Mitutoyo

High-performance ABS Digimatic Indicator
ID-F

Mitutoyo Quality

GOOD DESIGN AWARD 2020

NEW Products

High-performance ABS Digimatic Indicator ID-F

NEW Products

New-generation ID-F that makes measurement operations smoother and enhances the quality

Large characters and an analog display bar make it easier to read the measurement results. A color switching LCD backlight allows the user to instantly understand tolerance judgment results. Three large buttons make light work of menu navigation and setting. This tool also supports bidirectional communication and features high functionality and extendability to increase work efficiency. With a maximum resolution of 0.5 µm for higher precision and a calibration schedule warning function it will show its true value with manufacturers seeking high efficiency and quality.

Measuring range 25.4 mm

ID-F0525ENX
Order No. 543-852

Measuring range 50.8 mm

ID-F0550ENX
Order No. 543-854

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Enhances the production quality

ID-F is a precision measuring instrument that performs comparative measurement, such as thickness and surface unevenness measurement of the target object. By precisely measuring flatness, parallelism, concentricity and other values, this tool makes it possible to check any deformation caused by distortion if placed, for example, in several places on the sunroof during the automotive assembly process.

Main functions and features

Supports bidirectional communication to help increase work efficiency

Enables bidirectional communication between the ID-F and the computer to easily perform operations such as ID-F batch setting and measurement data collection. This reduces the time and effort required for measurement preparation and data processing.

Answers to more precise measurement needs

The maximum resolution is 0.5 µm (0.0005 mm). With a indication error corresponding to 0.0025 mm, this indicator can be used in high-precision applications.

Equipped with an external power supply for continuous use

Thanks to the external power supply, there is no battery to replace. With an external power supply (AC adapter) this indicator series also lends itself to long term tests or monitoring.

A wide range of support functions make measurement operations smoother

ID-F models feature a wide range of functions, including simple calculation, peak detection, data hold, data output, and counting direction switching functions.
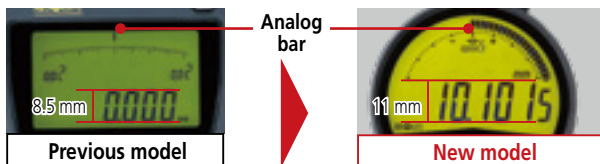
Main functions

Enhanced work efficiency thanks to superior readability
Large characters and analog bar

The readability has been increased with large characters of 11 mm in height* and an analog bar.

*Display unit in mm: Excludes last digit
 Display unit in inch: Applies to all digits

Analog bar

8.5 mm
**Previous model**

11 mm
New model

The height of the characters has been increased from 8.5 mm with the previous model to 11 mm (about 1.5 times as much). The analog bar has also been made larger to increase the readability.

Never miss a calibration
Calibration schedule warning function

An icon is displayed on the LCD to notify the user of the set calibration schedule. This function facilitates the proper precision management of the measuring instrument.

Notification icon
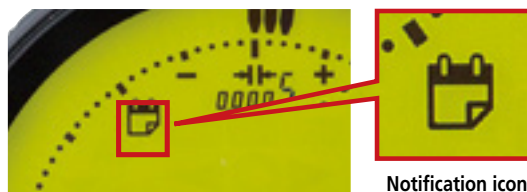
The calibration schedule warning icon starts blinking at a set time (e.g. 1 week before the calibration date) before the limit. If the limit is exceeded, the entire screen starts blinking to notify the user.

Frequently used functions can be set to the buttons for easy operation
Three large buttons

The ease of use has been greatly enhanced thanks to these three large buttons. The user can freely set any frequently used function to the buttons.

1 Parameter setting mode
· Counting direction switching
· Tolerance judgment function setting
· Resolution switching
· Calculation function setting
· Function lock setting

2 Switching between ABS measurement system (preset) and INC measurement system (zero set)

3 Power ON/OFF
· Data output (when connected to an external device)
· Data hold (when not connected to an external device)

Understand tolerance judgment results at a glance
Color backlight display

Built-in tolerance judgment function that shows the judgment result with the lighting color. Staff with no special training can now easily carry out judgment work.

