

# DIAL INDICATORS

TECLOCK Dial Indicator is definitely utilized at the production site where dimensional high accuracy is needed to be confirmed. The graduation (1-graduation) depends on usage and TECLOCK offers best quality dial indicators with 0.001mm, 0.005mm, 0.01mm, 0.05mm and 0.1mm graduations. The strokes are available from 0.16mm (the shortest) up to 150mm. Dial Indicator is normally not used independent but its stem or lugback is fixed to a jig and holds workpiece with measuring stands and contact point, and displacement volume is read by short hand and pointer. This dial indicator is applied for direct measurement to measure actual dimension and comparative measurement for measuring displacement volume from a certain standard dimension.



## 0.001mm Dial Indicators

- Durability is pursued by protecting mechanical parts like gears with unique shock proof mechanism.
- Jeweled bearing for extreme durability, toughness and stability.
- Stable repeatability is realized by most advanced TECLOCK Lever enlargement mechanism built-in.
- Tolerance hand is provided as standard accessory (all models) for positive tolerance setting.
- Lifting lever can be mounted.
- Bezel clamp can be mounted (Option), excepting TM-1201PW.



**TM-1201**  
Graduation 0.001mm  
Measuring Range 1mm



**TM-1201PW**  
Graduation 0.001mm  
Measuring Range 1mm  
Oil-Proof Type



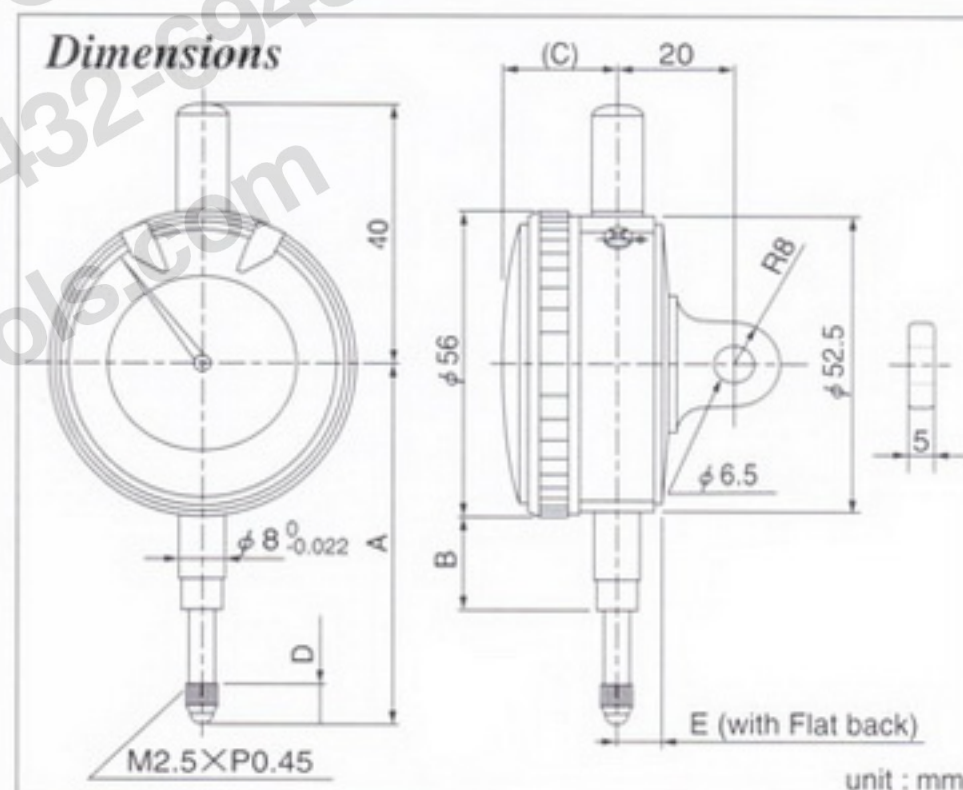
**TM-1251**  
Graduation 0.001mm  
Measuring Range 1mm  
One Revolution 0.1mm  
Green Colored Dial



**TM-1202**  
Graduation 0.001mm  
Measuring Range 2mm



**TM-1205**  
Graduation 0.001mm  
Measuring Range 5mm



**Dimension Table**

Model	A	B	C	D	E
TM-1201	62	18	15	7.5	8
TM-1201PW	65.5	(18)	13.5	11	8.5
TM-1251	62	18	15	7.5	8
TM-1202	62	18	15	7.5	8
TM-1205	62	18	15.5	7.5	8

unit : mm

### Specifications

Model	Graduation (mm)	Measuring Range (Free stroke) (mm)	Repeatability (μm)	Indication Error(μm)					Hysteresis (μm)	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1/2 Revolution	1 Revolution	2 Revolution	Total Range				
TM-1201	0.001	1(3)	0.5	2.5	±3	±4	±4	±5	3	ZS-017	1.5 or less	170
TM-1201PW	0.001	1(3)	0.5	2.5	±3	±4	±4	±5	3	ZS-028	1.5 or less	180
TM-1251	0.001	1(3)	0.5	2.5	±3	±4	±4	±5	3	ZS-017	1.5 or less	170
TM-1202	0.001	2(2)	0.5	4	±5	±6	±6	±7	3	ZS-017	1.5 or less	170
TM-1205	0.001	5(—)	1	5	±6	±7	±8	±10	4	ZS-017	1.5 or less	170

In case flat back is required, please add suffix "f" to the end of model number. (example =TM-1201f)



# 0.1mm Dial Indicators

- 0.1mm graduation series dial indicators and 10mm, 20mm and 30mm stroke are available.
- Lifting lever can be mounted.

- This is used to measure approximate dimensional judgment for woodwork and leather goods etc., and also applicable for measurement of judge deviation dimension.
- Bezel clamp can be mounted (Option).



