New Products

Digimatic Indicator

Refer to pages F-3 to F-20 for details.

Compact Type Dial Indicator

Refer to pages F-25 to F-26 for details.

Standard type Dial Indicator (0.01mm Resolution)

Refer to pages F-27 to F-28 for details.

Standard type Dial Indicator (0.001mm Resolution)

Refer to pages F-29 to F-30 for details.

Dial Test Indicator Ruby Contact Point Models

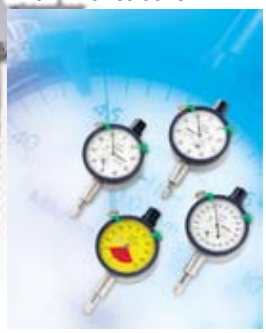
Refer to pages F-55 to F-58 for details.

Digimatic Indicators

Digimatic Indicator

Dial Indicators

Dial Indicators



Dial Test Indicators

Dial Test Indicators

Dial Indicator Applications and Stands

Dial Indicator Applications and Stands

INDEX

Digimatic Indicators

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

ABS Solar-Powered Digimatic Indicator ID-SS SERIES 543

- Solar power supply
  An environmentally friendly measuring instrument that does not require batteries, eliminating the hassle and cost of battery replacement. Can operate under minimum light conditions of 40 lux—lower than the level of a warehouse.
- Built-in recharger
  The large-capacity capacitor built-in recharger 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 reproduced 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.

543-505

543-500

- 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

PROPRIETARY INSPECTION CERTIFICATE

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

ABSOLUTE

(Refer to page VIII for details.)

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
*A built-in recharger allows a fully charged ID-SS to be used for about 3.5 hours under light conditions below the minimum level.
The charging time differs depending on the environment, but it usually takes about 1.5 hours for a fully discharged ID-SS to fully recharge under light conditions of 500 lux.
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)
21BZB005 (ANSI/AGD type)

Functions

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

F

Optional accessories

Lifting lever

Lifting knob

Lifting release

Optional Accessories

21EZA198: Spindle lifting lever (ISO/JIS type)
21EZA199: Spindle lifting lever (ANSI/AGD type)
21EZA105: Spindle lifting knob (ISO/JIS type)*
21EZA150: Spindle lifting knob (ANSI/AGD type)*
540774: Spindle lifting cable 12.7mm and 25.4mm

- SPC Cable:
  1m (**905338**)
  2m (**905409**)
- 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 pages F-50 for details.)
- Measuring stands
  Specifications are subject to change without notice.

Specifications

Metric

Order No.	Resolution	Range	Overall*	Hysteresis*	Repeatability*	Remarks
543-500	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

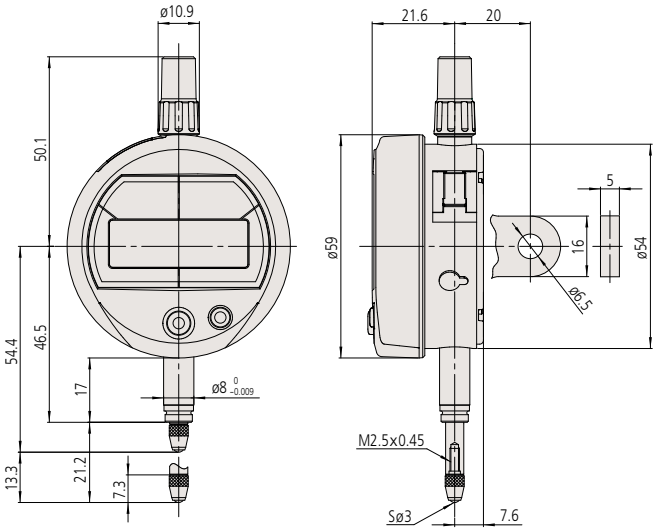
* Quantizing error of ±1 count is excluded.

ISO/JIS type ANSI/AGD type

Dimensions

Unit: mm

ISO/JIS Type



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

F

Mitutoyo

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 rotation function

ABSOLUTE (Refer to page VIII for details.)

Technical Data

Display: 6-digit LCD and sign
Scale type: ABSOLUTE electrostatic line encoder
Max. response speed: Unlimited (Measurement by scanning can not 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**
Battery life: Approx. 7,000 hours under normal use

Functions

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

Optional accessories

Lug (ISO/JIS type): **21EZA145**
Lug (ANSI/AGD type): **21EZA146**
Contact points for Mitutoyo's dial indicators
(Refer to pages F-46 to F-49 for details.)
Arm for ID-B (made-to-order)
Lifting knob (ISO/JIS type): **21EZA105** (ID-N only)
Lifting knob (ANSI/AGD type): **21EZA150** (ID-N only)
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**
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.

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

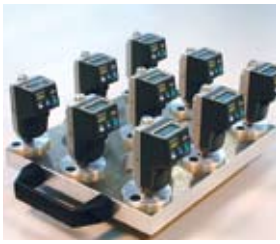
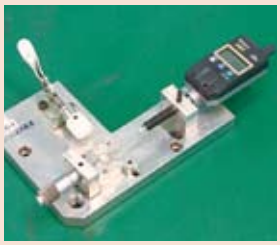
Order No.	Resolution	Range	Accuracy*	Remarks
543-571	.0005", 0.01mm	.5"	.0008"	Slim type ID-N
543-581		.2"	.0008"	Back plunger type ID-B
543-576	0.01mm / 0.001mm .0005" / .00005"	.5"	.0004" / .00012"	Slim type ID-N
543-586		.2"	.0004" / .00012"	Back plunger type ID-B