OK

Failure

Easy to read values in every situation
330° rotary mechanism

The face can be rotated on a wide range to maintain the ease of use and readability of the characters and the bar even when the ID-F is used horizontally or at an angle.
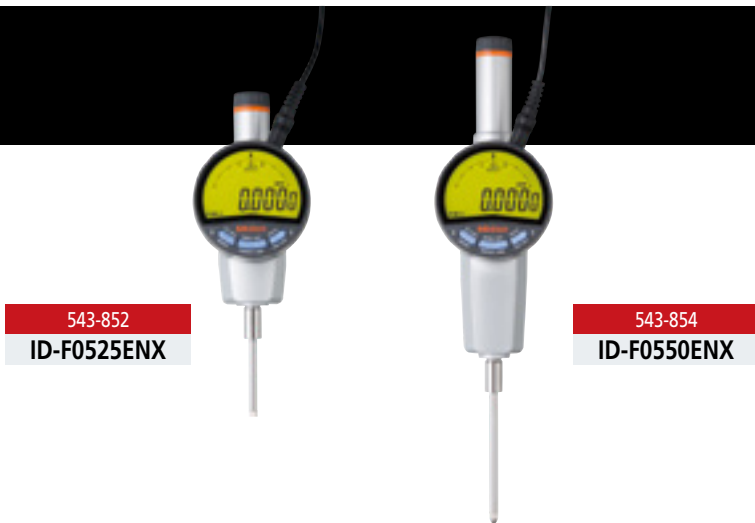
Enhanced measurement work efficiency
Simple calculation function

The result of the spindle movement value multiplied by a calculation coefficient can be displayed in real time. This reduces the work when measuring using a jig or similar tools.

$$f(x) = Ax$$

f(x): Displayed value
x: Spindle movement value
A: Any coefficient

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543-852
ID-F0525ENX

543-854
ID-F0550ENX

Order No.	543-851	543-853	543-857	543-852	543-854	543-858
Model	ID-F0525NX	ID-F0550NX	ID-F0550HNX	ID-F0525ENX	ID-F0550ENX	ID-F0550HENX
Unit (Display unit)	mm			mm/inch		
Range	25.4 mm	50.8 mm		25.4 mm/1 in	50.8 mm/2 in	
Resolution	0.0005 mm			0.0005 mm/0.00002 in		
Resolution switching	0.0005/0.001/0.01 mm			0.005/0.001/0.01 mm 0.00002/0.00005/0.0001/0.0005/0.001 in		
Maximum permissible error (MPE) — MPE$_E$*1	0.0025 mm	0.004 mm	0.003 mm	0.0025 mm/±0.0001 in	0.004 mm/±0.0002 in	0.003 mm/±0.00012 in
Maximum permissible error (MPE) — Hysteresis (MPE$_H$)	0.002 mm			0.002 mm/0.0001 in		
Maximum permissible error (MPE) — Repeatability (MPE$_R$)	0.002 mm			0.002 mm/0.0001 in		
Response speed	Unlimited					
Measuring force (MPL)	≤1.8 N	≤2.3 N		≤1.8 N	≤2.3 N	
Interface	DIGIMATIC d1/d2/S1					
Power supply	AC adapter (5.9V)					
Net mass	240 g	330 g		240 g	330 g	

*1 Error of indication for the total measuring range (MPE$_E$)

● Measures precisely Max., Min., and TIR (amplitude (Max - Min) values. (Peak detection speed: 500 times/s)
● This product is compatible with all Mitutoyo dial indicator contact points having the appropriate thread.

