

Straightness, Angle and Inclination Measurement



LEVELS BASED ON A NATURAL REFERENCE

Irrespective of their type, all precision levels are based on long-time stabilisation and reliability, but also on a free measuring base – the centre of the earth. Due to the gravitation, the liquid with embedded bubble of gas or the gravity pendulum indicates the horizontal or vertical level based on this natural reference. Electronic inclinometers or spirit levels measure the position of the pendulum compared to the measuring faces fitted on the tool body.

From these perfect conditions, each level offers a wide number of possibilities for accurately measuring to the nearest degree.

The measuring faces lying horizontally and vertically enable any deviation of the geometrical elements being measured on the workpiece to be detected.

These deviations often result from straightness or flatness errors, but also from position errors like those from parallelism or squareness.

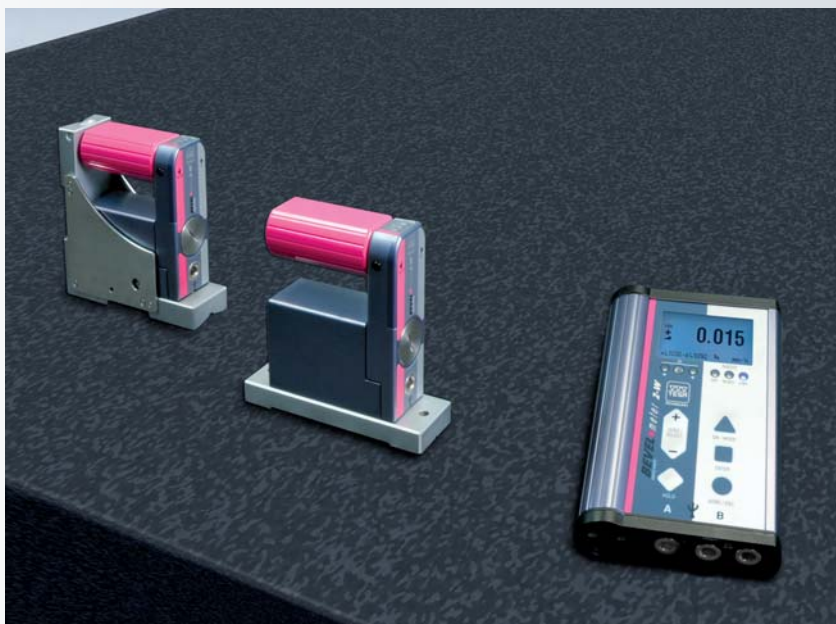
Value reading may vary, depending on the used level-type. Typical value outputs are:

- inclination in mm/m or in/10 in
- radian in mrad
- decimal angle, e.g. 12.37°
- sexagesimal angle in degrees (°), minutes (') and seconds (") – e.g. 15° 30' 45"



Calibration of a try square using ETALON RA.

Electronic dual-function clinometer that uses the difference mode for establishing flatness errors of a granite plate (example).





DIN 874 T2
NF E 11-104

Hardened steel to
≥ 650 HV 10

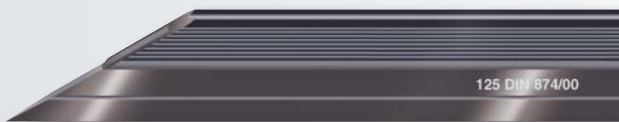
Models with length
up to 200 mm in a
plastic bag.
Models from 300 mm in a
wooden case.

Declaration
of conformity

ROCH Bevelled Straight Edges

Provided with 1 bevelled edge – Also with Heat insulating handle.

		
0951750002	75	2
0951750003	100	2
0951750004	125	3
0951750005	150	3
0951750006	200	3
0951750007	300	3
0951750008	400	4
0951750009	500	4
0951750010	600	5
0951750011	750	5



Factory
standard

Stainless steel
to 200 HRB
(not tempered)
or ≥ 550 HV 30 (tempered)

