

Dial gauges – Electronic and Analogue



EASY-TO-USE AND VERSATILE

For more than 50 years we have been producing and distributing a wide range of easy-to-use and versatile dial gauges. Our experience allows us to offer a wide choice of different models.

- Electronic indicators with combined analogue/digital display using the most up-to-date technology.
- Mechanical dial gauges equipped with high-precision movements and double-action shockproof mechanisms. Measuring spans up to 100 mm.

CHOICE OF DIAL GAUGE OR ELECTRONIC INDICATOR

- Digital indication provides error-free reading of the measured value. There is no need to read fractions of scale divisions.
- Analogue indication offers the advantage of being able to smoothly adjust the increase or decrease of the dimension to be measured on the workpiece. This type of indication is best suited for dynamic measurements such as determining axial and radial runout errors.
- Electronic indicators provide many additional functions compared to the mechanical models. For more information, refer to the section on electronic indicators.
- The inspection of axial and radial runout errors frequently requires the use of instruments with the lowest hysteresis characteristic. Our electronic indicators, precision dial gauges and dial test indicators meet this requirement.
- In order to significantly reduce the effect of systematic errors, it is recommended to carry out comparative measurements. Only deviations from the nominal dimension will be displayed. High precision, small range electronic indicators are the ideal instruments for these types of measurements.
- These same instruments also enable avoiding major errors in reading millimetres.

STANDARDS AND DEFINITIONS

The international ISO 463:2006 standard replaces national standards dealing with mechanical dial gauges. All the same, new definitions and standard requirements pertaining to measuring procedures, although valid, imply changes in design and metrological characteristics, which cannot be entirely indicated in this catalogue. This standard, is defined in the matrix "Product Specification (GPS) – dimensional measuring instruments". It only defines the requirements for the most important characteristics.

Therefore, all tolerance limits indicated in this catalogue which refer to metrological characteristics are based on our own internal standards.

Electronic indicators and short range precision indicators. Definitions used in this section:



Total permissible error in 1 measuring direction over the entire measuring range within the partial measuring range

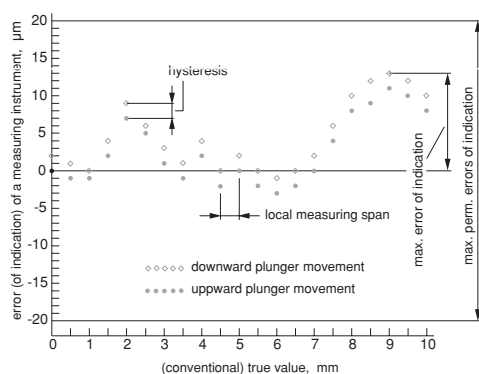
in the 2 measuring directions



Repeatability limit



Max. hysteresis



Mechanical dial gauges.

Definitions used in this section for the maximum permissible errors of a metrological characteristic (MPE):



Deviation span (error of indication within the measuring range)

Deviation span (error of indication) within the partial measuring range

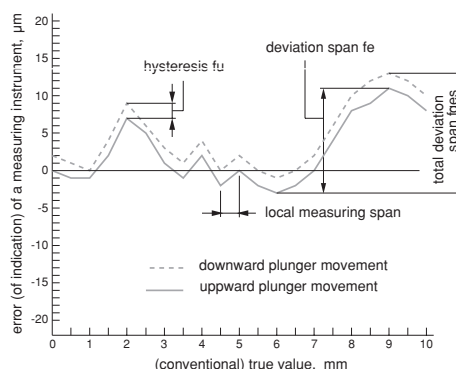
Total deviation span (error of indication within the measuring range)



Repeatability limit (reliability) of indication



Hysteresis of indication



 Resolution 0,01 mm = $\pm 0,25$ mm
Resolution to 0,001 mm = $\pm 0,025$ mm

 6-decade LC display field, plus minus sign

 Digit size 10 x 5 mm (H x L)

 Combined analogue and numerical display

 Glass scale with incremental divisions, capacitive

 MI or MIE type: metric/inch conversion

 ≤ 2 N

 ≤ 2 m/s

 Full-metal housing with front face in polyamide. Stainless steel plunger. M2,5 mounting thread for measuring insert.

 RS232, opto-coupled

 3V lithium battery type CR2032

 1 year to 2 years

 EN 50081-1
EN 50082-1

 150 g

 Transport case with 1 lithium battery 01961000

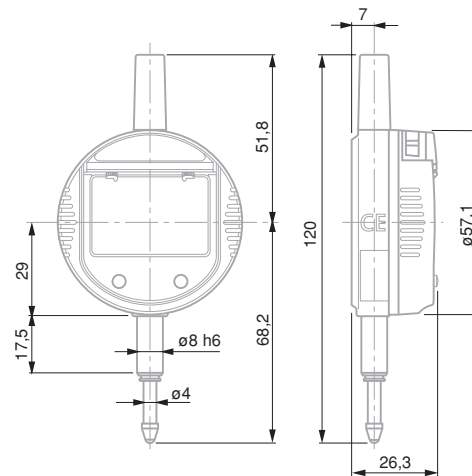
 Inspection report with declaration of conformity

TESA DIGICO 205 / 305

- Dual LC Display, digital and analogue.
- Mechanical tolerance markers.
- Dimensions according to DIN 878.

Main functions

ON/Auto OFF – Data output – Counting sense reversal – Keypad lock.



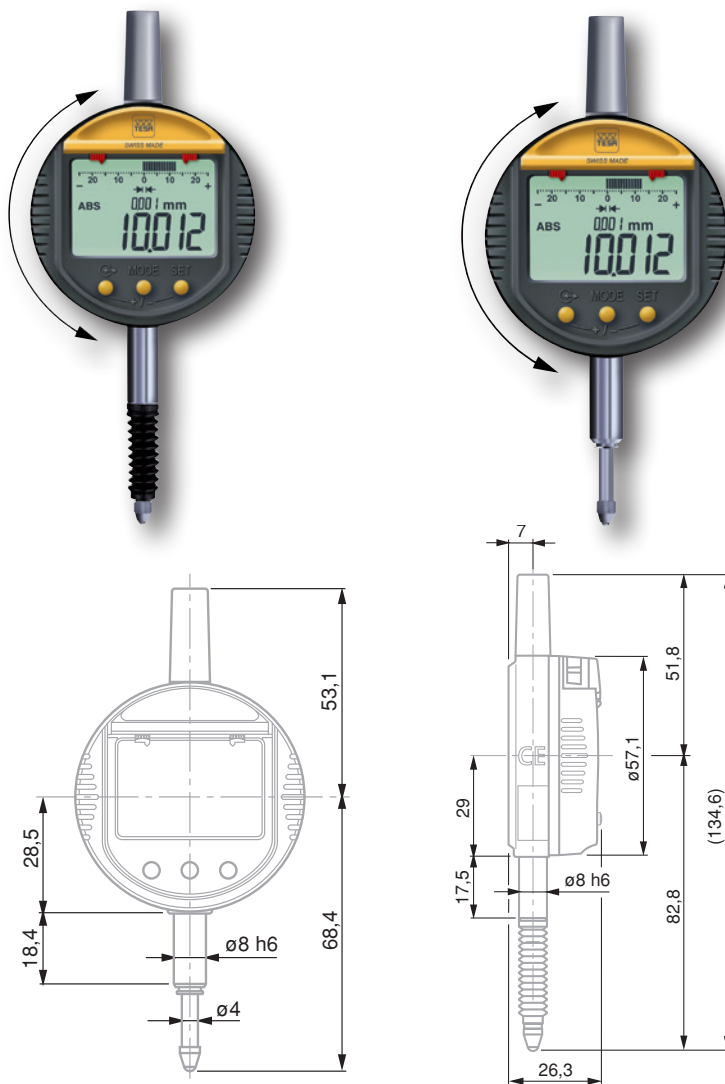
No	=						
01930230	DIGICO 205 MI	12,5	0.5	0,01	0.0005	20	10
01930231	DIGICO 305 MI	12,5	0.5	0,001	0.00005	8	2

TESA DIGICO 400 / 500

- Measuring modes ABS/REL.
- Dual LC Display, digital and analogue
- Rotation through 270° of display and key functions.
- Mechanical tolerance marks.
- Graphical display of tolerance limits.

Measuring functions and modes

ON – Auto OFF – PRESET mode – Tolerance mode – Data output – Counting sense reversal – Keypad lock – Metric/Inch units – Full RESET.



