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Digimatic Indicator Overview

Indicator functions



Indicator functions	IDS	IDC with Max/Min hold mode	IDC with Signal Output function	IDC	Calculator IDC	IDU	IDF	IDH	IDB	IDN
Signal output	-	-	●	-	-	-	-	-	-	-
Signal input	-	-	-	-	-	-	-	-	●	●
ON/OFF	●	●	●	●	●	●	●	●	●	●
Measurement direction switchable	●	●	-	●	-	●	●	●	●	●
Selectable resolution	-	-	-	-	●	-	-	-	-	-
INC mode	-	●	●	●	●	-	●	●	●	●
ABS/INC switchable	-	●	●	●	●	-	●	-	●	●
Tolerance limit input	-	●	●	●	●	-	●	●	●	●
PRESET	-	●	●	●	●	-	●	●	●	●
ORIGIN	●	-	-	-	-	●	-	-	-	-
Calculation	-	-	-	●	●	-	-	-	-	-
Key lock	-	-	-	●	●	-	●	●	-	-
Mode : - Max reading - Min reading - TIR reading	-	●	●	-	-	-	●	●	-	-
Mode : - Max reading - Min reading	-	-	-	-	●	-	-	-	-	-
DATA/HOLD	-	-	-	●	●	-	-	●	●	●
Digimatic data output	●	●	-	●	●	●	●	●	●	●
Digimatic data input	-	-	-	-	-	-	●	●	-	-
RS-232C data output	-	-	-	-	-	-	-	●	-	-
RS-232C data input	-	-	-	-	-	-	-	●	-	-
Weak battery alarm	●	●	●	-	●	●	-	-	●	●
Alarm E-SE (tolerance limit setting error)	-	●	●	●	●	-	●	●	●	●

ABSOLUTE Digimatic Solar Indicator ID-S

Functions	Series 543
ORIGIN	●
Counting direction switching	●
Digimatic data output	●

Specifications

Accuracy	0,003 mm
LCD Display	6 digit
Scale type	Absolute linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 1,5N
Stem dia.	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Alarm	Low voltage, sensor error
Power supply	Solar cell

Optional accessories

No.	Description
21EZA198	Spindle lifting lever (12,7 mm/0.5" models)
540774	Spindle lifting cable
21EZA105	Spindle lifting knob (12,7 mm/0.5" models)

Digimatic Signal Cables

905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point

Series 543

- The world's first solar powered ABSOLUTE Digimatic indicator.
- No battery to change.
- Super-capacitor charge storage enables working under low-level lighting conditions (full charge takes about 4 hours).



543-500



543-505

Metric

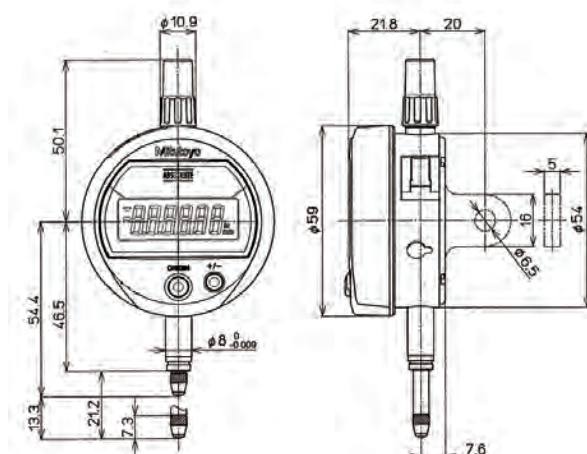
No.	No. Plain backplate	Resolution	Range	Mass g lug/plain
543-500*	543-500B	0,001 mm	12,7 mm	150/140
543-505*	543-505B	0,01 mm	12,7 mm	150/140

No. without "B" : Central-lug backplate

Inch/Metric

No.	No. Plain backplate	Resolution	Range	Mass g lug/plain
543-501*	543-501B	0,001 mm/0.0005"	12,7 mm/0.5"	150/140
543-506*	543-506B	0,01 mm/0.0005"	12,7 mm/0.5"	150/140

No. without "B" : Central-lug backplate



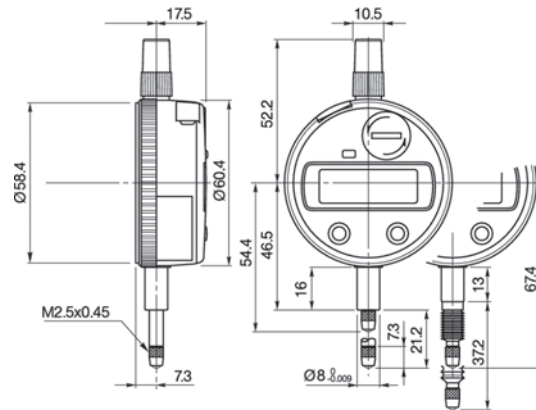
ABSOLUTE Digimatic Indicator ID-S

Series 543

- The zero-position only has to be set once, and is stored until the next battery replacement.
- Measuring accuracy is maintained even at the highest plunger speeds.
- Large display characters for easy reading.



543-690B



Metric

No.	No. Plain backplate	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
543-690*	543-690B	0,001 mm	12,7 mm	0,003 mm	≤ 2.0 N	150	
543-694*	543-694B	0,001 mm	12,7 mm	0,003 mm	≤ 2.5 N	150	IP53
543-681	543-681B	0,01 mm	12,7 mm	0,02 mm	≤ 2.0 N	200	

No. without "B" : Central-lug backplate

Inch/Metric

No.	No. Plain back-plate	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
543-691*	543-691B	0,001 mm/ 0.00005"	12,7 mm/0.5"	0,003 mm/ 0.00012"	≤ 2.0 N	150	
543-695*	543-695B	0,001 mm/ 0.00005"	12,7 mm/0.5"	0,003 mm/ 0.00012"	≤ 2.5 N	150	IP53
543-692*	543-692B	0,001 mm/ 0.00005"	12,7 mm/0.5"	0,003 mm/ 0.00012"	≤ 2.0 N	150	ANSI/AGD type
543-696*	543-696B	0,001 mm/ 0.00005"	12,7 mm/0.5"	0,003 mm/ 0.00012"	≤ 2.5 N	150	IP53, ANSI/AGD type
543-693*	543-693B	0,001 mm/ 0.0001"	12,7 mm/0.5"	0,003 mm/ 0.00012"	≤ 2.0 N	150	ANSI/AGD type
543-682	543-682B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.0008"	≤ 2.0 N	200	
543-683	543-683B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.0008"	≤ 2.0 N	200	ANSI/AGD type

No. without "B" : Central-lug backplate

Functions	Series 543
ORIGIN	●
Counting direction switching	●
Digimatic data output	●
ON/OFF	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	6 digit
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error
Power supply	1 battery SR-44

Optional accessories

No.	Description
903424	Spindle lift lever
540774	Spindle lifting cable
ANSI/AGD Type	
903425	Spindle lift lever
Digimatic Signal Cables	
905338	Data cable 1 m
905409	Data cable 2 m
06ADV380F	Data cable 2 m USB
02AZD790F	Data cable U-Wave

Consumable spares

No.	Description
901312	Standard contact point
02ACA376	Rubber boot
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point

ABSOLUTE Digimatic Indicator ID-U

Series 575



- Slim type digital indicator. Ideal for installation into measuring fixtures because of its compact design and long battery life.
- The zero-position only has to be set once, and is stored until the next battery replacement.
- Measuring accuracy is maintained even at the highest plunger speeds.
- Large display characters for easy reading.

Functions	Series 575
ORIGIN	●
Counting direction switching	●
Digimatic data output	●
ON/OFF	●

Specifications

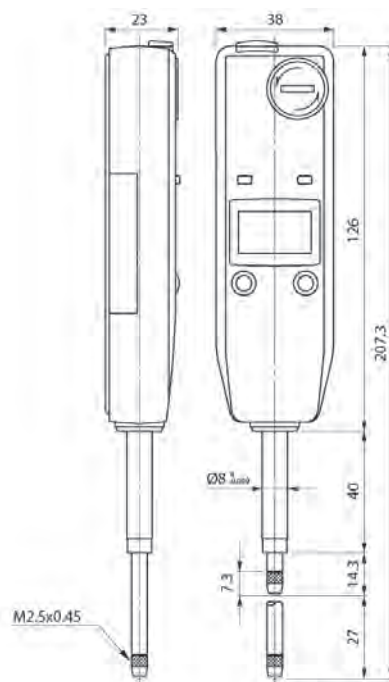
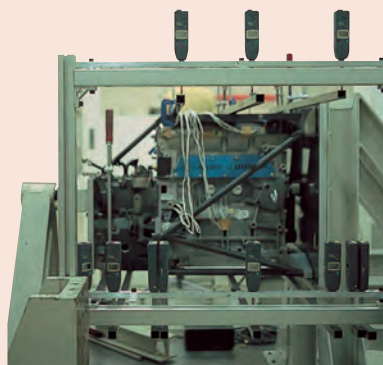
Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	6 digit
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error
Power supply	1 battery SR-44

Optional accessories

No.	Description
540774	Spindle lifting cable
Digimatic Signal Cables	
905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point



575-121

Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g
575-121	0,01 mm	25,4 mm	0,02 mm	≤ 1.8 N	140

Inch/Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
575-122	0,01 mm/0.0005"	25,4 mm/1"	0,02 mm/0.0008"	≤ 1.8 N	140	
575-123	0,01 mm/0.0005"	25,4 mm/1"	0,02 mm/0.0008"	≤ 1.8 N	140	ANSI/AGD type

ABSOLUTE Digimatic Indicator ID-C

Standard type

Series 543

- Simple calculation by a user-definable factor using the formula Ax ('x' is spindle displacement) can be performed.
- Measuring accuracy is maintained even at the highest plunger speeds.
- Large display characters for easy reading.

Setting measuring force on low measuring force models

•543-404/404B/405/405B/406/406B

Spindle orientation	Spring	Weight (approximately 0.1N)	Maximum measuring force
Pointing vertically downward	Yes	Yes	0.5N
	Yes	No	0.4N
	No	Yes	0.3N
	No	No	0.2N
Horizontal	Yes	No	0.2N

•543-394/394B/395/395B/396/396B

Spindle orientation	Spring	Weight (approximately 0.1N)	Maximum measuring force
Pointing vertically downward	Yes	Yes	0.7N
	Yes	No	0.6N
	No	Yes	0.4N
	No	No	Not guaranteed
Horizontal	Not guaranteed		



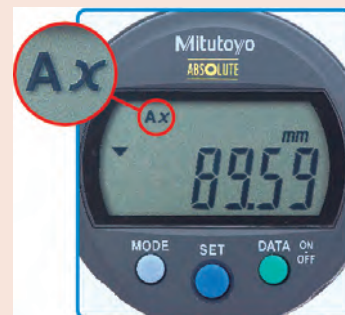
12,7 mm range model



25,4 mm range model



50,8 mm range model



Calculation : $f(x) = Ax$

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



330° rotary display

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



Function locking

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



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

ABSOLUTE Digimatic Indicator ID-C

Standard type

Series 543

- Simple calculation by a user-definable factor using the formula Ax ('x' is spindle displacement) can be performed.
- Measuring accuracy is maintained even at the highest plunger speeds.
- Large display characters for easy reading.



Functions	Series 543
ZERO/ABS switching	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Simplified calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	7 digit Rotatable 330°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
02ACA571	Auxiliary spindle spring (25,4 mm/1" models)
02ACA773	Auxiliary spindle spring (50,8 mm/2" models)
21EZA198	Spindle lifting lever (12,7 mm/0.5" models)
540774	Spindle lifting cable
21EZA105	Spindle lifting knob (12,7 mm/0.5" models)
21EZA197	Spindle lifting knob (25,4 mm/1" models)
21EZA200	Spindle lifting knob (50,8 mm/2" models)

Digimatic Signal Cables

905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

02ACA571/02ACA773 : required when orienting the indicator upside down
 21EZA105 : not available for low measuring force models
 540774 : moving measuring range max. 25 mm

Consumable spares

No.	Description
901312	Standard contact point
938882	Battery SR44

Metric

No.	No. Plain backplate	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
543-390*	543-390B	0,001/0,01 mm	12,7 mm	0,003 mm	≤ 1.5 N	170	
543-394*	543-394B	0,001/0,01 mm	12,7 mm	0,003 mm	0.4-0.7 N	170	Low measuring force
543-400*	543-400B	0,01 mm	12,7 mm	0,02 mm	≤ 0.9 N	170	
543-404*	543-404B	0,01 mm	12,7 mm	0,02 mm	0.2-0.5 N	170	Low measuring force

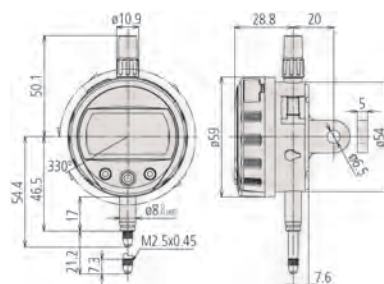
No. without "B" : Central-lug backplate

Low measuring force models : see the first ID-C page for specifications

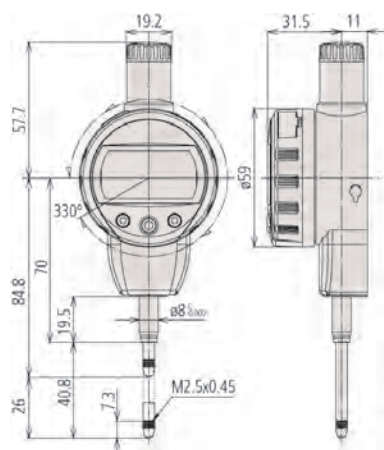
Metric

Plain backplate

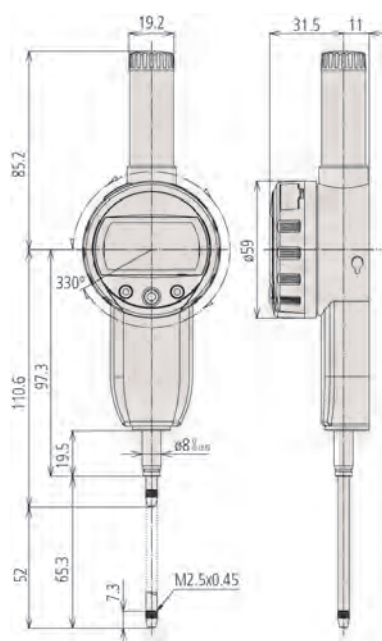
No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-470B	0,001/0,01 mm	25,4 mm	0,003 mm	≤ 1.8 N	190
543-474B	0,01 mm	25,4 mm	0,02 mm	≤ 1.8 N	190
543-490B	0,001/0,01 mm	50,8 mm	0,005 mm	≤ 2.3 N	260
543-494B	0,01 mm	50,8 mm	0,04 mm	≤ 2.3 N	260



12,7 mm range models



25,4 mm range models



50,8 mm range models

ABSOLUTE Digimatic Indicator ID-C

Standard type

Series 543

- Simple calculation by a user-definable factor using the formula Ax ('x' is spindle displacement) can be performed.
- Measuring accuracy is maintained even at the highest plunger speeds.
- Large display characters for easy reading.



(1) Resolution : 0,01 mm/0,001 mm/0.0005"/0.0001"/0.00005"

Inch/Metric Plain backplate

No.	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
543-471B	0,001 mm/0.00005" (1)	25,4 mm/1"	0,003 mm/0.0001"	≤ 1.8 N	190	
543-472B*	0,001 mm/0.00005" (1)	25,4 mm/1"	0,003 mm/0.0001"	≤ 1.8 N		ANSI/AGD type
543-475B	0,01 mm/0.0005"	25,4 mm/1"	0,02 mm/0.001"	≤ 1.8 N	190	
543-476B*	0,01 mm/0.0005"	25,4 mm/1"	0,02 mm/0.001"	≤ 1.8 N	190	ANSI/AGD type
543-491B	0,001 mm/0.00005" (1)	50,8 mm/2"	0,005 mm/0.0002"	≤ 2.3 N	260	
543-492B*	0,001 mm/0.00005" (1)	50,8 mm/2"	0,005 mm/0.0002"	≤ 2.3 N		ANSI/AGD type
543-495B*	0,01 mm/0.0005"	50,8 mm/2"	0,04 mm/0.0015"	≤ 2.3 N	260	
543-496B*	0,01 mm/0.0005"	50,8 mm/2"	0,04 mm/0.0015"	≤ 2.3 N	260	ANSI/AGD type

Inch/Metric

No.	No. Plain back-plate	Resolution	Range	Accuracy	Measuring force	Mass g	Remarks
543-391*	543-391B	0,001 mm/0.00005" (1)	12,7 mm/0.5"	0,003 mm/0.0001"	≤ 1.5 N	170	
543-392*	543-392B	0,001 mm/0.00005" (1)	12,7 mm/0.5"	0,003 mm/0.0001"	≤ 1.5 N	170	ANSI/AGD type
543-395*	543-395B	0,001 mm/0.00005" (1)	12,7 mm/0.5"	0,003 mm/0.0001"	0.4-0.7 N	170	Low measuring force
543-396*	543-396B	0,001 mm/0.00005" (1)	12,7 mm/0.5"	0,003 mm/0.0001"	0.4-0.7 N	170	Low measuring force ANSI/AGD type
543-401*	543-401B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.001"	≤ 0.9 N	170	
543-402*	543-402B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.001"	≤ 0.9 N	170	ANSI/AGD type
543-405*	543-405B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.001"	0.2-0.5 N	170	Low measuring force
543-406*	543-406B	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.001"	0.2-0.5 N	170	Low measuring force ANSI/AGD type

No. without "B" : Central-lug backplate

Low measuring force models : see the first ID-C page for specifications

Optional accessories

No.	Description
ANSI/AGD type	
21EZA150	Spindle lifting knob (12,7 mm/0.5" models)
21EZA199	Spindle lifting lever (12,7 mm/0.5" models)

21EZA150 : not available for low measuring force models

Consumable spares

No.	Description
ANSI/AGD type	
21BZB005	Standard contact point

For other accessories, see the previous page



12,7 mm range models



25,4 mm range models



50,8 mm range models

ABSOLUTE Digimatic Indicator Calculator ID-C



Series 543

With calculation function $Ax + B + Cx^{-1}$

- Electronic multi-function indicator with absolute scale.
- Multi-functional dial indicator with integrated calculation formula for a variety of applications.
- Coefficients A, B and C are freely definable.

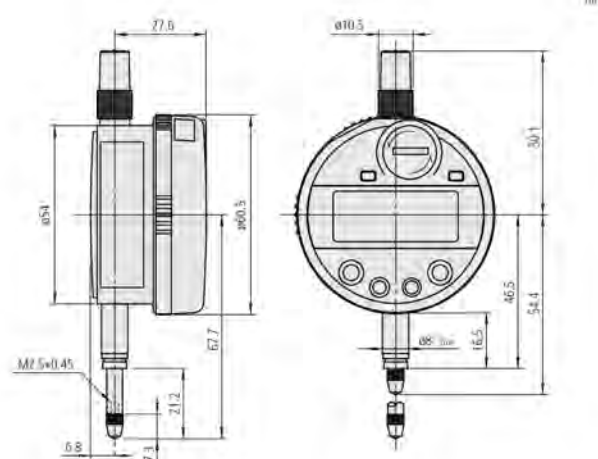
Spécifications

The resolution can be selected from 12 classes :

Class	mm	Class	mm	Class	mm
1	0,0002	5	0,005	9	0,1
2	0,0005	6	0,01	10	0,2
3	0,001	7	0,02	11	0,5
4	0,002	8	0,05	12	1



543-285B



Metric

No.	Range	Accuracy	Measuring force	Mass g
543-285B	12,7 mm	0,003 mm	≤ 1.5 N	160
543-480B	25,4 mm	0,003 mm	≤ 1.8 N	190
543-485B	50,8 mm	0,006 mm	≤ 2.3 N	230

Inch/Metric

No.	Range	Accuracy	Measuring force	Mass g	Remarks
543-286B	12,7 mm/0.5"	0,003 mm/0.00012"	≤ 1.5 N	160	
543-287B*	12,7 mm/0.5"	0,003 mm/0.00012"	≤ 1.5 N	160	ANSI/AGD type
543-481B*	25,4 mm/1"	0,003 mm/0.00012"	≤ 1.8 N	190	
543-482B*	25,4 mm/1"	0,003 mm/0.00012"	≤ 1.8 N	190	ANSI/AGD type
543-486B*	50,8 mm/2"	0,006 mm/0.00025"	≤ 2.3 N	230	
543-487B*	50,8 mm/2"	0,006 mm/0.00025"	≤ 2.3 N	230	

Measuring bridges

No.	R
011394*	50 - 100 mm
011395	100 - 200 mm
21FAJ394	25 - 70 mm
21FAJ395	outside : 45-140 mm / inside : 65-100 mm

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.

Functions	Series 543
ZERO/ABS switching	●
PRESET	●
DATA/HOLD	●
Max/Min value holding	●
GO/±NG judgement	●
Digimatic data output	●
Calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	Switchable 0,0002 mm - 1 mm or 0,0002 mm - 1 mm/0.00001" - 0.05"
Max/Min function	At a speed of ≥ 10 μm/sec, the peak value may not always be correctly displayed
LCD Display	6 digit Rotatable 330°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
902011	Spindle lifting lever
540774	Spindle lifting cable
Digimatic Signal Cables	
905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point



ABSOLUTE Digimatic Indicator ID-C

Max/min hold mode

Series 543

This is the Max/Min value holding function model in the ID-C indicator.

- The maximum, minimum, or runout value can be displayed during measurement.
- High sampling rate of 50 times/s.
- The zero-position only has to be set once, and is stored until the battery replacement.



Functions	Series 543
ZERO/ABS switching	●
PRESET	●
Counting direction switching	●
Max/Min/Runout value	●
GO/±NG judgement	●
Digimatic data output ON/OFF	●

Specifications

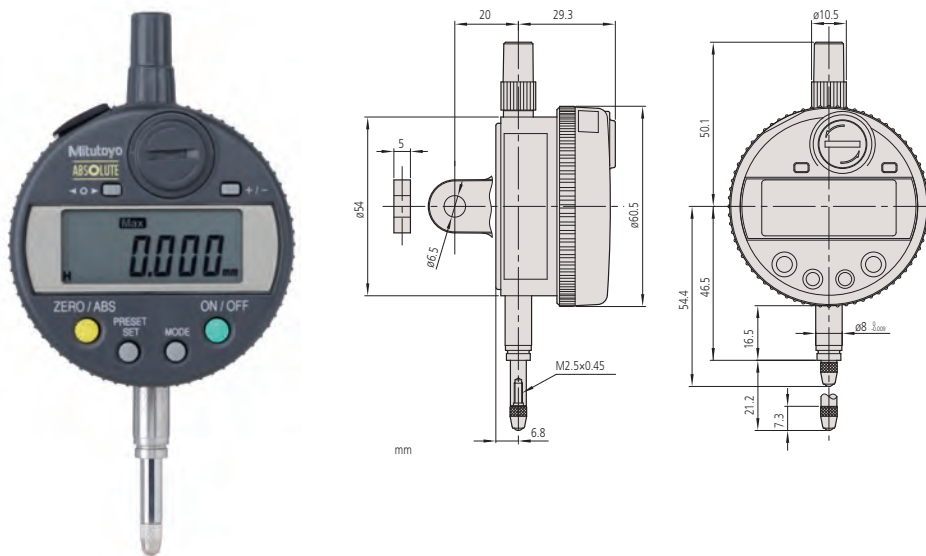
Accuracy	Refer to the list of specifications (excluding quantizing error)
Max/Min function	At a speed of $\geq 50 \mu\text{m/sec}$, the peak value may not always be correctly displayed
LCD Display	6 digit Rotatable 330°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	$\leq 1.5 \text{ N}$
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	2 batteries SR-44

Optional accessories

No.	Description
902011	Spindle lifting lever
540774	Spindle lifting cable
ANSI/AGD type	
902794	Spindle lifting lever
Digimatic Signal Cables	
905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point



543-260B

Metric

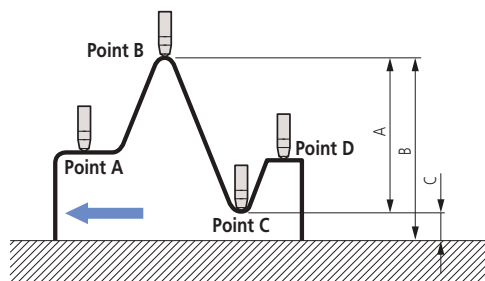
No.	No. Plain backplate	Resolution	Range	Accuracy	Mass g
543-260*	543-260B	0,001 mm	12,7 mm	0,003 mm	160

No. without "B" : Central-lug backplate

Inch/Metric

No.	No. Plain backplate	Resolution	Range	Accuracy	Mass g	Remarks
543-261*	543-261B	0,001 mm/0.00005"	12,7 mm/0.5"	0,003 mm/0.00012"	160	
543-262*	543-262B	0,001 mm/0.00005"	12,7 mm/0.5"	0,003 mm/0.00012"	160	ANSI/AGD type
543-263*	543-263B	0,001 mm/0.0001"	12,7 mm/0.5"	0,003 mm/0.00012"	160	ANSI/AGD type

No. without "B" : Central-lug backplate



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 key sequence.

ABSOLUTE Digimatic Indicator ID-B

Series 543

- Slim body design is advantageous for multi-point measurements.
- Switchable display orientation provides more mounting options.
- Back plunger type. Display viewed from above.
- Built-in tolerance judgement function.



543-580



Flexible installation options with switchable display orientation (overhead use)

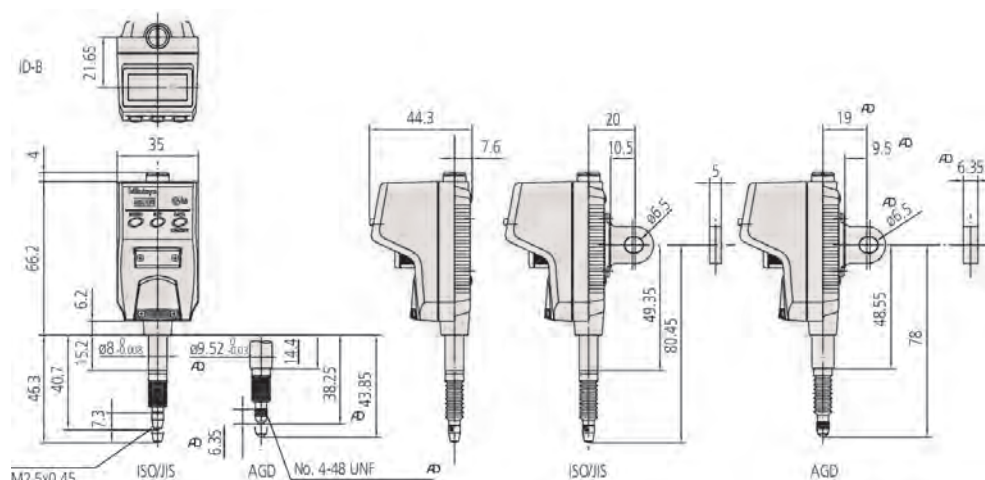
Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-580	0,01 mm	5,0 mm	0,02 mm	2.0 N	130
543-585	0,01 - 0,001 mm	5,0 mm	0,003 - 0,01 mm	2.0 N	130

Inch/Metric

ANSI/AGD Type

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-581*	0,01 mm/0.0005"	5,0 mm/0.2"	0,02 mm/0.0008"	2.0 N	130
543-586*	0,01 - 0,001 mm/0.0005 - 0.00005"	5,0 mm/0.2"	0,003 - 0,01 mm/0.00012 - 0.0004"	2.0 N	130



Functions	Series 543
ZERO/ABS	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Signal input	●
PRESET or external zero reset	●
ON/OFF	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	Orientation switchable 0/180°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
21EAA212	Silicon rubber boot
Digimatic Signal Cables	
21EAA194	Signal cable 1 m
21EAA190	Signal cable 2 m
21EAA210	Signal cable 1 m for external control Preset/Zero
21EAA211	Signal cable 2 m for external control Preset/Zero
02AZD790G	Signal cable U-Wave
06ADV380G	Signal cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point
125317	Rubber boot
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point

ABSOLUTE Digimatic Indicator ID-N

Series 543



- Slim body design is advantageous for multi-point measurements.
- Switchable display orientation provides more mounting options.
- Built-in tolerance judgement function.

