


TESA *micro-hite*[®]

3D

 **brown & sharpe**[®]

**THE BEST PRICE/PERFORMANCE
RATIO IN THE INDUSTRY**
for Lab or Shop



TECHNOLOGY

HEXAGON METROLOGY

A PERFECT SYNTHESIS OF MECHANICAL ENGINEERING, ELECTRONICS AND APPLICATION SOFTWARE

The TESA MICRO-HITE® 3D coordinate measuring system is an affordable high accuracy measuring instrument designed to fill the operational gap between precision hand-held measuring instruments and high-end coordinate measuring machines. To assure its high production standards, this advanced measuring system is produced at the TESA factory in Renens, Switzerland in a dedicated manufacturing cell.

The TESA MICRO-HITE 3D measures to the micron. Interactive TESA REFLEX™ software allows operators of all skill levels to perform complex inspection routines quickly and efficiently with little training. The offset triangular bridge design provides a low center of gravity and optimum stiffness-to-mass ratio. Air bearings ensure frictionless motion in all three axes.

The TESA MICRO-HITE 3D coordinate measuring system features a light alloy base fitted with a granite measuring table. It is constructed from materials that have a similar coefficient of expansion to offset the effects of changes in ambient temperature conditions, making it equally suitable for the shop floor and the inspection laboratory.

All operations are controlled through an ergonomically positioned operator interface panel. The patented Zmouse™ provides instant control of the measuring system from anywhere in the work envelope.

The TESA MICRO-HITE 3D coordinate measuring system comes equipped with either of two TESA 3D probes—the TESASTAR® Touch Trigger Probe or the TESASTAR-i® Indexable Probe.

This competitively priced three-axis measuring system is designed to fit any shop budget, and offers sophisticated measurement and inspection capability for any type of manufacturing operation.

NEW

Patented glass scales and non-contact opto-electronic sensors developed in conjunction with TESA's MICRO-HITE® Electronic Height Gage, provide high accuracy and repeatability to 3 µm.

NEW

Offset slant bridge with self-stabilized carriage assures precision movement.

NEW

User friendly, ergonomically designed control panel integrates powerful electronics with the system—no need for a PC. ZMouse control the system from anywhere in the measuring envelope.

APPLICATION SOFTWARE

TESA REFLEX™ software allows operators to perform 1, 2, and 3D measurement routines quickly and easily without the need for computer keyboard entries.

AIR BEARINGS

22 air bearings ensure frictionless motion of the three axes within the measuring volume.

PCMCIA CARD

Use the PCMCIA card to transfer data from the programming source to the MICRO-HITE 3D.



TESA micro-hite®



STYLII

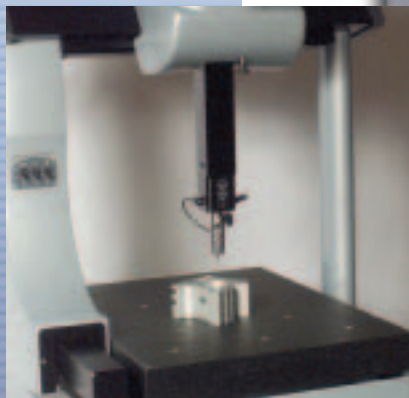
Wide variety of Swiss-made styli, in 10, 20 and 30 mm (0.39, 0.79 or 1.18 in.) lengths with 0.5 to 8 mm (0.02 to 0.31 in.) diameter tips.

VERSATILITY

The TESA MICRO-HITE 3D coordinate measuring system is available with an optional fine adjustment. By adding a CCD camera, it can be converted into non-contact measuring system. Choose either the TESASTAR Touch Trigger Probe and the TESASTAR-i Indexable Probe. Both probes feature adjustable trigger force from 0.1 N to 0.3 N. The TESASTAR-i Indexable Probe is adjustable to 168 positions in 15° increments.