- Resolution 0,01 mm
= ±0,25 mm Resolution
0,001 mm =
± 0,025 mm
- 6-decade LC display
field plus minus sign
- Digit size 10 x 5
(H x L)
- Combined analogue
and numerical
display
- Glass scale with in-
cremental divisions,
capacitive
- Conversion mm/in
- Measuring force:
< 2 N
- ≤ 2 m/s
- Full-metal housing,
front face in
polyamide. Stainless
steel plunger,
M2,5 mounting
thread for mea-
suring insert.
- RS232,
opto-coupled
- 3V lithium battery,
type CR2032
- 1 year to 2 years
- EN 50081-1
EN 50082-1
- Shipping case in-
cluding one lithium
battery 01961000
- Inspection report
with declaration of
conformity

No	=								
01930240	DIGICO 405 MI	12,5	0.5	0,01	0.0005	20	10	–	150
01930241	DIGICO 410 MI	25	1	0,01	0.0005	20	10	–	162
01930250	DIGICO 505 MI	12,5	0.5	0,001	0.00005	4	2	–	150
01930255	DIGICO 505 MIP, protected	12,5	0.5	0,001	0.00005	4	2	IP62	150

 Resolution 0,01 mm
= ± 0,25 mm Resolution
0,001 mm =
± 0,025 mm

 6-decade LC display
field plus minus sign

 Digit size 10 x 5 mm
(H x L)

 Combined analogue
and numerical
display

 Glass scale with in-
cremental divisions,
capacitive

 Conversion mm/in

 Measuring force:
< 2 N

 ≤ 2 m/s

 Full-metal housing
with front face in
polyamide. Stainless
steel plunger.
M2,5 mounting
thread for mea-
suring insert.

 RS232,
opto-coupled

 3V lithium battery,
type CR2032

 1 year to 2 years

 EN 50081-1
EN 50082-1

 Transport case with
1 lithium battery
01961000

 Inspection report
with declaration of
conformity

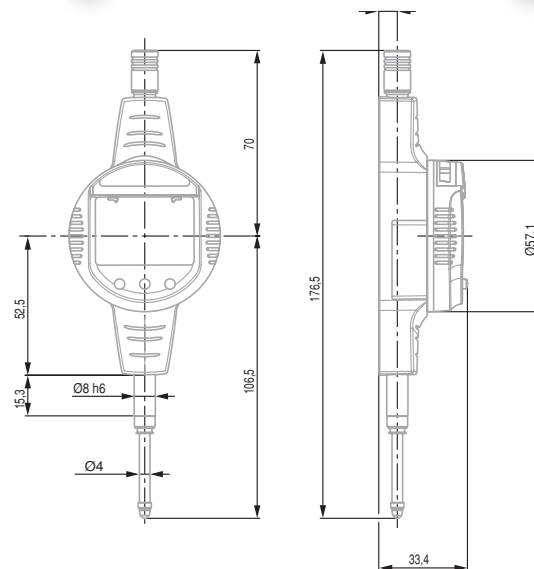
TESA DIGICO 600

- Measuring modes ABS/REL.
- Dual LC Display.
- Display rotation through 270°. Same goes for the key functions.
- Mechanical tolerance marks.
- Graphical display of tolerance limits.

Measuring functions and modes

ON – Auto OFF – PRESET mode – Tolerance mode – Measured value storage

- Max • Min • Max-Min (TIR) – Data output – Counting sense reversal – Keypad lock – Metric/Inch units – Full RESET.



No	=							
01930256	DIGICO 605 MI	12,5	0.5	0,001	0.00005	4	2	150
01930257	DIGICO 610 MI	25	1	0,001	0.00005	5	2	162

TESA DIGICO 705

For use with 2-point contact bore gauges. Allows setting of the dial gauge to the smallest setting ring value.

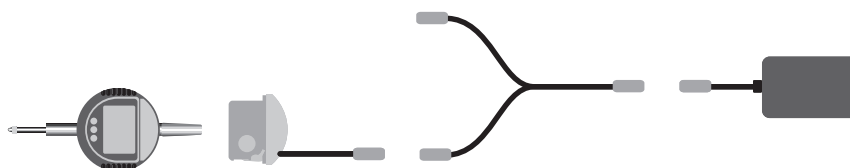
- Same functions as DIGICO 600.



- Resolution to 0,01 mm = $\pm 0,25$ mm
Resolution 0,001 mm = $\pm 0,025$ mm
- 6-decade LC display field, plus minus sign
- Digit size 10 x 5 mm (H x L)
- Combined analogue and numerical display
- Glass scale with incremental divisions, capacitive
- Conversion mm/in
- Measuring force < 2 N
- ≤ 2 m/s
- Full-metal housing with front face in polyamide. Stainless steel plunger, M2,5 mounting thread for the measuring insert.
- RS232, opto-coupled
- 3V lithium battery, type CR2032
- 1 to 2 years
- EN 50081-1 EN 50082-1
- Transport case with 1 lithium battery 01961000
- Inspection report with declaration of conformity

No	=							
01930258	DIGICO 705 MI	12,5	0.5	0,001	0.00005	4	2	150

Accessories for TESA DIGICO 200 – 700



No	=
01962002	External power supply
01961000	Lithium battery, 3V, CR2032
04761054	Battery charger 100 ÷ 200 VAC / 50 ÷ 60 Hz, 6,6 Vdc, 750 mAh supplied without power cable
04761055	Cable EU for charger 0471054
04761056	Power cable US for charger 0471054

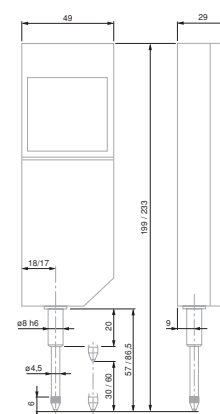
- Measuring inserts, see chapter "Measuring inserts for dial gauges, axial probes and other hand tools".
- Backs and retraction devices, see chapter "Devices for plunger retraction" and "Backs for Dial Gauges".
- Connectivity, see corresponding chapter.

-  According to selected tolerances
-  30,4 mm (DIGICO 1) or 60,4 mm (DIGICO 2)
-  40 mm scale length
-  According to selected tolerances
-  6 decades plus minus sign
-  9 x 4,5 mm digit size (H x W)
-  LC display with backlight, with 25 divisions
-  Incremental glass scale
-  Metric/inch conversion
-  DIGICO 1: 2 µm
DIGICO 2: 3 µm
-  1 µm
-  1 µm
-  DIGICO 1: max. 1 m/s
DIGICO 2: max. 2 m/s
-  Plunger guided on a plain bearing M2,5 mounting thread for measuring insert.
-  RS232
-  3,6 V lithium battery or mains adaptor
-  ≈ 1000 h with lithium battery
-  0,002%/°C
-  DIGICO case in standard execution: IP54 (IEC 60529)
-  290 g (DIGICO 1)
310 g (DIGICO 2)
-  Moved mass through the plunger:
28 g (DIGICO 1)
27 g (DIGICO 2)
-  Supplied in transport packing with 1 lithium battery
-  01960007
-  1 lift lever 01960005
-  Inspection report with a declaration of conformity

TESA DIGICO 1 / 2

These two indicators are remarkable for their multiple simple functions, long measuring travel and high accuracy.

- Analogue/digital display combined with the possibility of orienting the analogue display in different positions.
- Zero setting at any point within the measuring span.
- Data input via the keypad.
- Counting direction reversible.
- Entry of limit values for classification through displayed symbols. Additional green, red or amber coloured background whenever the instrument is connected to mains.
- Storage of measured values through the functions: "Maximum value", "Minimum value" or "Maximum value minus minimum value".



No	=				
01930000	DIGICO 1	30	1.18	0,001	0.00005
01930001	DIGICO 2	60	3.36	0,001	0.00005
OPTIONAL ACCESSORIES:					
04761037	Mains adaptor 230V for DIGICO 1 or 2				
04761057	Mains adaptor 110V for DIGICO 1 or 2				
01960007	3.5 V lithium battery, LR6, AA				
01960005	Bottom mounted lift lever				
04768000	Hand switch for manually triggering data transfer.				
	Jack plug connector, 1,8 m				
	– TESA SPC PRINTER printer				
	– TESATRONIC TT display units				

Force de mesure

		
Measuring force* close to measuring plunger stop		
– Bottom	0.85 N ± 0.15 N	0.90 N ± 0.20 N
– Top	1.10 N ± 0.20 N	1.45 N ± 0.25 N
Hysteresis*	0.10 N	0.15 N

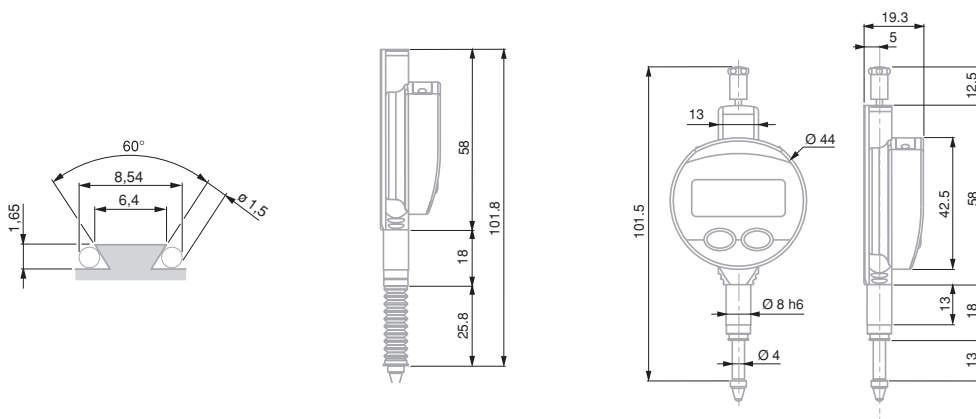
* Valid with indicator in vertical position, measuring plunger oriented downwards and in static measurement.

