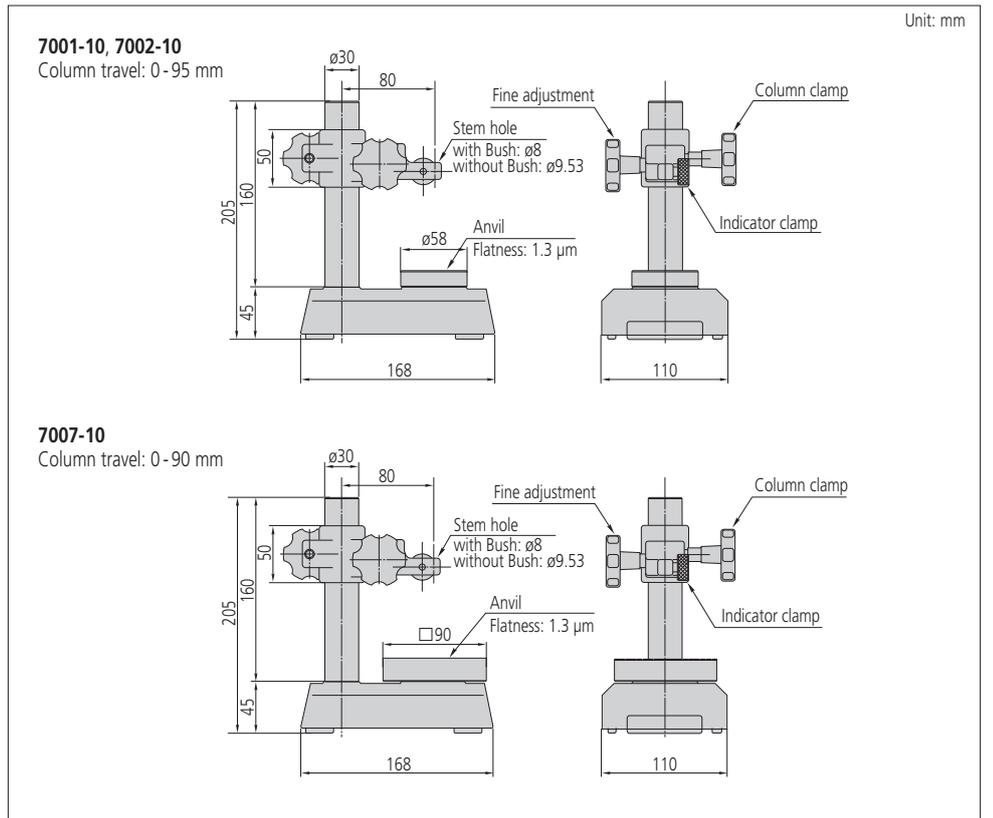
Specifications

Metric			
Code No.	Acceptable stem sizes	Remarks	Price
7001-10	$\phi 8$ mm, $\phi 9.53$ mm	With $\phi 58$ mm serrated anvil	£448.00
7002-10		With $\phi 58$ mm flat anvil	£419.00
7007-10		With 90 mm square anvil	£459.00

Note: Perpendicularity of the mounting hole to the anvil: less than 0.4 mm/100 mm.

Consult us when mounting Mitutoyo's Linear Gauge on this stand. We will check the operation of the stand and Linear gauge before shipment (made-to-order).

Dimensions



Stands

SERIES 7 – Magnetic Stands

- Mitutoyo's Magnetic Stands accept all dial indicators and dial test indicators (with stem $\varnothing 6$ mm or $\varnothing 8$ mm) and clamp to iron or steel surfaces with a strong magnetic force.

