Measurement Data Input Unit
USB Input Tool Direct: USB-ITN

Bulletin No. 2015

USB Input Tool Direct now features a model dedicated to each instrument type and a software option for increased spreadsheet efficiency

Mitutoyo

New

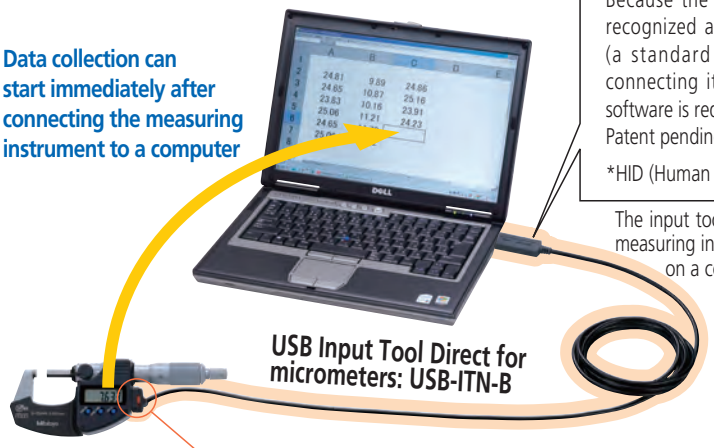
USB Input Tool Direct: USB-ITN

Our USB Input Tool Direct has been streamlined into a range of dedicated models for each type of measuring instrument.

Features 1: Using USB-ITN Alone

In the same way as the existing model, IT-012U, measurement data can be input to Excel, Notepad, and other programs just by connecting the input tool to a computer.

Data collection can start immediately after connecting the measuring instrument to a computer



Because the input tool is automatically recognized as an *HID keyboard device (a standard Windows driver) just by connecting it to a USB port, no special software is required.
Patent pending (Japan)

*HID (Human Interface Device)

The input tool directly connects the measuring instrument to a USB port on a computer

The input tool has been streamlined by incorporating the USB function into the cable

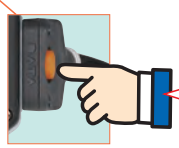
Existing model: USB input tool

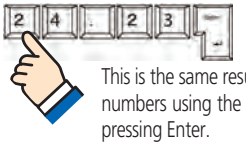
Cable length: 0.9 m
IT-012U No.264-012-10

+

Cable length: 1 m
No.05CZA662

The values displayed on the measuring instrument can be sent to the computer just by pressing the data switch.



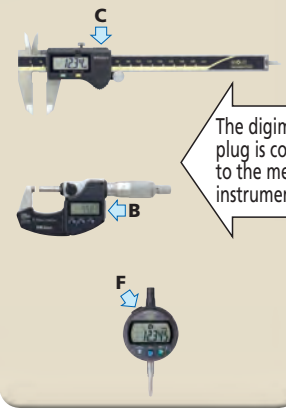


This is the same result as that of typing numbers using the keyboard and then pressing Enter.

Note on using a foot switch with USB-ITN

The USB-ITPAK and USB-FSW options are required (see page opposite).
If not using optional software the IT-012U input tool can be used with a foot switch.

Measuring instrument with digimatic output



The digimatic plug is connected to the measuring instrument.

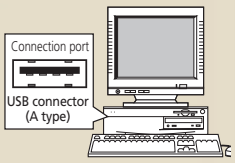
Plugs

USB-ITN types

Each type of USB-ITN has a unique plug to fit the instrument it is designed for (figures **A** to **G** on the left).
Just select the type that fits your measuring instrument (USB-ITN-A, USB-ITN-B,...). Detailed specifications, such as part numbers, are shown on page 5.

The USB plug is connected to a computer.

Computer



- Supported operating systems:
  Windows 2000 SP4
  Windows XP SP2 or later
  Windows Vista
  Windows 7

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Features 2: Using USB-ITN in Combination with the Optional Spreadsheet Software

Although measurement data can be simply loaded directly into an Excel spreadsheet by connecting the instrument and input tool to a computer, using the optional USB-ITPAK software enables time-saving operations and procedures that significantly improve reliability and efficiency.

Measurement data collection software: USB-ITPAK® Order No. 06ADV386

This setup and data collection software is used to input data from one or more measuring instruments (connected by way of **USB-ITN**) to any Excel sheet. (This software package cannot be used with **IT-012U**.)

USB-ITPAK

Details about the usage environment are provided on page 5.

USB dongle

Software use requires USB dongle.