TESA DIGICO 12

Designed to operate in a rugged environment, resistant to spray of liquids (IP65)
– 44 mm dial diameter – Provides the advantages of mechanical precision with digital reading

TESA DIGICO 12 – Standard

- 44 mm dial casing diameter.
- Resistant against cutting oils and coolants (IP65).
- RS232 SIMPLEX data output combined with external power supply.
- Inductive measuring system, patented.
- Choice between absolute "ABS" and relative "REL" measuring modes.
- Digital display.
- Setting of PRESET value (± 130 mm).
- Inverse measuring direction.
- Direct conversion of metric/inch units.
- Automatic shutdown.



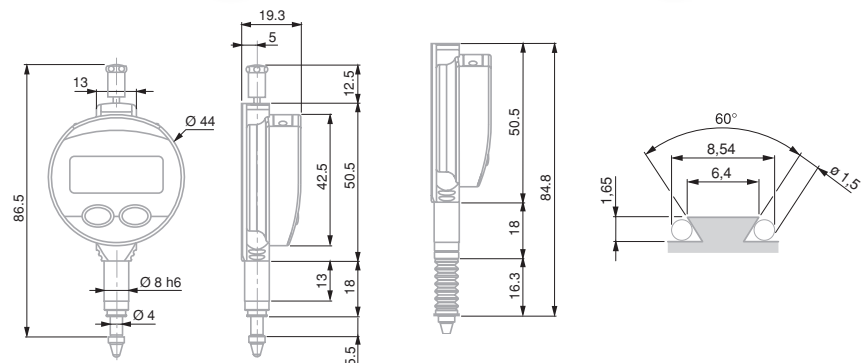
No						
	mm	in	mm	in	Protection bellows	
01930130	12,5	0.5	0,01	0.0005		IP65
01930132	12,5	0.5	0,001	0.00005		IP65
01930131	12,5	0.5	0,01	0.0005	With	IP65
01930133	12,5	0.5	0,001	0.00005	With	IP65

-  5-digit LC display + sign
-  Digit height 6 mm
-  20 µm
-  Repeatability: 5 µm
-  0,5 to 0,9 (± 0,15) N
-  Max. 2 m/sec
-  Number of measurements per second: 7
-  Zero setting of display
-  RS232
-  3 V lithium battery, type CR 3032
-  Battery life > 3500 hours
-  Working temperature range: 5°C to 40°C
-  Protection level: IP65 (CEI 629)
-  EN 61326-1
-  70 g
-  Supplied in transport packing with 1 lithium battery, type CR 2032 (No 01961000)
-  Inspection report with a declaration of conformity

-  LCD, 5 digits + sign
-  Digit height: 6 mm
-  Max. permissible error: 4 µm
-  Repeatability limit: 2 µm
-  0,4 to 0,75 (± 0,15) N
-  Max. 2 m/sec
-  Number of measurements per second: 9
-  Zero-setting of display
-  RS232
-  3 V lithium battery, type CR 2032
-  Battery life: > 4000 hours
-  Working temperature range: 5°C to 40°C
-  IP65 (CEI 529)
-  EN 61326-1
-  70 g
-  Supplied in transport packing with 1 lithium battery, type CR 2032 (No 01961000)
-  Inspection report with a declaration of conformity

TESA DIGICO 12 – HP

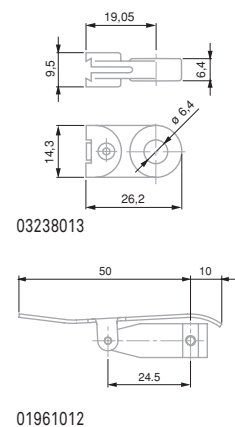
- High precision measuring system.
- Resistant to cutting oils and coolants (IP65).
- Combined analogue/digital display.
- Analogue reading from ±0.025 to ±1.25 mm.
- NOR/MIN/MAX/MAX-MIN measuring modes.
- 44 mm dial casing diameter.
- RS 232 data output combined with external power supply.
- Inductive measuring system, patented.
- Zero-setting of display.
- Direct conversion of metric/inch units.
- Shut down: either automatic or blocked.



No					Protection bellows	
01930134	5	0.210	0,001	0.00005		IP65
01930135	5	0.210	0,001	0.00005	With	IP65

Accessories for TESA DIGICO 12

No	=
03238013	Mounting lug
01961012	Upper lift lever
01960005	Bottom mounted lift lever
04761060	RS 232 cable with external power supply
01961000	Lithium battery, 3V, CR2032



ETALON HP

High precision comparators

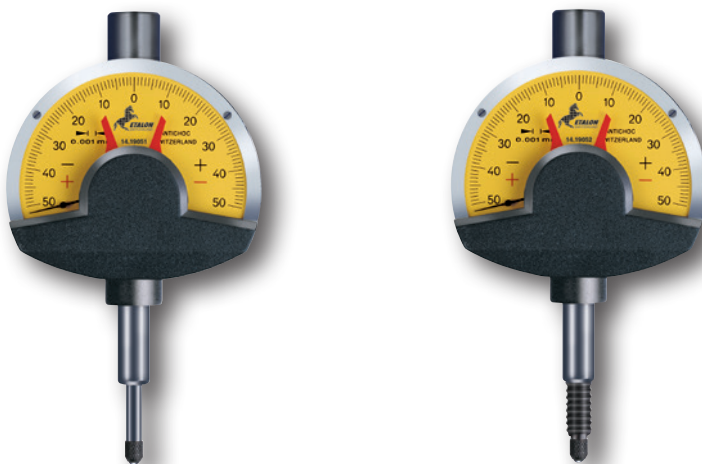
ETALON with short measuring travel

The ultimate in high precision.

Remarkably reliable, even when constantly used for series inspection – Specially designed for comparative measurements requiring a very low measurement uncertainty – Measures axial and radial runouts with very low hysteresis.

- Shockproof movement. Lever and gear transmission system. Long dead travel.
- Non-reflecting dial for easy readout.
- Measuring travel limited to less than one revolution of pointer. No possibility of reading errors.
- Fine adjustment with protective knob to prevent accidental displacement of the pointer.

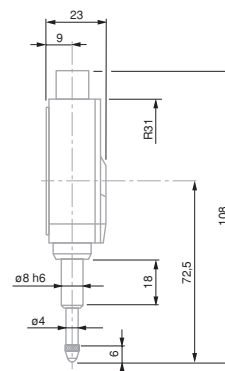
-  DIN 879-1 Dimensions according to EN ISO 463
-  Full-metal dial casing. Stainless steel plunger, hardened.
-  ≈ 1 N
-  Measuring plunger on ball-bearings
-  Adjustable tolerance markers. Coupling thread for retraction cable. M2,5 thread for measuring insert
-  1 measuring insert already mounted, steel ball tip Ø 3.175 mm. 1 retraction cable.



							
01419051	No	mm	mm	mm	50 ÷ 0 ÷ 50	62	–
01419052	No	mm	mm	mm	50 ÷ 0 ÷ 50	62	IP54

Accuracy

	0,001 mm
	1 µm
over any selected local range including 10 scale divisions, G _t	0,7 µm
in both measuring directions throughout the total measuring range, G _{ges}	1,2 µm
	0,5 µm
	0,5 µm



-  EN ISO 463
Factory standard
-  Rotating dial. With
or without dial lock
for standard models
-  Full-metal dial
casing. Mounting
shank and plunger
in hardened
stainless steel
-  With or without
shockproof
mechanism
-  Adjustable tolerance
markers. Thread
M2,5 for measuring
insert
-  Measuring insert
with 3 mm dia. ball
tip already mounted
-  Inspection report
with a declaration of
conformity

DIAL GAUGES – PREMIUM QUALITY

The TOP quality of our dial gauges guarantee the use of the best and most wear-resistant materials in order to ensure that the most demanding metrological criteria are respected along with a product life that exceeds all other dial gauges

Dial Ø 40 mm – Reading 0,01 mm

Precision dial gauges

These precision dial gauges combine excellent metrological properties with extra-long life.

- Smooth and regular travel, entirely jewel-mounted movement.
- Full-metal dial casing and bezel.
- Shockproof mechanism in both directions of plunger movement.
- Non-reflecting dial.



