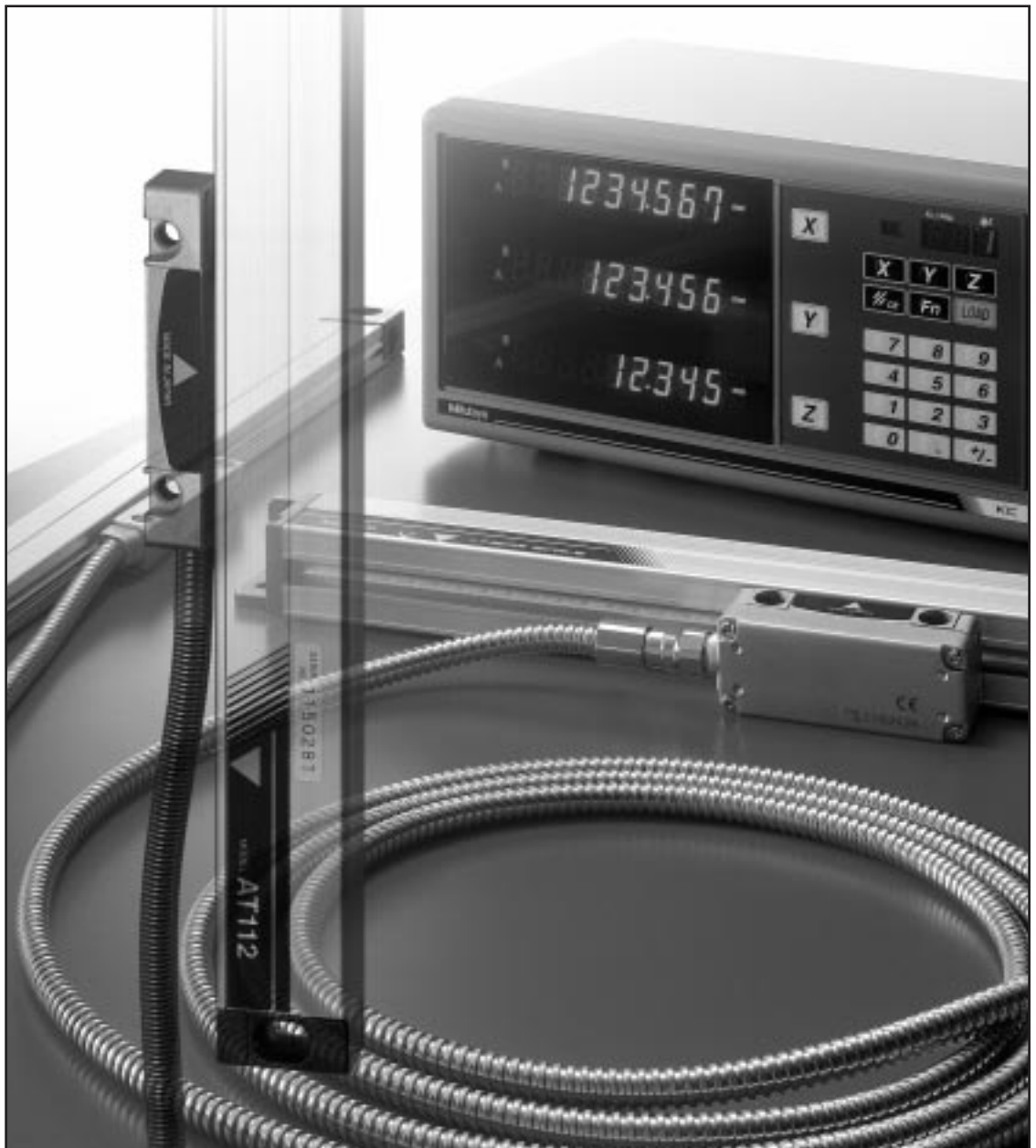


# DRO SYSTEM AND PACKAGE

Bulletin No. 1744

## Price Lists



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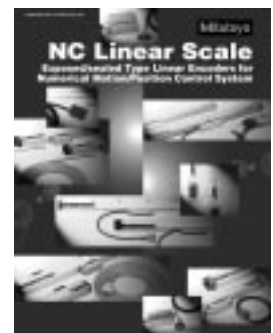
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<b>2</b>	Display Unit Functions. . . . .	4
<b>3</b>	Display Unit / Adapter Cross Reference. . . . .	5
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<b>5</b>	AT715 Linear Scale Magnetic ABS-AOS-DRO . . . . . 10-11	
<b>6</b>	Packages for Milling System Magnetic ABS-AOS-DRO System Package (Using KA counter and AT715) . . . . . 12 Glass Linear Scale High Resolution Package (Using KA counter and AT115) . . . . . 13 Brackets . . . . . 14	
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**Please request the following brochures for additional information**

Bulletin No. 1641

NC Linear Scale  
 Catalog No. US4189-539, 579



### System Components

#### Display Units

#### KA Counter

Standard Type for  
Milling Machine,  
Grinders & Lathes  
mm/inch 2-AXIS  
3-AXIS



#### ABS-AOS-DRO AT715

From 100mm up to 1,800mm



#### KC Counter

Multi-function Type with Data Output  
mm/E 1-AXIS  
mm/inch 2-AXIS  
3-AXIS



#### KLD Counter

Special Purpose Type  
with Limit Signal Output

mm/inch 1-AXIS



2-STEP LIMIT  
4-STEP LIMIT



8-STEP LIMIT

#### Scale Units

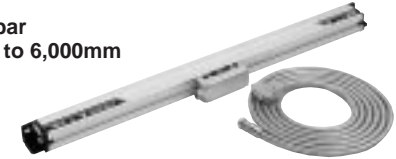
##### Linear Scale AT115

Slim Spar  
From 100mm up to 1,500mm  
STANDARD



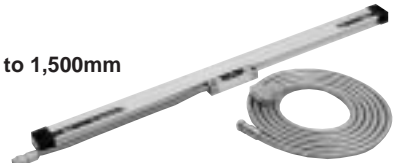
##### Linear Scale AT102

Standard-size Spar  
From 100mm up to 6,000mm  
STANDARD  
HIGH-ACCURACY



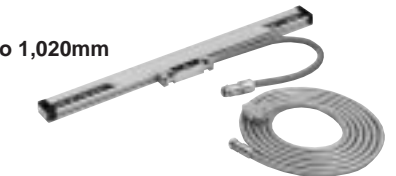
##### Linear Scale AT111

Slim Spar  
From 100mm up to 1,500mm  
STANDARD  
HIGH-ACCURACY



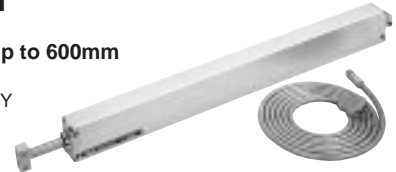
##### Linear Scale AT112

Super Slim Spar  
From 50mm up to 1,020mm  
STANDARD  
HIGH-ACCURACY



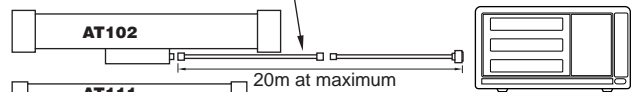
##### Linear Scale AT181

Panger Type  
From 100mm up to 600mm  
STANDARD  
HIGH-ACCURACY



#### Extension Cables

Type A†  
2m (09AAA033A)  
5m (09AAA033B)  
7m (09AAA033C)



20m at maximum

†With water-proof connectors  
(Not available on AT115)



Type B\*  
2m (09AAB674A)  
5m (09AAB674B)  
7m (09AAB674C)

20m at maximum  
15m at maximum (when using AT715)

\*Notes:  
09AAB674A to C connectable to AT715, AT115 and other AT100 Series

### Types of Display Units

Functions	Counter Types	KA Page 6	KC Page 7-8	KLD Page 9
ZERO	Zero-Setting	●	●	●
ZERO	Zero-set remote controller		○	
P.SET	Preset	●	●	●
0.001 / 0.01	Resolution setting	● <sup>*1</sup>	● <sup>*1</sup>	● <sup>*1</sup>
Counting direction	Counting direction setting	●	●	●
mm / E	mm/inch conversion	●	●	●
1 / 2	1/2 calculation	●	●	●
ABS/INC	ABS/INC coordinate selection	● <sup>*2</sup>	● <sup>*2</sup>	
123	Lower digit blanking out	●	●	●
Memory backup	Memory backup	●	●	●
Expansion/contraction	Expansion/contraction coefficient setting		●	●
Zero approach	Zero approach machining [ABS mode]		●	
Zero approach	Zero approach machining [INC mode]	●	●	
Bolt-hole circle	Bolt-hole circle machining	● <sup>*3</sup>	● <sup>*3</sup>	
Touch-signal probe	Touch-signal probe	○	○	○
SET	Scale reference point setting	● <sup>*6</sup>	● <sup>*6</sup>	●
+	Addition/subtraction		●	
MAX / MIN	Maximum/minimum value hold			●
DIA	Diameter display	●	●	●
Z1+Z2	Addition of 2-scale data	● <sup>*4</sup>	● <sup>*4</sup>	
Direct data entry	Direct data entry with Digimatic gage		●	
TOOL	Cutting tool selection	● <sup>*5</sup>	● <sup>*5</sup>	
Coordinate data copy	Coordinate data copy		●	
MACRO	One-touch macro key		●	
PROG.	Part-program setting		●	
Linearity error	Linearity error compensation	●	●	●
Pitch error	Pitch error compensation		●	
Lost motion	Lost motion compensation		●	
1234	Smoothing	●	●	●
RS-232C OUTPUT	RS-232C Interface Unit	○	○	○
LIMIT RS-232C	Limit signal output via RS-232C		○	
B C D OUTPUT	BCD Code Out		○	○
DIGIMATIC OUTPUT	Digimatic Code Out		○	
GP-IB OUTPUT	GP-IB Interface		○	
LIMIT OUTPUT	Limit signal output		○	●

● : Provided as standard

○ : Optional accessory

\*1 Resolutions to be set differ depending upon the type of Counters.

\*2 6 absolute (ABS) coordinates and 5 incremental (INC) coordinates are provided for the KC Counter.  
1 absolute (ABS) coordinate and 9 incremental (INC) coordinate are provided for the KA Counter.

\*3 Not available on the 1-axis Counters.

\*4 Not available on the 1-axis Counters.

\*5 5 cutting tools can be specified on the KC Counter. 10 cutting tools can be specified on the KA Counter.

\*6 When connecting AT100 Series Scale.

### KA Counter – For optional accessories, see page 6

Code No.	Description	List Price
174-173A	KA Counter, 2 Axis Milling, Grinder and Lathe	\$433.00
174-175A	KA Counter, 3 Axis Milling, Grinder and Lathe	\$639.00

Connectable with AT100 Series (Glass Linear Scale) and AT715 Scale (Magnetic ABS-AOS)

### KC Counter – For optional accessories, see page 8

Code No.	Description	List Price
174-122A	KC Counter, 1 Axis	\$1,024.00
174-124A	KC Counter, 2 Axis, Milling, Grinder and Lathe	\$1,360.00
174-126A	KC Counter, 3 Axis, Milling, Grinder and Lathe	\$1,700.00

Unconnectable with AT715 Scale (Magnetic ABS-AOS), For only Glass Linear Scale



09AAA207



09AAA198

## Adapter Cross Reference

(for adapting old scales to new counters, or new scales to old counters)

	Scale Series No's.	Adapter No.	Counters	List Price
<b>Old Scales</b> (w/6 pin round connectors)	<b>AT2-N, AT2, AT-11N, AT11, AT12N</b>	<b>09AAA207</b>	All KA, KS, KC, UDR Series Counters with 15 pin connectors	\$35.00
<b>Old Scales</b> (w/7 pin round connectors)	<b>AT-2FN, AT-11FN, AT12</b>	<b>50AAC486</b>	All KA, KS, KC, UDR Series Counters with 15 pin connectors	\$74.00
<b>New Scales</b> (w/15 pin D-Sub connectors)	<b>AT102, AT111, AT112, AT115, AT181</b>	<b>09AAA181</b>	For all .0001" resolution counters with seven pin round connectors	\$52.50
		<b>09AAA181V*</b>	APL Counter <b>164-660*</b> , <b>164-661*</b> , <b>164-662*</b> MPK-2L <b>983-352</b>	\$52.50
		<b>09AAA198</b>	For all .0005" resolution counters with six pin round connectors	\$46.50
		<b>09AAA198V*</b>	APL Counter <b>164-660*</b> , <b>164-661*</b> , <b>164-662*</b> , <b>164-563*</b> , <b>164-664*</b> , <b>164-665*</b> PL and PL Zero Output Counter <b>164-252A, 164-254A, 164-295A</b>	\$46.50

\* V = Vertical type

(When only replacing one scale, you can use either horizontal or vertical type adapter)

### Magnetic ABS-AOS and Glass Linear Scale Digital Readout System

#### Features

- Bolt Hole Circle Calculation
- Diameter Display and Tool Off Sets (Parameter Mode)
- Memory compensation value
- Selecting Coordinates 0 to 10
- Preset
- Detection reference (When connecting AT100 Series)
- Hold reference (When connecting AT100 Series)
- Touch Signal Probe Set and Hold (When connecting AT100 Series)
- Zero Approach Machining
- Pitch Approach Machining
- 1/2 Calculation
- mm/inch



Affordable price and High Performance Counter

Has both Mill and Lathe functions

Connectable with AT715 scales as electromagnetic induction system and AT100 series scales as photo-electric system

#### Specifications

Connectable Linear Scale	AT715 and AT100 Series
Standard Resolution	.001"/.0005"/.0002"/.0001"/.00005" (0.010mm/0.005mm/0.002mm/ 0.001mm): When connecting AT715 and AT100 Series .002"/.0010"/.0005"/.0004"/.0002"/.0001" (0.020mm/0.010mm/0.004mm/0.002mm): When connecting AT715 and AT100 Series (DIA.)
High Resolution	.0001"/.00005"/.00002"/.00001"/.000005" (0.0010mm/0.0005mm/0.0002mm/0.0001mm): When connecting AT100 Series .0002"/.00010"/.00005"/.00004"/.00002"/.000010" (0.0020mm/0.0010mm/0.0004mm/0.0002mm) When connecting AT100 Series (DIA.)
Display	Seven Segment Green LED
Unit	Inch / metric
Display Range	X, Y, Z Axis +/-999.9999" +/-9999.999mm
Power Supply	AC 100V to 240V (50/60Hz)
Output	RS-232C code out unit
Dimensions(WXHXD)	10.24"(W) X 6.61"(H) X 3.2"(D) / 260mm(W) X 168mm(H) X 80mm(D)

#### Order Number

Code No.	Axis	Model name	List Price
174-173A	2	KA-12	\$433.00
174-175A	3	KA-13	\$639.00

#### Optional Accessory

Code No.	Description	List Price
09CAB217	RS-232C Code out unit	\$201.00
938140	Touch Signal Probe (DIA. .787" (20mm)	\$255.00
935094	Touch Signal Probe (DIA. 1.260"(32mm)	\$227.00

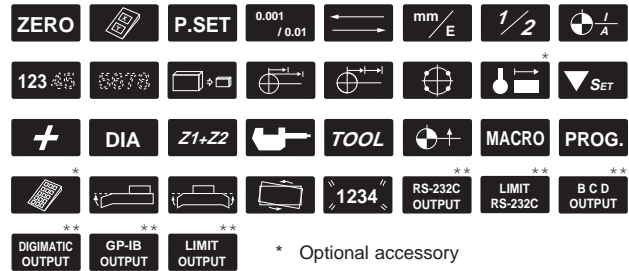
### RS-232C / BCD / GP-IB / Digimatic Limit Signal Outputs Available

- The KC Counter is a multi-functional counter to which various interfacing units can be attached for data output.
- Resolution to .000020"/.0005mm
- Output via one of five optional Boards: RS-232C, GP-IB, BCD, Digimatic, and Limit Signal outputs\*\*



Photo: 3-axis type

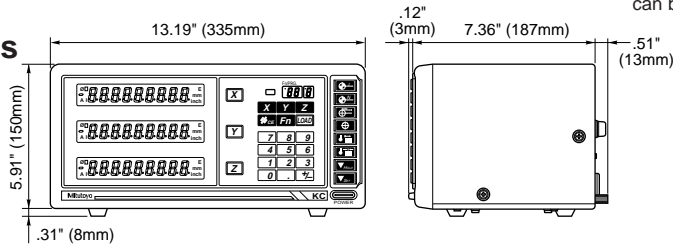
### Functions Included



\* Optional accessory

\*\* One of these Interfaces/Code Out can be installed (optional)

### Dimensions



**KC Counter** – For optional accessories, see page 8

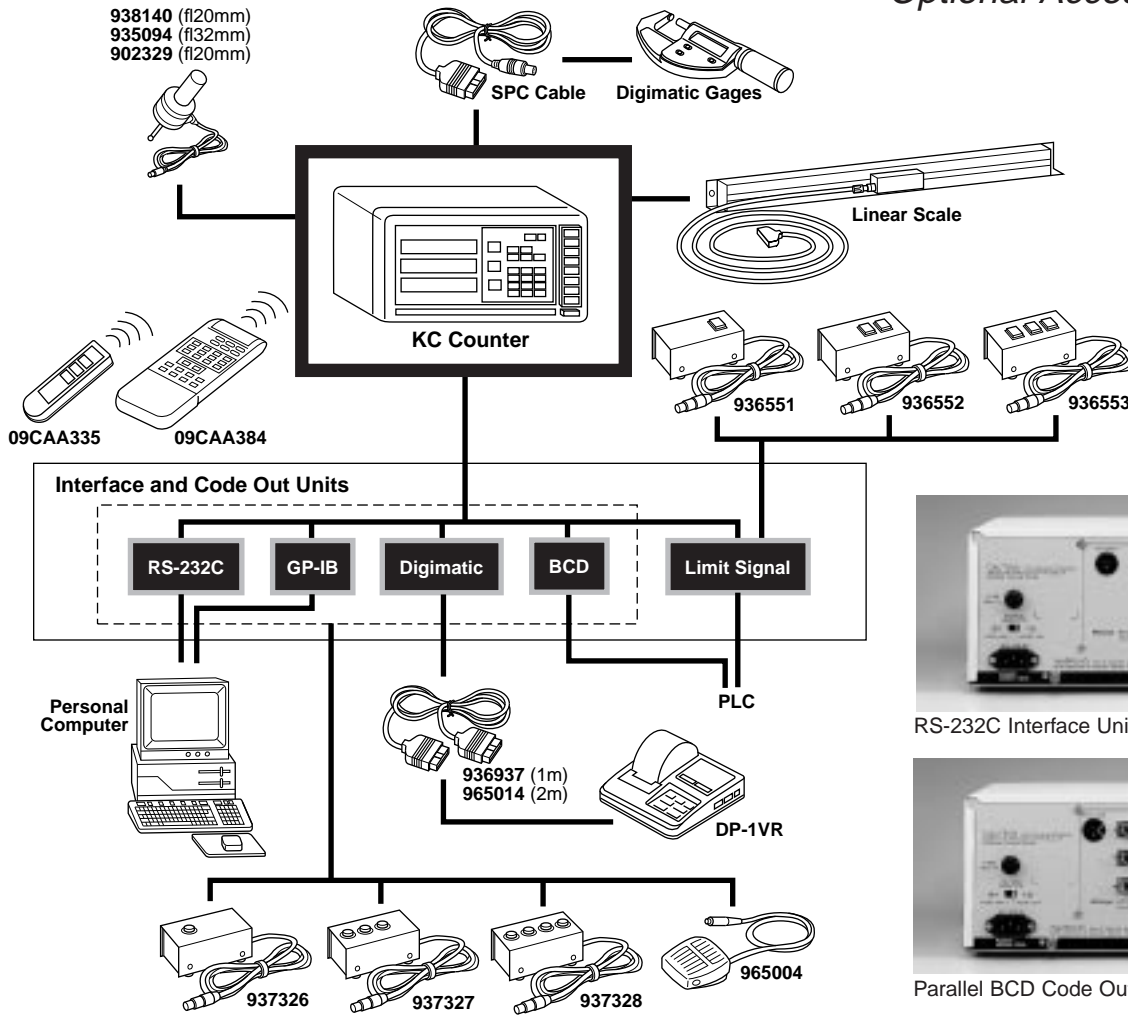
Code No.	Description	List Price
174-122A	KC Counter, 1 Axis	\$1,024.00
174-124A	KC Counter, 2 Axis, Milling, Grinder and Lathe	\$1,360.00
174-126A	KC Counter, 3 Axis, Milling, Grinder and Lathe	\$1,700.00

Unconnectable with AT715 Scale (Magnetic ABS-AOS), For Glass Linear Scale Only

### Specifications

Model	KC Counter		
Type	inch/mm		
Number of scale inputs	1-axis	2-axis	3-axis
Resolution	.00002"/.00005"/.0001"/.0002"/.0005"/.001" 0.0005mm/0.001mm/0.002mm/0.005mm/0.1mm		
Maximum counting digits	8 digits (with a negative [-] sign and a floating decimal point)		
Display	Luminous fluorescent tube (green)		
Maximum response speed	100kHz (The maximum response speed of each model of the AT100 Series linear scales acceptable.)		
Power consumption	Approx. 30VA (at maximum)		
Power supply	100-120V / 100-240V AC, 50/60Hz		
Operation temperature	0°C to 40°C		
Dimensions (W x D x H)	13.19" x 7.36" x 6.22" (335 x 187 x 158mm)		
Mass	7.7lbs. (3.5kg)	7.9lbs. (3.6kg)	8.14lbs. (3.7kg.)
Standard accessories	User's manual, power cord (2m), grounding lead wire (4m), spare fuse, macro key labels, dust cover, mounting bracket (1 set), warranty		

### Optional Accessories



RS-232C Interface Unit (09CAA402)



Parallel BCD Code Out Unit (09CAA430)



Digimatic Code Out Unit (09CAA462)



GP-IB Interface Unit (09CAA452)



Limit Signal Output Unit (09CAA472)

### Optional accessories

### List Price

09CAA335	Zero-set remote controller	\$43.50
09CAA384	Programmable remote controller	\$140.00
09CAA402	RS-232C Interface Unit	\$661.00
09CAA412	Parallel BCD Code Out Unit (1-axis)	\$556.00
09CAA424	Parallel BCD Code Out Unit (2-axis)	\$614.00
09CAA430	Parallel BCD Code Out Unit (3-axis)	\$661.00
09CAA462	Digimatic Code Out Unit	\$452.00
09CAA452	GP-IB Interface Unit	\$672.00
09CAA472	Limit Signal Output Unit	\$754.00
937326	External load box (1-axis)*	\$145.00
937327	External load box (2-axis)*	\$170.00
937328	External load box (3-axis)*	\$188.00
965004	External load foot switch (for all axes)*	\$102.00
936551	External zero-set box (1-axis)**	\$192.65
936552	External zero-set box (2-axis)**	\$205.90
936553	External zero-set box (3-axis)**	\$219.20
938140	Touch-signal probe (shank dia.: 20mm)	\$255.00
935094	Touch-signal probe (shank dia.: 32mm)	\$227.00
902329	Touch-signal probe (shank dia.: 1/2")	\$349.00
936937	SPC cable (1m) for connecting with DP-1VR***	\$35.00
965014	SPC cable (2m) for connecting with DP-1VR***	\$41.00
264-504A	DP-1VR Digimatic Mini-processor (120V AC)***	\$374.00

\* RS-232C Interface Unit, BCD Code Out Unit, Digimatic Code Out Unit, or GP-IB Interface Unit is required.

