

Dial Indicator Applications

MeasurLink[®] ENABLED
Data Management Software by Mitutoyo

Thickness Gages SERIES 547, 7

Standard Type (Resolution: 0.01 mm)

- Thickness gages can quickly measure the thickness of thin products such as paper and felt.
- Using a ceramic contact and anvil, there is no need to worry about rust. (except for **547-401A**)



547-301A



547-321A

SPECIFICATIONS

Metric

Code No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
547-301A	0.01	0 - 10	30	ø10 Flat	10
547-321A	0.01	0 - 10	120	ø10 Flat	10

Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
547-301A	±20	1.5 or less	245	Standard, ceramic point/anvil
547-321A	±20	1.5 or less	385	Deep throat, ceramic point/anvil

Inch / Metric

Code No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil	Parallelism of Contact point, Anvil
547-526S*	0.0001 in/0.001 mm	0 - 0.47*	30 mm (1.18 in)	ø10 mm (ø0.39 in) Flat	0.0002 in/0.005 mm
547-300A	0.0005 in/0.01 mm	0 - 0.4	30 mm (1.18 in)	ø10 mm (ø0.39 in) Flat	0.005 in/0.01 mm
547-500S*	0.0005 in/0.01 mm	0 - 0.47*	30 mm (1.18 in)	ø10 mm (ø0.39 in) Flat	0.005 in/0.01 mm
547-320A	0.0005 in/0.01 mm	0 - 0.4	120 mm (4.72 in)	ø10 mm (ø0.39 in) Flat	0.005 in/0.01 mm
547-520S*	0.0005 in/0.01 mm	0 - 0.47*	120 mm (4.72 in)	ø10 mm (ø0.39 in) Flat	0.005 in/0.01 mm

Code No.	Accuracy	Measuring force (N)	Mass (g)	Remarks
547-526S*	±0.0002 in/±5 μm	1.5 or less	225	Standard, ceramic point/anvil
547-300A	±0.001 in/±20 μm	1.5 or less	245	Standard, ceramic point/anvil
547-500S*	±0.001 in/±20 μm	1.5 or less	225	Standard, ceramic point/anvil
547-320A	±0.001 in/±20 μm	1.5 or less	385	Deep throat, ceramic point/anvil
547-520S*	±0.001 in/±20 μm	1.5 or less	380	Deep throat, ceramic point/anvil

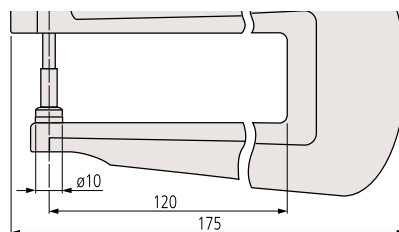
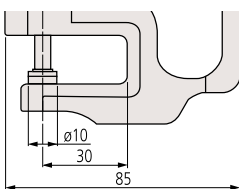
* Using **ID-SX** Digimatic indicator.

DIMENSIONS

547-301A, 547-526S, 547-300A, 547-500S

547-321A, 547-320A, 547-520S

Unit: mm



- Display: 6-digit display, sign (7-digit for models with 0.0005 mm resolution)
- Power source: CR2032 battery (1 pc.), included as standard (for operational checks)
- Battery life: Approx. 2.5 years under normal use
Approx. 2,700 hours of continuous use
- Response speed: Unlimited (except for scanning measurement)
- Zero-setting (INC system)
- Presetting (ABS system)
- Measuring direction switching
- Tolerance judgment
- Resolution switching (For models with 0.0005 mm resolution)
- Function Lock
- Calibration schedule warning function
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery voltage alarm display
- Error alarm display

Optional Accessories

Refer to page 07-90.