01410210

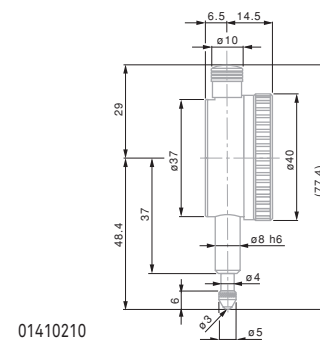
353

353E

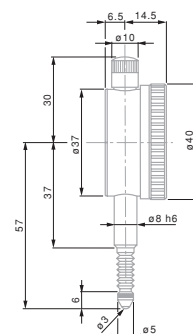
No	=								
01410210	TESA YR	5	5,4	0,01	0,5	0 ÷ 25 ÷ 50	●	●	
01416013	MERCER X185-1	5	5,4	0,01	0,5	0 ÷ 25 ÷ 0	–	●	
01416014	MERCER 186-1	5	5,4	0,01	0,5	0 ÷ 25 ÷ 50	–	●	
01412010	TESA YE	5	5,4	0,01	0,5	0 ÷ 25 ÷ 50	–	–	
353	COMPAC 353	5	5,4	0,01	0,5	0 ÷ 25 ÷ 50	●	–	
353E	COMPAC 353E IP54	5	5,4	0,01	0,5	0 ÷ 25 ÷ 50	●		IP54

Permissible limits of a metrological characteristic (MPE/MPL)

		0,01 mm
	Deviation span	12 µm
	Deviation span within partial measuring span 0,10 mm	6 µm
	Total deviation span	14 µm
	Repeatability limit	3 µm
	Max. hysteresis	3 µm
	Measuring force	= 1,4 N
	– IP54 model	= 2 N



01410210



353E



Dial Ø 57 and 58 mm – Reading 0,01 mm

Precision dial gauges



01410610



512K

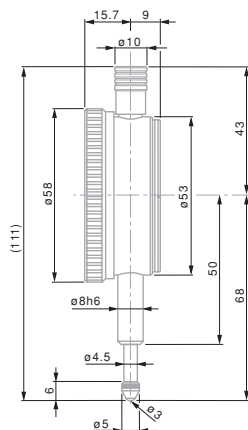


532E

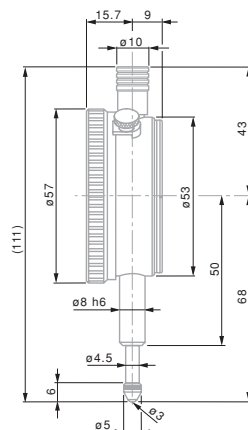


01416021

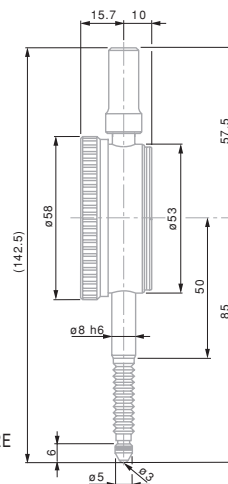
No	=								
		mm	mm	mm	mm				
01410610	TESA YR	10	10,5	0,01	1	0 ÷ 50 ÷ 100	●	●	
01410611	TESA YR	10	10,5	0,01	1	0 ÷ 50 ÷ 0	●	●	
01412310	TESA YE	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	–	
01416021	MERCER 251-1	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	●	
512K	COMPAC 512K	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	–	
532	COMPAC 532	10	10,5	0,01	1	0 ÷ 50 ÷ 100	●	–	
532E	COMPAC 532E IP54	10	10,5	0,01	1	0 ÷ 50 ÷ 100	●	–	IP54
533S	COMPAC 533S limited travel	± 0.5	4	0,01	1,27	50 ÷ 0 ÷ 50	●	–	



512K



01410610 - 01410611



532E

Permissible limits of a metrological characteristic (MPE/MPL)

		
	± 0,5	10 mm
 Deviation span	7 µm	15 µm
Deviation span within the selected local measuring span 0.10 mm	5 µm	8 µm
Total deviation span	9 µm	17 µm
 Repeatability limit	3 µm	3 µm
 Max. hysteresis	3 µm	3 µm
 Measuring force	≤ 1 N	≤ 1,5 N
– Models IP54	–	≤ 2,2 N

-  EN ISO 463
Factory standard
-  Rotating dial. With or without dial lock for standard models
-  Full-metal dial casing. Mounting shank and plunger in hardened stainless steel
-  With or without anti-shock mechanism
-  Adjustable tolerance markers. Thread M2,5 for measuring insert
-  Measuring insert with Ø 3 mm ball tip already mounted
-  Inspection report with declaration of conformity


 EN ISO 463
Factory standard


 Rotating dial. With
or without dial lock.


 Full-metal dial
casing. Mounting
shank and plunger
in hardened stain-
less steel


 Adjustable tolerance
markers. Thread
M2,5 for measuring
insert


 Measuring insert
with 3 mm ball tip
already mounted

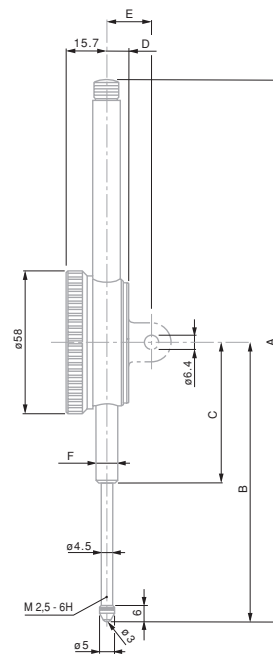

 Inspection report
with declaration of
conformity

Dial Ø 58 mm – Reading 0,01 mm – Long travel

Long range precision dial gauges



712



No	=								
		mm	mm	mm	mm				
712	COMPAC 712	30	30,5	0,01	1	0 ÷ 50 ÷ 100	●	–	58
722	COMPAC 722	50	50,5	0,01	1	0 ÷ 50 ÷ 100	●	–	58
732	COMPAC 732	100	100,5	0,01	1	0 ÷ 50 ÷ 100	●	–	58

Dimensions

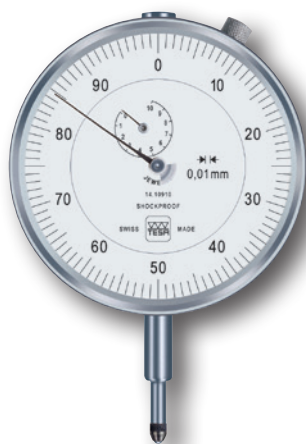
			
mm	30 mm	50 mm	100 mm
A	148	228	390
B	88	117,2	211,6
C	50	60	103,6
D	10	9	9
E	20	19	19
F	Ø 8h6	Ø 8h6	Ø 8h6

Permissible limits of a metrological characteristic (MPE/MPL)

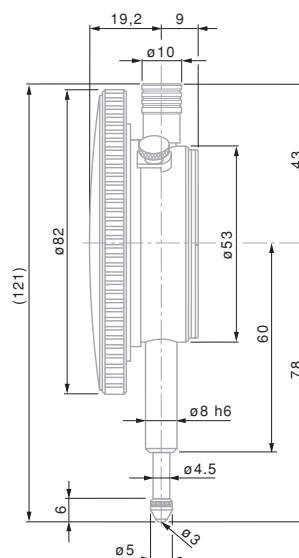
			
	30 mm	50 mm	100 mm
 Deviation span	20 µm	25 µm	30 µm
 Total deviation span	25 µm	30 µm	35 µm
 Repeatability limit	3 µm	3 µm	3 µm
 Max. hysteresis	5 µm	5 µm	8 µm
 Measuring force	≤ 2,2 N	≤ 2,5 N	≤ 3,2 N

Dial Ø 82 mm – Reading 0,01 mm

Precision dial gauges



01410910



01410910

- EN ISO 463
Factory Standard
- Rotating dial. With
ot without dial lock
- Full-metal dial cas-
ing. Stainless steel
fixing shank and
plunger, hardened
- High performance
shock-proof system
in the 2 directions
- M2,5 thread for
measuring insert
- Measuring insert
with Ø 3 mm ball tip,
already mounted
- Inspection report
with declaration of
conformity

01410910	10	10,5	0,01	0,1	0 ÷ 50 ÷ 100	•	•

Permissible limits of a metrological characteristic (MPE/MPL)

	10 mm
	Deviation span
	15 µm
	Deviation span within partial measuring span of 0,10 mm
	8 µm
	Total deviation span
	17 µm
	Repeatability limit
	3 µm
	Max. hysteresis
	3 µm
	Measuring force
	≤ 1,4 N


