

ĐỒNG HỒ ĐO MẶT SỖ

Dial Indicators

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

SERIES 2 — Standard Type, 0.01mm Graduation

- Standard 0.01mm graduation dial gages having a bezel with an outside diameter of 57mm. All types come with limit markers and a bezel clamp as standard.
- The bezel clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secure adhesion between the bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The spindle is made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- The grand gear is made of stainless steel with high resistance to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gage highly scratch- and chemical-resistant.



2046S



Continuous scale



Graduation: 0.01mm,
Measuring range: 10mm

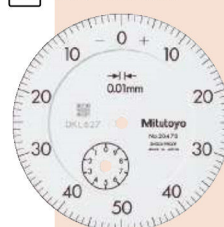
2046S

2046S-09

Shockproof type



Balanced scale

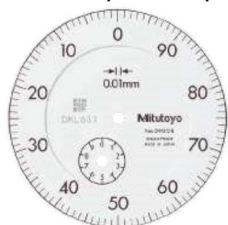


Graduation: 0.01mm,
Measuring range: 10mm

2047S



Reverse reading type. Suitable for depth and step measurement.



Graduation: 0.01mm,
Measuring range: 10mm

2902S



Continuous scale



Graduation: 0.01mm,
Measuring range: 10mm

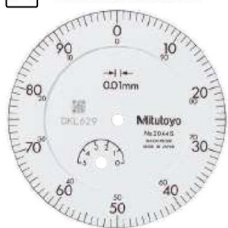
2310S-10

With coaxial revolution counter

Jeweled bearing type



Continuous scale



Graduation: 0.01mm,
Measuring range: 5mm

2044S

2044S-09

Shockproof



Balanced scale



Graduation: 0.01mm,
Measuring range: 5mm

2045S



An inspection certificate is supplied as standard.
Refer to page X for details.

TEL : 0353 478 116

Email : company@daichijp.vn

F

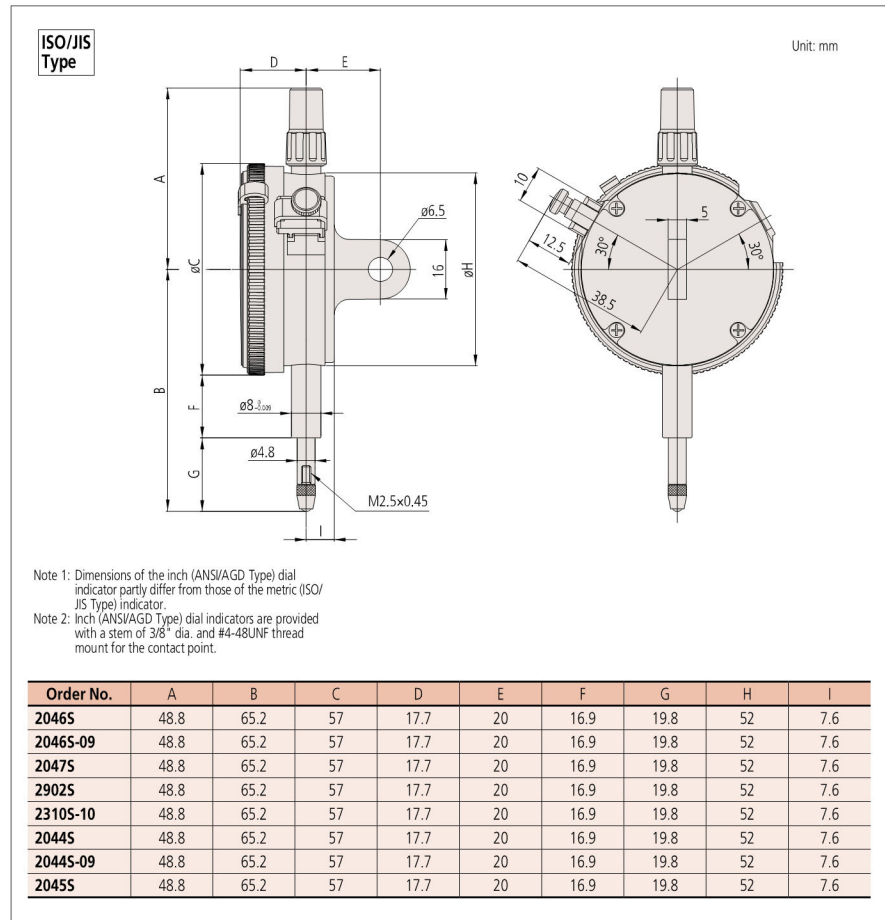
CÔNG TY TNHH TM DV SX DAI CHI
www.daichijp.com