Accuracy class
0 or 1

Suited
carrying case

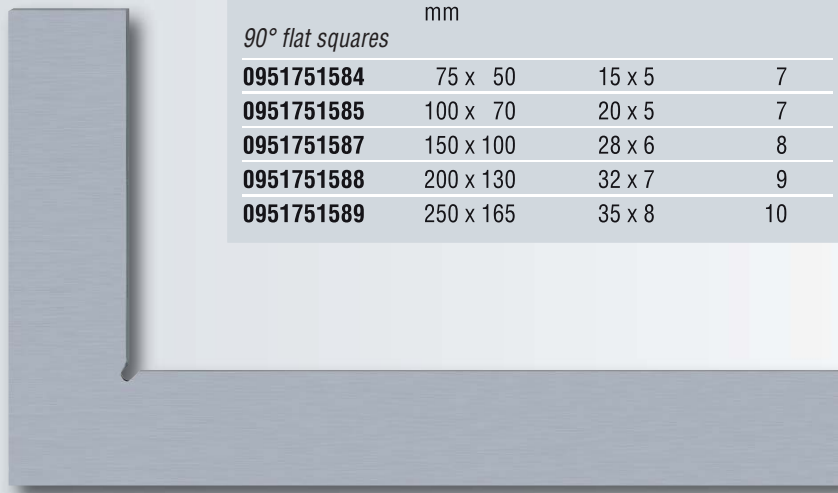
Declaration
of conformity

ROCH Flat and Try Squares

Made from stainless steel

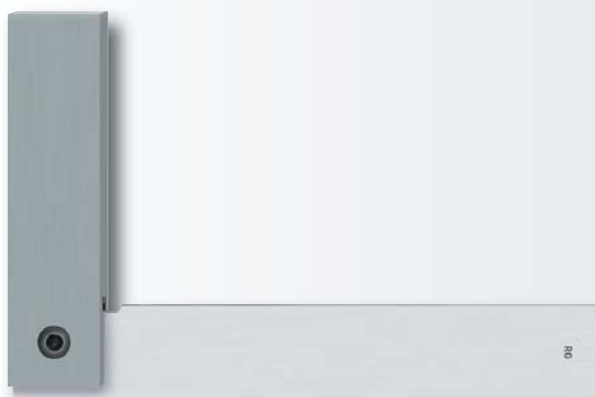
Accuracy class 0, not tempered

			
<i>90° flat squares</i>			
0951751584	75 x 50	15 x 5	7
0951751585	100 x 70	20 x 5	7
0951751587	150 x 100	28 x 6	8
0951751588	200 x 130	32 x 7	9
0951751589	250 x 165	35 x 8	10



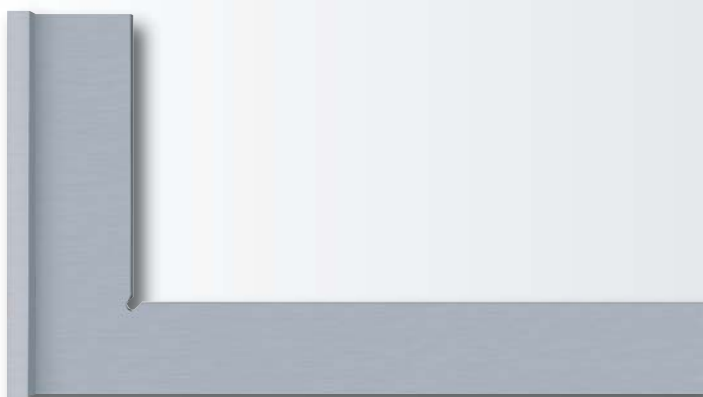
Accuracy class 0, tempered

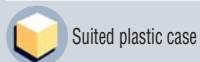
						
		Length of beams mm	Flat squares section of beams mm	Try squares section long beam mm	short beam mm	µm
<i>90° flat squares</i>	<i>90° try squares</i>					
0951751523	0951751543	50 x 40	15 x 4	16 x 2	14 x 10	7
0951751524	0951751544	75 x 50	15 x 4	18 x 2	14 x 10	7
0951751525	0951751545	100 x 70	20 x 5	18 x 2	16 x 10	7
0951751527	0951751547	150 x 100	30 x 6	22 x 2	20 x 12	8
0951751528	0951751548	200 x 130	30 x 7	26 x 3	24 x 14	9
0951751530	0951751550	300 x 200	40 x 8	32 x 3	30 x 18	11



Accuracy class 1, not tempered

				
90° flat squares	90° try squares	Length of beams mm	Section mm	µm
0951751564	0951751604	75 x 50	15 x 5	14
0951751565	0951751605	100 x 70	20 x 5	15
0951751567	0951751607	150 x 100	28 x 6	18
0951751568	0951751608	200 x 130	32 x 7	20
0951751569	0951751609	250 x 165	35 x 8	23
0951751570	0951751610	300 x 200	40 x 8	25
0951751572	0951751612	500 x 330	50 x 10	35
0951751574	0951751614	750 x 500	60 x 12	43
0951751575	0951751615	1000 x 660	70 x 14	60





Brown & Sharpe Try Square Set



06739001

Brown & Sharpe Try Square Set

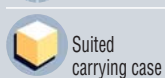
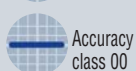


mm

µm

Consisting of:

1 Try square	68 x 45	16
1 Try square	120 x 70	16
1 Try square	175 x 95	16



ROCH Bevelled Edge Squares

Made from stainless steel, hardened



Length
of beams
mm

Section
of beams
mm

µm

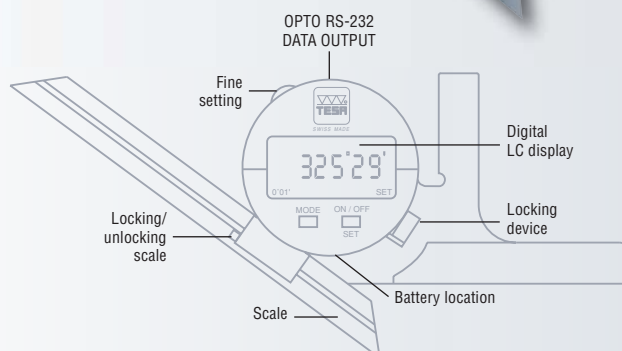
90° flat squares

0951751533	50 x 40	14 x 4,5	3
0951751534	75 x 50	16 x 4	3
0951751535	100 x 70	20 x 5	3
0951751537	150 x 100	28 x 6	4
0951751538	200 x 130	30 x 7	4



TESA Angle Protractor with Numerical Indication

- Decimal or sexagesimal large LC display
- 2 measuring directions
- Fine setting
- Locking device
- Scales - 200 300 or 500 mm



No

=

00630010

TESA angle protractor with numerical indication.
Provided with a regular scale, 200 mm long.

