

New Products

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Digimatic Indicator

Refer to pages F-3 to F-18 for details.

Standard type Dial Indicator (0.01mm Graduation)

Refer to pages F-21 to F-22 for details.

Standard type Dial Indicator (0.001mm Graduation)

Refer to pages F-23 to F-24 for details.

Dial Test Indicator

Refer to pages F-61 to F-70 for details.



F

Small Tool Instruments Digimatic Indicators Dial Indicators/ Dial Test Indicators

Digimatic Indicators



Dial Indicators



Dial Test Indicators



Dial Indicator Applications and Stands



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An inspection certificate is supplied as standard. Refer to page IX for details.

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Solar-Powered Digimatic Indicator ID-SS SERIES 543

- Solar powered
An environmentally friendly measuring instrument that does not require batteries, eliminating the hassle and cost of battery replacement. Can operate under minimum light conditions of 40 lux—lower than the level in a warehouse.
- Built-in recharger
The large-capacity built-in reservoir capacitor allows you to use the indicator for long periods of time under light conditions below the minimum level.*
- User-friendly buttons
All functions can be accessed by using the two or three large buttons on the front of the indicator.
- Origin recorded even if display disappears.
The indicator includes an ABS (absolute) sensor that allows the previously set origin to be restored even if the display disappears due

to insufficient light, making it easy to resume measurement. This feature makes ID-SS ideal for long-time or multi-point measurement.



543-500

Specifications

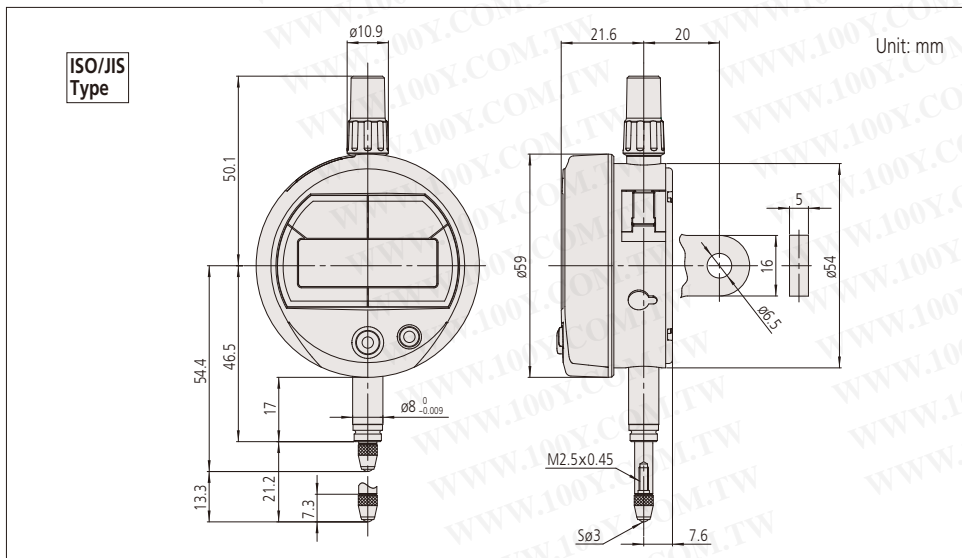
Metric						
Order No.	Resolution	Range	Overall*	Hysteresis*	Repeatability*	Remarks
543-501	0.001mm	12.7mm	0.003mm	0.002mm	0.002mm	With lug
543-500B	0.001mm	12.7mm	0.003mm	0.002mm	0.002mm	Flat
543-505	0.01mm	12.7mm	0.02mm	0.02mm	0.01mm	With lug
543-505B	0.01mm	12.7mm	0.02mm	0.02mm	0.01mm	Flat

Inch/Metric						
Order No.	Resolution	Range	Overall*	Hysteresis*	Repeatability*	Remarks
543-501	.00005"/0.001mm	.5"	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug
543-501B	.00005"/0.001mm	.5"	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	Flat
543-502	.00005"/0.001mm	.5"	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug
543-502B	.00005"/0.001mm	.5"	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	Flat
543-506	.0005/0.01mm	.5"	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	With lug
543-506B	.0005/0.01mm	.5"	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	Flat
543-507	.0005/0.01mm	.5"	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	With lug
543-507B	.0005/0.01mm	.5"	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	Flat

* Quantizing error of ±1 count is excluded.

ISO/JIS type ANSI/AGD type

Dimensions



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

Technical Data

Display: 6-digit LCD and sign
Scale type: ABSOLUTE electrostatic linear encoder
Measuring force: 1.5 N or less
Usable positions: All
Power supply: Solar battery (for indoor use)
Minimum Operating light: 40 lux
Note: A built-in reservoir capacitor allows a fully charged ID-SS to be used for about 3.5 hours under light conditions below the minimum level.
The charging time differs depending on the environment, but it usually takes about 1.5 hours for a fully discharged ID-SS to fully recharge under light conditions of 500 lux.
Maximum response speed: No limit (scan-type measurement is not supported)
Stem dia: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Standard contact point: 901312 (ISO/JIS type) 21BZ8005 (ANSI/AGD type)

Functions

Origin set (zero-set)
Count direction switching
inch/mm conversion (inch/mm models)
Data output
Alarm: Counting value composition error
Insufficient illumination intensity or change

Optional accessories



Optional Accessories

- 21EZA198: Spindle lifting lever (ISO/JIS type)
- 21EZA199: Spindle lifting lever (ANSI/AGD type)
- 21EJA105: Spindle lifting knob (ISO/JIS type)
- 21EJA150: Spindle lifting knob (ANSI/AGD type)
- 540774: Spindle lifting cable
- SPC Cable:
 - 1m (905338)
 - 2m (905409)
- USB Input Tool Direct (2m) : 06ADV380F
- Connecting Cables for U-WAVE-T:
 - 160mm (02AZD790F)
 For footswitch (02AZE140F)
Refer to page A-15 for details.
- Digimatic Mini-Processor DP-1VR: 264-504
- Contact points for Mitutoyo's dial indicators (Refer to pages F-46 to F-49 for details.)
Interchangeable backs for 2 series (Refer to page F-50 for details.)
- Measuring stands
Specifications are subject to change without notice.
- ID-SS can be used in standard work environments.
The following is excerpted from JIS Z9110:2010 General rules of recommended lighting levels; 5.4 Factories:

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



An inspection certificate is supplied as standard. Refer to page IX for details.

Technical Data

Display: 6-digit LCD and sign
 Scale type: ABSOLUTE electrostatic linear encoder
 Usable orientation: All
 Power supply: SR44, part No. **938882** for initial operational checks (standard accessory)
 Maximum response speed: No limit (scan-type measurement is not supported)
 Operating temperature range: 0 to 40°C
 Storage temperature range: -10 to 60°C
 Contact point: Spherical tip SR = 1.5 mm (carbide tipped) part No. **901312** (for ISO/JIS/DIN Type), part No. **21BZ8005** (for ASME/ANSI/AGD Type)

Functions

Origin set (zero-set) : The display can be zeroed at any chosen position.
 Direction switching : The measuring direction can be switched.
 in/mm reading (inch/mm models only)
 Measurement data output: These indicators have a measurement data output socket, which makes it possible to output measurement to the DP-1VR mini processor or to a PC through an input tool. Furthermore, the U-WAVE measurement data wireless communication system can be used to wirelessly input measurement data to a PC.
 Error warning

Optional accessories

- **Lifting**
 - Lifting lever **No.21EZA198** (ISO/JIS/DIN Type), **No.21EZA199** (ASME/ANSI/ AGD Type)
 - Lifting knob **No.21EZA105** (ISO/JIS/DIN Type), **No.21EZA150** (ASME/ANSI/ AGD Type)
 - Lifting cable (**No. 540774**)
- **SPC connecting cables** 1m (**No. 905338**) 2m (**No. 905409**)
- **Data processing products**
- **Contact points for Mitutoyo dial indicators**
- **Backs for Mitutoyo standard (2 series) dial indicators**
- **Stands**

IP53 dust/water protection level

Level 5: Dust protection

While complete protection against invasion of dust is not provided, protection is adequate to prevent dust amounts that would inhibit the prescribed operations and safety of the electronic equipment.

Level 3: Protection against spraying water

The product suffers no harmful effects when subjected to water sprayed at an angle of up to 60 degrees on both sides.

For details on the dust/water protection level test conditions, please refer to IEC 60529:2001 and JIS C 0920:2003.

IP code is the degree of protection against solid foreign objects and water.

Mitutoyo offers a lineup of coolant proof, ID-N/B indicators that have excellent resistance to oil, water and dust and so are suitable for use in environments that include splashing cutting fluid.

ABSOLUTE Digimatic Indicator ID-SX SERIES 543

- **Cost-effective oriented design**
 ID-SX indicators use a button-type battery (SR44) and come with the minimum of functionality for ease of use. There is a choice of models in the lineup allowing selection of 0.01 mm, 0.001 mm or inch-based measurement resolutions.
- **IP53 dust/water protection level**
 The models listed below also provide IP53 dust/water protection level specifications: **543-794/94B/95/95B/96/96B**
- **ABS (absolute) sensor**
 These Digimatic indicators employ Mitutoyo's proprietary ABS (absolute) sensor, which makes it possible to restore the origin point even if the power is turned off. This eliminates the need to perform origin restoration each time the power is turned on. Furthermore, this sensor ensures that overspeed errors do not occur, which improves reliability.
- **Long battery life**
 One button battery (SR44) provides approximately 20,000 hours of continuous use for .0005"/0.01mm resolution models.



