TESA TECHNOLOGY

Optical Measurement

A COMPLETE RANGE OF MACHINES FOR NON-CONTACT MEASUREMENT

Optical measurement addresses the growing need to inspect parts faster, in a more accurate and repeatable way. The TESA range meets these requirements whilst adapting to the morphology of the parts to inpect.

- *The TESA-SCAN profile-measuring machines for measuring round parts.*
- *The TESA-VISIO digital vision systems for a wide variety of machined, milled, cut, molded or stamped parts.*
- *Classic measurement through TESA-SCOPE profile projectors for immediate measurement results.*

Diameter: 0,5 s
Length: 0,5 s

24 VDC

Dimension max. parts:
Ø 100 x L 300 mm
Weight max. parts:
4 kg

< 80 %

Packaging

Inspection report with a declaration of conformity

Scope: see TESA-REFLEX Scan software

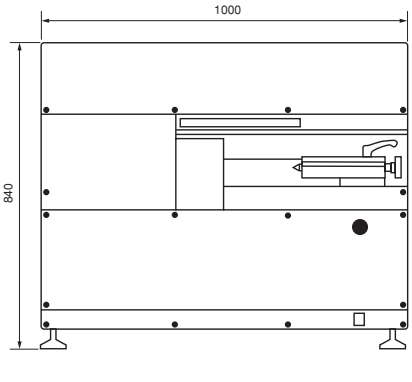
H840 x L1000 x P435 mm H33 x L39,5 x P17 in

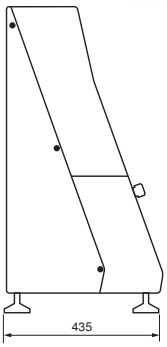
103 kg

10°C to 40°C

TESA-SCAN 52 REFLEX-Click

This model includes the ultimate power of all TESA-SCAN machines, offering high technological performances combined with unmatched ease of use and exceptional price/quality relationship.
Thanks to the added functionality for automatic recognition of the parts to be measured, the REFLEX-Click mode allows them to be quickly and reliably inspected with a single click. The colour coded classification of the measured values enables the analysis of the measurement results at a glance, rendering part inspection especially easy to execute.
Another unique function available in the REFLEX-Click mode is the ability to measure lengths and diameters speedily, making the machine ideally suited for use on the shop floor.





NO	
02430090	TESA-SCAN 52 fixed headstrock
02430091	TESA-SCAN 52 rotary headstock

		⌀	L	⌀	L
TESA-SCAN 52 REFLEX-Click		D	L	D	L
		0,5 ÷ 52 mm	300 mm	0.02 ÷ 2.0 in	11.8 in
		0,0001 mm	0,0005 mm	0.000004 in	0.00002 in
	20°C ± 1°C	(2 + D/100) µm (D = mm)	(5 + L/100) µm (L = mm)	(0.08 + D/100) / 1000 in (D in mm)	(0.2 + L/100) / 1000 in (L in mm)
	2σ	1 µm	2,5 µm	0.00004 in	0.0001 in

Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

TESA-SCAN 25

Measuring machine with rotating work including:

- 1 rotary headstock
- 1 tailstock
- 2 male centers TL02-0001
- Comes with computer, mouse, operating system Windows 7 screen TFT 21.5" Multilingual, U.S. keyboard software Pro-Measure with manual FDE application on CD.

Diameter : 0,5 s
Length : 0,5 s

100/110-220/240 VAC 50/60 Hz

Max. workpiece size (D x L): 59 x 270 mm; Max. workpiece weight: 2 kg

< 80 %

Shipping packaging

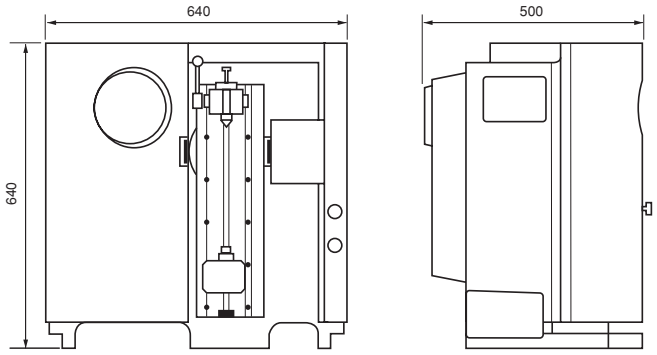
Inspection report with a declaration of conformity