Functions	Series 543
ZERO/ABS	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Signal input	●
PRESET or external zero reset	●
ON/OFF	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	Orientation switchable 0/180°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
21EZA105	Spindle lifting knob (12,7 mm/0.5" models)
238774	Silicon rubber boot
ANSI/AGD type	
21EZA150	Spindle lifting knob (12,7 mm/0.5" models)
Digimatic Signal Cables	
21EAA194	Signal cable 1 m
21EAA190	Signal cable 2 m
21EAA210	Signal cable 1 m for external control Preset/Zero
21EAA211	Signal cable 2 m for external control Preset/Zero
02AZD790G	Signal cable U-Wave
06ADV380G	Signal cable 2 m USB

Consumable spares

No.	Description
901312	Standard contact point
02ACA376	Rubber boot
938882	Battery SR44
ANSI/AGD type	
21BZB005	Standard contact point



Width of 35 mm instead of 60 as standard Digimatic indicators



543-575



Flexible installation options with switchable display orientation (overhead use)

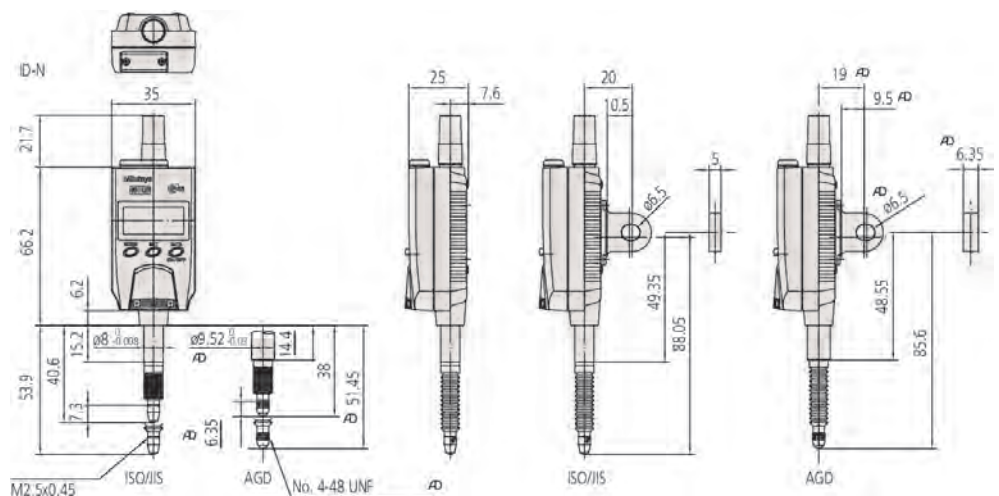
Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-570	0,01 mm	12,7 mm	0,02 mm	2.5 N	130
543-575	0,01 - 0,001 mm	12,7 mm	0,003 - 0,01 mm	2.5 N	130

Inch/Metric

ANSI/AGD Type

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-571	0,01 mm/0.0005"	12,7 mm/0.5"	0,02 mm/0.0008"	2.5 N	130
543-576*	0,01 - 0,001 mm/0.0005 - 0.00005"	12,7 mm/0.5"	0,003 - 0,01 mm/0.00012 - 0.0004"	2.5 N	130



Digimatic Indicator ID-H

Series 543

Superior multi-function indicator - High accuracy

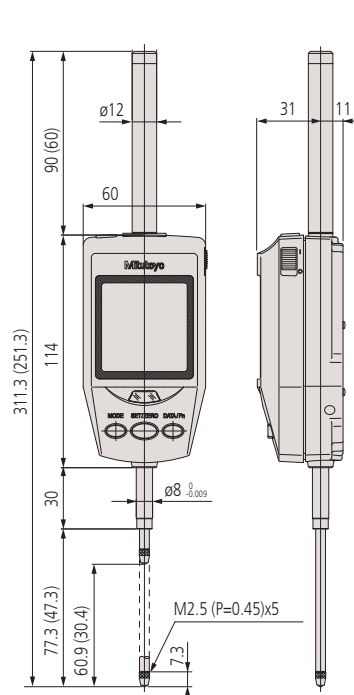
- With visual tolerance-monitoring and analogue bargraph display.
- Lifting mechanism over 30 mm with cable release (optional).
- Externally controllable. Remote control (optional).



543-561D



Remote control (optional)



Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-561D	0,001-0,0005 mm	30,4 mm	0,0015 mm	≤ 2.0 N	300
543-563D	0,001-0,0005 mm	60,9 mm	0,0025 mm	≤ 2.5 N	300

Inch/Metric

ANSI/AGD Type

No.	No. UK Only	Resolution	Range	Accuracy	Measuring force	Mass g
543-562D*	543-562E	0,001-0,0005 mm/ 0.0001-0.00005"	30,4 mm/1.2"	0,0015 mm/0.00006"	≤ 2.0 N	300
543-564D	543-564E	0,001-0,0005 mm/ 0.0001-0.00005"	60,9 mm/2.4"	0,0025 mm/0.0001"	≤ 2.5 N	300



Digimatic presetter (optional) : External keyboard for entering tolerance data or preselecting values



The display switches from green to red backlight if the upper or lower tolerance limit is exceeded



Max/Min/TIR value measurement



Functions	Series 543
ZERO	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
Resolution switching	●
Analogue measuring range switchable	●
Max/Min/Runout value	●
GO/±NG judgement	●
Digimatic data output	●
Digimatic data input	●
RS-232C data output	●
RS-232C data input	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	Refer to the list of specifications
Resolution	Switchable
Scale type	Photoelectric linear encoder
Max. slider speed	1000 mm/s
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Counting value composition error, overflow error, tolerance limit setting error
Power supply	AC adapter
Functions Remote Control (optional)	Data export, Reset to Max/Min/TIR measurement, Max/Min/TIR switchover, PRESET value (preselection) call, Zero reset

Standard accessories

No.	Description
137693	Lifting lever
526688UK	AC adapter 220 V (UK only)
09EAA119D	AC adapter

Optional accessories

No.	Description
540774	Spindle lifting cable
21EZA099	Remote control
21EZA101	Spindle lifting knob
543-004-1	Presetter UK
543-004D	Digimatic presetter

Digimatic Signal Cables

936937	Data cable (1 m)
965014	Data cable (2 m)
21EAA130	RS-232C cable (1 m)
21EAA131	RS-232C cable (2 m)
02AZD790D	Data cable U-Wave
06ADV380D	Data cable (2 m) USB

540774 : moving measuring range max. 30 mm

Consumable spares

No.	Description
901312	Standard contact point
011511	Battery for remote control (4 x LR03)
ANSI/AGD type	
21BZB005	Standard contact point

ABSOLUTE Digimatic Indicator ID-F

ABSOLUTE
Absolute System Trained by MITUTOYO

Series 543

- With visual tolerance-monitoring and analogue bargraph display.

Functions	Series 543
ZERO/ABS	●
PRESET	●
Counting direction switching	●
Analogue measuring range switchable	●
Max/Min/Runout value	●
GO/±NG judgement	●
Digimatic data output	●
Digimatic data input	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	Refer to the list of specifications
Resolution	Switchable
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Counting value composition error, overflow error, tolerance limit setting error
Power supply	AC adapter

Standard accessories

No.	Description
137693	Lifting lever
526688D	AC adapter
526688UK	AC adapter 220 V (UK only)

Optional accessories

No.	Description
02ACA571	Auxiliary spindle spring (25,4 mm/1" models)
02ACA773	Auxiliary spindle spring (50,8 mm/2" models)
540774	Spindle lifting cable
543-004-1	Presetter UK
543-004D	Digimatic presetter

Digimatic Signal Cables

936937	Data cable (1 m)
965014	Data cable (2 m)
02AZD790D	Data cable U-Wave
06ADV380D	Data cable (2 m) USB

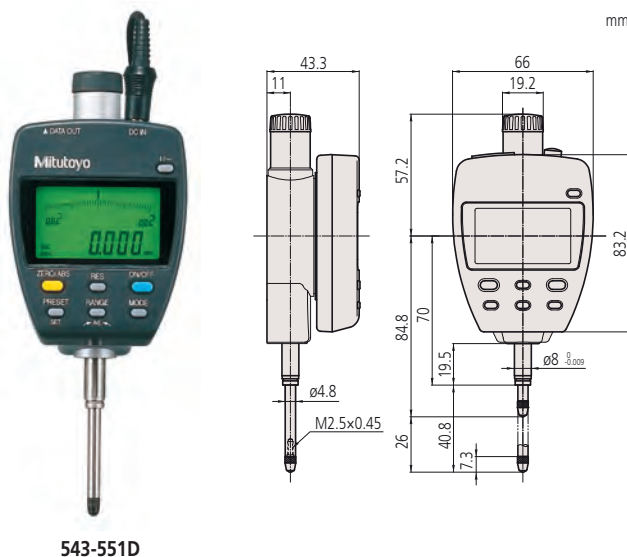
02ACA571/02ACA773 : required when orienting the indicator upside down

Consumable spares

No.	Description
901312	Standard contact point
ANSI/AGD type	
21BZB005	Standard contact point



Digimatic presetter (optional) :
External keyboard for entering tolerance data or preselecting values



543-551D

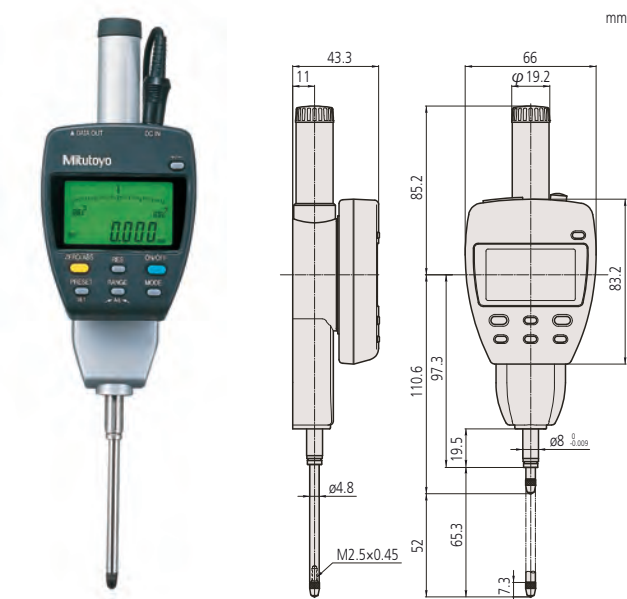
Metric

No.	Resolution	Range	Accuracy	Measuring force	Mass g
543-551D	0,001-0,01 mm	25 mm	0,003 mm	≤ 1.8 N	240
543-557D	0,001-0,01 mm	50 mm	0,003 mm	≤ 2.3 N	330
543-553D	0,001-0,01 mm	50 mm	0,006 mm	≤ 2.3 N	330

Inch/Metric

ANSI/AGD Type

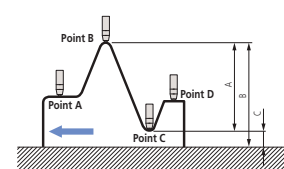
No.	No. UK Only	Resolution	Range	Accuracy	Measuring force	Mass g
543-552D*	543-552E	0,001-0,01 mm/ 0.00005-0.0005-0.0001-0.001"	25,4 mm/1"	0,003 mm/ 0.00012"	≤ 1.8 N	240
543-558D	543-558E	0,001-0,01 mm/ 0.00005-0.0005-0.0001-0.001"	50,8 mm/2"	0,003 mm/ 0.00012"	≤ 2.3 N	330
543-554D	543-554E	0,001-0,01 mm/ 0.00005-0.0005-0.0001-0.001"	50,8 mm/2"	0,006 mm/ 0.00024"	≤ 2.3 N	330



543-553D



Visual tolerance-monitoring



Difference/Runout measurement
Example : indicator travel from points A to D.

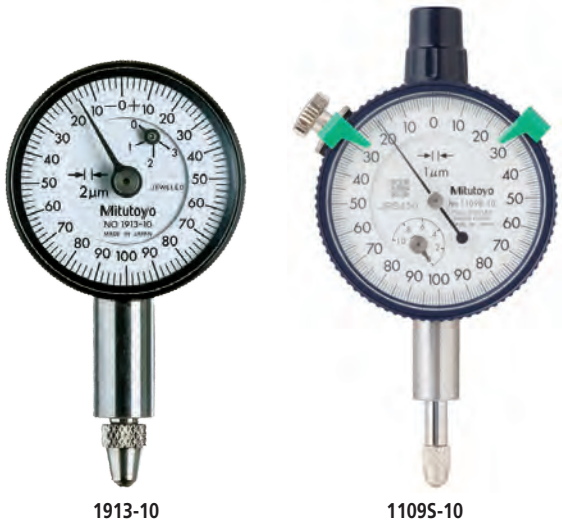
Difference (or Total Runout) is displayed as A. Dimensions B (maximum value) and C (minimum value) can be recalled from memory with a simple key sequence.

Metric Dial Indicator - Series 1

Series 1

Compact type

- Small diameter model for applications where space is limited.



Series 1					
	1003	1911	1913-10	1013S-10	1109S-10
Functions					
Balanced dial					
Continuous dial					
Shockproof					
Jewelled bearings					

Consumable spares

No.	Description
901312	Standard contact point
21AZA319	Standard contact point

901312 : for 1109S-10 / 1013S-10 / 1124S
21AZA319 : for 1913-10 / 1911 / 1003

For accessories and contact points, see end of dial indicators section



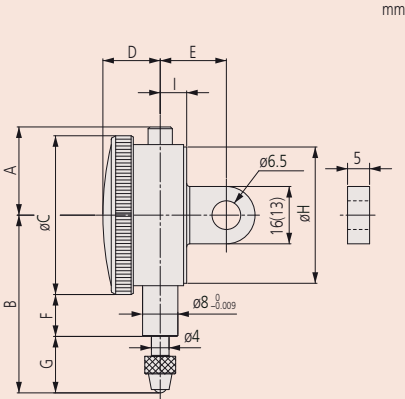
Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1913-10	1913B-10	0,5 mm	0,2 mm	0,002 mm	±8 µm	2 µm	≤ 1.8 N	0-100-0	50/46
1109S-10	1109SB-10	1 mm	0,2 mm	0,001 mm	±7 µm	1 µm	≤ 1.5 N	0-100-0	95/75
1013S-10	1013SB-10	1 mm	0,2 mm	0,002 mm	±10 µm	1 µm	≤ 1.5 N	0-100-0	95/75
1911	1911B	2,5 mm	1 mm	0,01 mm	±12 µm	5 µm	≤ 1.8 N	0-50-0	50/46
1124S	1124SB	3,5 mm	0,5 mm	0,005 mm	±13 µm	5 µm	≤ 1.4 N	0-50 (50-0)	90/70
1003	1003B	4 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-50-0	51/48

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
1913-10	15.5	39.5	31	12.5	19	15	9	30	7
1109S-10	32.5	49	40	14.5	20	13.8	15.2	38	6.6
1013S-10	32.5	49	40	14.5	20	13.8	15.2	38	6.6
1911	15.5	42	31	12.5	19	15	11.5	30	7
1124S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
1003	20	40.3	36	13	15	9.5	12.8	32	6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
1913-10	5.0	7.0	2.0	2.5	4.5	5.0	5.5	1.0	2.5
1109S-10	4.0	6.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0
1013S-10	8.0	10.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0
1911	10.0	13.0	3.0	6.5	10.0	11.0	13.0	3.0	3.5



Metric Dial Indicator - Series 1

Series 1

Compact type

- Small diameter model for applications where space is limited.



1044S(B)-60

Series 1						
	1040S	1044S	1044S-15	1044S-60	1041S	1045S
Functions						
Balanced dial						
Continuous dial						
Double scale spacing						
IP63						
Jewelled bearings						

Consumable spares

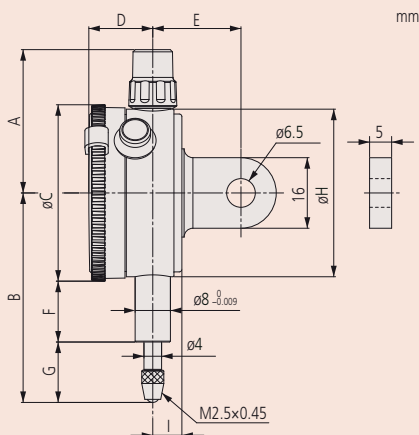
No.	Description
901312	Standard contact point
902119	Standard contact point
136838	Rubber boot

136838 and 902119 : for 1044S-60 (IP model)

For accessories and contact points, see end of dial indicators section



1044S-60
IP63



1044S

1045S

1040S

Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1040S	1040SB	3,5 mm	0,5 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-50 (50-0)	90/70
1041S	1041SB	3,5 mm	0,5 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-25-0	90/70
1044S	1044SB	5 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-100 (100-0)	90/70
1044S-15	1044SB-15	5 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 0.4 N ⁽¹⁾	0-100 (100-0)	90/70
1044S-60	1044SB-60	5 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 2.0 N	0-100 (100-0)	90/70
1045S	1045SB	5 mm	1mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-50-0	90/70

⁽¹⁾ Low measuring force model. Use in vertical position only (contact point downward)

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
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

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
1040S	12.0	14.0	3.0	5.0	8.0	9.0	12.0	3.0	3.0
1044S	12.0	14.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0
1044S-15	12.0	14.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0
1044S-60	12.0	14.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0
1045S	12.0	14.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0

Imperial Dial Indicator - Series 1

Series 1

Compact type - Inch

- Small diameter model for applications where space is limited.



1410S

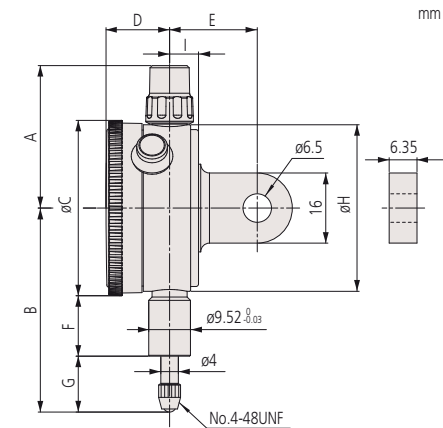
1411S

Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1927-10*	1927B-10	0.01"	0.004"	0.0001"	±0.0002"	±0.00003"	≤ 1.8 N	0-2-0	50/47
1925-10*	1925B-10	0.025"	0.01"	0.0001"	±0.0002"	±0.00003"	≤ 1.8 N	0-5-0	50/47
1923*	1923B	0.05"	0.02"	0.0005"	±0.005"	±0.0001"	≤ 1.8 N	0-10-0	50/47
1410S	1410SB	0.25"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1.4 N	0-100	83/70
1410S-10	1410SB-10	0.25"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1.4 N	0-100	90/70
1411S	1411SB	0.25"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1.4 N	0-50-0	90/70

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
1927-10*	15.5	37.2	31	12.5	19	15	6.7	30	7
1925-10*	15.5	37.5	31	12.5	19	15	7	30	7
1923*	15.5	38.3	31	12.5	19	15	7.8	30	7
1410S	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1410S-10	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



Series 1				
	1410S	1410S-10	1411S	1923 up to 1927-10
Functions				
Balanced dial				
Continuous dial				
Jewelled bearings				

Consumable spares

No.	Description
21BZB005	Standard contact point
21BZB056	Standard contact point

21BZB005 for 14XX models
21BZB056 for 19XX models

For accessories and contact points, see end of dial indicators section

Imperial Dial Indicator - Series 1

Series 1

Compact type

- Small diameter model for applications where space is limited.



Series 1						
	1506S	1802S-10	1780S	1507S	1803S-10	1781S
Functions						
Balanced dial						
Continuous dial						
Double scale spacing						
Jewelled bearings						

Consumable spares

No.	Description
21BZB005	Standard contact point

For accessories and contact points, see end of dial indicators section



1802S-10



1803S-10



1780S



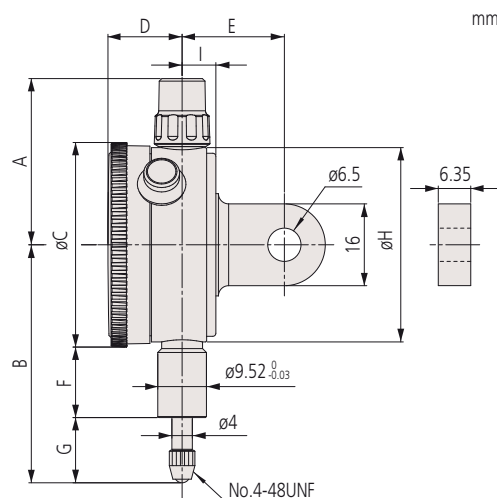
1507S

Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1802S-10	1802SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 1.5 N	0-10	95/75
1803S-10*	1803SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 1.4 N	0-5-0	95/75
1780S	1780SB	0.125"	0.05"	0.001"	±0.001"	±0.0002"	≤ 1.4 N	0-50	90/70
1781S	1781SB	0.125"	0.05"	0.001"	±0.001"	±0.0002"	≤ 1.4 N	0-25-0	90/70
1506S	1506SB	0.125"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 1.4 N	0-50	90/70
1507S	1507SB	0.125"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 1.4 N	0-25-0	90/70

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
1802S-10	32.5	41.3	40	14.5	19	8.5	9.9	38	6.6
1803S-10*	32.5	41.3	40	14.5	19	8.5	9.9	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	44.4	40	14.5	19	12.8	11.3	38	6.6
1507S	32.5	44.4	40	14.5	19	12.8	11.3	38	6.6



Metric Dial Indicator - Series 2

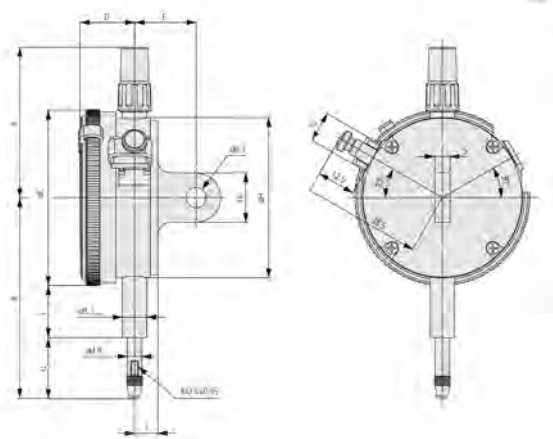
Series 2

Standard type

- Standard size, bezel Ø 57 mm.



2044S



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2044S	2044SB	5 mm	1 mm	0,01 mm	±12 µm	5 µm	≤ 1.4 N	0-100 (100-0)	145/136
2044S-09	2044SB-09	5 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4N	0-100 (100-0)	147/138
2044S-60	2044SB-60	5 mm	1 mm	0,01 mm	±12 µm	5 µm	≤ 2.5 N	0-100 (100-0)	147/138
2045S	2045SB	5 mm	1 mm	0,01 mm	±12 µm	5 µm	≤ 1.4 N	0-50-0	145/136

No. without "B" : Central-lug backplate

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

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2044S	10.0	13.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0
2044S-60	10.0	13.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0
2045S	10.0	13.0	3.0	5.0	9.0	10.0	12.0	3.0	3.0

Series 2				
	2044S	2044S-60	2044S-09	2045S
Functions				
Balanced dial				
Continuous dial				
Shockproof				
IP64				

Consumable spares

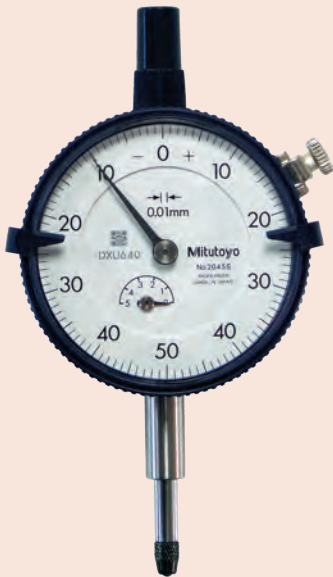
No.	Description
901312	Standard contact point
902119	Standard contact point
125317	Rubber boot

902119 and 125317 : for 2044S-60 (IP model)

For accessories and contact points, see end of dial indicators section



2044S-60



2045S

Metric Dial Indicator - Series 2

Series 2

Standard type

- Standard size, bezel Ø 57 mm.



Series 2						
	2046S	2310S-10	2046S-60	2046S-09	2902S	2047S
Functions						
 Balanced dial						
 Continuous dial						
 Reverse reading						
 Shockproof						
 IP64						
 Jewelled bearings						
 Coaxial revolution counter						

Consumable spares

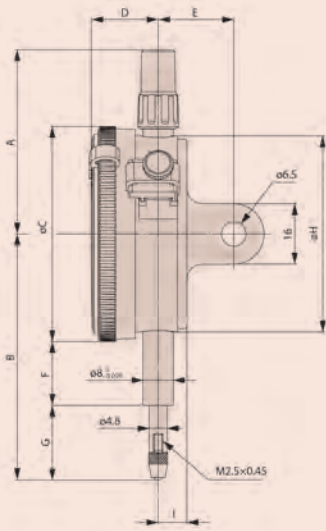
No.	Description
901312	Standard contact point
902119	Standard contact point
125317	Rubber boot

902119 and 125317 : for 2046S-60 (IP model)

For accessories and contact points, see end of dial indicators section



2046S-60



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2046S	2046SB	10 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4N	0-100 (100-0)	144/135
2046S-09	2046SB-09	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1.4 N	0-100 (100-0)	146/137
2046S-60	2046SB-60	10 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 2.5 N	0-100 (100-0)	146/137
2310S-10	2310SB-10	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1.4 N	0-100 (100-0)	146/137
2902S	2902SB	10 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	100-0	144/135
2047S	2047SB	10 mm	1 mm	0,01 mm	±13 µm	5 µm	≤ 1.4 N	0-50-0	144/135

No. without "B" : Central-lug backplate

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

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2046S	12.0	15.0	3.0	5.0	9.0	10.0	13.0	3.0	3.0
2046S-09	15.0	17.0	3.0	5.0	9.0	10.0	15.0	3.0	3.0
2046S-60	12.0	15.0	3.0	5.0	9.0	10.0	13.0	3.0	3.0
2902S	12.0	15.0	3.0	5.0	9.0	10.0	13.0	3.0	3.0
2047S	12.0	15.0	3.0	5.0	9.0	10.0	13.0	3.0	3.0

Metric Dial Indicator - Series 2

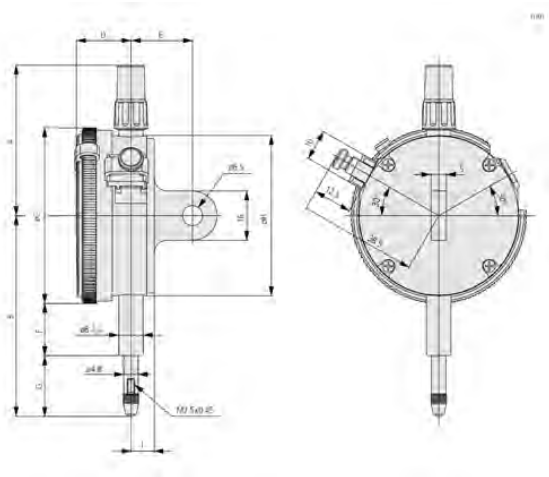
Series 2

Standard type

- Standard size, bezel Ø 57 mm.



2110S-10



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2110S-10	2110SB-10	1 mm	0,1 mm	0,001 mm	±5 µm	0,5 µm	≤ 1,5 N	0-100 (100-0)	149/140
2110S-70	2110SB-70	1 mm	0,1 mm	0,001 mm	±5 µm	0,5 µm	≤ 2,0 N	0-100 (100-0)	150/141
2109S-10	2109SB-10	1 mm	0,2 mm	0,001 mm	±5 µm	0,5 µm	≤ 1,5 N	0-100-0	148/139
2109S-70*	2109SB-70	1 mm	0,2 mm	0,001 mm	±5 µm	0,5 µm	≤ 2,0 N	0-100-0	149/140

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2110S-10	48.8	66.5	57	17.7	20	16.9	21.1	52	7.6
2110S-70	48.8	67.5	57	17.7	20	12.3	26.7	52	7.6
2109S-10	48.8	60.5	57	17.7	20	16.9	15.1	52	7.6
2109S-70*	48.8	65.3	57	17.7	20	12.3	24.5	52	7.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2110S-10	3.0	5.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0
2110S-70	3.0	5.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0
2109S-10	3.0	5.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0

Series 2				
	2109S-10	2109S-70	2110S-10	2110S-70
Functions				
Balanced dial	●	●		
Continuous dial			●	●
Double scale spacing			●	●
Shockproof	●	●	●	●
IP64		●		●
Jewelled bearings	●	●	●	●

Consumable spares

No.	Description
901312	Standard contact point
902119	Standard contact point
21AZA320	Standard contact point
136838	Rubber boot

902119 : for 2110S-70

21AZA320 and 136838 : for 2109S-70

For accessories and contact points, see end of dial indicators section.