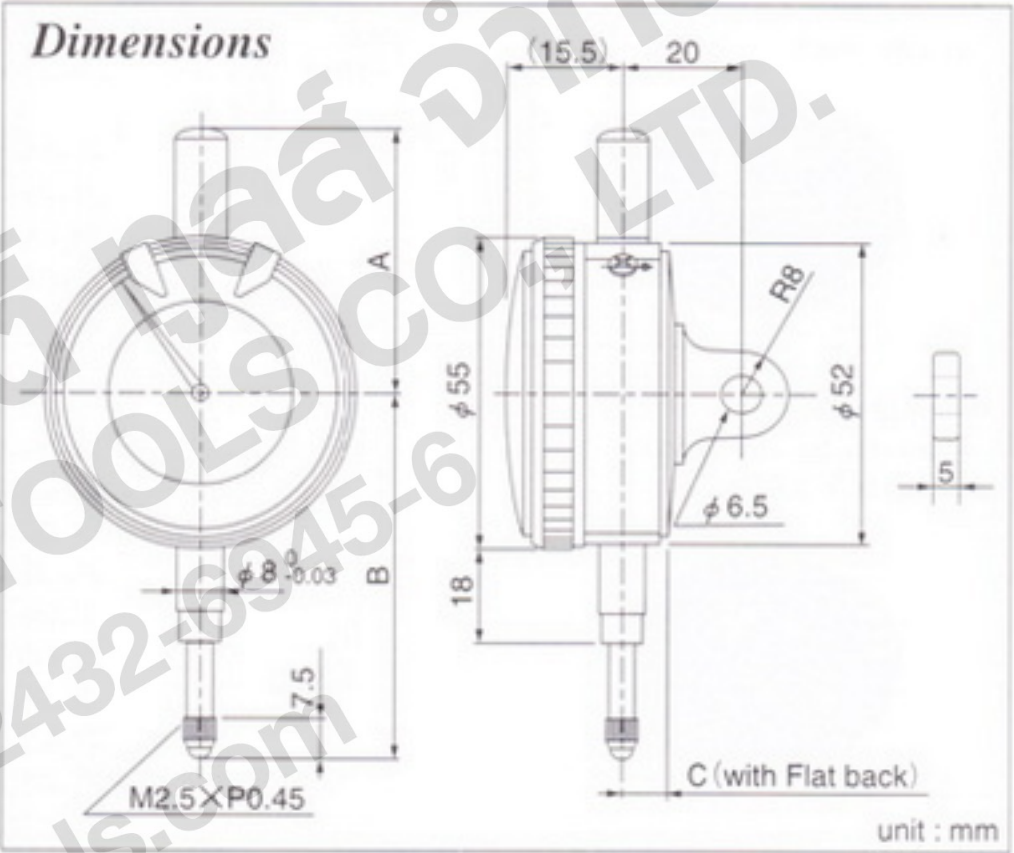
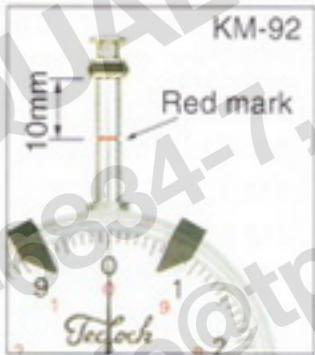
**TM-91**  
Graduation 0.1mm  
Measuring Range 10mm



**TM-91R**  
Graduation 0.1mm  
Measuring Range 10mm  
Reverse Reading



**KM-92**  
Graduation 0.1mm  
Measuring Range 20mm



**Dimension Table**

Model	A	B	C
TM-91	48	65	7.8
TM-91R	48	65	7.8
KM-92	36	75	7.8
KM-93	36	85	7.8

unit : mm



**KM-93**  
Graduation 0.1mm  
Measuring Range 30mm



**TM-35-01**  
Graduation 0.1mm  
Measuring Range 10mm  
Small type  
(See page 4)

**Specifications**

Model	Graduation (mm)	Measuring Range (mm)	Repeatability (μm)	Indication Error(μm)		Hysteresis (μm)	Standard Contact Point	Measuring Force (N)	Weight (g)
				1 Revolution	Total Range				
TM-91	0.1	10	35	—	±50	—	ZS-017	1.4 or less	140
TM-91R	0.1	10	35	—	±50	—	ZS-017	1.4 or less	140
KM-92	0.1	20	35	±50	±60	—	ZS-017	2.2 or less	145
KM-93	0.1	30	35	±50	±70	—	ZS-017	2.5 or less	145

In case flat back is required, please add suffix "f" to the end of model name.



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# 0.01mm Long Stroke Dial Indicators

- 20mm, 30mm long stroke dial indicators are available.
- Teclock unique shock proof mechanism is built-in to all models.
- Lifting lever (Option) can be mounted (except for KM-121PW).
- Bezel clamp (Option) can be mounted (except for KM-121PW).
- In case that flat back is required, add suffix "f" to the end of model number (example =KM-121f).



