

# Spring Promo 2012

## Precision Tools & Instruments

Prices effective April 2 through June 29, 2012



**Deep Discounts!**  
Savings of up to **30%!!**

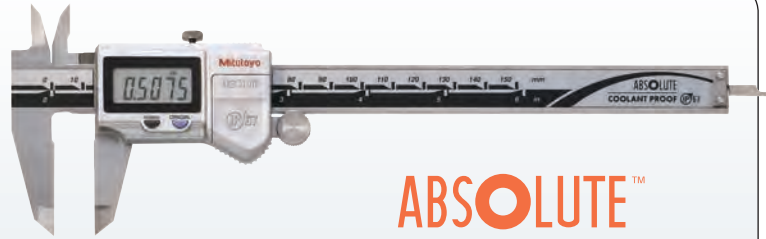
Mitutoyo HR-200

# Calipers



## Coolant Proof Calipers

**IP67**



**ABSOLUTE™**  
Absolute System Patented by MITUTOYO

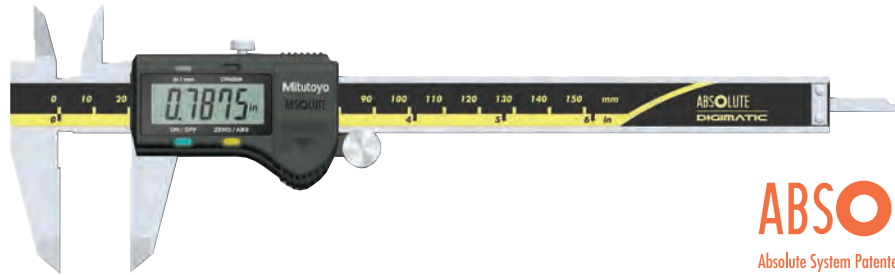
Order No.	Measuring Range	List Price	Sale Price
<b>Non-Output Style</b>			
500-752-10	0-6"/0-150mm	\$198.00	<b>\$188.10</b>
500-753-10	0-8"/0-200mm	\$265.00	<b>\$251.80</b>
500-754-10	0-12"/0-300mm	\$458.00	<b>\$435.10</b>

### FEATURES

- It's sealed housing is IP-67 rated, meaning it's immune to the coolants, dirt, grit and chips found in many manufacturing environments.
- .0005"/0.01mm resolution with  $\pm .001$ " accuracy for 6" models and 8" models.
- Certificate of inspection provided (4"/6"/8" models).



## Digimatic Calipers with Absolute Encoder



**ABSOLUTE™**  
Absolute System Patented by MITUTOYO

Order No.	Measuring Range	Remarks	List Price	Sale Price
<b>With SPC Output Style</b>				
500-171-20	0-6"/0-150mm		\$178.00	<b>\$169.10</b>
500-172-20	0-8"/0-200mm		\$234.00	<b>\$222.30</b>
500-173	0-12"/0-300mm		\$497.00	<b>\$472.20</b>
500-506-10	0-24"/0-600mm	Without Thumb Roller	\$852.00	<b>\$809.40</b>
500-507-10	0-40"/0-1000mm	Without Thumb Roller	\$1,650.00	<b>\$1,567.00</b>



Order No.	Description	List Price	Sale Price
959149	40" Caliper Cable	\$47.80	<b>\$45.30</b>
959150	80" Caliper Cable	\$53.55	<b>\$50.90</b>

## MyCAL Lite



### FEATURES

- Economically priced
- Large LCD digits
- .001"/0.1mm resolution
- Accuracy:  $\pm .005$ "

Order No.	Measuring Range	List Price	Sale Price
700-123	0-8"/0-200mm	\$174.00	<b>\$121.80</b>

## Dial Calipers

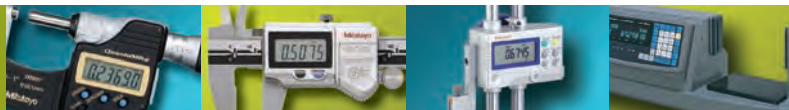


### FEATURES

- Stainless Steel
- .001" graduations

Order No.	Range	List Price	Sale Price
505-674	0 - 4"	\$100.00	<b>\$95.00</b>
505-675	0 - 6"	\$118.00	<b>\$112.10</b>
505-676	0 - 8"	\$173.00	<b>\$164.40</b>
505-677	0 - 12"	\$266.00	<b>\$252.70</b>

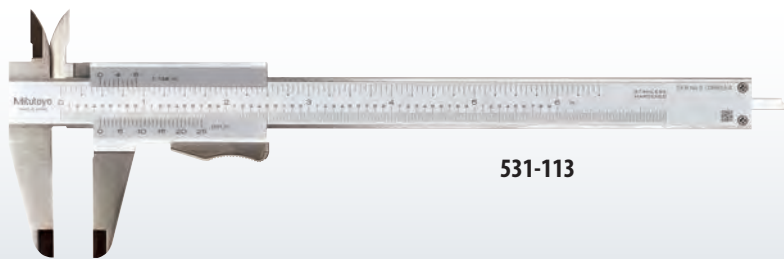
# Calipers/Micrometers



## Vernier Caliper with Thumb Clamp

### FEATURES

- The slider moves only when the spindle loaded thumb clamp is depressed.
- Can measure OD, ID, depth, and steps
- Supplied with vinyl holster in fitted carton.



531-113

### Graduation

Order No.	Range	Accuracy	Lower Scale	Upper Scale	List Price	Sale Price
531-113	0-6"	±.0015"	.001"	1/28"	\$102.00	<b>\$71.40</b>

## Micrometer Stand

The micrometer stand is designed to provide the convenience of a benchtop tool with hand micrometers or other gages.



156-101-10

Micrometer sold separately

Order No.	Description	Mic Range	List Price	Sale Price
156-101-10	Micrometer Stand	0-4"	\$104.00	<b>\$95.70</b>

## Digit Outside Micrometers

### FEATURES

- Mechanical digit counter with .001" reading for quick and error-free reading.
- Supplied in fitted plastic case.



Order No.	Range	Graduation	Remarks	List Price	Sale Price
193-211	0-1"	.0001"	Friction Thimble	\$176.00	<b>\$158.40</b>
193-212	1-2"	.0001"	Friction Thimble w/standard	\$208.00	<b>\$191.40</b>
193-213	2-3"	.0001"	Ratchet Stop w/standard	\$232.00	<b>\$213.40</b>
193-214	3-4"	.0001"	Ratchet Stop w/standard	\$256.00	<b>\$235.50</b>

## QuantuMike Micrometers



**UP TO 10% OFF!**

### FEATURES

- Faster measurement with 2mm travel per revolution instead of the standard 0.5mm
- A patented ratchet thimble mechanism helps ensure repeatability
- A Function lock helps prevent error
- IP-65 protection level
- Certificate of inspection is provided

Order No.	Range	Resolution	List Price	Sale Price
293-180*	0-1"/0-25mm	.00005"/0.001mm	\$249.00	<b>\$236.60</b>
293-181*	1-2"/25-50mm	.00005"/0.001mm	\$284.00	<b>\$269.80</b>
293-182*	2-3"/50-75mm	.00005"/0.001mm	\$339.00	<b>\$322.00</b>
293-183*	3-4"/75-100mm	.00005"/0.001mm	\$365.00	<b>\$346.80</b>
293-185	0-1"/0-25mm	.00005"/0.001mm	\$214.00	<b>\$203.30</b>
293-186	1-2"/25-50mm	.00005"/0.001mm	\$245.00	<b>\$232.80</b>
293-187	2-3"/50-75mm	.00005"/0.001mm	\$293.00	<b>\$278.40</b>
293-188	3-4"/75-100mm	.00005"/0.001mm	\$352.00	<b>\$334.40</b>
293-140*	0-25mm	0.001mm	\$249.00	<b>\$236.60</b>
293-141*	25-50mm	0.001mm	\$284.00	<b>\$269.80</b>

\*with SPC Output



Order No.	Description	List Price	Sale Price
05CZA662	40" IP65 Mic Cable	\$79.35	<b>\$75.40</b>
05CZA663	80" IP65 Mic Cable	\$87.50	<b>\$83.10</b>

## Quickmike with Absolute Encoder and SPC Output

Quick non-rotating 1.2" (30mm) stroke spindle... the spindle advances .4" (10mm) per thimble rotation-no-torsion on the workpiece, reducing inspection time.



Order No.	Range	Resolution	Accuracy	List Price	Sale Price
293-676	0-1.2"/0-30.48mm	.00005"/0.001mm	±.0001"	\$562.00	<b>\$517.00</b>

Order No.	Description	List Price	Sale Price
937387	40" Quick Mic Cable	\$48.15	<b>\$45.70</b>
965013	80" Quick Mic Cable	\$56.85	<b>\$54.00</b>

# Precision Tools



## Ratchet Thimble Micrometer

### FEATURES

- Improved repeatability for both "expert" and novice users
- Constant force device allows easy one-handed operation
- Clearly audible ratchet
- Certificate of Inspection provided



101-711

Order No.	Range	Graduations	Accuracy	List Price	Sale Price
101-711	0-1"	.001"	±0.0001"	\$116.00	<b>\$106.70</b>
101-717	0-1"	.0001"	±0.0001"	\$127.00	<b>\$116.80</b>

## Outside Micrometers



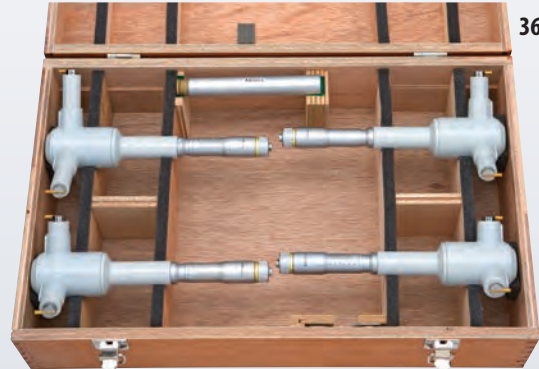
103-260-99

Order No.	Range	Graduation	Remarks	List Price	Sale Price
103-105	0-1"	.001"	Ratchet	\$63.00	<b>\$58.00</b>
103-260-99	0-1"	.0001"	Ratchet	\$81.10	<b>\$74.60</b>

## Holtest, Set 4-8"

### FEATURES

- TiN-coated measuring contact points
- Can measure deep holes using an Extension rod (optional) which is available on models over 6mm (.275") measuring range.
- With Ratchet Stop for constant force.
- Setting Rings for zero point adjustment are optional.
- Supplied in wooden case.