Major features

- Excel input settings: The input destination (a workbook, sheet, or cell), cell-fill direction (right or down), cell-fill interval, and other settings can be specified.
- Measurement method selection: Any of the following three methods can be selected: Sequential measurement, batch measurement, or individual measurement. (For details, see the measurement examples.)
- Data input control: Data can be requested, canceled, or skipped by using mouse buttons, function keys, or foot switch.
- Character string input by the USB foot switch adapter, USB-FSW: Any previously specified character string can be input using the foot switch. Examples: *pass* or *fail*
- Number of units that can be connected (total number for both USB-ITN and USB-FSW): Up to 20 units can be connected for Windows Vista or Windows 7, and up to 100 units can be connected for Windows 2000 or Windows XP. However, the above numbers might be less depending on the system configuration.
- Data importation time: About 0.2 to 0.3 seconds per unit. However, this value differs depending on the connected measuring instruments and measurement environment.
- Driver software: The VCP (virtual COM port) drivers for USB-ITN and USB-FSW are individually recognized using a built-in COM number. • Patent pending (Japan)

These types of measurement are made possible by using the USB-ITPAK optional software

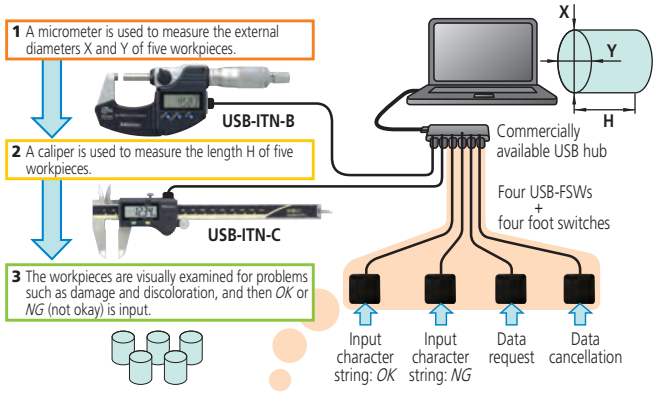
Various measurement patterns are supported by the three measurement modes of USB-ITPAK.
Data input and cancellation can also be performed with a single button press using the foot switch.

USB-ITPAK measurement examples

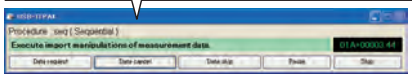
Sequential measurement

For this measurement method, one or more measuring instruments (connected by way of USB-ITN) are used to sequentially input one data item at a time according to a procedure stored in advance.

Measurement example Sequentially measuring the external diameters X and Y and length H, shown in the figure at the right, of five workpieces at a time, and then visually judging whether the external appearance is acceptable (based on damage, discoloration, and other problems)



While executing a measurement procedure, the following window is displayed, and Data Request*, Data Cancellation*, Data Skip*, Pause, or Stop can be selected by using the mouse. Operations marked with * can be assigned to a function key or foot switch (by way of USB-FSW).

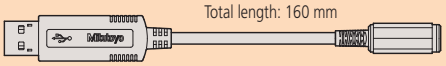


	A	B	C	D	E	F
1	Setting	1	2	3	4	5
2	Dimension X	10.025	10.033	9.964	10.031	10.046
3	Dimension Y	9.982	10.017	10.008	9.996	10.027
4	Dimension H	29.97	30.02	30.07	29.96	30.04
5	External appearance	OK	OK	NG		

Cell-fill direction after inputting data (down or right)
Carriage return (row, column)
Any previously specified Excel sheet
Micrometer input range (B2 to F3)
Caliper input range (B4 to F4)
Visual judgment input range (B5 to F5)
The cell into which the next data item will be input is shaded in green.

USB foot switch adapter: USB-FSW

No.06ADV384



Major specifications

The foot switch function can be specified with USB-ITPAK and used accordingly.

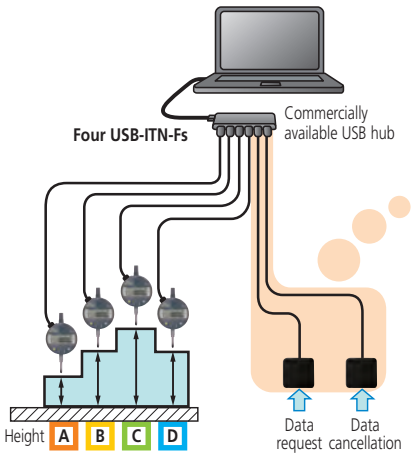
1 Data control: Data Request, Data Cancellation, and Data Skip

2 Inputting any character string: Examples - *pass*, *fail*, *OK*, *NG*

Batch measurement

For this measurement method, data is imported in batches from multiple measuring instruments (connected by way of USB-ITN).