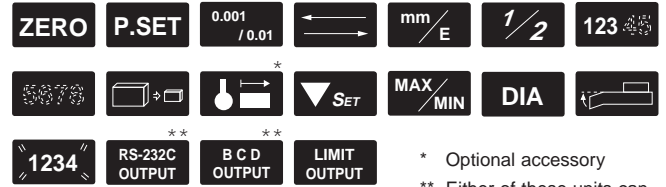
\*\* Limit Signal Output Unit (09CAA472) is required.

\*\*\* Digimatic Code Out Unit (09CAA462) is required.

### With Limit Signal Outputs

- A 1-axis counter dedicated to sending signals when a linear scale displacement value and a preset limit value coincide.
- Three types of limit settings are available: 2 steps, 4 steps, and 8 steps.
- For controlling a vertical position of an EDM or a grinding machine.
- Can be connected to a personal computer or a sequencer by installing an RS-232C Interface Unit or a BCD Code Out unit. (Both interface units are optional accessories.)

### Functions Included



\* Optional accessory  
 \*\* Either of these units can be installed (optional)



Photo: 4-step limit setting type



Photo: 8-step limit setting type

### KLD Counter

Code No.	Description	List Price
174-141A	KLD Counter, 2 Step	\$2,590.00
174-143A	KLD Counter, 4 Step	\$2,575.00
174-145A	KLD Counter, 8 Step	\$2,190.00

### Optional Accessories

	List price	
907569	RS-232C Interface Unit	\$580.00
907570	BCD Code Out Unit	\$580.00
965004	External load foot switch*	\$102.00
937326	External load box*	\$145.00
936551	External zero-set box	\$192.65
938140	Touch-signal probe (shank dia.: 20mm)	\$255.00
935094	Touch-signal probe (shank dia.: 32mm)	\$227.00
902329	Touch-signal probe (shank dia.: 1/2")	\$349.00

\* RS-232C Interface Unit (907569) is required.

### Specifications

Model	KLD Counter – 1-axis		
Type	inch/mm		
Limit signal output/Code No.	2-step/174-141A	4-step/174-143A	8-step/174-145A
Resolution	.00002"/.00005"/.0001"/.0002"/.0005"/.001" (0.0005mm/0.001mm/0.002mm/0.005mm/0.01mm)		
Maximum counting digits	9 digits (with a negative [-] sign and a floating decimal point)		
Display	Luminous fluorescent tube (green)		
Limit valve setting method	Digital switch	Ten-keyboard	
Maximum response speed	50kHz (60m/min. with the AT100 Series linear scales)		
Power consumption	Approx. 20VA (at maximum)		
Power supply	100-122V / 200-240V AC, 50/60Hz		
Operation temperature	0°C to 40°C		
Dimensions (W x D x H)	13.07" x 6.52" x 9.25" (332 x 165.5 x 235mm)		
Mass	9.9 lbs. (4.5kg)		
Standard accessories	Power cord (2m), grounding lead wire (4m), spare fuse, user's manual, warranty		

### AT715 Linear Scale

Using new Electromagnetic Induction Detection Method with Improved Reliability and Improved contamination protection.

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



#### Specifications

Detection Method	Electromagnetic Induction System
Interface	Mitutoyo Original Serial Interface (Connectable only to KA Counter)
Effective Length	4" (100mm) to 72" (1800mm)
Accuracy (20°C)	7 + 13 x L0/1000 um (L0: Effective Length)
Resolution	See KA counter Resolution (Page 6)
Response Speed	50 m/min
Dust / Water Proof	IP-55

#### Optional Extension Cables

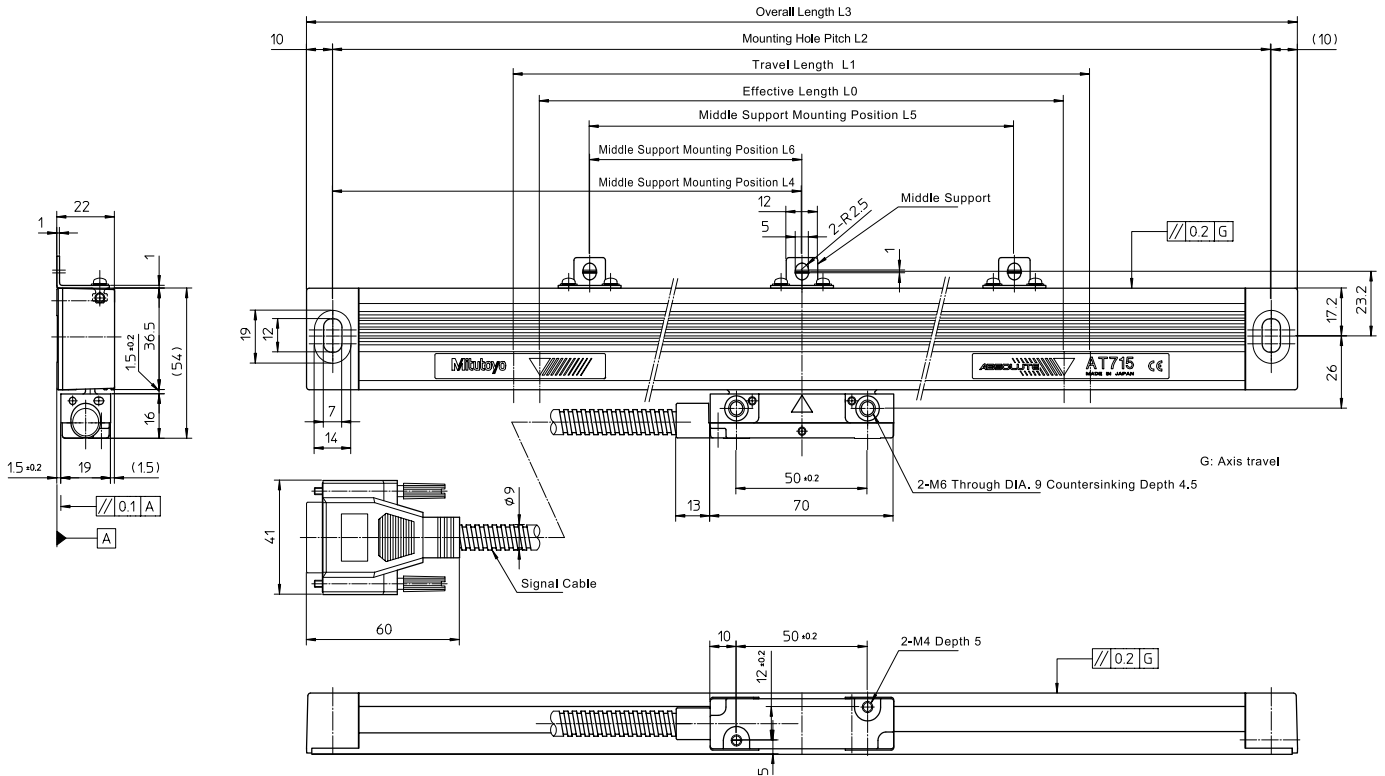
Code No.	Description	List Price
09AAB674A	Extension Cable 6.5 ft. (2m)	\$ 78.50
09AAB674B	Extension Cable 16.4 ft. (5m)	\$114.00
09AAB674C	Extension Cable 22.9 ft. (7m)	\$137.00

Note: connectable to AT715, AT115 and other AT100 Series.

#### Order Number

Code No.	Range (L0)	L1	L2	L3	Middle Support Number (Mounting Pitch)	Cable Length	List Price
539-801	4"/100mm	4.72"/120mm	10.16"/258mm	10.94"/278mm		11.48'/3.5m	\$230.00
539-802	6"/150mm	6.69"/170mm	12.13"/308mm	12.91"/328mm		11.48'/3.5m	\$230.00
539-803	8"/200mm	8.69"/220mm	14.09"/358mm	14.88"/378mm		11.48'/3.5m	\$233.00
539-804	10"/250mm	10.63"/270mm	16.06"/408mm	16.85"/428mm		11.48'/3.5m	\$233.00
539-805	12"/300mm	12.99"/330mm	18.43"/468mm	19.21"/488mm		11.48'/3.5m	\$233.00
539-806	14"/350mm	14.96"/380mm	20.39"/518mm	21.18"/538mm		11.48'/3.5m	\$235.00
539-807	16"/400mm	16.93"/430mm	22.36"/568mm	23.15"/588mm		11.48'/3.5m	\$238.00
539-808	18"/450mm	18.90"/480mm	24.33"/618mm	25.12"/638mm		11.48'/3.5m	\$242.00
539-809	20"/500mm	21.26"/540mm	26.69"/678mm	27.48"/698mm	1	11.48'/3.5m	\$245.00
539-811	24"/600mm	25.20"/640mm	30.63"/778mm	31.42"/798mm	1	11.48'/3.5m	\$250.00
539-813	28"/700mm	29.13"/740mm	34.57"/878mm	35.35"/898mm	1	11.48'/3.5m	\$254.00
539-814	30"/750mm	30.71"/780mm	36.14"/918mm	36.93"/938mm	1	11.48'/3.5m	\$258.00
539-815	32"/800mm	33.07"/840mm	38.50"/978mm	39.29"/998mm	1	11.48'/3.5m	\$260.00
539-816	36"/900mm	37.07"/940mm	42.44"/1078mm	43.23"/1098mm	1	11.48'/3.5m	\$284.00
539-817	40"/1000mm	40.94"/1040mm	46.38"/1178mm	47.17"/1198mm	1	16.40'/5m	\$295.00
539-818	44"/1100mm	44.88"/1140mm	50.31"/1278mm	51.10"/1298mm	2(16.93"/430mm)	16.40'/5m	\$335.00
539-819	48"/1200mm	48.82"/1240mm	54.25"/1378mm	55.04"/1398mm	2(18.11"/460mm)	16.40'/5m	\$375.00
539-820	52"/1300mm	52.76"/1340mm	58.19"/1478mm	58.98"/1498mm	2(19.29"/490mm)	16.40'/5m	\$415.00
539-821	56"/1400mm	56.69"/1440mm	62.13"/1578mm	62.91"/1598mm	2(20.87"/530mm)	16.40'/5m	\$455.00
539-822	60"/1500mm	60.63"/1540mm	66.06"/1678mm	66.85"/1698mm	2(22.05"/560mm)	16.40'/5m	\$505.00
539-823	64"/1600mm	64.57"/1640mm	70.00"/1778mm	70.79"/1798mm	3(8.46"/215mm)	16.40'/5m	\$565.00
539-824	68"/1700mm	68.50"/1740mm	73.94"/1878mm	74.72"/1898mm	3(9.06"/230mm)	16.40'/5m	\$625.00
539-825	72"/1800mm	72.44"/1840mm	77.87"/1978mm	78.66"/1998mm	3(11.03"/280mm)	16.40'/5m	\$685.00

### AT715 Linear Scale

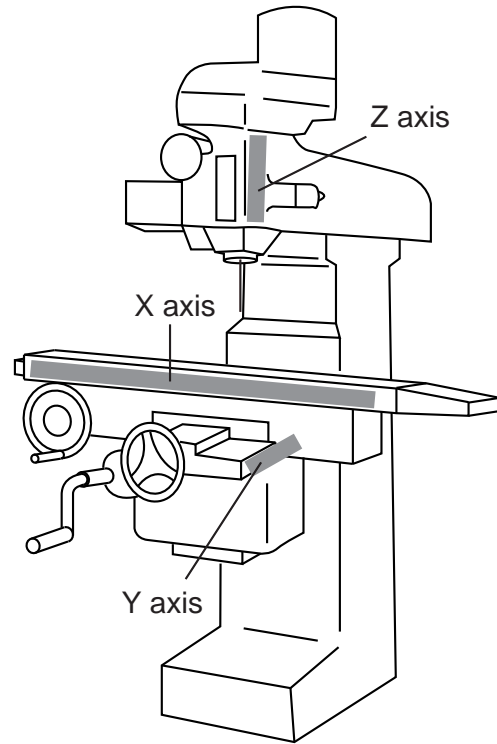


Using KA Counter and AT715

### 2 Axis, KA Counter Milling System

#### Package Includes:

- KA Counter
  - AT715 Linear Scale
  - Brackets for Scales
  - Display Arm Kit
- (refer to Page 14)



	Y Axis Travel				
	AT715-300 (12") For Bridgeport #1	AT715-350 (14") For Taiwan	AT715-400 (16") For Lagun		AT715-450 (18") For Lagun
AT715-750 (30") X Axis Travel	174-173PM1K \$995.00	174-173PM3K \$995.00			
AT715-900 (36") X Axis Travel	174-173PM2K \$995.00		174-173PM4K \$995.00	174-173PM5K \$995.00	
AT715-1000 (40") X Axis Travel		174-173PM6K \$995.00	174-173PM7K \$995.00	174-173PM8K \$995.00	174-173PM9K \$995.00

### 3 Axis, KA Counter Milling System (Z axis length 6")

#### Package Includes:

- KA Counter
- AT715 Linear Scale/AT715-150mm (6") for Z axis
- Brackets for Scales (refer to page 14)
- Display Arm Kit

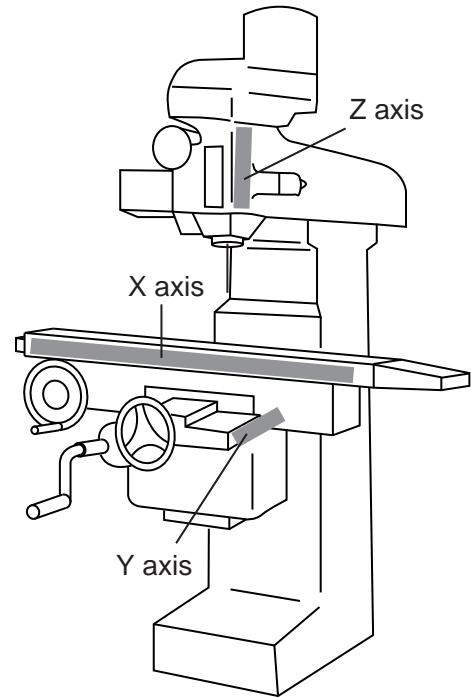
	Y Axis Travel				
	AT715-300 (12") For Bridgeport #1	AT715-350 (14") For Taiwan	AT715-400 (16") For Lagun		AT715-450 (18") For Lagun
AT715-750 (30") X Axis Travel	174-175PM1 \$1,695.00	174-175PM3 \$1,695.00			
AT715-900 (36") X Axis Travel	174-175PM2 \$1,695.00		174-175PM4 \$1,695.00	174-175PM5 \$1,695.00	
AT715-1000 (40") X Axis Travel		174-175PM6 \$1,695.00	174-175PM7 \$1,695.00	174-175PM8 \$1,695.00	174-175PM9 \$1,695.00

Using KA Counter and AT115

### 2 Axis, KA Counter Milling System

#### Package Includes:

- KA Counter
- AT115 Linear Scale
- Brackets for Scales (refer to Page 14)
- Display Arm Kit



Y Axis Travel

	AT115-300 (12") For Bridgeport #1	AT115-350 (14") For Taiwan	AT115-400 (16") For Lagun		AT115-450 (18") For Lagun
AT115-750 (30") X Axis Travel	174-173PM1L \$1,395.00	174-173PM3L \$1,395.00			
AT115-900 (36") X Axis Travel	174-173PM2L \$1,395.00		174-173PM4L \$1,395.00	174-173PM5L \$1,395.00	
AT115-1000 (40") X-Axis Travel		174-173PM6L \$1,395.00	174-173PM7L \$1,395.00	174-173PM8L \$1,395.00	174-173PM9L \$1,395.00

### 3 Axis, KA Counter Milling System (Z axis Length 6")

#### Package Includes:

- KA Counter
- AT115 Linear Scale/AT115-150mm (6") for Z axis
- Brackets for Scales (refer to page 14)
- Display Arm Kit

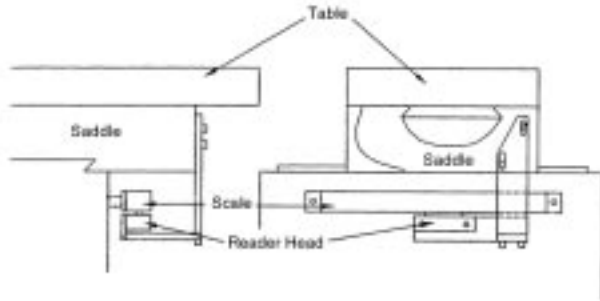
Y Axis Travel

	AT115-300 (12") For Bridgeport #1	AT115-350 (14") For Taiwan	AT115-400 (16") For Lagun		AT115-450 (18") For Lagun
AT115-750 (30") X Axis Travel	174-175PM1L \$1,995.00	174-175PM3L \$1,995.00			
AT115-900 (36") X Axis Travel	174-175PM2L \$1,995.00		174-175PM4L \$1,995.00	174-175PM5L \$1,995.00	
AT115-1000 (40") X Axis Travel		174-175PM6L \$1,995.00	174-175PM7L \$1,995.00	174-175PM8L \$1,995.00	174-175PM9L \$1,995.00