*Quantizing error of ±1 count is excluded

ISO/JIS type ANSI/AGD type

Usage examples



SPC cable

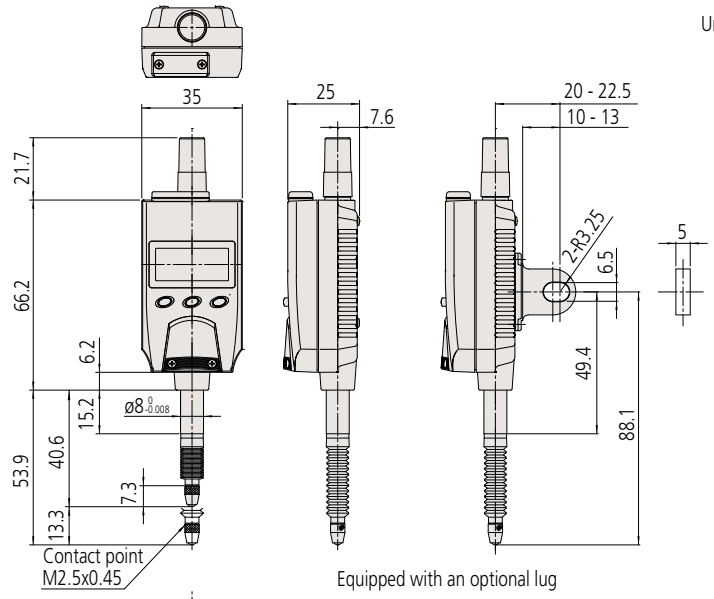
Bifurcated connecting cable with zero-setting terminal

Refer to Catalog **No. E4302-543** for details.

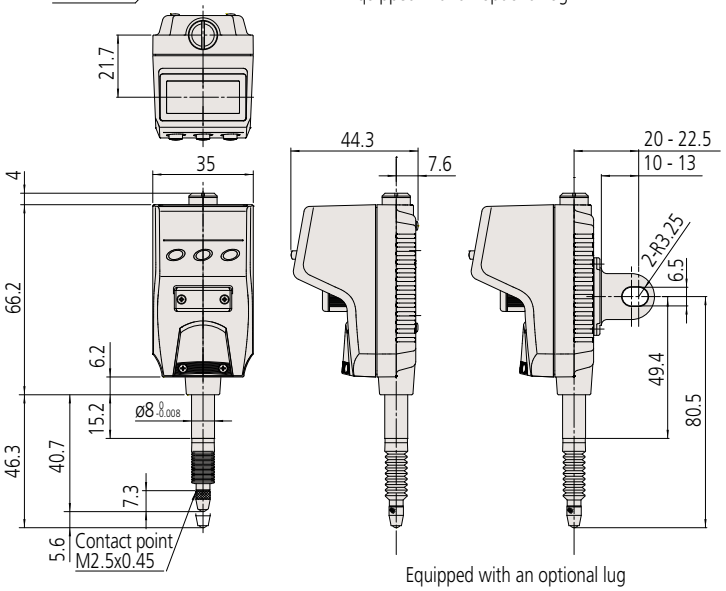
DIMENSIONS

ID-N

Unit: mm



ID-B



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

F

Mitutoyo

Digimatic Indicators

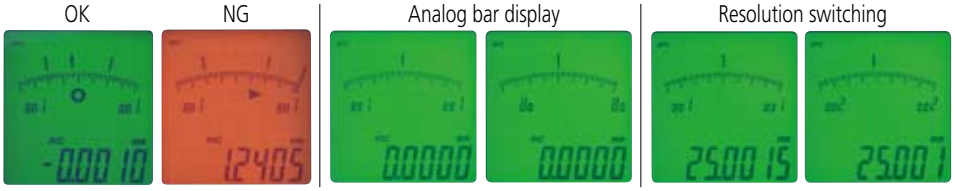
Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE 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 0.5µm/.0002" 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

OK NG Analog bar display Resolution switching

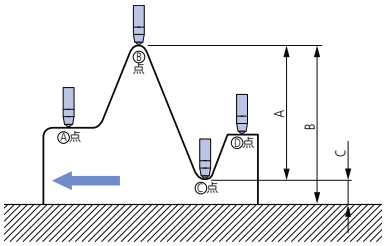


- Measuring maximum value, minimum value and runout (difference between a maximum and a minimum value)

Maximum value / minimum value measurement

Difference/runout measurement

Example: Indicator traces between 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.



- 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)

543-561

543-563

PROPRIETARY INSPECTION CERTIFICATE

An inspection certificate is attached 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)
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)
Plunger direction: Up to direction in which spindle is horizontal
Standard contact point: **901312** (ISO/JIS type)
21BZB005 (ANSI/AGD type)
Lifting lever: **No.137693**

Functions

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

Optional accessories

Remote controller: **21EZA099**
Spindle lifting cable (stroke: 30mm): **540774**
Spindle lifting knob: **21EZA101**
SPC cable: 1m (**936937**)
2m (**965014**)
RS-232 Connecting cable 2m: **21EAA131**
Connecting Cables for **U-WAVE-T**:
160mm (**02AZD790D**)
For footswitch (**02AZE140D**)
Refer to page A-15 for details.
Center-lug back: **101040** (ISO/JIS tyep)
101306 (ANSI/AGD type)
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**