Accessories

00660004	Scale, 200 mm
00660005	Scale, 300 mm
00660006	Scale, 500 mm
00660007	Extra base with one flat plus one prismatic measuring faces for small angles
00660008	Edge square for sharp angles
01961000	3V lithium battery, type CR 2032, 190 mAh

For information on connecting cables etc., see section A.



00660007



00660008



LCD,
5 digits + sign



Measuring
ranges: 1 x 360°,
2 x 180°, 4 x 90°



Digit height:
8,5 mm



Resolution:
0,01° or 1 minute
of arc (0°01')



Preset
to 0° or 180°



Max. perm. error:
4 minutes of arc



Max. perm.
rotation speed:
1080°/s



IP51
(IEC 529)



+5 °C to +40 °C



3V lithium battery,
type CR 2032



Battery life
> 3000 hours



RS 232,
opto-coupled



Stainless
steel body,
hardened



410 g



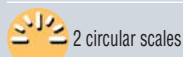
Wooden case



Serial number



Declaration of con-
formity



2 circular scales



5' on main scale.
Clockwise or
counter clockwise
reading.



10° on the
auxiliary scale



Stainless steel,
hardened



Max. perm.
error: 5' (without
accessory)



Plastic case



Declaration
of conformity

TESA EAC Angle Protractors with Dial

Circular scale with pointer – Easy, reliable readout of both the main and auxiliary scales – Very low hysteresis – Precision movement mechanism with compensation of play.



Scale length
mm

00630001 4 x 90°

200

00630002 4 x 90°

300

Optional accessories



mm

00660002 Scale

200

00660003 Scale

300

00610101 Auxiliary scale for acute angles up to 15°

00610102 Cast iron base with steel bottom surface, hardened



00610102



00610101



5'



Stainless steel,
hardened



Max. perm.
error: 5' (without
accessory)

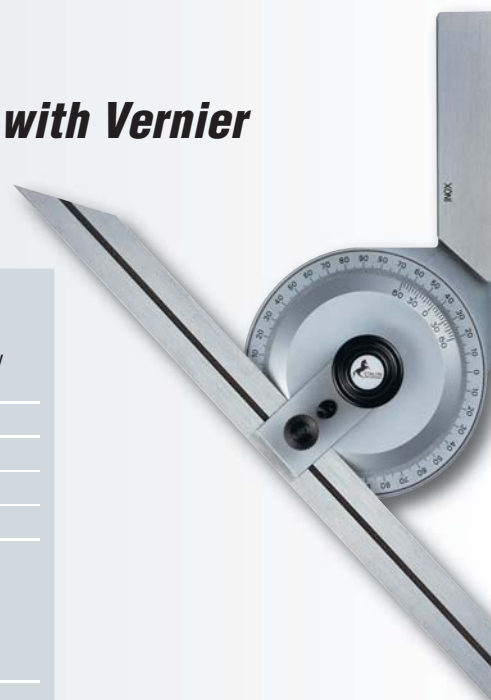


Plastic case



Declaration
of conformity

ETALON 436 Angle Protractor with Vernier



Scale
mm

Auxiliary
scale

076115566 4 x 90°

200

–

076115567 4 x 90°

300

–

076116009 4 x 90°

200

●

076116010 4 x 90°

300

●

Optional Accessories (as shown above)



mm

00660002 Scale

200

00660003 Scale

300

00610101 Auxiliary scale for acute angles up to 15°

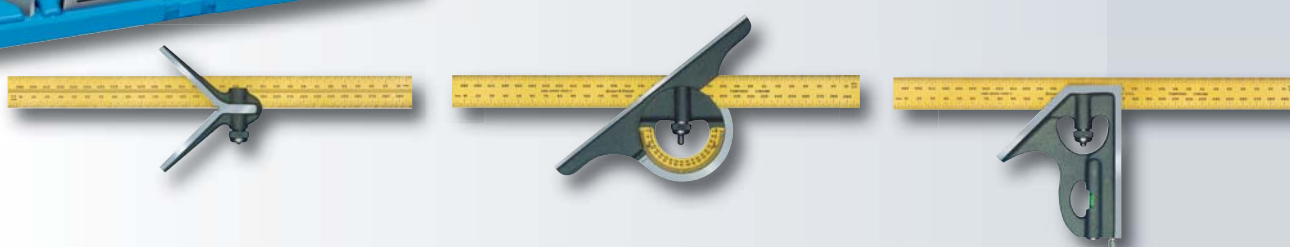
00610102 Cast iron base with steel bottom surface, hardened

00610103 Magnifying glass



Brown & Sharpe Angle Protractor Combination

Commonly used as bevelled protractor, ruler, scale, try square, depth and centre gauge as well as spirit level.