### Mounting Brackets

#### BP-I Scale-Y (AT115 & AT715) Bracket Kit

Order No. 50AAD310 List Price \$80.00

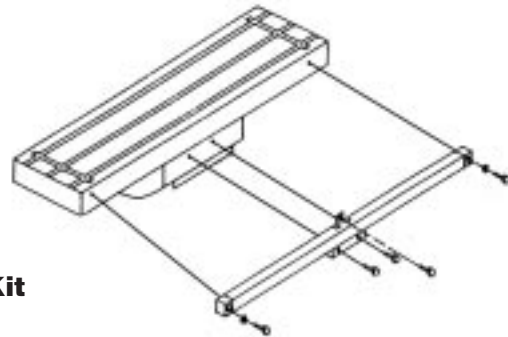


#### BP-I Scale-X (AT115 and AT715)

##### Screw Kits

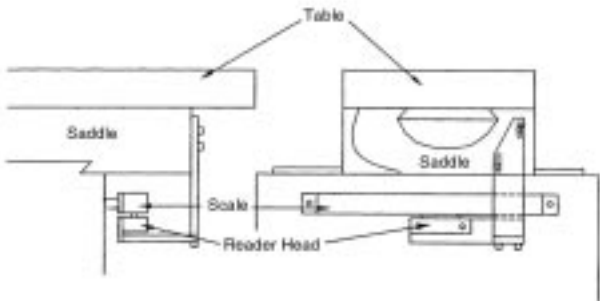
Order No. 53AAA313

List Price \$40.00



#### Taiwan Mill Scale-Y (AT115 & AT715) Bracket Kit

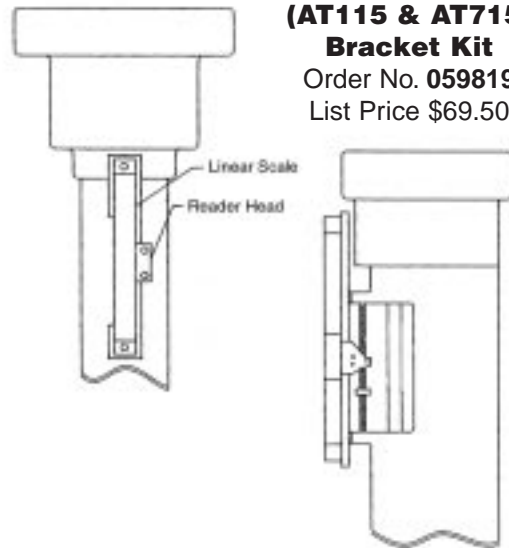
Order No. 50AAD313 List Price \$80.00



#### BP-1, Lagun, Taiwan Mill Scale-Z (AT115 & AT715) Bracket Kit

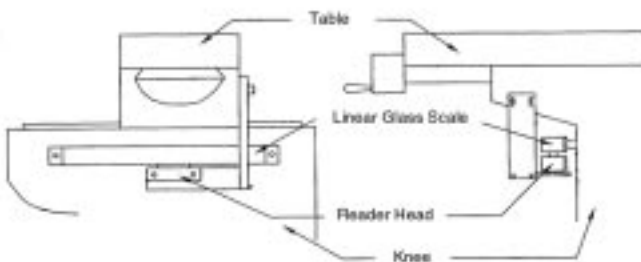
Order No. 059819

List Price \$69.50



#### Lagun Scale-Y (AT115 & AT715) Bracket Kit

Order No. 50AAD312 List Price \$80.00

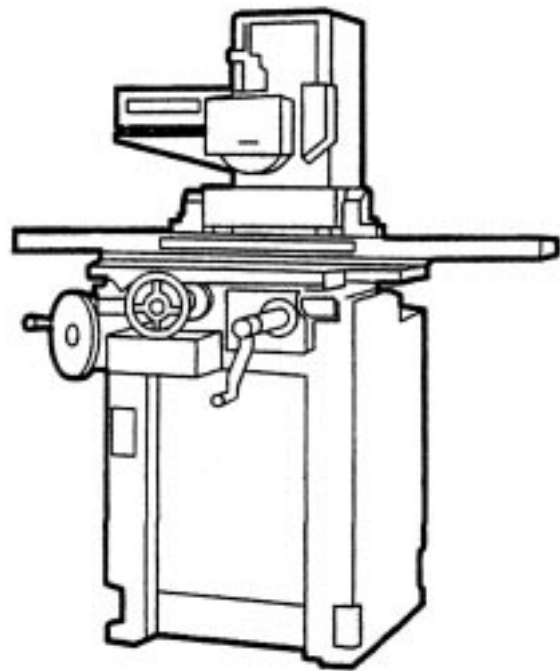


*Using KA Counter and AT115*

### 2 Axis, KA Counter Grinder System

#### Package Includes:

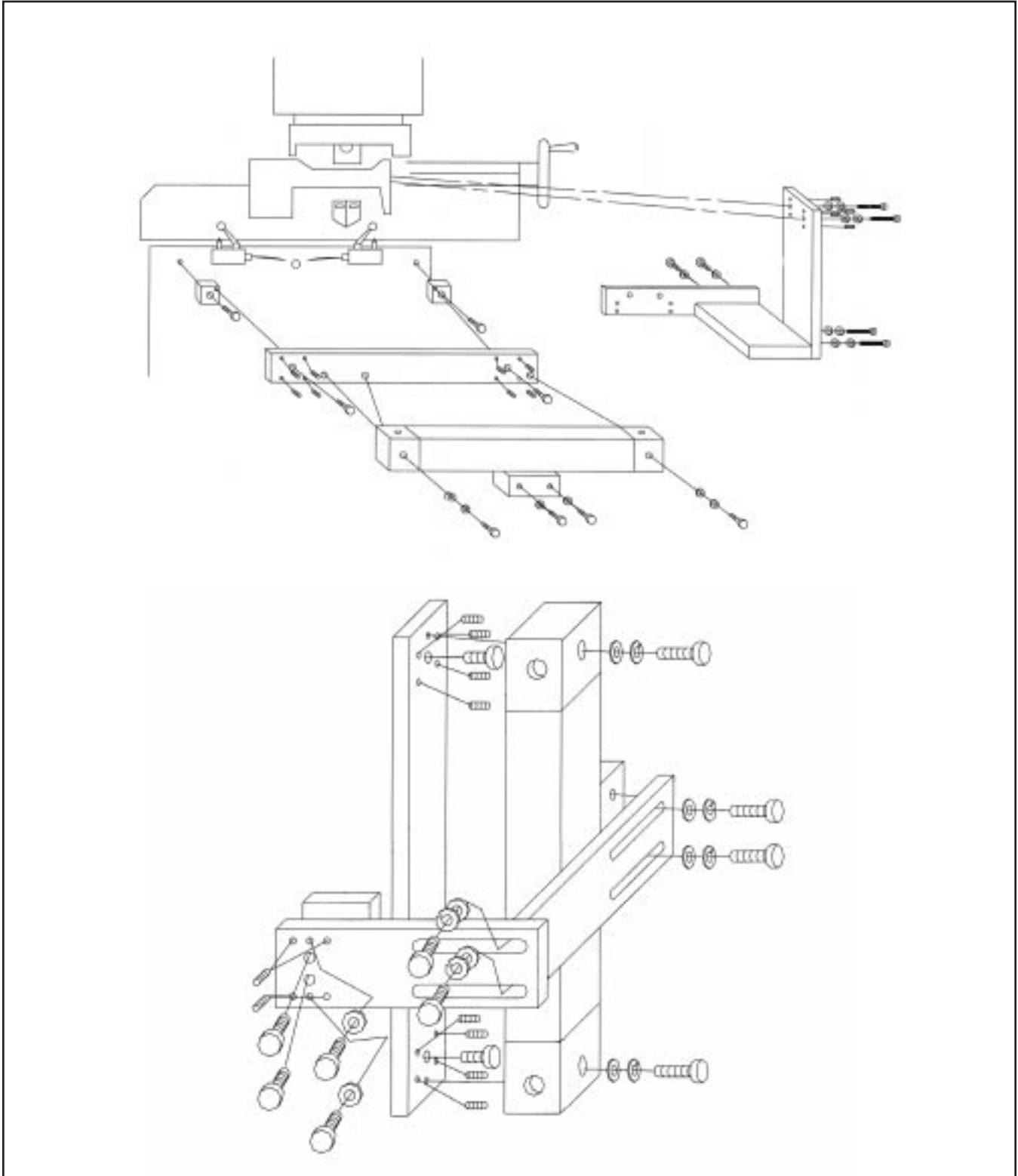
- KA Counter
- AT115 Glass Linear Scale
- Bracket Kits (refer to page 16)
- Display Arm Kit



Vertical	Cross Side			
	AT115-150 (6")	AT115-200 (8")	AT115-250 (10")	AT115-300 (12")
AT115-300 (12")	174-173PG1L \$1,250.00	174-173PG8L \$1,250.00	–	–
AT115-350 (14")	174-173PG7L \$1,250.00	174-173PG3L \$1,250.00	174-173PG5L \$1,250.00	–
AT115-400 (16")	–	174-173PG4L \$1,250.00	–	174-173PG13L \$1,250.00
AT115-450 (18")	174-173PG2L \$1,250.00	174-173PG9L \$1,250.00	174-173PG6L \$1,250.00	174-173PG14L \$1,250.00
AT115-500 (20")	–	174-173PG10L \$1,250.00	174-173PG11L \$1,250.00	174-173PG15L \$1,250.00
AT115-600 (24")	–	–	174-173PG12L \$1,250.00	174-173PG16L \$1,250.00

### *Mounting Brackets*

Bracket Kit: **50AAD343**, Grinder Scale List Price: \$150.00

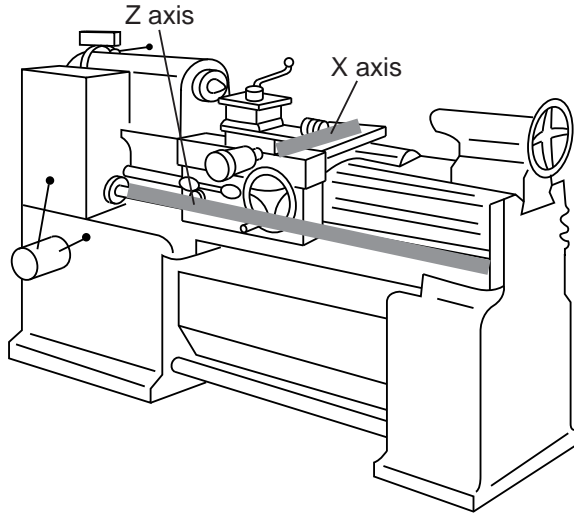


Using KA Counter, AT115, AT102 and AT715

### 2 Axis, KA Counter Lathe System

#### Package Includes:

- KA Counter
- AT115, AT102 and AT715 Linear Scale and Extension Cable
- Bracket Kit (refer to page 19)
- Counter Stand
- Counter Tray



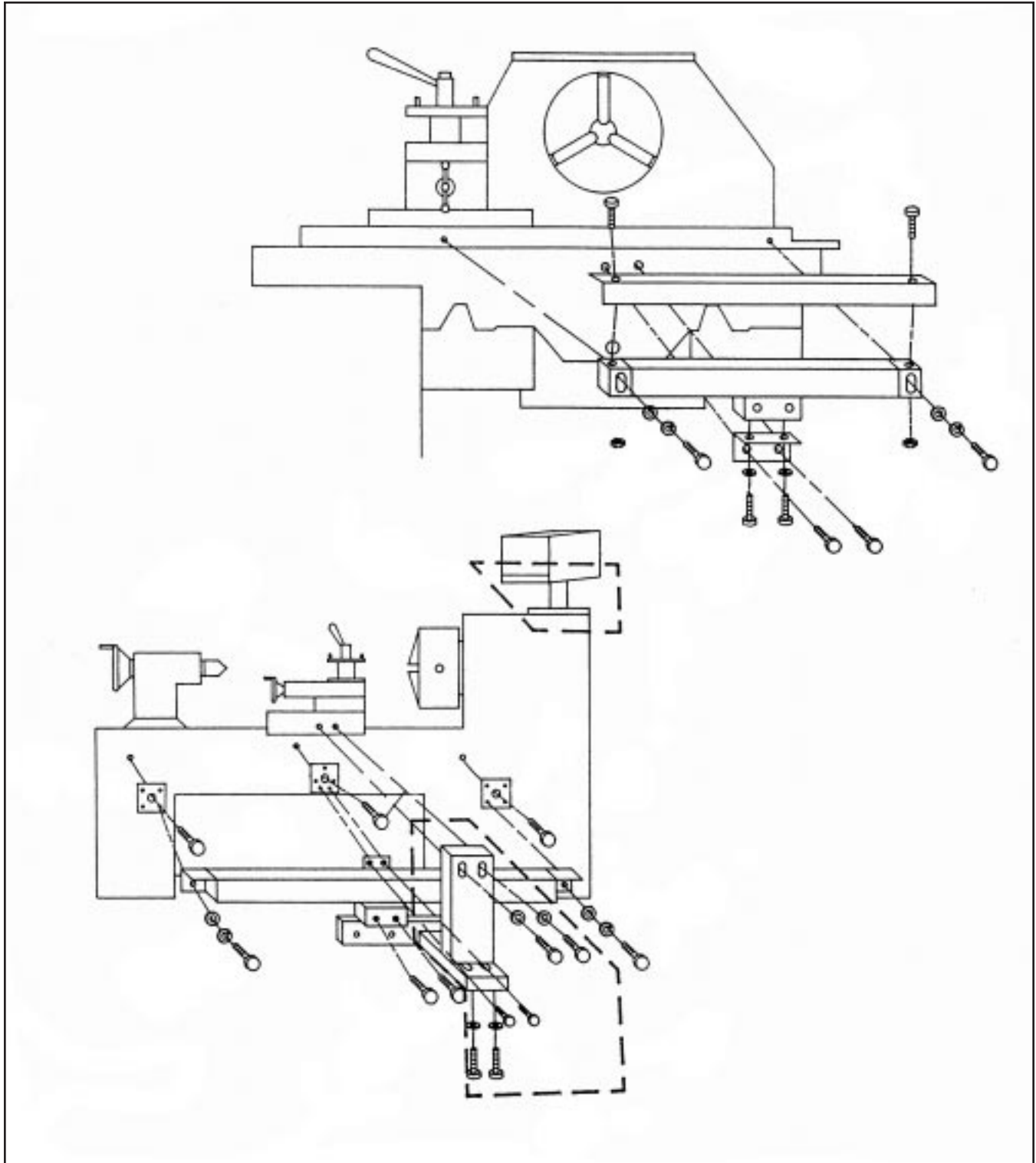
Z axis travel	X Axis Travel					
	AT115-150 (6")	AT115-200 (8")	AT115-250 (10")	AT115-300 (12")	AT115-350 (14")	AT115-400 (16")
AT715-700 (28")	174-173PL42 \$1,350.00	-	-	-	-	-
AT715-750 (30")	174-173PL1 \$1,350.00	-	-	-	-	-
AT715-900 (36")	174-173PL2 \$1,350.00	-	-	-	-	-
AT715-1000 (40")	174-173PL13 \$1,350.00	174-173PL3 \$1,350.00	174-173PL4 \$1,350.00	174-173PL25 \$1,350.00	174-173PL31 \$1,350.00	-
AT715-1100 (44")	-	174-173PL16 \$1,550.00	174-173PL5 \$1,550.00	174-173PL26 \$1,550.00	174-173PL32 \$1,550.00	-
AT715-1200 (48")	-	174-173PL17 \$1,550.00	174-173PL6 \$1,550.00	174-173PL27 \$1,550.00	174-173PL33 \$1,550.00	-
AT715-1300 (52")	-	174-173PL18 \$1,550.00	174-173PL21 \$1,550.00	174-173PL28 \$1,550.00	174-173PL34 \$1,550.00	-
AT715-1500 (60")	174-173PL14 \$1,550.00	174-173PL19 \$1,550.00	174-173PL7 \$1,550.00	174-173PL29 \$1,550.00	174-173PL35 \$1,550.00	174-173PL38 \$1,550.00
AT715-1800 (72")	-	-	-	174-173PL8 \$2,150.00	-	-
AT102-2000 (80")	174-173PL15L \$2,650.00	174-173PL20L \$2,650.00	174-173PL22L \$2,650.00	174-173PL30L \$2,650.00	174-173PL36L \$2,650.00	174-173PL39L \$2,650.00
AT102-2200 (88")	-	-	-	174-173PL9L \$2,650.00	-	-
AT102-2500 (100")	-	-	174-173PL23L \$2,950.00	174-173PL10L \$2,950.00	174-173PL37L \$2,950.00	174-173PL40L \$2,950.00
AT102-3000 (120")	-	-	174-173PL24L \$3,350.00	174-173PL11L \$3,350.00	174-173PL12L \$3,350.00	174-173PL41L \$3,350.00

### *Mounting Brackets*

Bracket Kit: **053910**  
**53AAA375**

Lathe Machine Bracket Kit  
Counter tray (for KA counter)

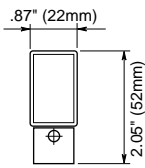
List Price: \$108.00  
List Price: \$15.50



### AT100 Series Glass Linear Scale

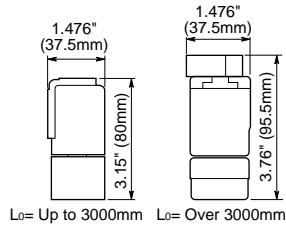
## AT115

Type: Slim spar  
MIN range: 4" (100mm)  
MAX range: 60" (1,500mm)



## AT102

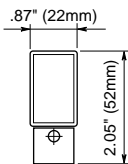
Type: Standard-size spar  
MIN range: 4" (100mm)  
MAX range: 240" (6,000mm)



L<sub>0</sub>= Up to 3000mm L<sub>0</sub>= Over 3000mm

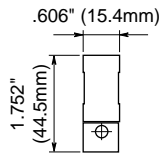
## AT111

Type: Slim spar  
MIN range: 4" (100mm)  
MAX range: 60" (1,500mm)



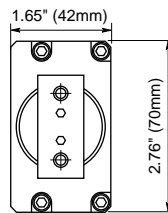
## AT112

Type: Super slim spar  
MIN range: 4" (50mm)  
MAX range: 40" (1,020mm)



## AT181

Type: Plunger  
MIN range: 4" (100mm)  
MAX range: 24" (600mm)



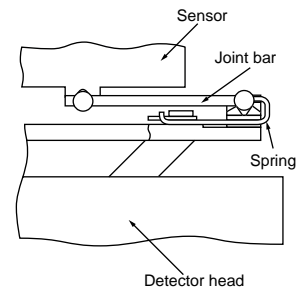
### Features

#### 1. Value-priced model AT115

The value-priced version of Mitutoyo Linear Scale AT115 series are available. The mounting dimensions of all the AT115 models are the same as those of the AT111 series. Most suitable for mounting on a milling machine or an XY table.

#### 2. Joint Structure of Detector

The ball joint structure is employed at the joint of the detector head and the slider (sensor unit) inside the scale. This structure prevents the slider movement from deviating from the normal moving directions when the detector head shifts to right and left, thus providing a normal scale reading and increasing flexibility in the scale installation. In addition, this structure is highly rigid and therefore has excellent durability.



#### 3. Water-proof Connector

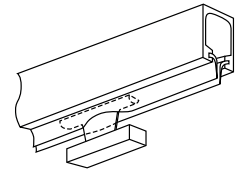
A waterproof/splash-proof connector is used to enable separation of the signal cable. Thus, an installation and maintenance of the Linear Scale can be easily performed. (The signal cable in AT115 cannot be separated.)

#### 4. Conduit armored type signal cable

The signal cable is protected by the conduit system. Its exterior is made of stainless steel, which is free from rust and corrosion and withstands sustained use for many years.

#### 5. Unique rubber-lip seals

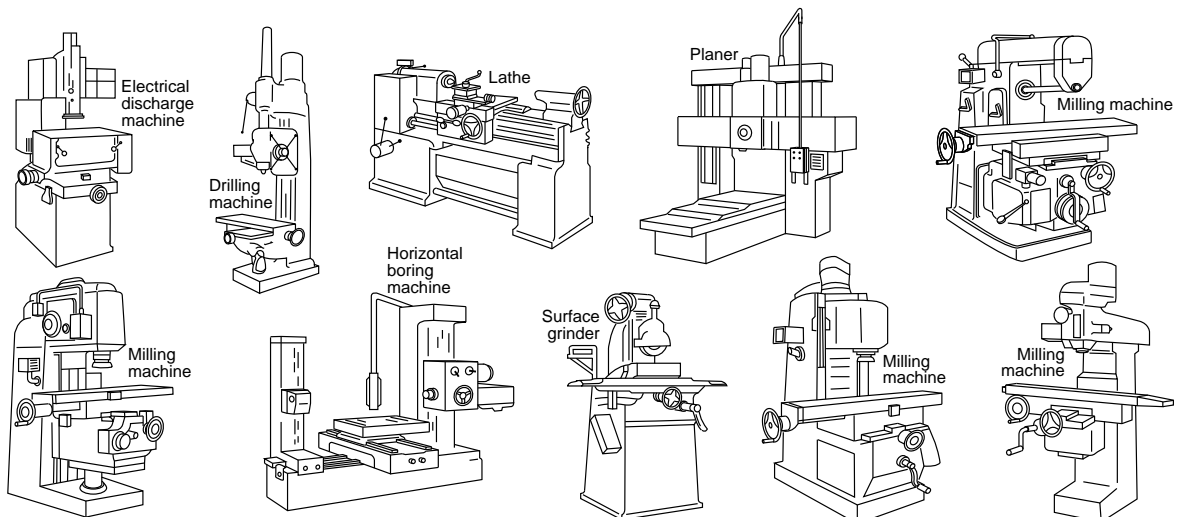
The rubber-lip seals openings are shaped like the bottom of a ship that plows the water.



#### 6. Excellent splash- and dust-proof rubber lip structure

The rubber lip seals are made of a strong, special urethane, that is wire reinforced to improve the contamination resistance of the scale.

