

# 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 form and position 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 different sizes with a measuring span of 365, 615 or 920 mm.
- Choice between two 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  $\mu$  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 ( $11,5 \times 10^{-6} \text{ K}^{-1}$ ).
- 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 N-18



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  $\mu\text{m}$   
600 < 7  $\mu\text{m}$   
900 < 9  $\mu\text{m}$



Incremental glass scale with datum point, 20  $\mu\text{m}$  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:  $\leq 600 \text{ mm/s}$ . Automatic value capture with a constant measuring force.



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



1 N Coupled for triggering 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 100 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

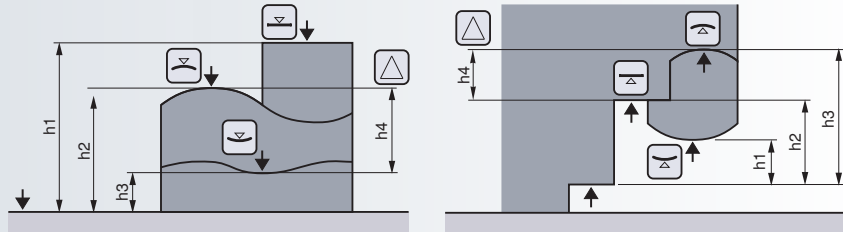
Identification number

Declaration of conformity

SCS calibration certificate

## Measurement without change of the probe direction

Probe constant excluded

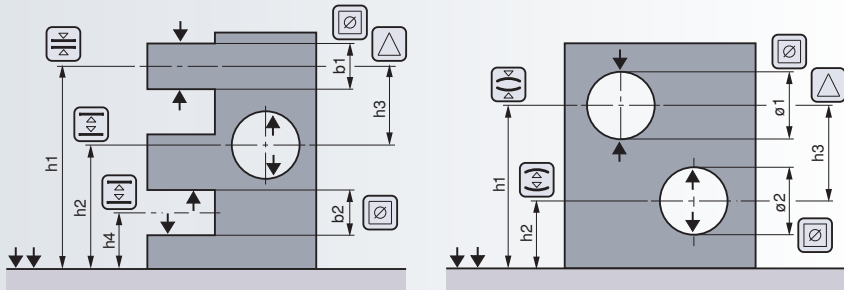


## Measurement with change of the probe direction

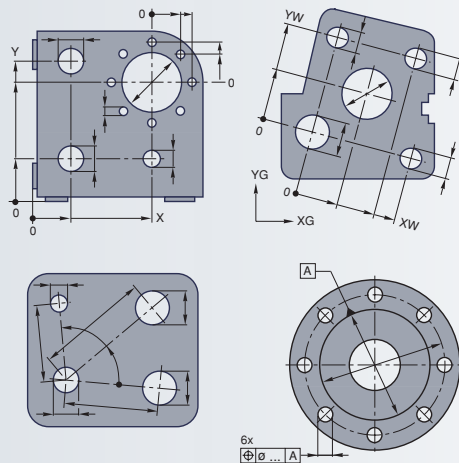
Probe constant included

– Disregarding the culmination point

– Considering the culmination point



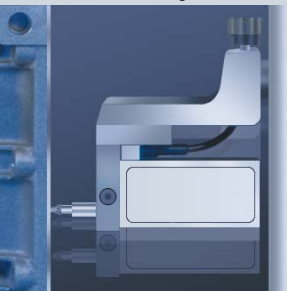
## Two-Dimensional Measurement



TESA μ System

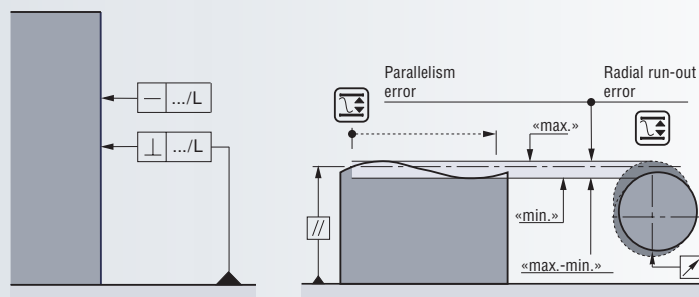


⊥ using TESATAST



⊥ using TESA IG-13

## Measurement of Form and Position Errors



## 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

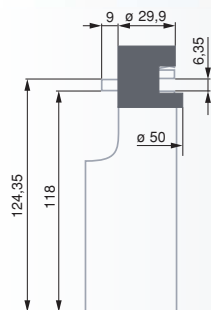
Each gauge set includes the following components, control panel excluded:

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 probe insert holder	●	●	●
00760227	1 Standard probe insert with shank and 5 mm dia. ball tip in tungsten carbide	●	●	●
00760219	1 Master piece with nominal dimension 6,350 mm/0.2500 in	●	●	●
00760142	1 Electric pump for creating the air cushion beneath the gauge base	●	●	●
00760141	1 Battery pack	●	●	●
04761054	1 Mains adapter, 100 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			●

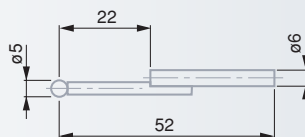
Optional Accessories for TESA MICRO-HITE plus M 350 / 600 / 900

00760157	Spare battery for battery pack No. 00760141
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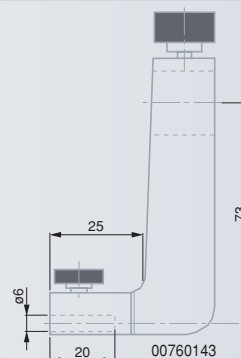
For additional accessories, report to both pages N-20 and N-27



00760219



00760227



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 probe insert holder No. 00760057	mm	0 ÷ 575	0 ÷ 825	0 ÷ 1130
	in	0 ÷ 22	0 ÷ 32	0 ÷ 44
With probe 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 into 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

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, optoelectronic 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



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 for value input through 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 printer for result output.

### Optional Accessories for TESA Power Panel plus M

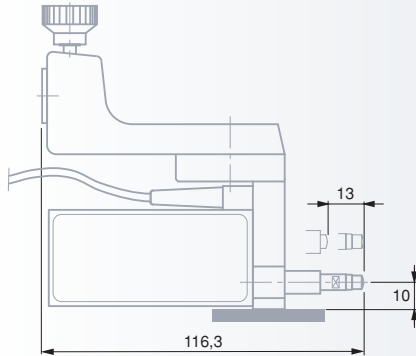
- 04761052 RS 232 connecting cable for PC and TESA PRINTER SPC
- 04761063 USB connecting cable for PC
- 04765008 Thermal paper roll, 57 mm wide



## 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 N-27.

### Optional Accessories



**00760140** TESA IG-13 probe set

Consisting of:

**00760139** 1 TESA IG-13 digital probe



13 mm / 0.51 in



1  $\mu$ m



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)