 EN ISO 463
Factory standard


 Rotating dial


 Full-metal casing.
Fixing shank and
plunger in hardened
stainless steel


 Adjustable tolerance
markers. Thread
M2,5 for measuring
insert


 Measuring insert
with Ø 3 mm ball tip
already mounted


 Inspection report
with declaration of
conformity

Dial Ø 40 mm – Reading 0,002 mm

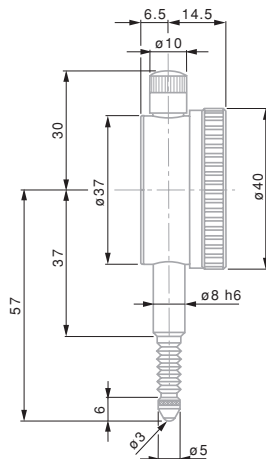
Precision dial gauges



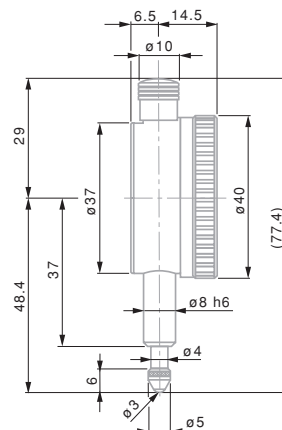
355E



365S



355E



365S

										
355		mm	mm	mm	mm	0 ÷ 10 ÷ 20	●	–	40	
355E		3	3,3	0,002	0,2	0 ÷ 10 ÷ 20	●	–	40	IP 54
365S		±0,08	1,5	0,002	0,2	8 ÷ 0 ÷ 8	●	–	40	

Permissible limits of a metrological characteristic (MPE/MPL)

		
	±0,08 mm	3 mm
 Deviation span	2 µm	10 µm
Deviation span within the selected local measuring span 0,10 mm	2 µm	6 µm
Total deviation span	4 µm	12 µm
 Repeatability limit	1 µm	1,5 µm
 Max. hysteresis	1 µm	2 µm
 Measuring force – Model IP54	≤ 1,4 N –	≤ 1,4 N ≤ 1,7 N

Dial Ø 58 mm – Reading 0,002 mm

Precision dial gauges



01416034



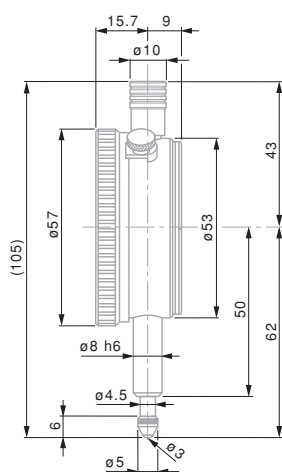
555



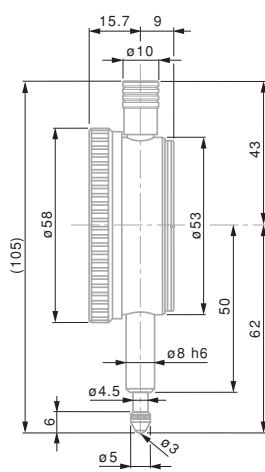
565S



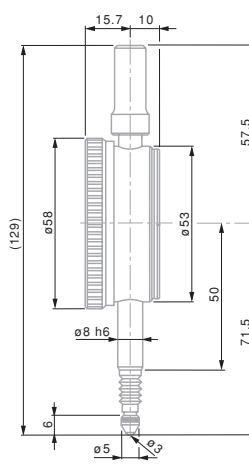
555E



01416034



555



555E

- EN ISO 463
Factory standard
- Rotating dial. With
or without dial lock.
- Full-metal dial
casing. Mounting
shank and plunger
in hardened stain-
less steel
- Adjustable tolerance
markers. Thread
M2,5 for measuring
insert
- Measuring insert
with 3 mm ball tip
already mounted
- Inspection report
with declaration of
conformity

No	=									
01416034	MERCER 253-1	5	5,3	0,002	0,2	0 ÷ 10 ÷ 0	–	●	58	–
555	COMPAC 555	5	5,3	0,002	0,2	0 ÷ 10 ÷ 20	●	–	58	–
555E	COMPAC 555E IP54	5	5,3	0,002	0,2	0 ÷ 10 ÷ 20	●	–	58	IP 54
565S	COMPAC 565S limited travel	±0,08	3,3	0,002	0,2	8 ÷ 0 ÷ 8	●	–	58	–

Permissible limits of a metrological characteristic (MPE/MPL)

	±0,08 mm	5 mm
Deviation span	4 µm	12 µm
Total deviation span	4 µm	14 µm
Repeatability limit	1 µm	2 µm
Max. hysteresis	1 µm	2 µm
Measuring force – Model IP54	≤ 1,5 N –	≤ 1,5 N ≤ 1,7 N


 EN ISO 463
Factory standard


 Cardboard box


 Full-metal dial casing. Mounting shank and plunger in hardened stainless steel


 With shock-proof mechanism, in both directions


 Adjustable tolerance markers. Thread M2,5 for measuring insert


 Measuring insert with 3 mm steel ball tip already mounted


 Inspection report with declaration of conformity

Dial Ø 40 mm – Reading 0,001 mm

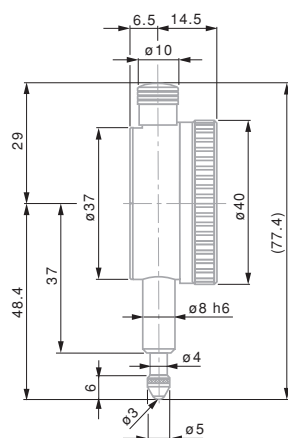
Precision dial gauges



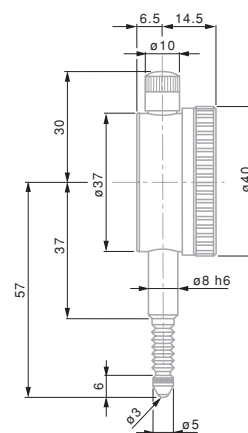
01410010



01410120



01410010



01410120

No	=											
01410010	TESA YR	1	1,5	0,001	0,1	40	0 ÷ 50 ÷ 100	●	●	40	–	–
01412510	TESA YE	1	1,5	0,001	0,1	40	0 ÷ 50 ÷ 100	●	–	40	–	–
01410120	TESA YR IP54	1	1,5	0,001	0,1	40	0 ÷ 50 ÷ 100	●	–	40	IP 54	–
367	COMPAC 367	1	1,5	0,001	0,1	40	0 ÷ 5 ÷ 10	●	–	40	–	–
367E	COMPAC 367E IP54	1	1,5	0,001	0,1	40	0 ÷ 5 ÷ 10	●	–	40	IP 54	–

Permissible limits of a metrological characteristic (MPE/MPL)

	
	1 mm
	Deviation span
	4 µm
	Deviation span within the selected local measuring span 0,10 mm
	4 µm
	Total deviation span
	5 µm
	Repeatability limit
	1 µm
	Max. hysteresis
	1 µm
	Measuring force
	≤ 1,7 N
	– Model IP54
	≤ 2 N

Dial Ø 58 mm – Reading 0,001 mm

Precision dial gauges



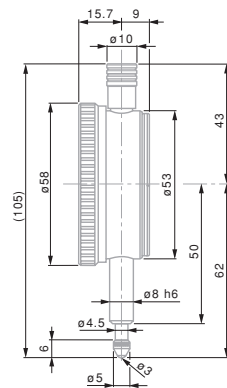
01412511



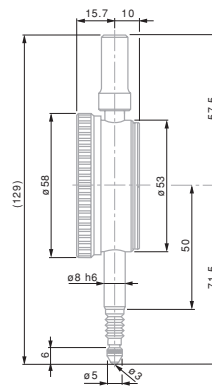
556



01412611



567



556E

-  EN ISO 463
Factory standard
-  Rotating dial
-  Full-metal dial casing. Mounting shank and plunger in hardened stainless steel
-  Effective anti-shock in the 2 directions
-  Adjustable tolerance markers. Thread M2,5 for measuring insert
-  Measuring insert with 3 mm Ø ball tip, already mounted
-  Inspection report with declaration of conformity

No	=										
		mm	mm	mm	mm						
01412511	TESA YE	1	1,5	0,001	0,1	58	0 ÷ 50 ÷ 100	●	–		
01412611	TESA YE	5	5,3	0,001	0,2	58	0 ÷ 100 ÷ 200	●	–		
556	COMPAC 556	5	5,3	0,001	0,2	58	0 ÷ 10 ÷ 20	●	–		
567	COMPAC 567	1	3,3	0,001	0,1	58	0 ÷ 5 ÷ 10	●	–		
556E	COMPAC 556E IP54	5	5,3	0,001	0,2	58	0 ÷ 10 ÷ 20	●	–		IP54
01412711	TESA YE IP54	1	1,5	0,001	0,1	58	0 ÷ 50 ÷ 100	●	–		IP54
01410520	TESA YR IP54	1	3,3	0,001	0,1	58	0 ÷ 50 ÷ 100	●	–		IP54

Permissible limits of a metrological characteristic (MPE/MPL)