**KM-121**

Standard type

Graduation 0.01mm  
Measuring Range 20mm



**KM-121D**

Coaxial revolution pointers type

Graduation 0.01mm  
Measuring Range 20mm



**KM-121PW**

Oil-proof type

Graduation 0.01mm  
Measuring Range 20mm

Measuring Range 30mm



**KM-131**

Standard type

Graduation 0.01mm  
Measuring Range 30mm



**KM-132D**

Coaxial revolution pointers type

Graduation 0.01mm  
Measuring Range 30mm



**KM-130**

High accurate type

Graduation 0.01mm  
Measuring Range 30mm

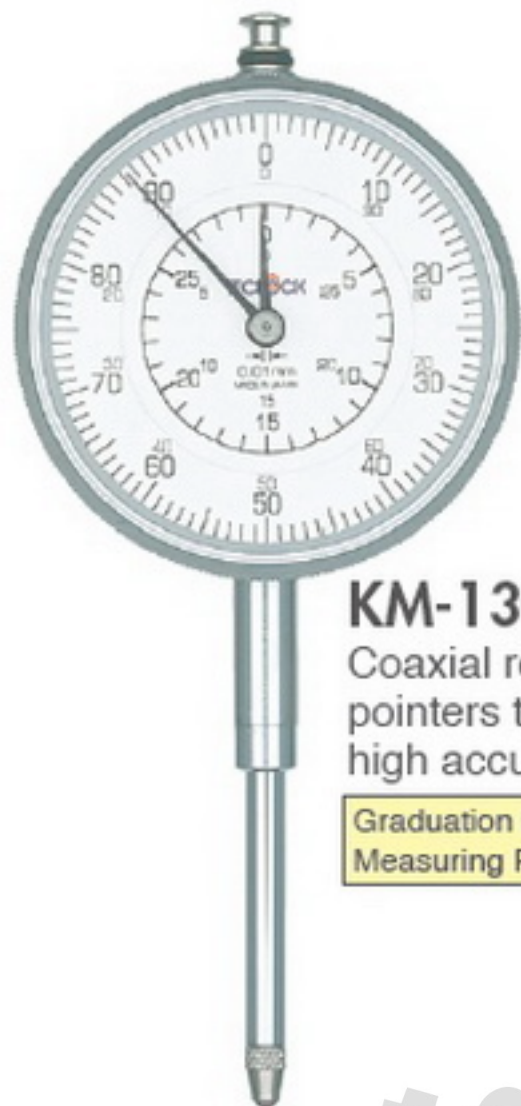


**KM-130R**

Reversed dial type

Graduation 0.01mm  
Measuring Range 30mm

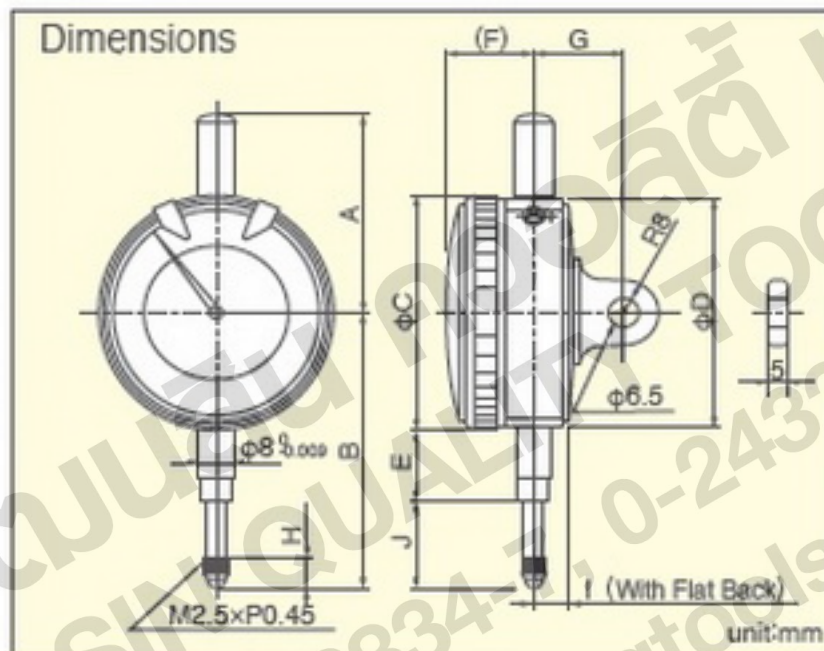




### KM-130D

Coaxial revolution  
pointers type in the  
high accuracy

Graduation 0.01mm  
Measuring Range 30mm



Dimensions Table

Model	A	B	C	D	E	F	G	H	I	J
KM-121	36	75	55	52	18	15.5	20	7.5	7.8	29.5
KM-121D	36	75	55	52	18	17.6	20	7.5	7.8	29.5
KM-121PW	55	89	56	52	(17.5)	14.5	20	11	8.3	(43.5)
KM-131	36	86	55	52	19	15.5	20	7.5	8	39.5
KM-132D	36	86	55	52	19	17.3	20	7.5	8	39.5
KM-130	38.5	92	59	54.5	22.7	17.5	22	7.5	9.6	39.8
KM-130R	38.5	92	59	54.5	22.7	17.5	22	7.5	9.6	39.8
KM-130D	38.5	92	59	54.5	22.7	19.5	22	7.5	9.6	39.8

unit:mm

### Specifications

Model	Graduation (mm)	Measuring Range (mm)	Repeatability ( $\mu$ m)	Indication Error( $\mu$ m)			Hysteresis ( $\mu$ m)	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1 Revolution	Total Range				
KM-121	0.01	20	5	10	$\pm 15$	$\pm 20$	7	ZS-017	2.2 or less	145
KM-121D	0.01	20	5	10	$\pm 15$	$\pm 20$	7	ZS-017	2.2 or less	150
KM-121PW	0.01	20	5	10	$\pm 15$	$\pm 20$	7	ZS-028	2.2 or less	165
KM-131	0.01	30	5	14	$\pm 18$	$\pm 35$	8	ZS-017	2.5 or less	150
KM-132D	0.01	30	5	14	$\pm 18$	$\pm 35$	8	ZS-017	2.5 or less	150
KM-130	0.01	30	5	14	$\pm 18$	$\pm 25$	7	ZS-017	2.2 or less	200
KM-130R	0.01	30	5	14	$\pm 18$	$\pm 25$	7	ZS-017	2.2 or less	200
KM-130D	0.01	30	5	14	$\pm 18$	$\pm 25$	7	ZS-017	2.2 or less	200

\*In case flat back is required, please add suffix "f" to the end of model number.



# Long Stroke Dial Indicators

- 50mm, 100mm, 150mm long stroke dial indicators with a large graduation plates are available.
- Measuring up to 150mm is materialized with highest precision components of high durability and Teclock original and unique enlargement mechanism is built-in.

- Bezel clamp (Option) can be mounted (except for KM-05100 /KM-05150).
- Long stroke dial Indicator is widely used for construction, civil engineering industries etc.
- In case that flat back is required, add suffix "f" to the end of model number (example =KM-155f ) (except for KM-05100 /KM-05150).



## KM-55

Durability emphasis type

Graduation 0.05mm  
Measuring Range 50mm



## KM-155

Wide graduation width type

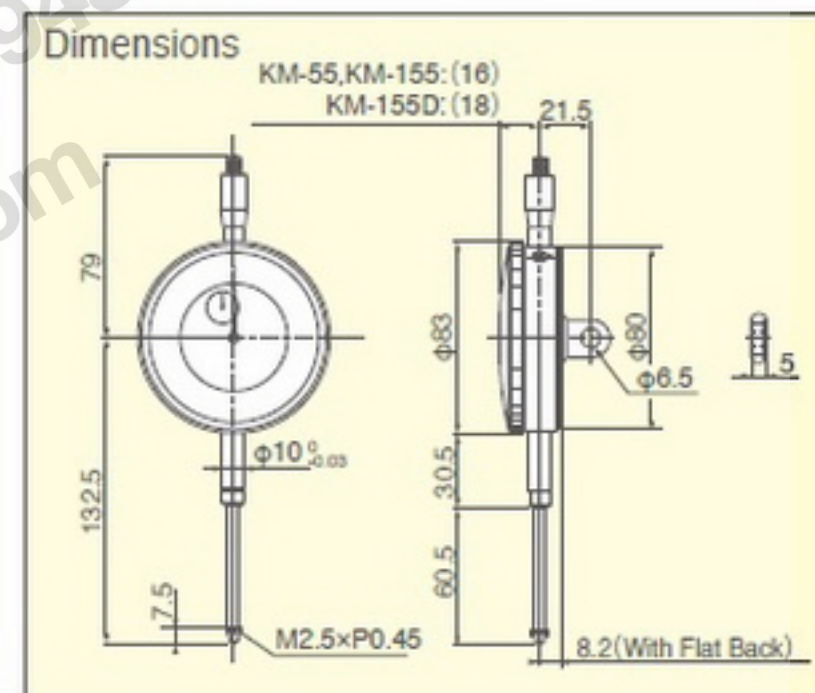
Graduation 0.01mm  
Measuring Range 50mm



## KM-155D

Coaxial revolution pointers type

Graduation 0.01mm  
Measuring Range 50mm



## Specifications

Model	Graduation (mm)	Measuring Range (mm)	Repeatability (μm)	Indication Error (μm)			Hysteresis (μm)	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1 Revolution	Total Range				
KM-55	0.05	50	20	30	±50	±100	15	ZS-017	2.5 or less	285
KM-155	0.01	50	5	15	±20	±35	9	ZS-017	2.5 or less	285
KM-155D	0.01	50	5	15	±20	±35	9	ZS-017	2.5 or less	285

\*In case flat back is required, please add suffix "f" to the end of model number.