2109S-10

Metric Dial Indicator - Series 2

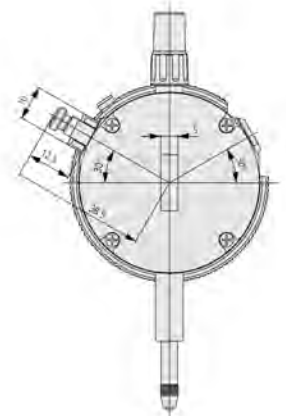
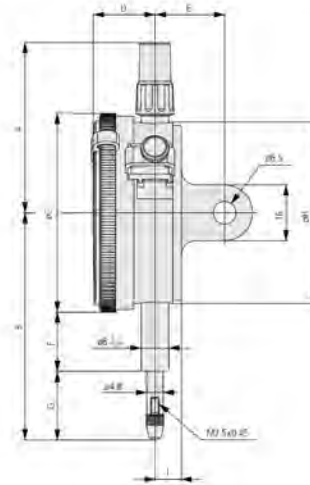
Series 2

Standard type

- Standard size, bezel Ø 57 mm.



2113S-10



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2113S-10	2113SB-10	2 mm	0,2 mm	0,001 mm	±7 µm	0,5 µm	≤ 1,5 N	0-100-0	148/139
2118S-10	2118SB-10	5 mm	0,2 mm	0,001 mm	±10 µm	1 µm	≤ 1,5 N	0-100-100	146/137
2119S-10	2119SB-10	5 mm	0,2 mm	0,001 mm	±10 µm	1 µm	≤ 1,5 N	0-100-0	146/137
2124S-10	2124SB-10	5 mm	0,5 mm	0,005 mm	±12 µm	3 µm	≤ 1,5 N	0-50 (50-0)	146/137

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2113S-10	48.8	61	57	17.7	20	16.9	15.6	52	7.6
2118S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6
2119S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6
2124S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2113S-10	5.0	7.0	2.0	2.5	4.0	4.5	7.0	1.0	2.0
2118S-10	8.0	10.0	2.0	4.0	6.0	6.5	9.5	1.5	2.5
2119S-10	8.0	10.0	2.0	4.0	6.0	6.5	9.5	1.5	2.5

Series 2				
Functions	2113S-10	2119S-10	2118S-10	2124S-10
Balanced dial	●	●		
Continuous dial				●
Shockproof	●			
Jewelled bearings	●	●	●	●

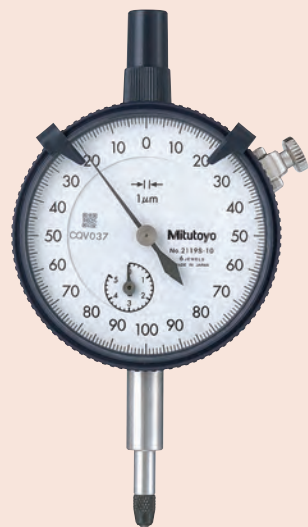
Consumable spares

No.	Description
901312	Standard contact point

For accessories and contact points, see end of dial indicators section.



2118S-10



2119S-10



2124S-10

Imperial Dial Indicator - Series 2

Series 2

Standard type

- Standard size, bezel Ø 57 mm.



2805S-10



2923S-10

Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2802S-10*	2802SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 2,0 N	0-10	164/139
2803S-10	2803SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 2,0 N	0-5-0	164/139
2905S-10*	2905SB-10	0.05"	0.01"	0.0001"	±0.0002"	±0.00003"	≤ 2,0 N	10-0	164/139
2923S-10	2923SB-10	0.05"	0.01"	0.0001"	±0.0002"	±0.00003"	≤ 2,0 N	0-5-0	164/139
2804S-10	2804SB-10	0.05"	0.01"	0.0001"	±0.0002"	±0.00003"	≤ 2,0 N	0-10	164/139
2805S-10	2805SB-10	0.05"	0.01"	0.0001"	±0.0002"	±0.00003"	≤ 2,0 N	0-5-0	164/139
2506S*	2506SB	0.125"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 1,8 N	0-50 (50-0)	164/139
2507S*	2507SB	0.125"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 1,8 N	0-25-0	164/139
2922S	2922SB	0.125"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 1,8 N	0-25-0	164/139

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2802S-10*	48.8	51.4	57	17.7	19	13.6	9.3	52	7.6
2803S-10	48.8	51.4	57	17.7	19	13.6	9.3	52	7.6
2905S-10*	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2923S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2804S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2805S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2506S*	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2507S*	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2922S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6

Series 2										
		2506S	2802S-10	2804S-10	2905S-10	2507S	2803S-10	2805S-10	2922S	2923S-10
Functions										
 Balanced dial										
 Continuous dial										
 Reverse reading										
 Shockproof										
 Jewelled bearings										

Consumable spares

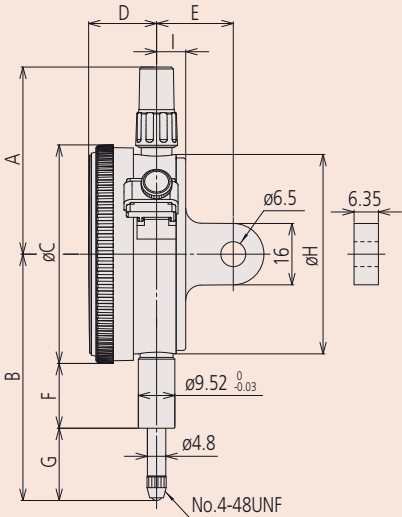
No.	Description
21BZB005	Standard contact point

For accessories and contact points, see end of dial indicators section.



2922S

mm



Imperial Dial Indicator - Series 2

Series 2

Standard type

- Standard size, bezel Ø 57 mm.



Series 2						
	2356S-10	2358S-10	2415S	2414S	2514S	2514S-60
Functions						
Balanced dial	●	●				
Continuous dial			●	●	●	
Reverse reading						●
IP64				●	●	
Jewelled bearings	●					

Consumable spares

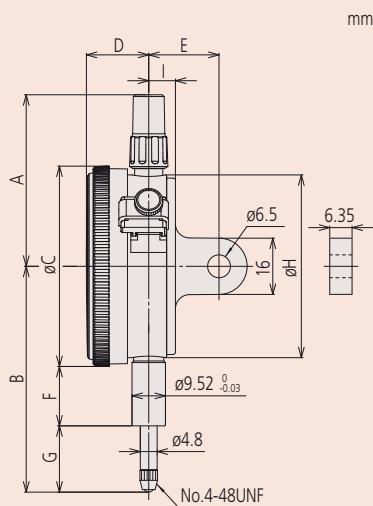
No.	Description
21BZB005	Standard contact point
21BZB118	Standard contact point

21BZB118 : for 2514S-60 (IP model)

For accessories and contact points, see end of dial indicators section.



2415S



mm



2358S-10



2414S

Inch

ANSI/AGD Type

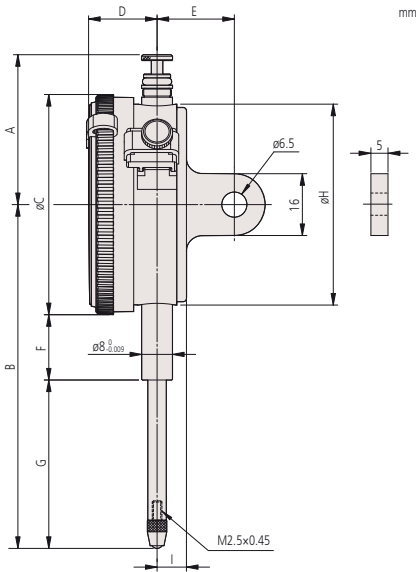
No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2356S-10*	2356SB-10	0.25"	0.01"	0.0001"	±0.0003"	±0.00003"	≤ 2,0 N	0-10	163/138
2358S-10	2358SB-10	0.5"	0.01"	0.0001"	±0.0003"	±0.00003"	≤ 2,0 N	0-10	164/139
2414S	2414SB	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-100 (100-0)	164/139
2415S	2415SB	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-50-0	164/139
2914S*	2914SB	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	100-0	164/139
2514S*	2514SB	0.5"	0.05"	0.0005"	±0.0015"	±0.0001"	≤ 1,8 N	0-50 (50-0)	164/139
2514S-60*	-	0.5"	0.05"	0.0005"	±0.0015"	±0.0001"	≤ 2,5 N	0-50 (50-0)	166/156

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2356S-10*	48.8	57.2	57	17.7	19	13.6	15.1	52	7.6
2358S-10	38.9	63.6	57	17.7	19	13.6	21.5	52	7.6
2414S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2415S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2914S*	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2514S*	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2514S-60*	48.8	69	57	17.7	19	10.6	29.9	52	7.6

Metric Dial Indicator with long stroke 20 mm - Series 2

Series 2



Metric									
No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2050S	2050SB	20 mm	1 mm	0,01 mm	±20 µm	5 µm	≤ 2,0 N	0-100 (100-0)	149/140
2050S-60*	2050SB -60	20 mm	1 mm	0,01 mm	±20 µm	5 µm	≤ 2,5 N	0-100 (100-0)	155/146
2050S-19	2050SB-19	20 mm	1 mm	0,01 mm	±20 µm	5 µm	≤ 2,0 N	0-100 (100-0)	149/140
2320S-10	2320SB-10	20 mm	1 mm	0,01 mm	±20 µm	5 µm	≤ 2,0 N	0-100 (100-0)	150/141

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2050S	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2050S-60*	59.8	87.2	57	17.7	20	12.3	46.4	52	7.6
2050S-19	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2320S-10	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6

Series 2				
	2050S	2320S-10	2050S-60	2050S-19
Functions				
Shockproof				
IP64				
Cushioned end stop				
Jewelled bearings				
Coaxial revolution counter				

Consumable spares	
No.	Description
901312	Standard contact point
21AZA321	Standard contact point

21AZA321 : for 2050S-60 (IP model)
For accessories and contact points, see end of dial indicators section.

Metric Dial Indicator with long stroke 30 mm - Series 2

Series 2



2052S
2052S-19



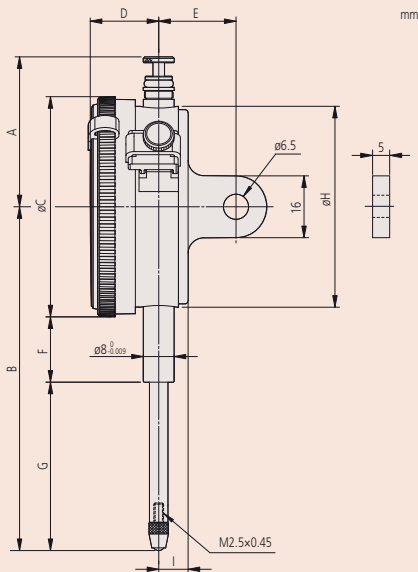
2952S

Series 2				
	2052S	2330S-10	2052S-19	2952S
Functions				
Reverse reading				
Shockproof				
Cushioned end stop				
Jewelled bearings				
Coaxial revolution counter				

Consumable spares

No.	Description
901312	Standard contact point

For accessories and contact points, see end of dial indicators section.



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2052S	2052SB	30 mm	1 mm	0,01 mm	±25 µm	5 µm	≤ 2,5 N	0-100 (100-0)	152/143
2052S-19	2052SB-19	30 mm	1 mm	0,01 mm	±25 µm	5 µm	≤ 2,5 N	0-100 (100-0)	152/143
2330S-10	2330SB-10	30 mm	1 mm	0,01 mm	±25 µm	5 µm	≤ 2,5 N	0-100 (100-0)	150/141
2952S	2952SB	30 mm	1 mm	0,01 mm	±25 µm	5 µm	≤ 2,5 N	100-0	152/143

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2052S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2052S-19	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2330S-10	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2952S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2052S-19	30.0	35.0	4.0	7.0	11.0	12.0	20.0	3.0	5.0
2952S	30.0	35.0	4.0	7.0	11.0	12.0	20.0	3.0	5.0

Imperial Dial Indicator with long stroke - Series 2

Series 2



2416S



2776S

Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2416S	2416SB	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-100 (100-0)	164/139
2416S-06*	2416SB-06	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-100 (100-0)	164/139
2416S-10	2416SB-10	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-100 (100-0)	164/139
2417S*	2417SB	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-50-0	164/139
2776S	2776SB	1"	0.05"	0.0005"	±0.0015"	±0.0001"	≤ 1,8 N	0-50 (50-0)	164/139
2904S	2904SB	1"	0.1"	0.001"	0.0002"	±0.0002"	≤ 1,8 N	100-0	164/139
2424S-19	2424SB-19	2"	0.1"	0.001"	±0.002"	±0.0002"	≤ 2,5 N	0-100 (100-0)	250/225

No. without "B" : models with lug, with "B" : flat-back.

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2416S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S-06*	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S-10	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2417S*	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2776S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2904S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2424S-19	118	142.5	57	17.7	20.9	54.3	59.7	52	9.5

Series 2					
	2416S up to 2776S	2416S-10 2424S-19	2904S	2417S	
Functions					
Balanced dial					
Continuous dial					
Reverse reading					
Shockproof					
Cushioned end stop					
Jewelled bearings					
Coaxial revolution counter					

Consumable spares

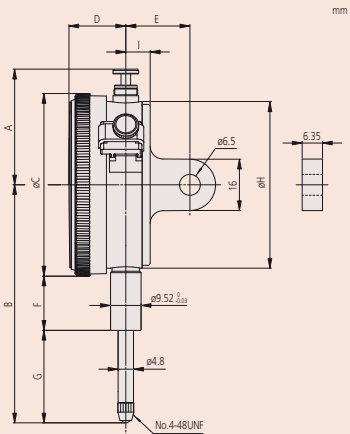
No.	Description
21BZB005	Standard contact point
21BZB056	Standard contact point

21BZB056 : for 2424S-19

For accessories and contact points, see end of dial indicators section.



2416S-10



Special Dial Indicator - Series 2

Series 2

Analogue dial indicator to special design

- Standard size, bezel Ø 57 mm.



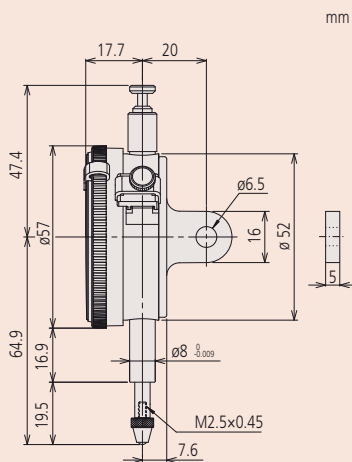
Series 2				
	2046S-80	2915S-10 up to 2919S-10	2048S-10	
Functions				
Continuous dial	●	●	●	
Jewelled bearings			●	
Peak retaining	●			
Coaxial revolution counter			●	
Adjustable pointer		●	●	

Consumable spares

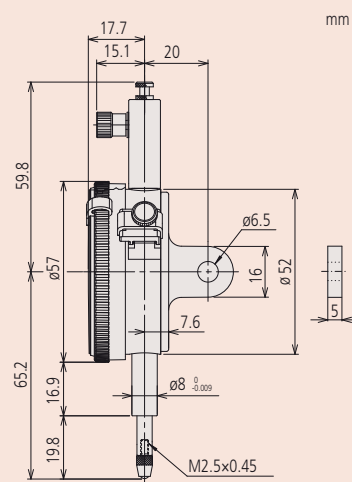
No.	Description
901312	Standard contact point
21AZA319	Standard contact point
21BZB056	Standard contact point

901312 : for 2046S-80
21AZA319 : for 2048S-10
21BZB056 : for 2915S-10

For accessories and contact points, see end of dial indicators section.



2048S-10



2046S-80



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2048S-10	2048SB-10	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1,4 N	0-100 (100-0)	144/135
2046S-80	2046SB-80	10 mm	1 mm	0,01 mm	±15 µm	-	≤ 5.0 N	0-100 (100-0)	158/149

No. without "B" : Central-lug backplate

Inch

ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2919S-10*		0.25"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-100 (100-0)	168
2915S-10*	2915SB-10	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-100 (100-0)	169/144
2918S-10*		0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-50-0	169

No. without "B" : Central-lug backplate

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2048S-10	15.0	17.0	3.0	5.0	9.0	10.0	15.0	3.0	3.0
2046S-80	12.0	15.0	3.0	5.0	9.0	10.0	15.0		

One Revolution Type Dial Indicator - Series 1

Series 1

- Limiting pointer rotation to one revolution eliminates the reading errors that can occur with Dial Indicators featuring more than one revolution of the pointer for full stroke. Small version, bezel ø 40 mm.



1929S



1929S-62

Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1929S	1929SB	1 mm	1,4 mm	0,01 mm	±11 µm	5 µm	≤ 1,4 N	50-0-50	90/70
1929S-62	1929SB-62	1 mm	1,4 mm	0,01 mm	±11 µm	5 µm	≤ 1,4 N	50-0-50	90/70
1900S-72	1900SB-72	0,1 mm	0,14 mm	0,001 mm	±6 µm	5 µm	≤ 1,4 N	50-0-50	95/75

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
1929S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1929S-62	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1900S-72	32.5	53.5	40	14.5	20	16.8	16.7	38	6.6

Inch

ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
1909S-62*	1909SB-62	0.04"	0.056"	0.0005"	±0.0005"	±0.0001"	≤ 1,4 N	20-0-20	90/70
1910S-72*	1910SB-72	0.006"	0.008"	0.0001"	±0.0001"	±0.00003"	≤ 1,5 N	3-0-3	90/70

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
1909S-62*	32.5	41.7	40	14.5	19	12.8	8.9	38	6.6
1910S-72*	32.5	40.8	40	14.5	19	12.8	8	38	6.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
1929S	10.0	13.0	3.0	5.0			7.0	3.0	3.0
1929S-62	10.0	13.0	3.0	5.0			7.0	3.0	3.0
1900S-72	3.0	5.0	2.0	2.0			4.0	1.0	2.0

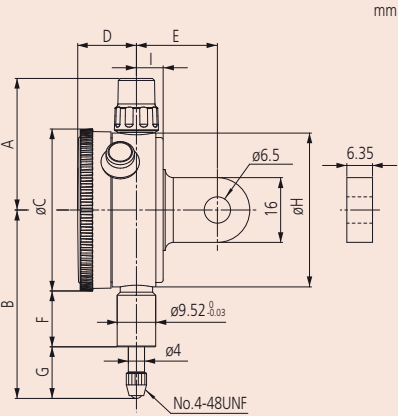
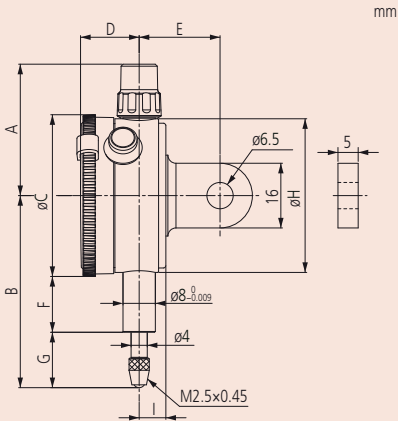
Series 1				
	1900S-72	1909S-62 up to 1929S-62	1929S	
Functions				
Balanced dial	●	●	●	●
One revolution	●	●	●	●
Shockproof	●	●	●	●
Jewelled bearings	●	●		
Dustproof	●	●		

Consumable spares

No.	Description
901312	Standard contact point
21BZB005	Standard contact point

21BZB005 : for 1909S-62 and 1910S-72 (ANSI/AGD type)

For accessories and contact points, see end of dial indicators section.



ANSI/AGD type

One Revolution Type Metric Dial Indicator - Series 2

Series 2

One Revolution type for error-free reading

- Limiting pointer rotation to one revolution eliminates the reading errors that can occur with Dial Indicators featuring more than one revolution of the pointer for full stroke.
- Flat-back only.



Metric

No.	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g
2971	0,5 mm	0,7 mm	0,01 mm	±10 µm	5 µm	≤ 1,4 N	25-0-25	75
2972	1 mm	1,4 mm	0,01 mm	±12 µm	5 µm	≤ 1,4 N	50-0-50	75
2973	1,6 mm	2 mm	0,02 mm	±16 µm	5 µm	≤ 1,4 N	80-0-80	75

No.	A mm	B mm	C mm	D mm	F mm	G mm	H mm	I mm
2971	43.2	65.6	55.6	16.2	21	16.8	55	7.6
2972	43.2	66	55.6	16.2	21	17.2	55	7.6
2973	43.2	66.3	55.6	16.2	21	17.5	55	7.6

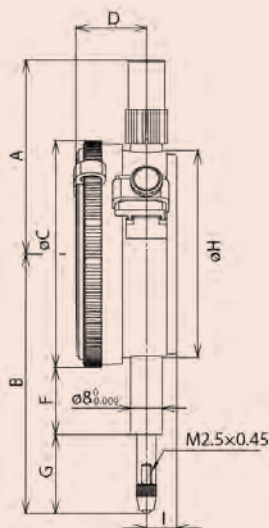
No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2971	8.0	11.0	3.0	5.0			7.0	3.0	3.0
2972	10.0	13.0	3.0	5.0			7.0	3.0	3.0

Series 2	
Functions	2971 up to 2973
One revolution	●
Shockproof	●
Dustproof	●

Consumable spares

No.	Description
901312	Standard contact point

For accessories and contact points, see end of dial indicators section.

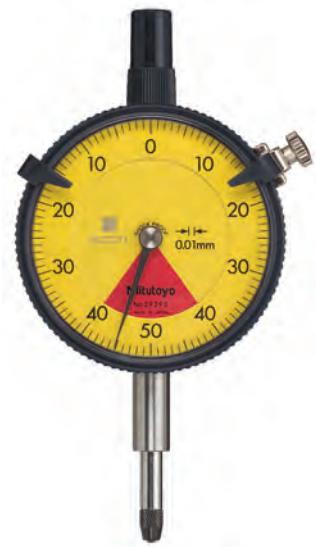


One Revolution Type Metric Dial Indicator - Series 2

Series 2

One Revolution type for error-free reading

- Limiting pointer rotation to one revolution eliminates the reading errors that can occur with Dial Indicators featuring more than one revolution of the pointer for full stroke.



2929S
2929S-60
2929S-62



2928S



2929S(B)-60

Series 2				
	2928S 2929S	2929S-62 2959S	2929S-60	
Functions				
One revolution				
Shockproof				
IP64				
Dustproof				

Consumable spares

No.	Description
901312	Standard contact point
902119	Standard contact point
125317	Rubber boot

902119 and 125317 : for 2929S-60 (IP model)

For accessories and contact points, see end of dial indicators section.



2959S

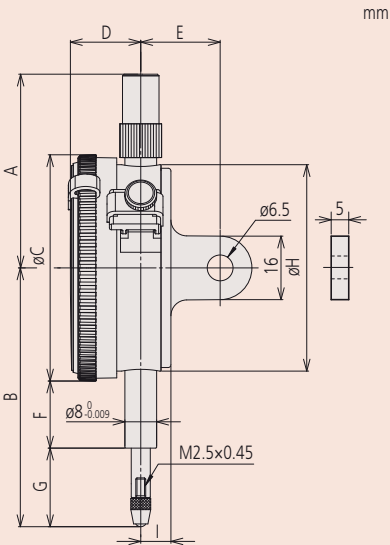
Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2929S	2929SB	0,8 mm	1 mm	0,01 mm	±9 µm	5 µm	≤ 1,4 N	40-0-40	145/136
2929S-60	2929SB-60	0,8 mm	1 mm	0,01 mm	±9 µm	5 µm	≤ 2,0 N	40-0-40	146/137
2929S-62	2929SB-62	0,8 mm	1 mm	0,01 mm	±9 µm	5 µm	≤ 2,0 N	40-0-40	145/136
2959S	2959SB	1,6 mm	2 mm	0,01 mm	±13 µm	5 µm	≤ 1,4 N	80-0-80	145/136
2928S	2928SB	4 mm	10 mm	0,1 mm	±40 µm	20 µm	≤ 1,4 N	2-0-2	145/136

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2929S	48.8	65.2	57	17.7	20	12.3	29.2	52	7.6
2929S-60	48.8	70	57	17.7	20	12.3	29.2	52	7.6
2929S-62	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2959S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2928S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2929S	7.0	10.0	3.0	5.0			7.0	3.0	3.0
2929S-60	7.0	10.0	3.0	5.0			7.0	3.0	3.0
2929S-62	7.0	10.0	3.0	5.0			7.0	3.0	3.0
2928S	40.0	50.0	10.0	15.0			25.0	20.0	12.0



One Revolution Type Metric Dial Indicator - Series 2

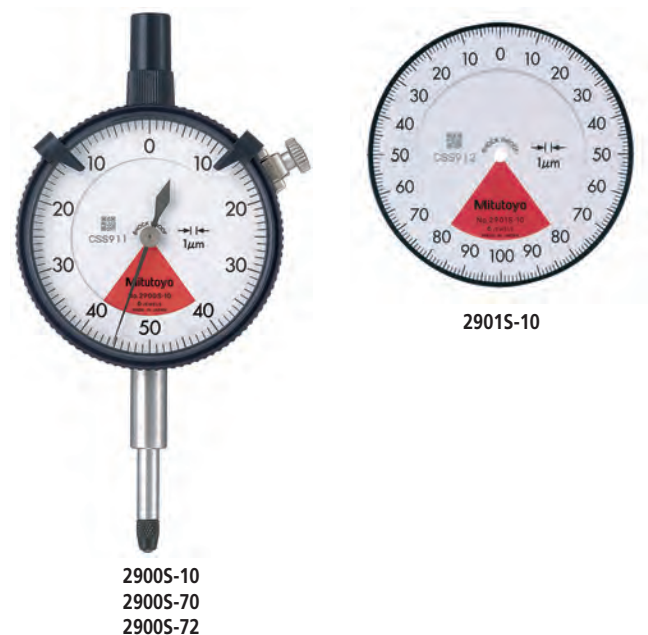
Series 2

One Revolution type for error-free reading

- Limiting pointer rotation to one revolution eliminates the reading errors that can occur with Dial Indicators featuring more than one revolution of the pointer for full stroke.



IP64
2900S(B)-70



Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2900S-10	2900SB-10	0,08 mm	0,1 mm	0,001 mm	$\pm 3 \mu\text{m}$	0,5 μm	$\leq 1,4 \text{ N}$	40-0-40	149/140
2900S-70	2900SB-70	0,08 mm	0,1 mm	0,001 mm	$\pm 3 \mu\text{m}$	0,5 μm	$\leq 2,0 \text{ N}$	40-0-40	150/141
2900S-72	2900SB-72	0,08 mm	0,1 mm	0,001 mm	$\pm 3 \mu\text{m}$	0,5 μm	$\leq 2,0 \text{ N}$	40-0-40	149/140
2901S-10	2901SB-10	0,16 mm	0,2 mm	0,001 mm	$\pm 4 \mu\text{m}$	0,5 μm	$\leq 1,4 \text{ N}$	80-0-80	149/140

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2900S-10	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2900S-70	48.8	67	57	17.7	20	12.3	26.2	52	7.6
2900S-72	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2901S-10	48.8	66.1	57	17.7	20	16.9	20.7	52	7.6

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe μm	fges μm	fu μm	Maximum allowable error over				Repeat limits μm	Hysteresis error μm
				Random 1/10 rotation μm	Random 1/2 rotation μm	Random 1 rotation μm	Measuring range μm		
2900S-10	2.0	3.0	1.5	2.0			3.0	1.0	2.0
2900S-70	2.0	3.0	1.5	2.0			3.0	1.0	2.0

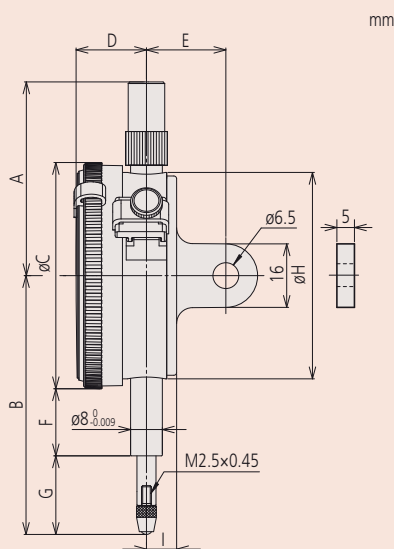
Series 2				
Functions	2900S-10	2901S-10	2900S-72	2900S-70
One revolution				
Shockproof				
IP64				
Jewelled bearings				
Dustproof				

Consumable spares

No.	Description
901312	Standard contact point
902119	Standard contact point
125317	Rubber boot

902119 and 125317 : for 2900S-70 (IP model)

For accessories and contact points, see end of dial indicators section.