Mitutoyo

ĐỒNG HỒ ĐO MẶT SỔ

TEL : 0353 478 116
Email : company@daichijp.vn

DIMENSIONS



FEATURES

Metric									
Order No.		Flat-back							
2046S	2046SB	✓	—	—	—	—	—	—	—
2046S-09	2046SB-09	✓	—	—	✓	—	—	—	—
2047S	2047SB	—	✓	—	—	—	—	—	—
2902S	2902SB	—	—	✓	—	—	—	—	✓
2310S-10	2310SB-10	✓	—	—	—	—	✓	✓	—
2044S	2044SB	✓	—	—	—	—	—	—	—
2044S-09	2044SB-09	✓	—	—	✓	—	—	—	—
2045S	2045SB	—	✓	—	—	—	—	—	—

SPECIFICATIONS

Metric		ISO/JIS type								
Order No.		Graduation	Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
w/ lug	Flat-back			Overall	Retrace	1/10 Rev	1 Rev			
2046S	2046SB	0.01mm	10mm (1mm)	13µm	3µm	5µm	10µm	3µm	±0-100	1.4N or less
2046S-09	2046SB-09	0.01mm	10mm (1mm)	15µm	3µm	5µm	10µm	3µm	±0-100	1.4N or less
2047S	2047SB	0.01mm	10mm (1mm)	13µm	3µm	5µm	10µm	3µm	0-50-0	1.4N or less
2902S	2902SB	0.01mm	10mm (1mm)	13µm	3µm	5µm	10µm	3µm	100-0	1.4N or less
2310S-10	2310SB-10	0.01mm	10mm (1mm)	15µm	3µm	5µm	10µm	3µm	±0-100	1.4N or less
2044S	2044SB	0.01mm	5mm (1mm)	12µm	3µm	5µm	10µm	3µm	±0-100	1.4N or less
2044S-09	2044SB-09	0.01mm	5mm (1mm)	12µm	3µm	5µm	10µm	3µm	±0-100	1.4N or less
2045S	2045SB	0.01mm	5mm (1mm)	12µm	3µm	5µm	10µm	3µm	0-50-0	1.4N or less


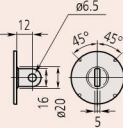

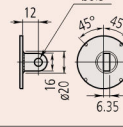

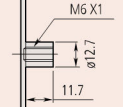

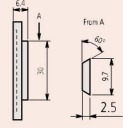

* Completed products inspection is performed in the vertical position (contact point downward) and the stated accuracy is guaranteed.

Dial Indicators

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

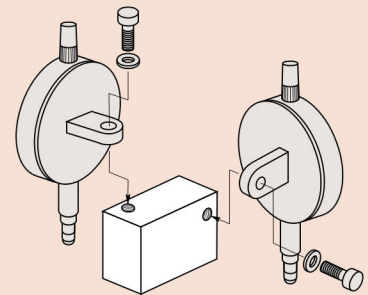
Interchangeable Backs Optional Accessory for Digimatic and Dial Indicators

SPECIFICATIONS

Description		Order No.		
		Series 1 (ø31, ø36, ø40mm)	Series 2 (ø57mm)	Series 3, 4 (ø78, 91mm)
Flat Back	 Unit: mm	101211: a=2.2 136872: for water-proof type 191559: for 1911TB-10, 1913TB-10, 1921TB-10, 1923TB-10, 1925TB-10 137906: for 1003TB	101039: a=2.5 21AZB231: for water-proof of S type 192910: (F type waterproof model)	100836: a=3.0
Lug-on-Center Back	 Unit: mm	101210: metric type 101307: inch type 190561: for 1911T-10, 1913-10 190139: 1921T-10, 1923T-10, 1925T-10 137905: for 1003T	101040: metric type 101306: inch type 21AZB230: for water-proof of S type (mm) 21BZB104: for water-proof of S type (inch)	100691: metric type 100797: inch type
Magnetic Back	 Unit: mm	Special order	900928	900929
Back with Offset Lug	 Unit: mm	Special order	101167	100837
Back with Post	 Unit: mm	193172 Custom made	101169	100839
Back with Screw Mount	 Unit: mm	193173: M6x1, Custom made 193174: #1/4-28UNF, Custom made	136023: M6x1 101170: #1/4-28UNF	136024: M6x1 100840: #1/4-28UNF
Adjustable Back	 Unit: mm	136025: M6x1 129721: #1/4-20UNC	136026: M6x1 101168: #1/4-20UNC	136027: M6x1 100838: #1/4-20UNC
Back with Dovetail	 Unit: mm	—	900008	Special order
Back with Adjustable Bracket	 Unit: mm	—	901963	—

A dial or Digimatic indicator may be held in position by clamping on either the stem or the lug on the back of the indicator. The back of the indicator may need to be interchanged with another type for special applications. A wide variety of backs are available for Mitutoyo Digimatic and dial indicators.