**KM-05100**

Coaxial revolution  
pointers type

Graduation 0.05mm  
Measuring Range 100mm



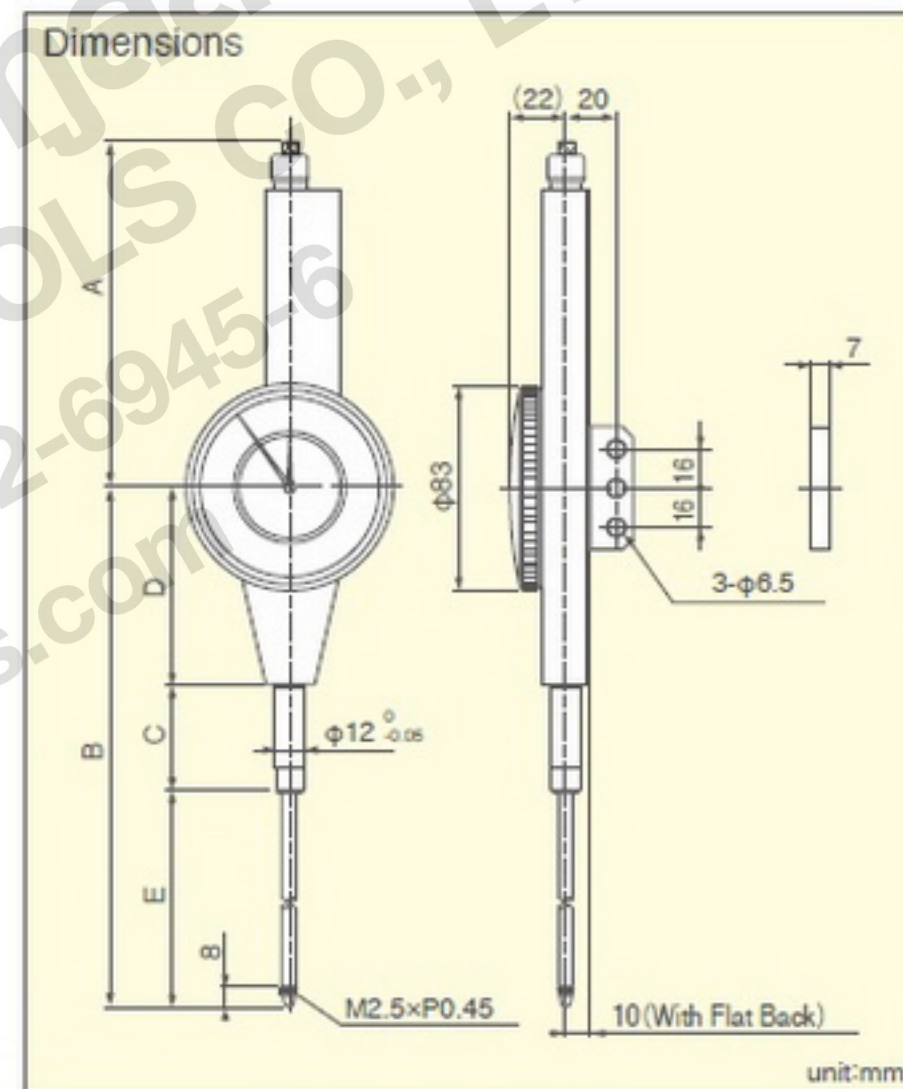
**KM-05150**

Coaxial revolution  
pointers type

Graduation 0.05mm  
Measuring Range 150mm



The longest mechanical type model: KM-05150



Dimensions Table

Model	A	B	C	D	E
KM-05100	140	235	44	80	111
KM-05150	190	335	55	120	160

unit:mm

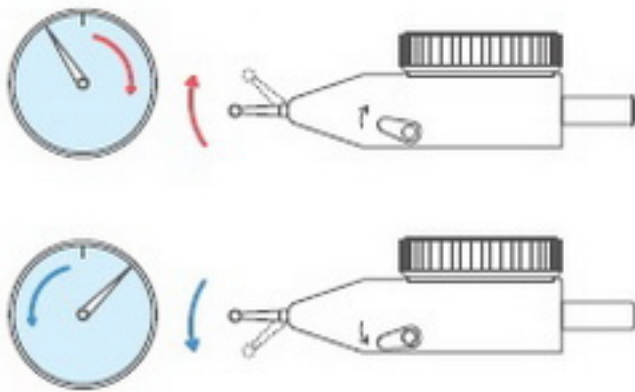
Specifications

Model	Graduation (mm)	Measuring Range (mm)	Repeatability ( $\mu$ m)	Total Range Indication Error ( $\mu$ m)	Hysteresis ( $\mu$ m)	Standard Contact Point	Measuring Force(N)	Weight (g)
KM-05100	0.05	100	30	$\pm 100$	15	ZS-018	2.5 or less	550
KM-05150	0.05	150	30	$\pm 150$	15	ZS-018	3.0 or less	680



- Measuring direction can be changed with change lever.
- Main bearings are jeweled for all models.
- A carbide ball stylus is provided for less abrasion.
- Stylus is made of  $\phi 2\text{mm}$  stainless steel and it is unique threaded type which can be changed easily.
- Stylus and pointer are anti-magnetic and not affected by magnetism.
- Due to the low measuring force, this is suitable for measurement of thin work piece as well.

Measuring direction is changed by Change Lever.



**LT-310**

Small and standard type

Graduation 0.01mm  
Measuring Range 0.8mm



**LT-311**

Small and large face type

Graduation 0.01mm  
Measuring Range 0.8mm



**LT-314**

Graduation width large type

Graduation 0.01mm  
Measuring Range 0.5mm



**LT-315**

Standard type

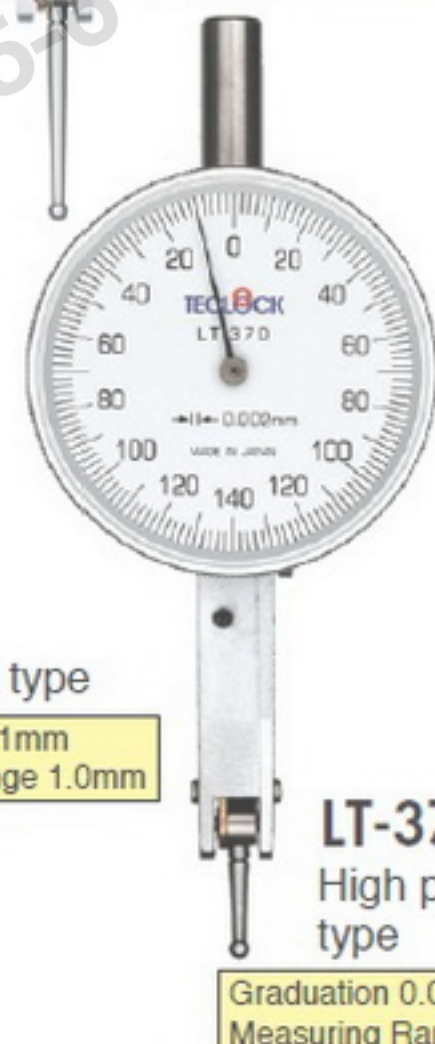
Graduation 0.01mm  
Measuring Range 0.8mm



**LT-316**

Long stylus type

Graduation 0.01mm  
Measuring Range 1.0mm



**LT-370**

High precision type

Graduation 0.002mm  
Measuring Range 0.28mm



- Shock from the angle excepting measuring direction can be avoided and body is protected by Teclock original shock preventing mechanism (PS mechanism) of center of stylus.