- Measurement Data Management **USB-ITPAK V3.0: 06AGR543**

Optional Accessories

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

High Accuracy Type (Resolution: 0.0005 mm)



547-401A

SPECIFICATIONS

Metric					
Code No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
547-401A	0.0005 (0.001/0.01 selectable)	0 - 12	21	ø6.3 Flat (Carbide)	3
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks	
547-401A	±3	3.5 or less	275	High accuracy, carbide point anvil	
Inch / Metric					
Code No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil	Parallelism of Contact point, Anvil
547-400A	0.00002/0.00005/ 0.0001/0.0005 in 0.0005/0.001/ 0.01 mm (selectable)	0 - 0.47	21 mm (0.83 in)	ø6.3 mm (ø0.25 in) Flat	0.0001 in/0.003 mm
Code No.	Accuracy	Measuring force (N)	Mass (g)	Remarks	
547-400A	±0.00012 in/±3 μm	3.5 or less	275	High accuracy, carbide point anvil	

DIMENSIONS

547-401A, 547-400A	Unit: mm

Dial Indicator Applications

Thickness Gages SERIES 547, 7

Standard Type (Graduation: 0.01 mm)

- Integrated moulding of the bezel and crystal ensures protection against water and oil penetration via the front face.



7301A



7321A

SPECIFICATIONS

Metric					
Code No.	Graduation (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
7327A	0.001	0 - 1	30	ø10 Flat	5
7301A	0.01	0 - 10	30	ø10 Flat	5
7305A	0.01	0 - 20	30	ø10 Flat	5
7321A	0.01	0 - 10	120	ø10 Flat	5
7323A	0.01	0 - 20	120	ø10 Flat	5

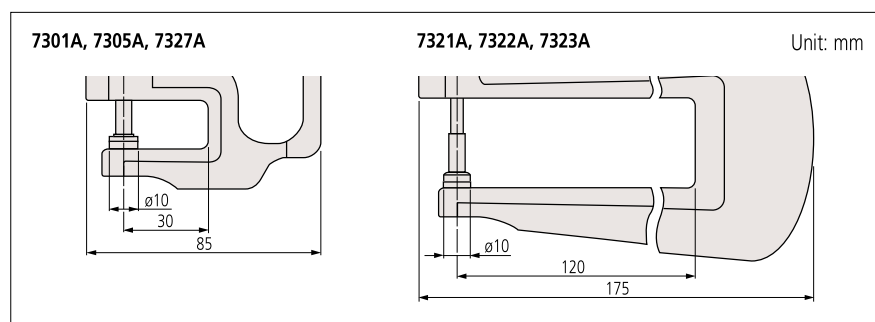
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
7327A	±5	1.5 or less	225	Fine dial reading, ceramic point/anvil
7301A	±15	1.4 or less	205	Standard, ceramic point/anvil
7305A	±20	2.0 or less	220	Standard, ceramic point/anvil
7321A	±15	1.4 or less	370	Deep throat, ceramic point/anvil
7323A	±22	2.0 or less	370	Deep throat, ceramic point/anvil

Inch					
Code No.	Graduation (in)	Range (in)	Measuring depth (in)	Contact point, Anvil (in)	Parallelism of Contact point, Anvil (in)
7326A	0.0001	0 - 0.05	1.18	ø0.39 Flat	0.0002
7300A	0.001	0 - 0.5	1.18	ø0.39 Flat	0.0005
7304A	0.001	0 - 1	1.18	ø0.39 Flat	0.0005
7322A	0.001	0 - 1	4.72	ø0.39 Flat	0.0005

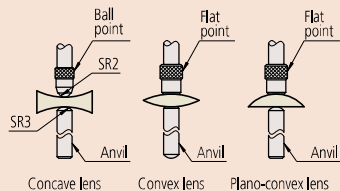
Code No.	Accuracy (in)	Measuring force (N)	Mass (g)	Remarks
7326A	±0.0002	2.0 or less	205	Fine dial reading, ceramic point/anvil
7300A	±0.001	1.8 or less	205	Standard, ceramic point/anvil
7304A	±0.002	1.8 or less	220	Standard, ceramic point/anvil
7322A	±0.002	1.8 or less	370	Deep throat, ceramic point/anvil

Note: The dial indicator needs to be reset when a contact point is replaced.