368-920

Order No.	Range	Individual range	Setting rings Incl	List Price	Sale Price
368-920	4" - 8"	4-5", 5-6", 6-7", 7-8"	5" DIA., 7" DIA.	\$7,050.00	<b>\$4,935.00</b>

## Borematic w/Absolute Technology Encoder



### FEATURES

- TiN-coated measuring pins provide excellent durability and impact resistance and allow the instrument to measure near the bottom of a blind hole.
- Digital display with quick-action lever operation makes for easy and fast measurement.
- Built-in Absolute scale system with absolute origin eliminates the necessity to set the origin at every power-on. The system is also immune to over-speed errors, increasing the reliability of measurement.
- A tolerance judgment function is built in to allow GO/NG judgment based on user-defined upper and lower limit settings.

Order No.	Range	Resolution	List Price	Sale Price
568-464	.5" - .65"	.00005"/.001mm	\$1,400.00	<b>\$1,330.00</b>
568-465	.65" - .8"	.00005"/.001mm	\$1,350.00	<b>\$1,282.00</b>
568-466	.8" - 1.0"	.00005"/.001mm	\$1,400.00	<b>\$1,330.00</b>
568-467	1.0" - 1.2"	.00005"/.001mm	\$1,450.00	<b>\$1,378.00</b>
568-468	1.2" - 1.6"	.00005"/.001mm	\$1,610.00	<b>\$1,530.00</b>
568-469	1.6" - 2.0"	.00005"/.001mm	\$1,610.00	<b>\$1,530.00</b>

Order No.	Description	List Price	Sale Price
905338	40" SPC Cable	\$37.90	<b>\$36.00</b>
905409	80" SPC Cable	\$45.15	<b>\$42.90</b>



# Precision Tools



## Dial Bore Gages

### FEATURES

- Interchangeable anvils and necessary accessories to perform close tolerance I.D. measurements.
- Carbide ball contact point for durability.
- Optional extension rods can be attached.
- A Digimatic Indicator can be attached in place of the dial gage.
- Accuracy: .0002"/5µm



511-931



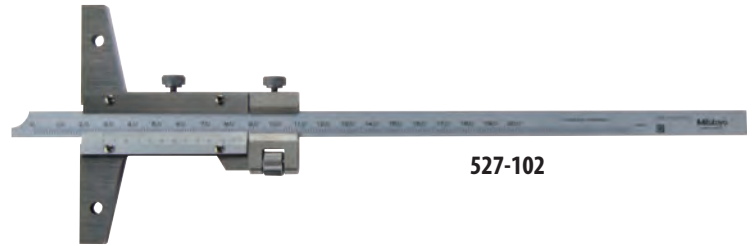
511-932

Order No.	Graduation (Indicator)	Measuring Range	Spacers	Anvils	List Price	Sale Price
511-931	.0001" (2922SB)	.7 - 6"	10	26 (2" sub anvil)	\$923.00	<b>\$849.20</b>
511-932	.0001" (2923SB-10)	.7 - 6"	10	26 (2" sub anvil)	\$973.00	<b>\$895.20</b>
511-128-05	(without Gage)	50 - 100mm	4	11	\$246.00	<b>\$172.20</b>

## Vernier Depth Gauge with fine adjustment

### FEATURES

- Made of hardened stainless steel.
- Base and measuring faces are hardened and micro-lapped.
- Optional wider extension base are available. (up to 450mm range models)



527-102

Order No.	Range	Vernier reading	Accuracy	Mass (g)	List Price	Sale Price
527-102	0 - 200mm	0.02mm	±0.03mm	300	\$204.00	<b>\$142.80</b>

## Digimatic Depth Gauge

### FEATURES

- ABSOLUTE Digimatic Depth Gauge can keep track of the origin point once set for the entire life of the battery.
- Wide probing range is available with the supplied extension rod.
- Bottom surface of the 2.5" base is hardened, ground and lapped for flatness.
- With SPC data output.



Order No.	Range	Graduation	List Price	Sale Price
547-2175	0-8"/0-200mm	0.0005"/0.01mm	\$456.00	<b>\$433.20</b>

Order No.	Description	List Price	Sale Price
905338	40" Depth Gage Cable	\$37.90	<b>\$36.00</b>
905409	80" Depth Gage Cable	\$45.15	<b>\$42.90</b>

## Tire Tread Depth Gauge

### FEATURES

- Specially designed to measure tire tread depth
- Plastic construction for light-weight use
- Inch/Metric conversion



700-105

Order No.	Range	Graduation	List Price	Sale Price
700-105	0-1"/0-25.4mm	.001"/0.1mm	\$71.20	<b>\$67.60</b>

## Quick Mini



Quick Mini is a convenient snap-action pocket thickness gage offering LCD digital readout. Quick Mini is ideal for rapid checking of a wide variety of materials including metal, paper, plastics and wood.

Order No.	Measuring Range	Resolution	List Price	Sale Price
700-118-20	0-.5"/0-12.7mm	.0005"/0.01mm	\$112.00	<b>\$106.40</b>

# Precision Tools



## Digimatic Thickness Gages

The Thickness Gages offer a quick and efficient means of inspection with their convenient grip handle, thumb trigger and spring-loaded spindle. The various models cover a wide range of applications.

547-500: Ceramic anvil and spindle

547-520: Deep throat (4.7") with Ceramic anvil and spindle

547-400S: Hi-Res model with Ceramic anvil and spindle



547-520



547-500

Order No.	Range	Resolution	List Price	Sale Price
547-500	0-.47"/0-12mm	.0005"/0.01mm	\$267.00	<b>\$253.70</b>
547-520	0-.47"/0-12mm	.0005"/0.01mm	\$288.00	<b>\$273.60</b>



Order No.	Description	List Price	Sale Price
905338	40" Thickness Gage Cable	\$37.90	<b>\$36.00</b>
905409	80" Thickness Gage Cable	\$45.15	<b>\$42.90</b>

## New Series 192 Digimatic Height Gages

Now with two resolutions and two value preset memory and increased character height for easier viewing.

The Heavy Duty Style has a built in touch probe port for the optional touch probe listed below.

### Functions include:

- Zero/ABS setting (ABS and INC modes)
- 2 Value Preset Memory
- Data hold/data output
- ± Counting
- Inch/mm conversion

Order No.	Range	Resolution	Accuracy	List Price	Sale Price
<b>Standard Style with output</b>					
192-630-10	0-12"/0-300mm	.0005"(0.01mm)/	±.001"	\$1,460.00	<b>\$1,387.00</b>
192-631-10	0-18"/0-450mm	.0002"(0.005mm)/	±.002"	\$2,000.00	<b>\$1,900.00</b>
192-632-10	0-24"/0-600mm	Switchable	±.002"	\$2,540.00	<b>\$2,413.00</b>
<b>Heavy Duty Style with output</b>					
192-670-10	0-12"/0-300mm	.0005"(0.01mm)/	±.001"	\$1,680.00	<b>\$1,596.00</b>
192-671-10	0-18"/0-450mm	.0002"(0.005mm)/	±.0015"	\$2,160.00	<b>\$2,052.00</b>
192-672-10	0-24"/0-600mm	Switchable	±.0015"	\$2,770.00	<b>\$2,630.00</b>
<b>Touch Probe for Heavy Duty Style Height Gage</b>					
192-008	Bi-Directional touch probe			\$785.00	<b>\$706.50</b>



Order No.	Description	List Price	Sale Price
905338	40" Cable for Height Gage	\$37.90	<b>\$36.00</b>
905409	80" Cable for Height Gage	\$45.15	<b>\$42.90</b>



# Height Gages



## Heightmatic



### FEATURES:

- .0001"/0.001mm resolution.
- $\pm 0.0002"/\pm 0.004\text{mm}$  accuracy.
- Functions: Zero-setting, Presetting, ABS/INC measurement mode switching, Data hold, Count direction switching, inch/mm conversion, Data output.
- Supplied with the bi-directional touch signal probe. The stylus tip ball diameter is automatically compensated for measurement.
- Fine feed wheel for the slider is provided on the base for easy operation.
- Provided with a data output port for connection with the SPC system.

Order No.	Range	List Price	Sale Price
574-212-1A	0-12"/300mm	\$4,790.00	<b>\$4,550.00</b>
574-211-1A	0-18"/450mm	\$5,310.00	<b>\$5,045.00</b>
574-210-1A	0-24"/600mm	\$5,920.00	<b>\$5,624.00</b>



## QM-Height Series

### The new world standard in height measurement!

Extreme accuracy, increased functionality and ease of use. The QM-Height delivers outstanding accuracy of  $\pm (.00011 + .0002 \times L/40)''$  to satisfy your most critical measurement needs. It measures maximum/minimum and displacement from the surface or by increment. It also measures inside/outside diameter via a unique process (detect the circle apex and process by tracing measurement). Additionally, all the measurements can be saved and recalled after measurement.