**LT-315PS**  
Standard type

Graduation 0.01mm  
Measuring Range 0.8mm



**LT-316PS**  
Long stylus type

Graduation 0.01mm  
Measuring Range 1.0mm

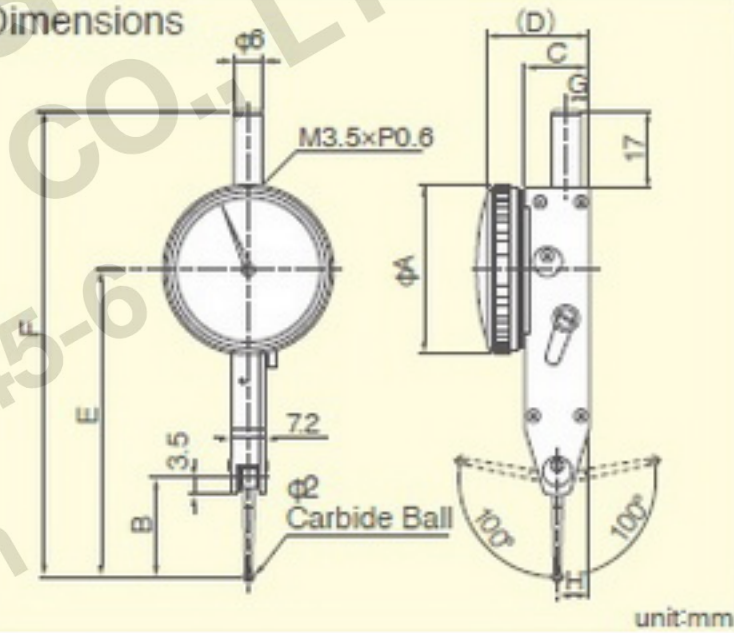
Major dimension is equal to LT-315 and LT-316.

#### Shock Preventing mechanism



TECLOCK original PS mechanism is set at center of stylus to prevent shock excepting measuring directions.

#### Dimensions



#### Dimensions Table

Model	A	B	C	D	E	F	G	H
LT-310	28.4	15.3	14	22.4	47.3	79.3	5	7
LT-311	35	15.3	14	23.3	47.3	79.3	5	7
LT-314	35	21.5	13.5	23	64.5	98.5	4.8	6.8
LT-315	35	20.1	13.5	23	63.1	97.1	4.8	6.8
LT-316	35	42.9	13.5	23	85.9	120	4.8	6.8
LT-370	38.4	12	13.5	23.2	55	89	4.8	6.8

unit:mm

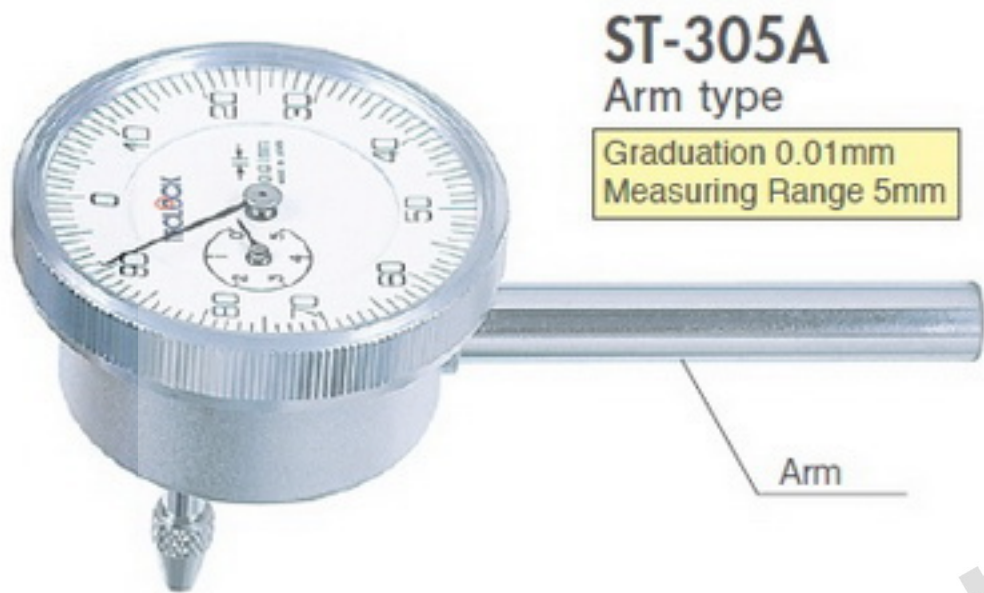
#### Specifications

Model	Graduation (mm)	Measuring Range (mm)	Dial Reading	Measuring Force	Repeatability (μm)	Adjacent Error (μm)	Accuracy on full range (μm)	Hysteresis (μm)	Standard Stylus	Weight (g)
LT-310	0.01	0.8	0-40-0	0.4 or less	3	5	8	3	ZS-700	50
LT-311	0.01	0.8	0-40-0	0.4 or less	3	5	8	3	ZS-700	60
LT-314	0.01	0.5	0-25-0	0.4 or less	3	5	5	3	ZS-701	70
LT-315	0.01	0.8	0-40-0	0.4 or less	3	5	8	3	ZS-702	70
LT-316	0.01	1.0	0-50-0	0.4 or less	3	5	10	4	ZS-704	70
LT-370	0.002	0.28	0-140-0	0.4 or less	1	2	3	2	ZS-713	75
LT-315PS	0.01	0.8	0-40-0	0.4 or less	3	5	8	3	ZS-703	70
LT-316PS	0.01	1.0	0-50-0	0.4 or less	3	5	10	4	ZS-705	70



# Back Plunger Dial Indicators

- These are different from general indicators, of which gradation plate can be set in parallel to measuring face. It is suitable for leveling smooth surface and reading from the front of measuring point.