F

SPECIFICATIONS

Metric

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

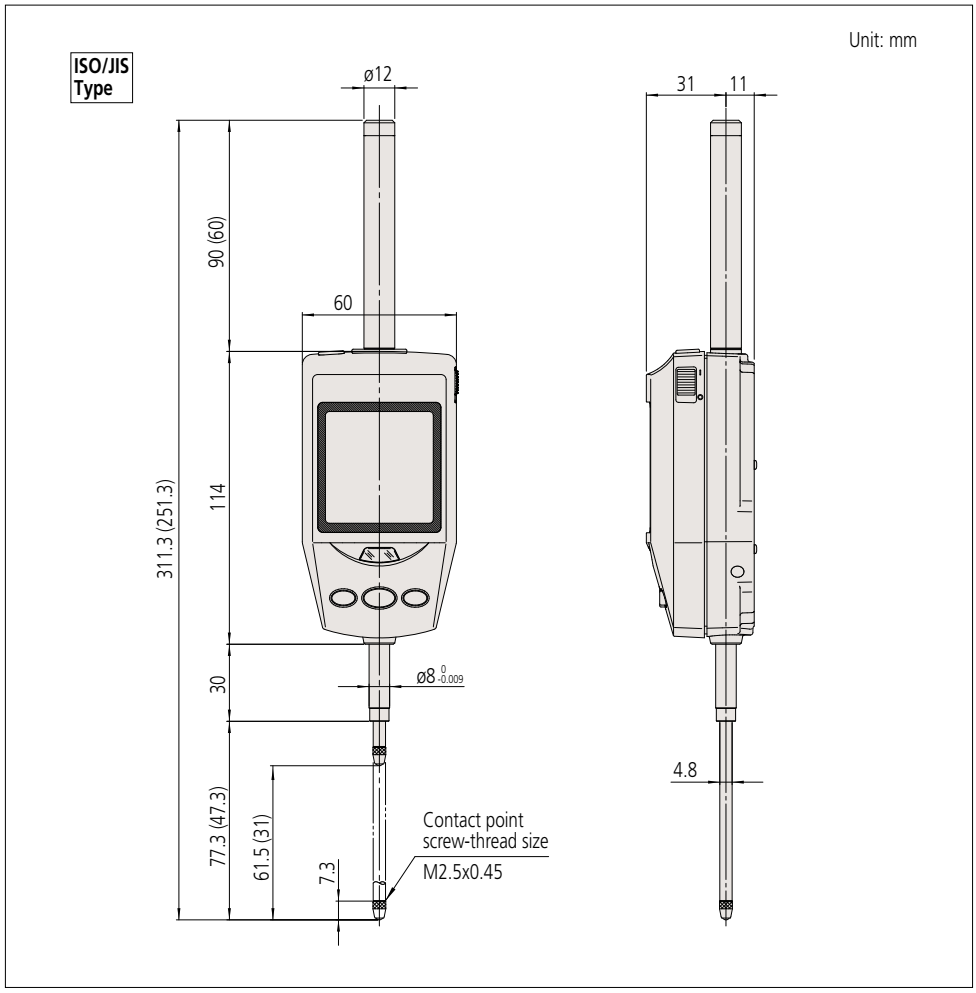
Inch/Metric

Order No.*	Resolution	Range	Accuracy**
543-562	.00002", .00005", .0001", 0.0005mm, 0.001mm	1.2"	.00006"
543-564		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 indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.
( ): for 30.4mm model

F

Mitutoyo

Digimatic Indicators

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

ABLOLUTE Digimatic Indicator ID-CX
SERIES 543 — Standard Type

- Employing the ABSOLUTE Linear Encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.
  *1 Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-18.
- Thanks to the ABSOLUTE Linear Encoder, reliability has been increased due to elimination of over-speed errors.
- Tolerance-judging measurement is available by setting upper and lower limit values. Tolerance judgment result can be enlarged.
- Battery life of approx. 7,000 hours in continuous use has been achieved with only 1 pc of battery.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

Standard Type

Measuring range: 12.7mm
543-390B

• 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.

Actual size

• 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.

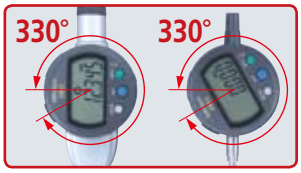
- Power switch
- Data output (when connected to an external device)
- Data hold (when no external device is connected)

Switches between the ABS (preset) and INC (zeroset) measurement modes

- Parameter setting mode
  Count direction switching, tolerance judgment setting, resolution switching, scale factor setting, and function lock setting
- inch/mm conversion (inch/mm models)

• 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 calculation factor (to any value) allows direct measurement without using a conversion table and 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 VIII for details.)

PROPRIETARY INSPECTION CERTIFICATE

An inspection certificate is attached 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 can not 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**
Battery life: Approx. 7,000 hours under normal 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")
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)
* Not available for low measuring force models.
** Required when orienting the indicator upside down.
137693: Lifting lever (for measuring range: 25.4 and 50.8mm) (supplied with 25.4mm and 50.8mm models as standard.)

- SPC Cable:
  1m (**905338**)
  2m (**905409**)
- 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 pages F-50 for details.)
- Measuring stands
  Specifications are subject to change without notice.

Low measuring force type
543-394B

Measuring range 25.4mm
543-470B

Measuring range 50.8mm
543-490B

Setting measuring force on low measuring force models

• 543-404/404B/405/405B/406/406B

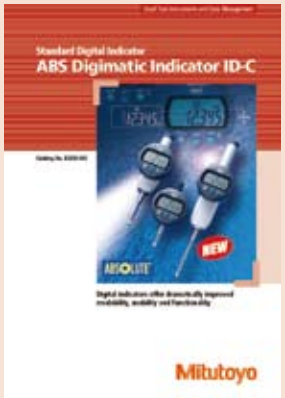
Spindle orientation	Spring	Weight (approximately 0.1N)	Maximum measuring force
Pointing vertically downward	Yes	Yes	0.5N or less
	Yes	No	0.4N or less
	No	Yes	0.3N or less
	No	No	0.2N or less
Horizontal	Yes	No	0.2N or less

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.



Refer to **Catalog E4330-543** "ABS Digimatic Indicator ID-CX" for details.

SPECIFICATIONS

Metric

ISO/JIS type ANSI/AGD type

Order No. (w/ lug)	Order No. (flat-back)	Resolution	Range	Overall*	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)	Order No. (flat-back)	Resolution	Range	Overall*	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
** Plunger direction is up to direction in which spindle is horizontal.

F

Mitutoyo

Digimatic Indicators

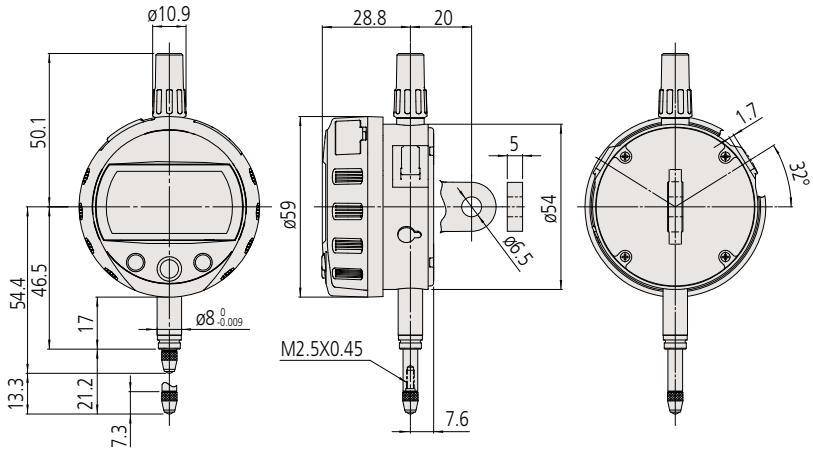
Comparison measuring instruments which ensure high quality, high accuracy and reliability.

