# ABSOLUTE Digimatic Indicator ID-C

## SERIES 543 — Standard Type

### FEATURES

- As compact as standard Series 2 dial indicators.
- Large, easy-to-read LCD.
- SET key: Allows the display to be Zero-Set at any spindle position for comparison measurements. This switch will also allow return to the absolute coordinate and display of the true position from the origin point.
- GO/±NG judgment can be performed by setting upper and lower tolerance limits. The judgment result (GO/±NG) can be displayed in full-size characters.
- Simple calculation by a user-definable factor using the formula Ax ('x' is spindle displacement) can be performed.
- The measuring direction can be reversed.
- Unlimited response speed eliminates spindle over-speed errors.
- The indicator face can be rotated 330° to an appropriate angle for easy reading.
- SPC data output.


543-390

IP42


543-470B

IP42


543-490B

IP42

### Large LCD

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


Actual size

SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

(Refer to page VIII for details.)

PROPRIETARY INSPECTION CERTIFICATE

(Refer tzo page VIII 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: LCD
Scale type: ABSOLUTE electrostatic linear encoder
Max. response speed: Unlimited
Measuring force: Refer to the list of specifications
Stem dia.: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point: Carbide ball with M2.5x0.45 (ISO/JIS type)
Carbide ball with #4-48UNF (ANSI/AGD type)
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 7,000 hours under normal use
Dust/Water protection level: IP42

### Function

Origin-set/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

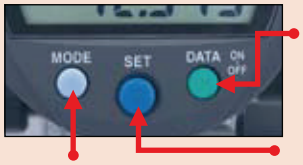
### Optional Accessories

**905338**: SPC cable (1m)
**905409**: SPC cable (2m)
**02AZD790F**: SPC cable for U-WAVE (160mm)
**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)**
———: Backs (See page F-40.)
**101039**: 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)
———: Contact points (See page F-36.)

*Not available for low measuring force models.
**Required when orienting the indicator upside down.

### Three large buttons

The popular three-large-button design, which is used in products such as the ABS coolant proof Digimatic indicator **ID-N/ID-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
  Measuring direction switching, tolerance judgment setting, resolution switching, scale factor setting, and function lock setting
- inch/mm conversion function

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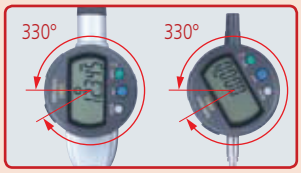
## 330° rotary display

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




## Calculation: f(x) = Ax

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


Application example

## Function locking

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


## Setting measuring force on low measuring force models

**•543-404/404B/405/405B/406/406B**

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

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 |
| | Yes | No | 0.6N |
| | No | Yes | 0.4N |
| | 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

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

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

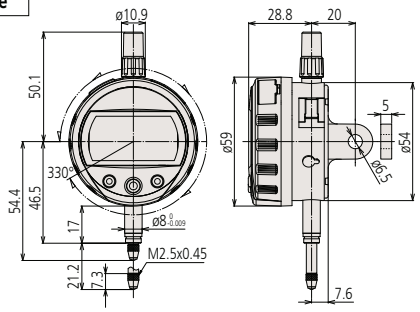
Repeatability: .0005"/.0001"/.0005"/0.001mm/0.01mm Resolution Type: .00010"/0.002mm
.0005"/0.01mm Resolution Type: .0005"/0.02mm

# DIMENSIONS

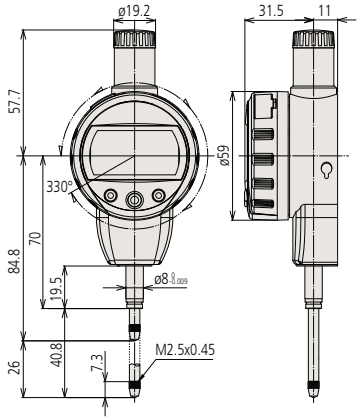
ISO/JIS Type

Unit: mm

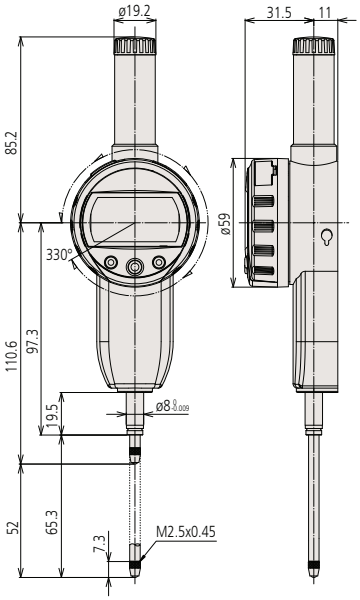
**12.7mm range models**




**25.4mm range models**




**50.8mm 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.

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Mitutoyo