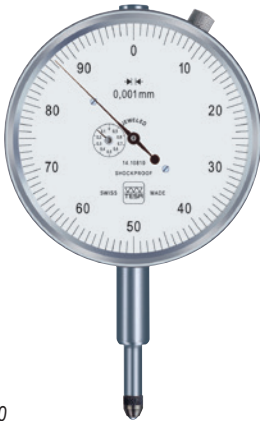
		
	1 mm	5 mm
 Deviation span	4 µm	12 µm
Deviation span within the selected local measuring span 0,10 mm	4 µm	–
Total deviation span	5 µm	14 µm
 Repeatability limit	1 µm	2 µm
 Max. hysteresis	1 µm	2 µm
 Measuring force – Models IP54	≤ 1,7 N –	≤ 1,5 N ≤ 1,7 N

-  EN ISO 463
Factory standard
-  Rotating dial. With
or without dial lock.
-  Full-metal dial ca-
sing. Stainless steel
fixing shank and
plunger, hardened
-  High performance
anti-shock system
in both directions
-  M2,5 thread for
measuring inserts
-  Measuring insert
with Ø 3 mm ball
tip, already mounted
-  Inspection report
with a declaration of
conformity

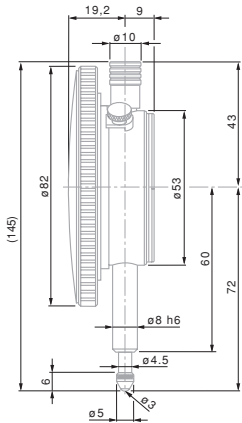
Dial Ø 82 mm – Reading 0,001 mm
Precision dial gauges



556G



01410810



01410810

											
01410810	TESA YR	1	3,3	0,001	0,1	0 ÷ 50 ÷ 100	●	●	●	●	82
556G	COMPAC 556G	5	5,3	0,001	0,2	0 ÷ 10 ÷ 20	●	●	●	●	82

Permissible limits in a metrological characteristic (MPE/MPL)

			
	1 mm	5 mm	
	Deviation span	4 µm	12 µm
	Deviation span within partial measuring span of 0,10 mm	4 µm	–
	Total deviation span	5 µm	14 µm
	Repeatability limit	1 µm	2 µm
	Max. hysteresis	1 µm	2 µm
	Measuring force	≤ 1,7 N	≤ 1,5 N

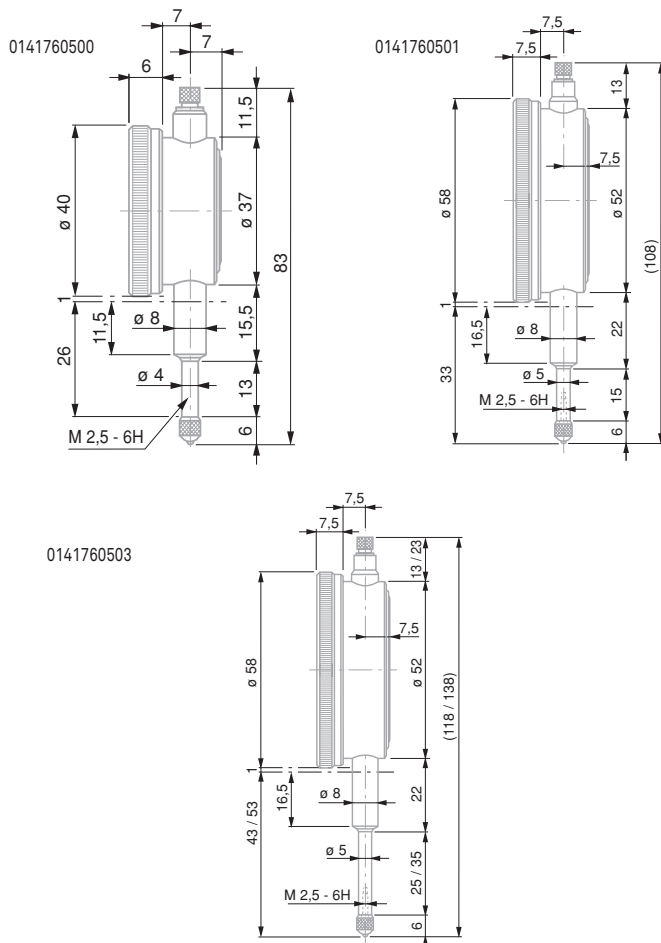


STANDARD DIAL GAUGES

The Standard product line offers a range of heavy duty and competitively priced dial gauges.

Dial Ø 40 / 58 – Reading 0,1 mm

Precision dial gauges



0141760500
0141760501

0141760503



-  EN ISO 463
Factory standard
-  Rotating dial
-  Full-metal casing.
Mounting shank and
plunger in hardened
stainless steel
-  Without anti-shock
mechanism
-  Thread M2,5 for
measuring insert
-  Measuring insert
with 3,175 mm
Ø ball tip already
mounted

No								
0141760500	10	10,5	0,1	10	0 ÷ 5 ÷ 10	–	≤ 1,0	40
0141760501	10	10,5	0,1	10	0 ÷ 5 ÷ 10	–	≤ 1,0	58
0141760503	30	30,5	0,1	10	0 ÷ 5 ÷ 10	–	≤ 1,5	58

Permissible limits of a metrological characteristic (MPE/MPL)

	
	0,1 mm
 Deviation span	40 µm
Deviation span within partial measuring span of 0.1 mm	25 µm
Total deviation error	55 µm
 Repeatability limit	15 µm
 Max. hysteresis	15 µm


 EN ISO 463
Factory standard


 Rotating dial


 Full-metal casing.
Mounting shank and
plunger in hardened
stainless steel


 With or without an-
ti-shock mechanism


 Adjustable tolerance
markers. Thread
M2,5 for measuring
insert


 Measuring insert
with 3,175 mm
Ø ball tip already
mounted


 Inspection report
with declaration of
conformity

Dial Ø 40 mm – Reading 0,01 mm

Precision dial gauges

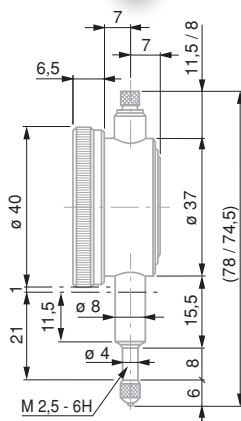
Model 0141760560 provides excellent value for money.



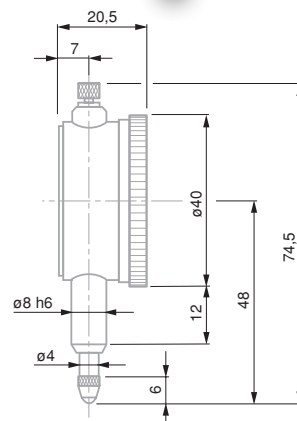
0141760560



01419047



0141760560



01419047

No	*	=						
0141760560 *	ROCH		3	3,4	0,01	0,5	0 ÷ 25 ÷ 50	–
01419047	ETALON		5	–	0,01	0,5	0 ÷ 25 ÷ 50	●

* With extra reverse numbering in red

Permissible limits of a metrological characteristic (MPE/MPL)

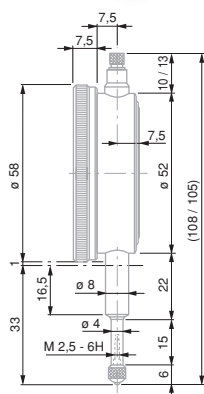
		
	3 mm	5 mm
 Deviation span	10 µm	12 µm
Deviation span within the selected partial measuring span of 0,1 mm	5 µm	6 µm
Total deviation span	12 µm	–
 Repeatability limit	3 µm	3 µm
 Max.hysteresis	3 µm	–
 Measuring force	≤ 1,4 N	≈ 1

Dial Ø 58 mm – Reading 0,01 mm – Long travel

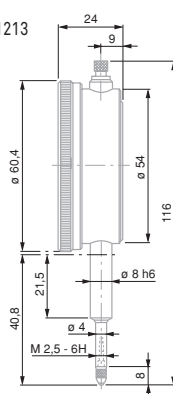
Long travel precision dial gauges



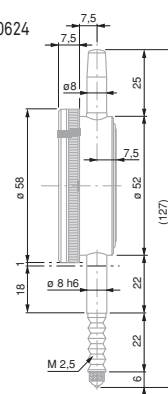
0141760631
0141760635
0141760636



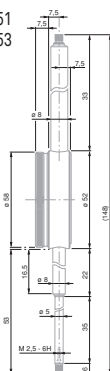
0141761213



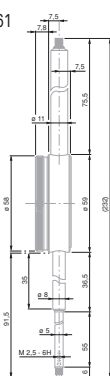
0141760624



0141760651
0141760653



0141760661



No									
			mm	mm	mm	mm		N	
0141760631 *	ROCH	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	≤ 1,4	
0141760635 *	ROCH	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	≤ 1,4	
0141760636 **	ROCH	10	10,5	0,01	1	0 ÷ 50 ÷ 100	–	≤ 1,4	
0141761213 ***	ROCH	15	15,5	0,01	1	0 ÷ 50 ÷ 100	●	≤ 1,6	
0141760651	ROCH	30	30,5	0,01	1	0 ÷ 50 ÷ 100	–	≤ 1,6	
0141760653	ROCH	30	30,5	0,01	1	0 ÷ 50 ÷ 100	●	≤ 2,2	
0141760624 *	ROCH IP54	10	10,5	0,01	1	0 ÷ 50 ÷ 100	●	≤ 2	IP54
0141760661	ROCH	50	51	0,01	1	0 ÷ 50 ÷ 100	–	≤ 2,2	