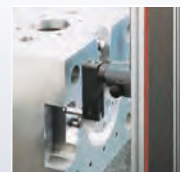
Order No.	Range	Accuracy at 20°C	List Price	Sale Price
518-221	0-14"/0-350mm	$\pm (.00011 + .0002 \times L/40)''$ (L=Length in inches)	\$2,840.00	<b>\$2,698.00</b>
518-223	0-24"/0-600mm	$\pm (.00011 + .0002 \times L/40)''$ (L=Length in inches)	\$3,690.00	<b>\$3,505.00</b>
526688A		Linear Height AC Adapter	\$59.50	<b>\$56.50</b>



## Linear Height LH-600D

The new Mitutoyo Linear Height LH-600D offers advanced performance for reliable and easy 2D measurement. Measuring Range (stroke) 0–38"(24") / 0–972mm(600mm)

Order No.	Description	List Price	Sale Price
518-341A-21	Linear Height Gage	\$8,030.00	<b>\$7,630.00</b>
12AA807	RS-232 Connecting Cable	\$51.40	<b>\$48.80</b>





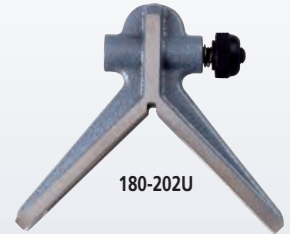
## Combination Square Set

### FEATURES

- Measuring head are attached to the graduated steel rule (blade), allowing versatile measurements on various types of workpieces
- The measuring head come hardened or cast iron-not-hardened
- Economy sets not including a protractor head are also available



180-102U



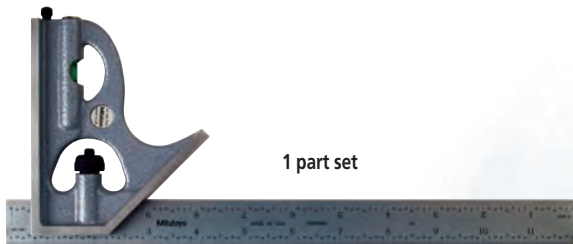
180-202U



180-301U

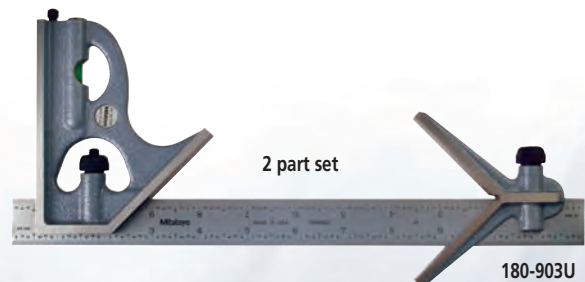
Head Only	Hardened		
Order No.	Description	List Price	Sale Price
180-102U	Square Head for 12"/300mm to 24"/600mm	\$55.05	<b>\$46.80</b>
180-202U	Center Head for 12"/300mm to 24"/600mm	\$46.55	<b>\$39.60</b>

Head Only	Cast iron-not hardened	List Price	Sale Price
180-301U	Protractor Head for 12"/300mm to 24"/600mm	\$83.80	<b>\$71.20</b>



1 part set

180-931U

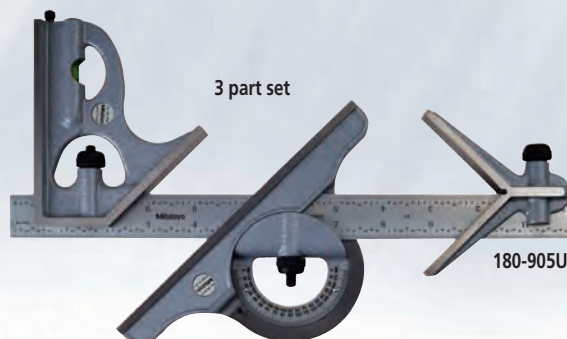


2 part set

180-903U

Sets	Blade Description	Square Head	Center Head	Protractor Head	List Price	Sale Price
180-903U	12" (4R) 180-501U	180-102U	180-202U	-	\$143.00	<b>\$121.60</b>
180-905U	12" (4R) 180-501U	180-102U	180-202U	180-301U*	\$225.00	<b>\$191.30</b>
180-931U	12" (4R) 180-501U	180-102U			\$91.30	<b>\$77.60</b>

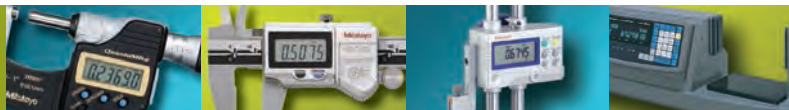
\*Cast iron-not hardened



3 part set

180-905U

# Precision Tools



## Steel Rules

### FEATURES

- Clear graduations on satin-chrome finish.
- Stainless tempered.



182-113

Order No.	Size	Graduations				Width	Accuracy	List Price	Sale Price
182-113	6"(3R)	1/32	1/64	1/10	1/50th	3/4"	+0.04" / -0.035"	\$8.25	<b>\$5.80</b>
182-129	12"(16R)	1/32	1/64	1/50	1/100th	1"	+0.05" / -0.035"	\$15.35	<b>\$10.80</b>
182-128	12"(5R)	1/32	1/64	1/10	1/100th	1"	+0.05" / -0.035"	\$15.35	<b>\$10.80</b>
182-130	12" x 300mm	1/32	1/64	1mm	0.5mm	1"	+0.05" / -0.035"	\$15.35	<b>\$10.80</b>
182-148	18"(16R)	1/32	1/64	1/50	1/100th	13/16"	+0.06" / -0.035"	\$33.40	<b>\$23.40</b>
182-147	18"(5R)	1/32	1/64	1/10	1/100th	13/16"	+0.06" / -0.035"	\$33.40	<b>\$23.40</b>
182-166	24"(4R)	1/8	1/16	1/32	1/64	13/16"	+0.07" / -0.035"	\$44.60	<b>\$31.20</b>
182-168	24"(16R)	1/32	1/64	1/50	1/100th	13/16"	+0.07" / -0.035"	\$44.60	<b>\$31.20</b>

Order No.	Size	Graduations				Width	Accuracy	List Price	Sale Price
182-212	6"(4R)	1/8	1/16	1/32	1/64th	1/2"	+0.04" / -0.035"	\$8.25	<b>\$6.00</b>
182-214	6"(16R)	1/32	1/64	1/50	1/100th	1/2"	+0.04" / -0.035"	\$6.85	<b>\$4.80</b>
182-216	6" x 150mm	1/32	1/64	1mm	0.5mm	1/2"	+0.04" / -0.035"	\$8.25	<b>\$5.80</b>
182-209	150mm	1mm	0.5mm	1mm	0.5mm	12mm	+0.05" / -0.035"	\$7.20	<b>\$5.00</b>
182-217	12"(4R)	1/8	1/16	1/32	1/64th	1/2"	+0.05" / -0.035"	\$14.30	<b>\$10.00</b>
182-219	12"(16R)	1/32	1/64	1/50	1/100th	1/2"	+0.05" / -0.035"	\$14.30	<b>\$10.00</b>
182-210	300mm	1mm	0.5mm	1mm	0.5mm	12mm	+0.05" / -0.035"	\$14.30	<b>\$10.00</b>
182-246	18"(4R)	1/8	1/16	1/32	1/64	3/4"	+0.06" / -0.035"	\$33.40	<b>\$23.40</b>
182-248	18"(16R)	1/32	1/64	1/50	1/100th	3/4"	+0.06" / -0.035"	\$33.40	<b>\$23.40</b>
182-247	18"(5R)	1/32	1/64	1/10	1/100th	3/4"	+0.06" / -0.035"	\$33.40	<b>\$23.40</b>
182-266	24"(4R)	1/8	1/16	1/32	1/64	3/4"	+0.07" / -0.035"	\$42.40	<b>\$29.70</b>
182-268	24"(16R)	1/32	1/64	1/50	1/100th	3/4"	+0.07" / -0.035"	\$42.40	<b>\$29.70</b>
182-267	24"(5R)	1/32	1/64	1/10	1/100th	3/4"	+0.07" / -0.035"	\$42.40	<b>\$29.70</b>

### Semi-Flexible Rules (1/64" Thickness)

182-301	4" / 100mm	1/16	1/32	1/64	1mm	5/8"	\$18.15	<b>12.70</b>
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## Digital Protractor

The **Digital Protractor** present inclination values on an easy to read LCD. The measurements are generated by an electronic gravity sensor and processed by the latest low power electronic circuit technology.

### FEATURES

- Machined aluminum frame
- Alternate reference (zero)
- Reading hold
- Simple calibration requiring no special fixtures



Order No.	Description	Range	Resolution	Accuracy	List Price	Sale Price
950-317	Pro 360 Digital Protractor	360° (90° x 4)	0.1°	±0.1° Level ±10° ±0.2° Max. error	\$263.00	<b>\$223.60</b>
950-318	Pro 3600 Digital Protractor With RS-232 Output	360° (90° x 4)	0.01° (0° to 9.99°) 0.1° (10° to 90°)	±0.05° (0° to 10°) ±0.2° (10° to 80°) ±0.1° (80° to 90°)	\$434.00	<b>\$368.90</b>
50AAA983A	RS-232 Cable with foot switch				\$184.00	<b>\$165.60</b>
64PPP795	Magnetic Base for 950-317, 950-318				\$61.25	<b>\$55.10</b>

# Data Collection



## Mitutoyo SPC Cables

Mitutoyo SPC cables for tools with Mitutoyo Digimatic SPC output.



Order No.	Length	Pins	For Use With	List Price	Sale Price
<b>With Data Out Switch</b>					
05CZA624	40"	—	IP66/67 Calipers	\$88.90	<b>\$84.50</b>
05CZA625	80"	—	IP66/67 Calipers	\$90.25	<b>\$85.70</b>
05CZA662	40"	—	IP65 Micrometers	\$79.35	<b>\$75.40</b>
05CZA663	80"	—	IP65 Micrometers	\$87.50	<b>\$83.10</b>
959149	40"	—	Height Gage 570 Series, Digimatic Indicator 543 and 575 Series, Digimatic Scale Unit 572 Series, Digimatic Absolute Calipers	\$47.80	<b>\$45.30</b>
959150	80"	—	Height Gage 570 Series, Digimatic Indicator 543 and 575 Series, Digimatic Scale Unit 572 Series, Digimatic Absolute Calipers	\$53.55	<b>\$50.90</b>
<b>Without Data Out Switch</b>					
937387	40"	6	Borematic 568 Series	\$48.15	<b>\$45.70</b>
965013	80"	6	Borematic 568 Series	\$56.85	<b>\$54.00</b>
905338	40"	—	Height Gage 570 Series, Digimatic Indicator 543 and 575 Series, Digimatic Scale Unit 572 Series	\$37.90	<b>\$36.00</b>
905409	80"	—	Height Gage 570 Series, Digimatic Indicator 543 and 575 Series, Digimatic Scale Unit 572 Series	\$45.15	<b>\$42.90</b>

## Data Collection and Processor (DP-1VR)

### DP-1VR with optional Digimatic Micrometer, Cable and Stand

Mitutoyo's DP-1VR is so compact, but with this powerful little device you can print data from your Digimatic caliper, micrometer and more using the Data Output function, and it can even calculate statistics.