Nº

=

06719000 Brown & Sharpe Angle Protractor Combination

Consisting of:

- 1 Ruler graduated in millimetres, 300 mm long
- 1 Protractor head with 2 x 90° graduations
- 1 Centre head
- 1 Square head with hardened steel scriber



Hardened steel,
wear protected
measuring faces



Suited plastic case

Brown & Sharpe Sine Bar

Suited for setting ranges from 0 to 60° – Sine function for establishing the angle that needs to be set on the basis of the length dimensions obtained from parallel gauge blocks.



Nº

Centre distance

mm

06769005

127 ± 0,004

123 x 25



5 µm



Hardened steel



Removable
front stop



Cardboard box



Declaration
of conformity



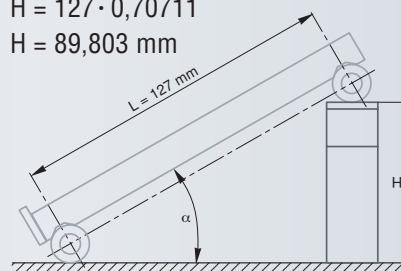
Calculating a 45° setting angle (example)

Gauge block combination H

$$H = L \cdot \sin \alpha$$

$$H = 127 \cdot 0,70711$$

$$H = 89,803 \text{ mm}$$





Angle standard made of fine-grained granite

Max. perm. error for squareness and straightness applies to the whole measuring range (carriage travel).

Valid for a theoretical line drawn symmetrically to the lateral guiding faces, at a distance of about 60 mm from the one in front of the angle standard.

ETALON RA only (without value sensor): 0,2 µm

Temperature stabilisation at < 0,1°C

Needed pressure: > 5 bar
Air consumption: < 20 l / min

Dimensions (L x W x H):
ETALON RA 500
250 x 80 x 634 mm
ETALON RA 700
250 x 80 x 884 mm

Suited carrying case

SCS calibration certificate

ETALON RA for Squareness Measurement

High-precision measuring instruments for determining squareness, straightness and parallelism errors – Perfect for use in the inspection laboratory as on the shop floor.

- Angle and straightness standards are made of natural granite with finely lapped measuring faces.
- Patented, hand moved carriage that attaches by vacuum on the guiding face of the angular standard. The grid potential thus obtained enables the carriage to be guided free of play.
- Base face on air bearing for easy displacement of the reference angle on the surface plate, practically without wear and tear.
- Helpful optional accessories to make measuring easy.



No	=	mm	Frontal µm	Lateral µm	µm	kg
05319201	ETALON RA 500	500	1,2	5	1,2	26
05319202	ETALON RA 700	700	1,5	7	1,5	37
Optional Accessories						
05360007	Auxiliary vacuum square for mounting either a flat or a try square at right angle on the ETALON RA front face.					
05360008	Probe holder with a 8 mm dia. clamp for inspecting the angle lying inside a flat or a try square and the like.					
05360009	Air filter unit (oil and water collector)					
05360011	Wooden case for safe storage of ETALON RA 500					
05360012	Wooden case for safe storage of ETALON RA 700					



TESA ClinoBEVEL 1 Electronic Inclinometer

User-friendly, versatile inclinometer made to measure the amount of tilt using either of both direct and differential modes – Measuring range $\pm 45^\circ$ with clear display of any measured angles or slopes – Reinforced aluminium housing and latest electronics – Large LC display for error free read-out.



05330203

TESA ClinoBEVEL 1 USB

$\pm 45^\circ$

mm/m

mm

100 x 75 x 35

Supplied with:

ClinoSOFT Software plus USB cable to host computer

Optional Accessories

04768002

4 Batteries, type LRC 6, AA, 1,5 V)

05360006

Cable with switch for value acquisition (2 m long)

05360014

Remote switch for value acquisition (range 10 to 15 m)

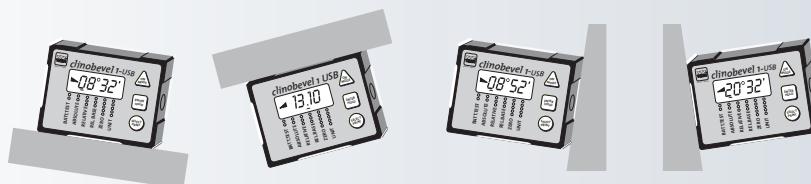
Numerous measuring applications, including comparative measurement of two parallel surfaces by means of two inclinometers. Inspection reports are also automatically generated under Microsoft EXCEL.



Measuring functions available: A ; B ; A+B ; A-B



ClinoBEVEL 1 USB can be used on any of its four faces.