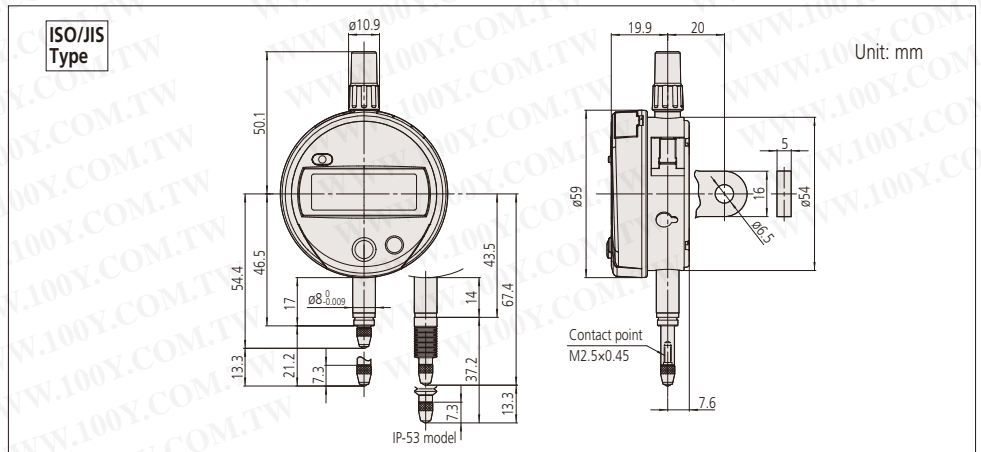
Specifications

Metric		ISO/JIS/DIN Type		ASME/ANSI/AGD Type					
Order No.	Range	Resolution	Accuracy*1			Back type	Measuring force	Battery life*3 (continuous use)	Dust/Water protection level*4
			Overall*2	Hysteresis	Repeatability				
543-790	12.7 mm	0.001 mm	0.003 mm	0.002 mm	0.002 mm	With lug	1.5N or less	18,000 hours	IP42
543-790B						Flat			
543-794		0.001 mm	0.003 mm	0.002 mm	0.002 mm	With lug	2.5N or less	20,000 hours	IP53
543-794B						Flat			
543-781	0.01 mm	0.02 mm	0.02 mm	0.01 mm	With lug	1.5N or less	20,000 hours	IP42	
543-781B					Flat				

Inch/Metric		ISO/JIS/DIN Type		ASME/ANSI/AGD Type					
Order No.	Range	Resolution	Accuracy*1			Back type	Measuring force	Battery life*3	Dust/Water protection level*4
			Overall*2	Hysteresis	Repeatability				
543-791	.5"/12.7 mm	.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours	IP42
543-791B						Flat			
543-792		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours	IP42
543-792B						Flat			
543-793		.0001"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours	IP42
543-793B						Flat			
543-795		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	2.5N or less	18,000 hours	IP53
543-795B						Flat			
543-796		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	2.5N or less	18,000 hours	IP53
543-796B						Flat			
543-782		.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.0005"/0.01mm	With lug	1.5N or less	20,000 hours	IP42
543-782B						Flat			
543-783	.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.0005"/0.01mm	With lug	1.5N or less	20,000 hours	IP42	
543-783B					Flat				

*1 These values apply at 20°C, and do not include ±1 count allowance for quantization error.
 *2 Overall magnification and linearity.
 *3 The battery life varies, depending on the number of times the Digimatic indicators are used as well as the way it is used. The values listed above are approximations.
 *4 This is only valid when the data socket cover is in place. Does not apply if the cover is removed, a lifting accessory is attached, or a connecting cable is attached.

Dimensions



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



Refer to the ABS Digimatic Indicator ID-S Series brochure (E12013) for details.

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABLOLUTE Digimatic Indicator ID-CX SERIES 543 — Standard Type

- The ABS (absolute) sensor restores the last origin position automatically when the indicator is turned on.
- Thanks to Mitutoyo's ABSOLUTE Linear Encoder, reliability has been increased due to elimination of over-speed errors.
- Tolerance-judging measurement is available by setting upper and lower limit values.
- Battery life of approx. 7,000 hours in continuous use has been achieved with only one battery.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

Note: Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.

Standard Type



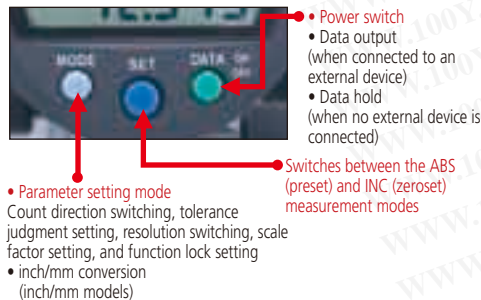
• Large LCD

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



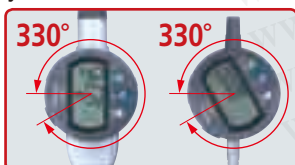
• Three large buttons

The popular three-large button design, which is used in products such as the ABS coolant proof Digimatic indicators ID-N/B, makes buttons easier to press and operations easier to perform.



• 330° rotary display

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



• Calculation: $f(x) = Ax$

Mounting the ID-CX on a measuring jig and setting the multiplying factor (to any practical value) allows direct indication of size (see example below) without using a conversion table and so improves measurement efficiency.



Usage example
Note: The measuring jig is not supplied with the ID-CX.

• Function locking

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



ABSOLUTE™ (Refer to page IX for details.)



An inspection certificate is supplied as standard. Refer to page IX for details.

Technical Data

Accuracy: Refer to the list of specifications (excluding quantizing error)

Resolution:	0.01mm type	0.01mm
	0.001mm type	0.01mm/0.001mm
	.0005"/0.01mm type	.0005"/0.01mm
	.00005"/0.001mm type	.0005"/.0001"/.00005"/0.01mm/0.001mm

Display: 6-digit LCD and sign
Scale type: ABSOLUTE electrostatic linear encoder
Max. response speed: Unlimited (Measurement by scanning cannot be performed)

Measuring force: Refer to the list of specifications
Stem dia.: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)

Battery: SR44 (1 pc.), **938882** for initial operational checks (standard accessory)
Battery life: Approx. 7,000 hours of continuous use
Dust/Water protection level: IP42

Functions

Preset, Zeroset, GO/±NG judgment, Counting direction switching, Power ON/OFF, Simplified calculation, Function lock, Data hold, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

Optional Accessories

- 21EZA198**: Spindle lifting lever (12.7mm/.5" ISO/JIS type)
- 21EZA199**: Spindle lifting lever (12.7mm/.5" ANSI/AGD type)
- 21EZA105**: Spindle lifting knob (12.7mm/.5" ISO/JIS type)*
- 21EZA150**: Spindle lifting knob (12.7mm/.5" ANSI/AGD type)*
- 21EZA197**: Spindle lifting knob (25.4mm/1" models)
- 21EZA200**: Spindle lifting knob (50.8mm/2" models)
- 540774**: Spindle lifting cable 12.7mm and 25.4mm
- 02ACA571**: Auxiliary spindle spring (25.4mm/1" models)**
- 02ACA773**: Auxiliary spindle spring (50.8mm/2" models)**
- 101040**: Lug-on-center back (25.4mm/1" and 50.8mm/2", ISO/JIS type)
- 101306**: Lug-on-center back (25.4mm/1" and 50.8mm/2", ANSI/AGD type)
- 137693**: Lifting lever (for measuring range: 25.4 and 50.8mm) (supplied with 25.4mm and 50.8mm models as standard.)

* Not available for low measuring force models.

** Required when orienting the indicator upside down.

- SPC Cable: 1m (**905338**), 2m (**905409**)

- USB Input Tool Direct (2m) : **06ADV380F**

- Connecting Cables for **U-WAVE-T**:

160mm (**02AZD790F**)

For footswitch (**02AZE140F**)

Refer to page A-15 for details.

- Digimatic Mini-Processor **DP-1VR: 264-504**

- Contact points for Mitutoyo's dial indicators (Refer to pages F-46 to F-49 for details.)

- Interchangeable backs for 2 series (Refer to page F-50 for details.)

- Measuring stands (Specifications are subject to change without notice.)



Refer to the ABS Digimatic Indicator ID-CX brochure (**E4330-543**) for details.

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 or less
	Yes	No	0.4N or less
	No	Yes	0.3N or less
	No	No	0.2N or less
Horizontal	Yes	No	0.3N or less

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

• 543-394/394B/395/395B/396/396B

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

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

SPECIFICATIONS

Metric					ISO/JIS type	ANSI/AGD type	
Order No. (w/ lug, flat-back)	Resolution	Range	Overall accuracy*	Measuring force	Remarks		
543-390	543-390B	0.001mm	12.7mm	0.003mm	1.5N or less	—	—
543-394	543-394B	0.001mm	12.7mm	0.003mm	0.4N - 0.7N	Low measuring force	—
—	543-470B	0.001mm	25.4mm	0.003mm	1.8N or less	—	—
—	543-490B	0.001mm	50.8mm	0.005mm	2.3N or less	—	—
543-400	543-400B	0.01mm	12.7mm	0.02mm	0.9N or less	—	—
543-404	543-404B	0.01mm	12.7mm	0.02mm	0.2N - 0.5N	Low measuring force	—
—	543-474B	0.01mm	25.4mm	0.02mm	1.8N or less	—	—
—	543-494B	0.01mm	50.8mm	0.04mm	2.3N or less	—	—

* Hysteresis: 0.001mm/0.01mm Resolution Type: 0.002mm
0.01mm Resolution Type: 0.02mm

* Repeatability: 0.001mm/0.01mm Resolution Type: 0.002mm
0.01mm Resolution Type: 0.02mm

