

Dial Indicator Applications

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

Thickness Gages SERIES 547, 7

MeasurLink ENABLED

Data Management Software by Mitutoyo

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Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).

Standard Type (Resolution: 0.01 mm)



547-301



547-321

High Accuracy Type (Resolution: 0.001 mm)



547-401

Standard Type (Graduation: 0.01 mm)



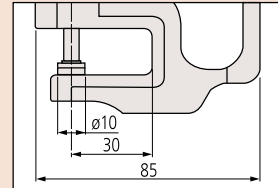
7301



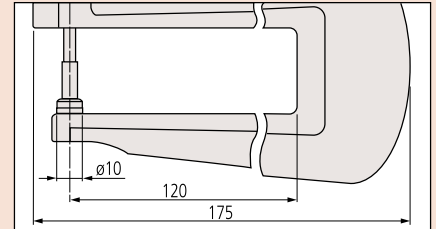
7321

DIMENSIONS

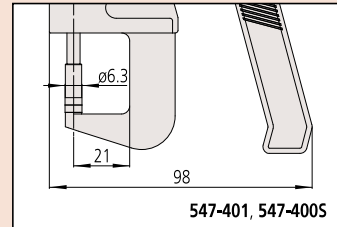
Unit: mm



7301, 7305, 7327, 547-301, 547-5265,
547-300S, 547-500S, 547-320S, 547-520S



7321, 7323, 7322S, 547-321, 547-320S, 547-520S



547-401, 547-400S

Technical Data

- Display: 6-digit LCD, sign
- Battery: SR44 (1 pc.), **938882** for initial operational checks (standard accessory)
- Battery life: Approx. 7,000 hours of continuous use
Approx. 1.2 years under normal use
- Maximum response speed: Not restricted (except for scanning measurement)

Functions

- Zero-setting (INC system)
- Presetting (ABS system)
- Direction switching
- Tolerance judgment
- Resolution switching (For 0.001 mm or 0.00005 inch resolution models)
- Calculation: $f(x) = Ax$
- Function Lock
- Data output
- Display value holding (when no external device is connected)
- 330° rotary display
- Low battery voltage alarm display
- Error alarm display

Optional Accessories

- SPC Cable:
 - 905338** (1 m)
 - 905409** (2 m)
 (Refer to pages A-27 to A-29 for details.)
- USB Input Tool Direct (2 m): **06AFM380F**
(Refer to page A-13 for details.)
- Connecting Cables for **U-WAVE-T** (160 mm):
02AZD790F
For foot switch: **02AZE140F**
(Refer to pages A-19 to A-21 for details.)
- Digimatic Mini-Processor **DP-1VA LOGGER: 264-505**

Lens thickness measurement

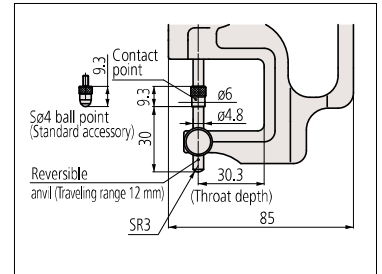
- Thickness of concave-convex lenses and surfaces can be measured. (Contact point, Anvil: hardened steel)
- Anvils and contact points are interchangeable to enable concave surfaces to be measured.



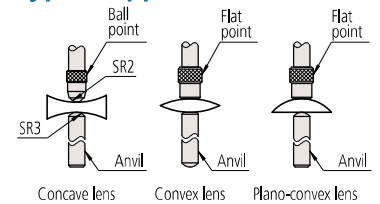
- Provided with a ball point as standard.

DIMENSIONS

Unit: mm



Typical applications



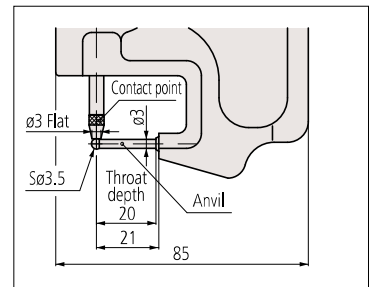
Tube thickness measurement

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



DIMENSIONS

Unit: mm

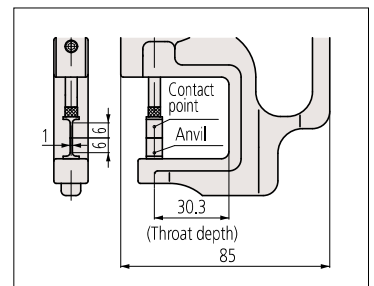


Groove thickness measurement



DIMENSIONS

Unit: mm



Dial Indicator Applications

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

Thickness Gages SERIES 547, 7

SPECIFICATIONS

Metric									
Order No.	Resolution (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
547-401	0.001/0.01 (selectable)	0 - 12	21	ø6.3 Flat (Carbide)	3	±3	3.5 or less	280	High accuracy, carbide point anvil
547-301	0.01	0 - 10	30	ø10 Flat	10	±20	1.5 or less	255	Standard, ceramic point/anvil
547-321	0.01	0 - 10	120	ø10 Flat	10	±20	1.5 or less	425	Deep throat, ceramic point/anvil
547-313	0.01	0 - 10	30	ø6 Flat (Contact point) ø4.8 Flat (Anvil)	10	±20	1.5 or less	275	Lens thickness
547-315	0.01	0 - 10	30	t=1 Blade	10	±20	1.5 or less	270	Groove thickness
547-360	0.01	0 - 10	20	ø3 Flat (Contact point) ø3.5 Ball (Anvil)	—	±20	1.5 or less	250	Tube thickness