**\$441<sup>60</sup>**

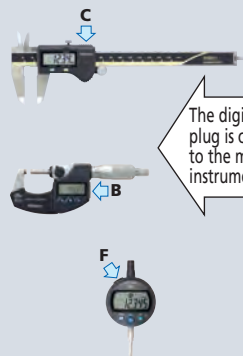
Our Regular Price: \$480.00  
Order Number: **264-504-5A**



# USB Input Tool Direct



**Measuring instrument with digimatic output**



**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.

Plugs

**A**

**B**


**C**

**D**

**E**

**F**

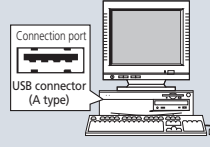
**G**



Cable length: 7 m

The USB plug is connected to a computer.

**Computer**

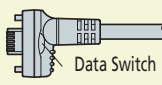
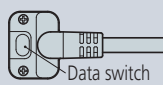
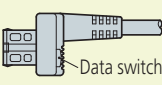
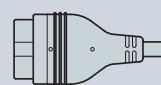

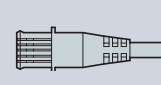
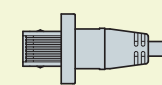

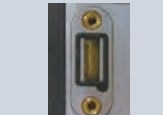







- Supported operating systems: Windows 2000 SP4
- Windows XP SP2 or later
- Windows Vista
- Windows 7

\$171<sup>10</sup>

Our Regular Price: \$186.00  
For All Input Tools

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.

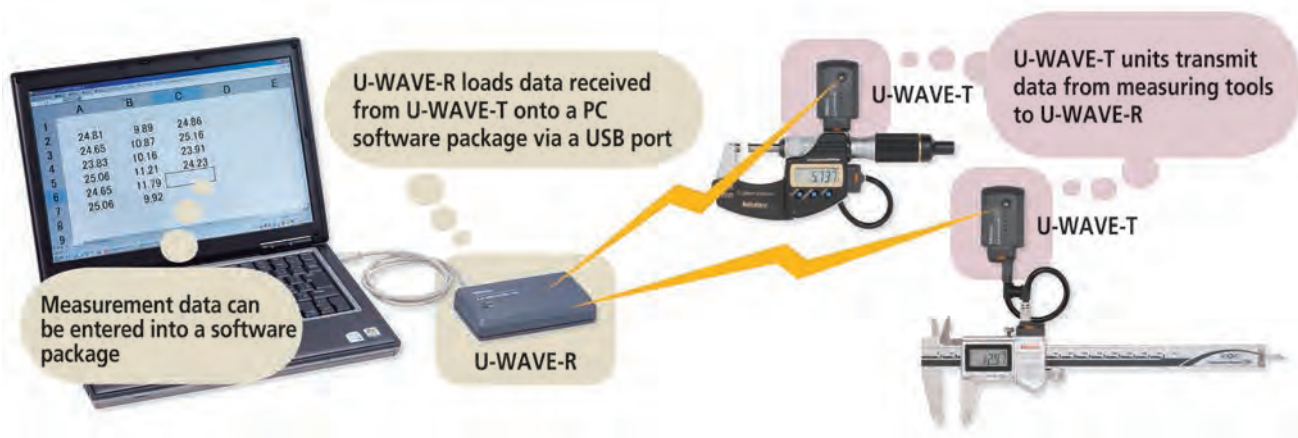
Model	USB-ITN-A	USB-ITN-B	USB-ITN-C	USB-ITN-D	USB-ITN-E	USB-ITN-F	USB-ITN-G	
Order No.	06ADV380A	06ADV380B	06ADV380C	06ADV380D	06ADV380E	06ADV380F	06ADV380G	
Whether the existence of a data switch affects usability	Incorporates a data switch, so the tool is usable regardless of whether or not the measuring 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	<b>A</b> Water-proof with switch	<b>B</b> Water-proof with switch	<b>C</b> With switch	<b>D</b> 10-pin plain	<b>E</b> 6-pin round	<b>F</b> Straight type	<b>G</b> 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] <b>-500 series</b> <b>-550/551 series</b> [Digimatic Carbon Fiber Caliper] <b>-552 series</b> [Digimatic Depth Gage] <b>-571 series</b> [Digimatic Scale Unit] <b>-572 series</b> [Digimatic Exclusive Caliper] <b>-573 series</b>			[Digimatic Micrometer, QuantuMike] <b>-293series</b> [Tubular Inside Micrometer] <b>-337 series</b> <b>-339 series</b> [Digimatic Micrometer Head] <b>-350 series</b> [Digimatic Exclusive Micrometer] (The end of the mark is-) <b>-468 series</b>			[Digimatic Micrometer Head] <b>-164 series</b> [Digimatic Caliper] <b>-500 series</b> <b>- 550/ 551</b> [Digimatic Depth Gage] <b>-571 series</b> [Digimatic Scale Unit] <b>-572 series</b> [Digimatic Exclusive Caliper] <b>-573 series</b>	
	Measuring instrument models that incorporate a data switch				[Surface Roughness Tester] <b>-178 series</b> [Coating Thickness Gage] <b>-179 series</b> [Linear Height] <b>-518 series</b> [Reference Gage] <b>-515 series</b> [Digimatic Indicator] <b>-543 series</b> [Laser Scan Micrometer] <b>-544 series</b> [μ-checker] <b>Digital μ-checker</b> (Using the foot switch)	[Digimatic Micrometer] <b>-121 series</b> <b>-164 series</b> <b>-227 series</b> <b>-293 series</b> [Tubular Inside Micrometer] <b>-337 series</b> [Tubular Inside Micrometer] <b>-339 series</b> [Digimatic Holtest] <b>-468 series</b> [Reference Gage] <b>-515 series</b> [Borematic] <b>-568 series</b> [Hardness Testing Machines] <b>-810 series</b>	[Digimatic Height Gage] <b>-192/570/574 series</b> [Digimatic Caliper] <b>-500/550/551 series</b> [Digimatic Bore Gage] <b>-511 series</b> [Digimatic Indicator] <b>-543 series</b> [Digimatic Depth Gage/ Digimatic Thickness Gage] <b>-547 series</b> Digimatic model [Digimatic Carbon Fiber Caliper] <b>-552 series</b> [Digimatic Scale Unit] <b>-572 series</b> [Portable Hardness Testing Instruments] <b>-811 series</b>	[Digimatic Indicator] <b>-543 series</b>
Measuring instrument models that do not have a data switch				[Digimatic Indicator] <b>-543 series</b> ID-F [Linear Gage/Counter] <b>-542 series</b> [Litematic] <b>-318 series</b>	No corresponding models	[Digimatic Indicator] <b>-543 series</b> [Digimatic Depth Gage/ Digimatic Thickness Gage] <b>-547 series</b> Digimatic model <b>-575 series</b>	No corresponding models	

# U-Wave



## U-Wave Wireless System

The U-WAVE system enables easy wireless data communication from a measuring tool to a PC using the Digimatic protocol. Measurement efficiency is improved by eliminating long and cumbersome data cables. The user-friendly interface allows data to be loaded into any software product that accepts keyboard input, such as Excel or Notepad.



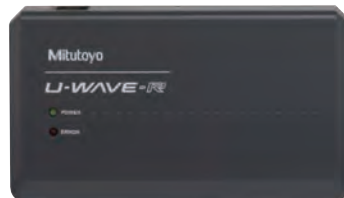
### How to “Spec” a U-Wave System:

1. One U-Wave-R required per system (will support up to 100 U-Wave-T): Order No. **02AZD810D**
2. One U-Wave-T required per tool: Order No. **02AZD730D**
3. Select the required connecting cable (cable length approx. 6”).  
Use the convenient U-Wave Cable Selection Chart to convert your existing cable part number to the corresponding U-Wave cable order number.

### U-Wave-R

#### FEATURES

- Supports up to 100 U-Wave-T
- Comes complete with U-WavePak set-up/data input software.
- U-WavePak, standard with U-Wave-R features a keyboard interface function. This allows measurement data to be easily entered into in Excel, Notepad or other formats that accepts numeric value input via a keyboard.
- Supplied with USB connecting cable.
- MeasurLink® V6.1 Real-Time PLUS supports the U-Wave System.



### U-Wave-T

#### FEATURES

- Is IP67 rated
- IP67 cables available for your Mitutoyo waterproof tools.
- Battery life approx. 400,000 data transmissions.
- Up to 60 feet transmission range. Actual range depends on the local radio transmission characteristics.



Order No.	Description	Use For Cables	List Price	Sale Price
<b>02AZD810D</b>	U-Wave-R		\$473.00	<b>\$449.40</b>
<b>02AZD730D</b>	U-Wave-T		\$209.00	<b>\$198.60</b>
<b>02AZD790A</b>	U-Wave Connecting Cable A	05CZA624 or 05CZA625	\$104.00	<b>\$98.80</b>
<b>02AZD790B</b>	U-Wave Connecting Cable B	05CZA662 or 05CZA663	\$104.00	<b>\$98.80</b>
<b>02AZD790C</b>	U-Wave Connecting Cable C	959149 or 959150	\$104.00	<b>\$98.80</b>
<b>02AZD790D</b>	U-Wave Connecting Cable D	936937 or 965014	\$104.00	<b>\$98.80</b>
<b>02AZD790E</b>	U-Wave Connecting Cable E	937387 or 965013	\$104.00	<b>\$98.80</b>
<b>02AZD790F</b>	U-Wave Connecting Cable F	905338 or 905409	\$104.00	<b>\$98.80</b>
<b>02AZD790G</b>	U-Wave Connecting Cable G	21EAA194 or 21EAA190	\$104.00	<b>\$98.80</b>



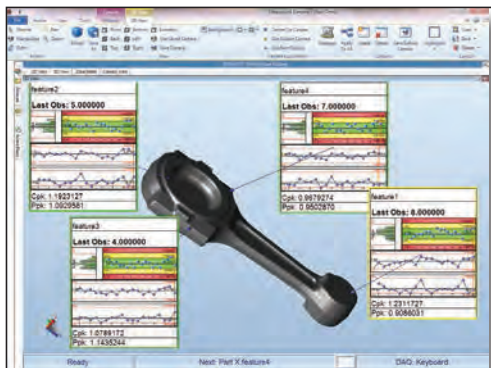


## MeasurLink Real Time SPC Software

**MeasurLink 7 Real-Time Standard Edition** is designed for customers who want to acquire and analyze data in real-time and check variable and attribute inspection to maximize production and minimize defects. It has views to allow the user to create Parts, Characteristics with nominal and tolerance and Traceability lists. The data collection interface provides real-time graphics for Run charts, Control charts, Histograms and Statistics. Standard views include Datasheet (observations and charts), Classic View (chart windows), and the 2D view (part images with callouts that include charts and statistical data). Full reporting template functionality is also provided. Supported data sources include keyboard, RS232 and USB devices.