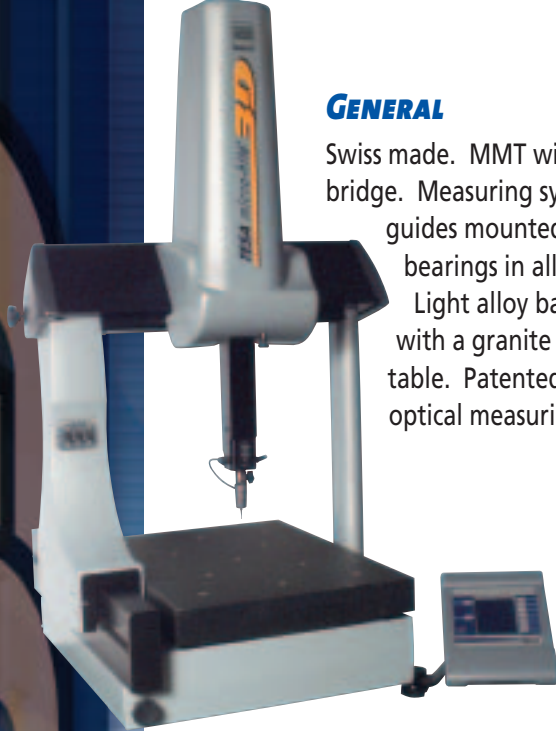
TECHNICAL EVOLUTION

The MICRO-HITE 3D coordinate measuring system is designed to be upgraded as software and system improvements are introduced by TESA.



GENERAL

Swiss made. MMT with moving bridge. Measuring system and guides mounted on air bearings in all three axes. Light alloy base fitted with a granite measuring table. Patented TESA optical measuring system.



SPECIFICATIONS

Measuring Range (X/Y/Z)	460 X 510 X 420 mm (18.11 X 20.08 X 16.54 in.)
Accuracy:	
Repeatability Limit	3 µm
Uncertainties (L=m)	U1(0.003 + 3L/1000) mm
Uncertainties (L=m)	U3 (0.003 + 4L/1000) mm
Display Resolution	0.001 mm (0.0001 in.)
Computing System Resolution	0.00001 mm (0.000001 in.)
Measuring Speed	760 mm/s (29.92 in./s)
Air Pressure	4.8 to 8.3 bar (69.62 to 120.38 psi)
Air Supply	21 liters/min (0.74 cu. ft./min)
Electrical Supply	115 to 230 Vac, 50-60 Hz, 0.3 to 0.7 A
Working Temperature Range	20° ± 1° C (68° ± 1°F)
Operating Temperature Range	13° to 35° C (55.4° to 95° F)
Electromagnetic Compatibility	✓
Weight	190 kg (419.43 lb.)
Overall Dimensions (L x H x D)	970 X 1620 X 930 mm (38.19 X 63.78 X 36.61 in.)
Max. Component Dimensions (X/Y/Z)	600 X 750 X 430 mm (23.62 X 29.53 X 16.93 in.)
VDI/VDE Inspection Report	✓
<i>Control panel:</i>	
Display Field with Illuminated Background	89 X 118 mm (3.50 X 4.65 in.)
Numerical Indication	7-decade display plus sign
Icon-Driven Menu	✓

ORDER NUMBERS

TESA MICRO-HITE 3D Coordinate Measuring System

Order Number	EDP Number	Description
03939040	28661	MH3D Basic Version
Consisting of:		
03939020	29736	TESASTAR Probe
03960040	29744	Kit of Styli for MP3 Thread
03960170	28525	Control Panel with REFLEX Application Software
03969006	29741	PCMCIA Memory Card
03969011	29319	Reference Sphere
82-703-1		Granite Measuring Table
049746		Air Filter and Regulator
03939041	28662	MH3D-I Version with Indexing Probe
03939042	28663	MH3D-F Version with Fine Adjustment
03939043	28664	MH3D-FI Version with Fine Adjustment and Indexing Probe

3D PROBES

	TESASTAR	TESASTAR-I
Repeatability, Uni-directional	0.75 µm	0.35 µm
Positioning Repeatability		1.5 µm
Adjustable Trigger Force	0.1 to 0.3 N	0.1 to 0.3 N
Number of Positions by 15° Increments		168
Order Number	03939020	03939030

STYLI



Thread	M2 or M3
Length (0.39, 0.79 or 1.18 in.)	10, 20 or 30 mm
Stylus with Ruby Ball Tip	0.5 to 8 mm (0.02 to 0.31 in.)

Probe extensions and adapters, star styli and cross pieces for M2 and M3 thread.

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tools for measurement