One Revolution Type Imperial Dial Indicator - Series 2

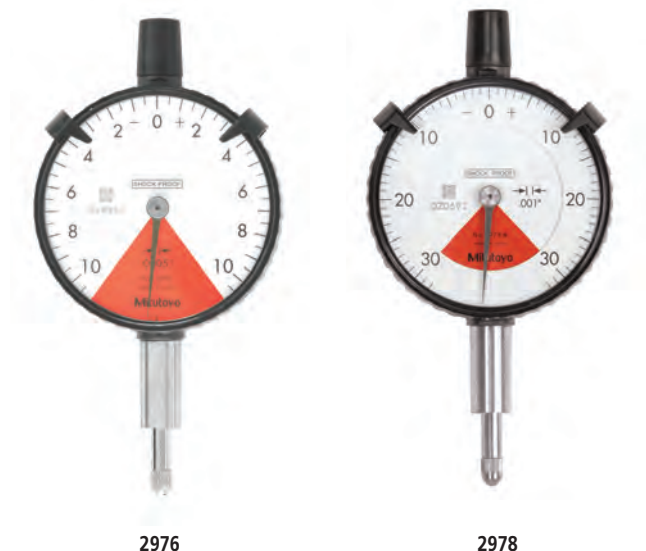
Series 2

One Revolution type for error-free reading

- Limiting pointer rotation to one revolution eliminates the reading errors that can occur with Dial Indicators featuring more than one revolution of the pointer for full stroke.

2976 / 2977 / 2978 :

- Plain backplate only.



Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
2910S-10	2910SB-10	0.008"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 1,8 N	4-0-4	163/138
2910S-72*	2910SB-72	0.008"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 2,5 N	4-0-4	163/138
2909S-62*	2909SB-62	0.04"	0.05"	0.0005"	±0.0005"	±0.0001"	≤ 2,5 N	20-0-20	163/138
2976*	-	0.02"	0.028"	0.0005"	±0.0005"	±0.0001"	≤ 1,4 N	10-0-10	75
2977*	-	0.04"	0.055"	0.0005"	±0.0005"	±0.0001"	≤ 1,4 N	20-0-20	75
2978*	-	0.06"	0.079"	0.001"	±0.001"	±0.0002"	≤ 1,4 N	30-0-30	75

No. without "B" : Central-lug backplate

No. 2976 / 2977 / 2978 : Plain backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
2910S-10	48.8	51.2	57	17.7	19	13.6	9.1	52	7.6
2910S-72*	48.8	51.2	57	17.7	19	13.6	9.1	52	7.6
2909S-62*	48.8	51.9	57	17.7	19	13.6	9.8	52	7.6
2976*	43.2	64.7	55.6	16.2		21	15.9	55	7.6
2977*	43.2	65	55.6	16.2		21	16.2	55	7.6
2978*	43.2	65.3	55.6	16.2		21	16.5	55	7.6

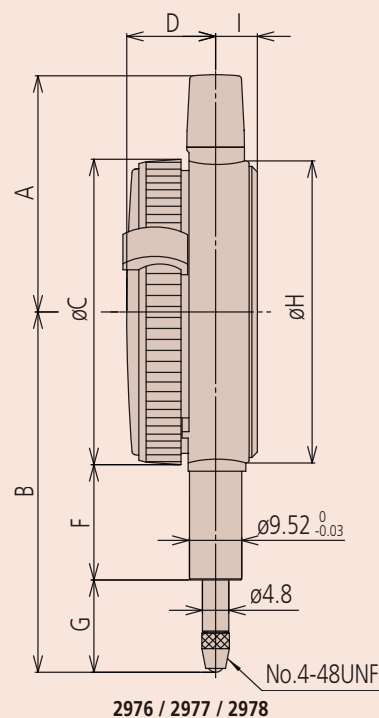
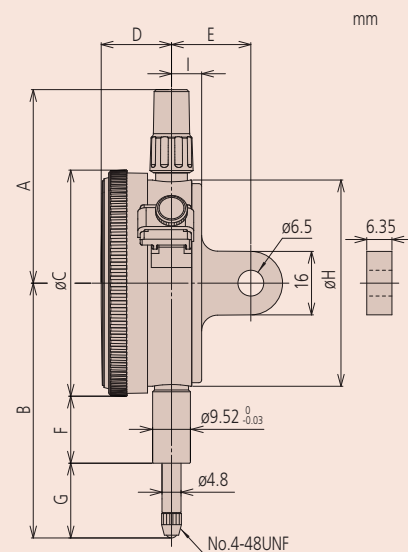


Series 2				
Functions	2909S-62 2910S-10	2910S-72	2976 up to 2978	
One revolution	●	●	●	
Shockproof			●	
Dustproof	●			●

Consumable spares

No.	Description
21BZB005	Standard contact point

For accessories and contact points, see end of dial indicators section.



Metric Dial Indicator with large diameter scale - Series 3

Series 3

- With large diameter scale of 78 mm.
- Hardened stainless steel plunger.



3046S



3047S

Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
3046S	3046SB	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1,4 N	0-100 (100-0)	252/237
3047S	3047SB	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1,4 N	0-50-0	252/237
3109S-10	3109SB-10	1 mm	0,2 mm	0,001 mm	±6 µm	1 µm	≤ 1,5 N	0-100-0	270/255

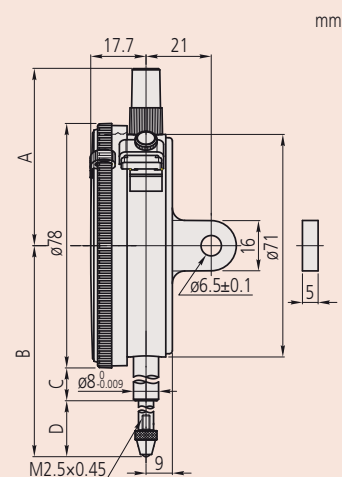
No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm
3046S	61.2	75.5	15.9	20.6
3047S	61.2	75.5	15.9	20.6
3109S-10	61.2	79.3	25.9	14.1

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
3046S	15.0	17.0	3.0	5.0	9.0	10.0	15.0	3.0	3.0
3047S	15.0	17.0	3.0	5.0	9.0	10.0	15.0	3.0	3.0
3109S-10	3.0	5.0	2.0	2.5	4.0	4.5	5.0	1.0	2.0



3109S-10



Imperial Dial Indicator with large diameter scale - Series 3

Series 3

- With large diameter scale of 3".
- Hardened stainless steel plunger.



Series 3				
	3414S	3802S-10	3415S	3803S-10
Functions				
Balanced dial				
Continuous dial				
Shockproof				
Jewelled bearings				

Consumable spares

No.	Description
21BZB005	Standard contact point

For accessories and contact points, see end of dial indicators section.



3802S-10



3803S-10



3414S



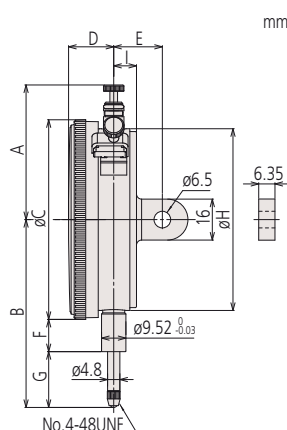
3415S

Inch ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
3802S-10	3802SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 2,0 N	0-10	260/245
3803S-10*	3803SB-10	0.025"	0.01"	0.0001"	±0.0001"	±0.00003"	≤ 2,0 N	0-5-0	260/245
3414S	3414SB	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-100 (100-0)	259/244
3415S*	3415SB	0.5"	0.1"	0.001"	±0.001"	±0.0002"	≤ 1,8 N	0-50-0	259/244

No. without "B" : Central-lug backplate

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
3802S-10	61.2	59.7	78	17.7	19	12.6	8.1	71	9
3803S-10*	61.2	59.7	78	17.7	19	12.6	8.1	71	9
3414S	51.3	73.4	78	17.7	19	12.6	21.8	71	9
3415S*	51.3	73.4	78	17.7	19	12.6	21.8	71	9



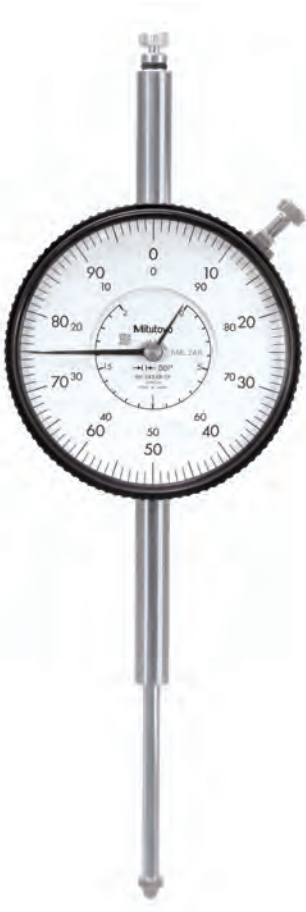
Imperial Dial Indicator with large diameter scale - Series 3

Series 3

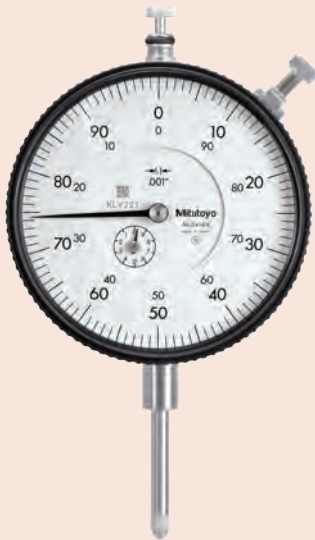
- With large diameter scale of 3".



3417S



3424S-19



3416S

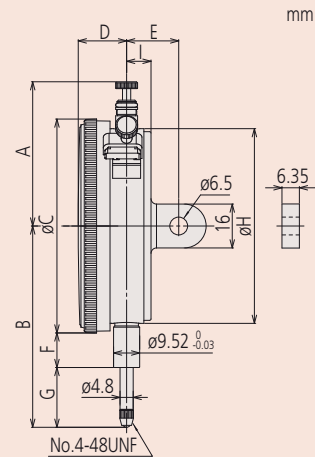
Inch		ANSI/AGD Type							
No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
3416S	3416SB	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-100 (100-0)	273/258
3417S*	3417SB	1"	0.1"	0.001"	±0.002"	±0.0002"	≤ 1,8 N	0-50-0	273/258
3424S-19	3424SB-19	2"	0.1"	0.001"	±0.002"	±0.0002"	≤ 3,0 N	0-100 (100-0)	321/306
3426S-19	3426SB-19	3"	0.1" (1)	0.001"	±0.002"	±0.0002"	≤ 3,0 N	0-100 (100-0)	340/325
3428S-19*	3428SB-19	4"	0.1" (1)	0.001"	±0.002"	±0.0002"	≤ 3,2 N	0-100 (100-0)	366/351

No. without "B" : Central-lug backplate
(1) 3426S-19 and 3428S-19 : use in a vertical position only.

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
3416S	52.6	86.1	78	17.7	19	12.6	34.5	71	9
3417S*	52.6	86.1	78	17.7	19	12.6	34.5	71	9
3424S-19	84	149.3	78	17.7	19	50.6	59.7	71	9
3426S-19	120.9	198.1	78	17.7	19	73.9	85.2	71	9
3428S-19*	144	244.5	78	17.7	19	94.9	110.6	71	9

Series 3				
	3416S	3424S-19 up to 3428S-19	3417S	
Functions				
Balanced dial				
Continuous dial				
Shockproof				
Jewelled bearings				
Coaxial revolution counter				
Consumable spares				
No.	Description			
21BZB005	Standard contact point			
21BZB056	Standard contact point			

21BZB056 : for 3424S-19 / 3426S-19 / 3428S-19
For accessories and contact points, see end of dial indicators section.



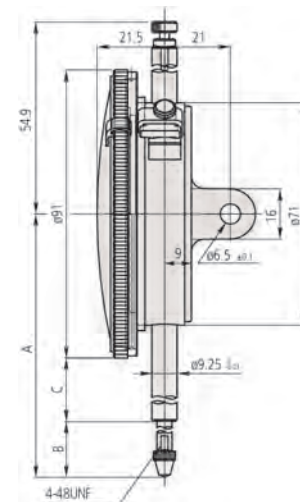
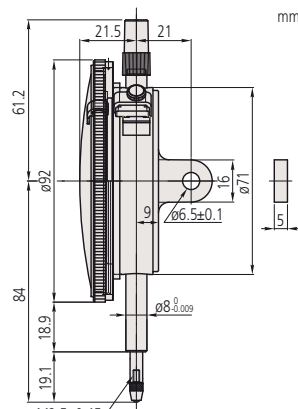
Dial Indicator with extra-large diameter scale - Series 4

Series 4

- With extra-large diameter scale.
- Hardened stainless steel plunger.



4046S



ANSI/AGD type

Metric

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
4046S	4046SB	10 mm	1 mm	0,01 mm	±15 µm	5 µm	≤ 1,4 N	0-100 (100-0)	345/330

No. without "B" : Central-lug backplate

Inch

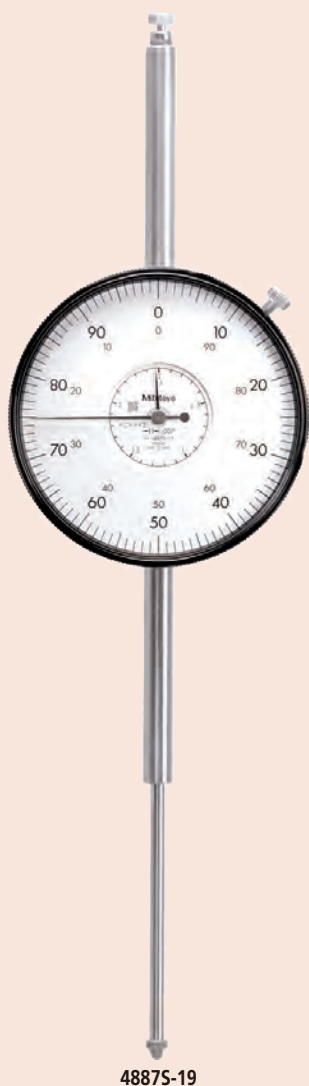
ANSI/AGD Type

No.	No. Plain backplate	Range	Range per rev.	Graduation	Accuracy	Repeatability	Measuring force	Scale	Mass g lug/plain
4571S-10*	-	0.075"	0.03"	0.0005"	±0.0005"	±0.0002"	≤ 1,8 N	0-15-0	348
4887S-19	4887SB-19	3"	0.1" (1)	0.001"	±0.002"	±0.0002"	≤ 3,0 N	0-100 (100-0)	407/392

(1) Use in a vertical position only

No.	A mm	B mm	C mm	D mm
4571S-10*	54.9	67.6	13.2	9.1
4887S-19	159	183.9	54.1	95

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
4046S	15.0	16.0	3.0	5.0	9.0	10.0	15.0	3.0	3.0



4887S-19

Back Plunger Type Dial Indicator - Series 1

Series 1



Metric

No.	Range	Range per rev.	Graduation	Accuracy	Measuring force	Scale	Mass g
1960	1 mm	1,27 mm ⁽¹⁾	0,01 mm	±14 µm	≤ 1,4 N	50-0-50	108
1160	5 mm	1 mm	0,01 mm	±16 µm	≤ 1,4 N	0-100	105
1162	5 mm	1 mm	0,01 mm	±16 µm	≤ 1,4 N	100-0	105

⁽¹⁾ Full stroke

No.	A mm	B mm	C mm	E mm	F mm	G mm	H mm
1960	39	21.5	35	22	28.7	12.8	46
1160	39	21.5	35	22	25	13.8	43.3
1162	39	21.5	35	22	25	13.8	43.3

Inch

ANSI/AGD Type

No.	Range	Range per rev.	Graduation	Accuracy	Measuring force	Scale	Mass g
1961*	0.04"	0.05" ⁽¹⁾	0.001"	±0.001"	≤ 1,4 N	20-0-20	108
1166*	0.2"	0.05"	0.001"	±0.001"	≤ 1,4 N	0-50	105
1167*	0.2"	0.05"	0.001"	±0.001"	≤ 1,4 N	0-25-0	105
1168*	0.2"	0.05"	0.001"	±0.001"	≤ 1,4 N	50-0	105

⁽¹⁾ Full stroke

No.	A mm	B mm	C mm	E mm	F mm	G mm	H mm
1961*	39.6	22	35	22	25	10.9	40
1166*	39.6	22	35	22	25	13	42
1167*	39.6	22	35	22	25	13	42
1168*	39.6	22	35	22	25	13	42

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)						
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm	
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm			
1960	12.0	15.0	3.0	7.0			15.0	3.0	3.5	
1160	15.0	19.0	4.0	7.0	11.0	12.0	18.0	3.0	4.0	

Series 1						
Functions	1160	1166	1162	1168	1167	1960 1961
Balanced dial						
Continuous dial						
Reverse reading						
One revolution						
Shockproof						

Optional accessories

No.	Description
136567	Holding bar Ø6 mm, L81 mm
136568	Holding bar Ø8 mm, L81 mm
21AAA166	Holding bar Ø6 mm, L42 mm
21AAA168	Holding bar Ø8 mm, L42 mm
ANSI/AGD type	
124625	Holding bar Ø0.25", L3.19"
21AAA167	Holding bar Ø0.25", L1.65"

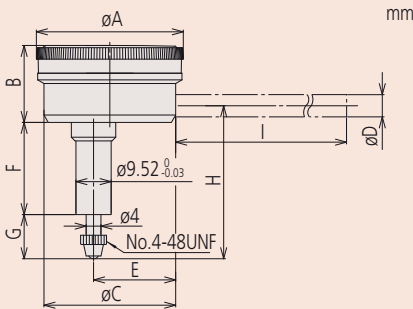
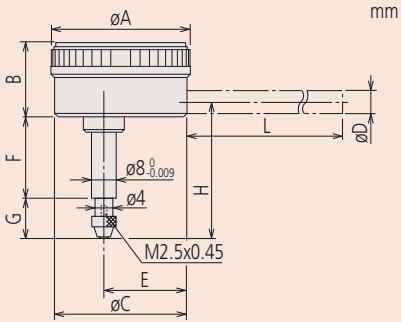
Consumable spares

No.	Description
901312	Standard contact point
21AZA319	Standard contact point
ANSI/AGD type	
900443	Standard contact point

901312 : for 1960

21AZA319 : for 1160 and 1162

For accessories and contact points, see end of dial indicators section.



ANSI/AGD type

Back Plunger Type Dial Indicator - Series 2

Series 2

Series 2			
Functions	2960F	2961F	2990
One revolution			
Shockproof			
Jewelled bearings			

Optional accessories

No.	Description
136567	Holding bar Ø6 mm, L81 mm
136568	Holding bar Ø8 mm, L81 mm
21AAA166	Holding bar Ø6 mm, L42 mm
21AAA168	Holding bar Ø8 mm, L42 mm
ANSI/AGD type	
124625	Holding bar Ø0.25", L3.19"
21AAA167	Holding bar Ø0.25", L1.65"

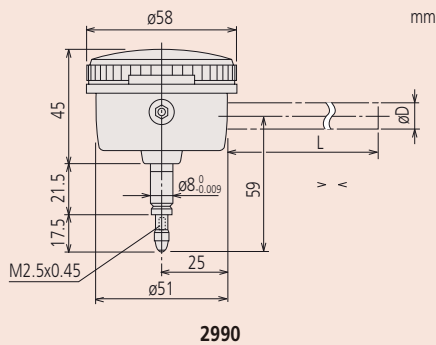
Consumable spares

No.	Description
901312	Standard contact point
21AZA319	Standard contact point
ANSI/AGD type	
21BZB005	Standard contact point

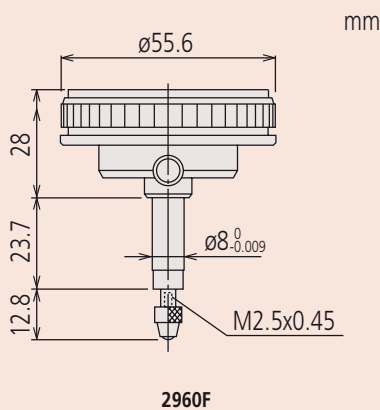
901312 : for 2990

21AZA319 : for 2960F

For accessories and contact points, see end of dial indicators section.



2990



2960F



2990

2960F

With optional holding bar

Metric

No.	Range	Range per rev.	Graduation	Accuracy	Measuring force	Scale	Mass g
2990	0,1 mm	0,14 mm ⁽¹⁾	0,001 mm	±6,5 µm	≤ 1,5 N	50-0-50	220
2960F	1 mm	1,27 mm ⁽¹⁾	0,01 mm	±14 µm	≤ 1,4 N	50-0-50	115

⁽¹⁾ Full stroke

Inch

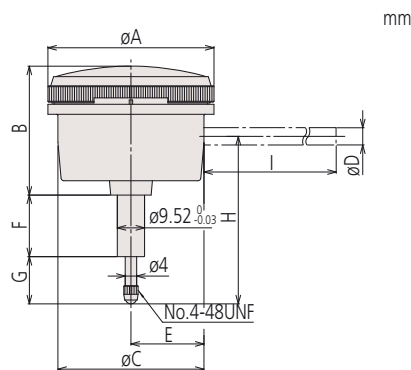
ANSI/AGD Type

No.	Range	Range per rev.	Graduation	Accuracy	Measuring force	Scale	Mass g
2991*	0.008"	0.01" ⁽¹⁾	0.0001"	±0.0002"	≤ 1,5 N	4-0-4	220
2961F*	0.04"	0.05" ⁽¹⁾	0.0005"	±0.001"	≤ 1,4 N	20-0-20	120

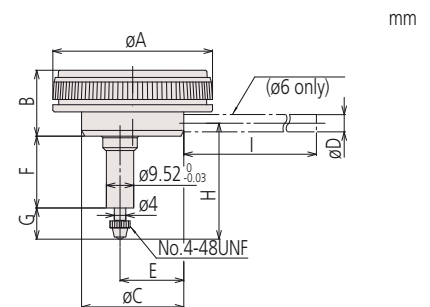
⁽¹⁾ Full stroke

No.	A mm	B mm	C mm	E mm	F mm	G mm	H mm
2991*	58	40	51	25.5	26.5	13.5	55.5
2961F*	55.6	23	35	22	25	10.9	40

No.	DIN 878 (1983)			DIN EN ISO 463 / DIN 878 (2006)					
	fe µm	fges µm	fu µm	Maximum allowable error over				Repeat limits µm	Hysteresis error µm
				Random 1/10 rotation µm	Random 1/2 rotation µm	Random 1 rotation µm	Measuring range µm		
2990	3.0	5.0	2.0	2.0			4.0	1.0	2.0
2960F	12.0	15.0	3.0	7.0			15.0	3.0	3.5



2991



2961

Contact Points

Ball Point

Metric

L mm	Carbide No.	Carbide waterproof type No.	Plastic No.	Ruby No.	Sapphire No.
7.3	901312	—	901994	120047	—
8	120045	—	—	—	120046
8.3	21AZA319	902119	—	—	—
12.1	—	21AZA320	—	—	—
14	21JAA225	—	—	—	—
15	120049	—	—	120051	120050
17	21JAA224	—	—	—	—
19.3	—	21AZA321*	—	—	—
20	137391	—	—	137392*	—
22	21JAA226*	—	—	—	—
25	120053	—	—	120055	120054
30	21AAA252*	—	—	21AAA253	—

Inch

L "	Carbide No.	Plastic No.
1/4	21BZB005	902018*

Ball Point

Metric

No.	Ø D mm	Material
21AAA349	1	Carbide
21AAA350	1,5	Carbide
101122	1,8	Steel
21AAA351	2,5	Carbide
21AAA352	4	Carbide

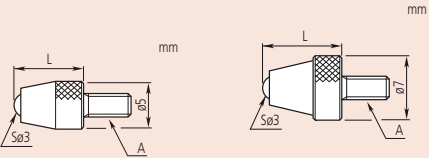
Shell Type Point - Steel

Metric

No.	L mm
101386	5
101118	10
137393	15
101387	20
101388	25
21AAA254	30

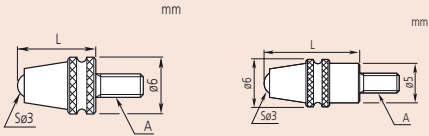
Inch

No.	L "
193697*	3/32
21AAA031*	1/4
21AAA032*	3/8
21AAA033*	5/8
21AAA034*	7/8
21AAA035*	11/4
21AAA036*	11/2
21AAA037*	13/4
21AAA038*	2
21AAA039*	21/4
21AAA040*	21/2
21AAA041*	23/4
21AAA042*	3



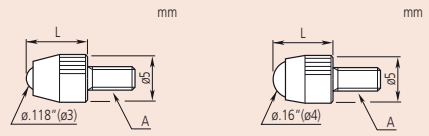
901312

21AZA319



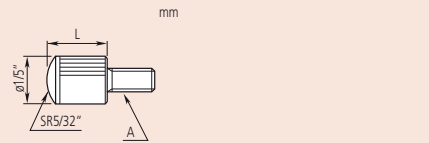
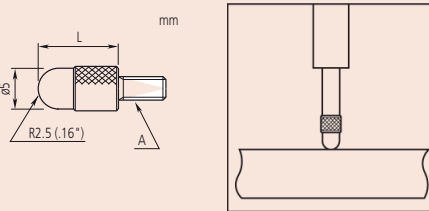
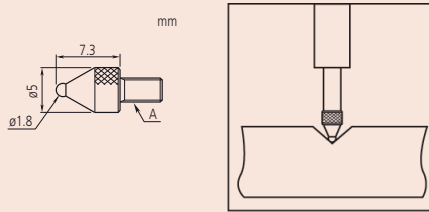
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21AZA320



21BZB005

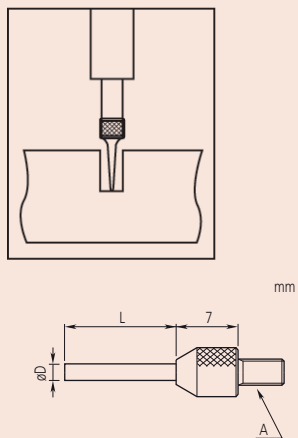
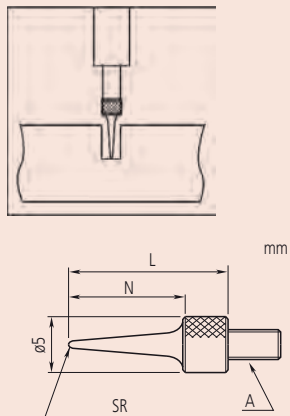
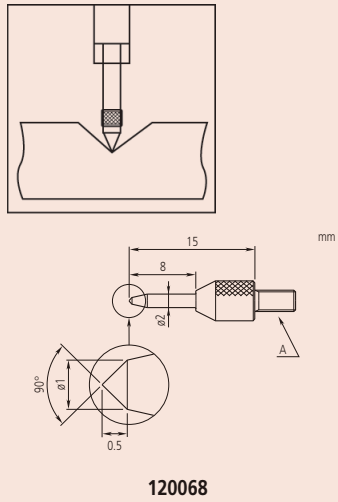
902018



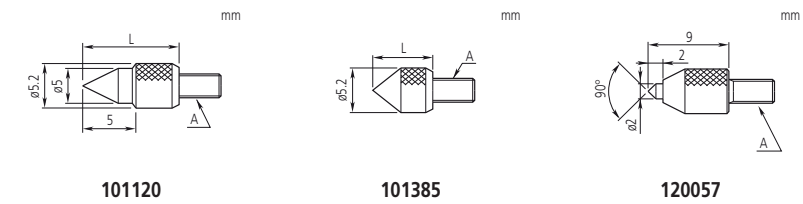
For all drawings
A = M 2,5 x 0,45 mm (metric) or 4-48 UNF (inch)

Contact Points

Conical Point



For all drawings
A = M 2,5 x 0,45 mm (metric) or 4-48 UNF (inch)



Metric

No.	Tip angle	L mm	Material
101120	60°	10	Steel
101385	90°	5	Steel
120057	90°	9	Carbide
120068	90°	15	Carbide

Needle Point - Steel

Metric

No.	N mm	L mm	SR mm
101121	11	15	0,4
137413	13	17	0,2
21AAA255	21	25	0,4
21AAA256	31	35	0,4

Inch

No.	L "	SR "
21AAA046	0.6	0.016
21AAA047	11/2	0.016
21AAA048	11/2	0.016

Needle Point - Carbide

Metric

No.	Ø D mm	L mm
120066	0,45	3
21AAA329	0,45	5
120065	1	3
21AAA330	1	5
21AAA331	1	8
21AAA332	1	10
21AAA333	1	20
21AAA334	1	40
21AAA335	1,5	5
21AAA336	1,5	10
120064	1,5	13
21AAA337	1,5	20
21AAA338	1,5	40
137257	2	8
21AAA257	2	18
21AAA258	2	28
21AAA339	2	40

Contact Points

Spherical Point

Metric

No.	Ø D mm	L mm	SR mm	Material
111460	5,5	3	5	Steel
120059	7,5	10	7	Carbide
125258*	7,9	5	5	Steel
101119	10	5	7	Steel
120060	10,5	10	10	Carbide