DIN 2276
Part 2
(Form D)



LC display

Angle

Decimal or sexagesimal

Inclination

mm/m, in/10 or 12 in, mm
or in/basis length, radian
(mrad) and the like



Capacitive meas-
uring system with
gravity pendulum



Anodised light alloy



Flat face
4 x 90°



2' + 1 numerical
interval



21 storable
correction values
(high accuracy)



Response
time ≈ 1 s



Display lock



RS 485,
asynchronous,
7 bits, 2 stop bits,
no parity, 9600 bauds



1,5 V battery,
type LRC 6, AA



≈ 150 hours



Automatic
shut down
after 8 min



0 to 40 °C



-20 to 70 °C



IP65
(IEC 60529)



EN 50081-1 / -2
EN 50082-1 / -2



100 x 75 x 35 mm



0,52 kg



Plastic case



Identification
number



Inspection report
with a declaration
of conformity



DIN 2276
Part 2
(Form D)

LC display

Angle
Decimal or sexagesimal

Inclination
mm/m, in/10 or 12 in, mm
or in/basis length, radian
(mrad) and the like

Capacitive measuring system with gravity pendulum

Rust inhibiting housing

2 flat measuring faces with V-slot for diameters from 17 to 94 mm

5" +0,07% based on measured value

Response time: < 5 s

RS 232

2 batteries 1,5 V, type LRC 6, AA

40 to 60 hours

150x150x35 mm

3 kg

Automatic shut down after 8 min

0 to 40 °C

-20 to 70 °C

IP65
(IEC 60529)

EN 50081-1 / -2
EN 50082-1 / -2

Plastic case

Identification number

Declaration of conformity

TESA ClinoBEVEL 2 Electronic Inclinometer

World-class model – Tilting range $\pm 45^\circ$ with inclination or angle units clearly displayed – Integrated temperature compensation – Microprocessor-based auxiliaries allowing both display and tool setting – Dual data output for comparative measurements etc.



No

=

mm

mm

mm

05330202 TESA ClinoBEVEL 2 $\pm 45^\circ$ $\geq 5"$ 100 x 150 x 35

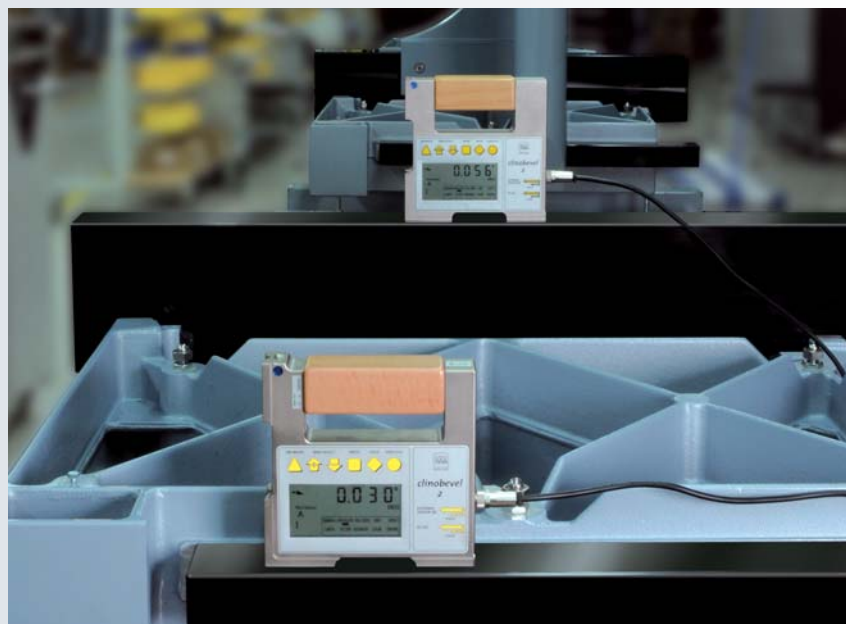
Optional Accessories

04768002 4 Batteries, type LRC 6, AA, 1,5 V

05360004 Cable for connecting two Clinobevel 2, length 2,50 m

S53070174 RS885 connecting cable Sub-D 9p/f to PC

ClinobeVEL 2 can be used on either of its both reference faces, but also linked to a second inclinometer. Use of a PC is unnecessary.



L

TESA MICROBEVEL 1

These electronic inclinometers measure slightly inclined surfaces, precisely – e.g. when inspecting flatness of a surface plate or the geometry of a machine – Specially suited for use in rough surrounding conditions.