7010SN



7011SN



7014-10



7033B



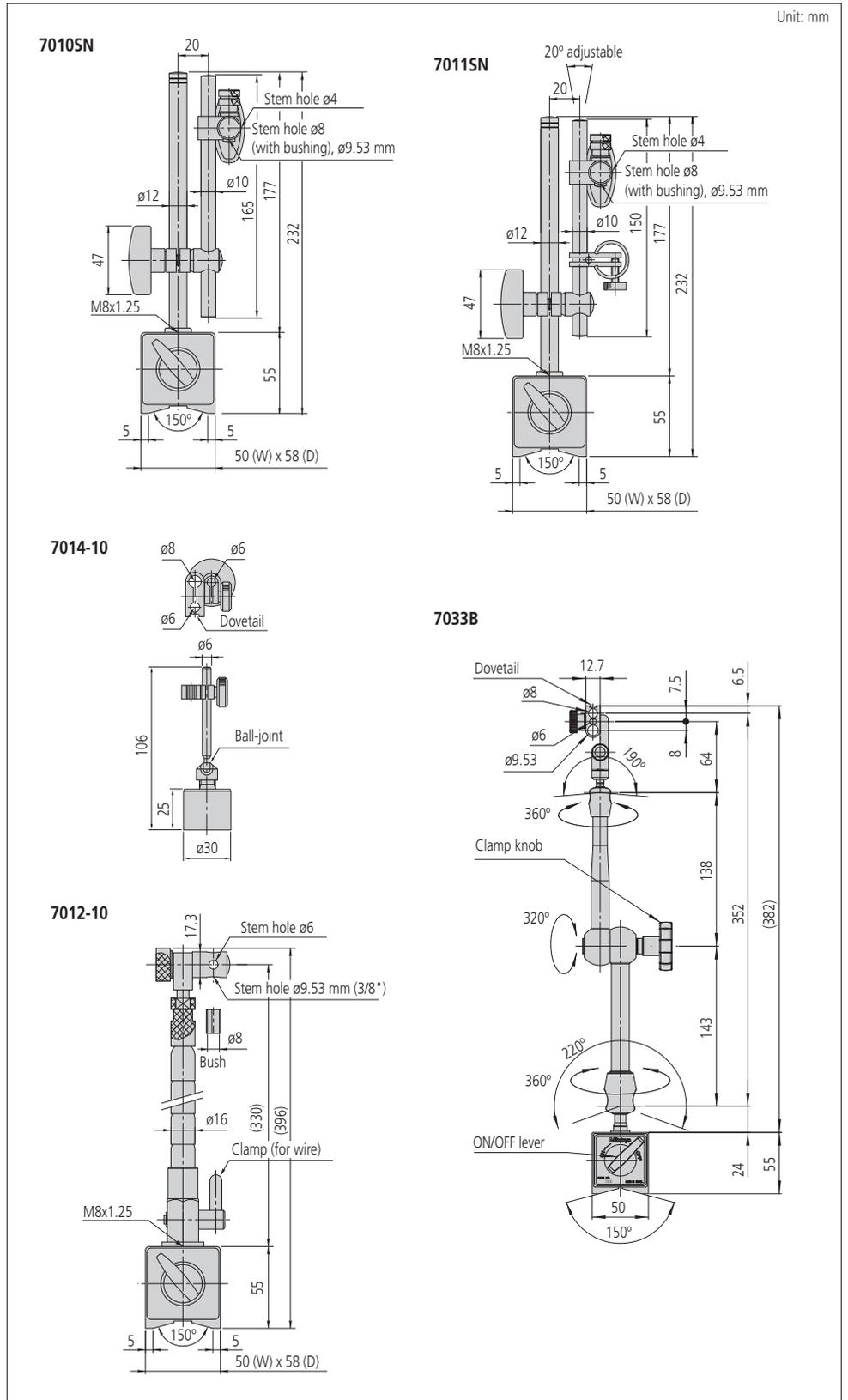
7012-10



Specifications

Code No.	Description	Acceptable stem sizes	Dovetail groove	Remarks	Price
7010SN	Magnetic stand	ø4 mm, ø8 mm, ø9.53 mm (3/8")	—	—	£58.50
7011SN				With fine adjustment	£70.50
7012-10	Flexible column stand	ø6 mm, ø8 mm, ø9.53 mm	Provided	—	£144.00
7014-10	Mini magnetic stand	ø6 mm, ø8 mm	Provided	Without magnet ON/OFF	£61.60
7033B	Universal magnetic stand	ø6 mm, ø8 mm, ø9.53 mm	Provided	With mechanical locking system	£165.00

Dimensions



Stands

SERIES 215 – Comparator Stands

- Comparator Stands have a very stable, cast iron base which enables precise measurement.
- The partially serrated anvil prevents very flat workpieces from wringing to it and the 2.3 µm flatness (or better) promotes accurate measurement.
- The **215-505-10** model has a threaded column which enables easy and precise coarse adjustment.
- Serrated anvils 110x110 mm are supplied with **215-405-10**, and 150x150 mm with **215-505-10** models.