Inch/Metric							
Order No. (w/ lug, flat-back)	Resolution	Range	Overall accuracy*	Measuring force	Remarks		
543-391	543-391B	.00005"/0.001mm	.5"	.0001"	1.5N or less	—	—
543-392	543-392B	.00005"/0.001mm	.5"	.0001"	1.5N or less	—	—
543-395	543-395B	.00005"/0.001mm	.5"	.0001"	0.4N - 0.7N	Low measuring force	—
543-396	543-396B	.00005"/0.001mm	.5"	.0001"	0.4N - 0.7N	Low measuring force	—
—	543-471B	.00005"/0.001mm	1"	.0001"	1.8N or less**	—	—
—	543-472B	.00005"/0.001mm	1"	.0001"	1.8N or less**	—	—
—	543-491B	.00005"/0.001mm	2"	.0002"	2.3N or less**	—	—
—	543-492B	.00005"/0.001mm	2"	.0002"	2.3N or less**	—	—
543-401	543-401B	.0005"/0.01mm	.5"	.001"	0.9N or less	—	—
543-402	543-402B	.0005"/0.01mm	.5"	.001"	0.9N or less	—	—
543-405	543-405B	.0005"/0.01mm	.5"	.001"	0.2N - 0.5N	Low measuring force	—
543-406	543-406B	.0005"/0.01mm	.5"	.001"	0.2N - 0.5N	Low measuring force	—
—	543-475B	.0005"/0.01mm	1"	.001"	1.8N or less**	—	—
—	543-476B	.0005"/0.01mm	1"	.001"	1.8N or less**	—	—
—	543-495B	.0005"/0.01mm	2"	.0015"	2.3N or less**	—	—
—	543-496B	.0005"/0.01mm	2"	.0015"	2.3N or less**	—	—

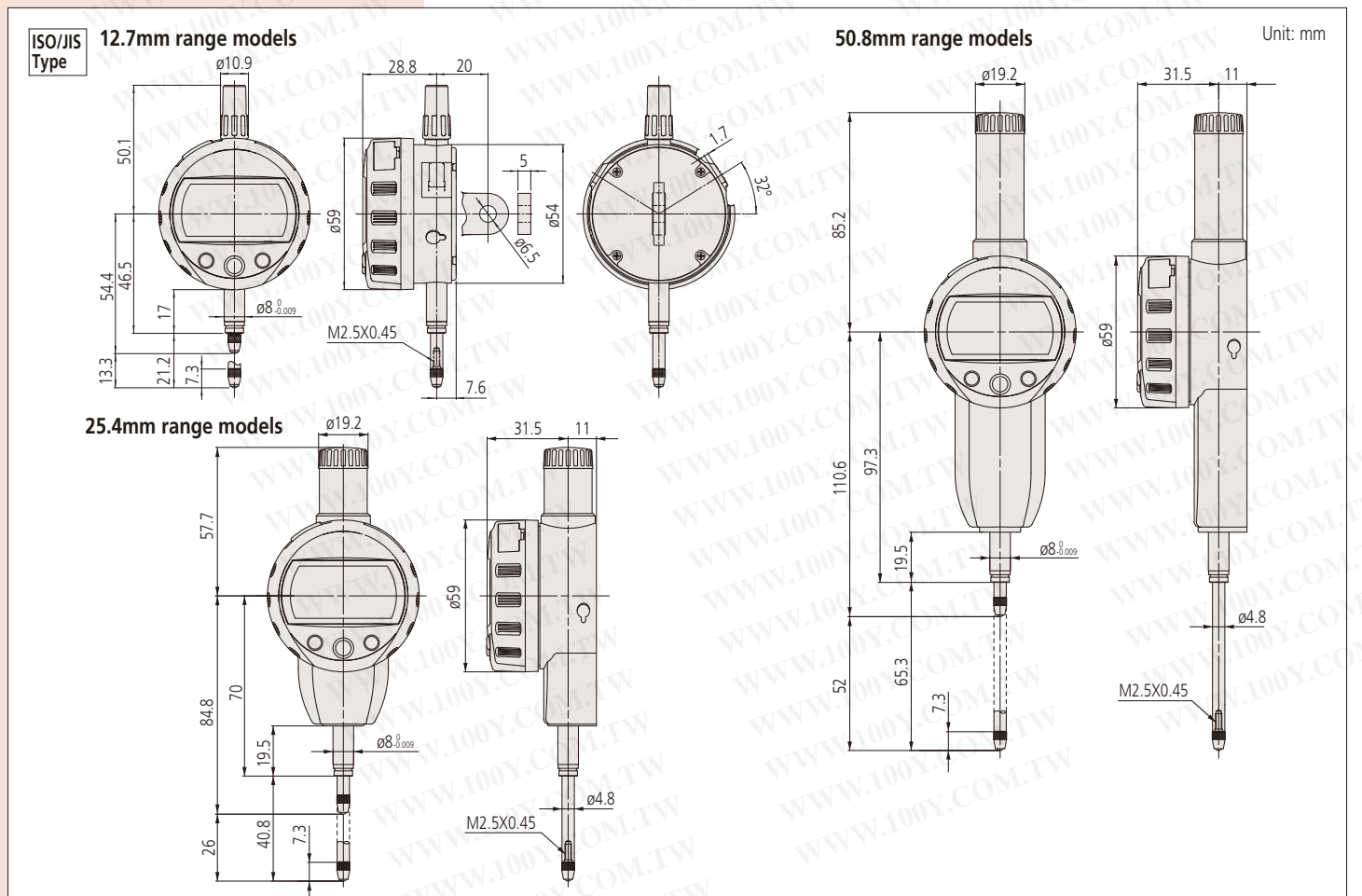
* Hysteresis: .0005"/.0001"/.0005"/0.001mm/0.01mm
Resolution Type: .00010"/0.002mm
.0005"/0.01mm Resolution Type: .0010"/0.02mm

* Repeatability: .0005"/.0001"/.0005"/0.001mm/0.01mm
Resolution Type: .00010"/0.002mm
.0005"/0.01mm Resolution Type: .0005"/0.02mm

* Quantizing error of ±1 count is excluded

** Applies for a spindle orientation between the spindle pointing vertically downward to the spindle horizontal.

DIMENSIONS



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

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

Note 3: Products with an Order No. suffixed "B" have a plain back, and other models have a center lug back.

Refer to page F48 for details of the backs.

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-N/B SERIES 543 — with Dust/ Water Protection Conforming to IP66

- Our unique ABS sensor restores the last origin position automatically when the indicator is turned on.
- The chance of overspeed errors has been eliminated thanks to the ABS sensor.
- Rated to IP66: can be used satisfactorily even in adverse environments where the indicator is subject to splashing by cutting fluid or coolant.
- Slim body design (body width: only 35mm) is advantageous in multipoint measurement situations where space is restricted. The LCD readout can also be rotated 180° to allow reading from the most convenient direction.
- Succeeded in digitalization of the Back Plunger type widely used for dial indicators for ID-B. A 5mm-stroke plunger with a higher degree of accuracy has been implemented by adopting a direct reading scale for plunger displacement.
- Built-in tolerance judgment function provides OK, +NG, or -NG judgment of measurement with respect to the preset upper and lower limit values, indicating the status of a measurement with the appropriate symbol. The symbols can be displayed much larger.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.
- There is a choice of convenient Interface Input Tools which enable the conversion of measurement data to keyboard signals and directly input them to cells in off-the-shelf spreadsheet software such as Excel.



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



Body width 35mm



LCD readout reversal function

543-575



IP66



www.tuv.com
ID 0000007161

543-585



IP66



www.tuv.com
ID 0000007162

SPECIFICATIONS

Metric				
Order No.	Resolution	Range	Accuracy*	Remarks
543-570	0.01mm	12.7mm	0.02mm	Slim type ID-N
543-580	0.01mm	5.0mm	0.02mm	Back plunger type ID-B
543-575	0.01mm / 0.001mm	12.7mm	0.01mm / 0.003mm	Slim type ID-N
543-585	0.01mm / 0.001mm	5.0mm	0.01mm / 0.003mm	Back plunger type ID-B

Inch/Metric				
Order No.	Resolution	Range	Accuracy*	Remarks
543-571	.0005", 0.01mm	.5"	.001"	Slim type ID-N
543-581		.2"	.001"	Back plunger type ID-B
543-576	0.01mm / 0.001mm	.5"	.00012"	Slim type ID-N
543-586	.0005" / .00005"	.2"	.00012"	Back plunger type ID-B

*Quantizing error of ±1 count is excluded

□ ISO/JIS type □ ANSI/AGD type

ABSOLUTE™ (Refer to page IX for details.)

Technical Data

Display: 6-digit LCD and sign
 Scale type: ABSOLUTE electrostatic linear encoder
 Max. response speed: Unlimited (Measurement by scanning cannot be performed)
 Measuring force: 2.5N or less (ID-N)
 2.0N or less (ID-B)
 Stem dia: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
 Standard contact point: 901312 (ISO/JIS type)
 21BZA005 (ANSI/AGD type)
 Battery SR44 (1pc.) : 938882 for initial operational checks (standard accessory)
 Battery life: Approx. 7,000 hours of continuous use

Functions

Zero-setting, Presetting, Direction switching, Tolerance judgment, Display hold, Data output, inch/mm conversion (inch/mm models), LCD readout reversal
 Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

Optional accessories

21EZA145 : Lug (ISO/JIS type)
 21EZA146 : Lug (ANSI/AGD type)
 21EZA105 (ID-N only) : Lifting knob (ISO/JIS type)
 21EZA150 (ID-N only) : Lifting knob (ANSI/AGD type)
 Arm for ID-B (made-to-order)
 Contact points for Mitutoyo's dial indicators (Refer to pages F-51 to F-54 for details.)
 Spindle can be manually lifted. Remove the spindle cap for ID-N and attach the lifting knob to the spindle. Note that water resistance is not maintained in this configuration.

