

TESA MICRO-HITE 350 / 600 / 900

The metrology-based reference for the workshop



Stand-alone design – Made to measure any size in the form of internal, external, height, depth, step and distance dimensions of geometric part features having either a flat, parallel or cylindrical surface.

Automatic capture of the culmination point on bores or shafts – Dynamic probing with memory functions «max.», «min.» plus «max.-min.»

The TESA IG-13 digital probe lets you also measure any deviation from perpendicularity, straightness and parallelism as well as runout errors with result output according to ISO 1101.

- State-of-the-art concept associated with a high-quality design is the fruit of years of experience in the manufacture of electronic height gauges.
- Ideal for dimensional inspection close to the manufacturing cell. No cumbersome cables to clutter up the working area.
- Fast, simple and reliable probing of the workpiece or holes, especially.
- 3 main gauges available with either a 365, 615 or 920 mm measuring span.
- Numerical display to 0,0005, 0,001, 0,01 and 0,1 mm, or equivalent inch units.
- Extremely accurate measuring of deviations from length, straightness and perpendicularity due to the automatic correction of the bias errors through CAA (Computer Aided Accuracy).
- Coefficient of linear expansion identical to steel ($11,5 \times 10^{-6} \text{ K}^{-1}$).

- POWER PANEL for value processing and output with interactive display to guide the operator.
- No manual calculation.
- 99 workpiece oriented measurement cycles, programmable. Each cycle includes a number of 64 features with related limits of size.
- Built-in printer for result output or possible use of an external printer unit to get a hard-copy in A4 format.
- RS 232 data output.
- Every height gauge comes with a SCS calibration certificate.

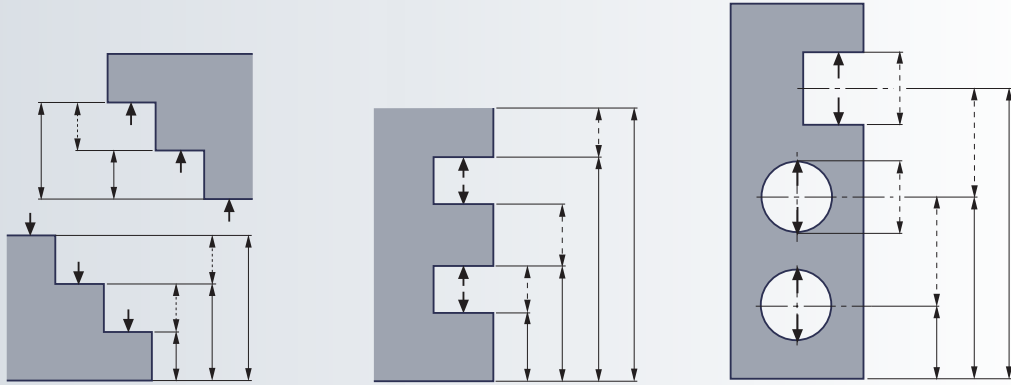
TESA MICRO-HITE 350 / 600 / 900 main gauges



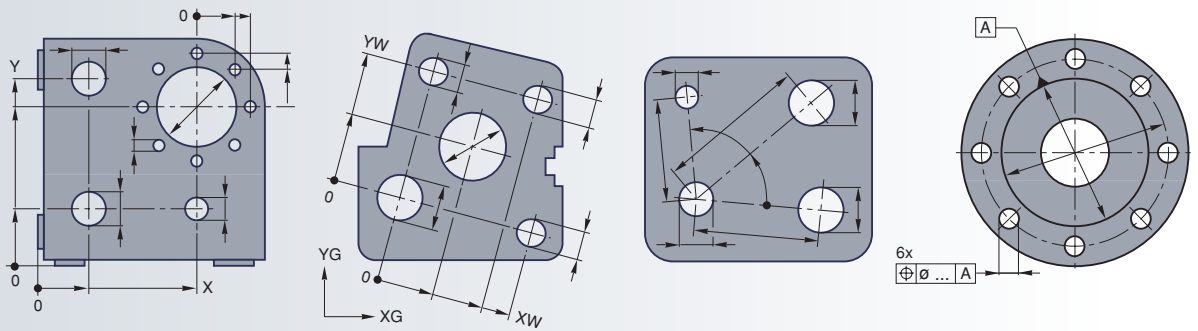
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TESA MICRO-HITE – Efficient and Powerful
One-Dimensional Measurement

