ABSOLUTE Digimatic Indicator ID-CNX (Digimatic S1 supported) SERIES 543 — Standard Type

- **ID-C** Series is a next-generation indicator with many new functions, supporting bidirectional communication. With the addition of the appropriate data cable and software, remote zero setting and gage setting can all be implemented from a connected PC, thereby improving your work efficiency.
- The digital display and analog bar indications help you to intuitively read the approach to the origin and tolerance values.
- The next calibration due date can be set with an alarm to improve instrument management.
- The ABS (ABSOLUTE) scale restores the last origin position* automatically when the indicator is turned on, and 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. (Refer to page 09-3)

* Refer to "Precautions for use" on page 07-2.

Measuring range 12.7 mm
543-700B

Measuring range 25.4 mm
543-720B

SPECIFICATIONS

Metric ISO/JIS Type

Code No. w/lug	Code No. Flat back	Range (mm)	Resolution (mm)	Maximum permissible error (MPE)*1 (mm) Partial measuring range P_{MPE}	Total measuring range E_{MPE}	Hysteresis H_{MPE}	Repeatability R_{MPE}	Maximum permissible limit (MPL) Measuring force (N)	Mass (g) w/lug	Mass (g) Flat back
543-700	**543-700B**	12.7	0.0005/0.001/0.01 (selectable)	0.003	0.003	0.002	0.002	1.5 or less	175	165
543-705*2	**543-705B***2							0.4 to 0.7	170	160
—	**543-720B**	25.4						1.8 or less	—	195
—	**543-730B**	50.8		0.005	0.005			2.3 or less	—	260
543-710	**543-710B**	12.7	0.01	0.02	0.02	0.02	0.01	0.9 or less	170	160
543-715*2	**543-715B***2							0.2 to 0.5	165	155
—	**543-725B**	25.4						1.8 or less	—	190
—	**543-735B**	50.8		0.04	0.04			2.3 or less	—	245

Inch/Metric ISO/JIS Type

Code No. w/lug	Code No. Flat back	Range	Resolution	Maximum permissible error (MPE)*3 (mm) Partial measuring range P_{MPE}	Total measuring range E_{MPE}	Hysteresis H_{MPE}	Repeatability R_{MPE}	Maximum permissible limit (MPL) Measuring force (N)	Mass (g) w/lug	Mass (g) Flat back
543-701	**543-701B**	0.5 in/12.7 mm	0.00002/0.00005/0.0001/0.0005 in, 0.0005/0.001/0.01 mm (selectable)	0.003	0.003	0.002	0.002	1.5 or less	175	165
543-706*2	**543-706B***2							0.4 to 0.7	170	160
—	**543-721B**	1 in/25.4 mm						1.8 or less	—	195
—	**543-731B**	2 in/50.8 mm		0.005	0.005			2.3 or less	—	260
543-711	**543-711B**	0.5 in/12.7 mm	0.0005 in/0.01 mm	0.02	0.02	0.02	0.01	0.9 or less	170	160
543-716*2	**543-716B***2							0.2 to 0.5	165	155
—	**543-726B**	1 in/25.4 mm						1.8 or less	—	190
—	**543-736B**	2 in/50.8 mm		0.04	0.04			2.3 or less	—	245

Inch/Metric ASME/ANSI/AGD Type

Code No. w/lug	Code No. Flat back	Range	Resolution	Maximum permissible error (MPE)*3 (in) Overall*4	Hysteresis	Repeatability	Maximum permissible limit (MPL) Measuring force (N)	Mass (g) w/lug	Mass (g) Flat back
543-702	**543-702B**	0.5 in/12.7 mm	0.00002/0.00005/0.0001/0.0005 in, 0.0005/0.001/0.01 mm (selectable)	±0.00012	0.00008	0.00008	1.5 or less	195	165
543-707*2	**543-707B***2						0.4 to 0.7	190	160
—	**543-722B**	1 in/25.4 mm					1.8 or less	—	195
—	**543-732B**	2 in/50.8 mm		±0.00020			2.3 or less	—	260
543-712	**543-712B**	0.5 in/12.7 mm	0.0005 in/0.01 mm	±0.0010	0.0010	0.0005	0.9 or less	190	160
543-717*2	**543-717B***2						0.2 to 0.5	185	155
—	**543-727B**	1 in/25.4 mm					1.8 or less	—	190
—	**543-737B**	2 in/50.8 mm		±0.0015			2.3 or less	—	245