Inch

No.	Ø D "	L "	SR "	Material
101205*	1/2	1/8	0.28	Steel

Flat Point - Steel

Metric

No.	L mm	Ø D mm	Flatness
131365	8		3 µm
21AAA340	10		3 µm
101117		10	5 µm
21AAA341		15	5 µm
21AAA342		20	5 µm
21AAA343		25	5 µm
21AAA344		30	5 µm

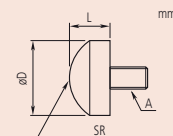
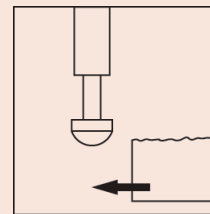
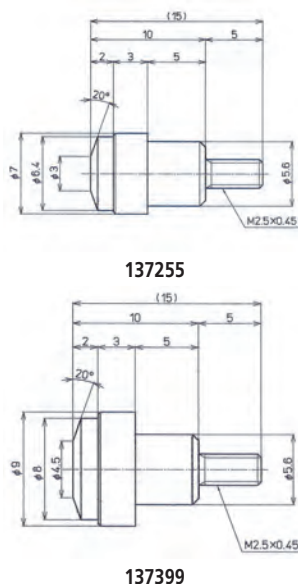
Inch

No.	L "	Flatness
133017	5/16	3 µm
21AAA043	1/2	3 µm
21AAA044	3/4	3 µm
21AAA045	1	3 µm

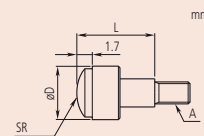
Flat Point - Carbide

Metric

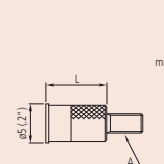
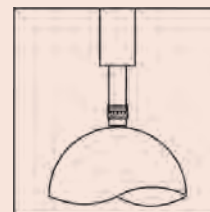
No.	Ø D mm	Ø d mm	L mm	Flatness
120056		2	8	3 µm
120041	5.2	4.3	5	3 µm
120042	7	6.5	10	3 µm
120043	10.5	9.5	10	3 µm
21AAA345	17	15	10	5 µm
21AAA346	22	20	10	5 µm
21AAA347	27	25	10	5 µm
21AAA348	32	30	10	5 µm
137255	7	6.4	10	
137399	9	8	10	



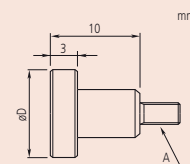
Steel



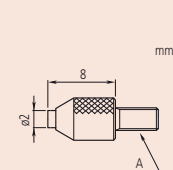
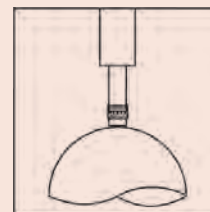
Carbide



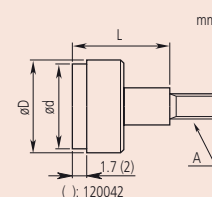
Flatness 3 µm



Flatness 5 µm

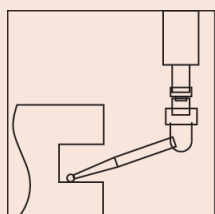
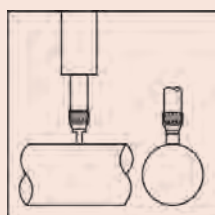
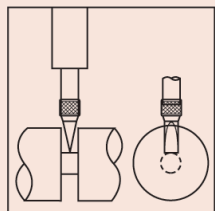


120056



(): 120042

For all drawings
A = M 2,5 x 0,45 mm (metric) or 4-48 UNF (inch)



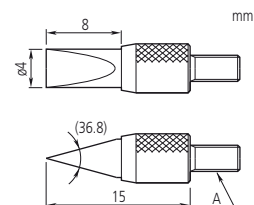
For all drawings
A = M 2,5 x 0,45 mm (metric) or 4-48 UNF (inch)

Contact Points

Knife Edge Point - Carbide

Metric

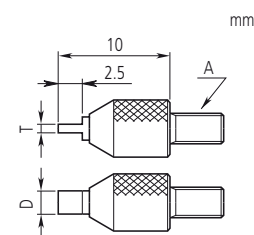
No.
120067



Blade Point - Carbide

Metric

No.	T mm	Ø D mm
120061	0,4	2
120062	0,6	2
120063	1	4



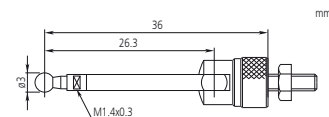
Lever Point - Steel

Metric

No.
900391

Inch

No.
900393



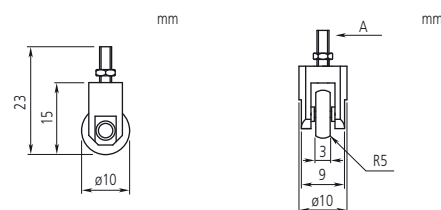
Roller Point - Steel

Metric

No.
901954

Inch

No.
901991



Interchangeable Contact Point Set

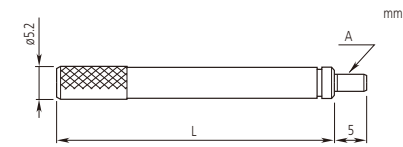


Metric

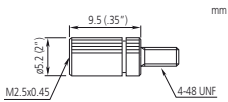
No.	Contact points included
7822	Flat point ø 5 mm (131365)
	Flat point ø 10 mm (101117)
	Needle point (101121)
	Spherical point (101119)
	Shell type point (101118)
	Shell type point (101387)

Extension Rods

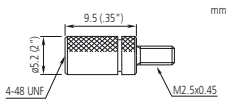
Steel Ø 5 mm



A = M 2,5 x 0,45 mm (metric) or 4-48 UNF (inch)



21AAA011



21AAA012

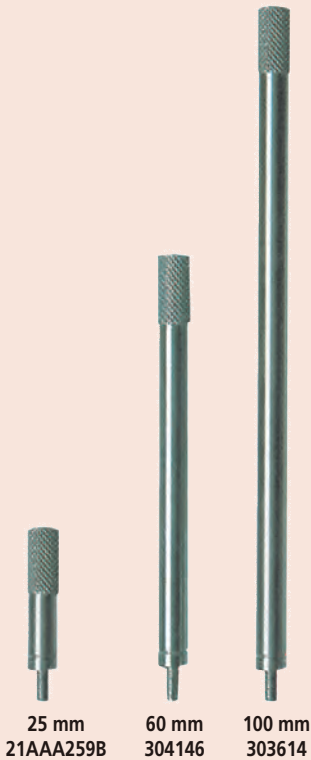
Metric

No.	L mm
303611	10
21AAA259A	15
303612	20
21AAA259B	25
303613	30
21AAA259C	35
21AAA259D	40
21AAA259E	45
21AAA259F	50
21AAA259G	55
304146	60
21AAA259H	65
21AAA259J	70
21AAA259L	75
21AAA259M	80
304147	90
303614	100

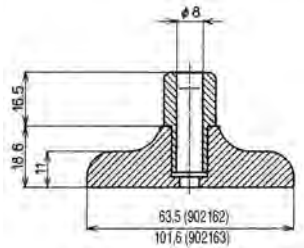
Inch

No.	L "
139167	1/2
301655	1
301657	2
301659	4

No.	L
21AAA011	9,5 mm
21AAA012	0.35"



Bases for indicators



Thickness : 16 mm

Without screw

No.	Mass g
902162	115
902163	166

Optional accessories

No.	Description
21JAA269	Screw

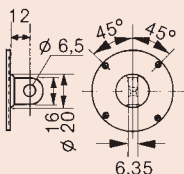
Interchangeable Backs



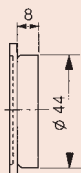
Flat Back Plate



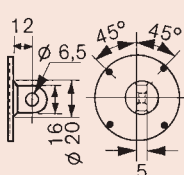
With centre lug



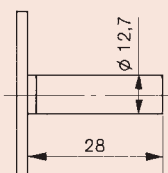
With magnet



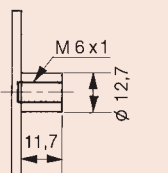
With laterally offset back lug



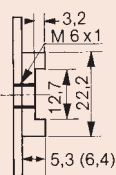
With post



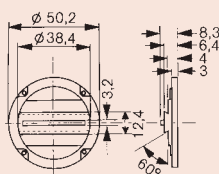
With threaded ring



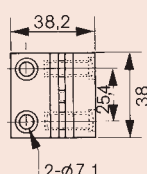
With adjustable stem



With rack



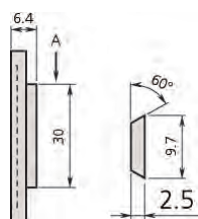
With rack and adjustable stem



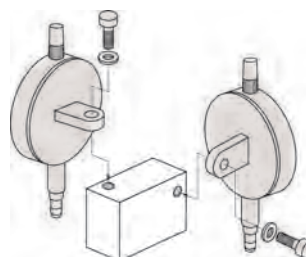
No.	Description	ANSI/AGD Type	For Series	Dimensions
191559	Flat Back Plate		1 ⁽¹⁾	
101211	Flat Back Plate		1	a = 2,2 mm
136872*	Flat Back Plate		1 waterproof	
137906*	Flat Back Plate		for 1003	
101039	Flat Back Plate		2 + ID-C/-F/-H	a = 2,5 mm
192910	Flat Back Plate		2 waterproof F type	
21AZB231*	Flat Back Plate		2 waterproof S type	
100836	Flat Back Plate		3 + 4	a = 3,0 mm
02ACB440	Flat Back Plate		ID-S	
190561	Back Plate with centre lug		1 ⁽¹⁾	
101210	Back Plate with centre lug		1	
101307	Back Plate with centre lug	●	1	
137905*	Back Plate with centre lug		for 1003	
101040	Back Plate with centre lug		2 + ID-C/-F/-H	
101306	Back Plate with centre lug	●	2 + ID-C/-F/-H	
21AZB230*	Back Plate with centre lug		2 waterproof S type	
100691	Back Plate with centre lug		3 + 4	
100797	Back Plate with centre lug	●	3 + 4	
21EZA145	Back Plate with centre lug		ID-N, ID-B, LGS ⁽²⁾	
21EZA146*	Back Plate with centre lug	●	ID-N, ID-B, LGS ⁽²⁾	
02ACB420	Back Plate with centre lug		ID-S	
900928	Back Plate with magnet		2 + ID-C/-F/-H	
900929	Back Plate with magnet		3 + 4	
02ACB650	Back Plate with magnet		ID-S	
101167	Back Plate with laterally offset back lug		2 + ID-C/-F/-H	
100837	Back Plate with laterally offset back lug		3 + 4	
02ACB640	Back Plate with laterally offset back lug		ID-S	
193172	Back Plate with post		1	
101169	Back Plate with post		2 + ID-C/-F/-H	
100839	Back Plate with post		3 + 4	
02ACB610	Back Plate with post		ID-S	
193173	Back Plate with threaded ring		1	
136023	Back Plate with threaded ring		2 + ID-C/-F/-H	
101170	Back Plate with threaded ring	●	2 + ID-C/-F/-H	#1/4-28 UNF
136024	Back Plate with threaded ring		3 + 4	
100840*	Back Plate with threaded ring	●	3 + 4	#1/4-20 UNF
02ACB670	Back Plate with threaded ring		ID-S	
136025	Back Plate with adjustable stem		1	
129721	Back Plate with adjustable stem	●	1	#1/4-20 UNF
136026	Back Plate with adjustable stem		2 + ID-C/-F/-H	
101168	Back Plate with adjustable stem	●	2 + ID-C/-F/-H	#1/4-20 UNF
136027	Back Plate with adjustable stem		3 + 4	
100838	Back Plate with adjustable stem	●	3 + 4	#1/4-20 UNF
02ACB630	Back Plate with adjustable stem		ID-S	
129902	Back Plate with rack		2 + ID-C/-F/-H	
901963	Back Plate set including rear lid with rack and adjustable stem		2 + ID-C/-F/-H	
02ACB680	Back Plate set including rear lid with rack and adjustable stem		ID-S	
900008*	Back Plate with Dovetail		2	

⁽¹⁾ for 1911, 1913-10, 1921, 1923, 1925-10, 1927-10

⁽²⁾ for LGS 575-303, 575-304, 575-313



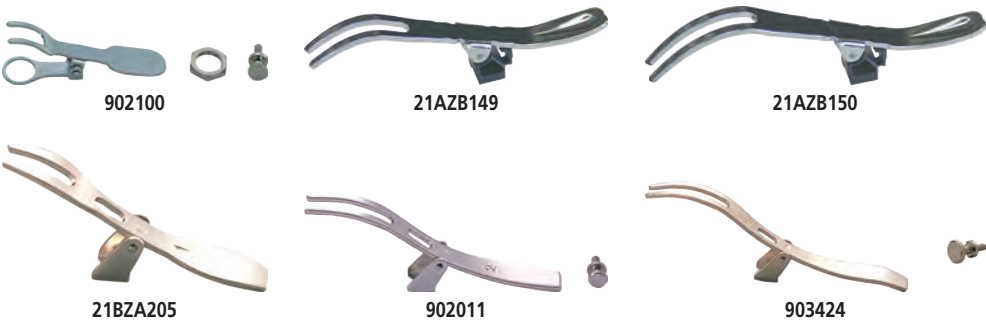
Back Plate with Dovetail



Sample application

Spindle Lifting Lever and Cable

- The spindle lifting lever is attached to the top end of the spindle for improved inspection efficiency when using a dial indicator mounted on a stand.



Spindle lifting lever

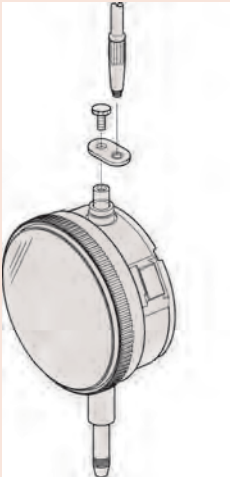
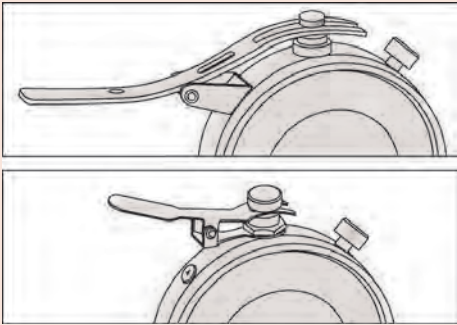
No.	Use for
902100	S type Series 1 F/S type Series 2 Indicators ID-C and ID-S (up to 10 mm/0.4" range)
21AZB149	S type Series 2, 3 and 4 (up to 10 mm /0.4" range)
21AZB150	S type Series 2 and 3 (from 10 mm/0.4" up to 20 mm/0.8" range)
21AZB151	S type No. 7322 / 7323
21BZA205	F type Series 1 (former model)
902011	F type Series 2 (former model up to 10 mm/0.4" range)
21EZA198	Indicators ID-C (up to 10 mm/0.4" range)
903424	F type Series 2 (former model up to 20 mm/0.8" range) F type Series 3 and 4 (former model up to 10 mm/0.4" range)

Spindle lifting cable

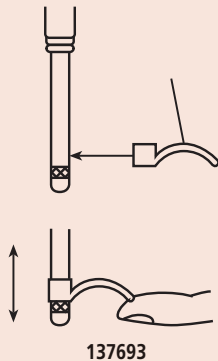
No.	Description
901975	With auto-stop function
540774	Without auto-stop function

Spindle lifting knob

No.	Description
137693	Suitable for 4,8 mm spindle diameter



Sample application
for No. 901975



Optional Accessories for Dial Indicators

Colour-coded Spindle Caps

- 9 colour-coded spindle caps are available for dial indicators with a range of 10 mm or less.
- With the exception of 2971 / 2972 / 2973 / 2976 / 2977 / 2978.

Colour	Standard	Water-resistant
	No.	No.
Black	193051	193595
Blue	193051B	193595B
Dark blue	193051S	193595S
Green	193051G	193595G
Orange	193051D	193595D*
Pink	193051P	193595P
Red	193051R	193595R
White	193051W	193595W*
Yellow	193051Y	193595Y



Plastic cover

- Protection against oil and splash water.
- For dial indicators Series 2.
- 10 pieces per set.

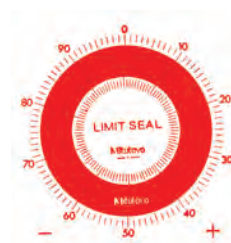
No.
902066



902066

Limit Stickers

- Tolerance markings.
- For dial indicators, Series 2 Ø 55,6 mm or 57 mm.
- 10 pieces per set.



136420



136421



136422

No.	Colour
136420	Red
136421	Green
136422	Yellow



Optional Accessories for Dial Indicators

Crystal setter and assorted thrust pads

- For inserting round dial glasses.
- Assorted thrust pads for diameters: 19,5 / 22,5 / 25,5 / 28,5 / 32,5 / 35 / 38 / 50 mm.



7000

No.
7000*

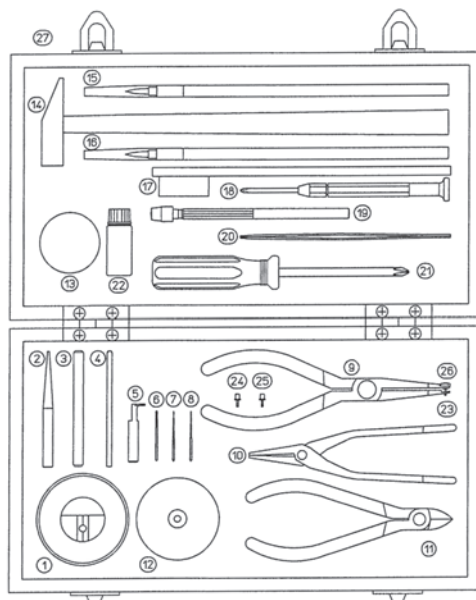
Tool set

- For repairing analogue dial indicators.



7823

No.
7823



Specifications

Set configuration

No. 7823 :

Description	No.
1 - Spindle stage	129730
2 - Pin removing bar	129732
3 - Punch	129733
4 - Bearing adjuster	129734
5 - Pinion stage	129735
6 - Reamer for pointer ø1	129736
7 - Reamer for pointer ø0.6	193702
8 - Reamer for pointer ø0.5	21JAA273
9 - Pointer remover	126628
10 - Pliers	901180
11 - Nippers	901179
12 - Stage for pin rest	129731
13 - Grease	901171
14 - Hammer	901178
15 - Spear	21JAA314
16 - Brush	901177
17 - Brush	901176
18 - Philips and plain screwdrivers	901174
19 - Pin vice	901175
20 - Tweezers	129729
21 - Philips screwdriver	901173
22 - Lubricant	21JAA313
23 - Pin ø0,8 mm	126630
24 - Pin ø0,5 mm	126630B
25 - Pin ø01,6 mm	126630C
26 - Nut	100699
27 - Wooden case	901182

Metric Lever Indicator - Horizontal type

Graduation 0,01 mm

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.

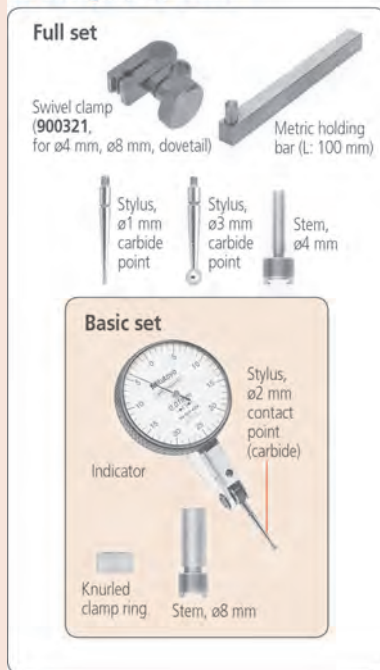


Series 513										
Functions	513-404E	513-474E	513-415E	513-477E	513-464E	513-414E	513-424E	513-478E	513-466E	513-426E
 Double scale spacing										
 Jewelled bearings										
 Coaxial revolution counter										
 Compact type										
 Long stylus										
 Nonmagnetic										

Specifications

Contact point Thread M 1,7 x 0,35
 Delivered In box with clamping stem ø8 mm
 For optional accessories, see end of lever indicators section.

Set Configuration: Metric



Metric

Basic set

No.	Range	fe µm	fges µm	fu µm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-466E	0,50 mm	5	10	3	≤ 0,3 N	0-25-0	137557	28	22.3	39
513-424E	0,50 mm	5	10	3	≤ 0,3 N	0-25-0	137557	40	22.3	42
513-414E	0,50 mm	10	13	4	≤ 0,2 N	0-25-0	129949	40	36.8	42
513-464E	0,80 mm	8	13	3	≤ 0,3 N	0-40-0	103006	28	20.9	39
513-404E	0,80 mm	8	13	3	≤ 0,3 N	0-40-0	103006	40	20.9	42
513-415E	1,00 mm	10	13	4	≤ 0,2 N	0-50-0	136013	40	44.5	42
513-426E	1,50 mm	8	13	3	≤ 0,4 N	0-25-0	137557	40	22.3	42

fe = accuracy

Metric

Basic set - Ruby contact point

No.	Range	fe µm	fges µm	fu µm	Measuring force	Scale	Ruby stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-478E*	0,50 mm	5	10	3	≤ 0,3 N	0-25-0	21CZA210	40	22.3	42
513-474E	0,80 mm	8	13	3	≤ 0,3 N	0-40-0	21CZA201	40	20.9	42
513-477E*	1,00 mm	10	13	4	≤ 0,3 N	0-50-0	21CZA211	40	44.5	42

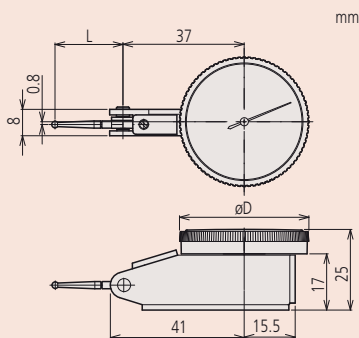
fe = accuracy

Metric

Full set

No.	Range	fe µm	fges µm	fu µm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-424T*	0,50 mm	5	10	3	≤ 0,3 N	0-25-0	137557	40	22.3	42
513-414T	0,50 mm	10	13	4	≤ 0,2 N	0-25-0	129949	40	36.8	42
513-404T	0,80 mm	8	13	3	≤ 0,3 N	0-40-0	103006	40	20.9	42
513-415T*	1,00 mm	10	13	4	≤ 0,2 N	0-50-0	136013	40	44.5	42

fe = accuracy

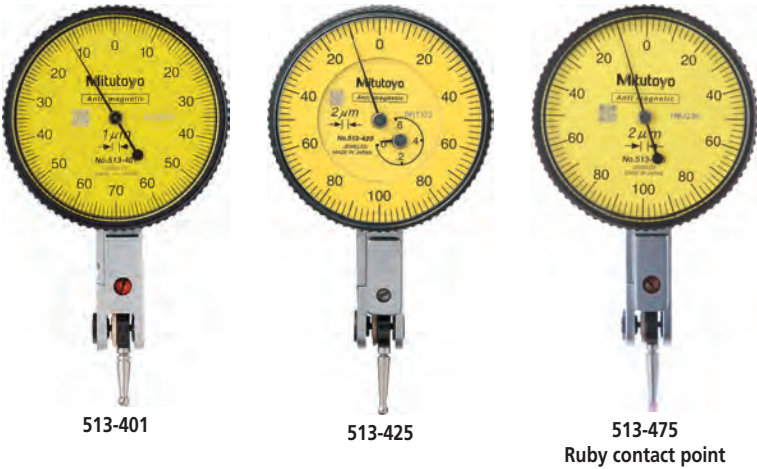


Metric Lever Indicator - Horizontal type

Graduation ≤0,002 mm

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



Metric

Basic set

No.	Range	Graduation	fe μm	fges μm	fu μm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-401E	0,14 mm	0,001 mm	3	4	2	≤ 0,3 N	0-70-0	21CZA036	40	12.8	42
513-465E	0,20 mm	0,002 mm	3	4	2	≤ 0,3 N	0-100-0	103010	28	14.7	39
513-405E	0,20 mm	0,002 mm	3	4	2	≤ 0,3 N	0-100-0	103010	40	14.7	42
513-425E	0,60 mm	0,002 mm	6	11	3	≤ 0,4 N	0-100-0	103010	40	14.7	42

fe = accuracy

Metric

Basic set - Ruby contact point

No.	Range	Graduation	fe μm	fges μm	fu μm	Measuring force	Scale	Ruby stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-475E*	0,20 mm	0,002 mm	3	4	2	≤ 0,3 N	0-100-0	21CZA209	40	14.7	42

fe = accuracy

Metric

Full set

No.	Range	Graduation	fe μm	fges μm	fu μm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	ØD mm	L mm	Mass g
513-405T	0,20 mm	0,002 mm	3	4	2	≤ 0,3 N	0-100-0	103010	40	14.7	42

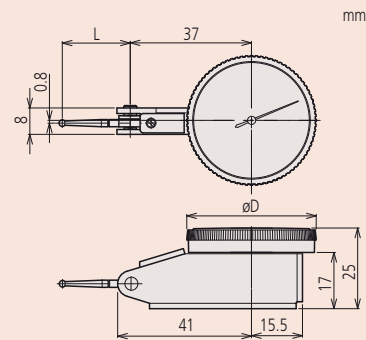
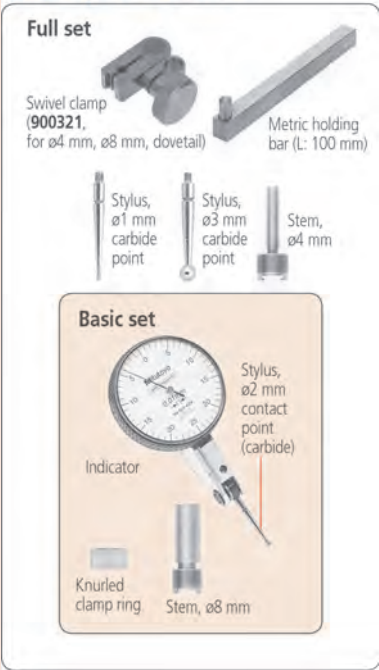
fe = accuracy

Series 513				
	513-401E	up to 513-475E	513-465E	513-425E
Functions				
Jewelled bearings				
Coaxial revolution counter				
Compact type				
Nonmagnetic				

Specifications

Contact point Thread M 1,7 x 0,35
Delivered In box with clamping stem ø8 mm
For optional accessories, see end of lever indicators section.

Set Configuration: Metric



Special Set : indicator and mini magnetic stand

Series 513



513-908

Indicator

- Centered, bi-directional action for automatic reversal of measuring direction.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.

Stand

- Magnetic force : 150 N.
- Mass : 180 g.