- Rechargeable batteries, 6 V, 3,0 Ah or mains adapter
- ≈ 12 hours for one battery pack; ≈ 2 hours for the pump used to form the air cushion
- 10°C to 40°C
- 10°C to 60°C
- 80% non-condensing
- IP40 (IEC 60529)
- EN 61326-1, Class B (with disconnected charger)
- Net weight (w/o panel nor battery pack)
Main gauges
350: 33 kg
600: 38 kg
900: 45 kg
- Shipping packaging
- Identification number
- SCS calibration certificate

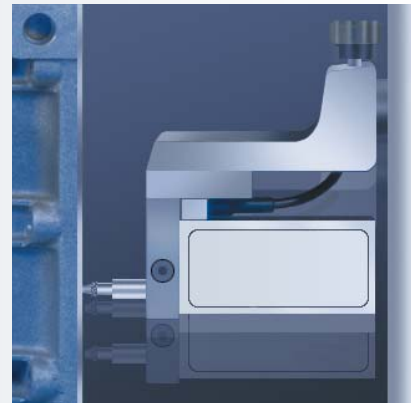
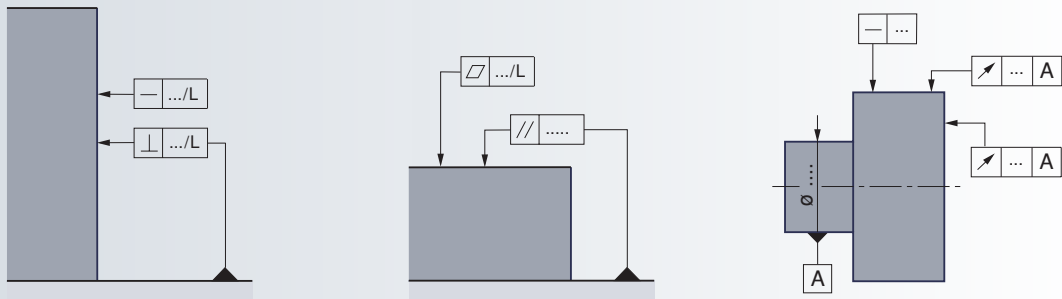


Two-Dimensional Measurement



Programme functions for the detection of form and position errors

with use of a TESA IG-13 digital probe



TESA IG-13



TESA MICRO-HITE 350 / 600 / 900 Height Gauge Sets



Nº	TESA MICRO-HITE height gauge set	Model
00730033	TESA MICRO-HITE height gauge set	350
00730034	TESA MICRO-HITE height gauge set	600
00730035	TESA MICRO-HITE height gauge set	900

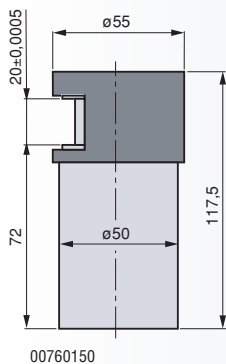
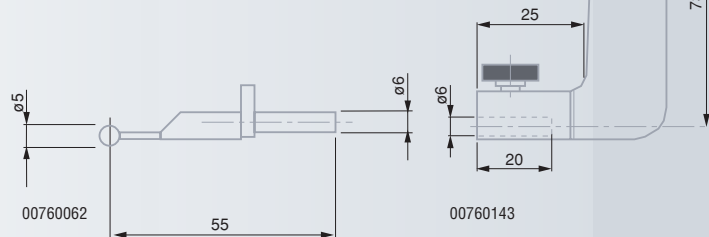
Each gauge set includes the following components, control panel excluded:

00730021	1 TESA MICRO-HITE 350 main gauge	●		
00730022	1 TESA MICRO-HITE 600 main gauge		●	
00730023	1 TESA MICRO-HITE 900 main gauge			●
00760143	1 Standard insert holder	●	●	●
00760062	1 Standard insert with a 5 mm dia. tungsten carbide ball tip	●	●	●
00760150	1 Master piece for determining probe constant, nominal dimension 20,0000 mm/0.78740 in	●	●	●
00760142	1 Electric pump for creating the air-cushion beneath the gauge base, already mounted	●	●	●
00760141	1 Battery pack	●	●	●
04761054	1 Mains adapter 110 à 240 Vac/50 à 60 Hz	●	●	●
04761055	1 Cable EU for mains adapter	●	●	●
00760151	1 Dust cover for TESA MICRO-HITE 350	●		
00760152	1 Dust cover for TESA MICRO-HITE 600		●	
00760153	1 Dust cover for TESA MICRO-HITE 900			●