Performances: see Pro-Measure software

H800 x L640 x P500 mm, H32 x L25 x P20 in

67 kg, 148 lbs

10°C to 40°C



No	=
02430000	TESA-SCAN 25

		Ø	⌀	Ø	⌀
TESA-SCAN 25		D	L	D	L
		0,25 ÷ 25 mm	200 mm	0.01 ÷ 1 in	8.0 in
		0,0001 mm	0,001 mm	0.000004 in	0.00004 in
	20°C ± 1°C	(1,5 + D/100) µm (D = mm)	(5 + L/100) µm (L = mm)	(0.06 + D/100)/ 1000 in (D = in)	(0.2 + L/100)/ 1000 (L = in)
	2σ	1 µm	2,5 µm	0.00004 in	0.0001 in

Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

Diameter : 0,5 s
Length : 0,5 s

100/110-220/240 VAC 50/60 Hz

Max. workpiece size (D x L): 100 x 290 mm. Max. workpiece weight: 4 kg.

< 80 %

Shipping packaging

Inspection report with a declaration of conformity

Performances: see Pro-Measure software

H1055 x L800 x P580 mm, H41 x L32 x P23 in

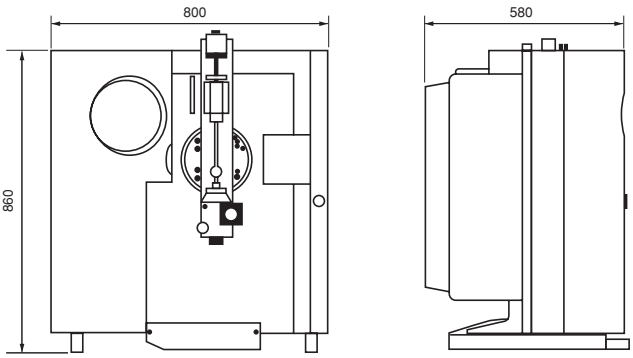
130 kg, 290 lbs

10°C to 40°C

TESA-SCAN 50

Measuring machine with rotating work including:

- 1 rotary headstock
- 1 tailstock
- 2 male centers TL02-0002
  Comes with computer, mouse, operating system Windows 7 screen TFT 21.5" Multilingual, U.S. keyboard, software Pro-Measure with manual FDE on CD.



NO	
02430010	TESA-SCAN 50

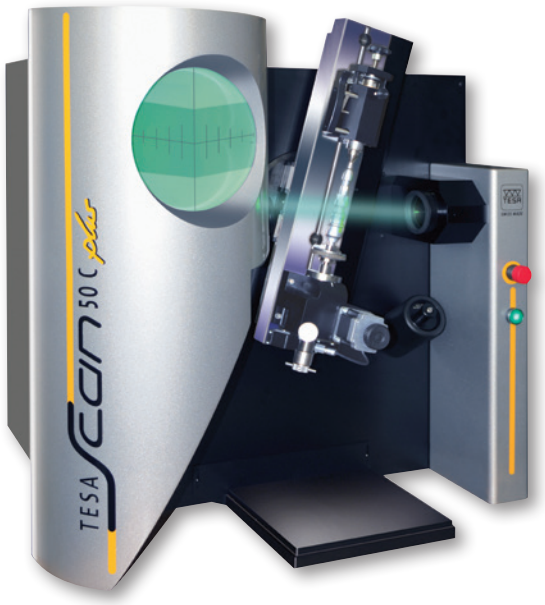
		Ø		Ø	
TESA-SCAN 50		D	L	D	L
		0,5 ÷ 50 mm	275 mm	0.02 ÷ 1.96 in	10.8 in
		0,0001 mm	0,001 mm	0.000004 in	0.00004 in
	20°C ± 1°C	(2 + D/100) µm (D = mm)	(5 + L/100) µm (L = mm)	(0.08 + D/100)/ 1000 in (D = in)	(0.2 + L/100)/ 1000 (L = in)
	2σ	1 µm	2,5 µm	0.00004 in	0.0001 in