### Applications

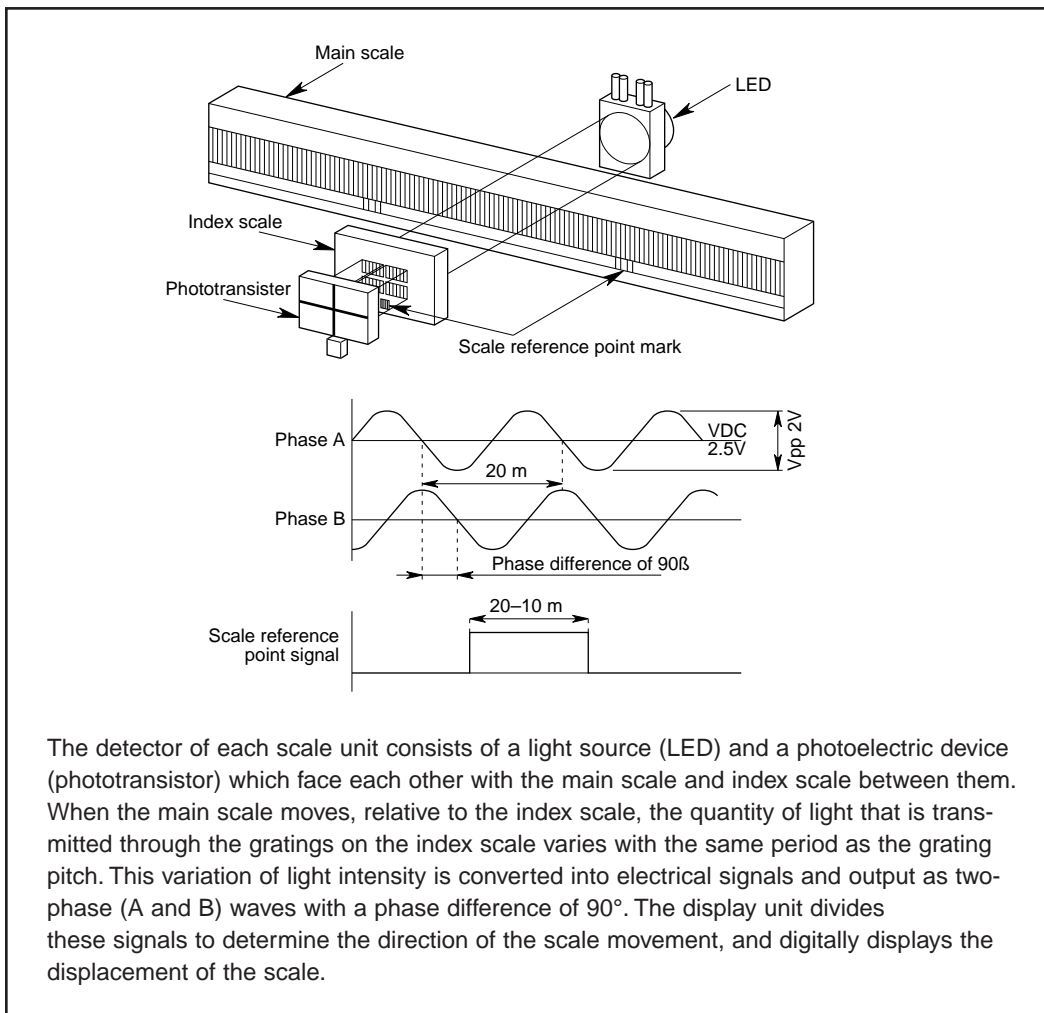


## Specifications of Glass Linear Scale

### Specifications

Model	AT115/AT102/AT111/AT112	AT181
Detecting method	Photoelectric	
Light source	LED	
Receptor	Phototransistor	Photodiode
Output wave form	2-phase sine wave with a phase difference of 90°	
Scale grating pitch	20μm	
Resolution	0.0005mm - .0.01mm (depending upon the counter connected)	
Scale reference point	At every 50mm interval	Not provided
Coefficient of linear expansion	$(8 \pm 1) \cdot 10^{-6}/^{\circ}\text{C}$	
Power supply	5V $\pm$ 5% DC	
Current consumption	70mA at maximum	120mA at maximum
Sliding force	5N or less	6N or less
Dust/water protection	Conforming to IP-53	Conforming to IP-54
Operating temperature	0°C to 45°C	
Storage temperature	-20°C to 70°C	
Relative humidity	20% to 80% (no condensation)	

### Detecting Principle



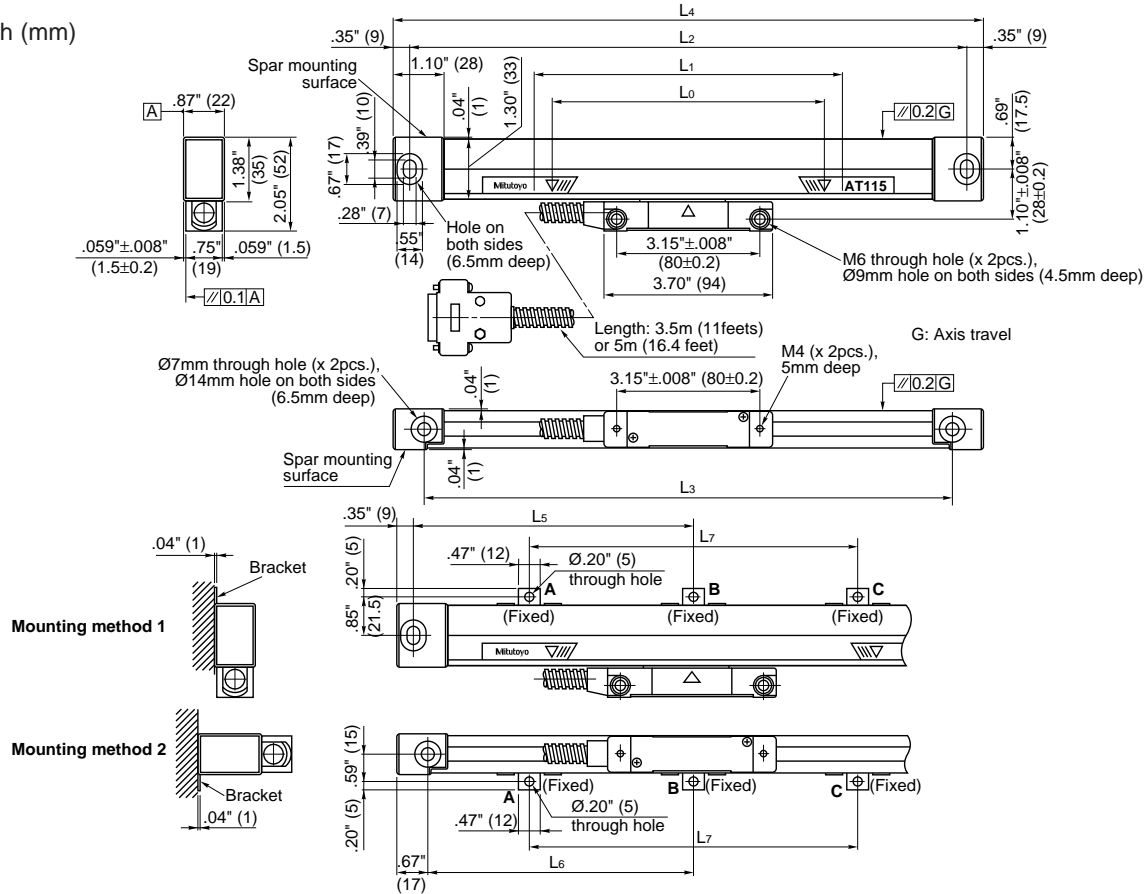
### Order Numbers and List Prices

Spar Type	Slim		Standard-size				Extra-long		Slim			
	Model	AT115 List Price	AT102 List Price	AT102 List Price	AT102 List Price	AT102 List Price	AT102 List Price	AT111 List Price	AT111 List Price	AT111 List Price	AT111 List Price	
Accuracy at 20°C (µm) Lo: Effective range	Standard-Accuracy 5 + 5Lo/1000		Standard-Accuracy 5 + 5Lo/1000		High-Accuracy 3 + 3Lo/1000		Standard-Accuracy 5 + 8Lo/1000		Standard-Accuracy 5 + 5Lo/1000		High-Accuracy 3 + 3Lo/1000	
Maximum response speed	164 ft/min 50m/min		236 ft/min 72m/min		236 ft/min 72m/min		164 ft/min 50m/min		236 ft/min 72m/min		236 ft/min 72m/min	
100mm (4")	<b>539-271</b>	\$272.00	<b>539-111</b>	\$388.00	<b>539-111-10</b>	\$545.00	-	-	<b>539-201</b>	\$418.00	<b>539-201-10</b>	\$545.00
150mm (6")	<b>539-272</b>	\$272.00	<b>539-112</b>	\$388.00	<b>539-112-10</b>	\$545.00	-	-	<b>539-202</b>	\$431.00	<b>539-202-10</b>	\$557.00
200mm (8")	<b>539-273</b>	\$280.00	<b>539-113</b>	\$400.00	<b>539-113-10</b>	\$557.00	-	-	<b>539-203</b>	\$461.00	<b>539-203-10</b>	\$572.00
250mm (10")	<b>539-274</b>	\$280.00	<b>539-114</b>	\$400.00	<b>539-114-10</b>	\$575.00	-	-	<b>539-204</b>	\$473.00	<b>539-204-10</b>	\$589.00
300mm (12")	<b>539-275</b>	\$280.00	<b>539-115</b>	\$400.00	<b>539-115-10</b>	\$575.00	-	-	<b>539-205</b>	\$480.00	<b>539-205-10</b>	\$602.00
350mm (14")	<b>539-276</b>	\$287.00	<b>539-116</b>	\$411.00	<b>539-116-10</b>	\$607.00	-	-	<b>539-206</b>	\$501.00	<b>539-206-10</b>	\$655.00
400mm (16")	<b>539-277</b>	\$316.00	<b>539-117</b>	\$451.00	<b>539-117-10</b>	\$651.00	-	-	<b>539-207</b>	\$522.00	<b>539-207-10</b>	\$708.00
450mm (18")	<b>539-278</b>	\$339.00	<b>539-118</b>	\$484.00	<b>539-118-10</b>	\$708.00	-	-	<b>539-208</b>	\$563.00	<b>539-208-10</b>	\$780.00
500mm (20")	<b>539-279</b>	\$351.00	<b>539-119</b>	\$502.00	<b>539-119-10</b>	\$757.00	-	-	<b>539-209</b>	\$595.00	<b>539-209-10</b>	\$852.00
600mm (24")	<b>539-281</b>	\$387.00	<b>539-121</b>	\$553.00	<b>539-121-10</b>	\$889.00	-	-	<b>539-211</b>	\$651.00	<b>539-211-10</b>	\$914.00
700mm (28")	<b>539-283</b>	\$419.00	<b>539-123</b>	\$598.00	<b>539-123-10</b>	\$990.00	-	-	<b>539-213</b>	\$714.00	<b>539-213-10</b>	\$996.00
750mm (30")	<b>539-284</b>	\$448.00	<b>539-124</b>	\$640.00	<b>539-124-10</b>	\$1,030.00	-	-	<b>539-214</b>	\$739.00	<b>539-214-10</b>	\$1,130.00
800mm (32")	<b>539-285</b>	\$474.00	<b>539-125</b>	\$677.00	<b>539-125-10</b>	\$1,070.00	-	-	<b>539-215</b>	\$776.00	<b>539-215-10</b>	\$1,200.00
900mm (36")	<b>539-286</b>	\$504.00	<b>539-126</b>	\$719.00	<b>539-126-10</b>	\$1,100.00	-	-	<b>539-216</b>	\$874.00	<b>539-216-10</b>	\$1,300.00
1000mm (40")	<b>539-287</b>	\$612.00	<b>539-127</b>	\$874.00	<b>539-127-10</b>	\$1,220.00	-	-	<b>539-217</b>	\$912.00	<b>539-217-10</b>	\$1,450.00
1100mm (44")	<b>539-288</b>	\$686.00	<b>539-128</b>	\$981.00	<b>539-128-10</b>	\$1,520.00	-	-	<b>539-218</b>	\$1,090.00	<b>539-218-10</b>	\$1,620.00
1200mm (48")	<b>539-289</b>	\$757.00	<b>539-129</b>	\$1,080.00	<b>539-129-10</b>	\$1,840.00	-	-	<b>539-219</b>	\$1,170.00	<b>539-219-10</b>	\$1,700.00
1300mm (52")	<b>539-290</b>	\$808.00	<b>539-130</b>	\$1,150.00	<b>539-130-10</b>	\$1,890.00	-	-	<b>539-220</b>	\$1,310.00	<b>539-220-10</b>	\$1,750.00
1400mm (56")	<b>539-291</b>	\$858.00	<b>539-131</b>	\$1,230.00	<b>539-131-10</b>	\$1,930.00	-	-	<b>539-221</b>	\$1,360.00	<b>539-221-10</b>	\$1,800.00
1500mm (60")	<b>539-292</b>	\$1,080.00	<b>539-132</b>	\$1,550.00	<b>539-132-10</b>	\$1,980.00	-	-	<b>539-222</b>	\$1,720.00	<b>539-222-10</b>	\$1,850.00
1600mm (64")	-	-	<b>539-133</b>	\$1,650.00	<b>539-133-10</b>	\$2,040.00	-	-	-	-	-	-
1700mm (68")	-	-	<b>539-134</b>	\$1,720.00	<b>539-134-10</b>	\$2,100.00	-	-	-	-	-	-
1800mm (72")	-	-	<b>539-135</b>	\$1,960.00	<b>539-135-10</b>	\$2,150.00	-	-	-	-	-	-
2000mm (80")	-	-	<b>539-136</b>	\$2,170.00	<b>539-136-10</b>	\$2,200.00	-	-	-	-	-	-
2200mm (88")	-	-	<b>539-137</b>	\$2,380.00	-	-	-	-	-	-	-	-
2400mm (96")	-	-	<b>539-138</b>	\$2,620.00	-	-	-	-	-	-	-	-
2500mm (100")	-	-	<b>539-139</b>	\$2,700.00	-	-	-	-	-	-	-	-
2600mm (104")	-	-	<b>539-140</b>	\$2,830.00	-	-	-	-	-	-	-	-
2800mm (112")	-	-	<b>539-141</b>	\$2,950.00	-	-	-	-	-	-	-	-
3000mm (120")	-	-	<b>539-142</b>	\$3,250.00	-	-	-	-	-	-	-	-
3250mm (130")	-	-	-	-	-	-	<b>539-143</b>	\$4,160.00	-	-	-	-
3500mm (140")	-	-	-	-	-	-	<b>539-144</b>	\$4,460.00	-	-	-	-
3750mm (150")	-	-	-	-	-	-	<b>539-145</b>	\$4,600.00	-	-	-	-
4000mm (160")	-	-	-	-	-	-	<b>539-146</b>	\$4,760.00	-	-	-	-
4250mm (170")	-	-	-	-	-	-	<b>539-147</b>	\$4,970.00	-	-	-	-
4500mm (180")	-	-	-	-	-	-	<b>539-148</b>	\$5,240.00	-	-	-	-
4750mm (190")	-	-	-	-	-	-	<b>539-149</b>	\$5,380.00	-	-	-	-
5000mm (200")	-	-	-	-	-	-	<b>539-150</b>	\$5,610.00	-	-	-	-
5250mm (210")	-	-	-	-	-	-	<b>539-151</b>	\$5,760.00	-	-	-	-
5500mm (220")	-	-	-	-	-	-	<b>539-152</b>	\$6,070.00	-	-	-	-
5750mm (230")	-	-	-	-	-	-	<b>539-153</b>	\$6,220.00	-	-	-	-
6000mm (240")	-	-	-	-	-	-	<b>539-154</b>	\$6,490.00	-	-	-	-

### Order Numbers and List Prices

Spar Type Model	Super-slim				Plunger construction				
	AT112	List Price	AT112	List Price	Model	AT181	List Price	AT181	List Price
Accuracy at 20°C (µm) Lo: Effective range	Standard-Accuracy 5 + 5Lo/1000		High-Accuracy 3 + 3Lo/1000			Standard-Accuracy 5 + 5Lo/1000		High-Accuracy 3 + 3Lo/1000	
Maximum response speed	164 ft/min 50m/min		164 ft/min 50m/min			164 ft/min 50m/min		164 ft/min 50m/min	
50mm (1.5")	<b>539-251</b>	\$579.00	<b>539-251-10</b>	\$811.00	100mm (4")	<b>539-301</b>	\$1,000.00	<b>539-301-10</b>	\$1,290.00
70mm (2.5")	<b>539-252</b>	\$591.00	<b>539-252-10</b>	\$827.00	150mm (6")	<b>539-302</b>	\$1,040.00	<b>539-302-10</b>	\$1,350.00
120mm (4.5")	<b>539-253</b>	\$640.00	<b>539-253-10</b>	\$895.00	200mm (8")	<b>539-303</b>	\$1,080.00	<b>539-303-10</b>	\$1,390.00
170mm (6.5")	<b>539-254</b>	\$652.00	<b>539-254-10</b>	\$914.00	250mm (10")	<b>539-304</b>	\$1,100.00	<b>539-304-10</b>	\$1,410.00
220mm (8.5")	<b>539-255</b>	\$664.00	<b>539-255-10</b>	\$930.00	300mm (12")	<b>539-305</b>	\$1,130.00	<b>539-305-10</b>	\$1,450.00
270mm (10.5")	<b>539-256</b>	\$686.00	<b>539-256-10</b>	\$961.00	350mm (14")	<b>539-306</b>	\$1,160.00	<b>539-306-10</b>	\$1,460.00
320mm (12.5")	<b>539-257</b>	\$698.00	<b>539-257-10</b>	\$980.00	400mm (16")	<b>539-307</b>	\$1,200.00	<b>539-307-10</b>	\$1,510.00
370mm (14.5")	<b>539-258</b>	\$726.00	<b>539-258-10</b>	\$1,020.00	450mm (18")	<b>539-308</b>	\$1,230.00	<b>539-308-10</b>	\$1,550.00
420mm (16.5")	<b>539-259</b>	\$833.00	<b>539-259-10</b>	\$1,160.00	500mm (20")	<b>539-309</b>	\$1,300.00	<b>539-309-10</b>	\$1,620.00
470mm (18.5")	<b>539-260</b>	\$900.00	<b>539-260-10</b>	\$1,260.00	550mm (22")	<b>539-310</b>	\$1,360.00	<b>539-310-10</b>	\$1,620.00
520mm (20")	<b>539-261</b>	\$940.00	<b>539-261-10</b>	\$1,330.00	600mm (24")	<b>539-311</b>	\$1,410.00	<b>539-311-10</b>	\$1,730.00
570mm (22")	<b>539-262</b>	\$968.00	<b>539-262-10</b>	\$1,370.00					
620mm (24")	<b>539-263</b>	\$1,000.00	<b>539-263-10</b>	\$1,410.00					
670mm (26")	<b>539-264</b>	\$1,040.00	<b>539-264-10</b>	\$1,460.00					
720mm (28")	<b>539-265</b>	\$1,090.00	<b>539-265-10</b>	\$1,520.00					
770mm (30")	<b>539-266</b>	\$1,230.00	<b>539-266-10</b>	\$1,740.00					
820mm (32")	<b>539-267</b>	\$1,310.00	<b>539-267-10</b>	\$1,820.00					
920mm (36")	<b>539-268</b>	\$1,400.00	<b>539-268-10</b>	\$1,940.00					
1020mm (40")	<b>539-269</b>	\$1,540.00	<b>539-269-10</b>	\$2,150.00					

units: inch (mm)



### Mounting dimensions

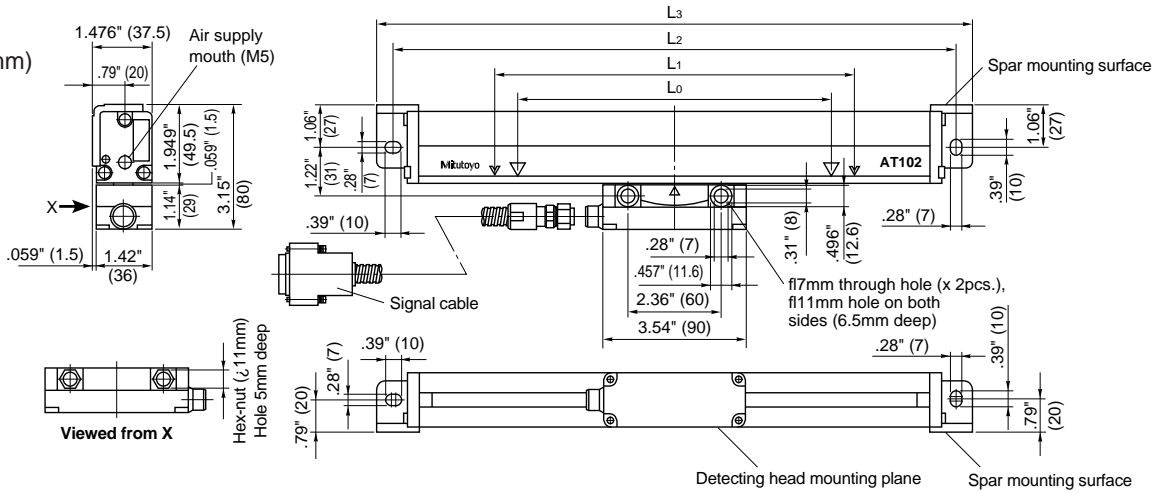
Effective range $L_0$ inch (mm)	Travel range $L_1$ inch (mm)	Mount interval $L_2$ inch (mm)	Mount interval $L_3$ inch (mm)	Overall length $L_4$ inch (mm)	Supporting bracket			Signal cable length feet (m)	Mass lbs. (kg)
					$L_5$ inch (mm)	$L_6$ inch (mm)	$L_7$ inch (mm)		
4" (100)	4.72" (120)	10.16" (258)	9.53" (242)	10.87" (276)	-	-	-	9.8 (3)	2.2 (1.0)
6" (150)	6.69" (170)	12.13" (308)	11.50" (292)	12.83" (326)	-	-	-	9.8 (3)	2.2 (1.0)
8" (200)	8.66" (220)	14.09" (358)	13.46" (342)	14.80" (376)	-	-	-	9.8 (3)	2.2 (1.0)
10" (250)	10.63" (270)	16.06" (408)	15.43" (392)	16.77" (426)	-	-	-	9.8 (3)	2.42 (1.1)
12" (300)	12.99" (330)	18.43" (468)	17.80" (452)	19.13" (486)	-	-	-	9.8 (3)	2.42 (1.1)
14" (350)	14.96" (380)	20.39" (518)	19.76" (502)	21.10" (536)	-	-	-	9.8 (3)	2.42 (1.1)
16" (400)	16.93" (430)	22.36" (568)	21.73" (552)	23.07" (586)	-	-	-	9.8 (3)	2.64 (1.2)
18" (450)	18.90" (480)	24.33" (618)	23.70" (602)	25.04" (636)	-	-	-	9.8 (3)	2.64 (1.2)
20" (500)	21.26" (540)	26.69" (678)	26.06" (662)	27.40" (696)	13.35" (339)	13.03" (331)	-	9.8 (3)	2.64 (1.2)
24" (600)	25.20" (640)	30.63" (778)	30.00" (762)	31.34" (796)	15.31" (389)	15.00" (381)	-	9.8 (3)	2.86 (1.3)
28" (700)	29.13" (740)	34.57" (878)	33.94" (862)	35.28" (896)	17.28" (439)	16.97" (431)	-	9.8 (3)	2.86 (1.3)
30" (750)	30.71" (780)	36.14" (918)	35.51" (902)	36.85" (936)	18.07" (459)	17.76" (451)	-	9.8 (3)	2.86 (1.3)
32" (800)	33.07" (840)	38.50" (978)	37.87" (962)	39.21" (996)	19.25" (489)	18.94" (481)	-	9.8 (3)	3.08 (1.4)
36" (900)	37.01" (940)	42.44" (1078)	41.81" (1062)	43.15" (1096)	21.22" (539)	20.91" (531)	-	9.8 (3)	3.08 (1.4)
40" (1000)	40.94" (1040)	46.38" (1178)	45.75" (1162)	47.09" (1196)	23.19" (589)	22.87" (581)	-	16.4 (5)	3.96 (1.8)
44" (1100)	44.88" (1140)	50.31" (1278)	49.69" (1262)	51.02" (1296)	-	-	16.93" (430)	16.4 (5)	3.96 (1.8)
48" (1200)	48.82" (1240)	54.25" (1378)	53.62" (1362)	54.96" (1396)	-	-	18.11" (460)	16.4 (5)	4.18 (1.9)
52" (1300)	52.76" (1340)	58.19" (1478)	57.56" (1462)	58.90" (1496)	-	-	19.29" (490)	16.4 (5)	4.18 (1.9)
56" (1400)	56.69" (1440)	62.13" (1578)	61.50" (1562)	62.83" (1596)	-	-	20.87" (530)	16.4 (5)	4.4 (2.0)
60" (1500)	60.63" (1540)	66.06" (1678)	65.43" (1662)	66.77" (1696)	-	-	22.05" (560)	16.4 (5)	4.4 (2.0)

### Mounting hardware (provided as standard)

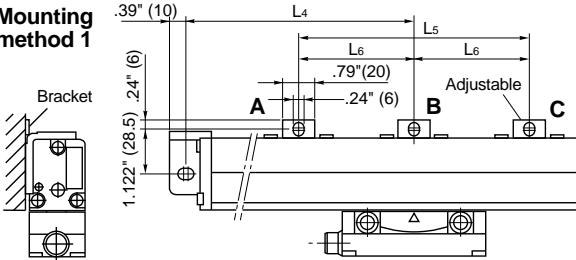
Items included	Quantity
• Hex-socket head screw (M6x1x25)	2 pcs.
• Hex-socket head screw (M4x0.7x25)	2 pcs.
• Hex-socket head screw (M4x0.7x8)	6 pcs.
• Plain washer (4mm nominal)	2 pcs.
• Plain washer (6mm nominal)	2 pcs.
• Cable clip	5 pcs.
• Connector clamp	1 pc.
• Spacer (0.3mm)	1 pc.
• Spacer (0.4mm)	1 pc.
• Spacer (0.5mm)	1 pc.
• Spacer (0.6mm)	1 pc.
• Middle support set	1 or 2 pcs.