Order No.	543-851 · 543-852	543-853 · 543-854 · 543-857 · 543-858
Dimensions		

(A) 543-852
(B) 543-851
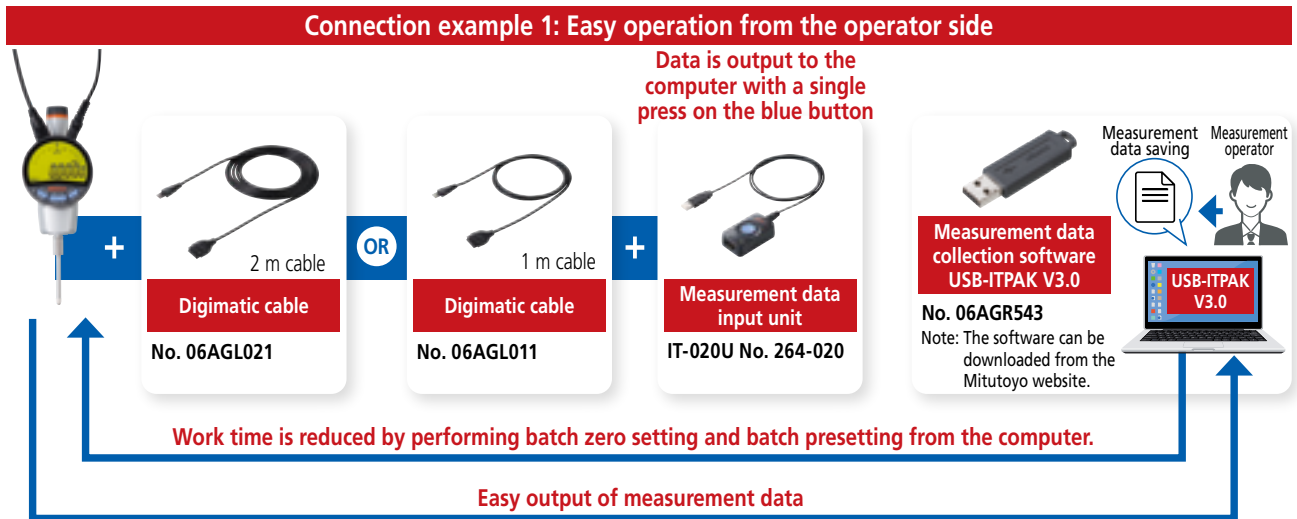
(C) 543-854, 543-858
(D) 543-853, 543-857

Data communication functions and related options

Easy connection to a computer providing increased efficiency
Bidirectional communication support

The ID-F features an interface supporting the proprietary bidirectional serial communication standard (DIGIMATIC S1). The indicator can be connected to a computer using the optional USB Input Tool or another means to enable bidirectional communication and greatly increase work efficiency.

*USB-ITPAK V3.0 or later must be installed on the computer used for communication.

Connection example 1: Easy operation from the operator side

Data is output to the computer with a single press on the blue button

+

2 m cable
Digimatic cable
No. 06AGL021

OR

1 m cable
Digimatic cable
No. 06AGL011

+

Measurement data input unit
IT-020U No. 264-020

Measurement data collection software USB-ITPAK V3.0
No. 06AGR543
Note: The software can be downloaded from the Mitutoyo website.

Measurement data saving   Measurement operator

USB-ITPAK V3.0

Work time is reduced by performing batch zero setting and batch presetting from the computer.

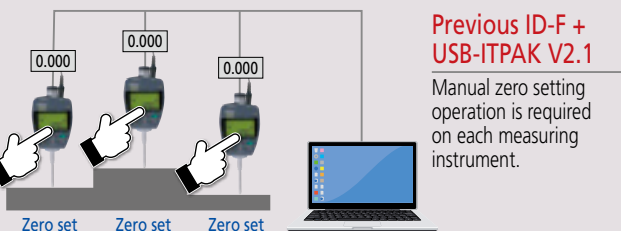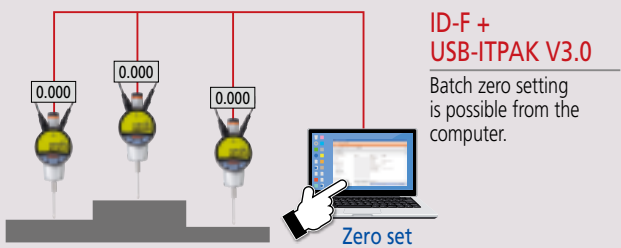**Easy output of measurement data**