**ST-305A**

Arm type

Graduation 0.01mm  
Measuring Range 5mm

Arm



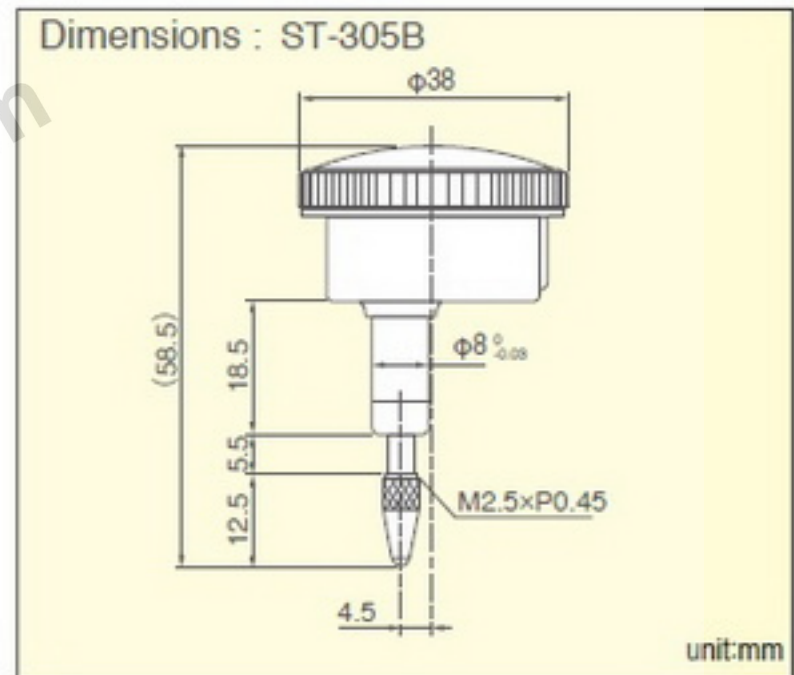
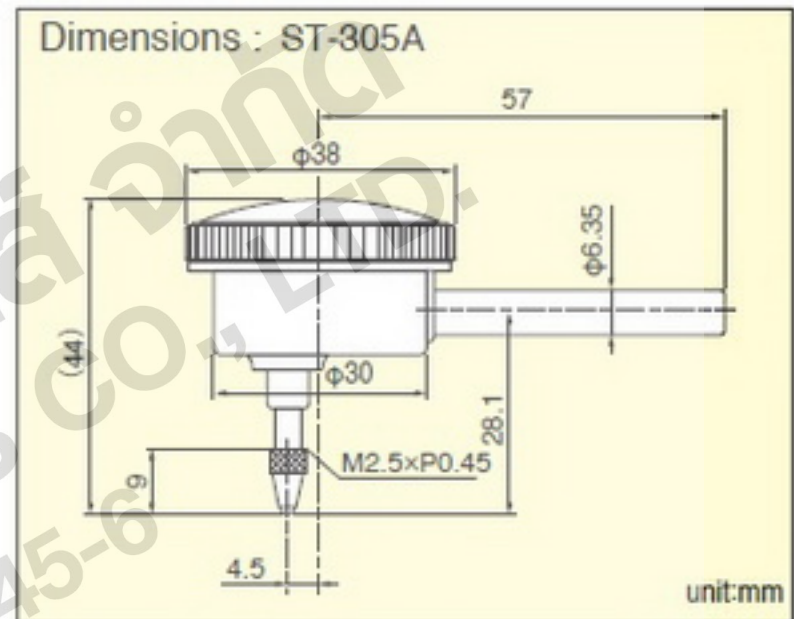
**ST-305B**

Stem type

Graduation 0.01mm  
Measuring Range 5mm



Displacement of can be read from above.



## Specifications

Model	Graduation (mm)	Measuring Range (mm)	Repeatability (μm)	Indication Error (μm)					Hysteresis (μm)	Measuring Force (N)	Weight (g)
				Adjacent Error	1/2 Revolution	1 Revolution	2 Revolution	Total Range			
ST-305A	0.01	5	5	10	±12	±15	±20	±20	6	1.4 or less	80
ST-305B	0.01	5	5	10	±12	±15	±20	±20	6	1.4 or less	80



# Small Dial Indicators

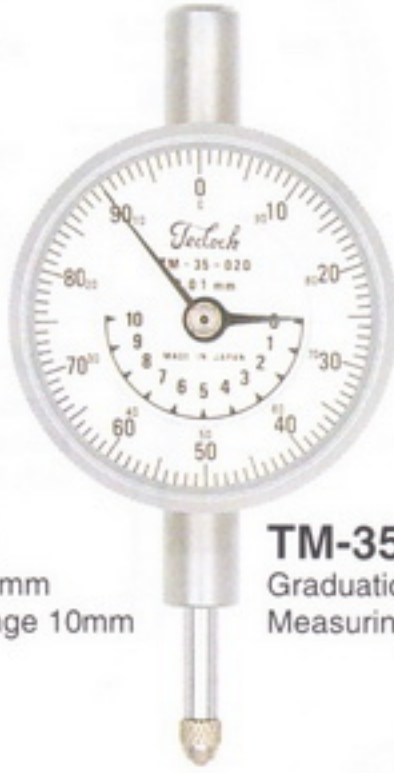
- Lifting lever can be mounted, excepting TM-34.
- Bezel clamp(Optional) can be mounted on TM-35, TM-35-01, TM-35-02D.
- Line-up of measuring range 3.5mm, 4mm, 5mm and 10mm.



**TM-35**  
Graduation 0.01mm  
Measuring Range 5mm



**TM-35-01**  
Graduation 0.1mm  
Measuring Range 10mm



**TM-35-02D**  
Graduation 0.01mm  
Measuring Range 10mm



**TM-34**  
Graduation 0.01mm  
Measuring Range 4mm



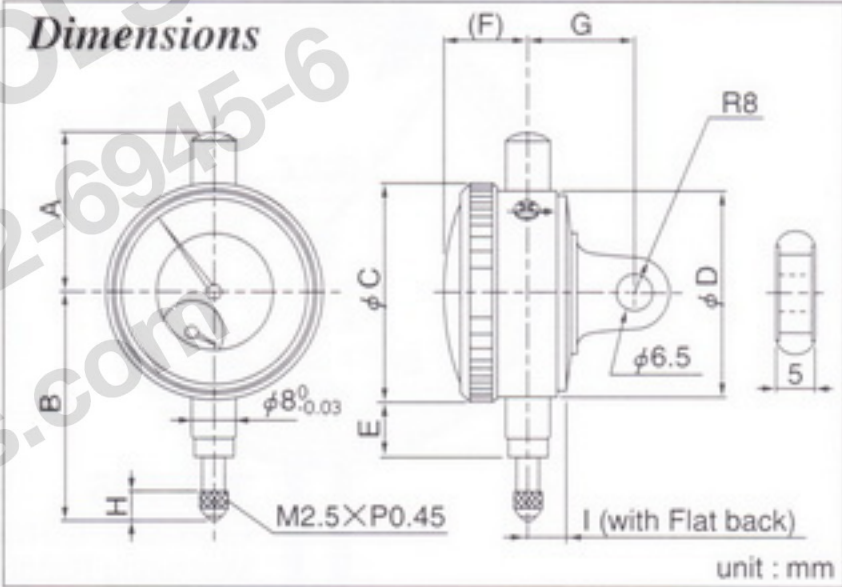
**TM-36**  
Graduation 0.005mm  
Measuring Range 3.5mm