- Display: 7-digit display, sign, and analog bar
- Power source: CR2032 battery (1 pc.), included as standard (for operational checks)
- Battery life: Approx. 2,700 hours of continuous use. Approx. 2.5 years under normal use. (Depends on use of the indicator. The above values are reference values.)
- Response speed: Unlimited (except for scanning measurement)

*1 These values apply to normal measurements at 20 °C (Resolution: 0.0005 mm, Calculation coefficient: A=1)
*2 Low measuring force *3 These values apply to normal measurements at 20 °C. *4 Overall magnification and linearity

MeasurLink® ENABLED Data Management Software by Mitutoyo

ABSOLUTE™

PROPRIETARY INSPECTION CERTIFICATE

DIGIMATIC S1

Functions

- Peak detection (MAX/MIN)
- Runout range measurement (MAX - MIN)
- Zero-setting (INC system)
- Presetting (ABS system)
- Measuring direction switching
- Tolerance judgment
- Resolution switching (For 0.0005 mm or 0.00002 inch resolution type)
- Simple calculation: f(x) =Ax
- Function Lock
- Calibration schedule warning
- Auto power OFF
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery/voltage alarm display
- Error alarm display

Example of ID-CNX installed on optional bore gage

Note: Direction setting, etc. is necessary when **ID-CNX** is used with a bore gage. Refer to the operation manual for details.

Spindle orientation for measurement

- Standard models with measuring range 12.7 mm: Usable in all orientations.
- Models with measuring range 25.4 or 50.8 mm: Usable between the contact point pointing downward and spindle in horizontal orientation. To use the contact point pointing upward, the auxiliary spindle spring (optional) is required.
- Low measuring force model: See "Setting measuring force on low measuring force models" below.

Setting measuring force on low measuring force models

The measuring force of models with low measuring force can be set by combining standard accessory springs and weights.

• 543-715(B)/716(B)/717(B)

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

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

• 543-705(B)/706(B)/707(B)

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

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

Product catalog E12049

Video

Optional Accessories

Code No.	Type	Description
264-020	—	USB Input Tool Series USB Keyboard Signal Conversion Type **IT-020U**
06AGL011	SF	Connection cable (1 m)
06AGL021	SF	Connection cable (2 m)
06AGQ001F	SF	USB Input Tool Direct (2 m)
02AZG011	SF	Connection cable for **U-WAVE-T** (160 mm)
02AZG021	SF	Connection cable for **U-WAVE-T** For foot switch
264-622	IP67	**U-WAVE-TM**
264-623	Buzzer	**U-WAVE-TM**
02AZD810D	—	**U-WAVE-R**
264-626	IP67	**U-WAVE-TMB**
264-627	Buzzer	**U-WAVE-TMB**
02AZF700	—	Connecting unit for **U-WAVE-TM**/**TMB** (for **ID-F**/**ID-C** Series 12.7 mm/0.5 inch type only)
02AZF670	—	**U-WAVE-TM**/**TMB** mounting bracket: for Digimatic Indicators

Connecting unit fitted to an indicator (12.7 mm type)

Typical application of **U-WAVE-TM**/**TMB** mounting bracket (with **543-725B**)

- Lifting
  Lifting lever:
  21EZA198 (12.7 mm/0.5 inch type)
  Lifting cable:
  21JZA295 Stroke 12.7 mm: 12.7 mm/0.5 inch type
  (This cannot be used on low measuring force model.)
  With auto-stop function:
  21JZA301 (overall length 300 mm) 12.7 mm/0.5 inch type
  (This cannot be used on low measuring force model.)
  Lifting knob:
  21EZA105 (12.7 mm/0.5 inch type)
  (This cannot be used on low measuring force model.)
  21EZA197 (25.4 mm/1 inch type)
  21EZA200 (50.8 mm/2 inch type)
  Lifting lever: **21EAA426**
  (supplied with 25.4 mm and 50.8 mm models as standard.)
- Auxiliary spindle spring:
  02ACA571 (25.4 mm/1 inch type*)
  02ACA773 (50.8 mm/2 inch type*)

*Required when orienting the indicator upside down.

