




TESA STAR


TESA STAR-M
SWISS MADE

**THE POWER
OF TECHNOLOGY**

TESASTAR – A FULL RANGE OF PROBE HEADS AND ACCESSORIES FOR 3D MEASUREMENT

HEXAGON METROLOGY



THE POWER OF TECHNOLOGY

FULL COMPATIBILITY WITH ALL COORDINATE MEASURING MACHINES AND SYSTEMS CURRENTLY AVAILABLE



HEXAGON METROLOGY



Technical Features

TESASTAR 03939020

Unidirectional repeatability (2 sigma): 0,75 μ m max.
 Adjustable trigger force: 0,1N to 0,3N
 Storage temperature range: -30°C to 60°C
 Operating temperature range: 10°C to 40°C (relative humidity 80 %)
 Coordinate directions: \pm X, \pm Y, +Z
 Probe stylus overtravel: X/Y \pm 20°, Z = +6 mm
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TESASTAR-i 03939030

Indexing capability through to 168 positions by increments of 15°
 Incrementation clearly stated
 Adjustable trigger force: 0,10N to 0,30N
 Positioning repeatability: 1,5 μ m
 Unidirectional repeatability: 0,35 μ m
 Probe orientation:
 A 0 to 90° by increments of 15° (swivelling)
 B \pm 180° by increments of 15° (rotation)
 Locking device fitted with 2 thumb buttons in each coordinate direction
 Styli with M3 thread, measuring length 21 to 100 mm
 Coordinate directions: \pm X, \pm Y, +Z
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TESASTAR probe head

First among many other key components of the TESASTAR product family, this probe head fitted with a touch probe with adjustable trigger force is attractively priced. Resolutely. The sensor built into this compactly sized feature especially convenient to small CMMs can swivel in an infinite number of positions – thus making the measurement of complex workpieces easier.

Simple to use, this probe head does not require any special electronics, cable or software and can easily be mounted to CMMs of any kind.

TESASTAR-i indexing probe head

TESASTAR-i emanates from a TESA's concept where an indexing head is coupled with a high-precision TESASTAR-p touch probe. This probe with indexing capability by increments of 15° in both axes allows the stylus to swivel through a number of positions as high as 168 without the need for recalibration. The system clearly shows the angular position of the probe, so that the operator is permanently informed, precisely. Probe head is provided with two buttons that allow for single-handed release.

TESASTAR-m motorised probe head

With this latest release, TESA have entered the world of high technology for its level of precision and perfection. TESASTAR-m is a motorised probe head combined with TESASTAR-e digital interface generated by the powerful PC-DMIS software tool.

TESASTAR-m can be pivoted through to $\pm 180^\circ$. Its articulated arm reaches angles ranging from $+90^\circ$ to -115° by steps of 5° . Rotation speed is as high as 90° in less than 2 seconds!

Its robust construction along with its coupling power permits extension rods with lengths over 300 mm to be added. Easily.

Achieving the accuracy of $0,5 \mu\text{m}$, this cost-effective motorised probe head is the universal mean suited for all CMMs, whatever their type or brand. Provided with the TESA KINEMATIC JOINT, TESASTAR-m can receive any touch probe from TESA, but also many of those available on the market, today.



TESASTAR-m 03939050

Angular rotation:
 A $+90^\circ$ to -115° by increments of 5°
 B 0 to $\pm 180^\circ$ by increments of 5°
 Total number of positions: 2952
 Rotation speed: 90° in 2 seconds
 Positioning repeatability: $0,5 \mu\text{m}$
 Rotation torque: $0,6 \text{ Nm}$
 Weight: $< 900 \text{ g}$
 Extension rods: $L = >300 \text{ mm}$
 TESASTAR-p coupling:
 TESA KINEMATIC JOINT
 TESASTAR-e interface
 SWISS MADE



TESASTAR



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**UP TO
THE LEAST DETAILS**

TESASTAR-p for probe heads

TESASTAR-p includes a small module integrating a touch probe with force triggered by contact in 5 directions. Fitted with a common M8 threaded connection, this small-sized probe can be fitted to the majority of existing probe heads, whether manually operated or motor driven. There are four variants available, each providing a varying trigger force from 0,05 N to 0,10 N.