DIMENSIONS

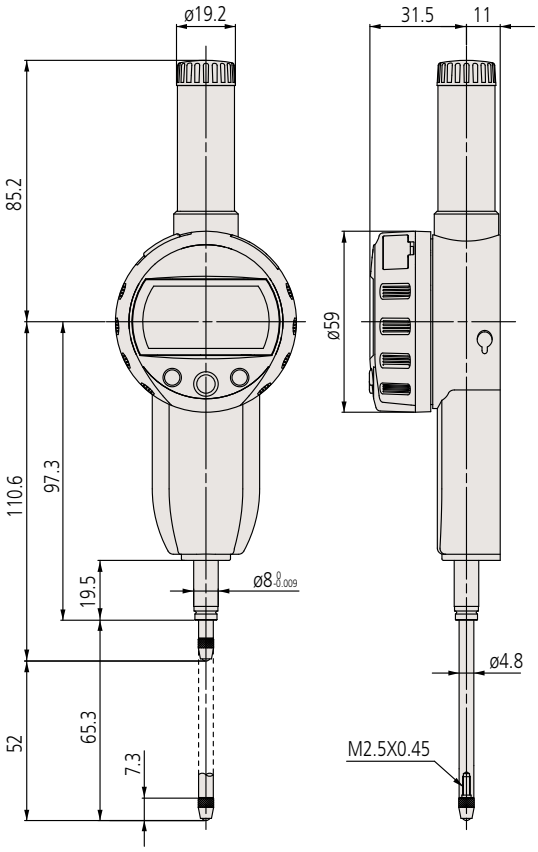
ISO/JIS Type

Unit: mm

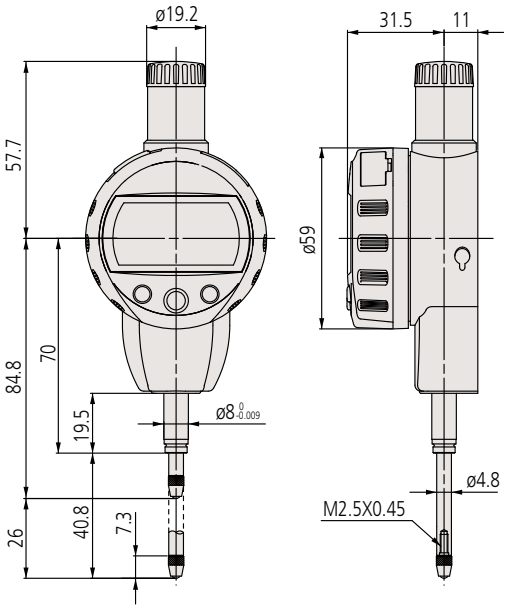
12.7mm range models



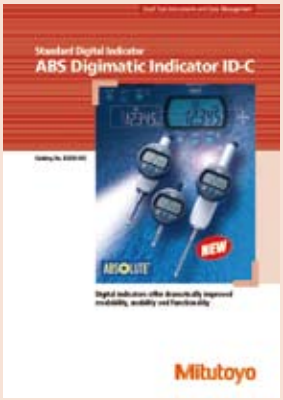
50.8mm range models



25.4mm range models



Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.
Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.
Note 3: Products with an Order No. suffixed "B" have a plain back, and other models have a center lug back. Refer to pages F48 for details of the backs.



Refer to **Catalog E4330-543** "ABS Digimatic Indicator ID-CX" for details.

F

ABSOLUTE

(Refer to page VIII 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**
Battery life: 6 months under normal use*
*Operation time par day: 8 hours

Functions

Preset, Zeroset, 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)
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 pages F-50 for details.)
Measuring stands

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

Inch/Metric

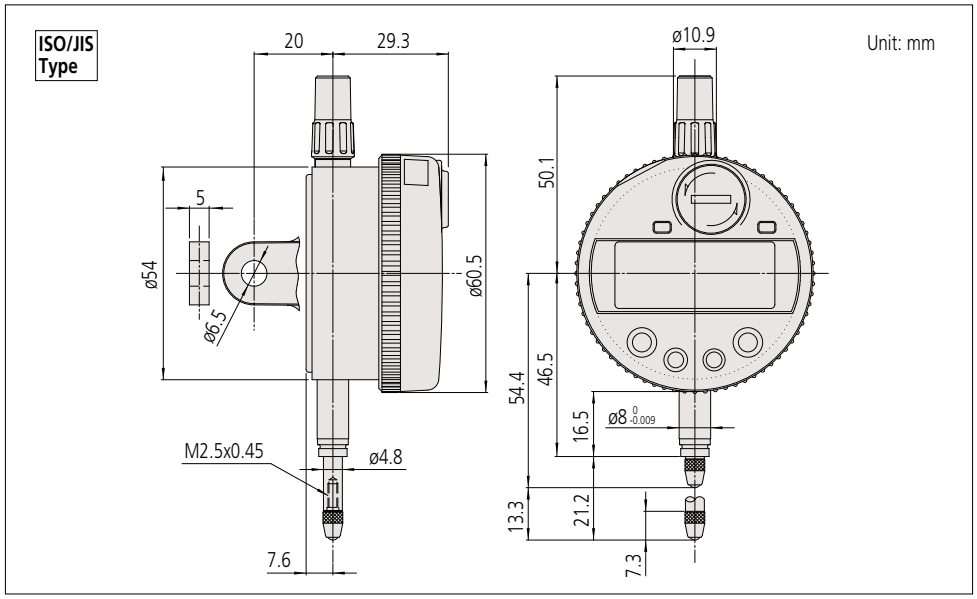
Order No. (w/lug, flat-back)		Resolution	Range	Accuracy**
543-261	**543-261B**	.00005" /0.001mm	.5"	.00012"
543-262	**543-262B**	.00005" /0.001mm	.5"	.00012"
543-263	**543-263B**	.0001" /0.001mm	.5"	.00012"

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

ISO/JIS Type

Unit: mm



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

F

Mitutoyo

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 the 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

Inch/Metric

Order No.*	Resolution	Range	Accuracy*2	Measuring force
543-286B	.00005"/ 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

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 pages F-50 for details of the optional backs.