Using the lifting knob



Rubber boot for ID-N, NBR: 02ACA376
 Rubber boot for ID-B, NBR: 125317
 Rubber boot for ID-N, silicon: 238774
 Rubber boot for ID-B, silicon: 21EAA212
 SPC cable: 1m 21EAA194
 2m 21EAA190

USB Input Tool Direct (2m) : 06ADV380G

Connecting Cables for U-WAVE-T:

160mm: 02AZD790G

For footswitch: 02AZE140G

Bifurcated connecting cable with zero-setting terminal (1m) : 21EAA210

Bifurcated connecting cable with zero-setting terminal (2m) : 21EAA211

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

Usage examples

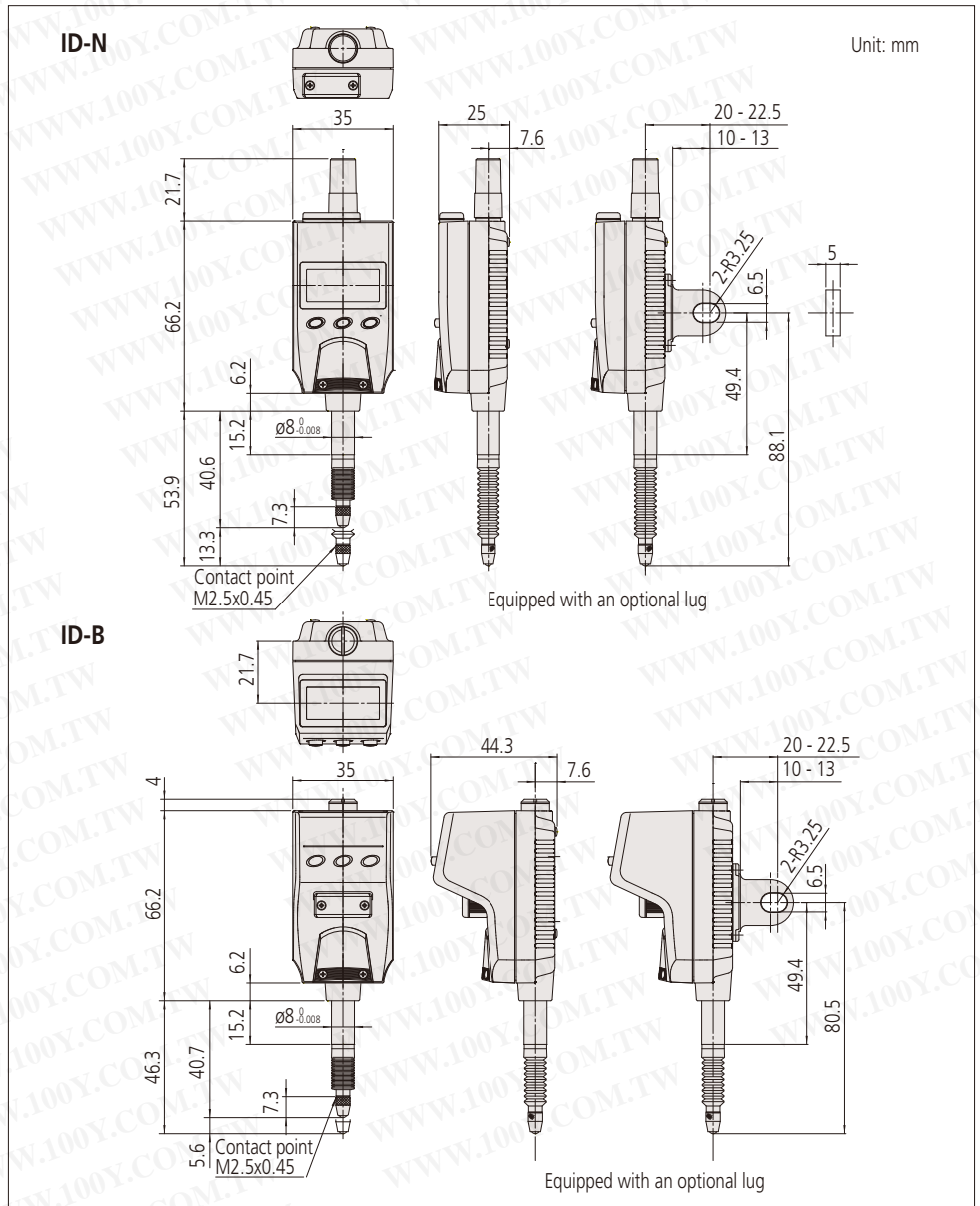


DIMENSIONS



SPC cable

Bifurcated connecting cable with zero-setting terminal



Refer to the ABS Coolantproof Digimatic Indicator ID-N/ID-B brochure (E4302-543) for details.

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

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

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-C SERIES 543 — Peak-Value Hold Type

- The maximum, minimum, or runout value can be measured and displayed during measurement.
 - The ABS (absolute) sensor restores the last origin position automatically when the indicator is turned on*1. It also realizes high reliability by eliminating over-speed errors.
 - Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.
 - User friendly, battery-operated type.
- * 1 Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18



543-260

SPECIFICATIONS

Metric			
Order No. (w/lug, flat-back)	Resolution	Range	Accuracy**
543-260 543-260B	0.001mm	12.7mm	0.003mm

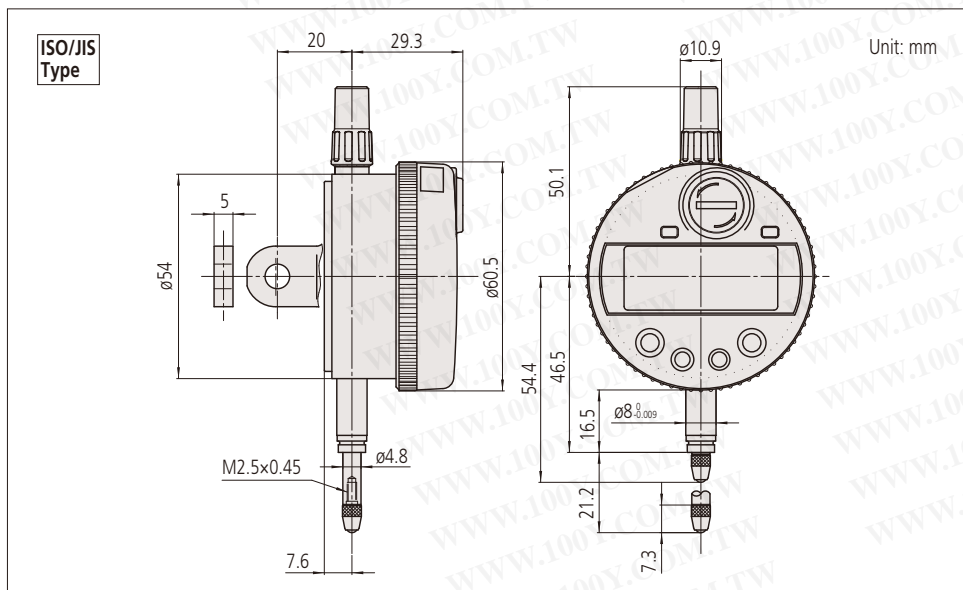
ISO/JIS type ANSI/AGD type

Notes:

- 1) GO/NG judgment result cannot be output.
- 2) Max./Min. holding: Sample rate is 50 readings per sec.
Change rate of reading is 50µm per sec.
- 3) Order numbers suffixed "B" have a plain back.

** Quantizing error of ±1 count is excluded.

DIMENSIONS



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

ABSOLUTE™ (Refer to page IX for details.)

Technical Data

Display: 6-digit LCD and sign
Scale type: ABSOLUTE electrostatic linear encoder
Measuring force: 1.5N or less
Stem dia: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Standard contact point: 901312 (ISO/JIS type)
21BZB005 (ANSI/AGD type)
Battery: SR44 (2pcs.) 938882 for initial operational checks (standard accessory)
Battery life: 6 months under normal use*
*Operation time per day: 8 hours

Functions

Preset, Zero set, Max/Min value hold, Run out value hold, GO/NG judgment, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

Optional Accessories

902011: Spindle lifting lever (ISO/JIS type)
902794: Spindle lifting lever (ANSI/AGD type)
540774: Spindle lifting cable
905338: SPC cable (1m)
905409: SPC cable (2m)
USB Input Tool Direct (2m) : 06ADV380F
Connecting Cables for U-WAVE-T:
160mm (02AZD790F)
For footswitch (02AZE140F)
Digimatic Mini-Processor DP-1VR: 264-504
Contact points for Mitutoyo's dial indicators
(Refer to pages F-46 to F-49 for details.)
Interchangeable backs for 2 series
(Refer to page F-50 for details.)
Measuring stands

Technical Data

Display: 6-digit LCD, sign and analog bar
 Scale type: ABSOLUTE electrostatic linear encoder
 Measuring force: 1.5N or less
 Stem dia: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
 Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)
 Battery: SR44 (2pcs.) **938882** for initial operational checks (standard accessory)
 Battery life: 9 months under normal use*
 *Operation time per day: 8 hours

Functions

Presetting, Power on/off, inch/mm conversion (inch/mm type only), 3 sets of master value and tolerance value memory, GO/±NG tolerance judgment, Min value holding, Data hold

Optional accessories

SPC Cable:
 1m (**905338**)
 2m (**905409**)
 Refer to page A-15 for details.
 USB Input Tool Direct (2m) : **06ADV380F**
 Connecting Cables for **U-WAVE-T**:
 160mm (**02AZD790F**)
 For footswitch (**02AZE140F**)
 Refer to page A-15 for details.
 Digimatic Mini-Processor **DP-1VR**: **264-504**

The ABSOLUTE Digimatic Bore Gage



ABSOLUTE Digimatic Bore Gages, which integrate the display with a bore gage measuring unit, are also available.
 Refer to pages C-41 and C-42 for details.