**MeasurLink 7 Real-Time Professional Edition** enables customers to connect and acquire data from Mitutoyo Coordinate Measuring Machines, Vision and Form Measuring Systems via native integration (DDE). ASCII and QMD (xml-based) file imports are also supported. In addition to all of the features supported by MeasurLink 7 Real-Time Standard Edition, this application also supports data filters. Full reporting functionality with templates is also provided. Supported data sources include keyboard, RS232C and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file imports.

**MeasurLink 7 Real-Time Professional 3D Edition** is designed for customers who wish to collect data using the Hoops 3D graphics view. Hoops 3D files can be exported from most CAD systems and provides the operator with a real view of the part. Camera angle and position can be saved for each characteristic providing for an intuitive prompted guided sequencing for the inspector. Supported data sources include keyboard, RS232C and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file imports.



### Database Management System (DBMS) Requirements

MeasurLink 7 ships with a copy of Microsoft® SQL Server Express Edition 2008 R2, this can be for a standalone or a workgroup installation.

MeasurLink 7 also supports the following Microsoft SQL Server versions:

- Microsoft® SQL Server 2008 Standard Edition
- Microsoft® SQL Server 2008 Enterprise Edition
- Microsoft® SQL Server 2005 Workgroup Edition
- Microsoft® SQL Server 2005 Standard Edition

### Operating System Requirements

All MeasurLink 7 products are supported on the following Microsoft® Windows Operating System versions:

- All Windows XP SP3 versions
- All Windows Vista SP2 versions
- All Windows 7 versions
- Both 32bit and 64bit operating systems supported

\*\* Note: All product media will contain installers for both 32bit and 64bit systems

### PC (OS Specific Hardware Requirements (Network)

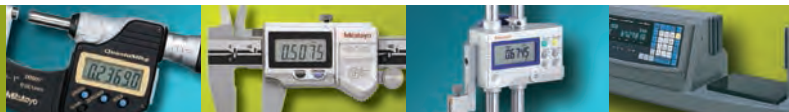
Windows 7	<ul style="list-style-type: none"> <li>• 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor</li> <li>• 2 gigabyte (GB) RAM (32-bit)</li> <li>• 16 GB available hard disk space (32-bit) or 20 GB (64-bit)</li> <li>• DirectX 9 graphics device with WDDM 1.0 or higher driver</li> <li>• DVD-ROM drive</li> </ul>
Windows Vista SP2	<ul style="list-style-type: none"> <li>• 1 gigahertz (GHz) 32-bit (x86) or 64-bit (x64) processor</li> <li>• 2 gigabyte (GB) of system memory</li> <li>• 40 GB hard drive with at least 15 GB of available space (20 GB for Home Basic)</li> <li>• Support for DirectX 9 graphics with WDDM and 128 MB of graphics memory</li> <li>• DVD-ROM drive</li> </ul>
Windows XP SP3	<ul style="list-style-type: none"> <li>• 1 gigahertz (GHz) 32-bit (x86)</li> <li>• 1 gigabyte (GB) of system memory</li> <li>• 40 GB hard drive with at least 15 GB of available space</li> <li>• DVD-ROM drive</li> </ul>



Order No.	Description	List price	Sale Price
64AAB177	MEASURLINK V7.0 REAL-TIME STANDARD EDITION	\$1,200.00	<b>\$1,080.00</b>
64AAB178	MEASURLINK V7.0 REAL-TIME PROFESSIONAL EDITION	\$1,800.00	<b>\$1,620.00</b>
64AAB179	MEASURLINK V7.0 REAL-TIME PROFESSIONAL 3D EDITION	\$2,000.00	<b>\$1,800.00</b>



# Indicators



## IDC Digimatic Indicators

### FEATURES

- Absolute Encoder ensures all settings and readings maintained for the life of the battery (even when the power is turned off).
- Preset, Zero-Set, inch/mm, +/- direction and GO/±NG functions
- Face rotates 330° for use at various angles on some models.
- Stem diameter: .375"
- Immune to overspeed error.
- SPC output provided on some models.

**New!**



543-392



Order No.	Range	Remark	List Price	Sale Price
<b>.0005"/0.01mm Resolution</b>				
543-402	.500"/12.7mm	Lug Back	\$293.00	<b>\$278.40</b>
543-402B	.500"/12.7mm	Flat Back	\$293.00	<b>\$278.40</b>
543-476B	1"/25mm	Flat Back	\$430.00	<b>\$408.50</b>
<b>.00005"/.0001"/.0005"/0.001mm/0.01mm Resolution</b>				
543-392	.500"/12.7mm	Lug Back	\$402.00	<b>\$381.90</b>
543-392B	.500"/12.7mm	Flat Back	\$402.00	<b>\$381.90</b>
543-472B	1"/25mm	Flat Back	\$538.00	<b>\$511.10</b>

Order No.	Description	List Price	Sale Price
905338	40" Cable for Indicators	\$37.90	<b>\$36.00</b>
905409	80" Cable for Indicators	\$45.15	<b>\$42.90</b>

## ID-N (Narrow) Digimatic Indicator



### FEATURES

- Absolute Encoder ensures all settings and readings maintained for the life of the battery (even when the power is turned off).
- IP-66 level of protection.
- Small 1.38" (35mm) width is an ideal advantage for multiple gage applications
- Multi-direction viewing is possible by the reversible LCD display.
- Measurement fixtures for various applications can be constructed with the combination of ID-N and ID-B indicators.
- For SPC, order cable 21EAA194 40" (1m) or 21EAA190 80" (2m)

**ABSOLUTE™**  
Absolute System Patented by MITUTOYO

**IP66**

ID-N Order No.	Range	Resolution	Accuracy	List Price	Sale Price
543-571	.5"/12.7mm	.0005"/0.01mm	.0008"/0.02mm	\$342.00	<b>\$314.60</b>
543-576	.5"/12.7mm	.00005"/0.001mm .0005"/0.01mm	.00012"/0.003mm	\$474.00	<b>\$436.10</b>

## ID-B (Back-plunger) Digimatic Indicator

### ID-B

Order No.	Range	Resolution	Accuracy	List Price	Sale Price
543-581	.2"/5.08mm	.0005"/0.01mm	.0008"/0.02mm	\$377.00	<b>\$346.80</b>
543-586	.2"/5.08mm	.00005"/0.001mm .0005"/0.01mm	.00012"/0.003mm	\$510.00	<b>\$469.20</b>



**ABSOLUTE™**  
Absolute System Patented by MITUTOYO

**IP66**

# Indicators



## New Dial Indicator

Order No.	Graduation	Range	Dial Face	Accuracy	Remarks	List Price	Sale Price
<b>Series Two Dial Indicators</b>							
2047S	0.01mm	10mm	0-50-0	±0.013mm	Lug Back	\$108.00	<b>\$75.60</b>
2109SB-11	0.001mm	1mm	0-10-0	±0.004mm	Flat Back, Jeweled, Shock Proof	\$190.00	<b>\$133.00</b>
2416S	.001"	1"	0-100	±.002"	Lug Back	\$113.00	<b>\$101.70</b>

Mitutoyo's Dial Gages now offer users more stability and longer life, thanks to advances to the inner workings of the rack and pinion gear system. Shock resistance is increased with a more robust gear train, while contamination resistance has been dramatically increased over other indicators of this type with a tighter seal around the bezel and frame, and the elimination of a lifting lever screw.



## Series Two One Revolution Dial Indicators



Unlike many other dial indicators, the one revolution dial indicator shows the entire spindle travel or range as one sweep of the hand, eliminating the possibility of reading errors due to miscounting the multiple revolutions. With one-revolution dial indicators, "within tolerance" and "out-of tolerance" can not be misinterpreted.

Order No.	Range	Graduation	Dial Reading	Remarks	List Price	Sale Price
2976*	.02"	.0005"	10-0-10	3/8" Stem	\$77.05	<b>\$70.90</b>
2977*	.04"	.0005"	20-0-20	3/8" Stem	\$64.25	<b>\$59.10</b>
2978*	.06"	.001"	30-0-30	3/8" Stem	\$70.05	<b>\$64.50</b>
2971*	0.5mm	0.01mm	25-0-25	8mm Stem	\$77.05	<b>\$70.90</b>
2972*	1mm	0.01mm	50-0-50	8mm Stem	\$63.60	<b>\$58.50</b>
2973*	1.6mm	0.02mm	80-0-80	8mm Stem	\$69.45	<b>\$63.90</b>

\* Flat Back

## "Quick-Set" Test Indicators

The most direct gear train design ever applied to Test Indicators means— higher levels of sensitivity, reliability, repeatability and accuracy throughout tool life.