			Basis length mm	Width mm	 mm/m	 kg
05330003	Horizontal model	110	45	0,01 or 0,001	1,8	
05330004	Horizontal model	150	45	0,01 or 0,001	2,1	
05330005	Square model	150	45	0,01 or 0,001	3,1	
Models with numerical interval to 0,05 or 0,005 mm/m available on request						
Optional Accessories						
04768002	4 Batteries, type LRC 6, AA, 1,5 V					



DIN 2276
Part 2
(Style D)



LCD
(see table)



See table



Fully encapsulated
measuring
system with gravity
pendulum



Cast iron base,
chromium plated
side faces,
varnished light alloy
housing



2 flat measuring
faces with V-slot
for diameters
from 20 to 120 mm



See table below



Response
time < 3 s



1 mV per unit
(100 kΩ)



1,5 V battery,
type LRC 6, AA



100 to 140 hours



Automatic
shut down
after 55 min



0 to 40°C



-20 to 70°C



≤ 0,1% / °C
based on the
measuring range
at 20 ± 5°C



As in above table,
incl. suited case



EN 50081-1 / -2
EN 50082-1 / -2



Plastic case



Identification
number



Declaration
of conformity

				 G = mm/m	 G = mm/m
Range	mm/m	mm/m	mm	≤ 5 mm/m	> 5 mm/m
1	± 20	± 5	0,01	G = 1% of measured value plus at least 0,01 mm/m	G = 0,01 mm/m
Range	mm/m	mm/m	mm	≤ 1 mm/m	> 1 mm/m
2	± 2	± 2	0,001	G = 1% of measured value plus at least 0,001 mm/m	G = 1% of (2x measured value - 1)



BEVELtronic 2

1 flat measuring face and 1 perpendicular face with a V-slot for diameters from 20 to 120 mm

BEVELmeter 2

LCD

Response time ≤ 3 s

RS232

33 à 40h

Automatic shut down after 8 min

SERVICE SET 2

0°C to 40°C

-20°C to 70°C

< 95%

EN 50081-1 / EN 50082-1

Plastic case

Identification number

Declaration of conformity

Inclinometer Sets for TESA SERVICE SET 2

Two distinct sets are available : TESA SERVICE SET 2-C operating with cables only, and TESA SERVICE SET 2-W allowing for data transfer either through cables or using the wireless operating mode.

Possible connection of a separate BEVELmeter 2 display unit to each BEVELtronic 2 for comparative measurement.



TESA SERVICE SET 2-W

TESA SERVICE SET 2-C

						
05330304	TESA SERVICE SET 2-C	± 10	1	0,2	*	**
05330305	TESA SERVICE SET 2-C	± 50	5	1	*	**
05330310	TESA SERVICE SET 2-W	± 10	1	0,2	*	**
05330311	TESA SERVICE SET 2-W	± 50	5	1	*	**

Each kit consists of the following:

- 1 BEVELtronic 2 – Horizontal model
- 1 BEVELtronic 2 – Square model
- 1 BEVELmeter 2, numerical interval to 0,001 or 0,005 mm/m
- 2 Single cables BEVELtronic 2 to BEVELmeter (2,5 m in length for each)
- 1 Infrared remote control
- 7 Alkaline batteries, type LR14 1,5V, C
- 2 Alkaline batteries, type LR03 1,5V, AA

* Maximum 1% of measured value + minimum 1 digit

** Maximum 1% of (2x measured value less 0,5x full scale value)

Additional Data

			
	Basis length mm	Width mm	kg
BEVELtronic 2 – Horizontal model	150	45	1,6
BEVELtronic 2 – Square model	150	45	1,7

Made for highly accurate difference measurements taken, for example, on granite plates or guiding rails or for checking the straightness.



TESA BEVELSOFT for SERVICE SET 2

The software that allows for geometry and flatness measurements.

TESA BEVELSOFT is specially designed for checking surfaces, but also for viewing any changes that need be made. Icon-driven menus besides a wide choice of languages available make it simple for the operator to quickly create full inspection reports.



- Standards:
DIN 876, JIS,
GGG-P-463c,
BS 817, ISO 8512
- Minimum requirements
for the computer:
- Microsoft Windows 98 / NT / 2000 / XP / 7
 - Pentium III
 - 128 MB RAM
 - Graphics card, 800 x 600 pixels
 - CD-Rom
 - 50 MB free space on hard disk



05360015 TESA BEVELSOFT

Consisting of:

CD containing instructions for installation and TESA BEVELsoft programme
USB dongle

Connecting cable BEVELmeter 2/PC along with 2 extra outlets
and connector RS485 Sub-D 9-pin/f connector, length 2,5 m

Power supply, 24 V

Hand switch with cable for value acquisition, length 2,5 m

Measuring functions



Straight line

Twisted line



Parallelism

2 or 3 lines

Twisted parallelism

2 or 3 lines



Perpendicularity

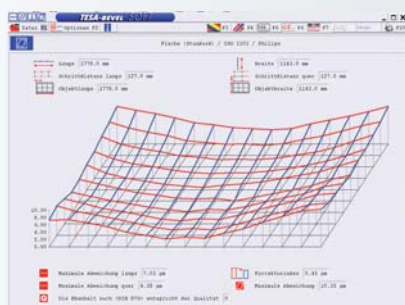
Various references



Flatness

Standard and U-Jack

Partial flatness



Measurement of a large granite plate



Measurement of a granite plate according to U-Jack



DIN 2276
Part 2
(Style D)



See table



See table



Inductive meas-
uring system with
gravity pendulum



Cast iron
body.
Horizontal model with
granite base.