Optional Accessories for TESA MICRO-HITE 350 / 600 / 900

00760144	Add-on fine adjust device for extra fine movement of the measuring head, complete
00760157	Spare battery pack No. 00760141
04761056	Cable US for mains adapter

For additional accessories, report to both pages M-18 and M-25



Technical Data

Models		350	600	900
	mm	365	615	920
	in	14	24	36
	With standard accessory	mm 0 ÷ 520	0 ÷ 770	0 ÷ 1075
		in 0 ÷ 20	0 ÷ 30	0 ÷ 42
	With insert holder No. 00760057	mm 0 ÷ 575	0 ÷ 825	0 ÷ 1130
		in 0 ÷ 22	0 ÷ 32	0 ÷ 44
	With insert holder No. S07001622	mm 0 ÷ 745	0 ÷ 995	0 ÷ 1300
		in 0 ÷ 29	0 ÷ 39	0 ÷ 51
	With standard accessory	(2 + 3 • L) µm		(L in m)
		(0.0001 + 0.000003 • L) in		(L in in)
	With standard accessory	2δ = ≤1 µm / ≤0.00005 in		
	Frontal, mechanical	µm 7	9	11
		in 0.00028	0.00035	0.00043
	Frontal and lateral using TESA IG-13	µm 6	8	10
		in 0.00024	0.00031	0.00039

POWER PANEL



Dual LC display, 128 x 63 mm in size.

- Upper display field for length values (7-segment/sign). Also with symbols for the functions.
- Lower full dot display field for perpendicularity and straightness along with symbols for all operator-controlled function keys.

7-decade display plus minus sign for the measured values.

12,7 x 6,4 mm main display, 6,3 x 4,2 mm auxiliary display.

See opposite

Metric/Inch conversion

Floating zero

PRESET function for entering a given value.

Continuous displaying.

Manual or automatic triggering of data transfer.

Output of predefined inspection reports with headings in 5 languages plus A4 format using an external printer unit.

Via TESA MICRO-HITE

IP40 (IEC 60529)



Control Panel for TESA MICRO-HITE 350 / 600 / 900



00760163



TESA POWER PANEL

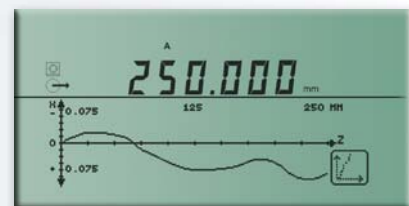
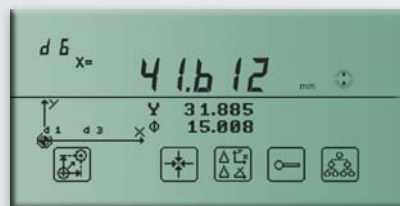
With dedicated programme for measuring in 1 and 2 coordinate directions with geometric combination of the measured values. Lets you measure perpendicularity, straightness and squareness. Provides 99 workpiece oriented measurement cycles including 64 features with related limits of size, programmable. Memory capacity for 2500 measured values. Statistical value processing (SPC). Result output via the built-in matrix printer or in A4 format using an external printer unit.



0,0005 / 0,001 / 0,01 / 0,1 mm
0,00002 / 0,0001 / 0,001 / 0,01 / 0,1 in

Accessory for TESA POWER PANEL

04765008 Thermal paper roll, 57 mm wide



TESA MICRO-HITE plus M 350 / 600 / 900

Speed of the manual vertical column combined with the precision of the motorised one



All TESA MICRO-HITE plus M height gauges are unique in that they have exceptional metrological capabilities and can be used intuitively with ease. The revolutionary rotary power control combines the speed of the manual concept with the precision of the motorised one.

With their robust and stand-alone design, these electronic height gauges are optimally suited for use on the shop floor as in the inspection laboratory.