Example of bore gage (optional) equipped with an IDC Digimatic Indicator

ABSOLUTE Digimatic Indicator ID-C SERIES 543 — Bore Gage Type

- Exclusively designed for Bore Gages: this ID-C series has the minimum value holding and GO/±NG judgment function.
 - The ABS (absolute) sensor restores the last origin position automatically when the indicator is turned on. Also, the reliability has been increased due to elimination of over-speed errors.
 - Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.
- Note: Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-20.
- An analog bar indication is integrated to provide the advantages of analog display for minimum value measurements.
 - Up to three sets of reference diameter and upper/lower tolerance values can be memorized to simplify the start-up key operation in repetitive hole inspection of mixed diameter holes.



543-264B

SPECIFICATIONS

Metric			
Order No.*	Resolution	Range	Accuracy*2
543-264B	0.001mm	12.7mm	0.003mm

*Flat back only

Metric/Inch			
Order No.*	Resolution	Range	Accuracy*2
543-265B	0.001mm/0.0005"	12.7mm	0.003mm

*Flat back only

Inch/Metric			
Order No.*	Resolution	Range	Accuracy*2
543-266B	.00005"/0.001mm	.5"	.00012"
543-267B	0.001mm/0.001"	12.7mm	0.003mm

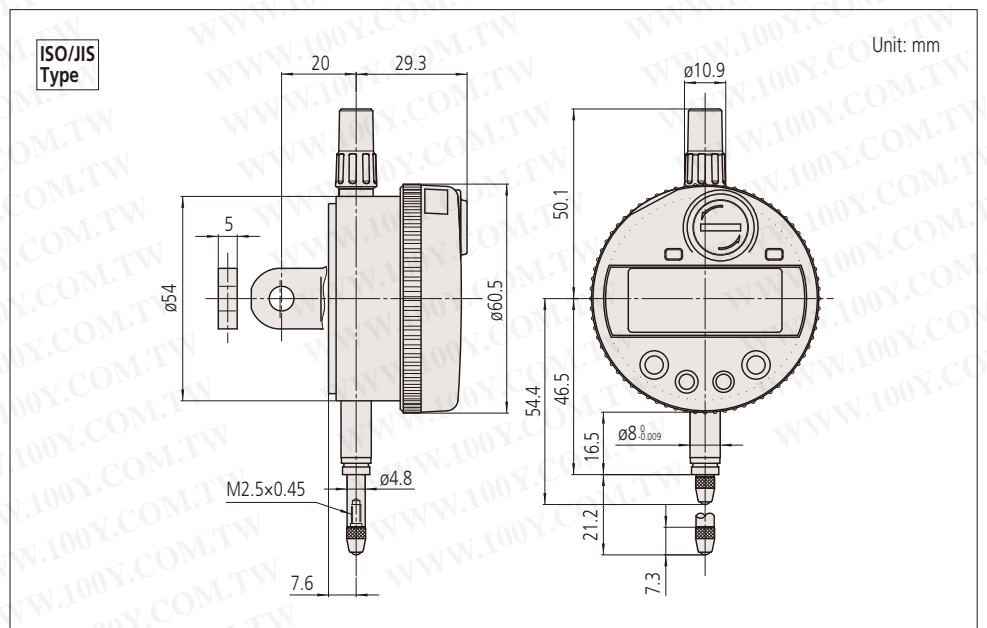
*Flat back only ISO/JIS type ANSI/AGD type

*1 Quantizing error of ±1 count is excluded.

Notes:

- 1) Min. holding: sample rate is 50 readings/sec; max. rate of change of reading is 50µm/sec.
- 2) All instruments in this series are of the flat back type.
- 3) All instruments in this series can be only used for inside diameter measurement.

DIMENSIONS



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

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-C SERIES 543 — Calculation Type

- The Calculation-Type Digimatic indicator incorporates an internal calculation function that operates from spindle displacement. With fixtures the measurement of outside and inside diameter, and radius of curvature, can easily be obtained without the hassle of conversion tables or equivalents.
- The ABS (absolute) sensor restores the last origin position*1 automatically when the indicator is turned on.
- The chance of over-speed error has been avoided thanks to the ABS sensor.
- Tolerance judgment is available by presetting upper and lower limit values.
- Easy-to-read large LCD readout with a character height of 8mm.

- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems. (Refer to page A-3 for details.)

*1 Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.



543-285B

SPECIFICATIONS

Metric				
Order No.*	Resolution	Range	Accuracy*2	Measuring force
543-285B	0.001mm	12.7mm	0.003mm	1.5N or less
543-480B		25.4mm	0.003mm	1.8N or less*3
543-485B		50.8mm	0.006mm	2.3N or less*3

* Flat back only

Inch/Metric				
Order No.*	Resolution	Range	Accuracy*2	Measuring force
543-286B	0.0005"/ 0.001 mm	.5"	.00012"	1.5N or less
543-287B		.5"	.00012"	1.5N or less
543-481B		1"	.00012"	1.8N or less*3
543-482B		1"	.00012"	1.8N or less*3
543-486B		2"	.00025"	2.3N or less*3
543-487B		2"	.00025"	2.3N or less*3

* Flat back only

□ ISO/JIS type □ ANSI/AGD type

Note: All instruments in this series are of the flat back type. The back is interchangeable with the standard backs for Series 2.

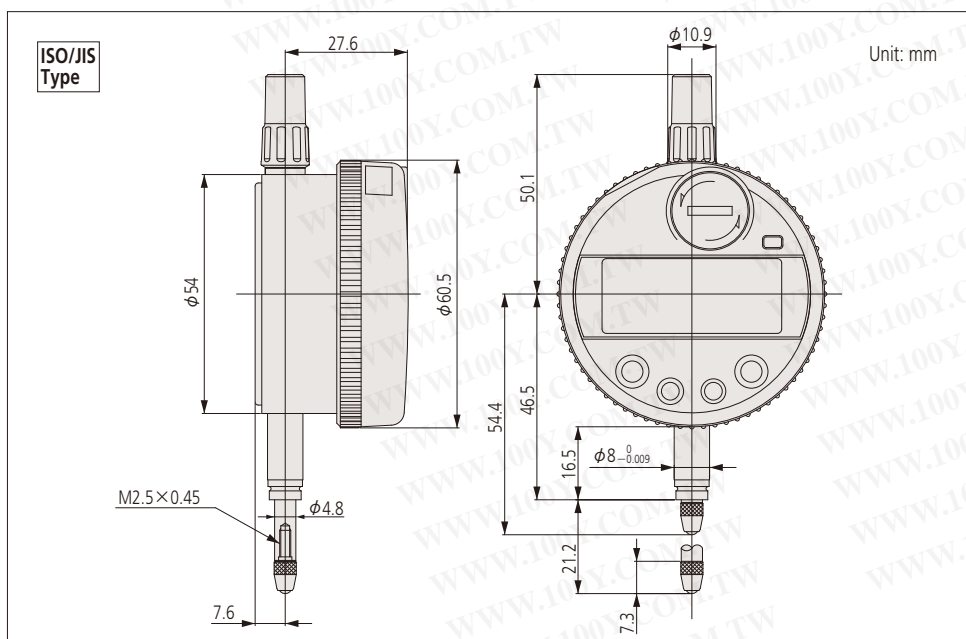
Refer to page F-50 for details of the optional backs.

*2 Depends on the values of the arithmetic coefficients currently set.

Quantizing error of ±1 count is excluded.

*3 Applies for a spindle orientation between the spindle pointing vertically downward to the spindle horizontal.

DIMENSIONS



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

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

ABSOLUTE™ (Refer to page IX for details.)

Technical Data

Display: 6-digit LCD and sign

Scale type: ABSOLUTE electrostatic linear encoder

Stem dia: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)

Standard contact point: **901312** (ISO/JIS type)

21BZB005 (ANSI/AGD type)

Battery: SR44 (1pc.) **938882** for initial

operational checks (standard accessory)

Battery life: 1 year under normal use

(Operation time per day: 8 hours)

Functions

Calculation function

$$f(x) = Ax + B + Cx^{-1}$$

Max./Min. value hold*5

Preset, Zero set, GO/±NG judgment,

Power ON/OFF,

Function lock, Data hold, Data output,

inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error,

Overflow error, Tolerance limit setting error

Resolution switching function*4

The resolution can be selected from one of 12 levels.

Resolution (mm)			Resolution (inch)		
0.0002	0.005	0.1	0.00001	0.0002	0.005
0.0005	0.01	0.2	0.00002	0.0005	0.01
0.001	0.02	0.5	0.00005	0.001	0.02
0.002	0.05	1	0.0001	0.002	0.05

*4 Since the calculation resolution is one micrometer (0.001mm), using sub-micrometer resolution settings may result in the 4th-place digit being unreliable, particularly when B is set to a very low value and C = 0. It does not change at all with certain combinations of calculation coefficient (for example, A = 1, B = C = 0). The 3rd-place digit representing micrometers (if displayed) is always reliable.

*5 If the spindle speed exceeds 10µm/sec, the correct peak value may not be displayed.

Optional Accessories

902011: Spindle lifting lever (ISO/JIS type)

902794: Spindle lifting lever (ANSI/AGD type)

02ACA571: Auxiliary spindle spring (25.4mm/1" model)

02ACA773: Auxiliary spindle spring (50.8mm/2" model)

540774: Spindle lifting cable

905338: SPC cable (1m)

905409: SPC cable (2m)

Refer to page A-21 for details.

USB Input Tool Direct (2m) : **06ADV380F**

Connecting Cables for **U-WAVE-T**:

160mm (**02AZD790F**)

For footswitch (**02AZE140F**)

Refer to page A-15 for details.

Digimatic Mini-Processor **DP-1VR: 264-504**

Contact points for Mitutoyo's dial indicators

(Refer to pages F-46 to F-49 for details.)