SOFTWARE   Reduces the time and effort needed for inspection work
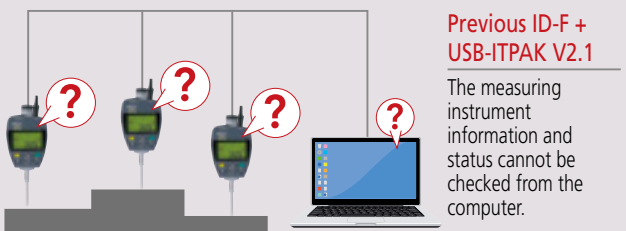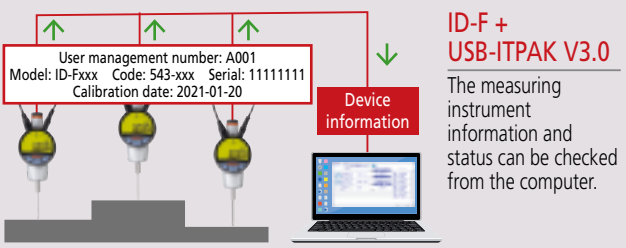
Measurement data collection software
USB-ITPAK V3.0

USB-ITPAK is useful software to create procedures when inputting measurement data into Excel sheets. The latest version allows the user to perform batch zero setting and presetting, batch setting of multiple ID-F devices, data acquisition instruction from a computer, etc.
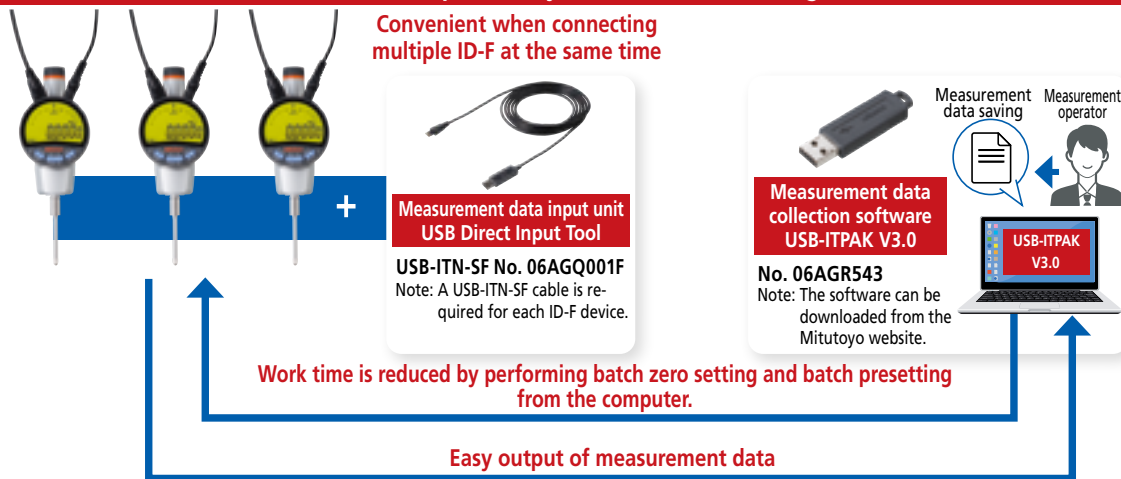
Function example ①: Zero setting from a computer

0.000   0.000   0.000

ID-F + USB-ITPAK V3.0
Batch zero setting is possible from the computer.

Zero set

0.000   0.000   0.000

Previous ID-F + USB-ITPAK V2.1
Manual zero setting operation is required on each measuring instrument.

Zero set   Zero set   Zero set

Function example ②: Indicator information collection

User management number: A001
Model: ID-Fxxx   Code: 543-xxx   Serial: 11111111
Calibration date: 2021-01-20

Device information

ID-F + USB-ITPAK V3.0
The measuring instrument information and status can be checked from the computer.

?   ?   ?   ?

Previous ID-F + USB-ITPAK V2.1
The measuring instrument information and status cannot be checked from the computer.

Connection example 2: Easy connection with a single cable

Convenient when connecting multiple ID-F at the same time

+

Measurement data input unit USB Direct Input Tool

USB-ITN-SF No. 06AGQ001F
Note: A USB-ITN-SF cable is required for each ID-F device.

Measurement data saving   Measurement operator

Measurement data collection software USB-ITPAK V3.0

No. 06AGR543
Note: The software can be downloaded from the Mitutoyo website.

USB-ITPAK V3.0

Work time is reduced by performing batch zero setting and batch presetting from the computer.