**Note** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale ( $L_1$ ) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length ( $L_0$ ).

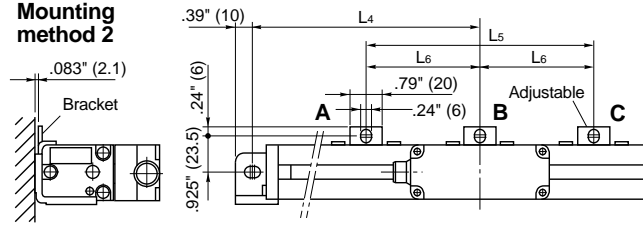
units:  
inch (mm)



Mounting method 1



Mounting method 2



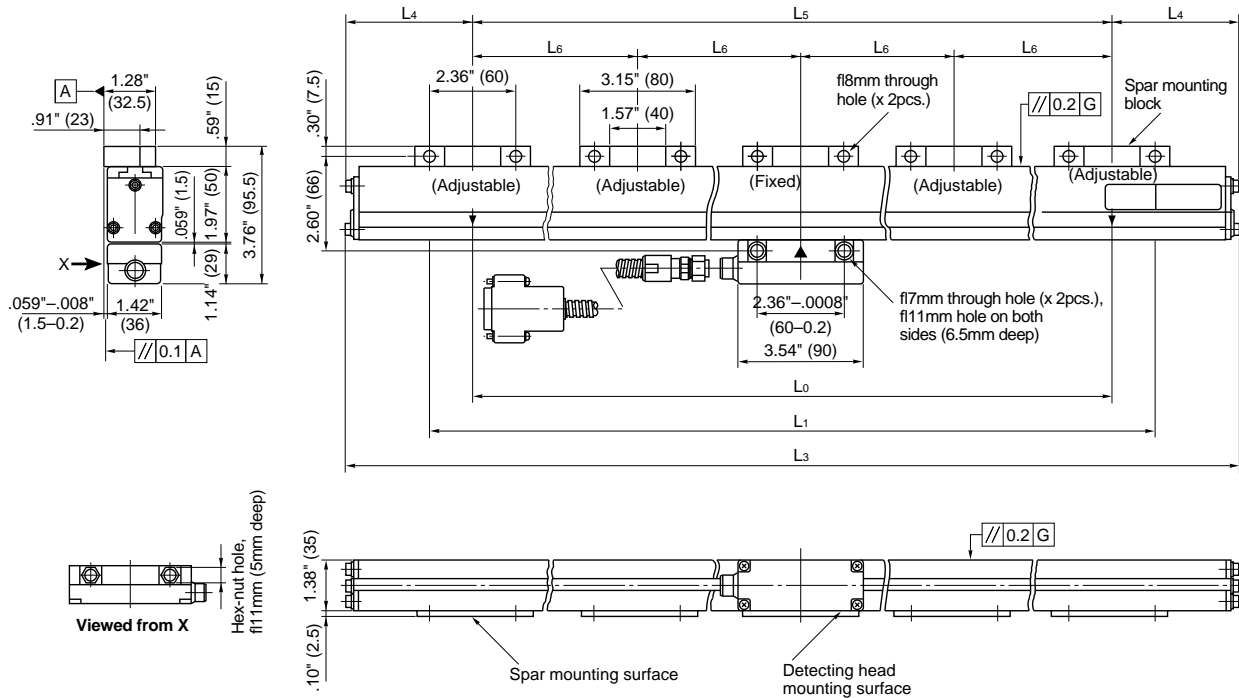
### Mounting dimensions

Effective range L <sub>0</sub> inch (mm)	Travel range L <sub>1</sub> inch (mm)	Mount interval L <sub>2</sub> inch (mm)	Overall length L <sub>3</sub> inch (mm)	Supporting bracket			Signal cable length feet (m)	Mass lbs. (kg)
				L <sub>4</sub> inch (mm)	L <sub>5</sub> inch (mm)	L <sub>6</sub> inch (mm)		
4" (100)	4.72" (120)	9.76" (248)	10.55" (268)	-	-	-	9.8 (3)	3.30 (1.5)
6" (150)	6.69" (170)	11.73" (298)	12.52" (318)	-	-	-	9.8 (3)	3.52 (1.6)
8" (200)	8.66" (220)	13.70" (348)	14.49" (368)	-	-	-	9.8 (3)	3.74 (1.7)
10" (250)	10.63" (270)	15.67" (398)	16.46" (418)	-	-	-	9.8 (3)	3.96 (1.8)
12" (300)	12.99" (330)	18.03" (458)	18.82" (478)	-	-	-	9.8 (3)	4.18 (1.9)
14" (350)	14.96" (380)	20.00" (508)	20.79" (528)	-	-	-	9.8 (3)	4.40 (2.0)
16" (400)	16.93" (430)	21.97" (558)	22.76" (578)	-	-	-	9.8 (3)	4.62 (2.1)
18" (450)	18.90" (480)	23.94" (608)	24.72" (628)	-	-	-	9.8 (3)	4.84 (2.2)
20" (500)	21.26" (540)	26.30" (668)	27.09" (688)	-	-	-	9.8 (3)	5.06 (2.3)
24" (600)	25.59" (650)	30.63" (778)	31.42" (798)	-	-	-	9.8 (3)	5.72 (2.6)
28" (700)	29.92" (760)	34.96" (888)	35.75" (908)	-	-	-	9.8 (3)	6.16 (2.8)
30" (750)	31.89" (810)	36.93" (938)	37.72" (958)	-	-	-	9.8 (3)	6.38 (2.9)
32" (800)	33.86" (860)	38.90" (988)	39.69" (1008)	-	-	-	9.8 (3)	6.60 (3.0)
36" (900)	37.79" (960)	42.83" (1088)	43.62" (1108)	-	-	-	9.8 (3)	7.26 (3.3)
40" (1000)	41.73" (1060)	46.77" (1188)	47.56" (1208)	23.39" (594)	-	-	16.4 (5)	8.14 (3.7)
44" (1100)	45.67" (1160)	50.71" (1288)	51.50" (1308)	25.35" (644)	-	-	16.4 (5)	8.80 (4.0)
48" (1200)	49.60" (1260)	54.65" (1388)	55.43" (1408)	27.32" (694)	-	-	16.4 (5)	9.24 (4.2)
52" (1300)	53.54" (1360)	58.58" (1488)	59.37" (1508)	29.29" (744)	-	-	16.4 (5)	9.68 (4.4)
56" (1400)	57.48" (1460)	62.52" (1588)	63.31" (1608)	31.26" (794)	-	-	16.4 (5)	10.12 (4.6)
60" (1500)	61.41" (1560)	66.46" (1688)	67.24" (1708)	33.23" (844)	-	-	16.4 (5)	10.56 (4.8)
64" (1600)	66.53" (1690)	71.57" (1818)	72.36" (1838)	-	610 (24.02")	-	16.4 (5)	11.22 (5.1)
68" (1700)	70.47" (1790)	75.51" (1918)	76.30" (1938)	-	650 (25.59")	-	16.4 (5)	11.66 (5.3)
72" (1800)	74.41" (1890)	79.45" (2018)	80.24" (2038)	-	670 (26.38")	-	16.4 (5)	12.10 (5.5)
80" (2000)	82.67" (2100)	87.72" (2228)	88.50" (2248)	-	740 (29.13")	-	16.4 (5)	13.20 (6.0)
88" (2200)	90.55" (2300)	95.59" (2428)	96.38" (2448)	-	800 (31.50")	-	16.4 (5)	14.08 (6.4)
96" (2400)	98.42" (2500)	103.46" (2628)	104.25" (2648)	51.73" (1314)	1300 (51.18")	25.59" (650)	22.9 (7)	15.62 (7.1)
100" (2500)	102.36" (2600)	107.40" (2728)	108.19" (2748)	53.70" (1364)	1340 (52.76")	25.38" (670)	22.9 (7)	16.06 (7.3)
104" (2600)	106.30" (2700)	111.34" (2828)	112.13" (2848)	55.67" (1414)	1400 (55.12")	27.56" (700)	22.9 (7)	16.50 (7.5)
112" (2800)	114.17" (2900)	119.21" (3028)	120.00" (3048)	59.60" (1514)	1500 (59.06")	29.53" (750)	22.9 (7)	17.38 (7.9)
120" (3000)	118.11" (3100)	127.09" (3228)	127.87" (3248)	63.99" (1614)	1600 (62.99")	31.50" (800)	22.9 (7)	18.26 (8.3)

**Note)** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale (L<sub>1</sub>) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length (L<sub>0</sub>).

Mounting parts for the AT102 Series scale units (standard accessories) are shown on the next page.

units: inch (mm)



### Mounting dimensions

Effective range $L_0$ inch (mm)	Travel range $L_1$ inch (mm)	Overall length $L_3$ inch (mm)	Mounting block			Signal cable length feet (m)	Mass lbs. (kg)	
			Blocks included	$L_4$ inch (mm)	$L_5$ inch (mm)			$L_6$ inch (mm)
130" (3250)	131.88" (3350)	136.61" (3470)	5 pcs.	5.32" (135)	125.98" (3200)	31.50" (800)	32.8 (10)	23.76 (10.8)
140" (3500)	141.73" (3600)	146.46" (3720)	5 pcs.	6.30" (160)	133.86" (3400)	33.46" (850)	32.8 (10)	25.08 (11.4)
150" (3750)	151.57" (3850)	156.30" (3970)	5 pcs.	4.92" (125)	146.46" (3720)	36.61" (930)	32.8 (10)	26.40 (12.0)
160" (4000)	161.42" (4100)	166.14" (4220)	5 pcs.	4.33" (110)	157.48" (4000)	39.37" (1000)	32.8 (10)	27.72 (12.6)
170" (4250)	171.26" (4350)	175.98" (4470)	5 pcs.	5.32" (135)	165.35" (4200)	41.34" (1050)	32.8 (10)	29.04 (13.2)
180" (4500)	181.10" (4600)	185.83" (4720)	5 pcs.	6.30" (160)	173.23" (4400)	43.31" (1100)	32.8 (10)	30.36 (13.8)
190" (4750)	191.94" (4850)	195.67" (4970)	7 pcs.	3.35" (85)	188.98" (4800)	31.50" (800)	49.2 (15)	33.44 (15.2)
200" (5000)	200.78" (5100)	205.51" (5220)	7 pcs.	4.72" (120)	196.06" (4980)	32.68" (830)	49.2 (15)	34.76 (15.8)
210" (5250)	210.63" (5350)	215.35" (5470)	7 pcs.	4.92" (125)	205.51" (5220)	34.25" (870)	49.2 (15)	36.08 (16.4)
220" (5500)	220.47" (5600)	225.20" (5720)	7 pcs.	5.12" (130)	214.41" (5460)	35.83" (910)	49.2 (15)	37.40 (17.0)
230" (5750)	230.31" (5850)	235.24" (5970)	7 pcs.	5.32" (135)	224.41" (5700)	37.40" (950)	49.2 (15)	38.72 (17.6)
240" (6000)	240.16" (6100)	244.88" (6220)	7 pcs.	4.33" (110)	236.22" (6000)	39.37" (1000)	49.2 (15)	40.04 (18.2)

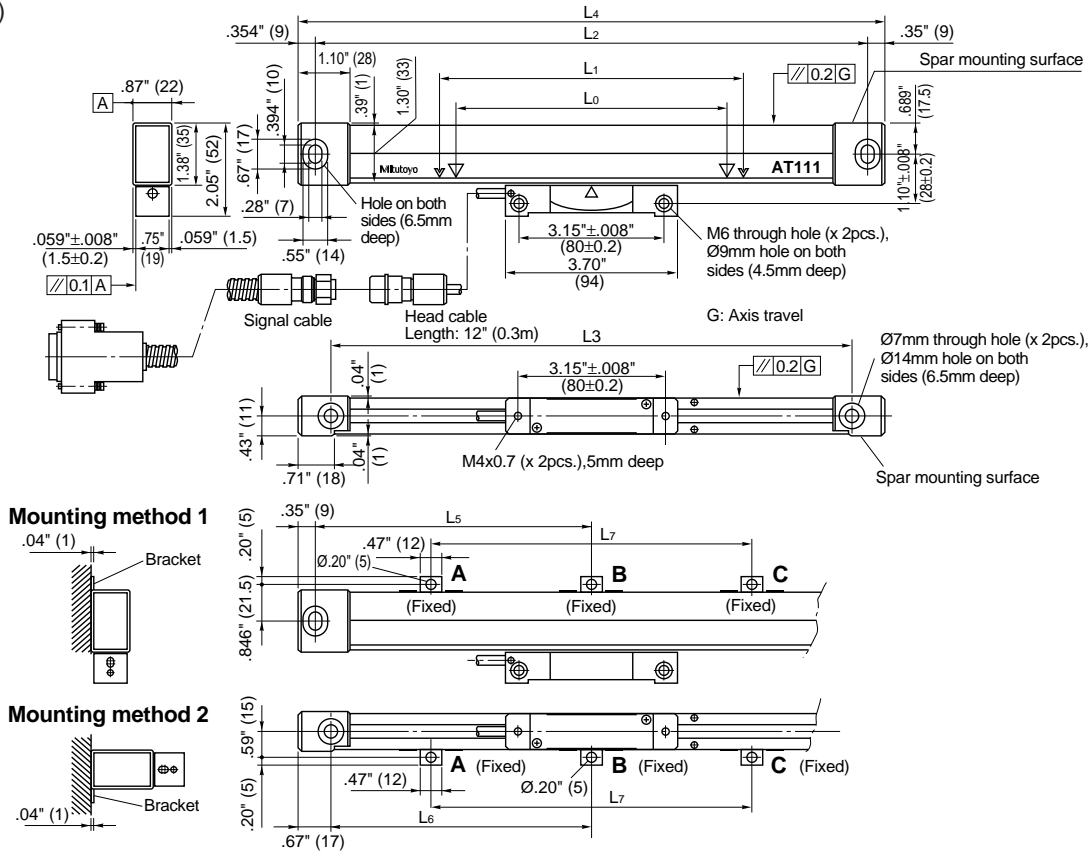
**Note)** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale ( $L_1$ ) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length ( $L_0$ ).

### Mounting hardware

Type of spar	Standard-size	Extra-long
Effective range $L_0$	4" (100mm) - 120" (3000mm)	130" (3250mm) - 240" (6000mm)
Items included	<ul style="list-style-type: none"> <li>Hex-socket head screw (M6x1x40) 2 pcs.</li> <li>Hex-socket head screw (M6x1x16) 2 pcs.</li> <li>Hex-socket head screw (M4x0.7x8) 5 pcs.</li> <li>Spring washer (6mm nominal) 2 pcs.</li> <li>Plain washer (6mm nominal) 2 pcs.</li> <li>Cable clip 5 pcs.</li> <li>Spacer (0.3mm) 1 pc.</li> <li>Spacer (0.4mm) 1 pc.</li> <li>Spacer (0.5mm) 1 pc.</li> <li>Spacer (0.6mm) 1 pc.</li> <li>Middle Support Set 1 to 3 pcs.</li> </ul>	<ul style="list-style-type: none"> <li>Hex-socket head screw (M6x1x40) 2 pcs.</li> <li>Hex-socket head screw (M6x1x30) 14 pcs.</li> <li>Hex-socket head screw (M4x0.7x8) 7 pcs.</li> <li>Spring washer (6mm nominal) 14 pcs.</li> <li>Plain washer (6mm nominal) 14 pcs.</li> <li>Cable clip 7 pcs.</li> <li>Spacer (0.3mm) 1 pc.</li> <li>Spacer (0.4mm) 1 pc.</li> <li>Spacer (0.5mm) 1 pc.</li> <li>Spacer (0.6mm) 1 pc.</li> <li>Middle Support Set 5 to 7 pcs.</li> </ul>

**Remarks:** Dustproofing and splashproofing of the AT102 model scale units can be improved by supplying clean and dry air to the main spar.  
(Air pressure required: 50kPa, Air flow rate: 10 to 20 normal liters per minute)

units: inch (mm)