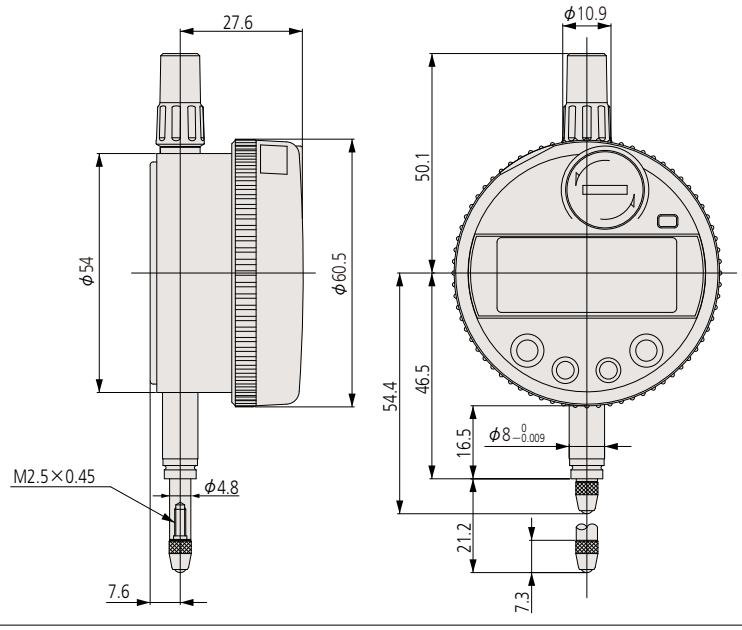
*2 Depends on the values of the arithmetic coefficients currently set.
Quantizing error of ±1 count is excluded.

*3 Plunger direction is up to direction in which spindle is horizontal.

DIMENSIONS

ISO/JIS Type

Unit: mm



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

ABSOLUTE

(Refer to page VIII for details.)

Technical Data

CDisplay: 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 (2pcs.) **938882**
Battery life: 1 year under normal use
(Operation time par day: 8 hours)

Functions

Calculation fanction
$f(x) = Ax + B + Cx^{-1}$
Max./Min. value hold*5
Preset, Zeroset, 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 Spindle speed exceeds 10μm/sec, the correct peak value may not be displayed.

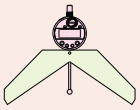
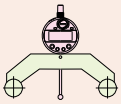
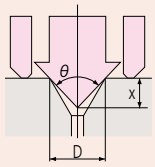
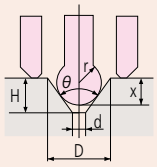
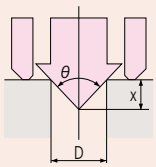
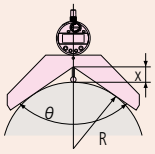
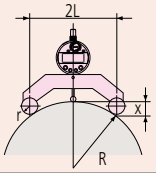
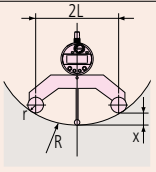
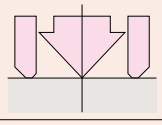
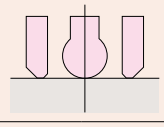
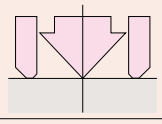
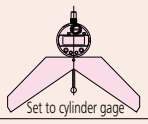
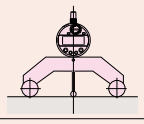
Optional Accessories

902011: Spindle lifting lever (ISO/JIS type)
902704: 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.
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 pages F-50 for details.)
Measuring stands

F

Fixture example

Examples of measuring various features

Fixture type*4							
Contact point		Cone	Ball		Cone	Ball or Flat	Ball or Flat	Ball or Flat
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	D = Ax+B	H = Ax+B	D = Ax	R = Ax		
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			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.

F

Mitutoyo

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. Substitute for the mechanical/ electrical contact, the judgement is carried out by calculating the measurement data obtained. This provides high reliability with no deterioration of the contact point and volume adjustment.
- Employing the 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

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

543-280

IP54

SPECIFICATIONS

Metric — ISO/JIS type — ANSI/AGD type

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	—

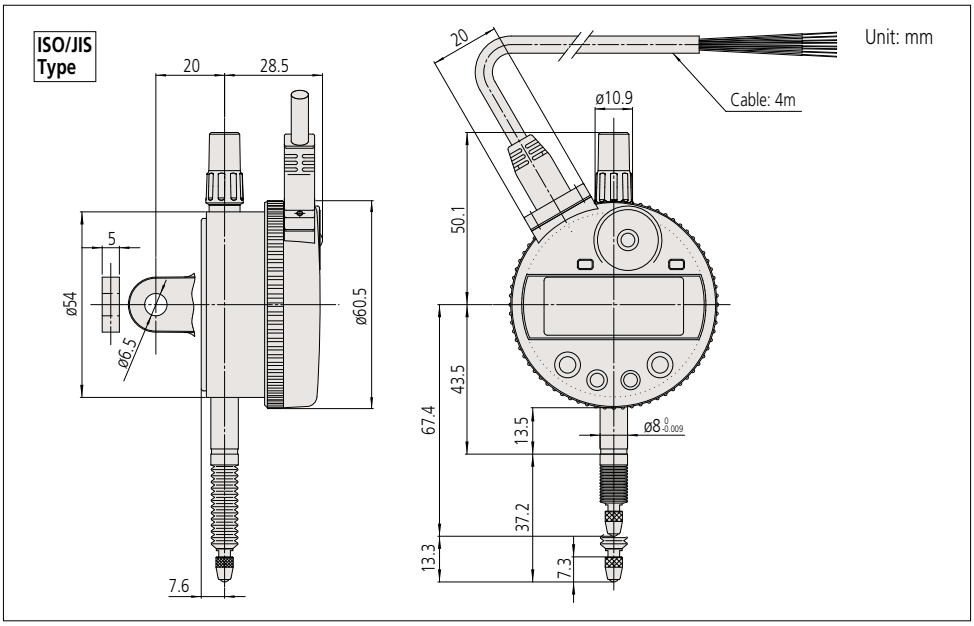
Inch/Metric

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 indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

ABSOLUTE

(Refer to page VIII for details.)