Measurement example Measuring the height of a workpiece at the four positions A to D in batches (at the same time) as shown in the figure below



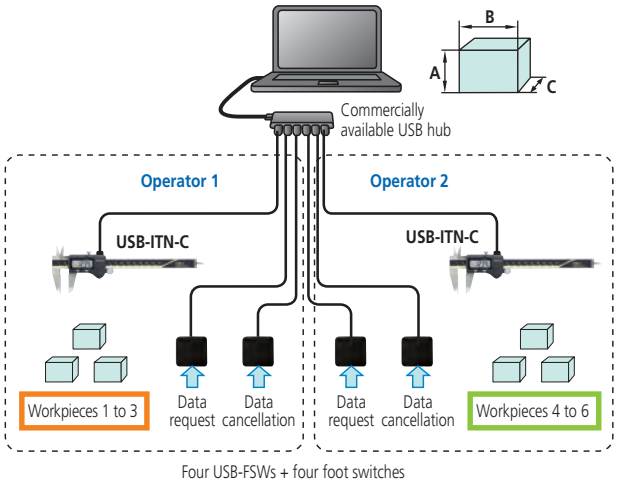
External appearance of USB-FSW

	A	B	C	D	E	
1		Height A	Height B	Height C	Height D	
2	1	5.02	8.03	9.96	6.03	First measurement (complete)
3	2	4.98	8.02	10.01	5.99	Second measurement (complete)
4	3	4.97	8.04	10.07	5.96	Third measurement (complete)
5	4					Fourth measurement (awaiting the next input)
6	5					

Individual measurement

For this measurement method, multiple operators make random measurements, and then data is input from the corresponding measuring instruments (by way of USB-ITN) according to individually specified input procedures. • Patent pending (Japan)

Measurement example Dividing six workpieces into two groups of three, one of which is measured by each of two operators (parallel work)



Four USB-FSWs + four foot switches

Because multiple operators are making measurements in parallel, the operation buttons in the following window and function keys, of which the system has only one, cannot be used. Only foot switches, for which multiple measuring instruments can be used, are available (by way of USB-FSW).

	A	B	C	D	E	F	G
1	Setting	1	2	3	4	5	6
2	Dimension A	10.02	10.03	9.96	10.15	10.23	10.04
3	Dimension B	9.98	10.01	10.07	9.99	9.78	
4	Dimension C	10.15	10.14		9.96	10.27	

Operator 1 — Next cell into which to input a measurement

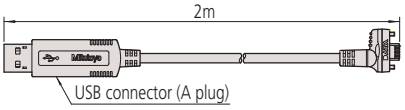
Operator 2 — Next cell into which to input a measurement

Notes on using USB-ITPAK

- Do not merge the cells within the range of cells specified as input destinations for measurement data.
- During measurement, do not perform operations on the Excel sheet you are using other than data input work stored in the measurement procedure. To write data, the measurement Pause or Stop button must be clicked.

Major specifications of USB Input Tool Direct

- Output specifications: USB 2.0 or 1.1
- Communication speed: 12 Mbps (full speed)
- Power supply: USB bus power
- Mass: 59 g
- USB 2.0 certification obtained
- Complies with the EU EMC Directive
- Illustration (Example: **USB-ITN-A**)



Note: It is recommended to use a commercially available USB hub that has USB certification.

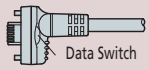
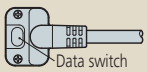
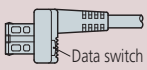
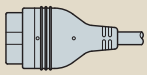
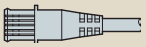
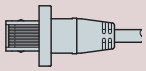
USB-ITPAK usage environment

Supported operating systems*	Windows 2000 SP4, Windows XP SP2 or later, Windows Vista, and Windows 7
Supported Excel versions	Excel 2000, 2002, 2003, and 2007
Hard disk	At least 20 MB of free space (required for installation)
CD-ROM drive	Required for installation
USB ports	At least two ports (for the USB dongle and USB-ITN)
Resolution	At least 800 x 600 pixels, and at least 256 displayable colors

*• 64-bit operating systems are not supported.
• The natural language selected in USB-ITPAK must be the same as that used in the operating system.

Codes for the main measuring instruments classified according to the USB Input Tool Direct code, part number, and plug type

Determine the plug type suitable for your measuring instrument (one of the seven types from **A** to **G**) in the following table, and then select the corresponding USB Input Tool Direct.