### Mounting dimensions

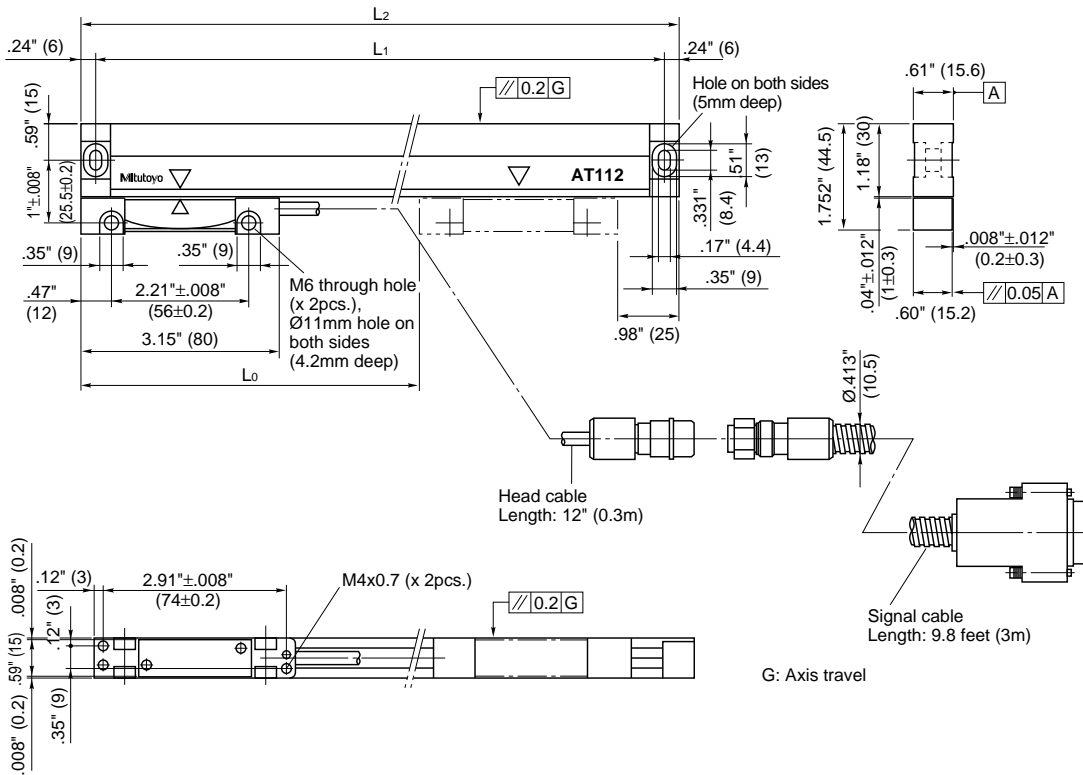
Effective range $L_0$ inch (mm)	Travel range $L_1$ inch (mm)	Mount interval $L_2$ inch (mm)	Mount interval $L_3$ inch (mm)	Overall length $L_4$ inch (mm)	Supporting bracket			Signal cable length feet (m)	Mass lbs. (kg)
					$L_5$ inch (mm)	$L_6$ inch (mm)	$L_7$ inch (mm)		
4" (100)	4.72" (120)	10.16" (258)	9.53" (242)	10.87" (276)	-	-	-	9.8 (3)	2.2 (1.0)
6" (150)	6.69" (170)	12.13" (308)	11.50" (292)	12.83" (326)	-	-	-	9.8 (3)	2.2 (1.0)
8" (200)	8.66" (220)	14.09" (358)	13.46" (342)	14.80" (376)	-	-	-	9.8 (3)	2.2 (1.0)
10" (250)	10.63" (270)	16.06" (408)	15.43" (392)	16.77" (426)	-	-	-	9.8 (3)	2.42 (1.1)
12" (300)	12.99" (330)	18.43" (468)	17.80" (452)	19.13" (486)	-	-	-	9.8 (3)	2.42 (1.1)
14" (350)	14.96" (380)	20.39" (518)	19.76" (502)	21.10" (536)	-	-	-	9.8 (3)	2.42 (1.1)
16" (400)	16.93" (430)	22.36" (568)	21.73" (552)	23.07" (586)	-	-	-	9.8 (3)	2.64 (1.2)
18" (450)	18.90" (480)	24.33" (618)	23.70" (602)	25.04" (636)	-	-	-	9.8 (3)	2.64 (1.2)
20" (500)	21.26" (540)	26.69" (678)	26.06" (662)	27.40" (696)	13.35" (339)	13.03" (331)	-	9.8 (3)	2.64 (1.2)
24" (600)	25.20" (640)	30.63" (778)	30.00" (762)	31.34" (796)	15.31" (389)	15.00" (381)	-	9.8 (3)	2.86 (1.3)
28" (700)	29.13" (740)	34.57" (878)	33.94" (862)	35.28" (896)	17.28" (439)	16.97" (431)	-	9.8 (3)	2.86 (1.3)
30" (750)	30.71" (780)	36.14" (918)	35.51" (902)	36.85" (936)	18.07" (459)	17.76" (451)	-	9.8 (3)	2.86 (1.3)
32" (800)	33.07" (840)	38.50" (978)	37.87" (962)	39.21" (996)	19.25" (489)	18.94" (481)	-	9.8 (3)	3.08 (1.4)
36" (900)	37.01" (940)	42.44" (1078)	41.81" (1062)	43.15" (1096)	21.22" (539)	20.91" (531)	-	9.8 (3)	3.08 (1.4)
40" (1000)	40.94" (1040)	46.38" (1178)	45.75" (1162)	47.09" (1196)	23.19" (589)	22.87" (581)	-	16.4 (5)	3.96 (1.8)
44" (1100)	44.88" (1140)	50.31" (1278)	49.69" (1262)	51.02" (1296)	-	-	16.93" (430)	16.4 (5)	3.96 (1.8)
48" (1200)	48.82" (1240)	54.25" (1378)	53.62" (1362)	54.96" (1396)	-	-	18.11" (460)	16.4 (5)	4.18 (1.9)
52" (1300)	52.76" (1340)	58.19" (1478)	57.56" (1462)	58.90" (1496)	-	-	19.29" (490)	16.4 (5)	4.18 (1.9)
56" (1400)	56.69" (1440)	62.13" (1578)	61.50" (1562)	62.83" (1596)	-	-	20.87" (530)	16.4 (5)	4.4 (2.0)
60" (1500)	60.63" (1540)	66.06" (1678)	65.43" (1662)	66.77" (1696)	-	-	22.05" (560)	16.4 (5)	4.4 (2.0)

### Mounting hardware (provided as standard)

Items included		
• Hex-socket head screw (M6x1x25)	2 pcs.	
• Hex-socket head screw (M4x0.7x25)	2 pcs.	
• Hex-socket head screw (M4x0.7x8)	6 pcs.	
• Plain washer (4mm nominal)	2 pcs.	
• Plain washer (6mm nominal)	2 pcs.	
• Cable clip	5 pcs.	
• Connector clamp	1 pc.	
• Spacer (0.3mm)	1 pc.	
• Spacer (0.4mm)	1 pc.	
• Spacer (0.5mm)	1 pc.	
• Spacer (0.6mm)	1 pc.	
• Middle Support Set	1 to 2 pcs.	

**Note)** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale ( $L_1$ ) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length ( $L_0$ ).

units: inch (mm)



### Mounting dimensions

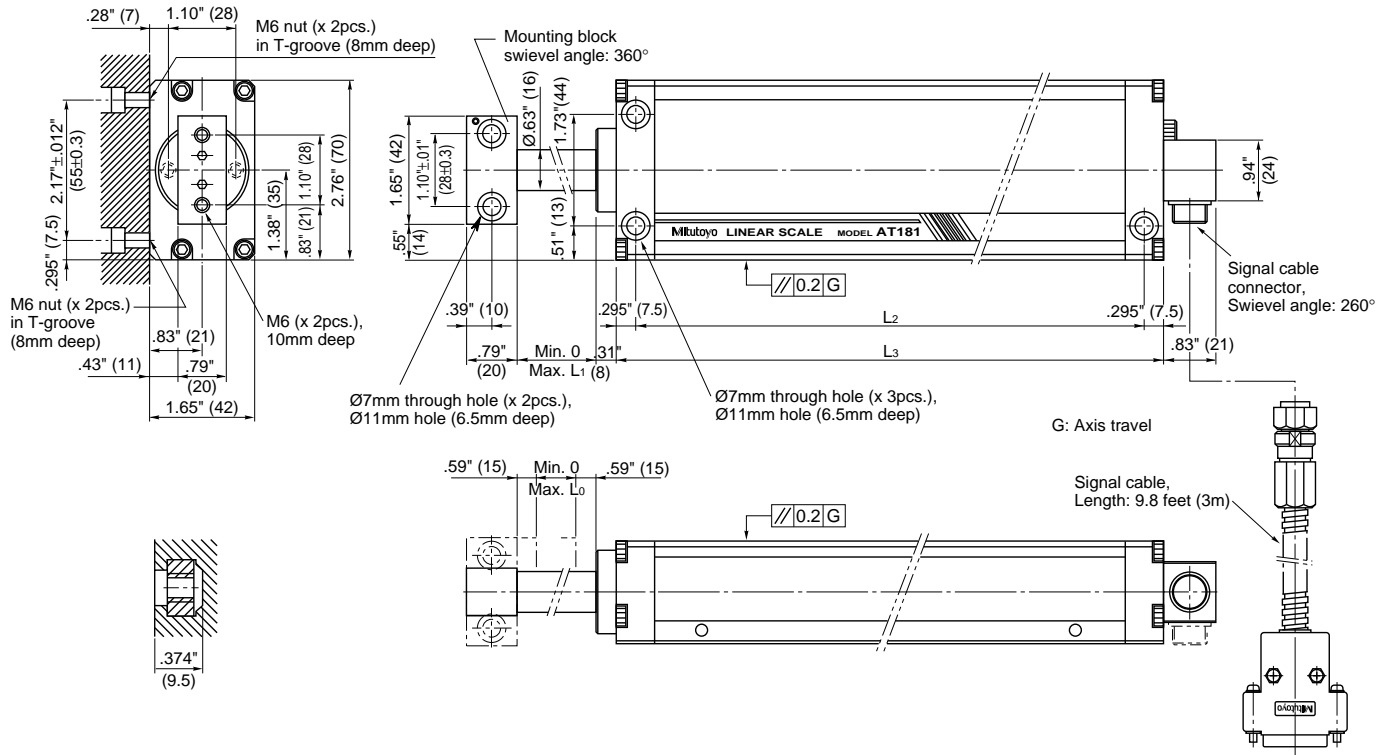
Effective range $L_g$ inch (mm)	Mount interval $L_1$ inch (mm)	Overall length $L_2$ inch (mm)	Signal cable length inch (mm)	Mass lbs. (kg)
1.5" (50)	5.63" (143)	6.10" (155)	9.8 (3)	1.58 (0.72)
2.5" (70)	6.42" (163)	10.89" (175)	9.8 (3)	1.63 (0.74)
4.5" (120)	8.39" (213)	8.86" (225)	9.8 (3)	1.76 (0.80)
6.5" (170)	10.35" (263)	10.83" (275)	9.8 (3)	1.87 (0.85)
8.5" (220)	12.32" (313)	12.80" (325)	9.8 (3)	1.98 (0.90)
10.5" (270)	14.29" (363)	14.76" (375)	9.8 (3)	2.09 (0.95)
12.5" (320)	16.26" (413)	16.73" (425)	9.8 (3)	2.20 (1.00)
14.5" (370)	18.23" (463)	18.70" (475)	9.8 (3)	2.31 (1.05)
16.5" (420)	20.20" (513)	20.67" (525)	9.8 (3)	2.42 (1.10)
18.5" (470)	22.17" (563)	22.64" (575)	9.8 (3)	2.53 (1.15)
20" (520)	24.13" (613)	24.61" (625)	9.8 (3)	2.64 (1.20)
22" (570)	26.10" (663)	26.57" (675)	9.8 (3)	2.75 (1.25)
24" (620)	28.07" (713)	28.54" (725)	9.8 (3)	2.86 (1.30)
26" (670)	30.04" (763)	30.51" (775)	9.8 (3)	2.97 (1.35)
28" (720)	32.01" (813)	32.48" (825)	9.8 (3)	3.08 (1.40)
30" (770)	33.98" (863)	34.45" (875)	9.8 (3)	3.19 (1.45)
32" (820)	35.94" (913)	36.42" (925)	9.8 (3)	3.30 (1.50)
36" (920)	39.88" (1013)	40.35" (1025)	9.8 (3)	3.43 (1.56)
40" (1020)	43.82" (1113)	44.29" (1125)	9.8 (3)	3.56 (1.62)

**Note)** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale ( $L_1$ ) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length ( $L_g$ ).

### Mounting parts (provided as standard)

Items included		
• Hex-socket head screw (M4x0.7x20)	4 pcs.	
• Hex-socket head screw (M4x0.7x8)	6 pcs.	
• Spring washer (4mm nominal)	4 pcs.	
• Plain washer (4mm nominal)	4 pcs.	
• Cable clip	5 pcs.	
• Connector clamp	1 pc.	
• Spacer (0.3mm)	1 pc.	
• Spacer (0.4mm)	1 pc.	
• Spacer (0.5mm)	1 pc.	
• Spacer (0.6mm)	1 pc.	

units: inch (mm)

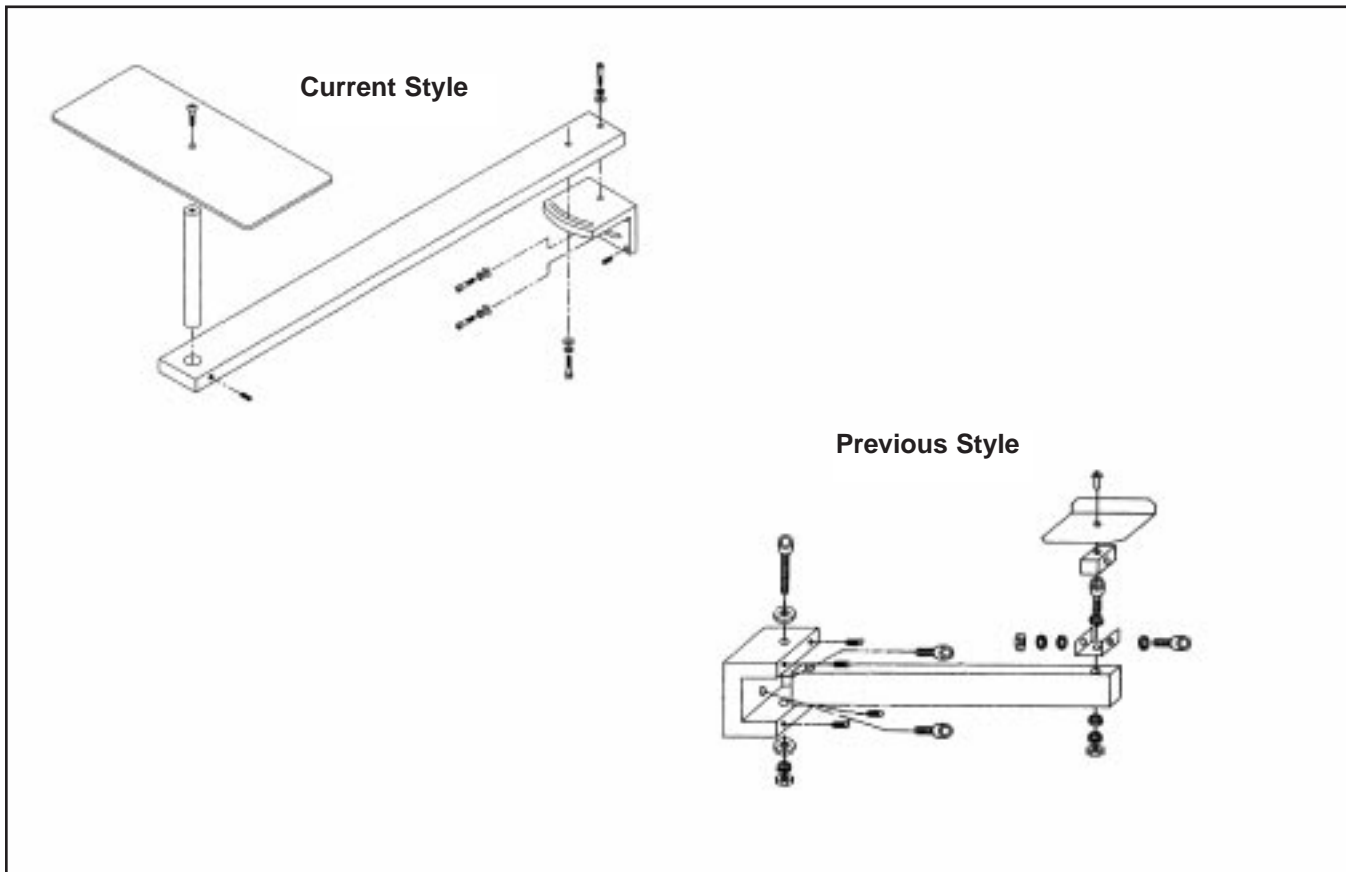


### Mounting dimensions

Effective range L <sub>0</sub> inch (mm)	Travel range L <sub>1</sub> inch (mm)	Mount interval L <sub>2</sub> inch (mm)	Main spar length L <sub>3</sub> inch (mm)	Signal cable length feet (m)	Mass lbs. (kg)
4" (100)	5.11" (130)	10.04" (255)	10.63" (270)	9.8 (3)	3.74 (1.7)
6" (150)	7.08" (180)	12.01" (305)	12.60" (320)	9.8 (3)	4.18 (1.9)
8" (200)	9.05" (230)	13.98" (355)	14.57" (370)	9.8 (3)	4.62 (2.1)
10" (250)	11.02" (280)	15.94" (405)	16.54" (420)	9.8 (3)	5.06 (2.3)
12" (300)	12.99" (330)	17.91" (455)	18.50" (470)	9.8 (3)	5.50 (2.5)
14" (350)	14.96" (380)	19.88" (505)	20.47" (520)	9.8 (3)	5.94 (2.7)
16" (400)	16.93" (430)	21.85" (555)	22.44" (570)	9.8 (3)	6.38 (2.9)
18" (450)	18.90" (480)	23.82" (605)	24.41" (620)	9.8 (3)	6.82 (3.1)
20" (500)	20.87" (530)	25.79" (655)	26.38" (670)	9.8 (3)	7.26 (3.3)
22" (550)	22.83" (580)	27.76" (705)	28.35" (720)	9.8 (3)	7.70 (3.5)
24" (600)	24.83" (630)	29.72" (755)	30.31" (770)	9.8 (3)	8.14 (3.7)

**Note)** When selecting the size of a Linear Scale for your application, make sure that the maximum travel range of the Linear Scale (L<sub>1</sub>) is larger than the maximum travel range of the machine. Also, take into consideration in selecting a size that the accuracy of the Linear Scale is guaranteed only within the range of the effective measuring length (L<sub>0</sub>).

Order No.	Description	List Price	Remark
<b>53AAB746</b>	Machine Arm Kit for KA (With Tray)	\$85.00	Current Style
<b>53AAB747</b>	Machine Arm Kit for KS (With Tray)	\$85.00	Current Style
<b>50AAD757</b>	Machine Arm Kit for KC, KLL, KL	\$85.00	
<b>53AAA375</b>	Counter tray for KA (Tray Only)	\$15.50	For Kit <b>53AAB746</b> and Mini Stand
<b>53AAA374</b>	Counter tray for KS (Tray Only)	\$15.50	For Kit <b>53AAB747</b> and Mini Stand
<b>50AAD756</b>	Counter tray for KC, KLL, KL	\$40.00	
<b>053901</b>	Mini Stand (Does not include tray)	\$34.00	For Lathe or Bench Mounting
<b>53AAA312</b>	Universal Machine Arm Kit	\$59.50	without Tray for Previous Style



### Brackets for Mill

#### Brackets for Mill Packages

Order No.	Description	List Price	Remark
50AAD310	Bracket Kit, Bridgeport #1, Scale-Y axis (12")	\$80.00	For AT115, AT111 & AT715 (AOS-DRO) Used in Mill Package
50AAD312	Bracket Kit, Lagun, Scale-Y axis (16")	\$80.00	For AT115, AT111 & AT715 (AOS-DRO) Used in Mill Package
50AAD313	Bracket Kit, Taiwan Mill, Scale-Y axis (16" and 14")	\$80.00	For AT115, AT111 & AT715 (AOS-DRO) Used in Mill Package
53AAA313	Screw Kit, Bridgeport #1	\$40.00	For AT115, AT111 & AT715 (AOS-DRO) Used in Mill Package

#### Brackets for Milling when using AT115, AT111 or AT715 (AOS-DRO)

059819	Bracket Kit, Scale-Z axis (6")	\$69.50	For AT115, AT111 & AT715 (AOS-DRO)
50AAD309	Front Mount Kit Bridgeport #1 Scale-X axis (30")	\$100.00	For AT115, AT111 & AT715 (AOS-DRO)
50AAD311	Bracket Kit, Bridgeport #2, Scale-Y axis (14" & 16")	\$105.00	For AT115, AT111 & AT715 (AOS-DRO)
50AAD314	Bracket Kit, Taiwan Bedmill Scale-Y axis (16" 18" and 20")	\$135.00	For AT115, AT111 & AT715 (AOS-DRO)
50AAD315	Bracket Kit, Knee Mount for Z axis	\$80.00	For AT115, AT111 & AT715 (AOS-DRO)

#### Brackets for Milling when using AT102

053903	Bracket Kit, Taiwan Mill, Scale-Y axis (16" and 14")	\$66.50	For AT102
053907	Bracket Kit, Taiwan Bedmill, Scale-Y axis (16", 18" and 20")	\$66.50	For AT102
053911	Bracket Kit, Knee Mount for Z axis	\$41.50	For AT102
059813	Bracket Kit, Excello	\$140.00	For AT102
059816	Bracket Kit, Taiwan Mill, Scale-Y axis (16")	\$90.50	For AT102
059822	Front Mount Kit, Bridgeport #1, Scale-X axis (30")	\$102.00	For AT102
059823	Bracket Kit, Bridgeport #1, Scale-Y axis (12")	\$66.50	For AT102
059824	Front Mount Kit, Lagun, Scale-X axis (36")	\$185.00	For AT102
059825	Bracket Kit, Lagun, Scale-Y axis (16")	\$66.50	For AT102

### Brackets for Grinder

#### Brackets for Grinder Packages

50AAD343	Bracket Kit, Grinder Scale Z-Y	\$150.00	For AT115, AT111 & AT715 (AOS-DRO) Used in grinder package
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#### Brackets for Grinder when Using AT102

053908	Bracket Kit, Grinder Scale Z-Y for travel over 60"	\$133.00	For AT102
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### Brackets for Lathe

#### Brackets for Lathe Packages

053910	Bracket Kit for Z (Universal Brackets) and X axis on a Lathe Includes mini-stand, Chip Guard for Cross-slide	\$108.00	For AT115, AT111, AT102 & AT715 (AOS-DRO) Used in Lathe Package
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### Other Brackets

#### Universal Brackets

053912	Heavy Duty Universal Bracket, Adjustable 5"-9", Mill, Lathe, Grinder	\$85.00	For AT115, AT111 & AT102
059814	Universal Bracket, Adjustable 2"-4", Mill, Lathe, Grinder	\$92.50	For AT115, AT111 & AT102
059815	Universal Bracket, Adjustable 3"-6", Mill, Lathe, Grinder	\$54.50	For AT115, AT111 & AT102
<b>Others</b>			
059801	Spar Guard 36"	\$51.00	
059802	Spar Guard 42"	\$53.50	
059804	Power Feed Kit 36"	\$54.50	
059805	Power Feed Kit 42"	\$56.50	

### Zero-set remote controller

The zero-set remote controller allows the displayed value to be remotely zero set.



Model for KS, KC counter No. **09CAA335**  
List Price \$43.50

### Programmable remote controller

The programming function of the KC Counter facilitates the repeated machining of multiple workpieces. The programmable remote controller can be used to write and edit the programs.