Measure lengths in the form of internal, external, height, depth or distance dimensions of geometrical part features having either a plane, parallel or cylindrical surface, whether in one or two coordinate directions – Determine the position of bores in two coordinate directions with output in both polar and Cartesian (rectangular) coordinates – Mechanically adjusted at our plant based on a patented TESA's method used to verify the correct position of the guiding column against the gauge base. This method allows any bias error to be easily and quickly detected by means of

a lever-type dial indicator – Check deviations from straightness or parallelism according to ISO 1101 when used in conjunction with TESA IG-13 linked to the Power panel plus M.

- Modular design descending from the successful TESA MICRO-HITE dynasty. Also equipped with the unique rotary power control located close to the rugged base. This feature serves for guiding the column that moves on a cushion of air, commanding fast motion of the probe insert and triggering all main measuring functions. Its intuitive use allows accurate, easy handling of the column. A simple rotation causes the measuring head to move rapidly, approach the contact point quickly or slowly, probe upward or downward or execute bore measurement.
- Available in three sizes with measuring span of 365, 615 or 920 mm.
- Choice of three control panels for value processing and output.
- Metric and inch LC display with a resolution to 0,0001 and 0,001 mm, or inch equivalent.
- Autonomous run through batteries. No cumbersome cable.
- Built-in air bearing for easy displacement over the surface plate.
- Motorised measuring head for fast, accurate probing at each contact point with a constant measuring force.
- TESA μ system for matchless reliability and simplicity.
- High precision through CAA (Computer Aided Accuracy). All correction values stored in the memory still add to the mechanical precision.
- Coefficient of linear expansion matching that of steel ($11,5 \times 10^{-6} K^{-1}$).
- RS 232 data output.
- SCS calibration certificate delivered with every height gauge.

TESA MICRO-HITE plus M main height gauges 350 / 600 / 900



Factory standard

Measuring span, application range and accuracy as stated on page M-16

Rugged nickel plated gauge base having 3 resting points, finely lapped

Built-in air-bearing for easy move of the column over the surface plate

Frontal, for models

350 < 5 μ m
600 < 7 μ m
900 < 9 μ m

Incremental glass scale with datum point, 20 μ m grating division. Opto-electronic data acquisition (TESA patent).

Measuring head mounted on a ball-bearing. Motorised head displacement at a varying speed from 7,5 up to 40 mm/s. Manual displacement: \leq 600 mm/s. Automatic value capture with a constant measuring force.

$11,5 \times 10^{-6} K^{-1}$

1 N Coupled servomotor for activating the measuring force

Continued next page

TESA MICRO-HITE plus M

Unrivalled Power, Performances, Ease of use

Rechargeable batteries 6 V, 3,0 Ah or mains adapter 110 to 240 Vac/50 to 60 Hz

≈ 12 hours after full recharging (8 hours)

10 °C to 40 °C

-10 °C to 60 °C

80% non-condensing

IP40 (IEC 60529)

EN 61326-1, Class B (with disconnected charger)

Net weight (w/o control panel nor battery pack)
main part 350 = 33 kg, 600 = 38 kg, 900 = 45 kg