DIMENSIONS



Typical applications



- Display: 6-digit display, sign (7-digit for models with 0.0005 mm resolution)
- Power source: CR2032 battery (1 pc.), included as standard (for operational checks)
- Battery life: Approx. 2.5 years under normal use
Approx. 2,700 hours of continuous use
- Response speed: Unlimited (except for scanning measurement)
- Zero-setting (INC system)
- Presetting (ABS system)
- Measuring direction switching
- Tolerance judgment
- Resolution switching (For models with 0.0005 mm resolution)
- Function Lock
- Calibration schedule warning function
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery voltage alarm display
- Error alarm display

Optional Accessories

Refer to page 07-90.

- Measurement Data Management **USB-ITPAK V3.0: 06AGR543**

Lens thickness measurement

- Thickness of concave-convex lenses and surfaces can be measured. (Contact point, Anvil: hardened steel)
- Anvils and contact points are interchangeable to enable concave surfaces to be measured.
- Provided with a ball point as standard.



547-313A

7313A

SPECIFICATIONS

Metric					
Code No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
547-313A	0.01	0 - 10	30	ø6 Flat (Contact point) ø4.8 Flat (Anvil)	12

Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
547-313A	±20	1.5 or less	265	Lens thickness

Inch / Metric					
Code No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil	Parallelism of Contact point, Anvil
547-312A	0.0005 in/0.01 mm	0 - 0.4	30 mm (1.18 in)	ø6 mm (ø0.24 in) Flat (Contact point) ø4.8 mm (ø0.19 in) Flat (Anvil)	0.005 in/0.01 mm
547-512A*	0.0005 in/0.01 mm	0 - 0.47*	30 mm (1.18 in)	ø6 mm (ø0.24 in) Flat (Contact point) ø4.8 mm (ø0.19 in) Flat (Anvil)	0.005 in/0.01 mm

Code No.	Accuracy	Measuring force (N)	Mass (g)	Remarks
547-312A	±0.001 in/±20 μm	1.5 or less	265	Lens thickness
547-512A*	±0.001 in/±20 μm	1.5 or less	240	Lens thickness

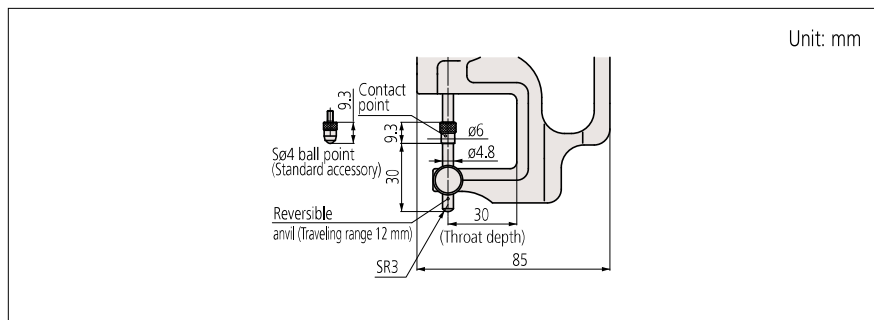
* Using ID-SX Digimatic indicator.

Metric					
Code No.	Graduation (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
7313A	0.01	0 - 10	30	ø6 Flat (Contact point) ø4.8 Flat (Anvil)	5
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks	
7313A	±15	1.4 or less	215	Lens thickness	

Inch					
Code No.	Graduation (in)	Range (in)	Measuring depth (in)	Contact point, Anvil (in)	Parallelism of Contact point, Anvil (in)
7312A	0.001	0 - 0.5	1.18	ø0.24 Flat (Contact point) ø0.19 Flat (Anvil)	0.0005
Code No.	Accuracy (in)	Measuring force (N)	Mass (g)	Remarks	
7312A	±0.001	1.8 or less	215	Lens thickness	

Note: The dial indicator needs to be reset when a contact point is replaced.