Used in automatic exchange mode, TESASTAR-p will be fitted with the TESASTAR M8 kinematic joint prior to be mounted on the TESASTAR-r AUTOCHANGE rack. Whilst substantially reducing the time needed to change the probe stylus within a measurement cycle, this also results in a flexible configuration that eliminates the need for recalibration.

TESA's engineers have carefully designed all components being part of this dedicated programme for 3D measurement – including styli, extensions and accessories. Truly SWISS MADE, each product gives evidence of a consistent family to our customers.



Sales programme

1. TESASTAR-p Touch Probes

TESASTAR-p LF low force – 0,055N, L = 10 mm
 TESASTAR-p SF standard force – 0,08N, L = 10 mm
 TESASTAR-p MF medium force – 0,10N, L = 25 mm
 TESASTAR-p EF extended force – 0,10N, L = 50 mm
 Set 4 probes
 13 mm probe diameter, 26 mm in length
 M8 coupling thread
 Repeatability limit (SF version): 0,35 µm
 Measuring directions: 5

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Probe Styli

- Single item or in Kit
- Ball tip sphericity to ISO 3290, Grade 5
- Ball tip diameter from 0,5 up to 8 mm
- M2 and M3 threads
- Stainless steel and tungsten carbide probe shafts
- Fully compatible
- Swiss Made with certificate of conformity