Interchangeable backs for 2 series




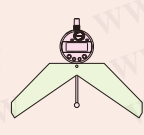
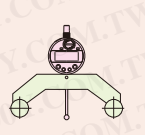
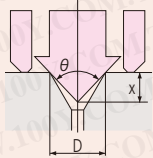
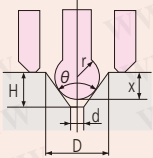
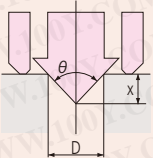
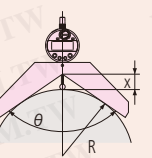
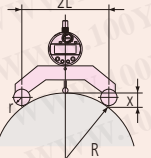
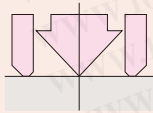
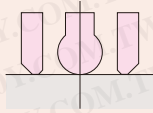
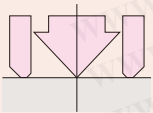
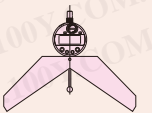
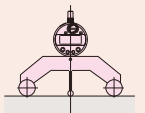
(Refer to page F-50 for details.)

Measuring stands

Fixture example



Examples of measuring various features

Fixture type*4								
Contact point	Cone	Ball	Cone	—	—			
x = Spindle displacement								
Feature measured	D = Diameter / Groove width H = Countersink depth		D = Hole diameter / Groove width	2R = Outside diameter	2R = Inside diameter			
Calculation formula	D = Ax + B D = Ax + B H = Ax + B		D = Ax	R = Ax	R = Ax + B + Cx ⁻¹			
Coefficient values	A	$-2 \tan \frac{\theta}{2}$	$-2 \tan \frac{\theta}{2}$	-1	$-2 \tan \frac{\theta}{2}$	$-\frac{\sin \frac{\theta}{2}}{1 - \sin \frac{\theta}{2}}$	$\frac{1}{2}$	$-\frac{1}{2}$
	B	0	$2r \left(\frac{1}{\cos \frac{\theta}{2}} - \tan \frac{\theta}{2} \right)$	$r \left(\frac{1}{\sin \frac{\theta}{2}} - 1 \right) - \frac{d}{2 \tan \frac{\theta}{2}}$	0	0	-r	r
	C	0	0	0	0	0	$\frac{L^2}{2}$	$-\frac{L^2}{2}$
Origin setting position (generally the position when x = 0)								
Indicated value when origin setting (generally the indicated value when x = 0)	0	Value of coefficient B	0	0	E - -oF (Overflow)			

*4 Fixtures suited to individual workpieces can be made to order.
Note: Measuring accuracy is subject to fixture accuracy and form accuracy of workpiece.

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-C SERIES 543 — Signal Output Function Type

- With the max./min. value holding function, this indicator can output the signal of the GO/±NG judgement result against the peak value set. In contrast to conventional electro-mechanical systems, the judgement is made and indicated by electronic processing of the measurement data obtained. This provides high reliability as there are no electrical contact points to deteriorate.
- Employing Mitutoyo's ABSOLUTE Linear Encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on. Also, the reliability has been increased due to the elimination of over-speed errors.
- The judgment signal can be output to an external device, such as a sequencer
- Provided with a 4m cable.
- External power DC 12 – 24V.
- Dust-water protection level: Conforms to IP54



543-280

IP54

*1 Regarding the origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.

SPECIFICATIONS

Metric						
Order No. (w/ lug, flat-back)		Resolution	Range	Accuracy*	Measuring force	Remarks
543-280	543-280B	0.001mm	12.7mm	0.003mm	2.0N or less	—

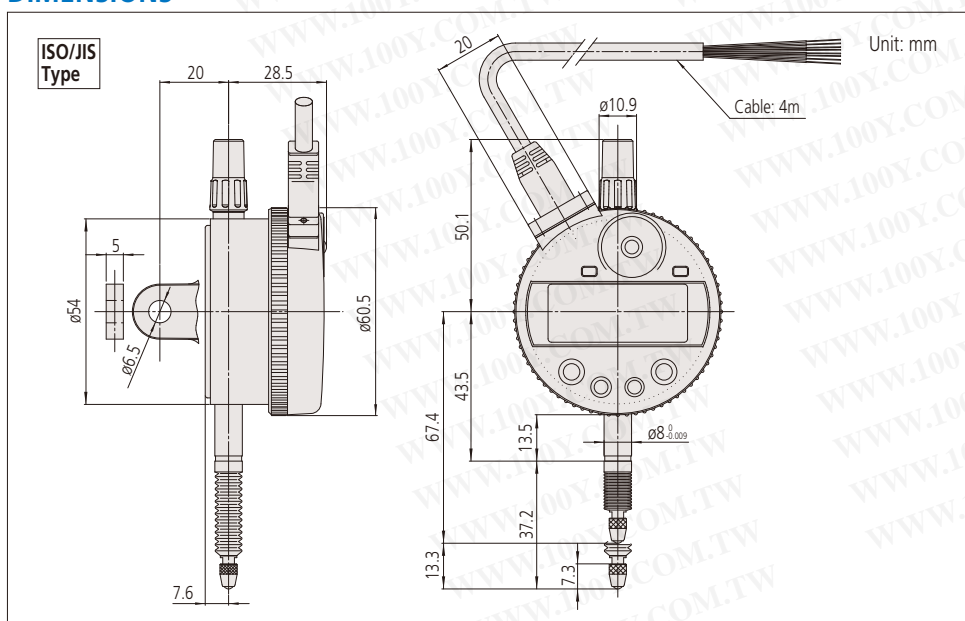
Inch/Metric						
Order No. (w/ lug, flat-back)		Resolution	Range	Accuracy*	Measuring force	Remarks
543-281	543-281B	.00005"/0.001mm	.5"	.00012"	2.0N or less	—
543-282	543-282B	.00005"/0.001mm	.5"	.00012"	2.0N or less	—
543-283	543-283B	.0005"/0.01mm	.5"	.00012"	2.0N or less	—

Notes:

- 1) LCD readout does not rotate.
- 2) Max./min. holding: sample rate is 50 readings/sec; max. rate of change of reading is 50µm/sec.
- 3) Products with an Order No. suffixed "B" have a flat back
- 4) Standard contact point: **901312** (ISO/JIS type), **21BZA005** (ANSI/AGD type)

* Quantizing error of ±1 count is excluded.

DIMENSIONS



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

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

ABSOLUTE™ (Refer to page IX for details.)

Functions

Signal output (–NG/OK/+NG, NPN open collector), Remote control (hold–reset, preset–recall, zero–set), Preset, Zeraset, GO/±NG judgment, Max/Min/Runout value holding, Counting direction switching, Power ON/OFF, inch/mm conversion (inch/mm models)
Alarm: Counting value composition error, Overflow error, Tolerance limit setting error

Optional accessories

Spindle lifting lever (ISO/JIS type) : **902011***4
Spindle lifting lever (ANSI/AGD type) : **902794***4
Spindle lifting cable : **540774***4
Rubber boot : **02ACA376**
Contact points for Mitutoyo's dial indicators*5
Interchangeable backs for Series 2 models*6
Note: Use the waterproof types of Series 2 for plain backs.
Measuring stands
*4 Dust-water protection is not guaranteed.
*5 Refer to pages F-46 to F-49 for details.
*6 Refer to page F-50 for details.

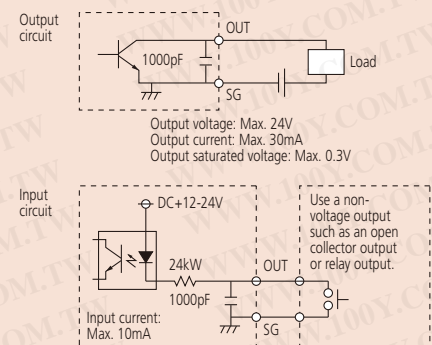
Output pattern

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

I/O Specifications

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

Note: Measurement data cannot be output.



Technical Data

Accuracy: Refer to the list of specifications (Excluding quantizing error of ±1 count)
 Resolution: 0.01mm, .0005"/0.01mm
 Display: 5-digit and sign
 Scale type: ABSOLUTE electrostatic linear encoder
 Max. response speed: Unlimited (Measurement by scanning cannot be performed)
 Measuring force: Refer to the list of specifications
 Stem dia.: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
 Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)
 Battery: SR44 (1 pc.), **938882** for initial operational checks (standard accessory)
 Battery life: Approx. 20,000 hours of continuous use
 Dust/Water protection level: IP24
 Lifting lever: **137693**

Function

Origin-set (Zeraset), Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (inch/mm models)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

Spindle lifting cable (stroke: 10mm) : **540774**
 Contact points for Mitutoyo's dial indicators (Refer to pages F-46 to F-49 for details.)
 SPC Cable:
 1m (**905338**)
 2m (**905409**)
 Refer to page A-15 for details.
 USB Input Tool Direct (2m) : **06ADV380F**
 Connecting Cables for **U-WAVE-T**:
 160mm (**02AZD790F**)
 For footswitch (**02AZE140F**)
 Digimatic Mini-Processor **DP-1VR**: **264-504**
 Measuring Stands

ABSOLUTE Digimatic Indicator ID-U SERIES 575 — Slim and Economical Design

- General purpose indicator with the measuring range of 25.4mm/ 1"
- Cost-effective and user-friendly type which is equipped with the basic functions necessary.
- The ABS (absolute) sensor restores the last origin position automatically when the indicator is turned on, and realizes high reliability by eliminating over-speed errors. Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.
- Battery life of 20,000 hours in continuous use has been achieved.
- Easy-to-read large LCD readout with the character height of 8mm.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