Shipping packaging

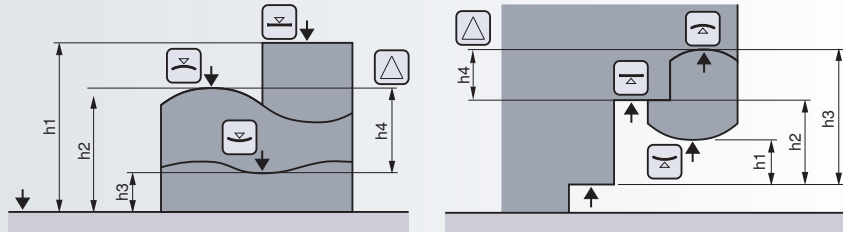
Identification number

Declaration of conformity

SCS calibration certificate

Measurement without change of the probe direction

Probe constant excluded

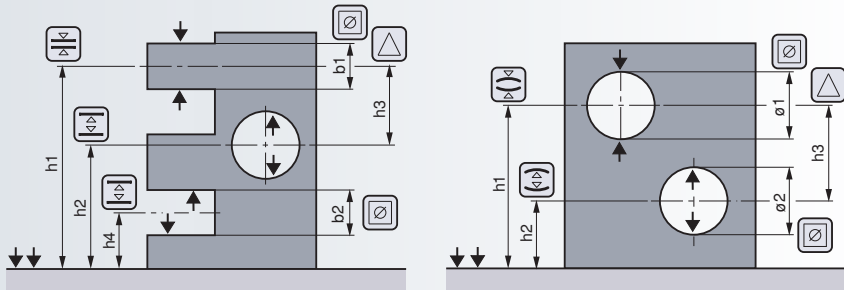


Measurement with change of the probe direction

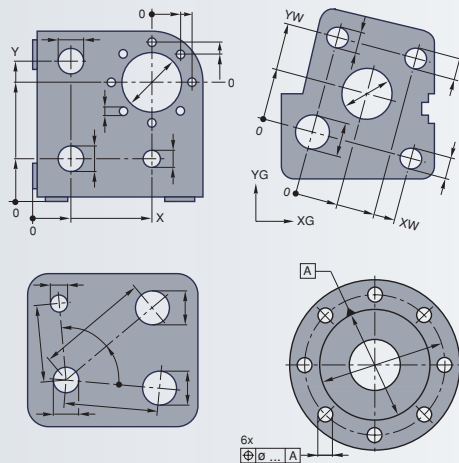
Probe constant included

– Without storage of the culmination point

– With storage of the culmination point



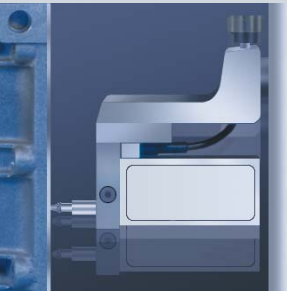
Two-Dimensional Measurement



TESA μ System

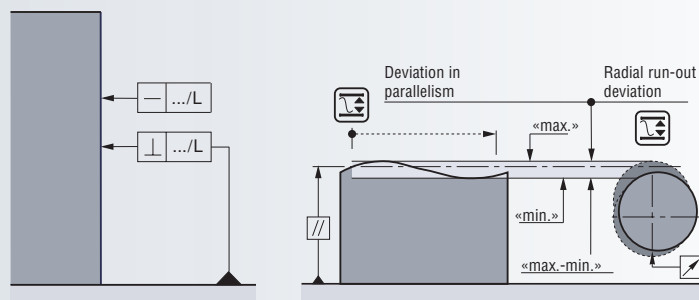


using TESATAST



using TESA IG-13

Measurement of Form and Position Deviations



TESA MICRO-HITE plus M Height Gauge Sets 350 / 600 / 900



Nº		
00730063	TESA MICRO-HITE plus M height gauge set	350
00730064	TESA MICRO-HITE plus M height gauge set	600
00730065	TESA MICRO-HITE plus M height gauge set	900

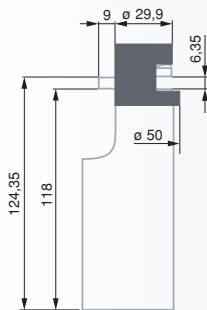
Each gauge set includes the following components, control panel excluded:

00730060	1 TESA MICRO-HITE plus M main gauge	●		
00730061	1 TESA MICRO-HITE plus M main gauge		●	
00730062	1 TESA MICRO-HITE plus M main gauge			●
00760143	1 Standard insert holder	●	●	●
00760062	1 Standard probe insert with a 5 mm dia. ball tip	●	●	●
00760219	1 Master piece with nominal dimension 6,35 mm/0.25 in	●	●	●
00760142	1 Electric pump for creating the air cushion beneath the gauge base	●	●	●
00760141	1 Battery pack	●	●	●
04761054	1 Mains adapter 110 to 240 Vac/50 to 60 Hz	●	●	●
04761055	1 Cable EU for mains adapter	●	●	●
04761056	1 Cable US for mains adapter	●	●	●
00760151	1 Dust cover for Model 350	●		
00760152	1 Dust cover for Model 600		●	
00760153	1 Dust cover for Model 900			●

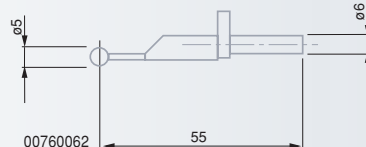
Optional Accessories for TESA MICRO-HITE plus M 350 / 600 / 900