Functions

Signal output (–NG/OK/+NG, NPN open collector), Remote control (hold-reset, preset-recall, zero-set), Preset, Zeroset, 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**
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 pages F-50 for details.

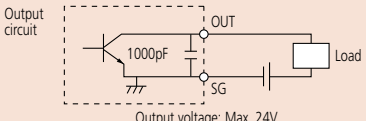
Output pattern

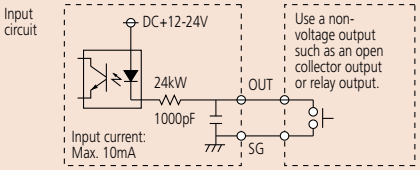
Wire	– NG	OK	+ NG	Composition error
Orange (– NG)	Low	High	High	High
Green (OK)	High	Low	High	High
Brown (+ NG)	High	High	Low	High
LED	Red	Green	Red	Red (blinking)
LCD	<	O	>	"x.xxE" indication

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

Note: Measurement data cannot be output.





ABSOLUTE

(Refer to page VIII for details.)

Functions

Presetting, Power on/off, inch/mm coversion (inch/mm type only), 3set 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.
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.
- Employing an ABSOLUTE Linear Encoder, the Signal ID-C always displays the spindle's "Absolute Position" from the origin at power-on. Also, the reliability has been increased due to elimination of over-speed errors.
  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 repeatable hole inspection of mixed diameter holes.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

543-264B

SPECIFICATIONS

Metric

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

*Flat back

Metric/Inch

Order No.*	Resolution	Range	Accuracy*2
543-265B	0.001mm/.00005"	12.7mm	0.003mm
543-267B	0.001mm/.0001"	12.7mm	0.003mm

*Flat back
Measuring force: 1.5N or less
Battery: SR44 (2pcs.) **938882**
Battery life: 9 months under normal use*3

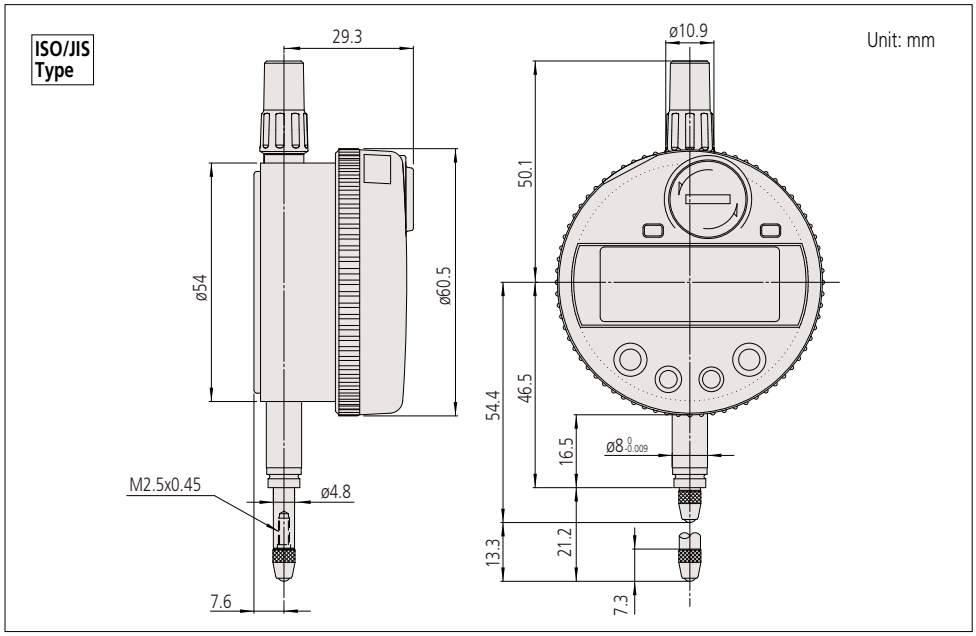
Inch/Metric

Order No.*	Resolution	Range	Accuracy*2
543-266B	.00005"/0.001mm	.5"	.00012"

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

*2 Quantizing error of ±1 count is excluded.
*3 Operation time per a day: 8 hours
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.
4) Standard contact point: **901312** (ISO/JIS type)
21BZB005 (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 indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

F

Mitutoyo

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 the 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.
- The resolution can be switched between 0.001mm /0.01mm (or .001" /.0005" /.0001" /.00005").
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

Multi-functional model

543-551 543-553

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 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.