General-purpose type



575-121

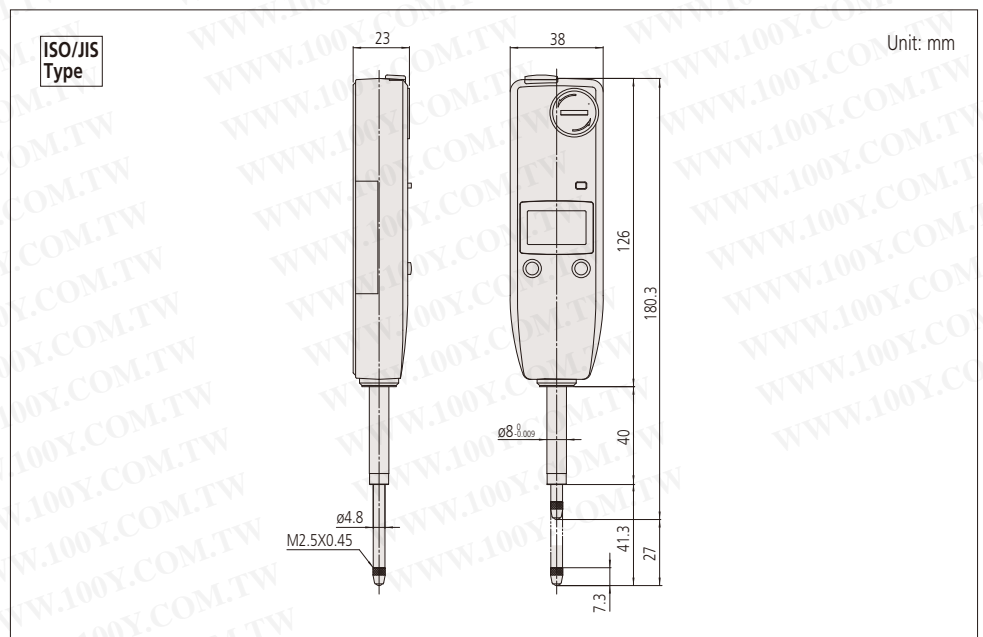
SPECIFICATIONS

Metric		ISO/JIS type		ANSI/AGD type	
Order No. (w/ lug, flat-back)	Resolution	Range	Accuracy*	Measuring force	
—	575-121	0.01mm	25.4mm	0.02mm	1.8N or less

Inch/Metric		ISO/JIS type		ANSI/AGD type	
Order No. (w/ lug, flat-back)	Resolution	Range	Accuracy*	Measuring force	
—	575-122	.0005"/0.01mm	1"	.001"	1.8N or less
—	575-123	.0005"/0.01mm	1"	.001"	1.8N or less

*Quantizing error of ±1 count is excluded
 *Flat back only

DIMENSIONS



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

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

Digimatic Indicator ID-H SERIES 543 — High Accuracy and High Functionality Type

- This new-generation digital indicator offers the excellent accuracy and functionality expected from the top class of indicator.
- Take advantage of its high accuracy backed up by 0.5 μ m/0.00002" resolution, remote control functionality via a handheld controller (or an RS-232C interface) and easy runout measurements with the well-established analog bar display.
- Functionality meets the needs of diverse measurement applications.

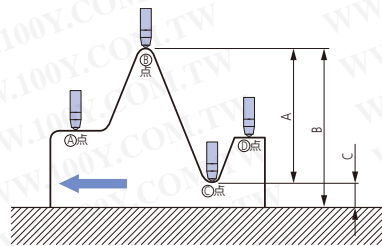
Tolerance judgment



- Measuring maximum value, minimum value and runout (difference between a maximum and a minimum value)



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



- With the optional remote controller, operations such as zero-setting and presetting can be made without touching the indicator body, thereby avoiding disturbance to the set-up.
- An advanced, remote control system can be implemented with the built-in RS-232 interface and a PC.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.



Remote controller (optional)



An inspection certificate is supplied as standard. Refer to page IX for details.

Technical Data

Display: 7-digit LCD, sign, and analog bar with 2-color backlight
 Power supply: 6V DC (via AC adaptor) **06AEG180**
 Positional detection method: Photoelectric-type reflection linear encoder
 Maximum response speed: 1000mm/sec
 Measuring force: 2.0N or less (30.4mm/1.2" type)
 2.5N or less (60.9mm/2.4" type)
 Spindle orientation: Between the spindle pointing vertically downward to the spindle horizontal
 Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)
 Lifting lever: **No.137693**

Functions

Zero set, Preset, GO/ \pm NG judgement
 Max/Min value hold, Runout measurement
 Resolution switching
 Counting direction switching
 Data output, Data hold, Function lock
 inch/mm conversion (inch/mm models)
 Alarm: Over speed error, Setting error, Overflow error

Optional accessories

21EZA101: Spindle lifting knob
540774: Spindle lifting cable (stroke 30mm)
101040: Lug-on-center back (ISO/JIS type)
101306: Lug-on-center back (ANSI/AGD type)
21EZA099: Remote controller
21EAA131: RS-232 Connecting cable (2m)
 SPC Cable: 1m (**936937**)
 2m (**965014**)
 USB Input Tool Direct (2m) : **06ADV380D**
 Connecting Cables for U-WAVE-T:
 160mm (**02AZD790D**)
 For footswitch (**02AZE140D**)
 Contact points for Mitutoyo's dial indicators
 (Refer to pages F-46 to F-49 for details.)
 Digimatic Mini-Processor DP-1VR: **264-504**
 Granite comparator stand: **215-156-10**
 Comparator stand: **215-505-10**

Comparator stand
215-505-10



SPECIFICATIONS

Metric			
Order No.*	Resolution	Range	Accuracy**
543-561	0.0005mm,	30.4mm	0.0015mm
543-563	0.001mm	60.9mm	0.0025mm

* To denote your AC power cable add the following suffixes to the order No.: **A** for UL/CSA, **D** for CEE, **DC** for CCC, **E** for BS, **K** for KC, **No suffix** is required for JIS/100V

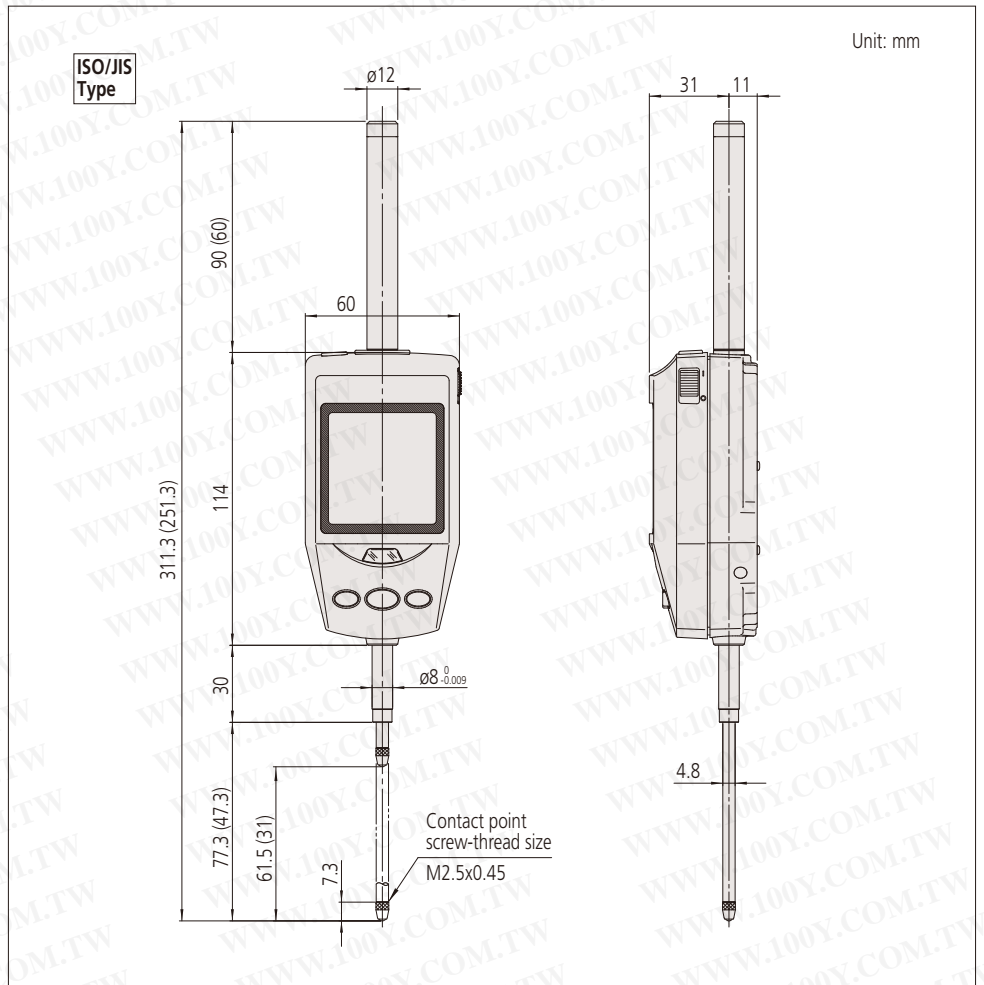
** Quantizing error of ± 1 count is excluded.

Inch/Metric			
Order No.*	Resolution	Range	Accuracy**
543-562	.00002", .00005", .0001"	1.2"	.00006"
543-564	0.0005mm, 0.001mm	2.4"	.0001"

* To denote your AC power cable add the following suffixes to the order No.: **A** for UL/CSA, **D** for CEE, **DC** for CCC, **E** for BS, **K** for KC, **No suffix** is required for JIS/100V

□ ISO/JIS type □ ANSI/AGD type

DIMENSIONS



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

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

() : for 30.4mm model

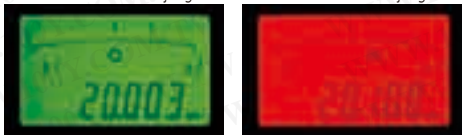
Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-F SERIES 543 — with Back-light LCD Screen

- GO/±NG judgment function: If a judgment result shows an out of tolerance condition, the display backlighting changes from green to red.
- An analog bar indicator has been integrated to make upper/lower limit and turnover point reading more comfortable.