DIMENSIONS



Dial Indicator Applications

MeasurLink[®] ENABLED
Data Management Software by Mitutoyo

Thickness Gages SERIES 547, 7

Pipe gage measurement

- Pipe wall thickness, thickness of curved boards can be measured. (Contact point, Anvil: hardened steel)



547-360A

7360A

SPECIFICATIONS

Metric				
Code No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)
547-360A	0.01	0 - 10	20	ø3 Flat (Contact point) ø3.5 Ball (Anvil)
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
547-360A	±20	1.5 or less	230	Pipe gage

Inch / Metric				
Code No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil
547-361A	0.0005 in/0.01 mm	0 - 0.4	20 mm (0.79 in)	ø3 mm (ø0.12 in) Flat (Contact point) ø3.5 mm (ø0.14 in) Ball (Anvil)
547-561S	0.0005 in/0.01 mm	0 - 0.47*	20 mm (0.79 in)	ø3 mm (ø0.12 in) Flat (Contact point) ø3.5 mm (ø0.14 in) Ball (Anvil)
Code No.	Accuracy	Measuring force (N)	Mass (g)	Remarks
547-361A	±0.001 in/±20 μm	1.5 or less	230	Pipe gage
547-561S	±0.001 in/±20 μm	1.5 or less	215	Pipe gage

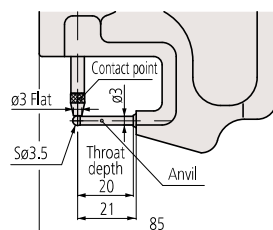
* Using ID-SX Digimatic indicator.

Metric				
Code No.	Graduation (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)
7360A	0.01	0 - 10	20	ø3 Flat (Contact point) ø3.5 Ball (Anvil)
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
7360A	±15	1.4 or less	200	Pipe gage

Inch				
Code No.	Graduation (in)	Range (in)	Measuring depth (in)	Contact point, Anvil (in)
7361A	0.001	0 - 0.5	0.8	ø0.12 Flat (Contact point) ø0.14 Ball (Anvil)
Code No.	Accuracy (in)	Measuring force (N)	Mass (g)	Remarks
7361A	±0.001	1.8 or less	200	Pipe gage

Note: The dial indicator needs to be reset when a contact point is replaced.

DIMENSIONS



Unit: mm

- Display: 6-digit display, sign (7-digit for models with 0.0005 mm resolution)
- Power source: CR2032 battery (1 pc.), included as standard (for operational checks)
- Battery life: Approx. 2.5 years under normal use
Approx. 2,700 hours of continuous use
- Response speed: Unlimited (except for scanning measurement)
- Zero-setting (INC system)
- Presetting (ABS system)
- Measuring direction switching
- Tolerance judgment
- Resolution switching (For models with 0.0005 mm resolution)
- Function Lock
- Calibration schedule warning function
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery voltage alarm display
- Error alarm display

Optional Accessories

Refer to page 07-90.

- Measurement Data Management **USB-ITPAK V3.0: 06AGR543**

- Display: 6-digit display, sign (7-digit for models with 0.0005 mm resolution)
- Power source: CR2032 battery (1 pc.), included as standard (for operational checks)
- Battery life: Approx. 2.5 years under normal use
Approx. 2,700 hours of continuous use
- Response speed: Unlimited (except for scanning measurement)
- Zero-setting (INC system)
- Presetting (ABS system)
- Measuring direction switching
- Tolerance judgment
- Resolution switching (For models with 0.0005 mm resolution)
- Function Lock
- Calibration schedule warning function
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery voltage alarm display
- Error alarm display

Optional Accessories

Refer to page 07-90.

- Measurement Data Management **USB-ITPAK V3.0: 06AGR543**

Blade thickness measurement

- Measuring faces of the contact point and anvil are blade-shaped (thickness: 1 mm). Suitable for measuring narrow grooves.



547-315A

7315A

SPECIFICATIONS

Metric					
Code No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
547-315A	0.01	0 - 10	30	t=1 Blade	10

Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks	
547-315A	±20	1.5 or less	260	Blade thickness	

Inch / Metric					
Code No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil	Parallelism of Contact point, Anvil
547-316A	0.0005 in/0.01 mm	0 - 0.4	30 mm (1.18 in)	t=1 mm (0.04 in) Blade	0.005 in/0.01 mm
547-516A*	0.0005 in/0.01 mm	0 - 0.47*	30 mm (1.18 in)	t=1 mm (0.04 in) Blade	0.005 in/0.01 mm

Code No.	Accuracy	Measuring force (N)	Mass (g)	Remarks	
547-316A	±0.001 in/±20 μm	1.5 or less	260	Blade thickness	
547-516A*	±0.001 in/±20 μm	1.5 or less	240	Blade thickness	

* Using **ID-SX** Digimatic indicator.