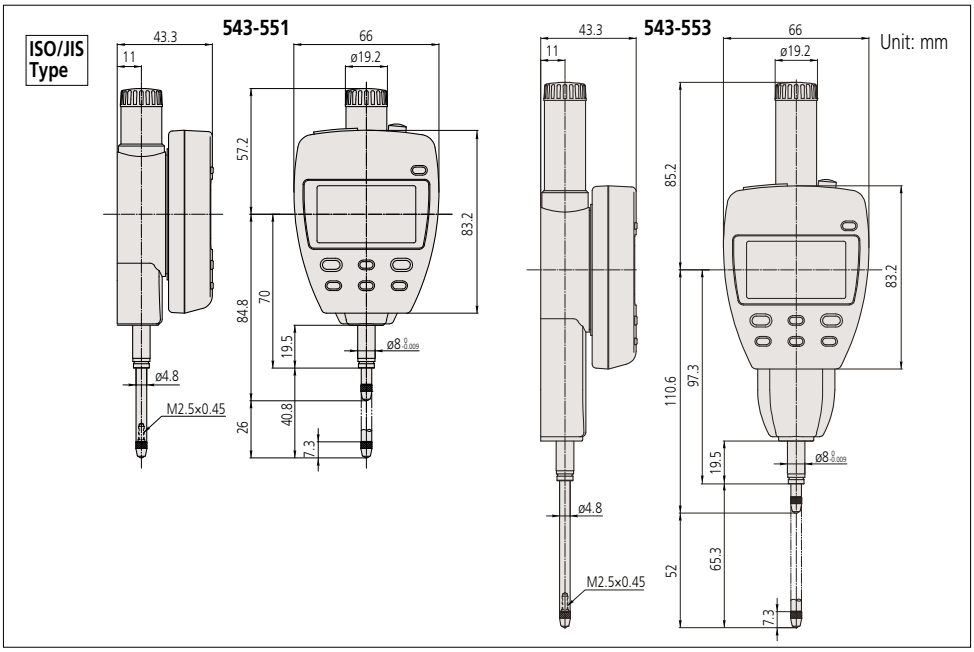
Inch/Metric

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

* 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.

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 indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

ABSOLUTE

(Refer to page VIII for details.)

Technical Data

Resolution: 0.01mm/0.001mm or .00005"/.0001"/.0005"/.001"/0.001mm/0.01mm
Display: LCD Character Height 8.5mm
Scale type: ABSOLUTE electrostatic linear encoder
Max. response speed: Unlimited
Measuring force: 1.8N/2.3N* or less (*50mm range models)
Plunger direction: Up to direction in which spindle is 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)
Lifting lever: **137693**

Functions

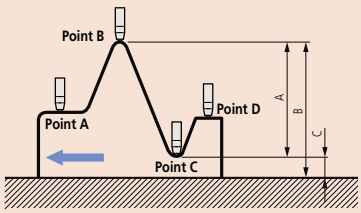
Preset, Zeroset, GO/±NG judgment, Max/Min value hold, Runout measurement, Resolution switching, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Counting value composition error, Overflow error, Tolerance limit setting error

Optional Accessories

Spindle lifting cable (stroke: 25.4mm): **540774**
Lifting knob: **21EZA197** (for the model with the measuring range of 25.4mm)
Lifting knob: **21EZA200** (for the model with the measuring range of 50.8mm)
Center-lug back: **101040** (ISO/JIS type)
101306 (ANSI/AGD type)
Auxiliary spindle spring for 25mm/1" models: **02ACA571**
Auxiliary spindle spring for 50mm/2" models: **02ACA773**
SPC cable: 1m (**936937**)
2m (**965014**)
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 pages 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.



F

ABSOLUTE

(Refer to page VIII for details.)

Technical Data

Display: LCD Character Height 8.5mm
Scale type: ABSOLUTE electrostatic linear encoder
Max. response speed: Unlimited (Measurement by scanning can not 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**
Battery life: Approx. 20,000 hours under normal use
Dust/Water protection level: IP42 (IP53: **543-694**, **543-695**, **543-696**)

Function

Origin-set (Zeroset), 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 lever (ISO/JIS type): **903424**
Spindle lifting lever (ANSI/AGD type): **No. 903425**
Spindle lifting cable: **540774**
Contact points for Mitutoyo's dial indicators
(Refer to pages F-46 to F-49 for details.)
Special backs:
Post-type Back: **02ACB610**
Adjustable Back: **02ACB630**
Offset-lug Back: **02ACB640**
Magnetic Back: **02ACB650**
Screw-mount Back: **02ACB670**
Adjustable-bracket Back: **02ACB680**
SPC Cable:
1m (**905338**)
2m (**905409**)
Connecting Cables for **U-WAVE-T**:
160mm (**02AZD790F**)
For footswitch (**02AZE140F**)
Digimatic Mini-Processor DP-1VR: **264-504**
Measuring Stands

ABSOLUTE Digimatic Indicator ID-S SERIES 543 — Economical Design

- Cost-effective and user-friendly type which is equipped with selected, necessary functions. Especially, **543-690** and **543-694** are a low-priced type with a resolution of 1µ.
- Dust-water protection level: IP42*1,*3 IP53 *2,*3: **543-694**, **543-695**, **543-696**)
- The ABS (ABSOLUTE) sensor restores the last origin position automatically when the indicator is turned on. It also 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 8.5mm.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems.

*1 Protected against solid foreign objects and vertical water drops
*2 Protected against dust and spraying water
*3 Both the cap (without the spindle lifting lever and the spindle lifting cable) and the output cap have to be mounted to keep this rating. Anti-corrosive treatment is necessary after use.

General purpose type

543-690

SPECIFICATIONS

Metric

ISO/JIS type ANSI/AGD type

Order No. (w/ lug, flat-back)		Resolution	Range	Accuracy*2	Measuring force	Remarks
543-690	**543-690B**	0.001mm	12.7mm	0.003mm	2.0N or less	—
543-694	**543-694B**	0.001mm	12.7mm	0.003mm	2.5N or less	Dust-proof (IP53)
543-681	**543-681B**	0.01mm	12.7mm	0.02mm	2.0N or less	—

Inch/Metric

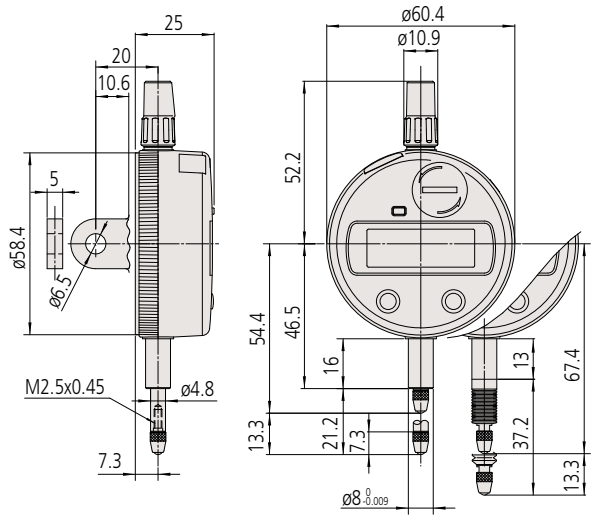
Order No. (w/ lug, flat-back)		Resolution	Range	Accuracy*2	Measuring force	Remarks
543-691	**543-691B**	.00005"/0.001mm	.5"	.00012"	2.0N or less	—
543-695	**543-695B**	.00005"/0.001mm	.5"	.00012"	2.5N or less	Dust-proof (IP53)
543-692	**543-692B**	.00005"/0.001mm	.5"	.00012"	2.0N or less	—
543-696	**543-696B**	.00005"/0.001mm	.5"	.00012"	2.5N or less	Dust-proof (IP53)
543-693	**543-693B**	.0001"/0.001mm	.5"	.00012"	2.0N or less	—
543-682	**543-682B**	.0005"/0.01mm	.5"	.0008"	2.0N or less	—
543-683	**543-683B**	.0005"/0.01mm	.5"	.0008"	2.0N or less	—