Model for KC counter No. **09CAA384**  
List Price \$140.00

### Touch-signal probe

Makes it easy to perform such operations as datum point setting (detecting the workpiece edge and setting the counter display to zero), workpiece centering, and dimensional measurement (detecting the workpiece end point end holding the counter display).

Provided with a connecting cable (length: 9.8 feet 3m).



**Note:** Only works on conductive material.

Shank Diameter	Order No.	Contact Point Diameter	Over Travel	List Price
20mm	<b>938140</b>	10±0.002mm	1mm at max.	\$255.00
32mm	<b>935094</b>	10±0.002mm	1mm at max.	\$227.00
.5"	<b>902329</b>	.2"	.04" at max.	\$349.00

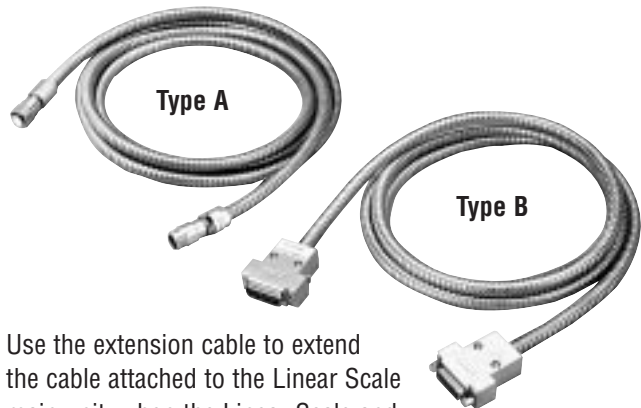
### Foot switch

Connects to the optional RS232C card of KS and KC counters. The foot switch can be used to output the displayed data.



Model No. **965004** List Price \$102.00

### Extension cables



Use the extension cable to extend the cable attached to the Linear Scale main unit, when the Linear Scale and the counter are placed far apart.

The Type A extension cable is provided with a water-proof connector. (The Type A is not available with the AT115 and AT715 scale units.)

#### Extension Cables Type A for AT102/111/112/181

Cable Length	Order No.	Mass	Remarks	List Price
6.5 ft (2m)	<b>09AAA033A</b>	0.35kg	Conduit armed	\$81.00
16.4 ft (5m)	<b>09AAA033B</b>	0.75kg	Conduit armed	\$104.00
22.9 ft (7m)	<b>09AAA033C</b>	1.01kg	Conduit armed	\$127.00

**Note:** Do not allow the entire length of the cables to exceed 20m.

#### Extension Cables Type B for AT715 and AT115\*

Cable Length	Order No.	Mass	Remarks	List Price
6.5 ft (2m)	<b>09AAB674A</b>	0.35kg	Conduit armed	\$78.50
16.4 ft (5m)	<b>09AAB674B</b>	0.75kg	Conduit armed	\$114.00
22.9 ft (7m)	<b>09AAB674C</b>	1.01kg	Conduit armed	\$137.00

\* Also can be used for AT102/111/112/181.

**Note:** Do not allow the entire length of the cables to exceed 20m.

### Quill Kit with Absolute Encoder

Easy Installation  
Fits Most Vertical Knee Mills

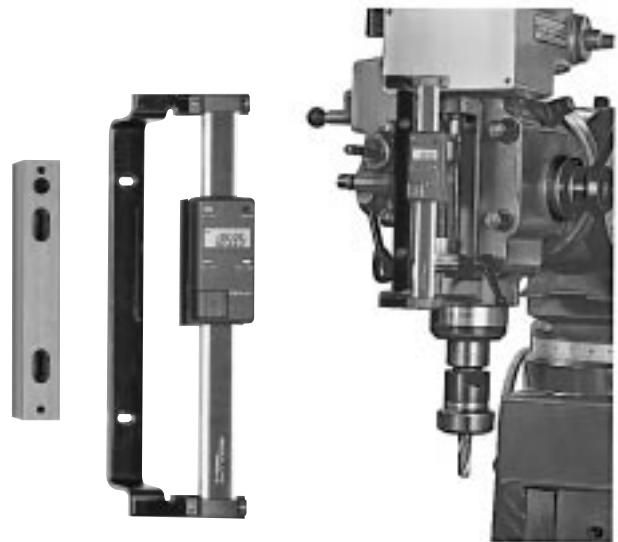
#### Features

- Easy to read LCD with resolution of .0005"/0.01mm.
- Push button controls for inch/mm, Zero-Set and On/Off.
- Powered by a single SR-44 Battery which lasts about 1 year with normal use.
- SPC Output for data transmission to Data Processors or a Remote Display.

#### Specifications

##### Quill Kit

Order No.	Description	List Price
053906A	Digimatic Quill Kit complete with brackets & scale for Bridgeport Type machines.	\$253.00



The Mitutoyo Quill Kit mounted on a vertical mill.

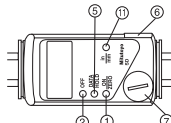
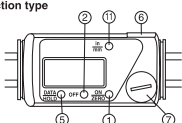
### Heavy Duty Digimatic Scale Units with Incremental Encoder

Series 572

Inch/Metric  
Single Function Type

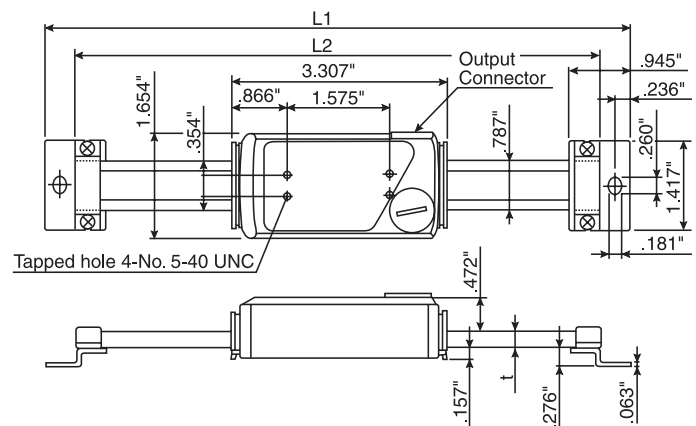
Order No.	Dimensions									Function	
	Horizontal	List Price	Vertical	List Price	Range	Resolution	Accuracy	L1	L2		t
-	-	-	<b>572-330</b>	\$196.00	4"/100mm	.0005"/0.01mm	.001"	9.606"	8.661"	.236"	• Zero-setting • Data hold • Data output • Inch/mm Conversion
-	-	-	<b>572-331</b>	\$211.00	6"/150mm	.0005"/0.01mm	.001"	11.575"	10.630"	.236"	
-	-	-	<b>572-332</b>	\$228.00	8"/200mm	.0005"/0.01mm	.001"	13.543"	12.598"	.236"	
-	-	-	<b>572-333</b>	\$436.00	12"/300mm	.0005"/0.01mm	.002"	17.480"	16.353"	.236"	
<b>572-234</b>	\$572.00	<b>572-334</b>	\$572.00	\$572.00	18"/450mm	.0005"/0.01mm	.002"	23.386"	22.441"	.236"	
<b>572-235</b>	\$645.00	<b>572-335</b>	\$645.00	\$645.00	24"/600mm	.0005"/0.01mm	.002"	30.472"	29.528"	.236"	
<b>572-236</b>	\$1,010.00	<b>572-336</b>	\$1,010.00	\$1,010.00	32"/800mm	.0005"/0.01mm	.0025"	38.346"	37.402"	.394"	
<b>572-237</b>	\$1,120.00	<b>572-337</b>	\$1,120.00	\$1,120.00	40"/1000mm	.0005"/0.01mm	.0025"	46.220"	45.276"	.394"	

(1) Single function type



- ① ON/ZERO button
- ② OFF button
- ③ ON/OFF button
- ④ ZERO/ABS button
- ⑤ DATA/HOLD button
- ⑥ Output connector

- ⑦ Battery compartment cap
- ⑧ Direction changeover button
- ⑨ PRESET button
- ⑩ x2/x1 count conversion button
- ⑪ inch/mm conversion button



## Digimatic Scale Units with Absolute Encoder

### Series 572

MITUTOYO'S new Absolute Digimatic Scale Unit offers special functions which allow it to always remember its measuring position even after the gage has been switched off.



### Single Function Type

#### Horizontal

Order No.	List Price	Range	Resolution	Accuracy	L1	L2	t
572-210-10	\$183.00	4"/100mm	.0005"/0.01mm	.001"	8.228"	7.283"	.138"
572-211-10	\$194.00	6"/150mm	.0005"/0.01mm	.001"	10.197"	9.252"	.138"
572-212-10	\$226.00	8"/200mm	.0005"/0.01mm	.001"	12.244"	11.299"	.138"
572-213-10	\$436.00	12"/300mm	.0005"/0.01mm	.002"	17.5"	16.5"	.150"

See page number 34 for scale dimension data.

#### Function

- ZERO/ABS changeover
- Origin-setting
- Inch/mm conversion
- Data output
- Data hold (with optional Data Hold Switch)

#### Vertical

Order No.	List Price	Range	Resolution	Accuracy	L1	L2	t
572-310-10	\$202.00	4"/100mm	.0005"/0.01mm	.001"	9.606"	8.661"	.150"
572-311-10	\$214.00	6"/150mm	.0005"/0.01mm	.001"	11.575"	10.630"	.150"
572-312-10	\$249.00	8"/200mm	.0005"/0.01mm	.001"	13.543"	12.598"	.150"
572-313-10	\$480.00	12"/300mm	.0005"/0.01mm	.002"	17.480"	16.535"	.150"

See page number 34 for scale dimension data.

#### Function

- ZERO/ABS changeover
- Origin-setting
- Inch/mm conversion
- Data hold (with optional Data Hold Switch)

### Multi-Function Type

#### Horizontal

Order No.		List Price	Range	Resolution	Accuracy	Dimension		
Horizontal	Vertical					L1	L2	t
572-470	572-570	\$385.00	4"/100mm	.0005"/0.01mm	.001"/0.03mm	9.606	8.661"	0.150"
572-471	572-571	\$402.00	6"/150mm	.0005"/0.01mm	.001"/0.03mm	11.575"	10.630"	0.150"
572-472	572-572	\$438.00	8"/200mm	.0005"/0.01mm	.001"/0.03mm	13.543"	12.598"	0.150"
572-473	572-573	\$503.00	12"/300mm	.0005"/0.01mm	.002"/0.04mm	17.480"	16.535"	0.150"
572-474	572-574	\$609.00	18"/450mm	.0005"/0.01mm	.002"/0.04mm	23.386"	22.441"	0.236"
572-475	572-575	\$675.00	24"/600mm	.0005"/0.01mm	.002"/0.04mm	30.472"	29.528"	0.236"
572-476	572-576	\$1,070.00	32"/800mm	.0005"/0.01mm	.0025"/0.06mm	38.346"	37.402"	0.394"
572-477	572-577	\$1,170.00	40"/1000mm	.0005"/0.01mm	.0025"/0.06mm	46.220"	45.276"	0.394"

See page numbers 34 and 35 for scale dimension data and spacer information.

#### Function

- ZERO/ABS changeover
- Origin-setting
- Inch/mm conversion
- Data output
- Data hold
- Presetting
- Counting direction Changeover

### Multi-Function Double Reading Type

#### Horizontal

Order No.		List Price	Range	Resolution	Accuracy	Dimension		
Horizontal	Vertical					L1	L2	t
572-490	572-590	\$423.00	4"/100mm	.0005"/0.01mm	.001"/0.03mm	9.606	8.661"	0.150"
572-491	572-591	\$443.00	6"/150mm	.0005"/0.01mm	.001"/0.03mm	11.575"	10.630"	0.150"
572-492	572-592	\$482.00	8"/200mm	.0005"/0.01mm	.001"/0.03mm	13.543"	12.598"	0.150"
572-493	572-593	\$553.00	12"/300mm	.0005"/0.01mm	.002"/0.04mm	17.480"	16.535"	0.150"
572-494	572-594	\$670.00	18"/450mm	.0005"/0.01mm	.002"/0.04mm	23.386"	22.441"	0.236"
572-495	572-595	\$741.00	24"/600mm	.0005"/0.01mm	.002"/0.04mm	30.472"	29.528"	0.236"
572-496	572-596	\$1,170.00	32"/800mm	.0005"/0.01mm	.0025"/0.06mm	38.346"	37.402"	0.394"
572-497	572-597	\$1,310.00	40"/1000mm	.0005"/0.01mm	.0025"/0.06mm	46.220"	45.276"	0.394"

See page number 35 for scale dimension data and spacer information.

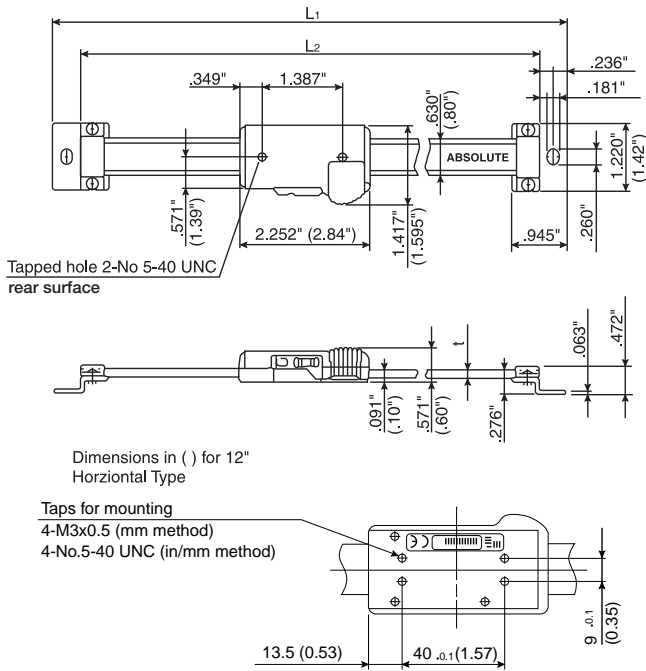
#### Function

- x1,x2 changeover
- ZERO/ABS changeover
- Origin-setting
- Inch/mm conversion
- Data output
- Data hold
- Presetting
- Counting direction Changeover

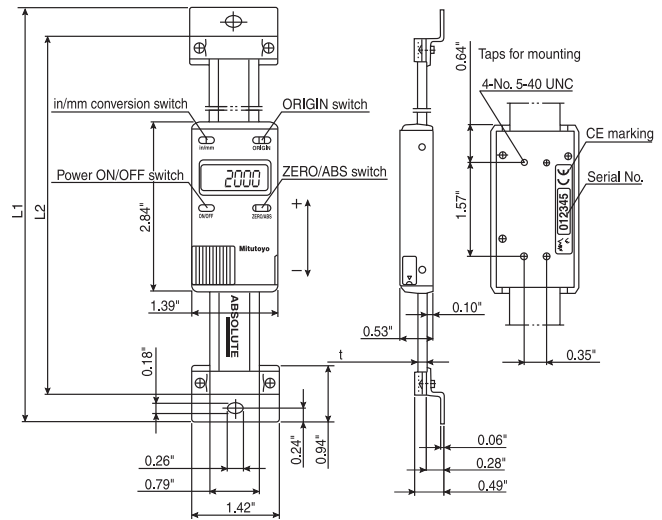
## Digimatic Scale Units with Absolute Encoder

Series 572

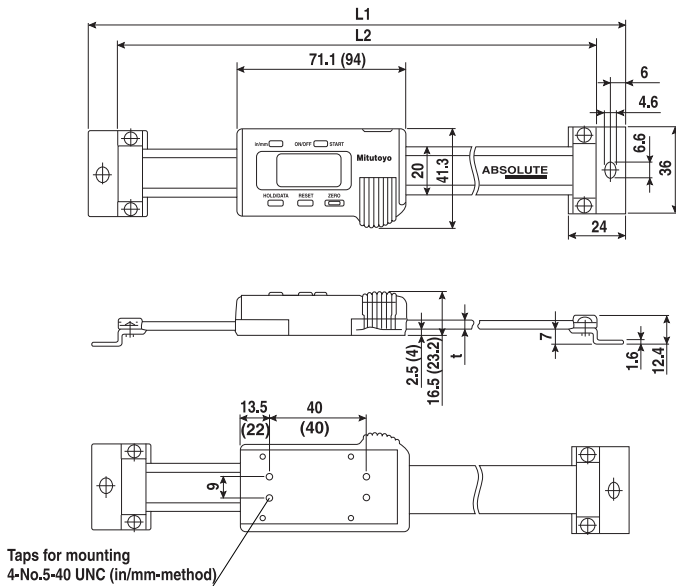
### SINGLE FUNCTION TYPE Horizontal



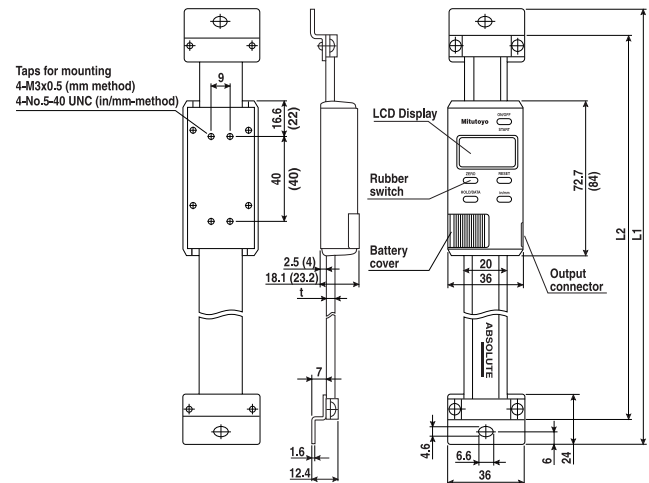
### SINGLE FUNCTION TYPE Vertical



### MULTI FUNCTION TYPE Horizontal



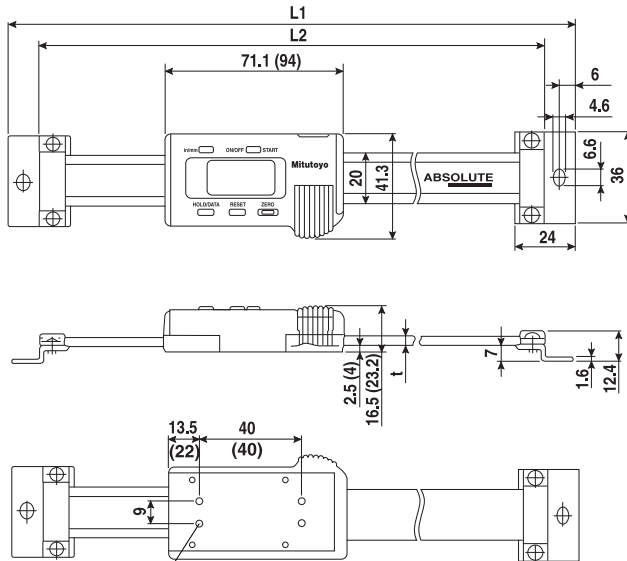
### MULTI FUNCTION TYPE Vertical



## Digimatic Scale Units with Absolute Encoder

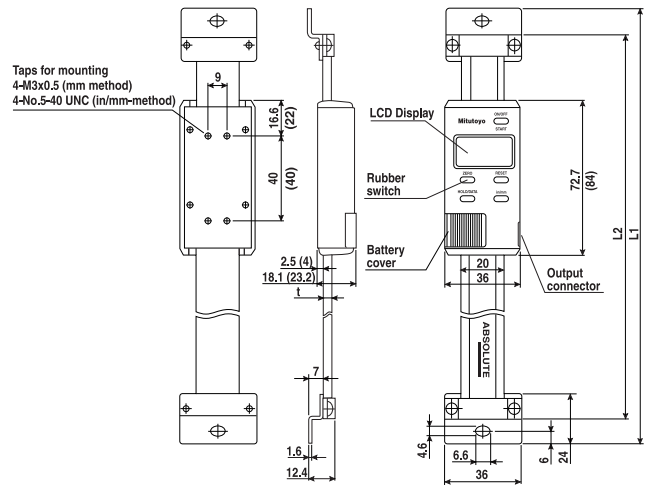
Series 572

### MULTI FUNCTION DOUBLE READING TYPE Horizontal



Taps for mounting  
4-No.5-40 UNC (in/mm-method)

### MULTI FUNCTION DOUBLE READING TYPE Horizontal

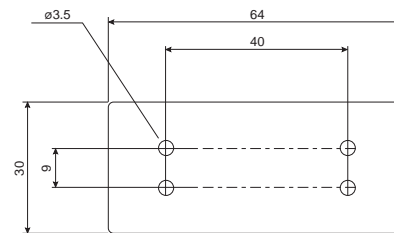


**Attention:**

When substituting a new style scale for a discontinued old style scale which is listed below, a spacer (Part No. 05DAA438) is required due to mounting dimension differences.