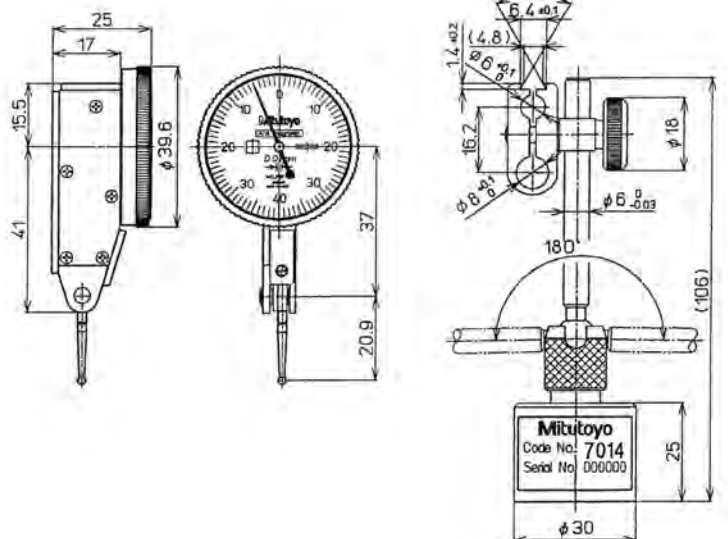
513-908

Metric

No.	Contents include
513-908	513-404E : Dial test indicator 7014 : Mini magnetic stand

Inch

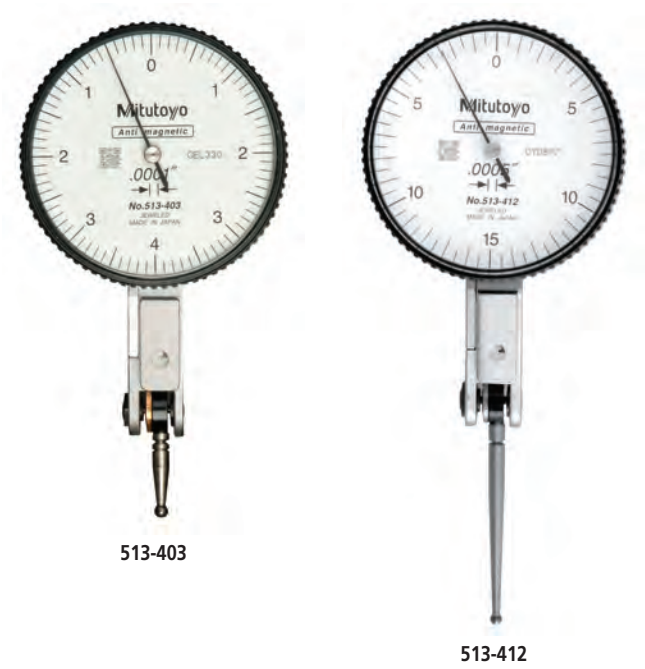
No.	Contents include
513-907*	513-402 : Dial test indicator 7014E : Mini magnetic stand



Imperial Lever Indicator - Horizontal type

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



Inch									
Basic set									
No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø0.079" No.	ØD mm	L mm	Mass g
513-402	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	133195	40	19.9	40
513-412	0.03"	0.0005"	±0.0005"	≤ 0,2 N	0-15-0	136290	40	33.9	58
513-462*	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	133195	28	19.9	55
513-403	0.008"	0.0001"	±0.0001"	≤ 0,3 N	0-4-0	136075	40	15	58
513-463*	0.008"	0.0001"	±0.0001"	≤ 0,3 N	0-4-0	136075	28	15	55

Inch									
Basic set - Ruby contact point									
No.	Range	Graduation	Accuracy	Measuring force	Scale	Ruby stylus tip ø0.079" No.	ØD mm	L mm	Mass g
513-472*	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	21CZA204	40	19.9	58
513-479*	0.03"	0.0005"	±0.0005"	≤ 0,2 N	0-15-0	21CZA214	40	33.9	42
513-473*	0.008"	0.0001"	±0.0001"	≤ 0,3 N	0-4-0	21CZA213	40	15	42

Inch									
Full set									
No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø0.079" No.	ØD mm	L mm	Mass g
513-402T	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	133195	40	19.9	40
513-412T	0.03"	0.0005"	±0.0005"	≤ 0,2 N	0-15-0	136290	40	33.9	58
513-403T	0.008"	0.0001"	±0.0001"	≤ 0,3 N	0-4-0	136075	40	15	58

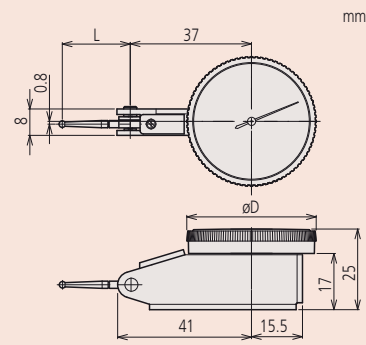
Series 513					
	513-402 up to 513-473	513-412 513-479	513-462 513-463		
Functions					
Jewelled bearings	●	●	●		
Compact type			●		
Long stylus		●			
Nonmagnetic	●	●	●		

Specifications
Delivered In box with clamping stem ø3/8"
For optional accessories, see end of lever indicators section.

Set Configuration: Inch

Full set

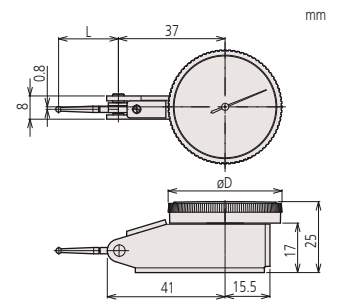
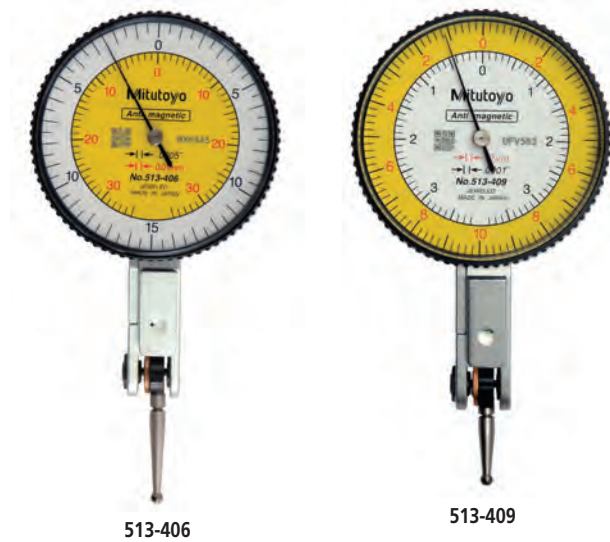
Basic set



Lever Indicator - Horizontal type

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.

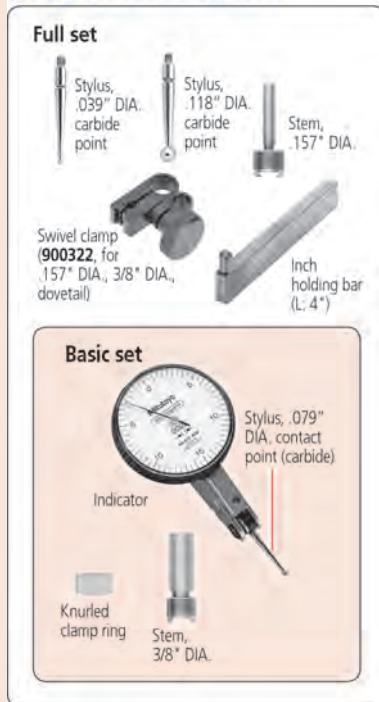


Series 513	
	513-406 513-409
Functions	
Jewelled bearings	
Nonmagnetic	

Specifications

Delivered In box with clamping stem $\varnothing 8$ mm or 3/8"
For optional accessories, see end of lever indicators section.

Set Configuration: Inch/Metric



Metric/Inch

Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	$\varnothing D$ mm	L mm	Mass g
513-409*	0,2 mm/ 0.0075"	0,002 mm/ 0.0001"	3 μ m	$\leq 0,3$ N	0-10-0, 0-3.8-0	103010	40	14.7	58

Metric/Inch

Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	$\varnothing D$ mm	L mm	Mass g
513-409T	0,2 mm/ 0.0075"	0,002 mm/ 0.0001"	3 μ m	$\leq 0,3$ N	0-10-0, 0-3.8-0	103010	40	14.7	58

Inch/Metric

Basic set

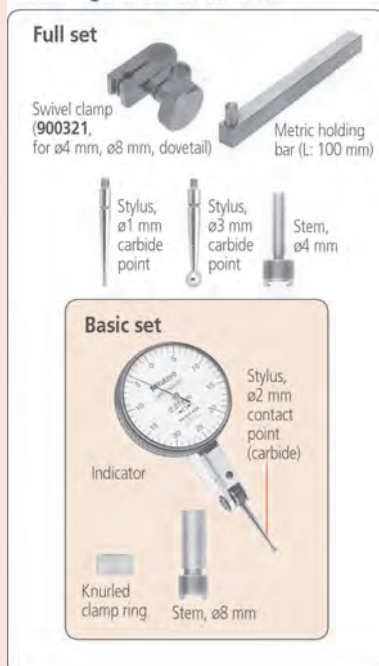
No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	$\varnothing D$ mm	L mm	Mass g
513-406*	0,7 mm/ 0.03"	0,01 mm/ 0.0005"	± 0.0005 "	$\leq 0,3$ N	0-35-0, 0-15-0	133195	40	19.9	58

Inch/Metric

Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	$\varnothing D$ mm	L mm	Mass g
513-406T	0,7 mm/ 0.03"	0,01 mm/ 0.0005"	± 0.0005 "	$\leq 0,3$ N	0-35-0, 0-15-0	133195	40	19.9	58

Set Configuration: Metric/Inch



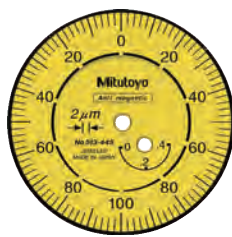
Lever Indicator - Horizontal (20° tilted face) type

Series 513

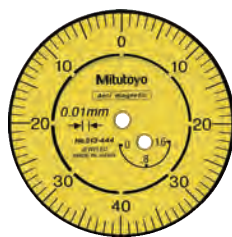
- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting. Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



513-445



513-445



513-444

Metric Basic set

No.	Range	Graduation	fe μ m	fges μ m	fu μ m	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-445E	0,4 mm	0,002 mm	5	10	3	$\leq 0,3$ N	0-100-0	103010	14.7	48
513-444E	1,6 mm	0,01 mm	10	13	3	$\leq 0,3$ N	0-40-0	103006	20.9	48

fe = accuracy

Metric Full set

No.	Range	Graduation	fe μ m	fges μ m	fu μ m	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-445T*	0,4 mm	0,002 mm	5	10	3	$\leq 0,3$ N	0-100-0	103010	14.7	48
513-444T*	1,6 mm	0,01 mm	10	13	3	$\leq 0,3$ N	0-40-0	103006	20.9	48

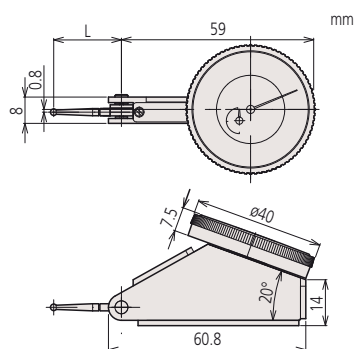
fe = accuracy

Inch Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-443T*	0.016"	0.0001"	± 0.0002 "	$\leq 0,3$ N	0-4-0	136075	15	48
513-442T*	0.06"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	133195	19.9	48
513-446T*	0.06"	0.0005"	± 0.0005 "	$\leq 0,2$ N	0-15-0	136290	33.9	48

Inch Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-443T*	0.016"	0.0001"	± 0.0002 "	$\leq 0,3$ N	0-4-0	136075	15	48
513-442T*	0.06"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	133195	19.9	48
513-446T*	0.06"	0.0005"	± 0.0005 "	$\leq 0,2$ N	0-15-0	136290	33.9	48



	513-442 up to 513-445E	513-446 513-446T
Functions		
Jewelled bearings		
Coaxial revolution counter		
Long stylus		
Nonmagnetic		

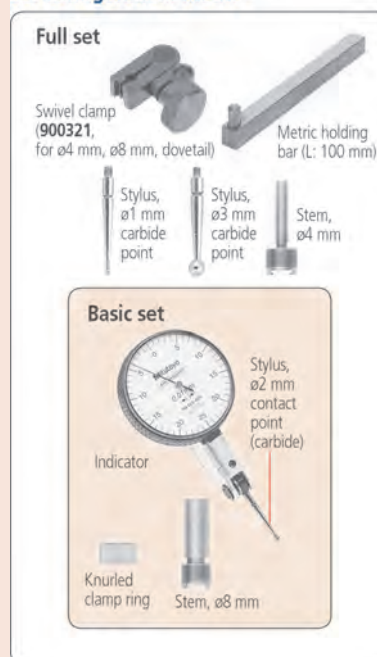
Specifications

Contact point Thread M 1,7 x 0,35

Delivered In box with clamping stem ϕ 8 mm or 3/8"

For optional accessories, see end of lever indicators section.

Set Configuration: Metric



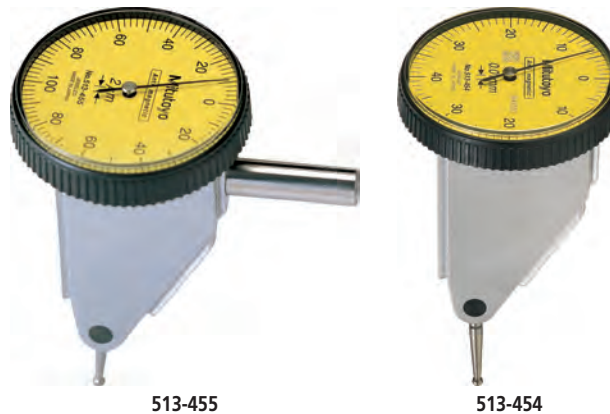
Set Configuration: Inch



Lever Indicator - Vertical type

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



Metric

Basic set

No.	Range	Graduation	$f_e \mu m$	$f_{ges} \mu m$	$f_u \mu m$	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	L mm	Mass g
513-455E	0,2 mm	0,002 mm	3	6	2	$\leq 0,3$ N	0-100-0	103010	14.7	50
513-454E	0,8 mm	0,01 mm	8	13	3	$\leq 0,3$ N	0-40-0	103006	20.9	50

f_e = accuracy

Metric

Full set

No.	Range	Graduation	$f_e \mu m$	$f_{ges} \mu m$	$f_u \mu m$	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	L mm	Mass g
513-455T	0,2 mm	0,002 mm	3	6	2	$\leq 0,3$ N	0-100-0	103010	14.7	50
513-454T	0,8 mm	0,01 mm	8	13	3	$\leq 0,3$ N	0-40-0	103006	20.9	50

f_e = accuracy

Inch

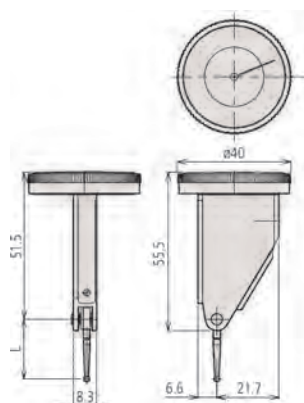
Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	L mm	Mass g
513-453*	0.008"	0.0001"	± 0.0001 "	$\leq 0,3$ N	0-4-0	136075	15	50
513-452	0.03"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	133195	19.9	50

Inch

Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip $\varnothing 2$ mm No.	L mm	Mass g
513-453T*	0.008"	0.0001"	± 0.0001 "	$\leq 0,3$ N	0-4-0	136075	15	50
513-452T*	0.03"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	133195	19.9	50



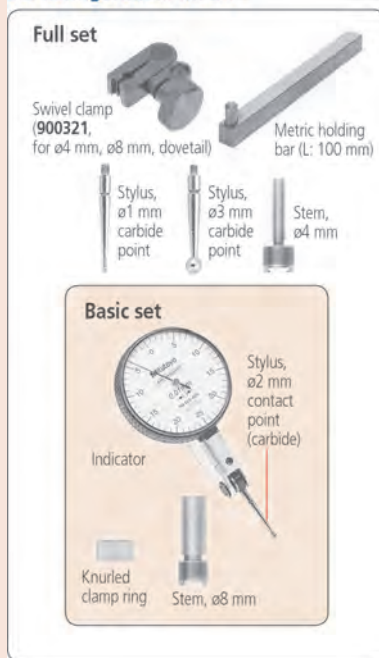
Series 513	
Functions	513-452 up to 513-455E
Jewelled bearings	
Nonmagnetic	

Specifications

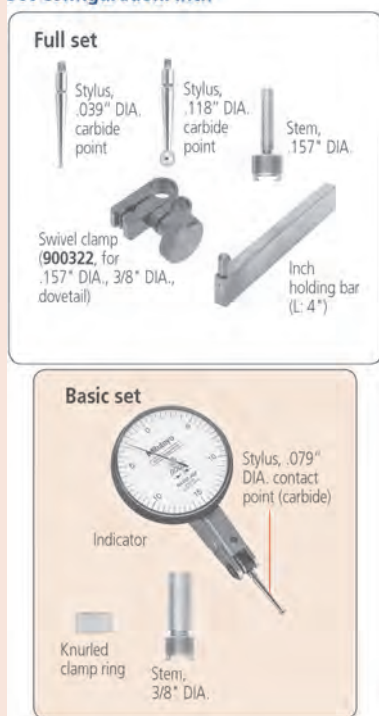
Contact point Thread M 1,7 x 0,35
 Delivered In box with clamping stem $\varnothing 8$ mm or 3/8"

For optional accessories, see end of lever indicators section.

Set Configuration: Metric



Set Configuration: Inch



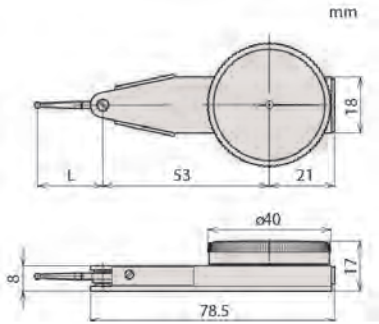
Lever Indicator - Parallel type

Series 513

- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



513-284



Metric Basic set

No.	Range	Graduation	fe μm	fges μm	fu μm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-284GE	0,8 mm	0,01 mm	8	13	3	≤ 0,3 N	0-40-0	103006	20.9	68

fe = accuracy

Metric Full set

No.	Range	Graduation	fe μm	fges μm	fu μm	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-284GT	0,8 mm	0,01 mm	8	13	3	≤ 0,3 N	0-40-0	103006	20.9	68

fe = accuracy

Inch Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-282G*	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	133195	20	68

Inch Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-282GT*	0.03"	0.0005"	±0.0005"	≤ 0,3 N	0-15-0	133195	20	68

Series 513

Functions

Jewelled bearings

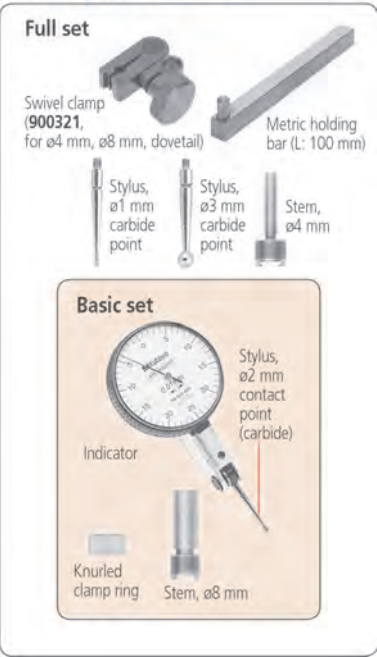
513-282G
up to
513-284GT

Specifications

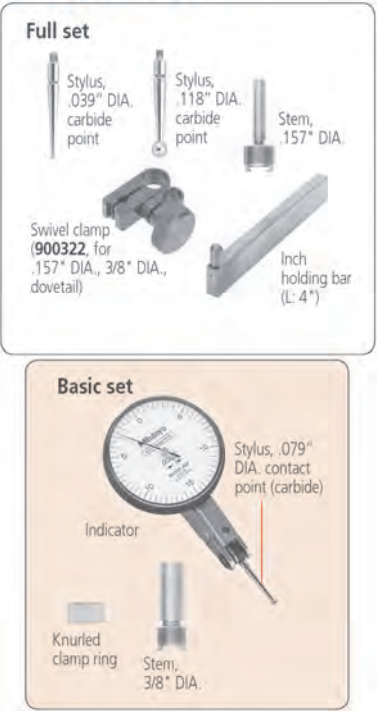
Contact point Thread M 1,7 x 0,35
Delivered In box with clamping stem ø8 mm or 3/8"

For optional accessories, see end of lever indicators section.

Set Configuration: Metric



Set Configuration: Inch



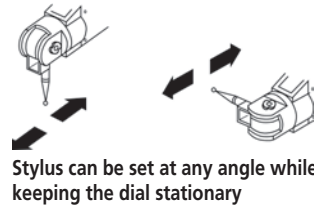
Lever Indicator - Universal type

Series 513

- Measuring head rotatable through 360° for ease of reading.
- Centered, bi-directional action for automatic reversal of measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



513-304



Metric

Basic set

No.	Range	Graduation	f_e μ m	f_{ges} μ m	f_u μ m	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-304GE	0,8 mm	0,01 mm	8	13	3	$\leq 0,3$ N	0-40-0	102825	24	80

f_e = accuracy

Metric

Full set

No.	Range	Graduation	f_e μ m	f_{ges} μ m	f_u μ m	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-304GT	0,8 mm	0,01 mm	8	13	3	$\leq 0,3$ N	0-40-0	102825	24	80

f_e = accuracy

Inch

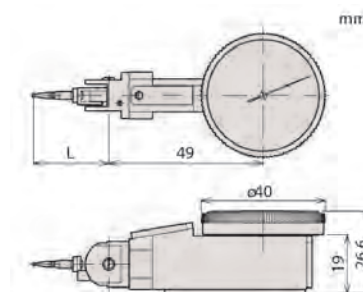
Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-302G*	0.03"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	102825	22.9	80

Inch

Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ϕ 2 mm No.	L mm	Mass g
513-302GT	0.03"	0.0005"	± 0.0005 "	$\leq 0,3$ N	0-15-0	102825	22.9	80



Series 513

513-302G up to 513-304GT

Functions

Jewelled bearings

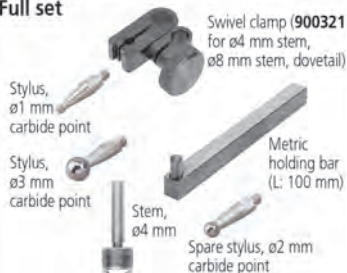
Specifications

Contact point Thread M 1,4 x 0,3
 Delivered In box with clamping stem ϕ 8 mm or 3/8"

For optional accessories, see end of lever indicators section.

Set Configuration: Metric

Full set



Basic set



Set Configuration: Inch

Full set



Basic set



Metric Lever Indicator - Small type

Series 513

- Small type with switch lever for changing the measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



Metric

Basic set

No.	Range	Graduation	$f_e \mu\text{m}$	$f_{ges} \mu\text{m}$	$f_u \mu\text{m}$	Measuring force	Scale	Carbide stylus tip $\phi 2 \text{ mm}$ No.	L mm	Mass g
513-501E	0,14 mm	0,001 mm	3	4	2	$\leq 0,4 \text{ N}$	0-70-0	136104	12	41
513-503E	0,20 mm	0,002 mm	3	4	2	$\leq 0,3 \text{ N}$	0-100-0	103010	14.7	41
513-514E	0,50 mm	0,01 mm	10	13	4	$\leq 0,3 \text{ N}$	0-25-0	129949	36.8	41
513-517E	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	103006	20.9	41
513-517WE	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	21CZA097	20.9	41
513-527E	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	103010	14.7	36

f_e = accuracy

Metric

Full set

No.	Range	Graduation	$f_e \mu\text{m}$	$f_{ges} \mu\text{m}$	$f_u \mu\text{m}$	Measuring force	Scale	Carbide stylus tip $\phi 2 \text{ mm}$ No.	L mm	Mass g
513-501T	0,14 mm	0,001 mm	3	4	2	$\leq 0,4 \text{ N}$	0-70-0	136104	12	41
513-503T	0,20 mm	0,002 mm	3	4	2	$\leq 0,3 \text{ N}$	0-100-0	103010	14.7	41
513-514T	0,50 mm	0,01 mm	10	13	4	$\leq 0,3 \text{ N}$	0-25-0	129949	36.8	41
513-517T	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	103006	20.9	41
513-517WT	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	21CZA097	20.9	41
513-527T*	0,80 mm	0,01 mm	8	13	3	$\leq 0,3 \text{ N}$	0-40-0	103010	14.7	36
513-515T	1,00 mm	0,01 mm	10			$\leq 0,3 \text{ N}$	0-50-0	136013	44.5	41

f_e = accuracy

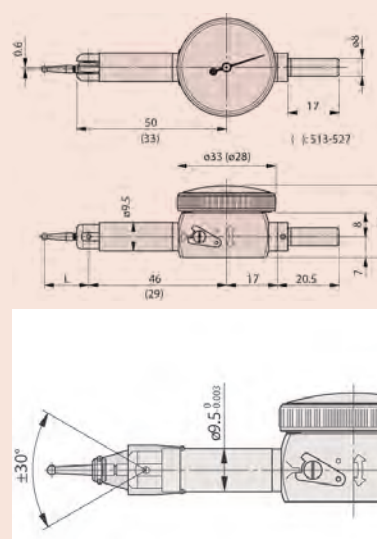
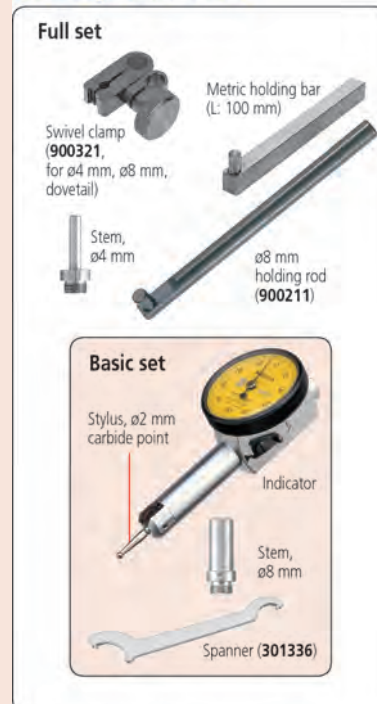
Series 513

	513-501E up to 513-517T	513-517WE 513-517WT	513-527E 513-527T	513-514E up to 513-515T
Functions				
Jewelled bearings				
Long stylus				
Compact type				
Dustproof				

Specifications

Contact point Thread M 1,7 x 0,35
 Delivered In box with clamping stem $\phi 8 \text{ mm}$
 For optional accessories, see end of lever indicators section.

Set Configuration: Metric



The stylus angle should be restricted within the range $\pm 30^\circ$ (as shown above) for dustproof models 513-517WE/T.

Imperial Lever Indicator - Small type

Series 513

- Small type with switch lever for changing the measuring direction.
- Rotatable scale for easy zero setting.
- Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.



Inch

Basic set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-504*	0.01"	0.0001"	±0.0002"	≤ 0,3 N	0-5-0	103011	18.7	41
513-512*	0.02"	0.0005"	±0.0005"	≤ 0,3 N	0-10-0	131324	37.4	41
513-518	0.04"	0.001"	±0.001"	≤ 0,3 N	0-20-0	103007	26.5	41
513-528*	0.04"	0.001"	±0.001"	≤ 0,3 N	0-20-0	103011	18.7	36

Inch

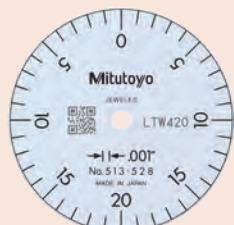
Full set

No.	Range	Graduation	Accuracy	Measuring force	Scale	Carbide stylus tip ø2 mm No.	L mm	Mass g
513-504T	0.01"	0.0001"	±0.0002"	≤ 0,3 N	0-5-0	103011	18.7	41
513-512T	0.02"	0.0005"	±0.0005"	≤ 0,3 N	0-10-0	131324	37.4	41
513-518T	0.04"	0.001"	±0.001"	≤ 0,3 N	0-20-0	103007	26.5	41
513-528T*	0.04"	0.001"	±0.001"	≤ 0,3 N	0-20-0	103011	18.7	36

Series 513				
	513-504	up to 513-518T	513-528	513-528T
Functions				
Jewelled bearings	●	●	●	●
Long stylus				●
Compact type			●	

Specifications

Delivered In box with clamping stem ø3/8"
For optional accessories, see end of lever indicators section.



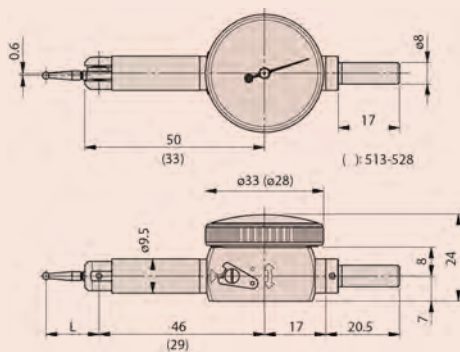
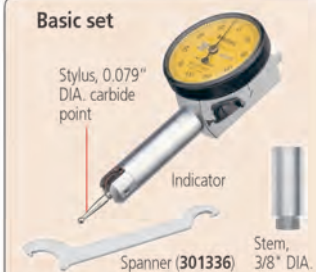
513-528

Set Configuration: Inch

Full set



Basic set



Styli, Stems and Holders

- Stylus length affects the scale factor of an indicator. The styli provided as standard give a scale factor of unity.