* With extra reverse numbering in red

** With mounted central lug back (see page F-29)

*** Dial Ø 60,4 mm

Permissible limits of a metrological characteristic (MPC/MPE)

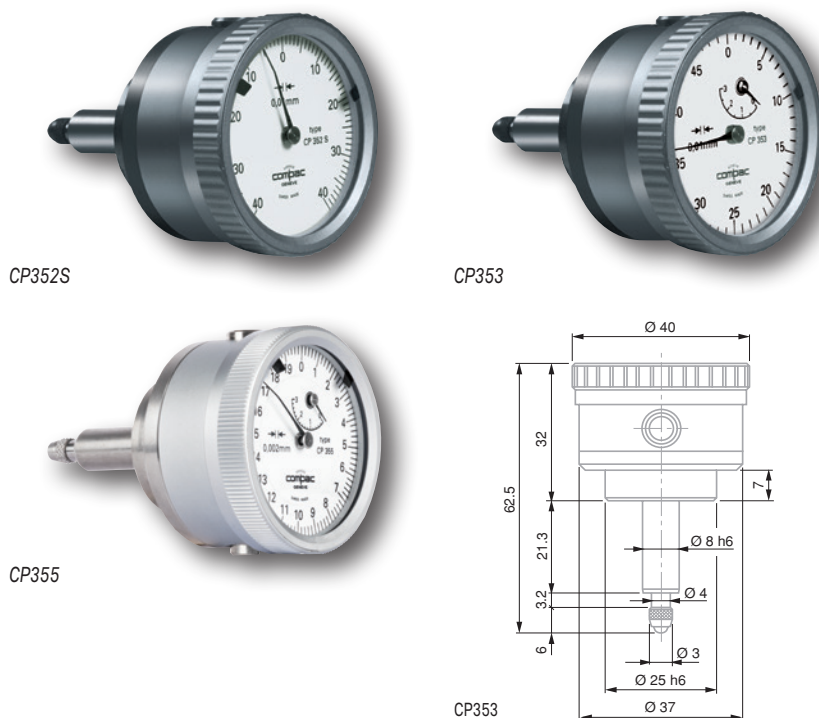
		10 mm	15 mm	30 mm	50 mm
Deviation span		15 µm	20 µm	20 µm	25 µm
Deviation span within the selected local measuring span 0,10 mm		5 µm	5 µm	5 µm	5 µm
Repeatability limit		3 µm	3 µm	3 µm	3 µm

- EN ISO 463
Factory standard
- Rotating dial
- Full-metal casing.
Mounting shank and
plunger in hardened
stainless steel
- With or without an-
ti-shock mechanism
- Adjustable tolerance
markers. Thread M2,5
for measuring insert
- Accuracy: see table
for max. deviations.
If measurements are
carried out with a
downward plunger,
the same must
be mechanically
coupled to the
measuring point
to eliminate all
hysteresis
- Measuring insert
with Ø 3,175 mm
steel ball tip,
already mounted.
Exceptions:
Model numbers
0141760631 /
0141761213 with
ruby ball tips.

DIAL GAUGES – ANALOGUE WITH BACK MOUNTED PLUNGER

Mechanical dial gauges with back mounted plungers differentiate by their concept of presenting a display which is perpendicular to the movement of the measuring stem.

Dial Ø 40 mm – Reading 0,01 or 0,002 mm



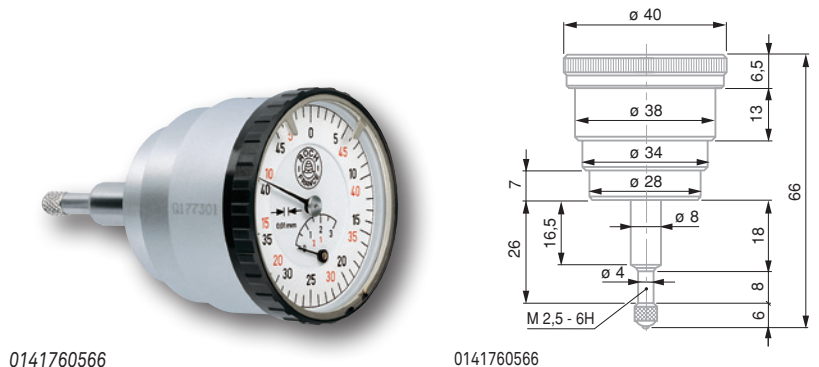
- EN ISO 463 Factory standard
- Rotating dial
- Full-metal casing. Mounting shank and plunger in hardened stainless steel
- With anti-shock mechanism
- Adjustable tolerance markers. Thread M2,5 for measuring insert. Fastening with sleeve Ø 8h6 and 25h6
- Measuring insert with Ø 3 mm steel ball tip, already mounted
- Inspection report with declaration of conformity

No	=									
		mm	mm	mm	µm	µm	µm	mm		N
CP 353	COMPAC CP353	3	3,2	0,01	14	3	3	0,5	0 ÷ 25 ÷ 50	0,9
CP 355	COMPAC CP355	3	3,2	0,002	14	2	2,5	0,2	0 ÷ 10 ÷ 20	0,9
CP 352S	COMPAC CP352S with limited travel	± 0,4	3,2	0,01	9	3	3	(1)	40 ÷ 0 ÷ 40	0,9

S: Limited range of indication, restricted reading.

The needle makes less than one revolution of the dial, all reading errors due to revolution counter are eliminated.

Dial Ø 40 mm – Reading 0,01 mm



- EN ISO 463 Factory standard
- Rotating dial
- Full-metal casing. Mounting shank and plunger in hardened stainless steel
- Adjustable tolerance markers. Thread M2,5 for measuring insert.
- Measuring insert with Ø 3,175 mm steel ball tip, already mounted

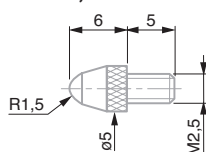
No	=									
		mm	mm	mm	µm	µm	µm	mm		N
0141760566	ROCH	3	3,5	0,01	15	5	15	0,5	0 ÷ 25 ÷ 50	≤ 1,2

With extra reverse numbering in red

INSERTS FOR DIAL GAUGES, AXIAL PROBES, ETC. – EXECUTION WITH M2,5 THREAD

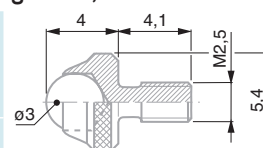
Spherical measuring inserts, standard.

	
03510001	Steel
03510002	Carbide
03560001	Sapphire



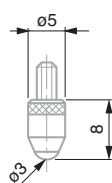
Spherical measuring insert, short

	
03560007	Carbide

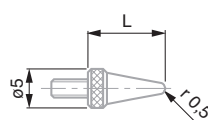


Spherical measuring inserts, long

	
03560019	Steel
03560020	Carbide
03560021	Ruby

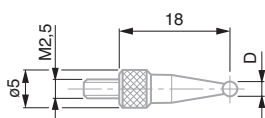


Spherical measuring inserts, R = 0,5 mm.



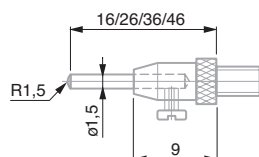
			L mm
03560035	Steel		5
03560036	Steel		10
03560037	Steel		15
03560038	Steel		20
03560039	Steel		30
03560040	Steel		40

Spherical measuring inserts



			D, mm
03560051	Carbide		1
03560052	Carbide		2
03560053	Carbide		3
03560054	Carbide		4
03560055	Carbide		5
03560056	Carbide		6
03560057	Carbide		7
03560058	Carbide		8

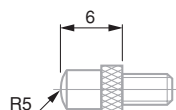
Spherical measuring insert with 4 interchangeable pins, R = 1,5 mm



			L, mm
03510201	Steel		16, 26, 36, 46

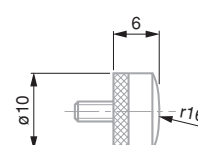
Spherical measuring inserts

	
03510101	Steel
03510102	Carbide

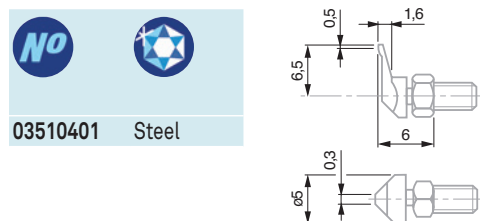


Spherical measuring inserts

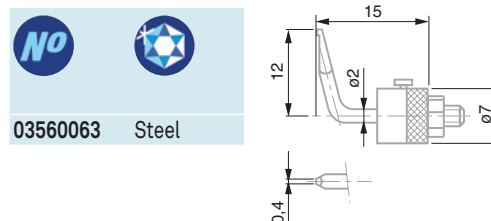
	
03560017	Steel
03560018	Carbide



Measuring insert with offset (A)
Pointed measuring face
Lock nut for radial alignment.