Measuring range	4"	6"	8"	12"
Code No.	572-430	572-431	572-432	572-433
	572-530	572-531	572-532	572-533
	572-450	572-451	572-452	572-453
	572-550	572-551	572-552	572-553

**Spacer**  
Order No. 05DAA438  
List Price \$8.50



t=1.5mm

### Pulse Signal Conversion Interface

#### Features

- +5VDC external power supply.
- Applicable with Linear Scales with the sinusoidal signal output.
- Quadrature signal output (conforming to EIA standard RS422-A).
- Alarm function for detecting broken wires or short circuits in the detector, over-speed and fluctuation errors in the input signal from the detector.
- LED indications. Origin signal input Alarm for power supply (voltage drop and noise)
- DIP switch functions. Direction switching. Mode switching (high impedance/alarm signal output). Division selection (4/8/10/20/40/80/100/200) Min. edge interval selection (1000/500/250/125/62.5ns)



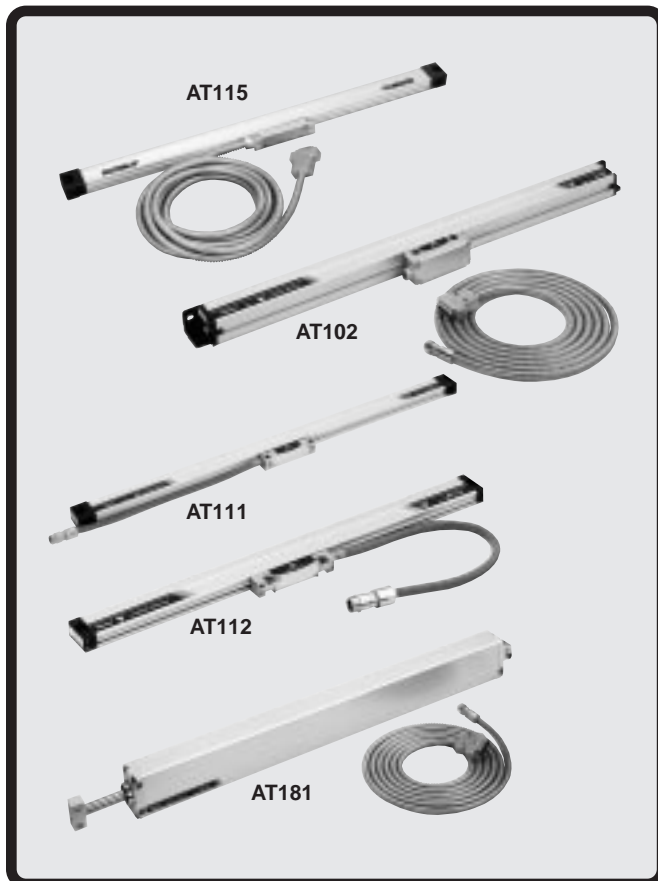
#### Order Number

Code No.	Model name	List Price
539-005	PSU-200	\$361.00

#### Specifications

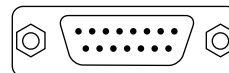
Number of axes	1 axis
Number of deviation	4, 8, 10, 20, 40, 80, 100 or 200 (switchable)
Functions	Division setting: 4/8/10/20/40/80/100/200 Min. edge interval setting: 1000/500/250/125/62.5ns Direction switching LED for alarm indication: Broken wires and short circuits in the scale, abnormal signal, overspeed Alarm output mode switching: High impedance output/alarm signal output External alarm reset (photo-coupler input) LED for origin detection LED for low-level power supply voltage warning
Power supply	5VDC±5% on the power terminal
Consumption	200mA (except the scale)
Operating temperature	0°C to 40°C
Mass	Approx. 620g (1.4 lbs)

#### Applicable Linear Scales

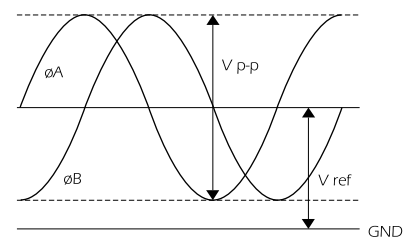


**Input Connector** →

■ Connector:  
D-Sub 15S



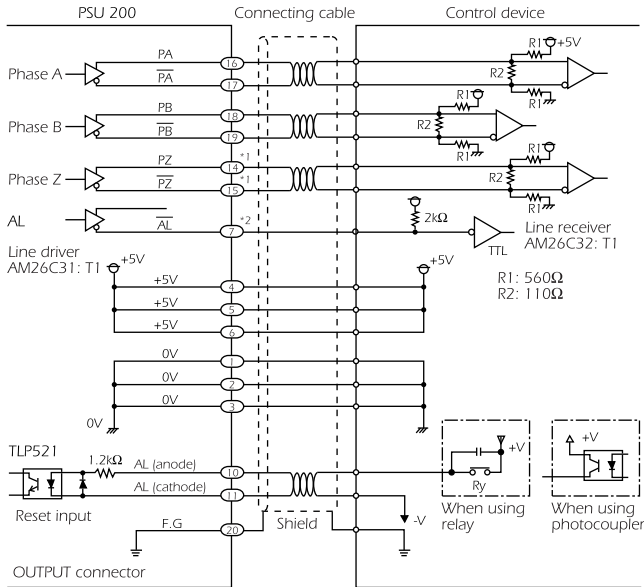
Pin No.	Signal name
1, 2	0V
3, 4	+5V
5	∅A
6	∅B
7	Vref
8	∅Z
9	AL
10 - 14	NC
15	F.GND



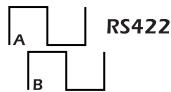
$V_{ref} \approx 2.5V$   
 $V_{pp} = 2V$

## Pulse Signal Conversion Interface

### Arrangement of cable connection

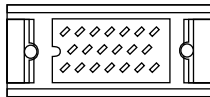


Reset input: Design the connection so that the current of the alarm reset input is between 3mA and 10mA. An alarm can be reset by supplying a voltage of 5V to 12V between the anode and cathode terminals because a resistor (1.2kV) is provided inside the PSU200. If the voltage is greater than 12V, add an appropriate external resistor.

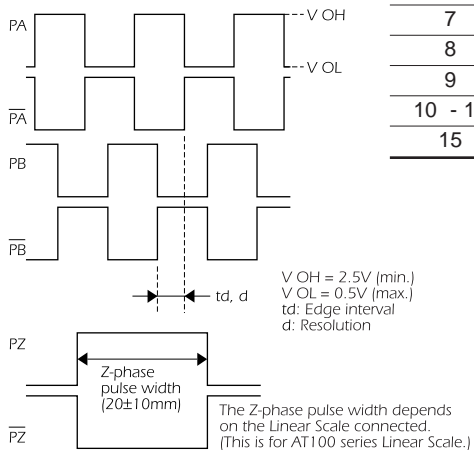


### Output Connector

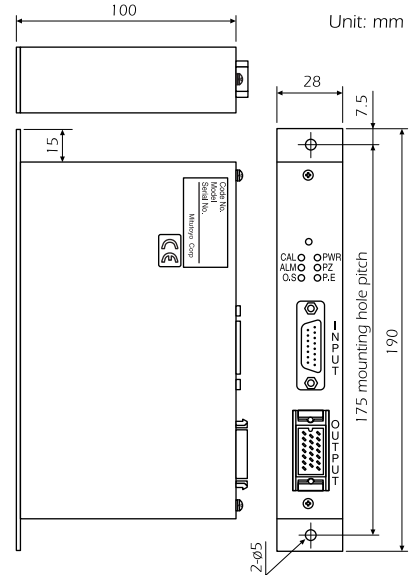
- **Connector:** MR20RM [Manufacturer: Honda Tsushin]
- **Applicable plug (standard accessory):** MR20LF [Manufacturer: Honda Tsushin]



Pin No.	Signal name
1, 2	0V
3, 4	+5V
5	ØA
6	ØB
7	Vref
8	ØZ
9	AL
10 - 14	NC
15	F.GND



### Dimensions



### Maximum response speed

Deviation	Min. edge interval <sup>3</sup>	Input signal pitch <sup>*2</sup>		
		4µm	8µm	20µm
4	62.5ns	120m/min	240m/min	600m/min
	125ns	120m/min	240m/min	600m/min
	250ns	120m/min	240m/min	600m/min
	500ns	120m/min	240m/min	600m/min
8	62.5ns	120m/min	240m/min	600m/min
	125ns	120m/min	240m/min	600m/min
	250ns	120m/min	240m/min	600m/min
	500ns	120m/min	240m/min	600m/min
10	62.5ns	120m/min	240m/min	600m/min
	125ns	120m/min	240m/min	600m/min
	250ns	96m/min	192m/min	480m/min
	500ns	48m/min	96m/min	240m/min
20	62.5ns	120m/min	240m/min	600m/min
	125ns	120m/min	240m/min	600m/min
	250ns	48m/min	96m/min	240m/min
	500ns	24m/min	48m/min	120m/min
40	62.5ns	96m/min	192m/min	480m/min
	125ns	48m/min	96m/min	240m/min
	250ns	24m/min	48m/min	120m/min
	500ns	12m/min	24m/min	60m/min
80	62.5ns	48m/min	96m/min	240m/min
	125ns	24m/min	48m/min	120m/min
	250ns	12m/min	24m/min	60m/min
	500ns	6m/min	12m/min	30m/min
100	62.5ns	38.4m/min	76.8m/min	192m/min
	125ns	19.2m/min	38.4m/min	96m/min
	250ns	9.6m/min	19.2m/min	48m/min
	500ns	4.8m/min	9.6m/min	24m/min
200	62.5ns	19.2m/min	38.4m/min	96m/min
	125ns	9.6m/min	19.2m/min	48m/min
	250ns	4.8m/min	9.6m/min	24m/min
	500ns	2.4m/min	4.8m/min	12m/min
1000	62.5ns	1.2m/min	2.4m/min	6m/min
	125ns	0.6m/min	1.2m/min	3m/min

\* The maximum response speed may be limited depending on the response speed of the scale itself.

## Proscale with Absolute Encoder

(see also [www.proscale.com](http://www.proscale.com))

Series 950

### ProScale ABS™ with Fraction/Decimal Reading

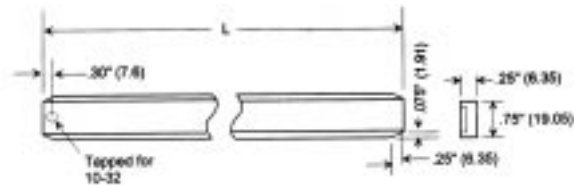
Mitutoyo's new ProScale ABS™ Absolute Encoder. Fractions to 1/64th of an inch are possible and decimals can be displayed in inch or metric.

#### Features

- Resolution: .001", .0001", 0.01mm 1/64 inch
- Zero, increment or decrement reading with front panel button.
- Display range: 0 to ±394.000"
  - 0 to ±9999.99mm
  - 0 to ±99 63/64 inches
- Power: Two standard AA batteries/display indicate low power. Battery Life one year with normal use.
- Operating temperature: 32° to 120°F
- Patent: U.S. Patent#s 4420754, 4879508, 4878013, 4959615

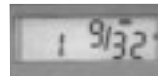


Model 150

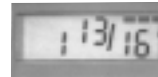


Model	Measuring length	(L)	(A)	(B)
150-10	10" (250mm)	14.25" (362mm)	NA	NA
150-18	18" (450mm)	22.25" (565mm)	NA	NA
250-4	52" (1.3m)	56" (1.4m)	4" (101mm)	12" (304mm)
250-8	96" (2.4m)	100" (2.5m)	2" (51mm)	16" (406mm)

DISPLAY IN FRACTION MODE

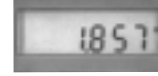


Fraction Mode (1/32 inch)

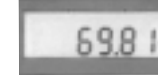


Fraction Mode (1/16 inch)

DISPLAY IN DECIMAL MODE



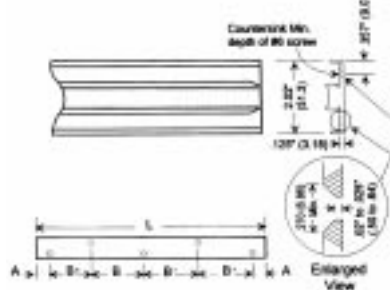
Decimal Mode (.001 inch)



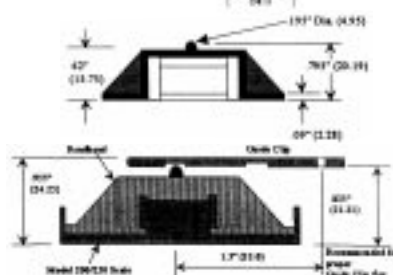
Decimal Mode (0.01 mm)



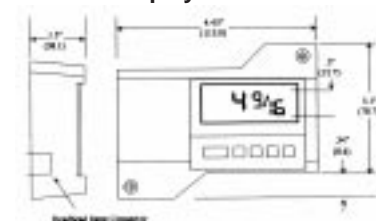
Model 250



Reader Head



Display Monitor



#### Specifications

#### Complete Sets (Display, Scale, Reading Head & Cable\*)

Order No.	List Price	Range	Accuracy	Description
950-404	\$534.00	0-10"/0-250mm	±.002"/±0.05mm	Model 150-10
950-405	\$588.00	0-18"/0-450mm	±.003"/±0.08mm	Model 150-18
950-406	\$753.00	0-52"/0-1,320mm	±.008"/±0.2mm	Model 250-4
950-407	\$971.00	0-96"/0-2,400mm	±.008"/±0.2mm	Model 250-8

#### Individual Components

Order No.	List Price	Range	Accuracy	Description
950-005	\$291.00	—	—	Display Monitor for ProScale ABS™ with SPC output
950-006	\$271.00	—	—	Reading Head & Cable (Model 150, 250)
950-004	\$30.50	—	—	Stand for display monitor
950-433	\$375.00	0-10"/0-250mm	±.002"/±0.05mm	Scale w/Reading Head & Cable*
950-436	\$419.00	0-18"/0-450mm	±.003"/±0.08mm	Scale w/Reading Head & Cable*
950-441	\$681.00	0-52"/0-1320mm	±.008"/±0.2mm	Scale w/Reading Head & Cable*
950-445	\$867.00	0-96"/0-2400mm	±.008"/±0.2mm	Scale w/Reading Head & Cable*

\*Cable 2m (80") supplied as standard.

For SPC output order connecting cable 936937 (1m), 965014 (2m), 64AAA020, or 64AAA021

## Operation Manuals

### For Current Display

Model	Manual No.	Remarks
KC	4716GB	-
KLD	4883GB	-
KA	99MBE032A	-

### For Discontinued Display

KL	99MBE001A	Discontinued
KLL	99MBE012A	Discontinued
KS	4715GB(4)	Discontinued
AL	029618C	Discontinued
ALC	029598A	Discontinued
ALC/ARC	4356	Discontinued
ALL	4452	Discontinued
APL	29624	Discontinued
FLC	4076	Discontinued
FLE	4245	Discontinued
FLL	4243	Discontinued
GLD	4246	Discontinued
GML	4104	Discontinued
GML-T	4210	Discontinued
PL	29599	Discontinued
PLE	4542	Discontinued
PLL	4412	Discontinued
PM (164-27x)	4639	Discontinued
PM-L	29600	Discontinued
UDR-100	50AAA870	Discontinued
UDR-200	50AAA852	Discontinued
UDR-220	50AAB428	Discontinued

## Operation Manuals

### For CODE OUT, Interface Unit and others

Model	Manual No.	Remarks
DRO-CARD 2	50AAA466	Discontinued
RS-232C Unit	029616	-
-	4611	For PM, PG Counter
-	4715-1	For KS Counter
-	N/A	For KLD Counter
-	N/A	For KL Counter
GP-IB Unit	4716-4	For KC Counter
BCD Code Out Unit	N/A	For KLD Counter
Digimatic Code Out Unit	4716-3 4216	For KC Counter For GM, F Counter
Programmable Remote Controller	4740GB	For KC Counter
SAM-7	029579A	Discontinued
SAM-10	029580	Discontinued
SAM-15	50AAA981	Discontinued
Touch Signal Probe	4099(5)	Workpiece Conducting
Proscale (Inc)	800-1000-014	
Proscale (ABS)	800-1024-001	
AT100 Series	4739G3	
	4792	Long Travel
SD Scale	99MBR902W	
DS-DRO Display	50AAA193B	
ADS-2 Display	50AAB954A	
DS-DRO	53AAA597	Installation

## Replacement Parts

Order No.	Description	List Price	Remark
09AAA077	AT102 Read Head	\$225.00	-
09AAA278	AT102 Read Head for Extra-Long	\$296.85	3250mm and Longer
09AAA135	AT111 Read Head	\$250.00	-
09AAA006	AT112 Read Head	\$240.30	-
09AAA607A	AT115 Read Head (3m cable)	\$265.50	-
09AAA607B	AT115 Read Head (5m cable)	\$265.50	-
09AAA030A	Signal Cable (9.9', 3m)	\$114.45	For AT102, 111, 112, 181
09AAA030B	Signal Cable (16.5', 5m)	\$114.45	For AT102, 111, 112, 181
09AAA030C	Signal Cable (23.1', 7m)	\$186.70	For AT102, 111, 112, 181
09AAA030D	Signal Cable (33', 10m)	\$234.85	For AT102, 111, 112, 181
09AAA030E	Signal Cable (49.5', 15m)	\$283.00	For AT102, 111, 112, 181
53AAA024	DS-DRO Read Head Assy	\$90.40	-

## Extension Cables

Order No.	Description	List Price	Remark
09AAA033A	2m - For AT102, 111, 112, 181	\$81.00	-
09AAA033B	5m - For AT102, 111, 112, 181	\$104.00	-
09AAA033C	7m - For AT102, 111, 112, 181	\$127.00	-
09AAB674A	2m - For AT115 and AT715	\$78.50	Can be used with all AT100 Series
09AAB674B	5m - For AT115 and AT715	\$114.00	Can be used with all AT100 Series
09AAB674C	7m - For AT115 and AT715	\$137.00	Can be used with all AT100 Series

### Linear Scale Systems Quotation Worksheet

1. Machine Type / Make \_\_\_\_\_

2. Table Size \_\_\_\_\_

3. Number of Axes Requiring Scales \_\_\_\_\_

4. Machine Travels (X) \_\_\_\_\_ (Y) \_\_\_\_\_ (Z) \_\_\_\_\_ (?) \_\_\_\_\_

5. Resolution Required \_\_\_\_\_

	Order No.	Quantity	Price
Counter	_____	_____	_____
Scales (X)	_____	_____	_____
(Y)	_____	_____	_____
(Z)	_____	_____	_____
(Other)	_____	_____	_____
Machine Arm Kit (For Counter)	_____	_____	_____
Brackets	_____	_____	_____
Extension Cables	_____	_____	_____
Options	_____	_____	_____
Total	_____	_____	_____
Installation Charges	_____	_____	_____

Distributed By \_\_\_\_\_

### Linear Scale Systems Quotation Worksheet

1. Machine Type / Make \_\_\_\_\_

2. Table Size \_\_\_\_\_

3. Number of Axes Requiring Scales \_\_\_\_\_

4. Machine Travels (X) \_\_\_\_\_ (Y) \_\_\_\_\_ (Z) \_\_\_\_\_ (?) \_\_\_\_\_

5. Resolution Required \_\_\_\_\_

	Order No.	Quantity	Price
Counter	_____	_____	_____
Scales (X)	_____	_____	_____
(Y)	_____	_____	_____
(Z)	_____	_____	_____
(Other)	_____	_____	_____
Machine Arm Kit (For Counter)	_____	_____	_____
Brackets	_____	_____	_____
Extension Cables	_____	_____	_____
Options	_____	_____	_____
Total	_____	_____	_____
Installation Charges	_____	_____	_____

Distributed By \_\_\_\_\_

### Linear Scale Systems Quotation Worksheet

1. Machine Type / Make \_\_\_\_\_

2. Table Size \_\_\_\_\_

3. Number of Axes Requiring Scales \_\_\_\_\_

4. Machine Travels (X) \_\_\_\_\_ (Y) \_\_\_\_\_ (Z) \_\_\_\_\_ (?) \_\_\_\_\_

5. Resolution Required \_\_\_\_\_

	Order No.	Quantity	Price
Counter	_____	_____	_____
Scales (X)	_____	_____	_____
(Y)	_____	_____	_____
(Z)	_____	_____	_____
(Other)	_____	_____	_____
Machine Arm Kit (For Counter)	_____	_____	_____
Brackets	_____	_____	_____
Extension Cables	_____	_____	_____
Options	_____	_____	_____
Total	_____	_____	_____
Installation Charges	_____	_____	_____

Distributed By \_\_\_\_\_



# Contact Information [www.mitutoyo.com](http://www.mitutoyo.com)

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- *Quotations*
- *Demonstrations*

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Los Angeles	Ph: (626) 961-9661 Fax: (626) 333-8019
Canada*	Ph: (905) 821-1261 Fax: (905) 821-4968
CMM Sales	Ph: (630) 978-6455 Fax: (630) 978-6475


\* Please call Mitutoyo Canada Ltd. for any Canadian inquiries listed below

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- *Technical Inquiries*
- *Application Support*



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Boston Metrology Center	Ph: (978) 692-7474 (978) 692-8765 Fax: (978) 692-9729
Charlotte Metrology Center	Ph: (704) 875-8332 Fax: (704) 875-9273
Los Angeles Metrology Center	Ph: (626) 961-9661 Fax: (626) 333-8019
Detroit Metrology Center	Ph: (734) 459-2810 Fax: (734) 459-0455
SPC Support Services	Ph: (630) 820-9666 x6446 Fax: (630) 820-9110 (IL) Ph: (626) 961-9661 (CA) Fax: (626) 333-8019 (CA)
DRO Customer Service (CA) (Scales, Millstar, DRO)	Ph: (800) 276-7796 Fax: (626) 369-3352

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CMM Software	Ph: (630) 978-6470 Fax: (630) 820-9110
CMM Parts	Ph: (630) 978-6468 Fax: (630) 978-6472

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- *Textbooks*

Mitutoyo Institute of Metrology (Aurora, IL)	Ph: (630) 978-6469 Fax: (630) 978-6471
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## Instafax

Literature Request	1-800-578-9130
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## Web

[www.mitutoyo.com](http://www.mitutoyo.com)

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## Mitutoyo America Corporation

### Regional Offices

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We reserve the right to change specifications and prices without notice.

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