### FEATURES

- Anti-magnetic
- Jeweled bearings
- No-clutch structure
- Water and dust resistant
- Glare-free crystal with scratch-resistant coating
- Metric dial faces in yellow
- Measuring force 0.3N or less

### Inch Test Indicators and Sets

Order No.	Graduation	Range	Dial Face	Remarks	List Price	Sale Price
513-402T	.0005"	.030"	0-15-0	Full Set	\$146.00	<b>\$134.30</b>
513-412T	.0005"	.030"	0-15-0	Long Point Full Set	\$204.00	<b>\$187.70</b>

513-403T	.0001"	.008"	0-4-0	Full Set	\$187.00	<b>\$172.00</b>
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### Combistest Set Inch/Metric

513-406T	.0005"/0.01mm	.030"/0.7mm	0-15-0/0-35-0	Full Set	\$160.00	<b>\$147.20</b>
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### Metric Test Indicators and Sets

513-404T	0.01mm	0.8mm	0-40-0	Full Set	\$147.00	<b>\$135.20</b>
513-405T	0.002mm	0.2mm	0-100-0	Full Set	\$181.00	<b>\$166.50</b>

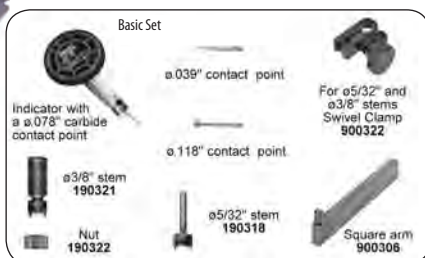


## Truetest Test Indicators

The most direct gear train design ever applied to Test Indicators means— higher levels of sensitivity, reliability, repeatability and accuracy throughout tool life.

### FEATURES

- Smooth spindle movement for increase measuring accuracy
- 20° tilted dial face for easy reading
- Anti-magnetic characteristics
- With rev counter



### Inch Test Indicators and Sets

Order No.	Graduation	Range	Dial Face	Remarks	List Price	Sale Price
513-442T	.0005"	.060"	0-15-0	Set	\$188.00	<b>\$172.00</b>
513-446T	.0005"	.060"	0-15-0	Long Point Set	\$251.00	<b>\$230.90</b>
513-443T	.0001"	.016"	0-4-0	Set	\$238.00	<b>\$219.00</b>

# Indicators/Stands



## Indicator and Magnetic Base Set

### FEATURES

- The **64PKA079** Magnetic Base/Indicator Set includes a 2416S, 1" travel, .001" graduations dial indicator and a 7010S magnetic stand.

Order No.	Description	List Price	Sale Price
<b>64PKA079</b>	Magnetic Base w/2416S Dial Indicator	\$221.00	<b>\$203.30</b>



## Magnetic Base



7010S

Mitutoyo Magnetic Stands accept all AGD-type dial indicators, test indicators and probes having .375", 6mm or 8mm diameter stems and/or lug back with 1/4" diameter mounting hole. The On/Off switch offers instant mounting and dismounting without any adverse effect to the indicators or work surface.

Mitutoyo Magnetic Stands have 132 Lbf of magnetic force to help prevent damage to indicators and probes due to accidental base fall-over.

Order No.	Description	List Price	Sale Price
<b>7010S</b>	Magnetic Stand w/6" Rod & Universal Clamp	\$128.00	<b>\$117.80</b>

## Dial Gage Stand

with Serrated Anvil

This Dial Gage Stand provides an ideal work base for all AGD type indicators as well as other gages with a .375" DIA. mounting stem.



7007-10

Order No.	Max. Height Capacity	Mounting Stem Dia.	List Price	Sale Price
<b>7007-10</b>	3.54"	.375"	\$524.00	<b>\$497.80</b>

## Dial Gage Stand

with Serrated Anvil

The compact and versatile Dial Gage Stands are commonly used general-purpose stands for comparison measurements, 4" maximum height capacity. They feature a wide fine adjusting range for zero-setting gage heads.

For 3/8" diameter mounting stems.



7001-10

Order No.	Max. Height Capacity	Anvil Type	List Price	Sale Price
<b>7001-10</b>	4.0"	Serrated Anvil	\$524.00	<b>\$497.80</b>

## TI with Ruby Stylus

### FEATURES

- Wear characteristic improved by 50%.
- Non-magnetic and non-conductive material, enable its use in EDM operation

### SPECIFICATIONS

Graduation: .0005"  
 Measuring Range: .03"  
 Dial Face: 0-15-0  
 Accuracy: ±.0005"  
 Measuring Force: .072N or less  
 Contact Point diameter: .079"  
 Stem diameter: 3/8"



513-472

**\$126<sup>00</sup>**

Our Regular Price: \$137.00  
 Order Number: **513-472**

# Linear Gage/Litematic



## Linear Gage LGF



Order No	Range	Resolution	Accuracy*	Force**	Stem Dia	List Price	Sale Price
542-181	.4" (10mm)	0.0001mm	(0.8+L/50)	1.2N/1.1N/1.0N	8mm	\$970.00	<b>\$922.00</b>
542-182	1" (25mm)	0.0001mm	(0.8+L/50)	4.6N/4.3N/4.0N	15mm	\$1,220.00	<b>\$1,159.00</b>
542-161	.4" (10mm)	0.001mm	(1.5+L/50)	1.2N/1.1N/1.0N	8mm	\$596.00	<b>\$566.00</b>
542-171	.4" (10mm)	0.0005mm	(1.5+L/50)	1.2N/1.1N/1.0N	8mm	\$596.00	<b>\$566.00</b>
542-162	1" (25mm)	0.001mm	(1.5+L/50)	4.6N/4.3N/4.0N	15mm	\$767.00	<b>\$729.00</b>
542-172	1" (25mm)	0.0005mm	(1.5+L/50)	4.6N/4.3N/4.0N	15mm	\$767.00	<b>\$729.00</b>
542-163	2" (50mm)	0.001mm	(1.5+L/50)	5.7N/5.3N/4.9N	15mm	\$927.00	<b>\$880.00</b>
542-173	2" (50mm)	0.0005mm	(1.5+L/50)	5.7N/5.3N/4.9N	15mm	\$927.00	<b>\$880.00</b>
542-612	1" (25mm)	0.005mm	(7.5+L/50) $\mu$ m	4.6N/4.3N/4.0NN	15mm	\$518.00	<b>\$492.00</b>
542-613	2" (50mm)	0.005mm	(7.5+L/50) $\mu$ m	5.7N/5.3N/4.9NN	15mm	\$569.00	<b>\$540.00</b>

## EH Counter Multi-function Display Unit

### FEATURES

- DIN compatible Panel-mounting type and DIN size (144 x 72mm). It can be easily incorporated into each system instrument
- This counter can be used on a desktop by mounting it on the supplied stand leg
- The standard RS-232C interface allows easy communication with an external PC
- The RS Link function permits multiple EH counters (6 units maximum) to be connected with daisy chain and data to be input/output from one channel of the terminal RS-232C interface
- The maximum value, minimum value, and TIR (runout) measurements are possible
- The 2-gage input type can perform 2-axis display and make addition or subtraction calculations between 2 gages



542-071A



542-075A

Model	EH-101P	EH-102P
Order No.	542-075A	542-071A
Applicable input	2.5MHz (Differential square-wave)	
Applicable gage	LGK, LGF with scale origin point mark, LGB, LGH (0.1 $\mu$ m)	
Number of gage input	1 (Single-display)	2 (Double-display)
Resolution (Depending on the linear gage type connected)	.000005", .00005", .0005"/ 0.0001mm, 0.0005mm, 0.001mm, 0.005mm, 0.01mm	
Mass	760g	800g
Tolerance judgment display	LED display (3 step: Amber, Green, Red / 5 step: Amber, Amber flash, Green, Red flash, Red)	
List Price	\$923.00	\$1,130.00
<b>Sale Price</b>	<b>\$738.00</b>	<b>\$904.00</b>

## Litematic and Litematic Head High-resolution Measuring Unit

### FEATURES

- The Litematic is designed for measuring easily-deformed workpieces and high-precision parts such as pin gages, thin-wall bearings, plastic parts, and springs.
- Extra-low measuring force of 0.01N (1gf).
- Hands free operation with optional foot switch.
- Ceramic anvil models are free from corrosion and easy to maintain.
- The Litematic Head unit can be mounted onto fixtures or an optional stand to allow great flexibility of use.
- With SPC output.



318-221A



318-226A

Order No.	Resolution	Range	Accuracy (at 20°C)	List Price	Sale Price
318-221A	.5 $\mu$ inch, 5 $\mu$ inch, 50 $\mu$ inch, 0.01 $\mu$ m, 0.1 $\mu$ m, 1 $\mu$ m	0 - 2" (50mm)	(0.5 + L / 100) $\mu$ m L=Measured length (mm)	\$8,030.00	<b>\$6,825.00</b>
318-226A	.5 $\mu$ inch, 5 $\mu$ inch, 50 $\mu$ inch, 0.01 $\mu$ m, 0.1 $\mu$ m, 1 $\mu$ m	0 - 2" (50mm)	(0.5+L/100) $\mu$ m L=Measured length (mm)	\$8,030.00	<b>\$6,825.00</b>

# Laser Scan Micrometers



## LSM-9506 Bench-Top Type Laser Scan Micrometer with display



Laser Type	Visible semiconductor laser Wavelengths: 670nm Scanning speed: 8900"/s (226m/s)
Display	Fluorescent display 16-digit+11-digit, guidance LEDs
Measuring Function	Segment Designation: 1 to 7 (1 to 3 for Transparent) 10 Program Storage (PROG. 0 to PROG. 9) 255 Edge Designations can be detected Multi-Limit GO/±NG Tolerance Judgment (up to 7 intervals) Dual-Axis LED Display Offset Setting and Mastering Reference Value Setting Automatic Workpiece Detection Dual-Gage Calibration Inch/mm Conversion Abnormal Data Elimination Dual Program Measurement Statistical Processing Workpiece Position Display Foot-switch Connector
Data Output	Standard RS-232C, I/O Analog Interface, SPC

**\$7,623<sup>00</sup>**

Our List Price: \$8,470.00  
Order Number: **544-116-1A**

Measuring Range	.02 - 2.36" (0.5 - 60mm)
Measuring Area	.02 x 2.36" (5x60mm) (*1)
Scanning Rate	1600/sec.
Resolution(Selectable)	.00002 - .005" (0.05 - 100µm)
Repeatability	±.00003" (±0.6µm) (±2σ measuring rate: 0.32s)
Accuracy	Linearity (*2) ±.0001" (±2.5µm) The optical axis direction ±.0001" (±2.5µm) The scanning direction ±(.00008+L/10000)" [L: inch] (*3) ±(2.0+L/10)µm [L:mm] (*3)

(\*1): The area given by [measuring range on the optical axis] x [measuring range in the scanning direction].  
(\*2): Specified at the center of the measurement region.  
(\*3): L=Deviation between the center of workpiece and the optical axis.