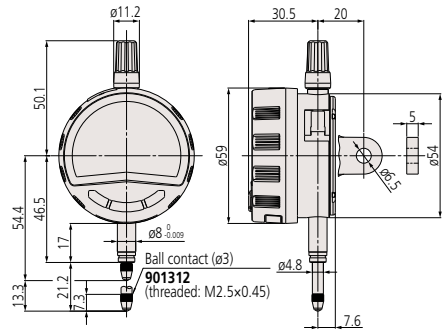
- Measurement data collection software
  USB-ITPAK V3.0: **06AGR543**
- Contact points for Mitutoyo's Digimatic indicators (optional)
  Refer to pages 07-63 to 07-68 for details.
- Interchangeable back covers (optional)
  Refer to pages 07-69 to 07-70 for details.
- Measuring stands (optional)
  Refer to pages 07-97 to 07-103 for details.

DIMENSIONS

12.7 mm range models

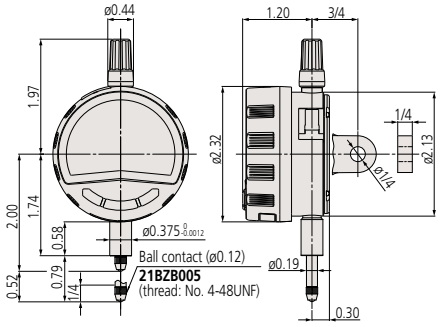
Unit: mm

ISO/JIS Type



Unit: in

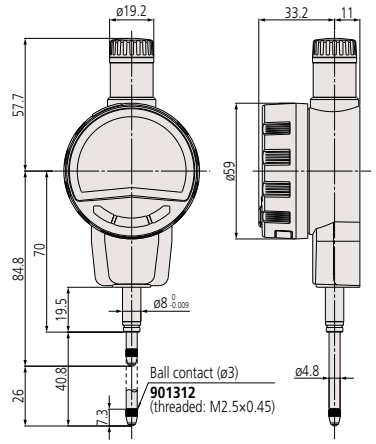
ASME/ANSI/AGD Type



25.4 mm range models

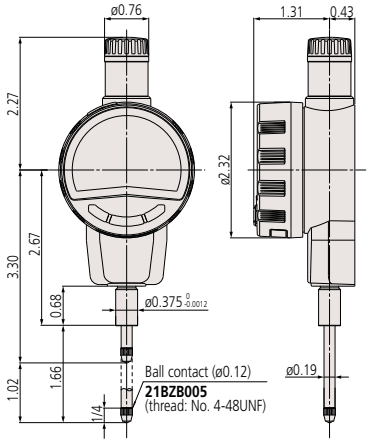
Unit: mm

ISO/JIS Type



Unit: in

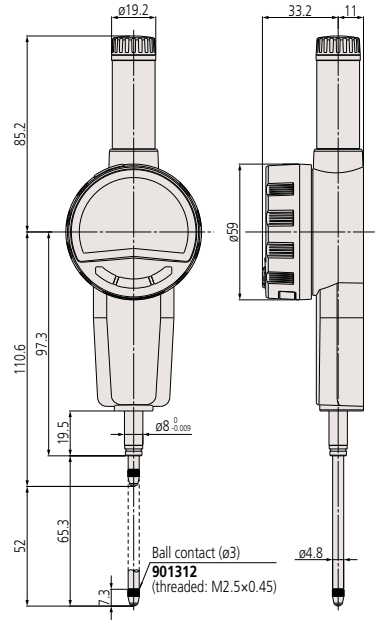
ASME/ANSI/AGD Type



50.8 mm range models

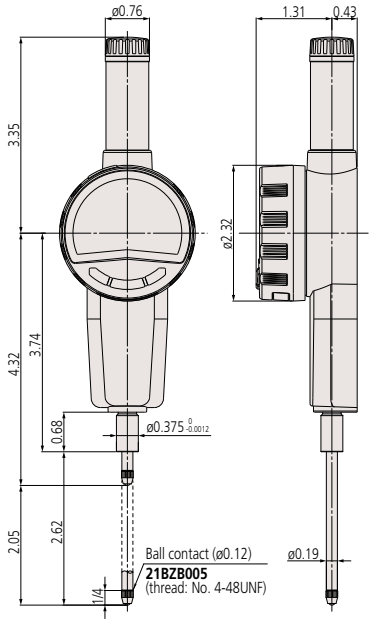
Unit: mm

ISO/JIS Type



Unit: in

ASME/ANSI/AGD Type



Note: Products with a code No. suffixed "**B**" have a plain back, and other models have a center-lug back. Refer to pages 07-69 to 07-70 for details of the backs.

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