Horizontal model
with a flat meas-
uring face. Square
model with 2 flat faces hav-
ing a V-slot for diameters
from 20 to 120 mm



0,005 mm / m
+ 1% of the
measured value



0,001 mm / m



$\approx \pm 0,2$ V
Impedance
4,5 k Ω



10 to 30°C



-20 to 60°C



EN 50081-1 / -2
EN 50082-1 / -2



Wooden case



Identification
number



Declaration
of conformity

TESA NIVELTRONIC Electronic Levels

Most popular electronic levels with a solid cast iron body used for checking and levelling horizontal and vertical surfaces – Also suitable for accurate measurement of small angles, especially while inspecting surface flatness of granite plates.



Basis length
mm

Width
mm



mm/m



kg

03130063	Horizontal model	150	45	0,05 / 0,01	6,0**
03130060	Square model	200	45	0,05 / 0,01	6,5**

Optional Accessories

03160007	Granite base*	200	50		1,0
03160008	Granite base*	250	50		1,5
03160009	Granite base*	500	50		6,0
03160048	Holder with built-in voltage regulator (4,65 V) plus 1 battery-set as below				
04761059	1 Set = 4 spare batteries, type LR 03, AAA, 1,5 V				

* For horizontal model ** Along with a wooden case



Range



mm/m



"



mm/m

"

1	$\pm 0,75$	$\pm 150''$	0,05	10''
2	$\pm 0,15$	$\pm 30''$	0,01	2''



TESA Spirit Levels



DIN 877



See table



DIN 2276
Part 1



No. 05331350 to
No. 05331352
in a wooden
case, others models in
cardboard boxes



Declaration
of conformity



mm/m



mm



For shafts
mm

Model A Spirit levels with a prismatic measuring face, Ω-shaped

05331650	1,0	100 x 30 x 35	17 ÷ 80
05331651	0,3	100 x 30 x 35	17 ÷ 80

Model B Tubular spirit levels with a flat measuring face

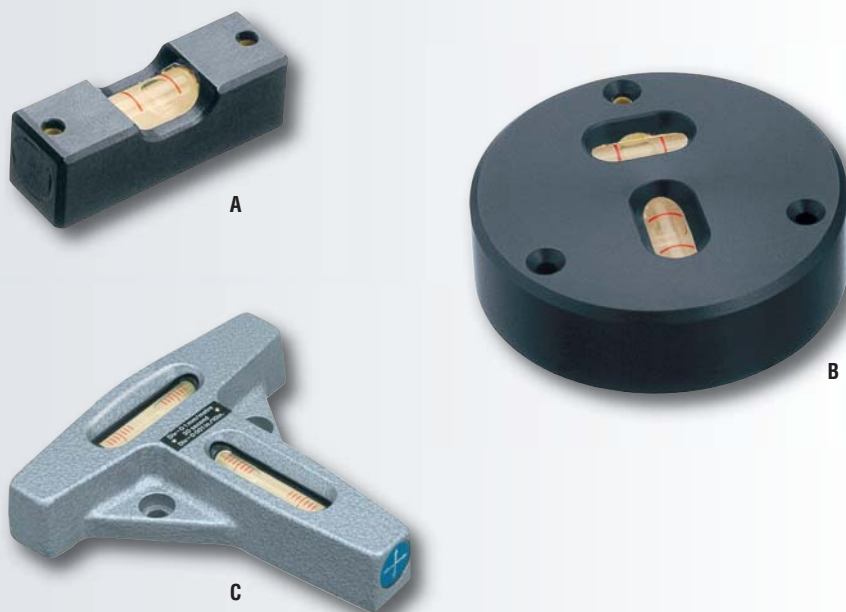
05331250	0,1	80 x 9, Ø 16	
05331251	0,3	80 x 9, Ø 16	
05331252	0,1	100 x 10, Ø 20	
05331254	0,05	150 x 11, Ø 22	
05331255	0,1	150 x 11, Ø 22	
05331256	0,3	150 x 11, Ø 22	
05331257	0,05	200 x 12, Ø 22	
05331258	0,1	200 x 12, Ø 22	

Model C Spirit levels for transmission shafts with side viewing slots

05331350	0,05	100 x 30 x 35	17 ÷ 80
05331351	0,3	100 x 30 x 35	17 ÷ 80
05331352	0,1	200 x 30 x 35	17 ÷ 80



TESA Screw-On Spirit Levels



					
Model A	<i>Screw-on spirit levels with a longitudinal vial</i>				
05331400		2 ÷ 5	30 x 10		10
05331401		2 ÷ 5	40 x 10		11
05331402		1,0	50 x 10		12
05331404		1,0	60 x 12		14
05331406		0,3	60 x 12		14
05331407		2 ÷ 5	80 x 15		18
05331408		0,1	80 x 15		18
05331410		1,0	100 x 18		22
05331411		0,1	100 x 18		22
Model B	<i>Circular screw-on spirit levels with both a longitudinal and cross vials</i>				
05331500		2 ÷ 5		40	11
05331502		0,3		60	13
Model C	<i>T-shaped screw-on spirit levels with both a longitudinal and cross vials</i>				
05331550		0,1	80 x 65		17
05331551		0,3	80 x 65		17
05331552		0,02	150 x 147		30

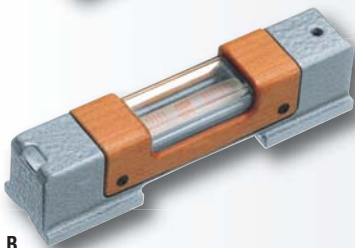


TESA Precision Spirit Levels

Used for checking and aligning flat or cylindrical surfaces in the horizontal position.