**TM-37**  
Graduation 0.01mm  
Measuring Range 3.5mm



**TM-37C**  
Graduation 0.01mm  
Measuring Range 3.5mm  
Flat Back



**Dimension Table**

Model	A	B	C	D	E	F	G	H	I
TM-35	27.4	41.3	39	36.5	10	14.5	19	5	6.2
TM-35-01	32.5	46	39	36.5	10	14.5	19	5	6.2
TM-35-02D	32.5	46	39	36.5	10	16.5	19	5	6.2
TM-34	20	39.5	36	32	11.5	13	19	5	6.5
TM-36	33.5	50	47	44	13	15.5	19.7	7.5	7
TM-37	33.5	50	47	44	13	15.5	19.7	7.5	7
*TM-37C	33.5	50	47	44	13	15.5	19.7	7.5	7

\* Indicator is supplied with flat back.

unit : mm

## Specifications

Model	Graduation (mm)	Measuring Range (mm)	Repeatability (μm)	Indication Error(μm)			Hysteresis (μm)	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1 Revolution	Total Range				
TM-35	0.01	5	5	9	±13	±15	6	ZS-014	1.3 or less	70
TM-35-01	0.1	10	—	—	—	±50	—	ZS-014	1.5 or less	70
TM-35-02D	0.01	10	5	9	±13	±18	7	ZS-014	1.6 or less	75
TM-34	0.01	4	5	8	±11	±15	6	ZS-014	1.0 or less	60
TM-36	0.005	3.5	5	8	±10	±12	5	ZS-017	1.2 or less	115
TM-37	0.01	3.5	5	8	±10	±12	6	ZS-017	1.2 or less	115
TM-37C	0.01	3.5	5	8	±10	±12	6	ZS-017	1.2 or less	115

In case flat back is required, please add suffix "f" to the end of model name.





**TM-110-4A**  
With oil ejection  
holed bezel type

Graduation 0.01mm  
Measuring Range 10mm



**TM-110PW**  
Oil-Proof type

Graduation 0.01mm  
Measuring Range 10mm



**TM-110G**  
With stop hand

Graduation 0.01mm  
Measuring Range 10mm

Peak  
Retaining  
Function



**TM-110P**  
Direct reading  
graduation type

Graduation 0.01mm  
Measuring Range 10mm



**TM-105**  
Type suitable to  
Boregauge

Graduation 0.01mm  
Measuring Range 5mm



**TM-105W**  
Reversed type

Graduation 0.01mm  
Measuring Range 5mm



**TM-5106**  
Wide scale width type

Graduation 0.01mm  
Measuring Range 5mm

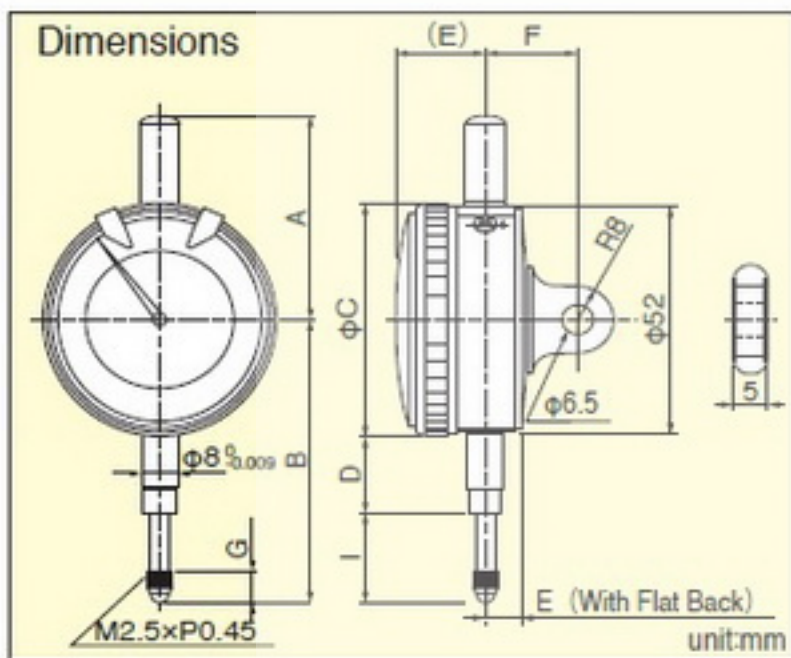
### 0.005mm Dial Indicators



**TM-5105**

Graduation 0.005mm  
Measuring Range 5mm





Dimension Table

Model	A	B	C	D	E	F	G	H	I
TM-110	48	65	55	18	15.5	20	7.5	7.8	19.5
TM-110R	48	65	55	18	15.5	20	7.5	7.8	19.5
TM-110D	48	65	55	18	17.6	20	7.5	7.8	19.5
TM-110-4A	48	65	55	18	15.5	20	7.5	7.8	19.5
TM-110PW	44.5	68.5	56	(17.5)	14.5	20	11	8.3	23.0
TM-110G	48	65	55	18	17.3	20	7.5	7.8	19.5
TM-110P	48	65	55	18	15.5	20	7.5	7.8	19.5
* TM-105	48	65	55	18	15.5	*	7.5	7.8	19.5
TM-105W	48	65	55	18	15.5	20	7.5	7.8	19.5
TM-5106	48	65	55	19	15.5	20	7.5	7.8	19.5
TM-5105	48	65	55	19	15.5	20	7.5	7.8	19.5

\*Indicator is supplied with Flat back.