Inch/Metric									
Order No.	Resolution	Range (in)	Measuring depth	Contact point, Anvil	Parallelism of Contact point, Anvil	Accuracy	Measuring force (N)	Mass (g)	Remarks
547-400S	0.00005 in/0.001 mm	0 - 0.47	21 mm (0.83 in)	ø6.3 mm (ø0.25 in) Flat	0.0001 in/0.003 mm	±0.0001 in/±3 μm	3.5 or less	290	High accuracy, carbide 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	±0.0002 in/±5 μm	1.5 or less	225	Standard, ceramic point/anvil
547-300S	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	±0.001 in/±20 μm	1.5 or less	255	Standard, ceramic point/anvil
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	±0.001 in/±20 μm	1.5 or less	225	Standard, ceramic point/anvil
547-320S	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	±0.001 in/±20 μm	1.5 or less	400	Deep throat, ceramic point/anvil
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	±0.001 in/±20 μm	1.5 or less	380	Deep throat, ceramic point/anvil
547-312S	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	±0.001 in/±20 μm	1.5 or less	275	Lens thickness
547-512S*	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	±0.001 in/±20 μm	1.5 or less	240	Lens thickness
547-316S	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	±0.001 in/±20 μm	1.5 or less	270	Groove thickness
547-516S*	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	±0.001 in/±20 μm	1.5 or less	260	Groove thickness
547-361S	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)	0.005 in/0.01 mm	±0.001 in/±20 μm	1.5 or less	240	Tube thickness
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)	0.005 in/0.01 mm	±0.001 in/±20 μm	1.5 or less	215	Tube thickness

* Using ID-SX Digimatic indicator.

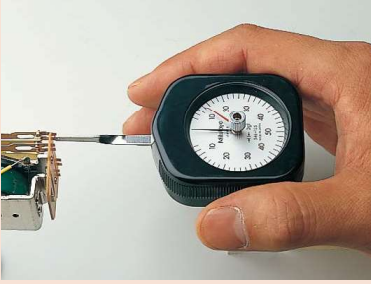
Metric									
Order No.	Graduation (mm)	Range (mm)	Measuring depth (mm)	Contact point, Anvil (mm)	Parallelism of Contact point, Anvil (μm)	Accuracy (μm)	Measuring force (N)	Mass (g)	Remarks
7327	0.001	0 - 1	30	ø10 Flat	5	±5	1.5 or less	230	Fine dial reading, ceramic point/anvil
7301	0.01	0 - 10	30	ø10 Flat	5	±15	1.4 or less	218	Standard, ceramic point/anvil
7305	0.01	0 - 20	30	ø10 Flat	5	±20	2.0 or less	236	Standard, ceramic point/anvil
7321	0.01	0 - 10	120	ø10 Flat	5	±15	1.4 or less	377	Deep throat, ceramic point/anvil
7323	0.01	0 - 20	120	ø10 Flat	5	±22	2.0 or less	371	Deep throat, ceramic point/anvil
7313	0.01	0 - 10	30	ø6 Flat (Contact point) ø4.8 Flat (Anvil)	5	±15	1.4 or less	220	Lens thickness
7315	0.01	0 - 10	30	t=1 Blade	5	±15	1.4 or less	220	Groove thickness
7360	0.01	0 - 10	20	ø3 Flat (Contact point) ø3.5 Ball (Anvil)	—	±15	1.4 or less	220	Tube thickness

Inch									
Order No.	Graduation (in)	Range (in)	Measuring depth (in)	Contact point, Anvil (in)	Parallelism of Contact point, Anvil (in)	Accuracy (in)	Measuring force (N)	Mass (g)	Remarks
7326S	0.0001	0 - 0.05	1.18	ø0.39 Flat	0.0002	±0.0002	2.0 or less	205	Fine dial reading, ceramic point/anvil
7300S	0.001	0 - 0.5	1.18	ø0.39 Flat	0.0005	±0.001	1.8 or less	205	Standard, ceramic point/anvil
7304S	0.001	0 - 1	1.18	ø0.39 Flat	0.0005	±0.002	2.0 or less	220	Standard, ceramic point/anvil
7322S	0.001	0 - 1	1.18	ø0.39 Flat	0.0005	±0.002	2.0 or less	370	Deep throat, ceramic point/anvil
7312S	0.001	0 - 0.5	1.18	ø0.24 Flat (Contact point) ø0.19 Flat (Anvil)	0.0005	±0.001	1.8 or less	215	Lens thickness
7316S	0.001	0 - 0.5	1.18	t=0.04 Blade	0.0005	±0.001	1.8 or less	220	Groove thickness
7361S	0.001	0 - 0.5	0.8	ø0.12 Flat (Contact point) ø0.14 Ball (Anvil)	—	±0.001	1.8 or less	200	Tube thickness

Note 1: The dial indicator needs to be reset when a contact point is replaced.