A



B



C



Precision spirit level with insulating pad

No	mm/m	mm	For shafts mm	A
05331600	0,05	100 x 45 x 35	19 ÷ 120	A

Precision spirit levels with insulating grip and vial protection, side viewing slots

No	mm/m	mm	For shafts mm	A
05331050	0,02	100 x 32 x 35	17 ÷ 84	B
05331051	0,1	100 x 32 x 35	17 ÷ 84	B
05331052	0,3	100 x 32 x 35	17 ÷ 84	B
05331054	0,02	150 x 35 x 38	17 ÷ 94	C
05331056	0,05	150 x 35 x 38	17 ÷ 94	C
05331057	0,1	150 x 35 x 38	17 ÷ 94	C
05331058	0,02	200 x 40 x 42	19 ÷ 108	C
05331059	0,04	200 x 40 x 42	19 ÷ 108	C
05331061	0,1	200 x 40 x 42	19 ÷ 108	C
05331063	0,02	250 x 45 x 42	19 ÷ 120	C
05331065	0,05	300 x 50 x 42	22 ÷ 135	C



DIN 877



Longitudinal and cross level vials



Flat and prismatic measuring faces



See table



DIN 2276 Part 1



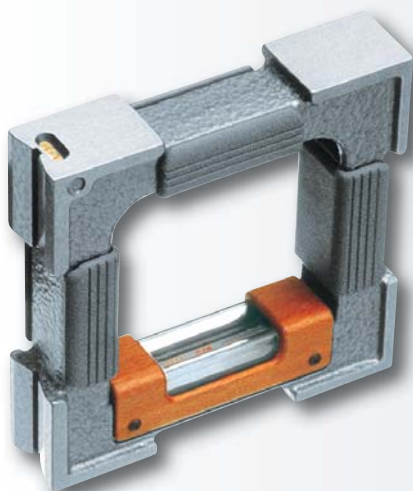
Wooden case



Declaration of conformity

TESA Precision Spirit Levels with a Frame

For checking and levelling flat or cylindrical surfaces in both horizontal and vertical positions – Insulating grips and vial protection – Side viewing slots.



No	mm/m	mm	For shafts mm
05331201	0,05	100 x 100 x 32	17 ÷ 84
05331202	0,1	100 x 100 x 32	17 ÷ 84
05331204	0,05	150 x 150 x 35	17 ÷ 94
05331206	0,02	200 x 200 x 40	19 ÷ 108
05331208	0,05	200 x 200 x 40	19 ÷ 108
05331210	0,05	250 x 250 x 45	19 ÷ 120



DIN 877



Longitudinal and cross level vials



4 x 90° flat measuring faces, machined to one another. Two of them have a V-shape



See table



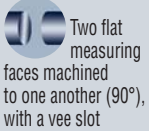
DIN 2276 Part 1



Wooden case



Declaration of conformity



TESA Precision Spirit Levels Magnetic Square Models

For inspecting and levelling flat or cylindrical surfaces in both horizontal and vertical positions – Attach magnetically on such surfaces – Fitted with insulating handle.

No	mm/m	mm	For shafts mm
05331000	0,02	150 x 150 x 40	19 ÷ 108
05331001	0,04	150 x 150 x 40	19 ÷ 108
05331002	0,05	150 x 150 x 40	19 ÷ 108



TESA Precision Spirit Level with Micrometer Element

For checking surface flatness and slopes – With insulating pads.

No	mm/m	mm	For shafts mm
05331450	0,02	150 x 45 x 45	19 ÷ 120



TESA Protractor Spirit Inclinator

No		Vial	mm	For shafts mm
05331300	4 x 90°	1°	7 ÷ 17'	180 x 75 x 22



TESA Protractor Spirit Inclinometers



Factory standard



Longitudinal and cross level vials

Square model



90° flat measuring faces with added V-slot, machined to one another.

Model with a frame

Four 90° measuring faces, machined to one another. Two of them have a V-slot.



Wooden case



Declaration of conformity



Vernier



Vial



mm



For shafts mm

Square model with fine setting for the pivoting vial

05331150	90°	10'	1'	150 x 150 x 40	19 ÷ 108
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Model with frame and fine setting for the rotating vial

05331700	2 x 180°	3'	1'	150 x 150 x 40	19 ÷ 108
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TESA Spirit Clinometer with Micrometer Element



DIN 877



Longitudinal and cross level vials



Hardened and ground base



Flat and prismatic measuring faces



DIN 2276 part 1



Wooden case



Declaration of conformity



Micrometer element



Vial



mm



For shafts mm

05331750	2 x 180°	1'	1'	150 x 35 x 116	17 ÷ 80
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