Styli (for Metric Models, except for universal type dial indicator)

No.	L (mm)	Ø ball point	Standard models	513-5XX models
190547	14,7	0,5 mm carbide	●	●
190549	20,9	0,5 mm carbide	●	●
190654	22,3	0,5 mm carbide	●	
190656	44,5	0,5 mm carbide	●	●
190548	14,7	0,7 mm carbide	●	●
190550	20,9	0,7 mm carbide	●	●
190653	22,3	0,7 mm carbide	●	
190655	44,5	0,7 mm carbide	●	●
136756	12,1	1 mm carbide		●
21CZA044	12,8	1 mm carbide	●	
103017	14,7	1 mm carbide	●	●
103013	20,9	1 mm carbide	●	●
21CZA098	21	1 mm carbide		●
137558	22,3	1 mm carbide	●	
102824	24,1	1 mm carbide* ²	●	
137746	36,8	1 mm carbide	●	
136235	44,5	1 mm carbide	●	●
136104	12,1	2 mm carbide		●
21CZA036	12,8	2 mm carbide	●	
103010	14,7	2 mm carbide	●	●
103006	20,9	2 mm carbide	●	●
21CZA097	21	2 mm carbide* ³		●
137557	22,3	2 mm carbide	●	
102825	24,1	2 mm carbide* ²	●	
129949	36,8	2 mm carbide	●	
136013	44,5	2 mm carbide	●	●
21CZA212	12,8	2 mm ruby	●	
21CZA209	14,7	2 mm ruby	●	●
21CZA201	20,9	2 mm ruby	●	●
21CZA210	22,3	2 mm ruby	●	
21CZA211	44,5	2 mm ruby	●	
136758	12,1	3 mm carbide		●
21CZA045	12,8	3 mm carbide	●	
103018	14,7	3 mm carbide	●	●
103014	20,9	3 mm carbide	●	●
21CZA099	21	3 mm carbide		●
137559	22,3	3 mm carbide	●	
102826	24,1	3 mm carbide* ²	●	
137747	36,8	3 mm carbide	●	
136236	44,5	3 mm carbide	●	●

*² : Used extension 209829

*³ : For 513-517W models



Ø 0,5 mm ball-point



Ø 0,7 mm ball-point



Ø 1 mm ball-point Carbide



Ø 2 mm ball-point Carbide



Ø 2 mm ball-point Ruby



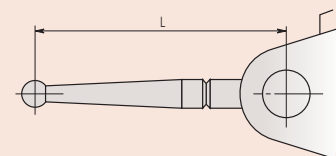
Ø 3 mm ball-point Carbide

Specifications

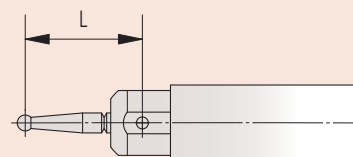
Length (L)	Order No. compatible () : Older model
Thread M 1,7 x 0,35 12,1 mm	513-501E (513-101-1)
12,8 mm	513-401E
14,7 mm	513-405E - 513-425E 513-445E - 513-455E 513-465E - 513-503E 513-527E - (513-103-1) (513-127-1)
20,9 mm	(513-284FE) - 513-284GE 513-444E - 513-404E 513-464E - 513-454E 513-517E 513-517WE - 513-474E (513-117W-1) - (513-117-1)
22,3 mm	513-424E - 513-514E (513-114-1)
36,8 mm	513-414E - 513-514E (513-114-1)
44,5 mm	513-415E
Thread M 1,4 x 0,3	
24,1 mm	(513-304) - 513-304GE

Optional accessories

No.	Description
209829	Extension



Styli for Standard models



Styli for 513-5XX models

Styli, Stems and Holders

Einspannschäfte

Spanner

No.	Standard models	513-5XX models
102037	●	
301336		●

Stems

No.	Description	Diameter	Standard models	513-5XX models
902802	With Knurled Clamp Ring	4 mm	●	
902803	With Knurled Clamp Ring	6 mm	●	
902804	With Knurled Clamp Ring	8 mm	●	
902805	With Knurled Clamp Ring	3/8"	●	
902806	With Knurled Clamp Ring	4 and 8 mm	●	
902807	With Knurled Clamp Ring	6 and 8 mm	●	
102036		4 mm		●
102389		6 mm		●
102822		8 mm		●
190318		4 mm	●	
190319		6 mm	●	
190320		8 mm	●	
190322	Knurled Clamp Ring		●	

Swivel Clamps

No.	Description	Standard models	513-5XX models
900321	For ø 4, 8 mm stems and dovetail	●	●

Holding Bars

No.	Description	L	Standard models	513-5XX models
953638	9 x 9 mm	50 mm	●	●
900209	9 x 9 mm	100 mm	●	●
900211	ø 8 mm	115 mm	●	●
953639*	0.25" x 0.5"	2"	●	●
900306	0.25" x 0.5"	4"	●	●

Universal Holder

No.	Stem	Standard models	513-5XX models
901461	ø 6 mm	●	
901459	ø 0.25"	●	
901916	ø 8 mm	●	
901547	ø 6 mm		●
901546	ø 0.25"		●
901917	ø 8 mm		●

Centering Holder

No.	Stem	Standard models
901959	ø 8 mm	●
901997	ø 0.25"	●



Spanner 102037



Spanner 301336



902802

902804

902805



102389

102822

190322



900321



953638 - 900209

900211

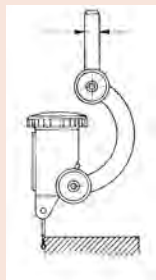
953639 - 900306



Universal Holder



Centering Holder
901959



ABSOLUTE Digimatic Quick Thickness Gauge

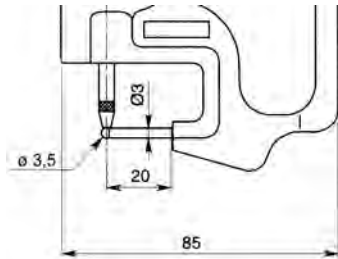
Series 547

For measuring tube wall thickness.

- Measuring accuracy unaffected by high plunger speed.



547-360



Metric

No.	Range	Resolution	Indicator No.	Mass g
547-360	0-10 mm	0,01 mm	543-400B (ID-C)	240

Inch/Metric

ANSI/AGD type

No.	Range	Resolution	Indicator No.	Mass g
547-361S	0-10 mm/0-0.4"	0,01 mm/0.0005"	543-402B (ID-C)	240

Series 547-5XX

Inch/Metric

ANSI/AGD type

No.	Range	Resolution	Indicator No.	Mass g
547-561*	0-12 mm/0-0.47"	0,01 mm/0.0005"	543-683B (ID-S)	240

Functions	Series 547
ZERO/ABS	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Simplified calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	±20 µm
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 1,5 N
Contact point	Carbide ball M 2,5 x 0,45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
06ADV380F	Data cable 2 m USB
02AZD790F	Data cable U-Wave

Consumable spares

No.	Description
21AZB149	Lifting lever
938882	Battery SR44
Series 547-5XX	
903386	Lifting lever

Functions	Series 547-5XX
ORIGIN	●
Counting direction switching	●
Digimatic data output	●
ON/OFF	●

All other characteristics are described above

ABSOLUTE Digimatic Quick Thickness Gauge

Series 547

For measuring film, paper, etc.

- Measuring accuracy unaffected by high plunger speed.



Metric

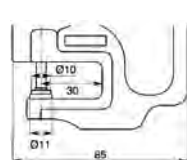
With indicator ID-C No. 543-400B

No.	Range	Resolution	Max. measuring depth	Type	Mass g
547-301	0-10 mm	0,01 mm	30 mm	Ceramic disc contact points	255
547-321	0-10 mm	0,01 mm	120 mm	Ceramic disc contact points and large jaw capacity	425
547-313	0-10 mm	0,01 mm	30 mm	Adjustable anvil	275
547-315	0-10 mm	0,01 mm	30 mm	Knife-edge contact point	270

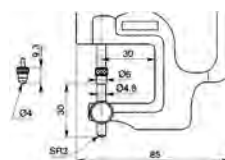
Inch/Metric

ANSI/AGD type with indicator ID-C No. 543-402B

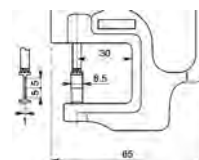
No.	Range	Resolution	Max. measuring depth	Type	Mass g
547-300S	0-10 mm/0-0.4"	0,01 mm/0.0005"	30 mm	Ceramic disc contact points	255
547-320S	0-10 mm/0-0.4"	0,01 mm/0.0005"	120 mm	Ceramic disc contact points and large jaw capacity	400
547-312S	0-10 mm/0-0.4"	0,01 mm/0.0005"	30 mm	Adjustable anvil	275
547-316S*	0-10 mm/0-0.4"	0,01 mm/0.0005"	30 mm	Knife-edge contact point	270



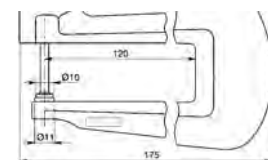
547-301



547-313



547-315



547-321

Series 547-5XX

Inch/Metric

ANSI/AGD type with indicator ID-S No. 543-683B

No.	Range	Resolution	Max. measuring depth	Type	Mass g
547-500*	0-12 mm/0-0.47"	0,01 mm/0.0005"	30 mm	Ceramic disc contact points	225
547-520*	0-12 mm/0-0.47"	0,01 mm/0.0005"	120 mm	Ceramic disc contact points and large jaw capacity	395
547-512*	0-12 mm/0-0.47"	0,01 mm/0.0005"	30 mm	Adjustable anvil	245
547-516*	0-12 mm/0-0.47"	0,01 mm/0.0005"	30 mm	Knife-edge contact point	240

Functions	Series 547
ZERO/ABS	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Simplified calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	±20 µm
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 1,5 N
Contact point	Carbide ball M 2,5 x 0,45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
06ADV380F	Data cable 2 m USB
02AZD790F	Data cable U-Wave

Consumable spares

No.	Description
21AZB149	Lifting lever
938882	Battery SR44
Series 547-5XX	
903386	Lifting lever



547-321

Functions	Series 547-5XX
ORIGIN	●
Counting direction switching	●
Digimatic data output	●
ON/OFF	●

All other characteristics are described above

ABSOLUTE Digimatic Quick Thickness Gauge

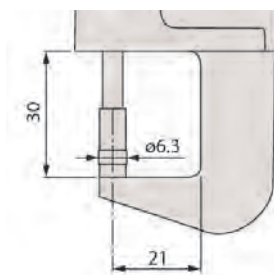
Series 547

For measuring film, paper, etc., with a resolution of 0,001 mm.

- Measuring accuracy unaffected by high plunger speed.



547-401



Metric

No.	Range	Resolution	Indicator No.	Mass g
547-401	0-12 mm	0,01 mm/0,001 mm	543-390B (ID-C)	290

Inch/Metric

ANSI/AGD type

No.	Range	Resolution	Indicator No.	Mass g
547-400S	0-12 mm/0-0.47"	0,01 mm/0,001 mm/0.0005"/0.0001"/0.00005"	543-392B (ID-C)	290

Functions	Series 547
ZERO/ABS	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Simplified calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	±3 µm
Parallelism	≤ 3 µm
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 3,5 N
Contact point	Carbide ball M 2,5 x 0,45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
06ADV380F	Data cable 2 m USB
02AZD790F	Data cable U-Wave

Consumable spares

No.	Description
21AZB149	Lifting lever
938882	Battery SR44

QUICK MINI Thickness Gauge

Series 700

- Quick Mini is an ABSOLUTE Digital quick thickness gauge without data output.



700-119-20

Metric

No.	Range	Accuracy	Mass g
700-119-20	0-12 mm	±0,02 mm	70

Inch/Metric

No.	Range	Accuracy	Mass g
700-118-20	0-12 mm/0-0.5"	±0,02 mm/0.001"	70

Functions	Series 700
ORIGIN	●
ZERO/ABS	●
ON/OFF	●

Specifications

Accuracy	Refer to the list of specifications
Resolution	0,01 mm or 0,01 mm/0.0005"
Repeatability	0,01 mm/0.0005"
Measuring force	2 N
Display	LCD 5 digit with sign (-)
Power supply	Battery SR-44
Delivered	In case

Consumable spares

No.	Description
938882	Battery SR44

Metric Quick Thickness Gauge

Series 7

- Lightweight construction, with mechanical Dial Indicator.

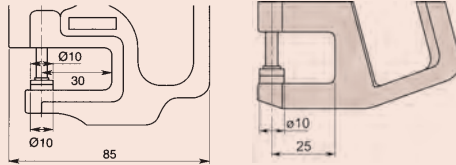
Specifications

Accuracy Refer to the list of specifications
Parallelism $\leq 5 \mu\text{m}$

Consumable spares

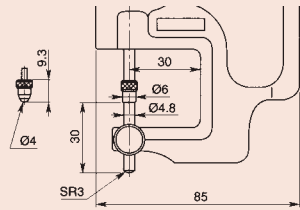
No.	Description
21AZB149	Lifting lever
21AZB150	Lift lever

21AZB149 : for 7301/7327/7321/7313/7315/7360
21AZB150 : for 7305/7323

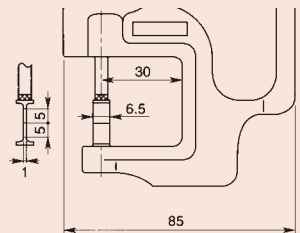


7327 / 7301 / 7305

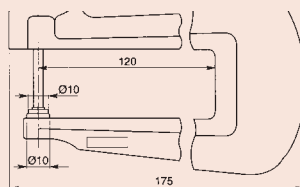
7331S



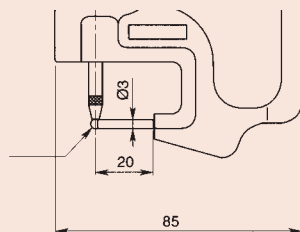
7313



7315



7321 / 7323



7360



7327



7331S



7321

Metric

Ceramic disc contact points

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7327	0-1 mm	0,001 mm	30 mm	$\pm 0,007 \text{ mm}$	$\leq 1,5 \text{ N}$	2109SB-10	230
7301	0-10 mm	0,01 mm	30 mm	$\pm 0,015 \text{ mm}$	$\leq 1,4 \text{ N}$	2046SB	212
7331S	0-10 mm	0,01 mm	25 mm	$\pm 0,02 \text{ mm}$	$\leq 1,4 \text{ N}$		260
7305	0-20 mm	0,01 mm	30 mm	$\pm 0,025 \text{ mm}$	$\leq 2,0 \text{ N}$	2050SB	217

Metric

Large jaw capacity and ceramic disc contact points

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7321	0-10 mm	0,01 mm	120 mm	$\pm 0,015 \text{ mm}$	$\leq 1,4 \text{ N}$	2046SB	371
7323	0-20 mm	0,01 mm	120 mm	$\pm 0,02 \text{ mm}$	$\leq 2,0 \text{ N}$	2050SB	371

Metric

Adjustable anvil

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7313	0-10 mm	0,01 mm	30 mm	$\pm 0,015 \text{ mm}$	$\leq 1,4 \text{ N}$	2046SB	224

Metric

Knife-edge contact point

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7315	0-10 mm	0,01 mm	30 mm	$\pm 0,015 \text{ mm}$	$\leq 1,4 \text{ N}$	2046SB	217

Metric

Tube thicknesses - Minimum inside diameter 3,5 mm

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7360	0-10 mm	0,01 mm	20 mm	$\pm 0,015 \text{ mm}$	$\leq 1,4 \text{ N}$	2046SB	199



7313



7315



7360

Imperial Quick Thickness Gauge

Series 7

- Lightweight construction, with mechanical Dial Indicator.



7304S

Inch Ceramic disc contact points

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7326S*	0-0.05"	0.00005"	1.2"	±0.0002"	≤ 1,4 N	2804SB-10	205
7300S*	0-0.5"	0.001"	1.2"	±0.002"	≤ 1,4 N	2414SB	205
7304S*	0-1"	0.001"	1.2"	±0.0025"	≤ 2,0 N	2416SB	220

Inch Large jaw capacity and ceramic disc contact points

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7322S	0-1"	0.001"	4.72"	±0.002"	≤ 2,0 N	2416SB	355

Inch Adjustable anvil

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7312S*	0-0.5"	0.001"	1.2"	±0.001"	≤ 1,4 N	2414SB	215

Inch Knife-edge contact point

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7316S	0-0.5"	0.001"	1.2"	±0.001"	≤ 1,4 N	2414SB	220

Inch Tube thicknesses - Minimum inside diameter 3,5 mm

No.	Range	Dial reading	Max. measuring depth	Accuracy	Measuring force	Indicator No.	Mass g
7361S*	0-0.5"	0.001"	0.8"	±0.001"	≤ 1,4 N	2414SB	200

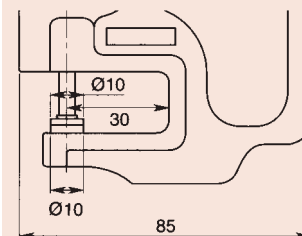
Specifications

Accuracy	Refer to the list of specifications
Parallelism	±0.0005"
	±0.0002" : 7326S

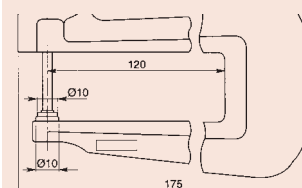
Consumable spares

No.	Description
21AZB149	Lifting lever
21AZB150	Lift lever

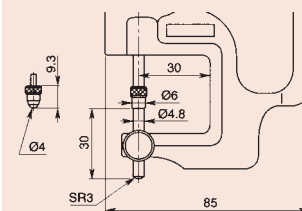
21AZB149 : for 7326S/7300S/7312S/7316S/7361S
21AZB150 : for 7304S/7322S



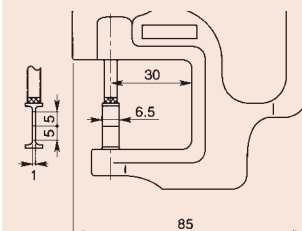
7326S / 7300S / 7304S



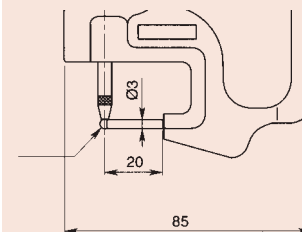
7322S



7312S



7316S



7361S

ABSOLUTE Digimatic Indicator Depth Gauge

ABSOLUTE
Absolute System Released by MITUTOYO

Series 547

- Indicator Depth Gauge equipped with the ABSOLUTE Digimatic Indicator ID-C.
- Hardened, precision ground and micro-lapped reference face on base.
- Fast acting, lever-controlled plunger.
- Measuring accuracy unaffected by high plunger speed.



Functions	Series 547
ZERO/ABS switching	●
PRESET	●
DATA/HOLD	●
Counting direction switching	●
GO/±NG judgement	●
Digimatic data output	●
Simplified calculation	●
ON/OFF	●
Lock function	●

Specifications

Accuracy	Refer to the list of specifications
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 1,5 N
Contact point	Carbide ball
Stroke	12,7 mm or 0.5"
Extensions	Metric 5 pcs : 10, 20, 30, 30, 100 mm Inch/Metric 4 pcs : 0.5, 1, 2, 4"
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery SR-44

Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
21AZB149	Lifting lever
938882	Battery SR44

Metric With indicator No. 543-400

No.	Range	Resolution	Accuracy	Base size	Base flatness	Mass g
547-211	0-200 mm	0,01 mm	±20 μm	63,5 x 16 mm	5 μm	290
547-212*	0-200 mm	0,01 mm	±20 μm	101,6 x 16 mm	5 μm	340

Metric With indicator No. 543-390

No.	Range	Resolution	Accuracy	Base size	Base flatness	Mass g
547-251	0-200 mm	0,001 mm	±5 μm	63,5 x 16 mm	2 μm	290
547-252	0-200 mm	0,001 mm	±5 μm	101,6 x 16 mm	2 μm	340

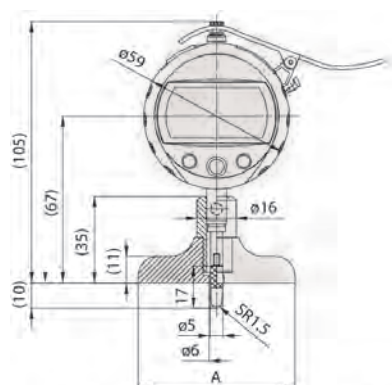
Inch/Metric ANSI/AGD type with indicator No. 543-402

No.	Range	Resolution	Accuracy	Base size	Base flatness	Mass g
547-217S	0-200 mm/0-8"	0,01 mm/0.0005"	±20 μm/0.001"	2.5 x 0.63"	0.0002"	290
547-218S	0-200 mm/0-8"	0,01 mm/0.0005"	±20 μm/0.001"	4 x 0.63"	0.0002"	340

Inch/Metric ANSI/AGD type with indicator No. 543-392

No.	Range	Resolution	Accuracy	Base size	Base flatness	Mass g
547-257S*	0-200 mm/0-8"	0,001 mm/0.00005" (1)	±5 μm/0.0002"	2.5 x 0.63"	0.00008"	290
547-258S	0-200 mm/0-8"	0,001 mm/0.00005" (1)	±5 μm/0.0002"	4 x 0.63"	0.00008"	340

(1) 0,01 mm/0,001 mm/0.0001"/0.0005"/0.00005"



547-211, 547-251, 547-217, 547-257 A = 63.5mm
547-212, 547-252, 547-218, 547-258 A = 101.6mm

Dial Indicator Depth Gauge

Series 7

- Hardened, precision ground and micro-lapped reference face on base.



7211



7214



7231

Metric

With indicator No. 2902SB

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7210	0-10 mm	10 mm	15 µm	1,4 N	40 x 16 mm	Ball R = 0,2 mm	10, 20, 30, 30, 100 mm	205
7211	0-200 mm	10 mm	15 µm	1,4 N	63,5 x 16 mm	Ball R = 1,5 mm	10, 20, 30, 30, 100 mm	300
7212	0-200 mm	10 mm	15 µm	1,4 N	101,6 x 16 mm	Ball R = 1,5 mm	10, 20, 30, 30, 100 mm	350
7220*	0-200 mm	10 mm	15 µm	1,4 N	100 x 18 mm	Ball R = 1,5 mm	10, 20, 30, 30, 100 mm	374

Metric

With indicator No. 2952SB

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7213	0-210 mm	30 mm	30 µm	2,5 N	63,5 x 16 mm	Ball R = 1,5 mm	30, 60, 90 mm	320
7214	0-210 mm	30 mm	30 µm	2,5 N	101,6 x 16 mm	Ball R = 1,5 mm	30, 60, 90 mm	380

Metric

With horizontal indicator No. 1162

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7231	0-200 mm	5 mm	15 µm	1,4 N	63,5 x 16 mm	Ball R = 1,5 mm	10, 20, 30, 30, 100 mm	240

Inch

With indicator No. 2904SB

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7217S	0-8"	1"	30 µm	2,5 N	2.5 x 0.63"	Ball R = 1,5 mm	1, 2, 4"	300
7218S	0-8"	1"	30 µm	2,5 N	4 x 0.63"	Ball R = 1,5 mm	1, 2, 4"	350

Inch

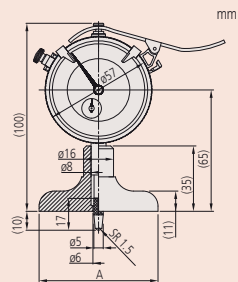
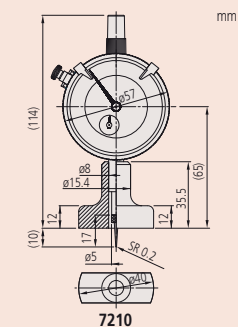
With horizontal indicator No. 1168

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7237*	0-8"	0.2"	15 µm	1,4N	2.5 x 0.63"	Ball R = 1,5 mm	0.5, 1, 2, 4"	240

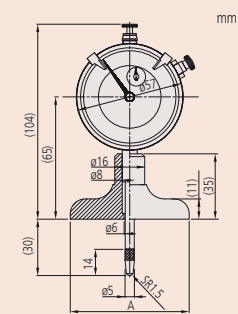
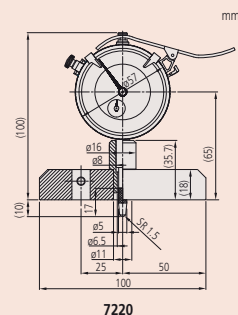
Specifications

Graduation

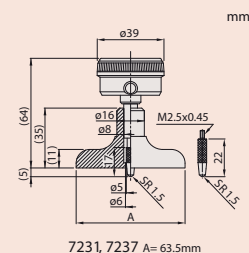
0,01 mm



7211 A= 63.5mm
7212 A= 101.6mm



7213, 7217S A= 63.5mm
7214, 7218S A= 101.6mm



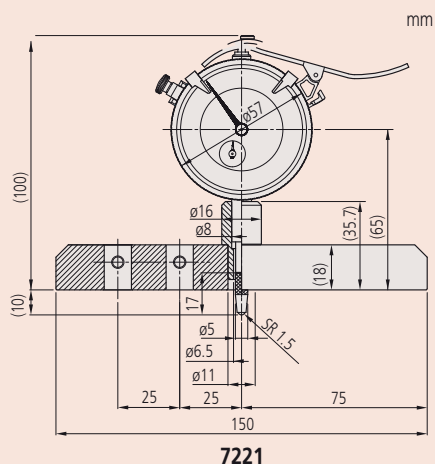
7231, 7237 A= 63.5mm

Specifications

Graduation 0,01 mm



7221



7221

Dial Indicator Depth Gauge

Series 7

- Hardened, precision ground and micro-lapped reference face on base.



7222



7224

Metric

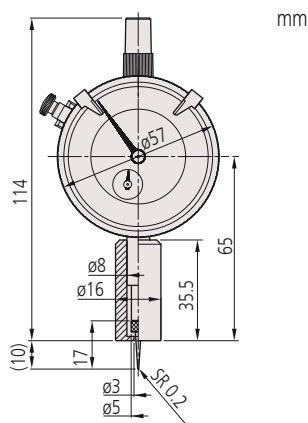
150 mm base with 3 mounting positions for indicator No. 2902SB

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7221	0-200 mm	10 mm	15 µm	1,4 N	150 x 18 mm	Ball R = 1,5 mm	10, 20, 30, 30, 100 mm	820

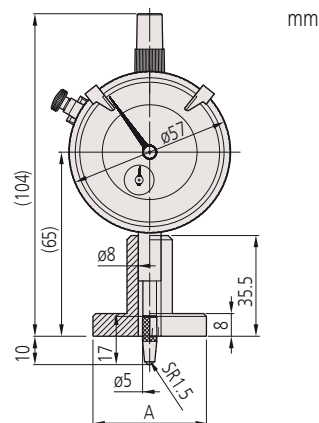
Metric

Circular base with indicator No. 2902SB.

No.	Range	Stroke	Accuracy	Measuring Force	Base size	Probe tip	Extensions	Mass g
7222	0-10 mm	10 mm	15 µm	1,4 N	ø 16 mm	Needle R = 0,2 mm	10, 20, 30, 30, 100 mm	165
7223	0-10 mm	10 mm	15 µm	1,4 N	ø 25 mm	Needle R = 1,5 mm	10, 20, 30, 30, 100 mm	184
7224*	0-10 mm	10 mm	15 µm	1,4 N	ø 40 mm	Needle R = 1,5 mm	10, 20, 30, 30, 100 mm	234



7222



7223 A= ø25mm
7224 A= ø40mm

Dial Caliper Gauge for Inside Measurement

Series 209

- Ideal for comparative internal measurements.
- Adjusted using a micrometer or a setting ring.
- Spring loaded for practically constant measuring force throughout measuring range.