Easy output of measurement data

USB-ITPAK V2.1/V3.0 Function comparison table

Symbols: ●: Can be used only when connected to a model supporting USB-ITPAK V3.0 and Digimatic S1, ○: Can be used, ×: Cannot be used

Operating environment and functions		Details	ITPAK V2.1	ITPAK V3.0
Supported communication standard	Digimatic d1/d2	d1: 1st generation, unidirectional communication, 6-digit / d2: 2nd generation, unidirectional communication, 8-digit	○	
	Digimatic S1	3rd generation, bidirectional communication, 8-digit	×	○
Supported OS		Windows 2000 SP4, Windows XP SP2 or later, Windows Vista, Windows7, Windows8 / 8.1	○	×
		Windows10		○
Functions	Sequential measurement	When using one or several measuring instruments, the measurement data is input into an Excel sheet from the measuring instruments registered in advance.		○
	Batch measurement	The measurement data is acquired in batch from several measuring instruments and then input into an Excel sheet.		○
	Individual measurement	Measurement data is acquired for each measuring instrument and then input into Excel sheets and cells set individually. With this method, measurements performed randomly by multiple operators can be input from each instrument into specified sheets and cells.		○
	Simple measurement	Makes it possible to start measuring without prior detailed settings and to sort data in Excel columns by measurement location.	×	○
	Measuring instrument setting	Used to change the settings (zero set, registration of preset values, unit, counting direction, tolerance setting) of the connected measuring instruments using the USB-ITPAK software.	×	●
	Measurement history	Used to save information on the measurement operator and measurement tool in the measurement data (information on who made the measurement using which tool).	×	●
	Device information	Used to display information (model, serial No., calibration date) about the connected measuring instrument on the computer.	×	●
	Data input into Microsoft Excel	Used to input values to specified cells in Excel.		○
	Text data input using a virtual keyboard	Used to input text (characters and values) in specified cells in Excel.		○
Security	USB dongle for V2.1	*For USB-ITPAK V2.1 (cannot be used with V3.0)	○	×
	USB dongle for V3.0	*Can also be used with USB-ITPAK V2.1.	○	○

Coordinate Measuring Machines	Vision Measuring Systems	Form Measurement	Optical Measuring
Sensor Systems	Test Equipment	Digital Scale and DRO Systems	Small Tool Instruments and Data Management
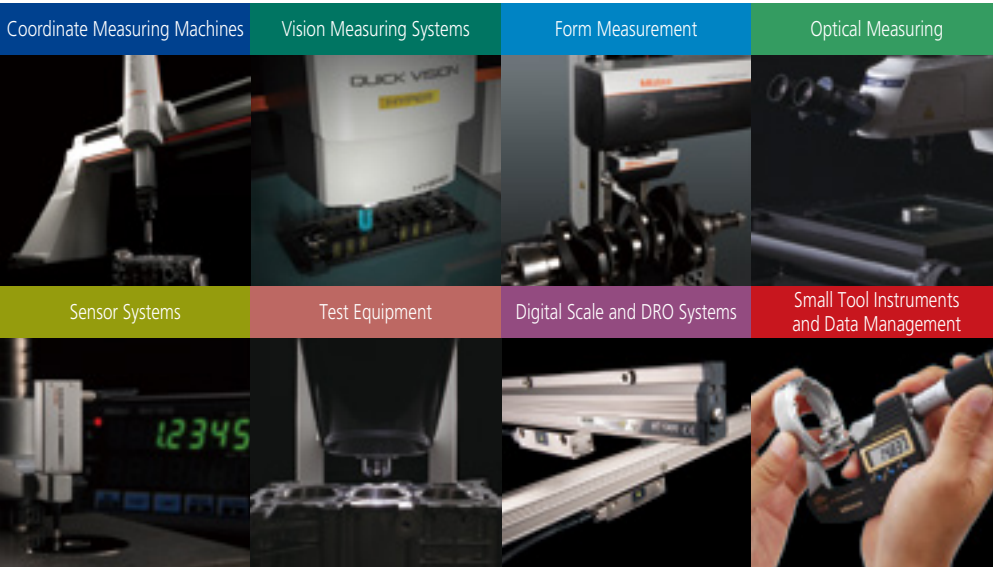
Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

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