Green indication for GO judgment Red indication for ±NG judgment



- With Mitutoyo's ABSOLUTE Linear Encoder technology, once the measurement reference point has been set it will not be lost when the power is turned off. Also, reliability has been increased due to the elimination of over-speed errors.
Note: Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.
- Easy-to-read large LCD readout with the character height of 8.5mm.
- External power supply type: battery change is not necessary. Power can also be supplied via the AC adapter supplied as a standard accessory.

SPECIFICATIONS

Metric			
Order No.*	Resolution	Range	Accuracy**
543-551	0.001mm, 0.01mm	25mm	0.003mm
543-557		50mm	0.003mm
543-553		50mm	0.006mm

* To denote your AC power cable add the following suffixes to the order No.: **A** for UJ/CSA, **D** for CEE, **DC** for CCC, **E** for BS, **K** for KC, **No suffix** is required for JIS/100V

**Quantizing error of ±1 count is excluded.

- The resolution can be switched between 0.001mm /0.01mm (or .001" /0.005" /0.0001" /0.0005").
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

Multi-functional model



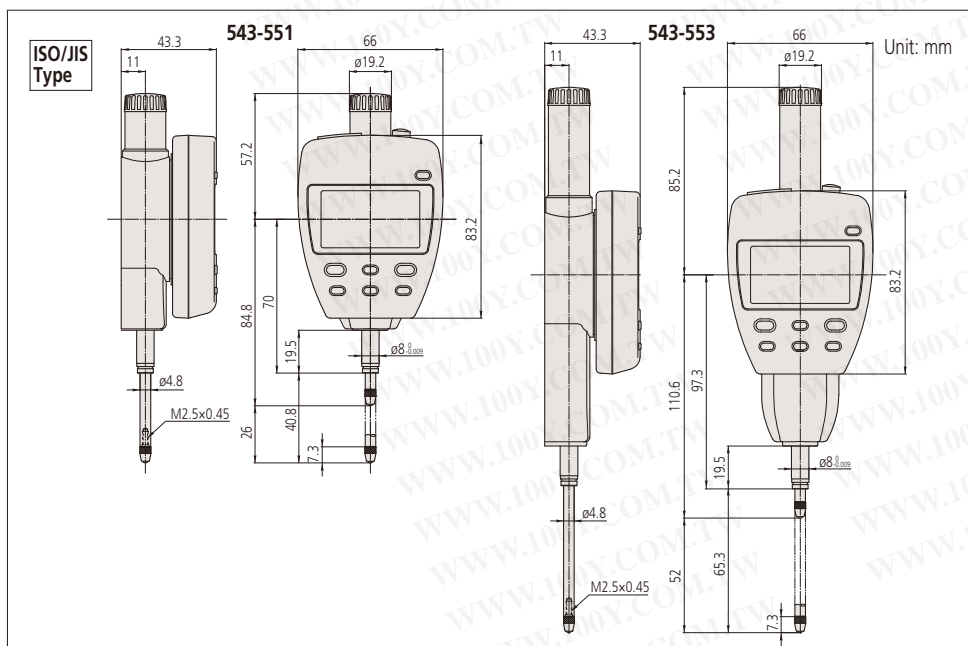
Inch/Metric			
Order No.*	Resolution	Range	Accuracy**
543-552	.00002", .00005",	1"	.00012"
543-558	.0001", .0005", .001",		
543-554	0.001mm, 0.01mm	2"	.00012"
		2"	.00024"

* To denote your AC power cable add the following suffixes to the order No.: **A** for UJ/CSA, **D** for CEE, **DC** for CCC, **E** for BS, **K** for KC, **No suffix** is required for JIS/100V

**Quantizing error of ±1 count is excluded.

□ ISO/JIS type □ ANSI/AGD type

DIMENSIONS



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

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

ABSOLUTE™ (Refer to page IX for details.)

Technical Data

Resolution: 0.01mm/0.001mm or .0005"/.0001"/.0005"/.001"/0.001mm/0.01mm
 Display: 6-digit LCD, sign, and analog bar with 2-color backlight
 Scale type: ABSOLUTE electrostatic linear encoder
 Max. response speed: Unlimited
 Measuring force: 1.8N or less (25.4mm models)
 2.3N or less (50.8mm models)
 Spindle orientation: Between the spindle pointing vertically downward to the spindle horizontal
 Stem dia.: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
 Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)
 Power supply: 9V DC (via AC adaptor) **06AEG302**
 Lifting lever: **137693**

Functions

Preset, Zerose, GO/±NG judgment, Max/Min value hold, Runout measurement, Resolution switching, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (inch/mm models)
 Alarm: Counting value composition error, Overflow error, Tolerance limit setting error

Optional Accessories

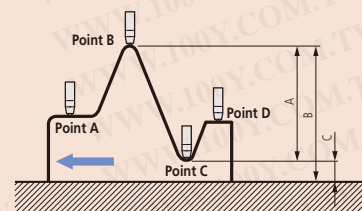
540774: Spindle lifting cable 25.4mm
02ACA571: Auxiliary spindle spring (25.4mm/1" models)*
02ACA773: Auxiliary spindle spring (50.8mm/2" models)*
101040: Lug-on-center back (ISO/JIS type)
101306: Lug-on-center back (ANSI/AGD type)
 * Required when orienting the indicator upside down.
 SPC cable: 1m (**936937**)
 2m (**965014**)
 USB Input Tool Direct (2m): **06ADV380F**
 Connecting Cables for U-WAVE-T:
 160mm (**02AZD790D**)
 For footswitch (**02AZE140D**)
 Contact points for Mitutoyo's dial indicators *4
 Interchangeable backs for Series 2 models*5
 Measuring stands
 *4 Refer to pages F-46 to F-49 for details.
 *5 Refer to page F-50 for details.

Application

Difference/Runout measurement

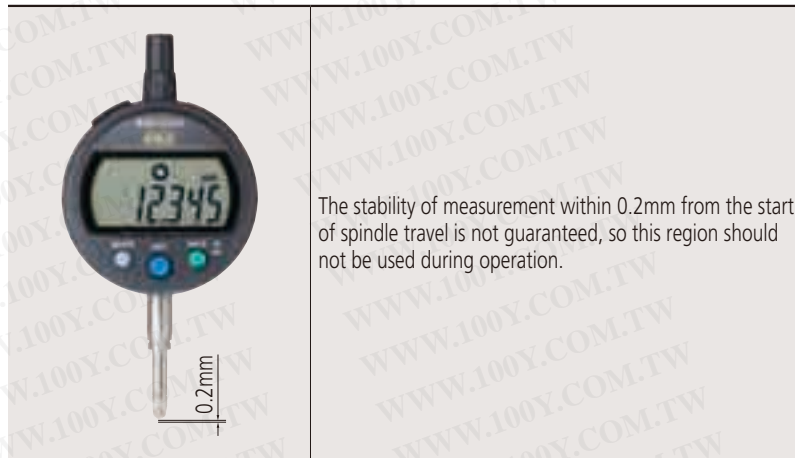
Example: Indicator travel from points A to D

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



Supplemental information on Digimatic Indicators

Origin setting of Digimatic Indicators



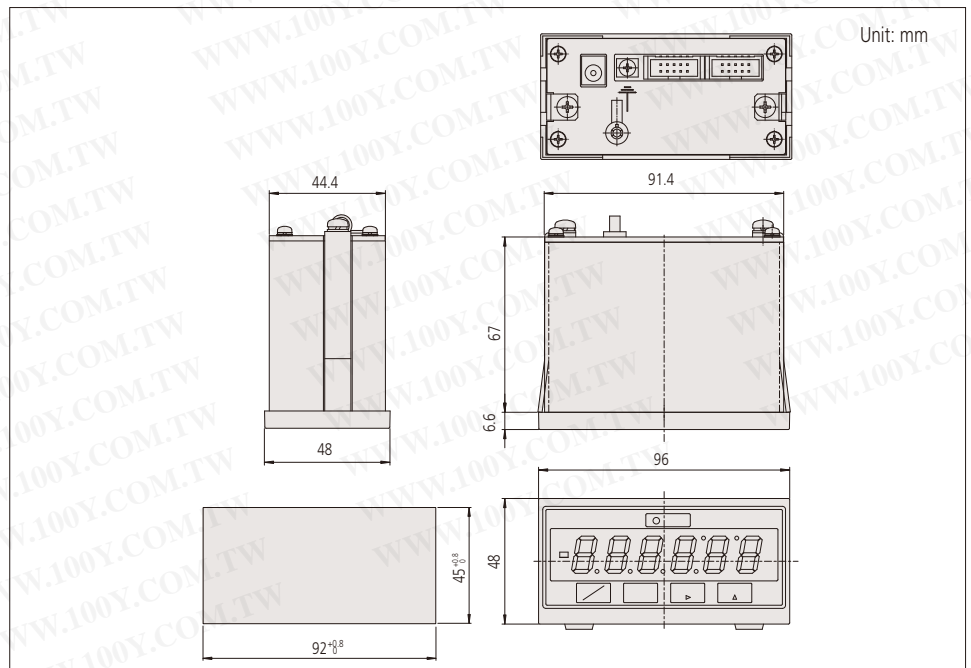
EC Counter SERIES 542 — Low-cost, Modular Type Display Unit



542-007

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

DIMENSIONS



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)