00760157	Spare battery for battery pack No. 00760141
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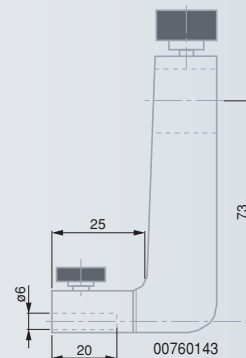
For additional accessories, report to both pages M-18 and M-25



00760219



00760062



00760143

Technical Data

Models		350	600	900
	mm	365	615	920
	in	14	24	36
With standard accessory	mm	0 ÷ 520	0 ÷ 770	0 ÷ 1075
	in	0 ÷ 20	0 ÷ 30	0 ÷ 42
With insert holder No. 00760057	mm	0 ÷ 575	0 ÷ 825	0 ÷ 1130
	in	0 ÷ 22	0 ÷ 32	0 ÷ 44
With insert holder No. S07001622	mm	0 ÷ 745	0 ÷ 995	0 ÷ 1300
	in	0 ÷ 29	0 ÷ 39	0 ÷ 51
With standard accessory		(2 + 1,5•L) µm (0.0001 + 0.0000015•L) in		(L in m) (L in in)
With standard accessory		on flat surfaces: 2δ = ≤ 0,5 µm – ≤ 0.000025 in inside bores: 2δ = ≤ 1 µm – ≤ 0.00005 in		
Frontal, mechanical	µm	5	7	9
Frontal and lateral using TESA IG-13	in	0.00020	0.00028	0.00035

1D Control Panel



LC display, 67 x 33 mm in size.

3-line display (alphanumeric) plus symbols.
7-decade display plus minus sign for the measured values.
7 or 4 signs for both auxiliary displays 1 and 2.



10 x 4,9 mm (measured values).
7,5 x 3,7 or 5 x 2,5 mm (display 1 or 2).



Keypad with 20 softkeys



See opposite



Metric/Inch conversion



PRESET function for entering a given value.

Acoustic signal.
Choice of 7 languages for report headings.



RS 232, opto-electronic and bidirectional



Via TESA MICRO-HITE plus M



IP50 (IEC 60529)



Declaration of conformity



Declaration of conformity

POWER PANEL plus M



LC dual display, 128 x 63 mm in size.

- Length measurement: 7-segment/digit upper display field for values plus symbols for the functions.
- Straightness or perpendicularity measurement: display field for values plus symbols (function keys). Operator controlled operations (full dot display).

Measured values: 7-decade display plus minus sign.

12,7 x 6,4 mm main display, 6,3 x 4,2 or 3,8 x 2,9 mm auxiliary display

Keypad with 42 softkeys

See opposite

Metric/Inch conversion

PRESET function for entering a given value.

Acoustic signal.

Manual or automatic triggering of data transfer.

Output of predefined reports with headings in 5 languages (plus a programmable one) using an external printer unit (A4 format).

Bidirectional RS 232, opto-electronic and Centronics

Via TESA MICRO-HITE plus M

IP50 (IEC 60529)



Declaration of conformity

Control Panels for TESA MICRO-HITE plus M 350 / 600 / 900



00760216



1D Control Panel

Includes a part programme for one-dimensional measurement. Also used for parallelism and runout inspection.



0,0001 / 0,001 mm
0.00001 / 0.0001 in

00760221

TESA POWER PANEL plus M

Includes a part programme for one or two-dimensional measurement.

- Captures flatness, parallelism and run-out deviations.
- Measures any deviation in perpendicularity or straightness.
- Executes angle measurement.
- Allows value input through both the keypad and digital value sensor.
- Enables automatic programming of the measurement cycles in Teach-in mode. Up to 9999 features distributed in several part programmes (each including max. 999 values) can be stored in the memory.
- Memory capacity for up to 25 000 measured values.
- Provides SPC capability with output of mean value, range, standard deviation, histogram, comparison nominal value/actual value, number of out-of-tolerance values, control limits, control charts.
- Prints reports in A4 format with related tables and graphics. Creates tailor-made headings to suit Users' needs.



0,0001 / 0,001 / 0,01 mm
0.00001 / 0.0001 / 0.001 in

00760220

TESA POWER PANEL plus M with built-in printer

Identical to item N° 00760221, but with integrated matrix print for result output.

Optional accessory for TESA Power Panel plus M with built-in printer

04765008

Thermal paper roll, 57 mm wide



Optional Accessories for TESA MICRO-HITE 350 / 600 / 900 TESA MICRO-HITE plus M 350 / 600 / 900 equipped with Power Panel plus M

For additional optional accessories, see on page M-26.