* Products with an Order No. suffixed "B" have a plain back.
*2 Quantizing error of ±1 count is excluded.

DIMENSIONS

ISO/JIS Type

Unit: mm



543-694

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

F

Mitutoyo

Digimatic Indicators

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

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-20.
- 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

ABSOLUTE

(Refer to page VIII for details.)

Technical Data

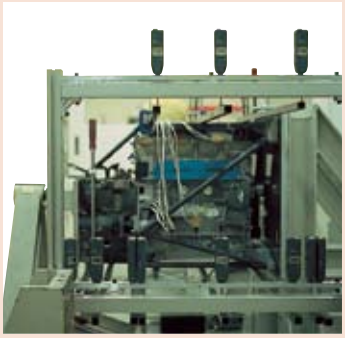
Accuracy: Refer to the list of specifications (Excluding quantizing error of ±1 count)
Resolution: 0.01mm, .0005"/0.01mm
Display: LCD Character Height 8.5mm
Scale type: ABSOLUTE electrostatic linear encoder
Max. response speed: Unlimited (Measurement by scanning can not be performed)
Measuring force: 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**
Battery life: Approx. 20,000 hours under normal use
Dust/Water protection level: IP42
Lifting lever: **137693**

Function

Origin-set (Zeroset), 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.
Connecting Cables for **U-WAVE-T**:
160mm (**02AZD790F**)
For footswitch (**02AZE140F**)
Digimatic Mini-Processor **DP-1VR**: **264-504**
Measuring Stands



Application example

SPECIFICATIONS

ISO/JIS type ANSI/AGD type

Metric

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

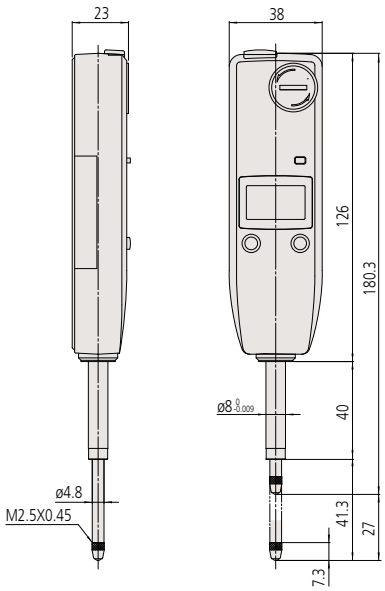
Order No. (w/ lug, flat-back)		Resolution	Range	Accuracy*	Measuring force
—	**575-122**	.0005"/0.01mm	1"	.0008"	1.8N or less
—	**575-123**	.0005"/0.01mm	1"	.0008"	1.8N or less

*Quantizing error of ±1 count is excluded

DIMENSIONS

ISO/JIS Type

Unit: mm



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

F

Supplemental information on Digimatic Indicators

Origin setting of Digimatic Indicators

The stability of measurement within 0.2mm from the start of spindle travel is not guaranteed, so this region should not be used during operation.

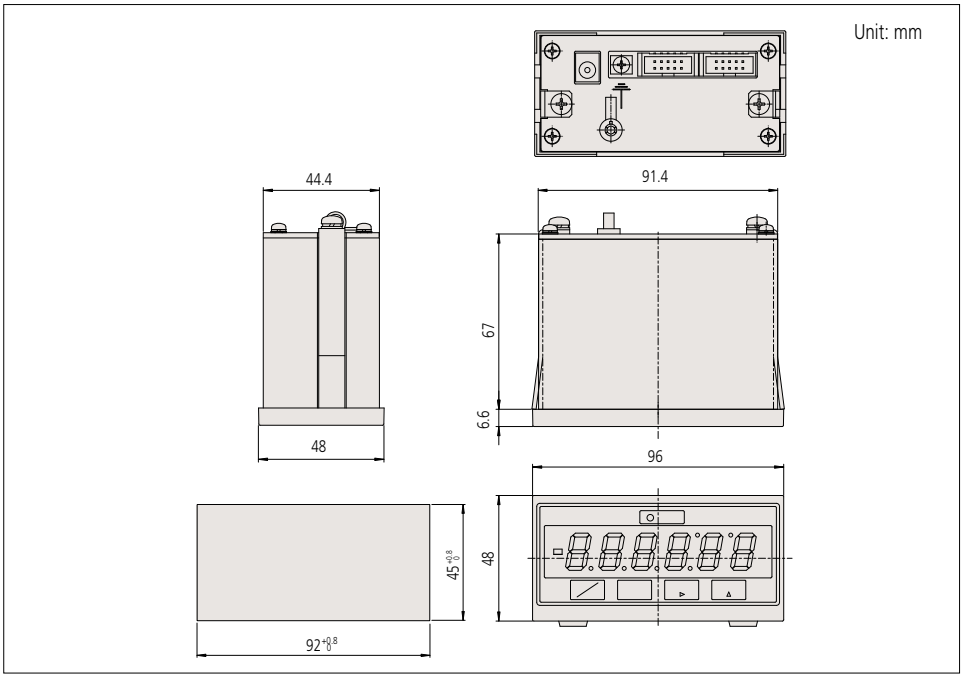
EC Counter
SERIES 542 — Low-cost, Modular Type Display Unit

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

Unit: mm



F

Mitutoyo