Note 2: The stated accuracy of Digimatic indicators does not include an allowance for quantizing error (±1 count).

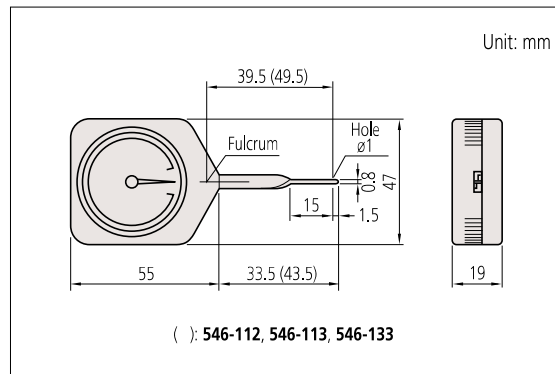
Measuring contact force on a relay



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.

DIMENSIONS



SPECIFICATIONS

mN-scale models

Standard			
Order No.	Graduation (mN)	Range (mN)	Accuracy (division)
546-112	2	6 - 50	±0.5
546-113	5	10 - 100	
546-114	10	30 - 300	

Peak hold			
Order No.	Graduation (mN)	Range (mN)	Accuracy (division)
546-133	5	10 - 100	±0.5
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			
Order No.	Graduation (N)	Range (N)	Accuracy (division)
546-115	0.02	0.06 - 0.5	±0.5
546-116	0.05	0.1 - 1	
546-117	0.05	0.15 - 1.5	
546-118	0.1	0.3 - 3	
546-119	0.2	0.6 - 5	

Peak hold			
Order No.	Graduation (N)	Range (N)	Accuracy (division)
546-135	0.02	0.06 - 0.5	±0.5
546-136	0.05	0.1 - 1	
546-137	0.05	0.15 - 1.5	
546-138	0.1	0.3 - 3	
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.

Dial Indicator Applications

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

Dial Snap Gage SERIES 201

- Designed for quick GO/NG judgment of diameters of cylinders and shafts in machining processes.
- Wide (13.5×12 mm/1.53×47 in), flat carbide anvils.
- Anvil retracting stroke: 2 mm/0.08 in
Anvil positioning range: 25 mm/1 in
- Adjustment nut: adjusts the measuring range.
- Clamp: adjustment nut
- Flatness of measuring face: 1 μm
- Repeatability of indication: 2 μm or better (repeatability of indicators is not included)
- The dial indicator and protection cover are optional. Also, some dial indicators and protection covers cannot be used with the dial snap gage. Consult Mitutoyo if intending to use dial indicators which are not recommended.



201-101

Note: The dial indicator and protection cover are optional.

Optional accessories

Dial protection cover: **21DZA000**

Recommended dial indicators (optional)

- Metric models:
2046SB: Dial indicator (Graduation: 0.01 mm)
2109SB-10: Dial indicator (Graduation: 0.001 mm)
- Inch models: **2803SB-10** (Graduation: 0.0001 in)

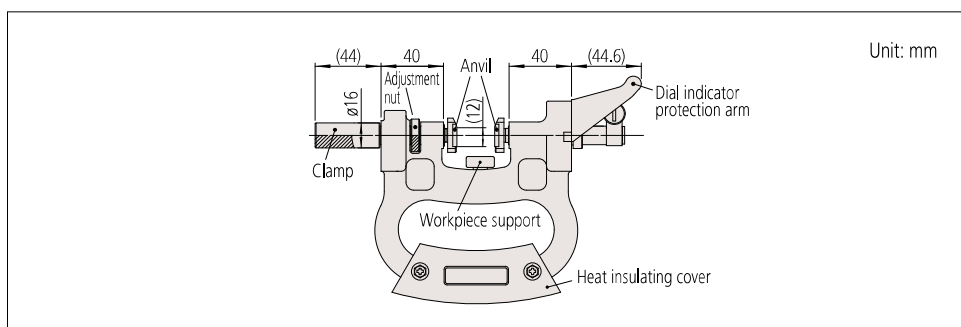
SPECIFICATIONS

Metric			
Order No.	Range (mm)	Parallelism (μm)	Measuring force* (N)
201-101	0 - 25	5	15±3
201-102	25 - 50		
201-103	50 - 75		
201-104	75 - 100		
201-105	100 - 125		
201-106	125 - 150		
201-107	150 - 175		
201-108	175 - 200		
201-109	200 - 225		
201-110	225 - 250		
201-111	250 - 275		
201-112	275 - 300		

Inch			
Order No.	Range (in)	Parallelism (in)	Measuring force* (N)
201-151	0 - 1	0.00025	15±3
201-152	1 - 2		
201-153	2 - 3		
201-154	3 - 4		
201-155	4 - 5		
201-156	5 - 6		
201-157	6 - 7		
201-158	7 - 8		
201-159	8 - 9		
201-160	9 - 10		
201-161	10 - 11		
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