Metric					
Code No.	Graduation (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)
7315A	0.01	0 - 10	30	t=1 Blade	5

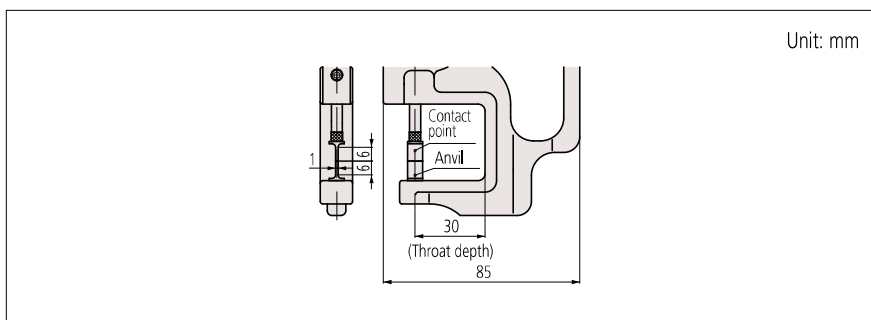
Code No.	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks	
7315A	±15	1.4 or less	220	Blade thickness	

Inch					
Code No.	Graduation (in)	Range (in)	Measuring depth (in)	Contact point, Anvil (in)	Parallelism of Contact point, Anvil (in)
7316A	0.001	0 - 0.5	1.18	t=0.04 Blade	0.0005

Code No.	Accuracy (in)	Measuring force (N)	Mass (g)	Remarks	
7316A	±0.001	1.8 or less	220	Blade thickness	

Note: The dial indicator needs to be reset when a contact point is replaced.

DIMENSIONS



Dial Indicator Applications

Contact Force Gage
SERIES 546

- Contact Force Gages are widely used to determine the measuring force applied by an instrument to a workpiece, as well as contact forces of electrical relays, micro-switches, valves and precision springs.
- Thanks to the miniature anti-friction bearing in the fulcrum, stable measurement is guaranteed.
- 2 types are available: Standard and peak hold.



Measurement example of contact force on a relay



SPECIFICATIONS

mN-scale models

Standard				Peak hold			
Code No.	Graduation (mN)	Range (mN)	Accuracy (graduation)	Code No.	Graduation (mN)	Range (mN)	Accuracy (graduation)
546-112	2	6 - 50	±0.5	—	—	—	—
546-113	5	10 - 100		546-133	5	10 - 100	±0.5
546-114	10	30 - 300		546-134	10	30 - 300	

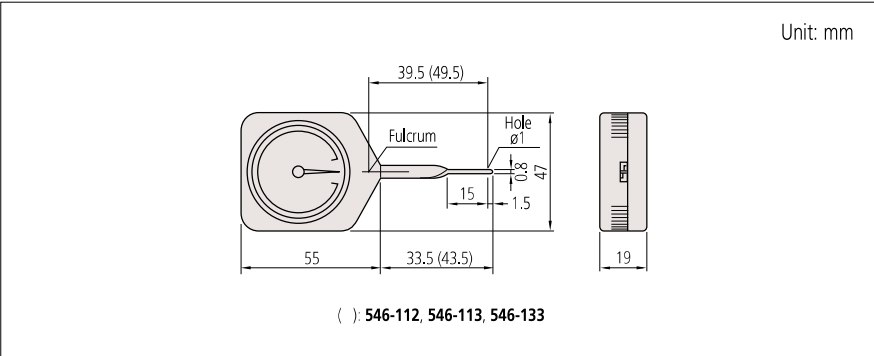
Note: Please note that these products are only available in their standard forms; they cannot be customized for special sizes or specifications.