Application



CÔNG TY TNHH TM DV SX DAI CHI
www.daichijp.com



TEL : 0353 478 116

Email : company@daichijp.vn

When installing to 297*TB series, please separately prepare 4 fixing screws (Order No.546666 Self-tapping screw only for resin). Do not apply a tightening torque of more than 20N-cm in order to avoid stripping the screw threads.

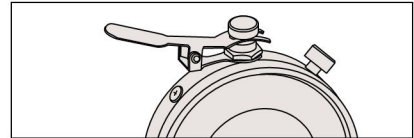
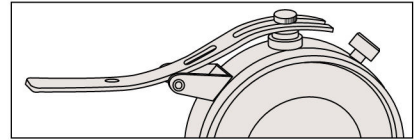
Mitutoyo

Spindle Lifting Lever and Cable Optional Accessories for Digimatic and Dial Indicators

Spindle Lifting Lever

- The Spindle Lifting Lever is attached to the top end of the spindle for improved inspection efficiency when using a dial indicator mounted on a stand.

Application



902100

Use for S type Series 1 and F type Series 2 (up to 10mm/.4" range) dial indicators.



21BZA205

Use for F type Series 1 dial indicators.



900527: Lever
101171: Screw

21AZB149

Use for S type Series 2, 3, and 4 dial indicators (up to 10mm/.4").



902011

Use for F type Series 2 dial indicators (up to 10mm/.4" range).



21AZB150

Use for S type Series 2 and 3 dial indicators (from 10mm/.4" up to 20mm/.8").



903424

Use for F type Series 2 dial indicators (up to 20mm/.8" range) and Series 3 and 4 dial indicators (up to 10mm/.4" range).



903307: Lever
192686: Screw

21EZA198

Use for ID-SS, ID-SX, ID-CX



21AZB149: Lever
101171: Screw

F

TEL : 0353 478 116
Email : company@daichijp.vn

* If the spindle lifting lever is installed on a water/dustproof type, waterproof performance is not guaranteed.

Dial Indicators

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

Spindle Lifting Cable

901975: with auto-stop function



Note: This accessory is not applicable to range of 20mm or more, 2048S(B)-10, 2046S(B)-80, 1911T-10, 1913T-10, 1921T-10, 1923T-10, 1925T-10, and 2971TB to 2978TB.

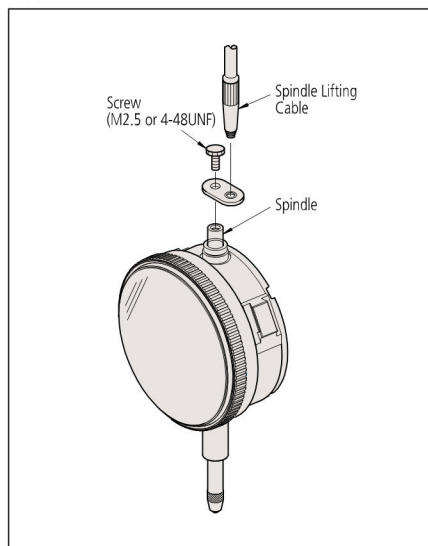
Spindle Lifting Lever

137693

Suitable for 4.8mm spindle diameter.



Application



CÔNG TY TNHH TM DV SX DAI CHI
www.daichijp.com



TEL : 0353 478 116

Email : company@daichijp.vn

F



Limit Stickers

- These are stuck onto the dial face or crystal of a Series 2 dial indicator (55.6mm or 57mm bezel diameter) to indicate tolerance limits.

TEL : 0353 478 116
Email : company@daichijp.vn



Red

Green

Yellow



No.136420
(10 sheets/set)



No.136421
(10 sheets/set)



No.136422
(10 sheets/set)

Color-coded Spindle Caps

- 9 color-coded spindle caps are available for dial indicators with a range of 10mm or less.