215-405-10



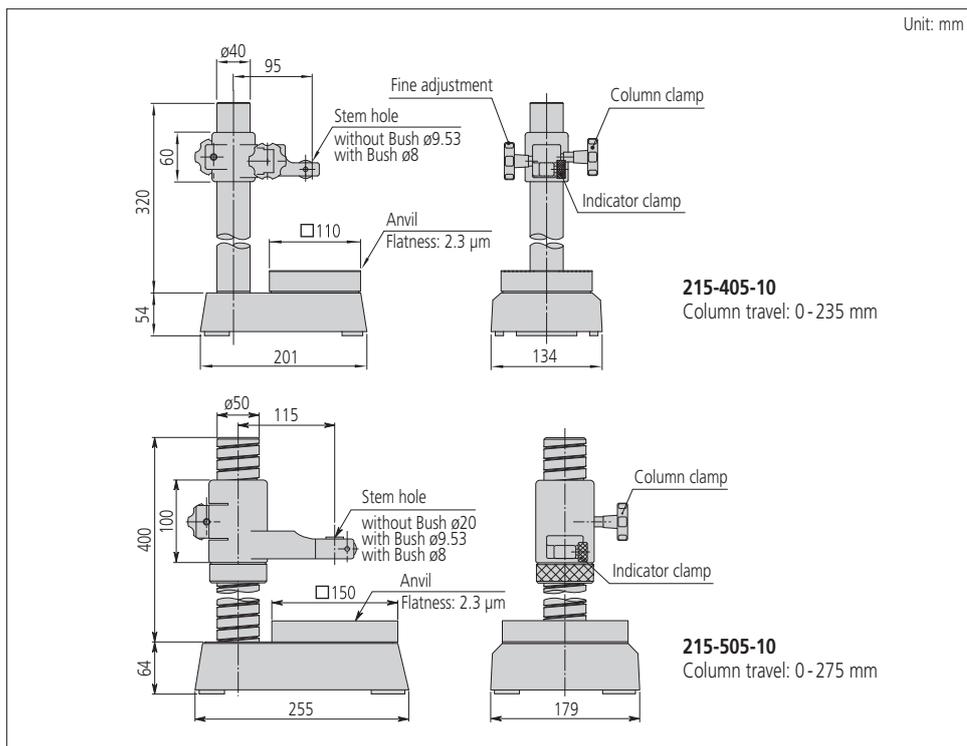
215-505-10

Specifications

Code No.	Square anvil size (WxD)	Column travel	Acceptable stem sizes	Remarks	Price
215-405-10	110x110 mm	235 mm	ø8 mm, ø9.53 mm	With fine adjustment of 1 mm range	£575.00
215-505-10	150x150 mm	275 mm	ø8 mm, ø9.53 mm, ø20 mm	With fine adjustment over the entire travel	£755.00

Note: Perpendicularity of the mounting hole to the anvil: less than 0.4/100 mm.

Dimensions



Optional Accessories

Code No.	Description	Price
21JAA329	ø8 mm bush*	£24.20
21JAA330	ø9.53 mm (3/8") bush*	£24.20
21JAA331	ø15 mm bush*	£27.20

* Only available for 215-505-10.



Application example using Digimatic Indicator ID-H.

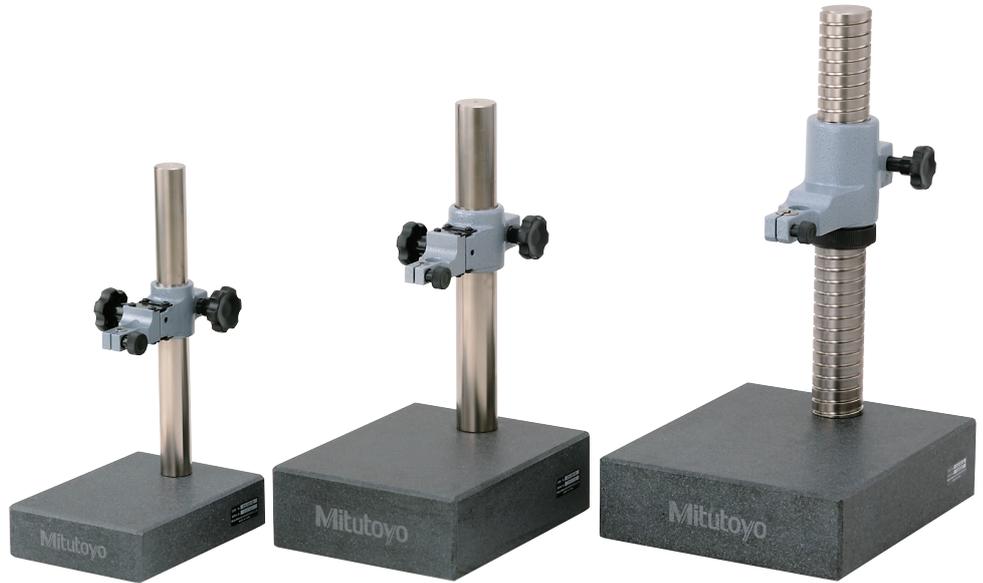
Optional Accessories

Code No.	Description	Price
21JAA329	ø8 mm bush*	£24.20
21JAA330	ø9.53 mm (3/8") bush*	£24.20
21JAA331	ø15 mm bush*	£27.20