2. TESA Kinematic Joint

TESASTAR M8, 31 mm
 TESASTAR M8, 140 mm
 TESASTAR M8, 300 mm

03969365
 03969366
 03969367

3. Extension Rods with Kinematic Joint (all wiring)

TESASTAR-KJ 50, 50 mm
 TESASTAR-KJ 100, 100 mm
 TESASTAR-KJ 200, 200 mm
 TESASTAR-KJ 300, 300 mm

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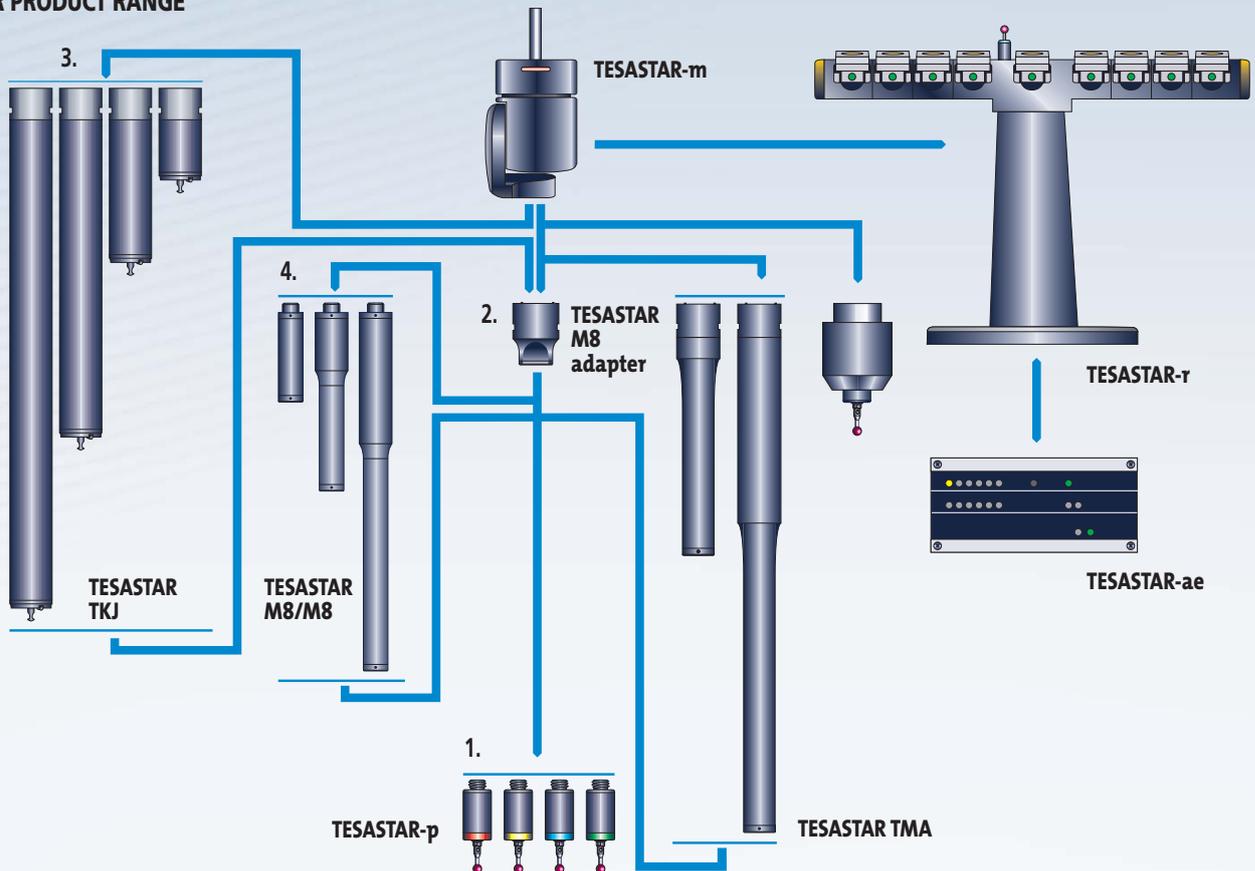
4. TESASTAR M8/M8

TESASTAR M8/M8, 50 mm
 TESASTAR M8/M8, 100 mm
 TESASTAR M8/M8, 200 mm
 Kit 3 extensions

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TESASTAR PRODUCT RANGE





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ESSENTIAL FOR AUTOMATED MEASUREMENT

TESASTAR-r automated rack with accessories for coordinate measurement

TESASTAR-r is the fruit of the latest advances in technology. This device permits probe styli and other accessories to be quickly changed without the need for the operator to take any action.

Dimensional inspection often requires to change the stylus used for the measurements frequently.

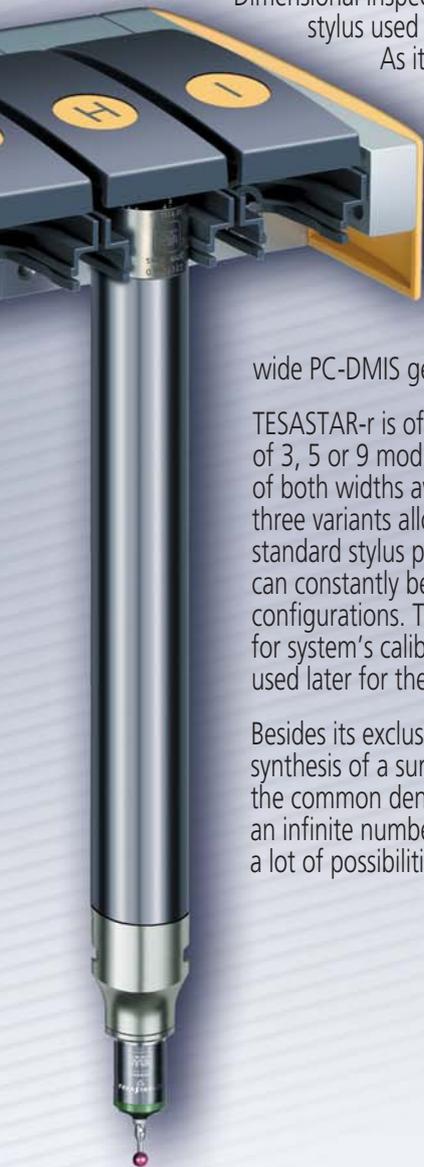
As it can be conveniently adapted, this rack with modular design is perfect for any CNC controlled coordinate system.