209-125

Metric

Measuring contacts : Bevel (radius 0,2 mm) - Graduation 0,01 mm

No.	Range	Accuracy	Scale	L mm	A mm	B mm	C mm	øD mm	E mm	F mm	Mass g
209-155*	5-15 mm	±30 µm	0-100	26	2.2	2.2	1.2	55	4.7	2.3	85
209-156	10-20 mm	±30 µm	0-100	28	5.5	5.5	1.5	55	4.7	2.3	85
209-175*	10-30 mm	±40 µm	0-100-100	61	5.5	5.5	2.3	55	4.7	2.3	95
209-176*	20-40 mm	±40 µm	0-100-100	61	10	10	2.3	55	4.7	2.3	95

Metric

Measuring contacts : Ball ø1,6 mm - Graduation 0,01 mm

No.	Range	Accuracy	Scale	L mm	A mm	B mm	C mm	øD mm	E mm	Mass g
209-125	6-18 mm	±40 µm	0-100-100	40	1.1	1.1	2.3	50	2.4	75
209-126	10-22 mm	±40 µm	0-100-100	40	2.7	2.3	2.3	50	2.4	75
209-127*	20-32 mm	±40 µm	0-100-100	40	4.4	8	2.3	50	2.4	75

Metric

Measuring contacts : Ball ø1,6 mm - Graduation 0,025 mm

No.	Range	Accuracy	Scale	A mm	B mm	Mass g
209-106	10-35 mm	±75 µm	0-500	2.6	2.6	85
209-107	30-55 mm	±75 µm	0-500	8.5	7.5	85
209-108	50-75 mm	±75 µm	0-500	8.5	7.5	85

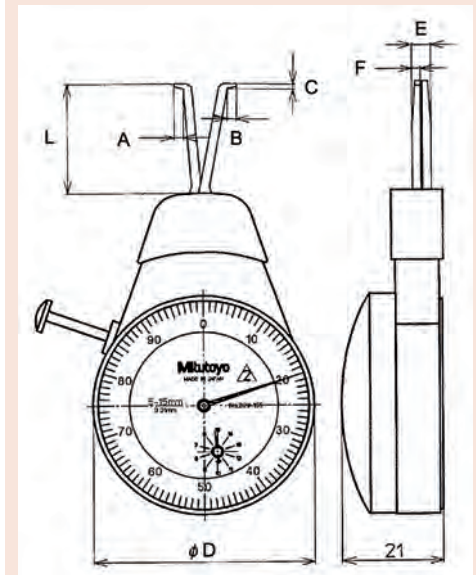
Inch

Measuring contacts : Ball ø1,6 mm - Graduation 0.001"

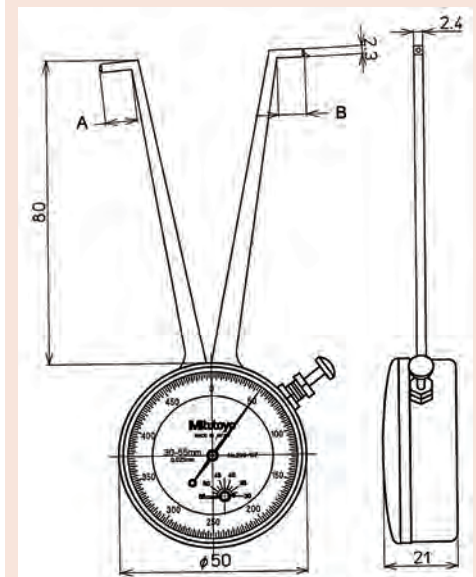
No.	Range	Accuracy	Scale	A mm	B mm	Mass g
209-116	0.4-1.4"	±0.003"	0-100	2.6	2.6	85
209-117	1.2-2.2"	±0.003"	0-100	8.5	7.5	85
209-118	2.0-3.0"	±0.003"	0-100	8.5	7.5	85

Specifications

Accuracy Refer to the list of specifications
Measuring force ≤ 2,0 N



Graduation 0,01 mm



Graduation 0,025 mm or 0.001"

Metric Dial Caliper Gauge for Inside Measurement

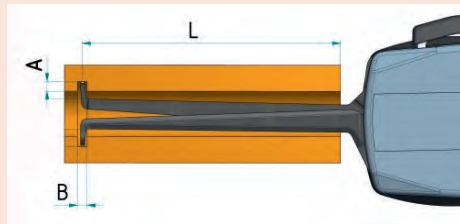
Series 209



209-300



209-305



209-896

Measuring contacts : Carbide bevel (radius 0,1 mm)

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-300	2,5-12,5	0,005	0,015	0,8/1,2	35	0.7	0.4	fig. 1	155

Measuring contacts : Carbide ball $\phi 0,6$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-301	5-15	0,005	0,015	0,8/1,2	35	2.3	0.8	fig. 4	160

Measuring contacts : Carbide ball $\phi 1,0$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-302	10-30	0,01	0,03	1,1/1,6	85	5.2	1.2	fig. 4	180
209-303	20-40	0,01	0,03	1,1/1,6	85	7	1.2	fig. 2	180
209-304	30-50	0,01	0,03	1,1/1,6	85	7	1.2	fig. 2	185
209-305	40-60	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 3	195
209-306	50-70	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 3	195
209-307	60-80	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 3	200
209-308*	70-90	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 3	200
209-309*	80-100	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 3	200

Measuring contacts : Interchangeable, carbide ball $\phi 1,0$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-310	50-100	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 5	220
209-311	90-140	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 5	230
209-312	130-180	0,01	0,03	1,1/1,6	85	8.3	1.2	fig. 5	230

Measuring contacts : Carbide ball $\phi 1,5$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-896	15-65	0,05	0,05	1,2/2,0	175	4.5	2.5	fig. 4	400

Measuring contacts : Carbide ball $\phi 2,0$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-897	40-90	0,05	0,05	1,2/2,0	175	8	2.5	fig. 3	440
209-898	70-120	0,05	0,05	1,2/2,0	175	8	3.3	fig. 3	440

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum groove depth ⁽³⁾ Minimum groove width



Figure 1

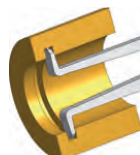


Figure 2

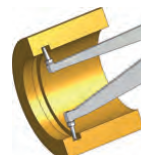


Figure 3

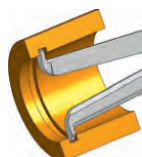


Figure 4



Figure 5

Digimatic Caliper Gauge for Inside Measurement

Series 209

IP 63

209-505 up to 209-517

IP 67

209-550 up to 209-558



209-516

Measuring contacts : Carbide bevel (radius 0,1 mm)

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-550	2,5-12,5	0,005	0,015	0,8-1,2	35	0.7	0.4	fig. 1	225

Measuring contacts : Carbide ball ø0,6 mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-551	5-15	0,005	0,015	0,8-1,2	35	2.3	0.8	fig. 4	230

Measuring contacts : Carbide ball ø1,0 mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-552	10-30	0,01	0,03	1,1-1,6	85	5.2	1.2	fig. 4	250
209-553	20-40	0,01	0,03	1,1-1,6	85	7	1.2	fig. 2	250
209-554	30-50	0,01	0,03	1,1-1,6	85	7	1.2	fig. 2	255
209-555	40-60	0,01	0,03	1,1-1,6	85	8.3	1.2	fig. 3	265
209-556	50-70	0,01	0,03	1,1-1,6	85	8.3	1.2	fig. 3	265
209-557	60-80	0,01	0,03	1,1-1,6	85	8.3	1.2	fig. 3	270
209-558	70-90	0,01	0,03	1,1-1,6	85	8.3	1.2	fig. 3	270

Measuring contacts : Carbide ball ø1,5 mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-505	15-55	0,02	0,04	1,2-1,7	114	4.5	2.5	fig. 4	360
209-516	15-75	0,02	0,06	1,0-1,2	175	6	1.8	fig. 4	440

Measuring contacts : Carbide ball ø2,0 mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	A ⁽²⁾ mm	B ⁽³⁾ mm	Type	Mass g
209-511	35-75	0,02	0,04	1,3-1,8	114	8	3	fig. 3	380
209-513	55-95	0,02	0,04	1,3-1,8	114	8	3	fig. 3	380
209-514*	75-115	0,02	0,04	1,3-1,8	114	8	3.3	fig. 3	380
209-515	95-135	0,02	0,04	1,3-1,8	114	8	3.3	fig. 3	380
209-517	40-100	0,02	0,06	1,0-1,2	190	8.5	2.6	fig. 3	440

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum groove depth ⁽³⁾ Minimum groove width

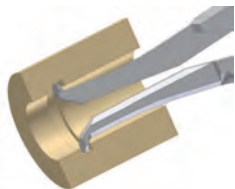


Figure 1

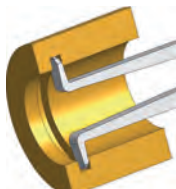


Figure 2

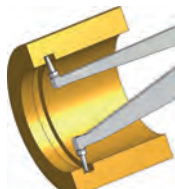


Figure 3

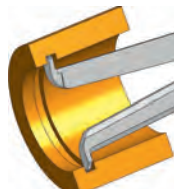


Figure 4

Functions	Series 209
Mode key	●
SET key	●
DATA key	●
ON/OFF/0-Preset	●
Tolerance LED (green/red)	●
Counting direction switching	●
Max. reading	●
Min. reading	●
ABS/INC switchable	●
HOLD function	●
Tolerance input and monitoring	●
Data output	●

Specifications

Power supply 209-505 up to 209-517 : 1 battery AA
209-550 up to 209-558 : 2 batteries AAA

Optional accessories

No.	Description
For 209-505 up to 209-517	
011449	Holder for stand
21JAA299D	USB cable
21JAA300D	Digimatic Signal cable with interface
For 209-550 up to 209-558	
011518	Digimatic Signal cable
011530	Holder for stand
011531	USB cable

Consumable spares

No.	Description
011037	4 batteries LR-6 (AA)



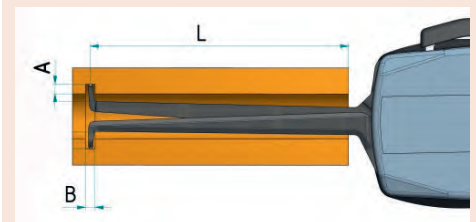
011449



011530



209-550



Metric Dial Caliper Gauge for Outside Measurement

Series 209



Optional accessories

No.	Description
011530	Holder for stand

Except 209-602, 209-603, 209-604, 209-843



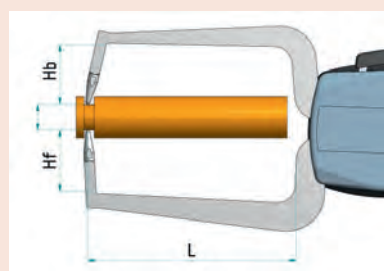
209-402



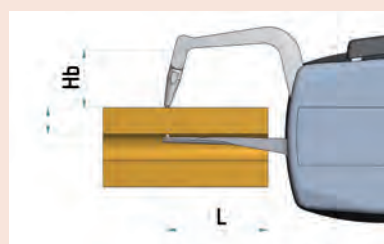
209-405



209-406



Figures 1/2/6/7



Figures 3/4/5/8

Measuring contacts : Carbide bevel

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Contact radii mm	Mass g
209-405	0-20	0,01	0,03	1,1/1,6	81	24.7	24.6	fig. 1	0,40/0,40	210

Measuring contacts : Carbide ball / carbide bevel

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Contact radii mm	Mass g
209-401	0-10	0,005	0,015	0,8/1,2	35	18.8	0.9	fig. 8	0,75/0,75	165
209-406	0-20	0,01	0,03	1,1/1,6	80	24.7	2.5	fig. 3	0,40/0,75	200

Measuring contacts : Carbide ball $\phi 1,5/2$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Contact radii mm	Mass g
209-402	0-10	0,005	0,015	0,8/1,2	35	19.1	18.6	fig. 2	0,75/0,75	170
209-404	0-20	0,01	0,03	1,1/1,6	85	24.7	24.6	fig. 2	0,75/0,75	210
209-407	0-20	0,01	0,03	1,1/1,6	85	24.7	25	fig. 4	0,75/0,75	200
209-602	0-50	0,05	0,05	1,2/1,8	170	31	35	fig. 2	1,00/1,00	560

Measuring contacts : Carbide ball $\phi 2$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-843	0-10	0,1	0,1	0,3/1,3	36	5	5	fig. 7	40
209-604	0-50	0,05	0,05	1,2/1,8	170	31	35	fig. 4	520

Measuring contacts : Disc measuring faces $\phi 10$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-403*	0-10	0,005	0,02	0,8/1,2	36	21.7	14.8	fig. 6	175

Measuring contacts : Ball $\phi 2$ mm/radius 0,5 mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Contact radii mm	Mass g
209-603	0-10	0,1	0,1	0,3/1,3	36	5	0.8	fig. 5	1,00/0,50	40

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum penetration depth of upper contact
⁽³⁾ Maximum penetration depth of lower contact



Figure 1



Figure 2

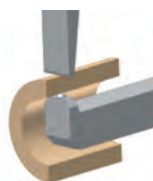


Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8

Digimatic Caliper Gauge for Outside Measurement

Series 209

IP 63

209-531 up to 209-533

IP 67

209-570 up to 209-573



209-572



209-531

Measuring contacts : Carbide ball $\phi 1,5$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-570	0-10	0,005	0,015	0,8/1,2	35	19.1	18.6	fig. 1	240
209-572	0-20	0,01	0,03	1,1/1,6	85	24.7	24.6	fig. 1	280
209-573	0-20	0,01	0,03	1,1/1,6	80	24.7	2.5	fig. 2	270

Measuring contacts : Carbide ball $\phi 3,0$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-531	0-40	0,02	0,04	1/1,5	115	24.9	25.4	fig. 1	380
209-532	0-40	0,02	0,04	1/1,5	100	22	1	fig. 2	380

Measuring contacts : Disc measuring faces $\phi 10$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-571	0-10	0,005	0,02	0,8/1,2	35	21.7	14.8	fig. 3	245

Measuring contacts : Disc measuring faces $\phi 50$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-533	0-40	0,02	0,04	1/1,5	115	30	19.4	fig. 4	380

⁽¹⁾ Maximum reach of contact arms over workpiece

⁽²⁾ Maximum penetration depth of upper contact

⁽³⁾ Maximum penetration depth of lower contact



Figure 1



Figure 2



Figure 3

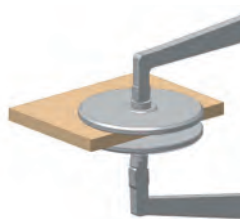


Figure 4

Functions	Series 209
Mode key	●
SET key	●
DATA key	●
ON/OFF/0-Preset	●
Tolerance LED (green/red)	●
Counting direction switching	●
Max. reading	●
Min. reading	●
ABS/INC switchable	●
HOLD function	●
Tolerance input and monitoring	●
Data output	●

Specifications

Power supply 209-531 up to -533 : 1 battery AA
209-570 up to -573 : 2 batteries AAA

Optional accessories

No.	Description
For 209-531 up to 209-533	
011449	Holder for stand
21JAA299D	USB cable
21JAA300D	Digimatic Signal cable with interface
For 209-570 up to 209-573	
011518	Digimatic Signal cable
011530	Holder for stand
011531	USB cable

Consumable spares

No.	Description
011037	4 batteries LR-6 (AA)



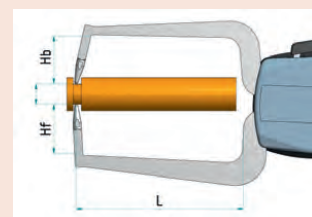
011449



011530



Dial caliper gauge with optional stand
No. 7001-10 and holder No. 011449



Digimatic Caliper Gauge for Outside Measurement

Series 209



209-534

Functions	Series 209
Mode key	●
SET key	●
DATA key	●
ON/OFF/0-Preset	●
Tolerance LED (green/red)	●
Counting direction switching	●
Max. reading	●
Min. reading	●
ABS/INC switchable	●
HOLD function	●
Tolerance input and monitoring	●
Data output	●

Specifications

Power supply 1 battery AA

Optional accessories

No.	Description
011449	Holder for stand
21JAA299D	USB cable
21JAA300D	Digimatic Signal cable with interface

Consumable spares

No.	Description
011037	4 batteries LR-6 (AA)



Digimatic caliper gauge with optional stand No. 7001-10 and holder No. 011449

Measuring contacts : Carbide ball $\phi 5$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-535	0-60	0,02	0,06	0,9/1,2	150	25	3.9	fig. 2	470
209-534	0-60	0,02	0,06	0,9/1,2	190	25	25	fig. 1	470

Measuring contacts : Disc measuring faces $\phi 50$ mm

No.	Range mm	Graduation mm	Accuracy mm	Loading N	L ⁽¹⁾ mm	Hb ⁽²⁾ mm	Hf ⁽³⁾ mm	Type	Mass g
209-536	0-60	0,02	0,08	0,6/1	190	27	19.5	fig. 3	470

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum penetration depth of upper contact
⁽³⁾ Maximum penetration depth of lower contact



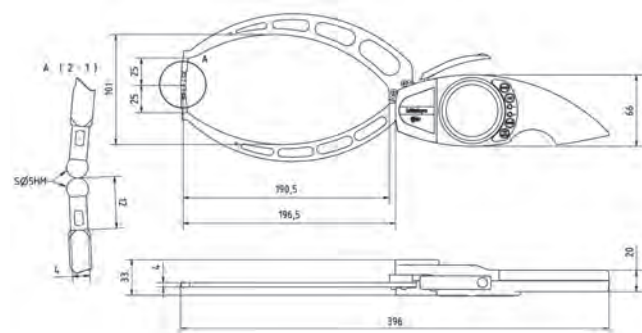
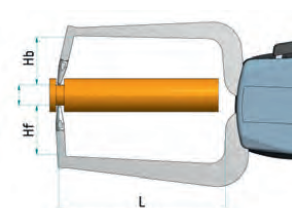
Figure 1



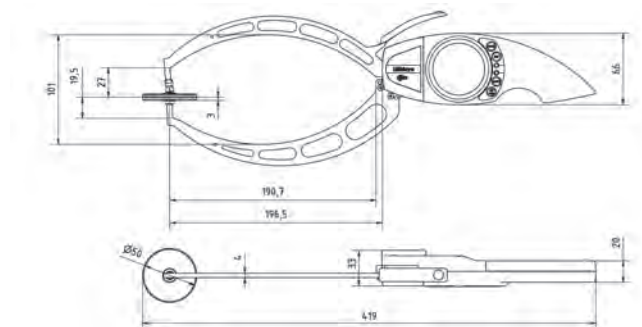
Figure 2



Figure 3



209-534



209-536

Imperial Dial Caliper Gauge for Inside Measurement

Series 209



209-732

Measuring contacts : Carbide bevel (radius 0.004")

No.	Range inch	Graduation inch	Accuracy inch	L ⁽¹⁾ inch	A ⁽²⁾ inch	B ⁽³⁾ inch	Type
209-730*	0.1-0.3	0.0002	±0.0008	0.39	0.025	0.024	Fig. 1
209-732*	0.2-0.6	0.0005	±0.001	1.18	0.066	0.043	Fig. 1

Measuring contacts : Carbide ball ø0.0236"

No.	Range inch	Graduation inch	Accuracy inch	L ⁽¹⁾ inch	A ⁽²⁾ inch	B ⁽³⁾ inch	Type
209-731*	0.2-0.4	0.0002	±0.0006	0.87	0.085	0.055	Fig. 2

Measuring contacts : Carbide ball ø0.0394"

No.	Range inch	Graduation inch	Accuracy inch	L ⁽¹⁾ inch	A ⁽²⁾ inch	B ⁽³⁾ inch	Type
209-733*	0.4-0.8	0.0005	±0.001	1.98	0.157	0.078	Fig. 2
209-172	0.4-1.4	0.0005	±0.0015	3.1	0.2	0.007	Fig. 2

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum groove depth
⁽³⁾ Minimum groove width

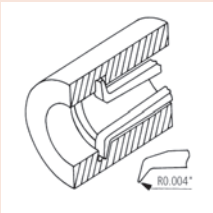
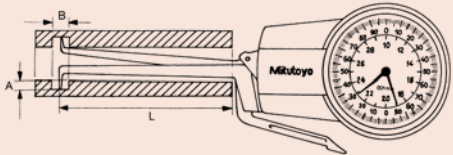


Figure 1

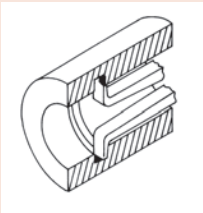


Figure 2

Imperial Dial Caliper Gauge for Outside Measurement

Series 209



209-791

Measuring contacts : Carbide ball ø0.059"

No.	Range inch	Graduation inch	Accuracy inch	L ⁽¹⁾ inch	A ⁽²⁾ inch	B ⁽³⁾ inch	Type
209-791*	0-0.2	0.0002	±0.0015	1.1	0.47	0.2	Fig. 1

Measuring contacts : Carbide ball ø2.0 mm

No.	Range inch	Graduation inch	Accuracy inch	L ⁽¹⁾ inch	A ⁽²⁾ inch	B ⁽³⁾ inch	Type
209-782*	0-2.0	0.001	±0.002	6.7	0.4	0.18	Fig. 2

⁽¹⁾ Maximum reach of contact arms over workpiece ⁽²⁾ Maximum groove depth
⁽³⁾ Minimum groove width

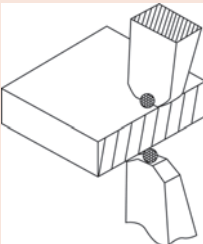
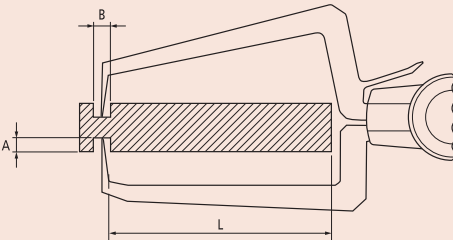


Figure 1

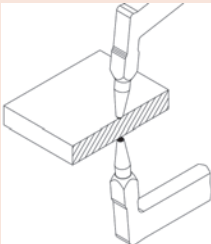
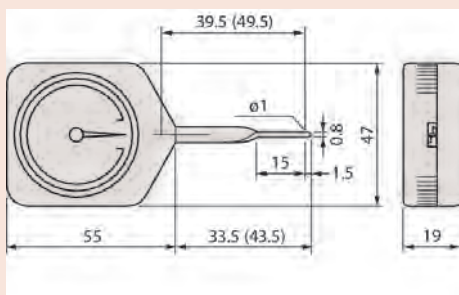
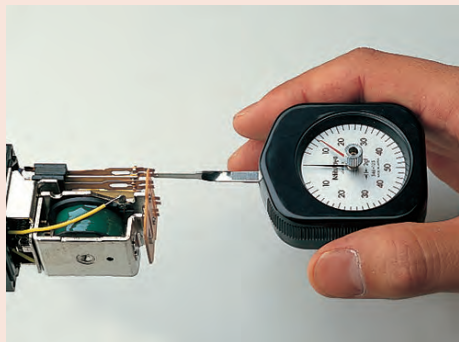


Figure 2

Specifications

Accuracy	1/2 graduation
Mass	56 g



Dimensions in brackets refer to No. 546-112, 546-113, 546-133



310-132
with optional dial indicator

Spring Balance

Series 546

- For setting micro switches, relay springs and valves, for testing the measuring force of dial indicators and for adjusting tension and compression springs.
- Divided dial plate for measurement in both directions.

Standard

No.	Range	Graduation
546-112	6-50 mN	2 mN
546-113	10-100 mN	5 mN
546-114	30-300 mN	10 mN
546-115	0,06-0,5 N	0,02 N
546-116*	0,1-1 N	0,05 N
546-117	0,15-1,5 N	0,05 N
546-118	0,3-3 N	0,1 N
546-119	0,6-5 N	0,2 N

Peak hold

No.	Range	Graduation
546-133	10-100 mN	5 mN
546-134	30-300 mN	10 mN
546-135	0,06-0,5 N	0,02 N
546-136	0,1-1 N	0,05 N
546-137	0,15-1,5 N	0,05 N
546-138	0,3-3 N	0,1 N
546-139	0,6-5 N	0,2 N



546-112



546-137

Roll Caliper

Series 310

- The Roll Caliper is the most widely used instrument for checking the diameter of rollers used in the manufacture of many products such as metal, rubber and paper.
- Performs fast and accurate comparison measurements of roller diameter with the roller still mounted on a machine tool.
- Various types of detector (dial indicator, Digimatic indicator, electronic gauge head, etc.) can be attached according to the required accuracy and workpiece size.

Metric

No.	Range
310-135*	ø 100-450 mm
310-134	ø 200-600 mm
310-133*	ø 275-825 mm
310-132*	ø 400-1050 mm
310-131*	ø 500-1400 mm

Inch

No.	Range
310-145*	ø 4-17"
310-144*	ø 8-24"
310-143*	ø 11-32"
310-142*	ø 16-42"
310-141*	ø 20-56"

Coating Thickness Gauge DIGI-DERM

Series 179

- For non-destructive thickness measurement of non-magnetic coatings on magnetic substrates, or non-conductive coatings on non-magnetic substrates.
- Accurate measuring results thanks to interference-free operation with precise assessment using sensor-integrated, digital signal processing.
- Interchangeable sensors with measuring ranges up to 15 mm (DIGI-DERM 740) for maximum breadth of use.
- Highly accurate characteristic curves thanks to up to 50 calibration points taken during manufacture.
- Large illuminated graphics display for easy reading; the presentation can be rotated by 180°.



No.	Model	Sensor type	Measurement value memory	Number of storable measurement values
179-720F5	DIGI-DERM 720	internal, fixed	10	max. 10 000
179-720FN5	DIGI-DERM 720	internal, fixed	10	max. 10 000
179-606-740	DIGI-DERM 740	external interchangeable	100	max. 100 000

Sensors for DIGI-DERM 720 (standard)

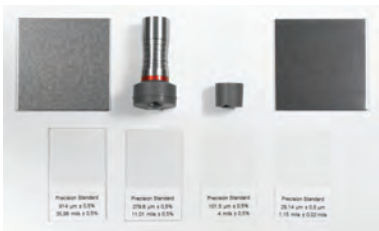
No.	Sensor type	Measuring range	Measuring method
179-720F5 sensor	F 5	0... 5 mm	magnetic-inductive
179-720FN5 sensor	FN 5	F 0... 5 mm N 0... 2,5 mm	magnetic-inductive and eddy current

Sensors for DIGI-DERM 740 (optional)

No.	Sensor type	Measuring range	Measuring method
011507	F 1.5	0... 1,5 mm	magnetic-inductive
011508*	F 5	0... 5 mm	magnetic-inductive
011509*	FN 1.5	F 0... 1,5 mm N 0... 0,7 mm	magnetic-inductive and eddy current
011510	N 07	0... 0,7 mm	eddy current



011508



011509

Specifications

Scale units	µm, mm, cm
Standards	DIN EN ISO 1461, 2064, 2178, 2360, 2808, 3882, 19840 ASTM B244, B499, D7091, E376 AS 3894, 3, SS 1841 60, SSPC-PA 2
Statistics functions	Number of measurement values, minimum, maximum, average, standard deviation, variation coefficient, block statistics
Calibration modes	Factory calibration, zero point, 2-point or 3-point calibration, freely adjustable offset
Limit gauging	Optical and acoustic signal when measurement is outside limits
Power supply	2 batteries AA
Dimensions	157 x 75,5 x 49 mm
Mass	175 g
Standard accessory	Carrying bag

Material	Coatings	Sensor type		
		F	N	FN
Iron and steel : including alloyed and ferromagnetic steel	Insulating coatings : Varnish, enamel, plastic	●	-	●
	Non-ferrous metal coating : Chromium, copper, zinc, tin	●	-	●
Non ferrous metal : Aluminium, copper, zinc, austenitic steel	Insulating coatings : Varnish, enamel, plastic	-	●	●
	Non-ferrous metal coating : Chromium, copper, zinc, tin	-	-	-

Sensors for DIGI-DERM 720 (standard)

- Standard sensor for general applications
- Accuracy according to DIN 55 350 Part 13 : $\pm(1,5 \mu\text{m}+0,75\%$ of measurement value)
- Repeatability : $\pm(0,8 \mu\text{m}+0,5\%$ of measurement value)
- Smallest target surface : $\varnothing 10 \text{ mm}$

Sensors for DIGI-DERM 740 (optional)

- Applications : small parts, thin coatings
- Accuracy according to DIN 55 350 Part 13 : $\pm(1 \mu\text{m}+0,75\%$ of measurement value)
- Repeatability : $\pm(0,5 \mu\text{m}+0,5\%$ of measurement value)
- Smallest target surface : $\varnothing 5 \text{ mm}$

Coating Thickness Gauge MINI-DERM

Series 179

- For non-destructive thickness measurement of non-magnetic coatings, e.g. galvanic coatings (layers of zinc, copper, chromium, cadmium) and paints, enamels, plastics, etc., on iron and steel substrates.



179-504

No.	Applications	Measuring range	Accuracy ⁽¹⁾	Smallest target surface	Min. bend radius on the test piece
179-503	galvanic coatings on steel and iron	0... 100 µm	1 µm (0... 20µm) 5% (20...100 µm)	ø 20 mm	5 mm convex 40 mm concave
179-504	paint, lacquer on steel and iron	0... 1000 µm	5 µm (0... 100 µm) 5% (100... 1000 µm)	ø 30 mm	8 mm convex 40 mm concave

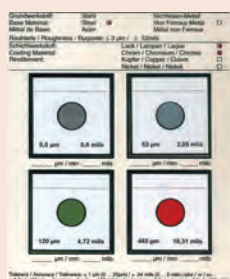
⁽¹⁾ % of measurement value

Specifications

Min. thickness of substrate testable	0,4 mm
Dimensions	220 x 120 x 50 mm
Mass	660 g

Optional accessories

No.	Description
011029	Leather pouch for carrying on the belt
179-551	Coating thickness standard 0-50 µm Nominal dimensions ≈ 0, 10, 20, 40 µm in each case chrome on steel
179-552	Coating thickness standard 0-400 µm Nominal dimensions ≈ 0, 40, 120, 400 µm 40 µm chrome on steel 120 µm paint on steel 400 µm paint on steel
527599	Coating thickness 25 µm
527600	Coating thickness 50 µm
527601	Coating thickness 100 µm
527602	Coating thickness 250 µm
527603	Coating thickness 500 µm
527604	Coating thickness 1000 µm
527605	Coating thickness 2000 µm



179-552

Wet-film Thickness Gauge

- For measuring freshly applied, still-wet coatings.



No.
011030