* Only available for 215-156-10.

SERIES 215 – Granite Comparator Stands

- The rigid granite base is free from burrs, pileups, rust and deterioration over time.
- The **215-156-10** model has a threaded column which enables easy and precise coarse adjustment.



215-151-10

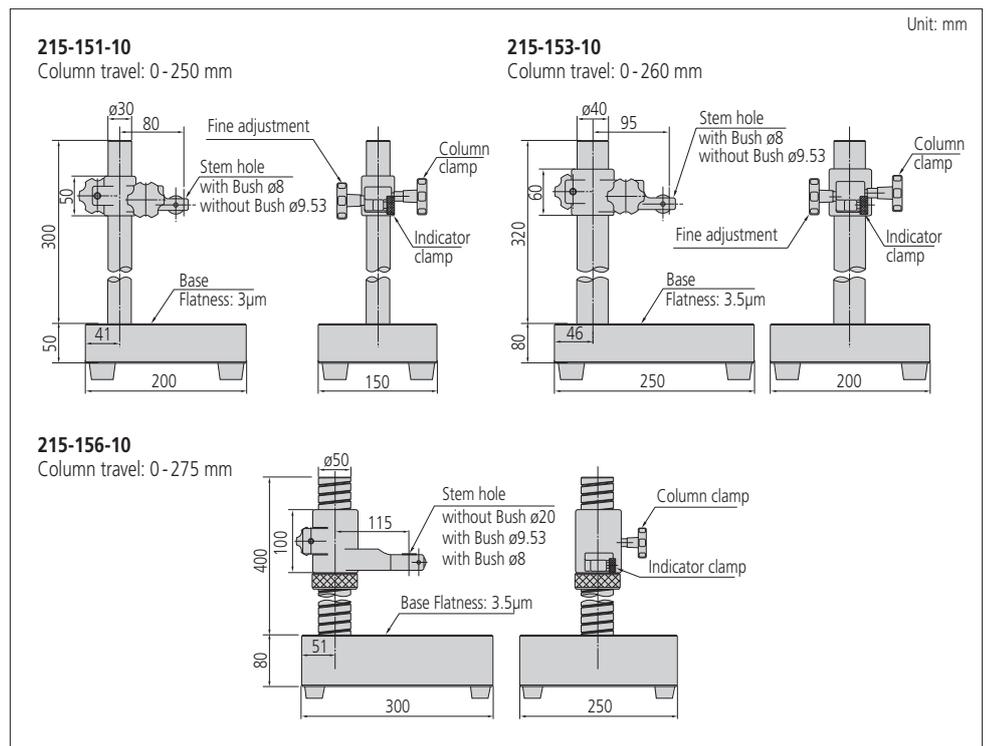
215-153-10

215-156-10

Specifications

Code No.	Granite base size (WxDxH)	Column travel	Acceptable stem sizes	Remarks	Price
215-151-10	150x200x50 mm	250 mm	ø8 mm, ø9.53 mm	With fine adjustment of 1 mm range	£475.00
215-153-10	200x250x80 mm	260 mm			£516.00
215-156-10	300x250x80 mm	275 mm	ø8 mm, ø9.53 mm, ø20 mm	With fine adjustment over the entire travel	£639.00

Dimensions



Stands

SERIES 519 – Transfer Stand

- Transfer Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.