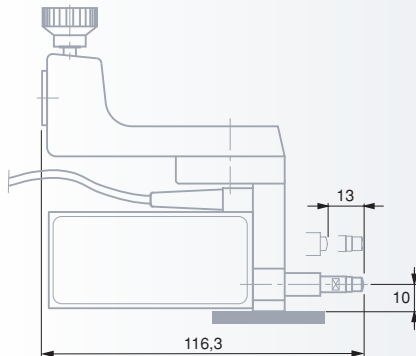
Optional Accessories



Factory standard



Shipping packaging



00760140 TESA IG-13 probe set

Consisting of:

00760139 1 TESA IG-13 digital probe



13 mm / 0.51 in



1 μm



0,45 N at zero
0,75 N at stop

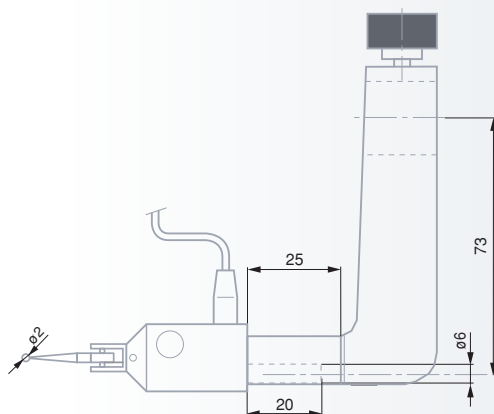
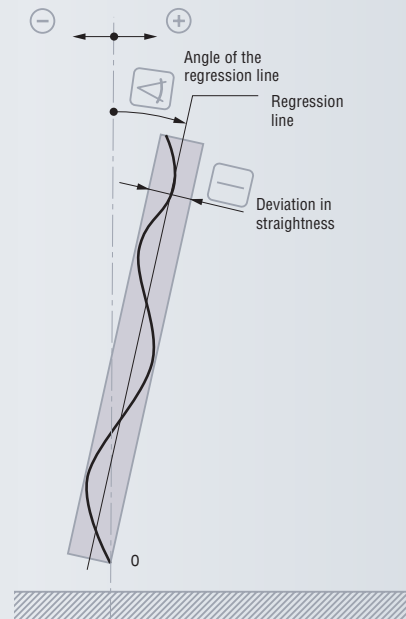
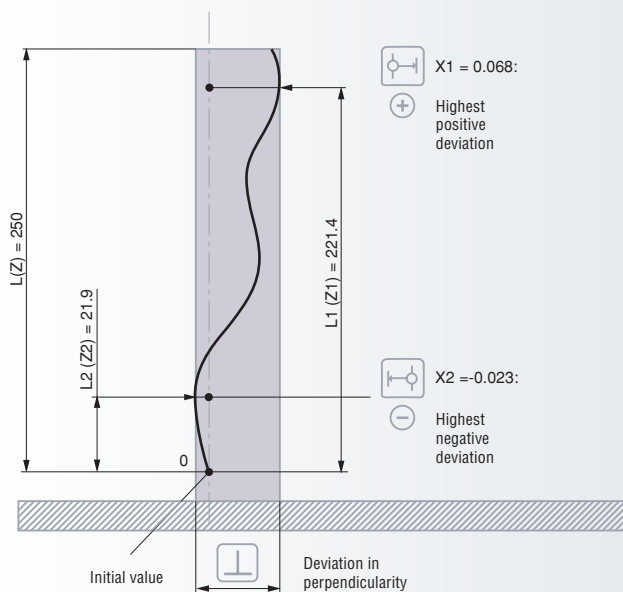
00760138 1 TESA IG-13 attachment

Accessories:

01960005 Lift lever for the measuring bolt

03540501 10 mm long extension for the probe insert

04761047 Connecting cable IG-13/Power Panel plus M (1 m)



S07020086 TESA MEMOTAST-special

Consisting of:

1 TESA MEMOTAST auxiliary probe along with probe holder, order N° S07072076. Technical data are valid for use of this probe mounted on TESA MICRO-HITE 10, 11 or 12.



0,5 N



$(3 + 3 \cdot L) \mu\text{m}$
L in m



$\leq 3 \mu\text{m}$