Interfacing between the machine, TESASTAR-r and the computer is ensured through the electronic controller – i.e. TESASTAR-ae. The enterprise-

wide PC-DMIS generates all the functions.

TESASTAR-r is offered in 3 versions, each consisting of 3, 5 or 9 modules. They can be supplied in either of both widths available (40 mm or 65 mm). These three variants allow users to change all existing standard stylus probes. Complementary modules can constantly be added to suit different stylus configurations. TESASTAR-p comes with the rack for system's calibration. This probe can further be used later for the measurement tasks.

Besides its exclusive design, TESASTAR-r is the synthesis of a sum of skills in terms of engineering, the common denominator of a system made up of an infinite number of components that offer quite a lot of possibilities.



TESASTAR-e or TESASTAR-ae electronic controller

Each unit serves for interfacing all commands – i.e. changing probe and stylus, locking various features, choosing voltage, securing probe head and rack. These electronic controllers have a direct action on the way the movements of the rack and/or the probe head are generated.

The choice of either unit depends on the machine's configuration, which may include a motorised probe head alone or coupled with the rack. In the first case, TESASTAR-e will be suited or TESASTAR-ae in the second one.

Sales Programme

Interface TESASTAR-e for motorised probe head	03939100
Set of connecting cables for TESA MH3D DCC	03969104
Set of connecting cables for B&S global	03969118

Interface TESASTAR-ae	
for motorised probe head and TESASTAR-r	03939102
Set of connecting cables for TESA MH3D DCC	03969100
Set of connecting cables for B&S global	03969117

Sales Programme

TESASTAR-r AUTOCHANGE

TESASTAR-r 3 modules	03939080
TESASTAR-r 5 modules	03939081
TESASTAR-r 9 modules	03939082
Probe holder MH3D DCC	03939083

Additional Modules

TESASTAR Active module 40 mm	03939091
TESASTAR Active module 65 mm	03939092





FR	TESA FRANCE SAS	13-15, av. Georges de La Tour	F-54303 Lunéville Cedex	Tél. +33 (0)3 83 76 83 76	Fax +33 (0)3 83 74 13 16	tesa-france@ch.bnsmc.com
IT	TESA Technology ITALIA s.r.l.	Via Bizzozzero, 118	20032 Cormano (MI)	Tel. +39 (0)2 663 053 69	Fax +39 (0)2 663 090 82	italia@ch.bnsmc.com
DE	TESA Deutschland – Hexagon Metrology GmbH	Netzstraße 32	D-71638 Ludwigsburg	Tel. +49 (0)7141 8747 0	Fax +49 (0)7141 8747 88	tesainfo@ch.bnsmc.com
ES/PT	TESA Technology Ibérica	Av. de Vizcaya s/n – Apart. 202	ES-48260 Ermua	Tel. +34 943 170 340	Fax +34 943 172 092	iberica@ch.bnsmc.com
UK	TESA Technology UK	Metrology House – Halesfield 13	Telford, Shropshire TF7 4PL	Tel. +44 1952 681 349	Fax +44 1952 681 391	uksales@ch.bnsmc.com
BENELUX	Pascal Siebens	Generaal de Wittelaan 17 – Bus 21	2800 Mechelen	Tel. +32 (0)15 435 301	Fax +32 (0)15 435 302	psiebens@ch.bnsmc.com

Headquarters: TESA SA – Bugnon 38 – CH-1020 Renens – Switzerland – Tel. + 41 (0)21 633 16 00 – Fax + 41 (0)21 633 17 57 – www.tesabs.ch – tesainfo@ch.bnsmc.com