## LSM-500S

Mitutoyo's LSM-500S Series Laser Micrometers have the highest scanning speed in the world. A speed of 3,200 scans/sec makes in line measurements more accurate and repeatable. It's memory function has been increased to allow storage of up to 100 programs and includes a built in program to measure odd fluted drills and endmills.



(Entire Range)

Order No	Model	Range Inch	Range mm	Repeatability	Linearity	Scanning Rate	List Price	Sale Price
544-532*	LSM-500S	.0002" - .08"	0.005~2mm	±0.03µm	±0.3µm	3,200 scans/sec	\$6,720.00	<b>\$6,050.00</b>
544-534*	LSM-501S	.002" - .4"	0.05~10mm	±0.04µm	±0.5µm	3,200 scans/sec	\$5,730.00	<b>\$5,160.00</b>
544-536*	LSM-503S	.012" - 1.18"	0.3~30mm	±0.11µm	±1.0µm	3,200 scans/sec	\$6,470.00	<b>\$5,825.00</b>
544-538*	LSM-506S	.04" - 2.36"	1~60mm	±0.36µm	±3µm	3,200 scans/sec	\$7,770.00	<b>\$6,995.00</b>
544-540*	LSM-512S	.04" - 4.72"	1~120mm	±0.85µm	±6µm	3,200 scans/sec	\$13,600.00	<b>\$12,240.00</b>
*LSM-6200 display unit is required. Order No. 544-072A								
544-072A	LSM-6200 Display Unit						\$3,110.00	<b>\$2,490.00</b>

# Linear Scales



## ABS-Absolute Digital Readout System



### FEATURES

- Bolt Hole Circle Calculation
- Diameter Display and Tool Offsets (Parameter Mode)
- Memory compensation value
- Selecting Coordinates 0 to 10
- Preset
- Zero Approach Machining
- Pitch Approach Machining
- 1/2 Calculation
- inch/mm
- Standard Resolution:  
 .001"/.0005"/.0002"/.0001"/.0005"/.0005mm/0.002mm/0.001mm);  
 When connecting AT715 .002"/.0010"/.0005"/.0004"/.0002"/.0001"(0.020mm/0.010  
 mm/0.004mm/0.002mm); When connecting AT715 Series (DIA.).



**Affordable price and High Performance.**  
**KA Counter connected with AT715 scales as an electromagnetic induction system.**



Using new Electromagnetic Induction Detection with improved reliability and improved contamination protection.

True Absolute Scale Technology means original part datum point is never lost even when power is off.

The sizes of the AT715 range from 4" (100mm) to 72" (1800mm) with an accuracy at 20°C of 7+13xLO/1000 μm (LO: Effective Length in/mm). It has a response speed of 50m/min and a IP-67 rating for dust and water.

### ABS-AOS-DRO Mill Packages (2-Axis)

Order No.	Description/Table Travel	List Price	Sale Price
<b>64PKA058</b>	Bridgeport Style 12 x 30"	\$1,490.00	<b>\$1,340.00</b>
<b>64PKA059</b>	Bridgeport Style 12 x 36"	\$1,490.00	<b>\$1,340.00</b>
<b>64PKA062</b>	Universal Style 16 x 36"	\$1,490.00	<b>\$1,340.00</b>
<b>174-173A</b>	KA-12 (2-Axis)	\$570.00	<b>\$456.00</b>
<b>053906B</b>	Quill Kit Vert. Knee Mill	\$306.00	<b>\$275.40</b>

## ABS Digimatic Scale Units with SPC Output

MITUTOYO Digimatic Scale Units can be installed on almost any surface, offering the user precise linear measurement capability with the added benefits of LCD readout and output for recording data and SPC.

### FEATURES

- No rack, no pinion, no glass scale. Digimatic Scale is safely embedded in the hardened stainless steel blade.
- All units come with two mounting brackets, each located at either end of the scale.
- Battery life of approximately 1.5 years.

### Single Function Type



#### Horizontal

Order No.	Range	Resolution	Accuracy	List Price	Sale Price
<b>572-211-20</b>	6"/150mm	.0005"/0.01mm	.001"/0.03mm	\$242.00	<b>\$222.70</b>
<b>572-212-20</b>	8"/200mm	.0005"/0.01mm	.001"/0.03mm	\$282.00	<b>\$259.40</b>
<b>572-213-10</b>	12"/300mm	.0005"/0.01mm	.002"/0.04mm	\$543.00	<b>\$500.00</b>

#### Vertical

<b>572-311-10</b>	6"/0-150mm	.0005"/0.01mm	.001"/0.03mm	\$268.00	<b>\$246.60</b>
<b>572-312-10</b>	8"/0-200mm	.0005"/0.01mm	.001"/0.03mm	\$311.00	<b>\$286.10</b>



Order No.	Description	List Price	Sale Price
<b>959149</b>	40" Scale Cable	\$47.80	<b>\$45.30</b>
<b>959150</b>	80" Scale Cable	\$53.55	<b>\$50.90</b>

# Hardness Testing



## HH-411 Hardmatic

Rebound type portable hardness tester featuring reproducibility and ease of operation on large parts. It is light weight and can be conveniently carried into the shop or out in the field.

<b>Model</b>	<b>HH-411</b>		
<b>Order No.</b>	<b>810-298</b>		
<b>Hardness Range</b>	L-Value (ASTM A956)		
<b>Detector</b>	Input device D (carbide ball)		
<b>Display</b>	<b>Hardness</b>	<b>Range</b>	<b>Resolution</b>
	HL	1-999 HL	1 HL
	HV	43-950 HV	1 HV
	HB	20-894 HB	1 HB
	HRC	19.3-68.2 HRC	0.1 HRC
	HRB	13.5 - 101.7 HRB	0.1 HRB
	HS	13.2 - 99.3 HS	0.1 HS
<b>Functions</b>	HTN 499 - 1996 Mpa 1 Mpa		
	Conversions: HL, HV, HB, HRC, HRB, HS, HTN Judgment: OK/NG Offsetting Memory: 1,800 data		
<b>Indentation Direction</b>	Any directions		
<b>Output</b>	RS-232C, SPC		
<b>Power supply</b>	Alkaline AA Battery 2pcs.		
<b>Dimensions</b>	Detector: (Dia. X H) 1.10" x 6.89" (28 x 175mm) Display: (W x D x H) 2.76" x 4.33" x 1.38" (70 x 110 x 35mm)		
<b>Mass</b>	Detector: .26lbs (120g) Display: .44lbs (200g)		
<b>Standard Accessories</b>	Test Block HLD800 (19BAA265) Display (19BAA450) Detector (810-287) Cable (19BAA460) Battery AA (Alkaline) 2pcs.		

**\$3,775<sup>00</sup>**

Our List Price: \$4,720.00  
Order Number: **810-298**



## Durometers (Digital and Analog)

Durometers are suitable for testing natural rubber, neoprene, polyesters, P.V.C., leather, Thiokol, nitril, wax, vinyl, cellulose acetates, glass, polystyrol and other materials.



811-331  
811-333



811-332  
811-334



811-335  
811-337



811-336  
811-338

Order No	Model	Scale	Display	Graduation	Range	Indenter	List Price	Sale Price
811-331	HH-331	Shore A	Analog	1.0	10~90	Blunt Taper	\$567.00	<b>\$510.00</b>
811-332	HH-332	Shore A	Digital	0.5	10~90	Blunt Taper	\$1,210.00	<b>\$1,090.00</b>
811-333	HH-333	Shore D	Analog	1.0	20~90	Sharp Point	\$567.00	<b>\$510.00</b>
811-334	HH-334	Shore D	Digital	0.5	20~90	Sharp Point	\$1,210.00	<b>\$1,090.00</b>
811-335	HH-335	Shore A	Analog	1.0	10~90	Blunt Taper	\$567.00	<b>\$510.00</b>
811-336	HH-336	Shore A	Digital	0.5	10~90	Blunt Taper	\$1,210.00	<b>\$1,090.00</b>
811-337	HH-337	Shore D	Analog	1.0	20~90	Sharp Point	\$567.00	<b>\$510.00</b>
811-338	HH-338	Shore D	Digital	0.5	20~90	Sharp Point	\$1,210.00	<b>\$1,090.00</b>
64AAA964	Test Block Set (Shore A Scale)						\$183.00	<b>\$173.90</b>
64AAA590	Test Block Set (Shore D Scale)						\$183.00	<b>\$173.90</b>

# Hardness Testing



## New Rockwell and Rockwell Superficial Type Hardness Tester

With Real-Time Electronic Test Force Control



**\$12,285<sup>00</sup>**

Our List Price: \$14,200.00  
Order Number: 810-202-03A

### FEATURES

- Closed-loop control of testing forces
- Primary and final forces (loads) are applied with unparalleled accuracy and repeatability
- Extended indenter arm reaches inside diameters and hard to reach surfaces at eye level, allowing the operator to easily see where the indenter addresses small or hard to reach parts
- Automatic setting of preliminary test force and application of total test force
- Indenter escape function allows automatic removal of preliminary test force at end of test cycle
- Touch screen operation with a back-lit LCD graphic display
- Hardness scale is set automatically via the touch screen
- Cylindrical and spherical surface compensation
- Auto conversion to all hardness scales or tensile strength