unit:mm

## Specifications

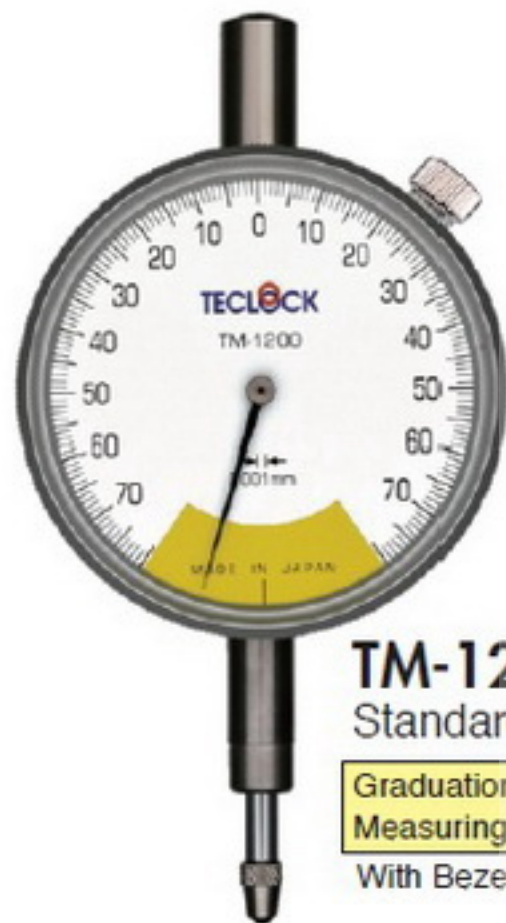
Model	Graduation (mm)	Measuring Range (mm)	Repeatability (μm)	Indication Error (μm)					Hysteresis (μm)	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1/2 Revolution	1 Revolution	2 Revolution	Total Range				
TM-110	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	1.4 or less	165
TM-110R	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	1.4 or less	165
TM-110D	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	1.4 or less	165
TM-110-4A	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	1.4 or less	165
TM-110PW	0.01	10	5	8	±9	±10	±15	±15	5	ZS-028	1.4 or less	165
TM-110G	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	2.0 or less	165
TM-110P	0.01	10	5	8	±9	±10	±15	±15	5	ZS-017	1.4 or less	145
TM-105	0.01	5	5	8	±9	±10	±12	±12	5	ZS-017	1.4 or less	145
TM-105W	0.01	5	5	8	±9	±10	±12	±12	5	ZS-017	1.4 or less	145
TM-5106	0.01	5	3	7	±8	±9	±10	±12	5	ZS-017	1.4 or less	145
TM-5105	0.005	5	3	7	±8	±9	±10	±12	5	ZS-017	1.4 or less	145

\*In case flat back is required, please add suffix "f" to the end of model number. (example=TM-1201f)



- These are indicators that are effective for comparative measurement with 0.0005mm, 0.001mm, and 0.01mm.
- High durability is realized with Teclock original and unique enlargement mechanism is built-in.
- Limiter is mounted as standard.

- Measuring ranges are subdivided to 0.08mm, 0.16mm, 0.2mm and 1.0mm.
- Clump is attached to 0.001mm model.
- Lifting lever (Option) can be mounted.
- In case that flat back is required, add suffix "f" to the end of model number (example =TM-1200 f).



**TM-1200**  
Standard type

Graduation 0.001mm  
Measuring Range 0.16mm  
With Bezel clamp



**TM-1210**  
Wide scale  
width type

Graduation 0.001mm  
Measuring Range 0.08mm  
With Bezel clamp



**TM-1211**  
Full range type

Graduation 0.001mm  
Measuring Range 0.2mm  
With Bezel clamp



**TM-102**  
Graduation of  
0.01mm type

Graduation 0.01mm  
Measuring Range 1.0mm  
Bezel clamp (Option)





### TM-98

Graduation of  
0.1mm type

Graduation 0.1mm  
Measuring Range 3.2mm

Bezel clamp (Option)



### TM-5210

Minimum graduation  
type

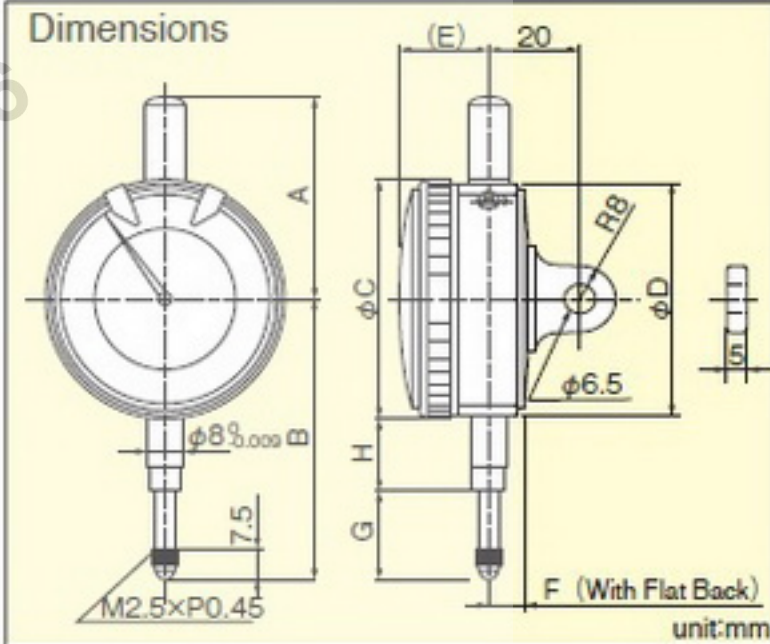
Graduation 0.0005mm  
Measuring Range 0.08mm

## Specifications

Model	Graduation (mm)	Measuring Range (Free Stroke) (mm)	Repeatability ( $\mu\text{m}$ )	Indication Error ( $\mu\text{m}$ )			Hysteresis ( $\mu\text{m}$ )	Standard Contact Point	Measuring Force (N)	Weight (g)
				Adjacent Error	1 Revolution	Total Range				
TM-1200	0.001	0.16 (3.5)	0.5	2.5	-	$\pm 5$	3	ZS-017	1.5 or less	170
TM-1210	0.001	0.08 (3.5)	0.8	2.5	-	$\pm 3.5$	3	ZS-017	1.5 or less	170
TM-1211	0.001	0.2 (3.5)	0.5	2.5	-	$\pm 5$	3	ZS-017	1.5 or less	170
TM-102	0.01	1 (5)	5	7	-	$\pm 10$	5	ZS-017	1.4 or less	145
TM-98	0.1	3.2 (6)	20	20	-	$\pm 40$	20	ZS-017	1.4 or less	145
TM-5210	0.0005	0.08 (3.5)	0.8	2.5	-	$\pm 2.5$	2.5	ZS-017	1.5 or less	170

\*In case flat back is required, please add suffix "F" to the end of model number.

## Dimensions



## Dimensions Table

Model	A	B	C	D	E	F	G	H
TM-1200	44.5	62	56	52.5	15	8	16	18
TM-1210	44.5	62	56	52.5	15	8	16	18
TM-1211	44.5	62	56	52.5	15	8	16	18
TM-102	48	65	55	52	15.8	8	19	18.5
TM-98	48	65	55	52	15.8	7.8	19	18.5
TM-5210	44.5	62	56	52.5	15	8	16	18

unit:mm