519-109-10
(with a serrated anvil)

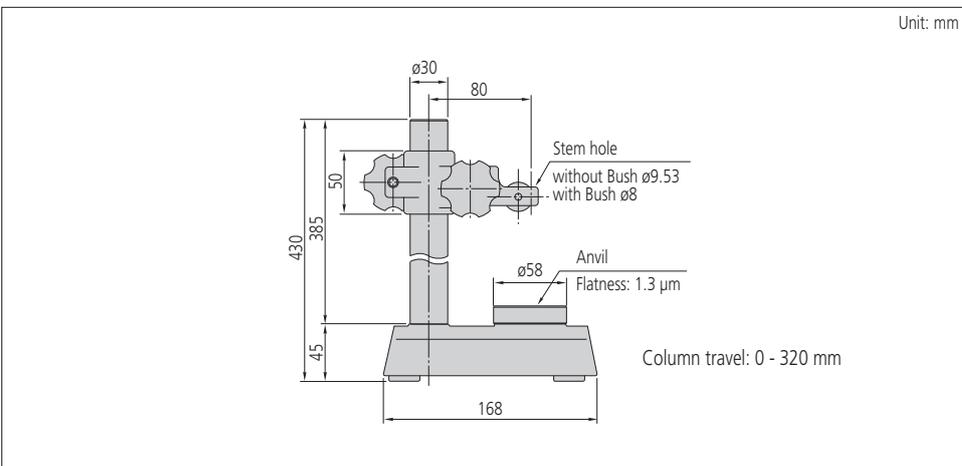
Specifications

Metric

Code No.	Acceptable stem sizes	Remarks	Price
519-109-10	ø8 mm, ø9.53 mm	With serrated anvil	£589.00

Note: Perpendicularity of the mounting hole to the anvil: less than 0.4 mm / 100 mm.

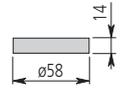
Dimensions



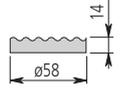
Optional Accessories

Code No.	Description	Price
101461	Hardened steel flat anvil	£44.10
101462	Hardened steel serrated anvil	£48.20
101463	Hardened steel domed anvil	£61.80

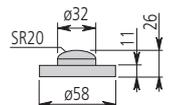
101461



101462

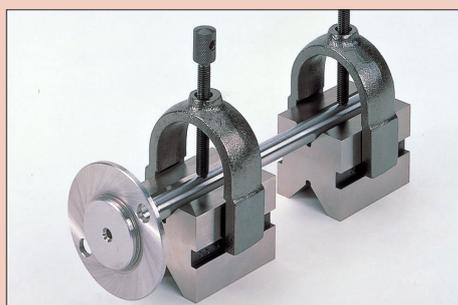


101463



Accuracy

	Mitutoyo	Reference JIS B 7540 Grade 1, 100 mm or less	
Bottom-surface flatness	2 μ m or less	10 μ m or less	
V-surface flatness			
Parallelism between the bottom-surface and the cylinder on the V-surface	7.5 μ m or less		
Inclination of the V-anvil against the bottom-surface	10 μ m or less		
Parallelism between the side surface and the cylinder on the V-surface	7.5 μ m or less		20 μ m or less
Difference in the height of a pair of V-blocks	9 μ m or less		10 μ m or less



Application example.

SERIES 181 – V-Block Set

- Made of hardened steel.
- Two V-blocks per set.
- Feature V-angle 90° clamping brackets.
- Contact faces are ground and lapped.
- Designed as a fixture to enable you to check cylindrical precision machined parts.



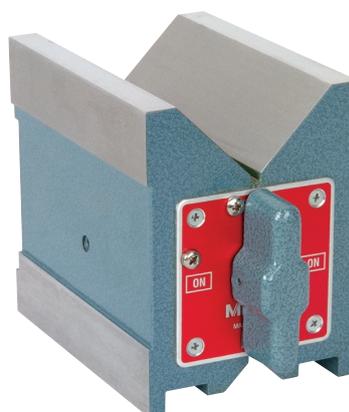
181-902-10

Specifications

Metric				
Code No.	Max. workpiece dia.	Dimensions (LxWxH)	Remarks	Price
181-902-10	25 mm	41 x 31.8 x 31.8 mm	With clamp	£160.00
Inch				
Code No.	Max. workpiece dia.	Dimensions (LxWxH)	Remarks	Price
181-901-10	1"	41 x 31.8 x 31.8 mm	With clamp	£160.00

SERIES 181 – Magnetic V-Block

- Contact faces are ground and lapped.
- They are of regular length with two differently sized 90° V-grooves.
- You can use them for holding ferromagnetic cylindrical parts for scribing, adjusting, testing etc.



181-246

Specifications

Metric				
Code No.	Max. workpiece dia.	Dimensions (LxWxH)	Magnetic force	Price
181-146	50 mm	64 x 58 x 76 mm	500 N	£166.00
181-246		95 x 70 x 95 mm	1000 N	£402.00