Color	Order No.	
	Standard	Waterproof
Black	193051	193595
White	193051W	193595W
Red	193051R	193595R
Green	193051G	193595G
Blue	193051B	193595B
Yellow	193051Y	193595Y
Orange	193051D	193595D
Pink	193051P	193595P
Navy	193051S	193595S

Note: This accessory is not applicable to 1003T, 1911T-10, 1913T-10, 1921T-10, 1923T-10, 1925T-10 and 2971TB to 2978TB.

Note: When attaching to small dial indicators, the overall height will be 8mm taller.

Dial Indicators

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

Dial Indicator Repair Tool Kit



Set 7823

Set Configuration

- (1) Spindle rest (129730)
- (2) Pin remover (129732)
- (3) Punch (129733)
- (4) Bearing adjuster (129734)
- (5) Pinion set (129735)
- (6) Reamer $\phi 1$ (129736)
- (7) Reamer $\phi 0.6$ (193702)
- (8) Reamer for pointer ($\phi 0.5$: 1/20 taper) (21JAA273)
- (9) Pointer removing tool (126628)
- (10) Pliers (901180)
- (11) Nippers (901179)
- (12) Pin rest (129731)
- (13) Grease (901171)
- (14) Hammer (901178)
- (15) Stick (21JAA314)
- (16) Brush (901177)
- (17) Brush (901176)
- (18) Pin-vise (901175)
- (19) Screwdriver (Phillips/flat blade) (901174)
- (20) Tweezers (129729)
- (21) Screwdriver (Phillips) (901173)
- (22) Lubricating oil (21JAA313)
- (23) Pointer removing tip ($\phi 0.8$) (126630)
- (24) Pointer removing tip ($\phi 0.5$) (126630B)
- (25) Pointer removing tip ($\phi 1.6$) (126630C)
- (26) Adjustable nut (100699)
- (27) Case (901182)

TEL : 0353 478 116

Email : company@daichijp.vn

Application examples

Lubricate bezel to restore smooth operation

Apply the grease (No. 13) to the entire groove of the bezel with the brush (No. 16).

Renew lubricant in bearing

Apply the lubricating oil (No. 22) to the pinion bearing with the stick (No. 15).

Remove the long hand

Position the pointer removing tool (No. 9) on the hole diameter of the minute hand. Push the pivot with the pointer removing tool to remove the long hand.

Remove the little hand

Remove the little hand with the nippers (No. 11).

Adjust a bearing

Press the steel or jeweled bearing into its housing using the bearing adjuster (No. 4).

Remove or replace a pin

Place the spindle on the groove of the spindle rest (No. 1). Remove the pin with the pin remover (No. 2) and the hammer (No. 14). Tap the pin directly with the hammer (No. 14) to replace the pin.

Replace the long or little hand

Screw the pinion rest (No. 5) into the pin rest (No. 12). Support the pinion with the fixed pinion rest, and replace the hand with the punch (No. 3) and hammer (No. 14). Reaming is necessary in order to use a new hand. Use the reamer $\phi 1$ (No. 6) or reamer $\phi 0.6$ (No. 7) for F-type dial indicators and dial test indicators. Use the reamer for hands ($\phi 0.5$ 1/20 taper) (No.8) on S type and T type dial indicators.

Dial Indicator Crystal Setter



7000

- Used for fitting a crystal on dial indicators (Series 1 and 2), dial test indicators, and dial calipers. (Integrated molded crystals are excluded.)
- 8 sizes of crystal setting pads are supplied as standard.
- Application examples
 - Nos. 2 and 3: Pocket-type dial test indicators
 - Nos. 3 and 4: Dial test indicators, universal-type test indicators, full-range of Series 1 dial indicators, full range of dial calipers
 - Nos. 7 and 8: full-range of Series 2 dial indicators, dial height gage with counter
- Size of crystal setting pads (mm)

(1) $\phi 19.5$	(2) $\phi 22.5$	(3) $\phi 25.5$	(4) $\phi 28.5$
(5) $\phi 32.5$	(6) $\phi 35$	(7) $\phi 38$	(8) $\phi 50$

- Crystal setting pads set (including No. 1 to No. 8): 21JAA032

Note: Crystal setting pads for large dial indicators (Series 3 and 4) are available by special order.

Replacing bezels and graduation plates

A bezel and graduation plate must be swaged together so that the graduation plate always rotates with the bezel. Assemblies comprised of a swaged bezel and graduation plate are available for some models.

Code No. of dial indicators	Code No. of swaged assemblies
2046S	21AZB132
2109S-10	21AZB138
2046F	903457
2109F	903464