### Specifications

<b>Preliminary Test Force</b>	29.42N (3kgf), 98.07N (10kgf)	
<b>Test Force</b>	Rockwell	588.4N (60kgf), 980.7N (100kgf), 1471N (150kgf)
	Rockwell Superficial	147.1N (15kgf), 294.2N (30kgf), 441.3N (45kgf)
<b>Force Control</b>	Automatic control (unloading/duration/unloading) with spring deformation feed back	
<b>Console/Display Unit</b>	Touch screen operation with back-lit LCD graphic display	
<b>Test Force Selection</b>	By touch screen	
<b>Load Duration</b>	0 to 120 sec. (1 sec. step)	
<b>Maximum Specimen Height</b>	Height: 205mm Depth: 150mm, from center of indenter shaft	
<b>Display Indication Functions</b>	Hardness value, Converted hardness value, Test conditions, OK/NG tolerance judgment, statistical processing result. Rockwell/Rockwell superficial hardness testing. Continuous testing. Cylindrical/spherical surface compensation, data offset. Hardness conversion (HV, HK, HRA/B/C/D/F/G/15T/30T/45T/15N/30N/45N, HS, HB, HBW, tensile strength). OK/±NG tolerance judgement, measured data editing, data memory (max 1024 data). SPC calculation (Number of data, max/min/mean values, range, upper/lower limit values, standard deviation, number of passing/defective) Histogram, X-bar & R chart.	
<b>Data Output</b>	RS-232C, SPC, Centronics	
<b>Dimensions (W x D x H)</b>	9.84" x 26.38" x 23.82" (250 x 670 x 605mm)	
<b>Mass</b>	Approx. 132 lbs (60kg)	

## HR Series Hardness Testers



### Model: HR-210MR

- Rockwell
- Motorized test force control
- Test force selection manual by weight



### Model: HR-320MS

- Rockwell/Rockwell Superficial
- Motorized test force control
- Test force selection manual by weight



### Model: HR-430MR

- Rockwell
- Motorized test force control
- Dial a weight test force selection
- Auto brake/start



### Model: HR-430MS

- Rockwell/Rockwell Superficial
- Motorized test force control
- Dial a weight test force selection
- Auto brake/start

Model Order No.	HR-210MR 963-220-10A	HR-320MS 963-231-10A	HR-430-MR 963-240-10A	HR-430MS 963-241-10A
Rockwell	●	●	●	●
Rockwell Superficial	—	●	—	●
Light Force Brinell	Optional	Optional	Optional	Optional
Display Unit	Analog	Digital: Hardness value, Scale display, Timer setting, Conversion, GO/NG judgment, Offset setting		
Data Output	—	RS-232C SPC (Digimatic)		
Dial a Weight	—	—	●	●
Motorized Test Force Control	●	●	●	●
Automatic Brake/Start	—	—	●	●
<b>List Price</b>	\$5,950.00	\$8,530.00	\$8,780.00	\$9,780.00
<b>Sale Price</b>	<b>\$4,990.00</b>	<b>\$6,990.00</b>	<b>\$7,990.00</b>	<b>\$8,990.00</b>

### Mitutoyo is proud to introduce the new 963 Series of Hardness Testers.

Four new features packed yet economical Rockwell and Rockwell Superficial Hardness Testers cover a large range of testing applications. These testers meet the current international requirements such as ASTM E18 and are designed for years of accurate results.

# Microscopes



## TM-505D/510D Series 176



### Toolmaker's Microscope

The TM-505D/510D is a compact microscope well suited for measuring dimensions and angles of machined metals. It can also be used to check the shape of screws and gears by attaching an optional reticle. Its compact body makes it ideal for use on shop-floors with limited space!

- The eyepiece section of the optical tube incorporates a vernier protractor. Angle measurement is performed easily by turning the protractor to align the cross-hair reticle with the workpiece image.
- Complete selection of interchangeable reticles are available.
- Both the transmitted and reflected illumination intensity can be adjusted to obtain the optimal illumination intensity for the workpiece.
- Two XY stages with different travel ranges, 2" x 2" (50mm x 50mm) and 4" x 2" (100mm x 50mm), are available.
- The TM-505D/510D can output XY coordinate data if Digimatic Mic Heads (optional on 176-811A/812A) are used with it. Highly efficient two-dimensional data processing is available by connecting the Digimatic Mic Heads to an SPC tool such as QC220-MSR.

Order No.	Description	List Price	Sale Price
176-808A	TM-505 With Mic Heads, 2 X 2" Stage	\$5,200.00	<b>\$4,680.00</b>
176-809A	TM-510 With Mic Heads, 4 X 2" Stage	\$6,930.00	<b>\$5,890.00</b>
959149	40" Mic Head Cable	\$48.15	<b>\$45.30</b>
959150	80" Mic Head Cable	\$56.85	<b>\$50.90</b>

## Mitutoyo MF Series Microscopes

### FEATURES

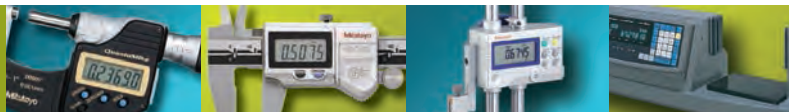
- Observation with a clear and flare-less erect image and a wide field of view
- Measuring accuracy that is the highest in its class (and conforms to JIS B 7153)
- ML series, high-NA objectives that are specially designed for the MF series (long working distance type)
- Illumination unit (reflected/transmitted) selectable from a high-intensity LED or halogen bulb (required)
- Variable aperture diaphragm (reflected/transmitted) allows observation measurement while suppressing light diffraction
- Variety of standardized stages in sizes up to 400~200mm
- Quick-release mechanism useful for moving the stage quickly when measuring workpieces that are large in size or quantity
- Coarse/fine feed handles equipped as standard on both sides allow precise focus and observation measurement regardless of handedness
- High-magnification eyepiece observation up to 2000X
- Standard measuring microscope that has a wide variety of optional accessories including a Vision Unit an various digital CCD cameras
- Low-noise design



176-664-10

Order Number	Description	Stage Size	Stage Travel	List Price	Sale Price
176-662-10	MF-A1010C	11" X 11"	4" X 4"	\$14,100.00	<b>\$11,280.00</b>
176-345A	LED Illumination Unit (MF)			\$2,950.00	<b>\$2,360.00</b>
176-393	Binocular Tube			\$1,910.00	<b>\$1,528.00</b>
176-664-10	MF-A2017C	16" X 13.5"	8" X 6.7"	\$20,700.00	<b>\$16,560.00</b>
176-345A	LED Illumination Unit (MF)			\$2,950.00	<b>\$2,360.00</b>
176-393	Binocular Tube			\$1,910.00	<b>\$1,528.00</b>

# Profile Projectors



## PH-3515F Horizontal Profile Projector

14" (356mm) Diameter Protractor Screen with crosshair line for easy alignment

### FEATURES

- Heavy-Duty, bench-top model with horizontal optical system.
- Erect image on Day-bright screen.
- 14" (356mm) dia. protractor screen with crosshair line for easy alignment.
- Floating-type workstage incorporates linear scales for fast, accurate measurement.
- Suitable for thread pitch measurements — free from blurred or distorted images when the workpiece is angled.

Order No.	Description	List Price	Sale Price
172-848-1A	PH-3515F Main Unit	\$9,760.00	<b>\$9,270.00</b>
264-146A	QM-Data 200	\$2,310.00	<b>\$1,848.00</b>
332-151	Optoeye 200	\$1,560.00	<b>\$1,248.00</b>
12AAE671	Attachment board for Optoeye	\$38.60	<b>\$36.70</b>
174-173A	KA-12 Counter (2-axis)	\$570.00	<b>\$456.00</b>
64AAB149	Counter Tray	\$140.00	<b>\$112.00</b>
64AAB176	PH-3515F Stand	\$670.00	<b>\$536.00</b>
172-133	Surface Illuminator	\$744.00	<b>\$707.00</b>



## PJ-A3000 Vertical Profile Projector

### FEATURES

- Bright, 12.40" (315mm) diameter screens and easy-to-operate XY measurement tables.
- Easy-to-read digital counters are located near the projection screen, thereby minimizing strain associated with excessive movement. A digital angle display eliminates the need to perform complex calculations.
- A floating table makes measuring quicker and easier.
- For edge sensing capabilities, order the Optoeye-200, part number 332-151



Order No.	Description	XY Range	List Price	Sale Price
302-711A	PJ-A3010F-200	8" x 4"	\$12,700.00	<b>\$10,160.00</b>

### Optional Accessories

Order No.	Description	List Price	Sale Price
264-146A	QM-Data 200	\$2,310.00	<b>\$1,848.00</b>
332-151	Optoeye 200	\$1,560.00	<b>\$1,248.00</b>
64PMI167	Stand for PJ-A3000	\$671.00	<b>\$637.50</b>
12AAA807	RS-232C Cable	\$51.40	<b>\$48.80</b>
12AAE671	Attachment board for Optoeye	\$38.60	<b>\$36.70</b>

## PH-A14 Horizontal Profile Projector

14" (356mm) Screen Diameter Profile Projector with Linear Scales

### FEATURES

- Mitutoyo's lens technology and workmanship combine to provide a bright, crisp image for error free inspection.
- 8" x 4" floating-type workstage incorporates linear scales for fast, accurate measurement.
- The workstage provides high accuracy and can handle a workload of up to 100 lbs.
- 10x objective lens and fiber illuminator are standard accessories.

Order No.	Description	List Price	Sale Price
172-810-10A	PH-A14 unit	\$5,510.00	<b>\$5,235.00</b>
264-146A	QM-Data 200	\$2,310.00	<b>\$1,848.00</b>
332-151	Optoeye 200	\$1,560.00	<b>\$1,248.00</b>
12AAE671	Attachment board for Optoeye	\$38.60	<b>\$36.70</b>
174-173A	KA-12 Counter (2-axis)	\$570.00	<b>\$456.00</b>
64AAB149	Counter Tray	\$140.00	<b>\$112.00</b>
64AAA129B	PH-A14 Stand	\$690.00	<b>\$552.00</b>



# Looking for an X, Y and Z movement solution?



## Mitutoyo offers engineers a wide range of solutions for OEM's

Mitutoyo supplies a wide range of precision micrometer heads able to answer many unique X, Y and Z application challenges. We provide micrometer heads with different measuring ranges, stem types and body sizes. High-performance types including our Digimatic Micrometer Heads, 0.1mm spindle-pitch models (standard 0.5mm) are now available for many specialized applications. Mitutoyo also has the ability to customize our micrometer heads with spindle tips and precision leadscrews manufactured to our customers' specifications.

Whether you are looking for several pieces or several thousand, Mitutoyo has the ability to provide you with high quality, reliable products with agile delivery to meet your needs.

Please contact our application specialists at 630-723-3513 with your application challenge.



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April 25 - 26, Booth 1015



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