Model	USB-ITN-A	USB-ITN-B	USB-ITN-C	USB-ITN-D	USB-ITN-E	USB-ITN-F	USB-ITN-G
Order No.	06ADV380A	06ADV380B	06ADV380C	06ADV380D	06ADV380E	06ADV380F	06ADV380G
Whether the existence of a data switch affects usability	Incorporates a data switch, so the tool is usable regardless of whether or not the measuring instrument has a switch.			Does not incorporate a data switch, so an instrument fitted with a switch is required in order to use the instrument alone. (However, the tool can be used with USB-ITPAK.)			
Cable type	**A** Water-proof with switch	**B** Water-proof with switch	**C** With switch	**D** 10-pin plain	**E** 6-pin round	**F** Straight type	**G** Water-proof straight type
Illustration of the plug that connects to the measuring instrument							
Socket type on the measuring instrument							
Codes of major compatible measuring instruments	[Digimatic Caliper /Super Caliper] **-500 series CD67-S_PM CD-PMX/PM/GM -550/551 series CDC-P_PMX CDN-P_PMX** [Digimatic Carbon Fiber Caliper] **-552 series CFC-G/GL/GC/GU** [Digimatic Depth Gage] **-571 series VDS-PMX** [Digimatic Scale Unit] **-572 series SD-G** [Digimatic Exclusive Caliper] **-573 series NTD-PMX/PM** 	[Digimatic Micrometer, QuantuMike] **-293series MDC-MJ/MJB/MJT MDE-MJ** [Tubular Inside Micrometer] **-337 series IMZ-MJ -339 series IMJ-MJ** [Digimatic Micrometer Head] **-350 series MHN-MB/MJB/MJNB** [Digimatic Exclusive Micrometer] (The end of the mark is– **MJ/MJB/M/MB/PM/PMB**) **[Digimatic Holtest] -468 series HTD-R** 	[Digimatic Micrometer Head] **-164 series MHD-MB** [Digimatic Caliper] **-500 series CD-CX/C/S_C - 550/ 551 CDC-C/CX, CDN-C/CX** [Digimatic Depth Gage] **-571 series VDS-DCX/DC** [Digimatic Scale Unit] **-572 series SD-D/SDV-D** [Digimatic Exclusive Caliper] **-573 series** The end of the mark is **-CX/C** 	Measuring instrument models that incorporate a data switch [Surface Roughness Tester] **-178 series SJ-201/210/301/ 400/500** [Coating Thickness Gage] **-179 series DGE-745/755** [Linear Height] **-518 series QMH-S** [Reference Gage] **-515 series HMD-C** [Digimatic Indicator] **-543 series ID-H** [Laser Scan Micrometer] **-544 series LSM-9506/6100/ 6200/6900** [μ-checker] **Digital μ-checker** (Using the foot switch)	[Digimatic Micrometer] **-121 series BD -164 series MHD-M -227 series CLM -293 series MDQ-M MDC-M** [Tubular Inside Micrometer] **-337 series IMZ-M** [Tubular Inside Micrometer] **-339 series IMJ-M** [Digimatic Holtest] **-468 series HTD** [Reference Gage] **-515 series HME-DM** [Boremetic] **-568 series SBM-C** [Hardness Testing Machines] **-810 series HM-100/200 HV-100/HH-411 HR-500**	[Digimatic Height Gage] **-192/570/574 series HDM-A/AX, HD-A/AX HDS-H_C/C HDF-N** [Digimatic Caliper] **-500/550/551 series CD/CDC/CDN** [Digimatic Bore Gage] **-511 series CG-D** [Digimatic Indicator] **-543 seires ID-C_X/_RB/_GB** [Digimatic Depth Gage/ Digimatic Thickness Gage] **-547 series** Digimatic model (**ID-CX**) [Digimatic Carbon Fiber Caliper] **-552 series CFC-P/-L/-C/-U** [Digimatic Scale Unit] **-572 series SD-E, SDV-E SD-F, SDV-F** [Portable Hardness Testing Instruments] **-811 series HH-300**	[Digimatic Indicator] **-543 series ID-N ID-B** 
				Measuring instrument models that do not have a data switch [Digimatic Indicator] **-543 series ID-F** [Linear Gage/Counter] **-542 series EF-PRH/ZR, EH-P/Z/S/D EB-P/Z/D EC-D** [Litematic] **-318 series VL-A/AS/AH**	No corresponding models	[Digimatic Indicator] **-543 series ID-C/S/C_A** [Digimatic Depth Gage/ Digimatic Thickness Gage] **-547 series** Digimatic model (**ID-C**) **-575 series ID-U**	No corresponding models

- Coordinate Measuring Machines
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- Small Tool Instruments and Data Management

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