N-scale models

Standard				Peak hold			
Code No.	Graduation (N)	Range (N)	Accuracy (graduation)	Code No.	Graduation (N)	Range (N)	Accuracy (graduation)
546-115	0.02	0.06 - 0.5	±0.5	546-135	0.02	0.06 - 0.5	±0.5
546-116	0.05	0.1 - 1		546-136	0.05	0.1 - 1	
546-117	0.05	0.15 - 1.5		546-137	0.05	0.15 - 1.5	
546-118	0.1	0.3 - 3		546-138	0.1	0.3 - 3	
546-119	0.2	0.6 - 5		546-139	0.2	0.6 - 5	

Note: Please note that these products are only available in their standard forms; they cannot be customized for special sizes or specifications.

DIMENSIONS



Dial Snap Gage SERIES 201

Optional accessories

Dial protection cover: **21DZA000**

Recommended dial indicators / Digimatic indicators (optional)

• Metric models:

2046AB: Dial indicator (Graduation: 0.01 mm)

2109AB-10: Dial indicator (Graduation: 0.001 mm)

543-700B: Digimatic Indicator (Resolution:
0.0005/0.001/0.01 mm)

• Inch models:

2414AB: Dial indicator (Graduation: 0.001 in)

2805AB-10: Dial indicator (Graduation: 0.0001 in)

543-702B: Digimatic Indicator (Resolution:
0.00002/0.00005/0.0001/0.0005 in
(0.0005/0.001/0.01 mm))

- Designed for quick Go/±No-go judgment of diameters of cylinders and shafts in machining processes.
- Enables single-handed comparative measurements of a cylinder diameter, etc. while workpiece processing is taking place.
- The dial indicator and protection cover are optional.
- Some digimatic/dial indicators cannot be used with the dial snap gage. Consult Mitutoyo before using dial indicators which are not recommended.
- Measuring faces: Carbide.
- Anvil positioning range: 25 mm/1 in. Adjustment nut: adjusts the setting anvil to the nominal size required within the measuring range.
- Clamp: clamps the setting anvil at the required position.



201-101

Note: The dial indicator and dial protection cover are optional.

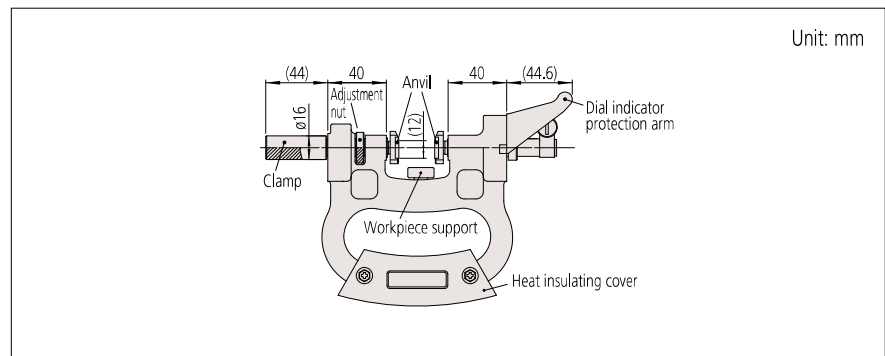
07
Indicators

SPECIFICATIONS

Metric				Inch			
Code No.	Range (mm)	Parallelism (μm)	Measuring force* (N)	Code No.	Range (in)	Parallelism (in)	Measuring force* (N)
201-101	0 - 25	5	15±3	201-151	0 - 1	0.00025	15±3
201-102	25 - 50			201-152	1 - 2		
201-103	50 - 75			201-153	2 - 3		
201-104	75 - 100			201-154	3 - 4		
201-105	100 - 125			201-155	4 - 5		
201-106	125 - 150			201-156	5 - 6		
201-107	150 - 175			201-157	6 - 7		
201-108	175 - 200			201-158	7 - 8		
201-109	200 - 225			201-159	8 - 9		
201-110	225 - 250			201-160	9 - 10		
201-111	250 - 275			201-161	10 - 11		
201-112	275 - 300			201-162	11 - 12		

* Measuring force is that force present before an indicator is installed and is determined at the point where the spindle is retracted 1 mm from the rest position.

DIMENSIONS



Unit: mm

Dial Indicator Applications