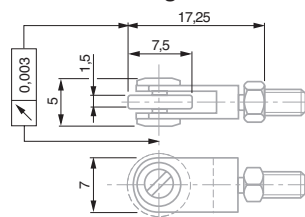
Measuring insert with offset (A)
Pointed measuring face
Lock nut for radial alignment.



Measuring insert with needle contact point

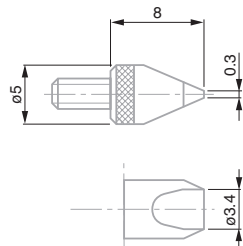


Measuring inserts with ball-bearing rollers
Lock nut for radial alignment



No	Shape	
03560010	Cylindrical	Steel
03560011	Domed	Steel

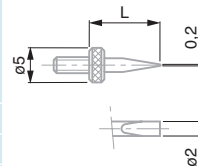
Inserts with a knife blade measuring face
Lock nut for radial alignment



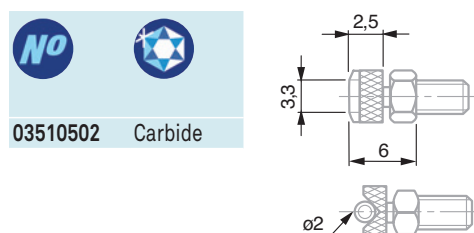
No	
03560024	Steel
03560025	Carbide

Inserts with a knife blade steel face
Lock nut for radial alignment

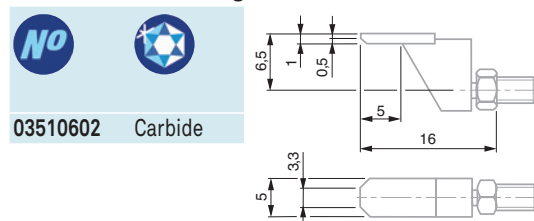
No	L, mm
03560031	5
03560032	10
03560033	15
03560034	20



Insert with a cylindrical measuring face
Lock nut for radial alignment



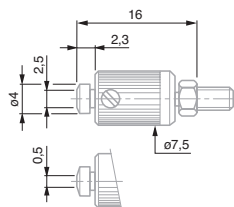
Insert with a narrow, off-centre measuring face
Lock nut for radial alignment



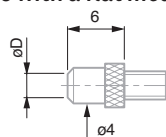
Insert with a narrow measuring face
Parallelism adjustable
Lock nut for radial alignment



03510702 Carbide



Inserts with a flat measuring face.

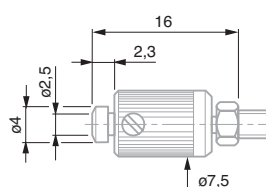


No		
03510801	2,5	Steel
03510802	2,5	Carbide
03560022	3,4	Steel
03560023	3,4	Carbide

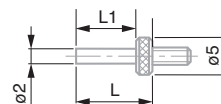
Insert with a flat measuring face
Parallelism adjustable
Counter-nut for radial alignment



03510902 Métal dur



Inserts with a flat measuring face, in steel

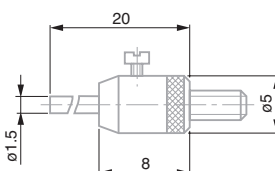


No	L, mm	L1, mm
03560026	5	2,8
03560027	10	7,8
03560028	15	12,8
03560029	20	17,8

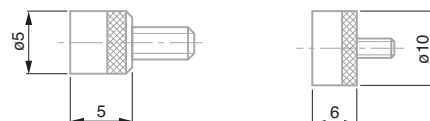
Inserts with interchangeable pins
Flat measuring face



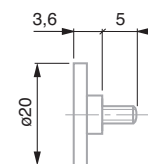
03560008 Steel
03560009 Carbide



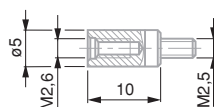
Inserts with flat measuring face



No		
03560012	5	Steel
03560013	5	Carbide
03560014	10	Steel
03560015	10	Carbide
03560016	20	Steel



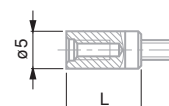
Connectors for measuring inserts



No	Outside	Inside
03560092	M2,5	M2
03560065	M3	M2,5

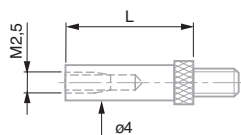
Extensions for measuring inserts

No	L, mm
03560042	10
03560043	15
03560044	20
03560045	25
03560046	30
03560047	35
03560048	40
03560049	45
03560050	50



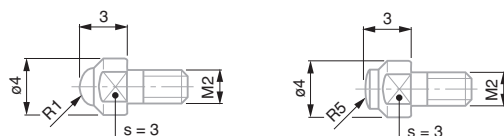
Extensions for measuring inserts.

No	L, mm
03540501	10
03540502	15
03540503	20
03540504	40



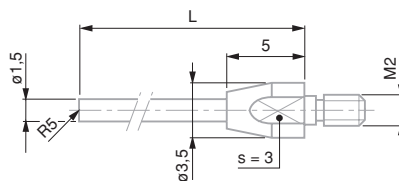
– EXECUTIONS WITH A M2 COUPLING THREAD

Spherical measuring inserts, M2 thread



No	mm	
03510204	R 1	Carbide
03510103	R 5	Carbide

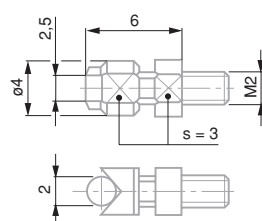
Spherical measuring inserts, R = 5 mm, M2 thread



No	L, mm
03510202	16
03510203	26

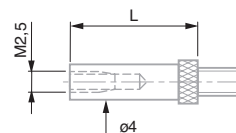
Measuring insert with cylindrical measuring face. Lock nut for radial alignment, M2 thread

No	Carbide
03510503	



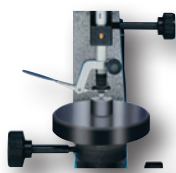
Extensions for measuring inserts, M2

No	L, mm
03540505	10
03540506	15



ADDITIONAL ACCESSORIES FOR DIAL GAUGES

Device for plunger retraction for mounting on the bottom stem



No



Consisting of:

03540104 - 03540101: Lever
- 03540102: Washer



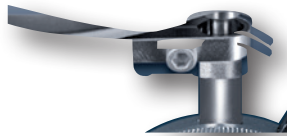
Retraction lever Bottom mounted lift lever

No



01960005 Bottom mounted lift lever Contains only lifting lever

Device for plunger retraction for mounting on the top stem



No



mm

03560004 Ø 40
03560005 Ø 58



90° angle probe. For the transmission of movements of the measuring plunger. Max. travel up to 10 mm. For dial gauges of 0,01 mm

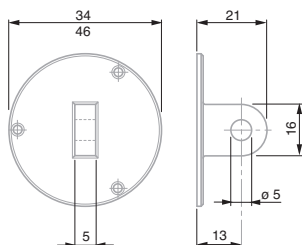
No



03560006 90° angular probe 03560012; Insert with flat measuring face, Ø 5 mm

 Matt chrome plated except for tinted model numbers 01460010, 01460011

Backs for ROCH and ETALON Dial Gauges



No



Bezel diameter, mm

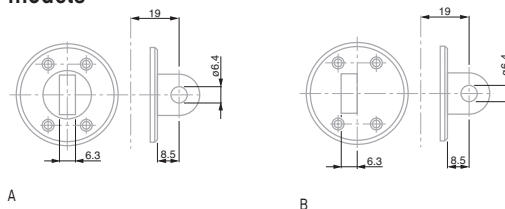


Back, mm



01462004 40 34 Back with central lug
01462005 58, 60, 80 46 Back with central lug

Backs for dial gauges TESA YR – YE / MERCER / COMPAC / DIGICO 200-700 – Ø 40 mm dial models



No



01460008 A – Back with central lug
01460009 B – Back with offset lug

 Dull chrome-plated except for model numbers 01460016, 01460017.

Backs for dial gauges TESA YR – YE / MERCER / COMPAC / DIGICO 200-700 – Ø 58 and 82mm dial models

No



01460014 C – Back with central lug
01460015 D – Back with offset lug