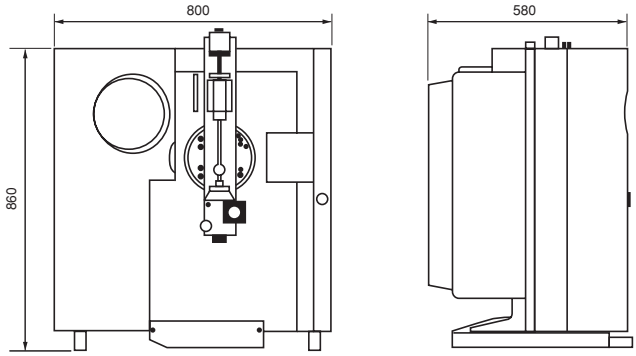
Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

TESA-SCAN 50 CE+

Measuring machine with workpiece rotation and tilt mechanism of the slide (30°) for thread measurement, base unit including:

- 1 rotary headstock
- 1 tailstock
- 2 male centers TL02-0002.
- Comes with computer with a mouse, 21.5" TFT screen Multilingual Windows 7 operating system, U.S. keyboard, Pro-Measure software with FDE implementation manual on CD.





Diameter : 0,5 s
Length : 0,5 s

100/110-220/ 240 VAC 50/60 Hz

Max. workpiece size (D x L): 100 x 290 mm; Max. workpiece weight: 4 kg

< 80 %

Shipping packaging

Inspection report with a declaration of conformity

Performances: see Pro-Measure software

H1055 x L800 x P580 mm, H41 x L32 x P23 in

140 kg, 310 lbs

10°C to 40°C

02430030	TESA-SCAN 50CE+

		Ø	⌀	Ø	⌀
TESA-SCAN 50CE+		D	L	D	L
		0,5 ÷ 50 mm	275 mm	0.02 ÷ 1.96 in	10.8 in
	Tilting for thread measurement	Max. 30°			
		0,0001 mm	0,001 mm	0.000004 in	0.00004 in
	20°C ± 1°C	(2 + D/100) µm (D = mm)	(5 + L/100) µm (L = mm)	(0.08 + D/100)/ 1000 in (D = in)	(0.2 + L/100)/ 1000 in (L = in)
	2σ	1 µm	2,5 µm	0.00004 in	0.0001 in

Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

Diameter : 0,5 s
Length : 0,5 s

100/110-220/ 40 VAC 50-60 Hz

Max. workpiece size (D x L): 100 x 515 mm; Max. workpiece weight: 6 kg

< 80 %

Shipping packaging

Inspection report with a declaration of conformity

Performances: see Pro-Measure software

H1455 x L800 x P580 mm, H57 x L32 x P23 in

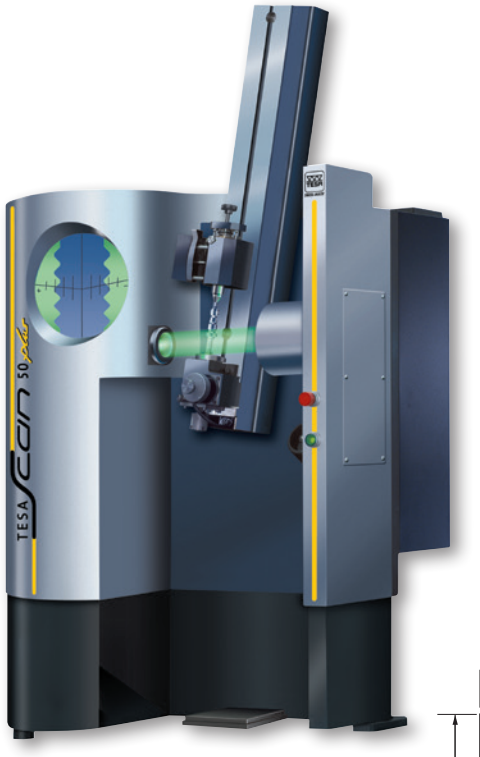
180 kg, 398 lbs

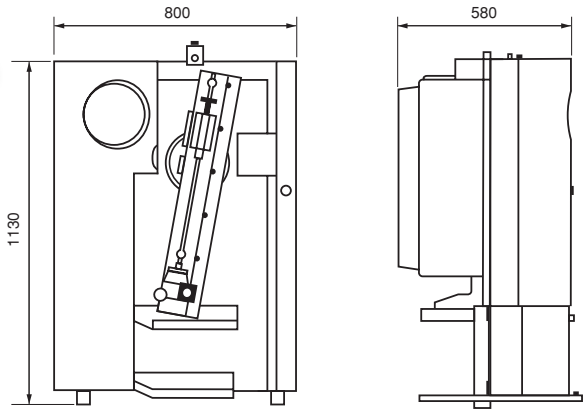
10°C to 4°C

TESA-SCAN 50+

Measuring machine with workpiece rotation and tilt mechanism of the slide (30°) for thread measurement, base unit including:

- 1 rotary headstock
- 1 tailstock
- 2 male centers TL02-0002
- Comes with computer with a mouse, 21.5" TFT screen Multilingual Windows 7 operating system, U.S. keyboard, Pro-Measure software with F-D-E implementation manual on CD.





No	
02430040	TESA-SCAN 50+

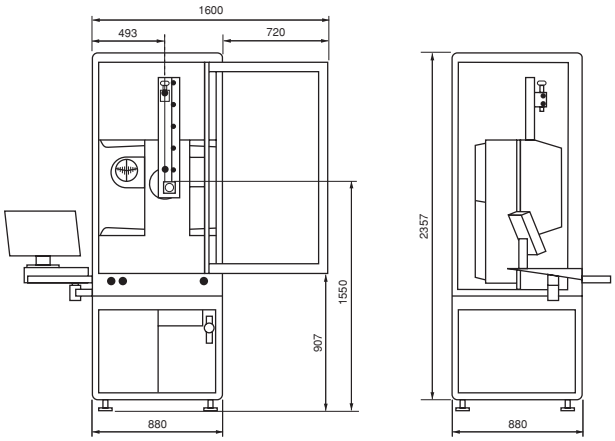
		⌀	⌀	⌀	⌀
TESA-SCAN 50+		D	L	D	L
		0,5 ÷ 50 mm	500 mm	0.02 ÷ 1.96 in	19.7 in
	Tilting for thread measurement	Max. 15°			
		0,0001 mm	0,001 mm	0.000004 in	0.00004 in
	20°C ± 1°C	(2 + D/100) µm (D = mm)	(5 + L/100) µm (L = mm)	(0.08 + D/100)/ 1000 in (D = in)	(0.2 + L/100)/ 1000 in (L = in)
	2σ	1 µm	2,5 µm	0.00004 in	0.0001 in

Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

TESA-SCAN 80/ 80+

Measurement center with protection cabin, part rotation and tilt mechanism slide (TESA-SCAN 80 +) base unit including:

- 1 rotary doll
- 1 tailstock
- 2 male centers TL02-0002
- Delivered with computer with a mouse, 7 Multilingual Windows operating system already installed, screen, keyboard, software Pro-Measure/Pro-Composer with F-D-E implementation manual on CD.



Diameter: 1 s
Length: 1 s

100/110-220/ 240 VAC 50/60 Hz

Max. workpiece size (D x L): 100 x 515 mm; Max. workpiece weight: 6 kg

< 80 %

Shipping packaging

Inspection report with a declaration of conformity

Performances: see Pro-Measure software

H 1500 x W750 x D 520 mm, H 60 x L 30 x P 20 in

250 kg (TESA-SCAN 80) 260 kg (TESA-SCAN 80+)

10°C à 35°C

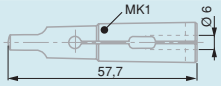
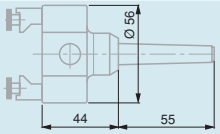
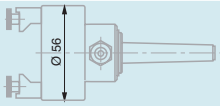
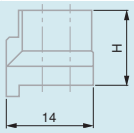
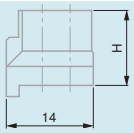
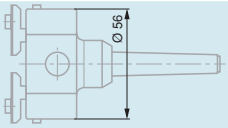
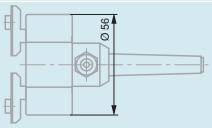
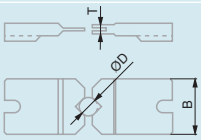
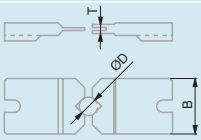
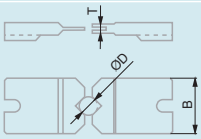
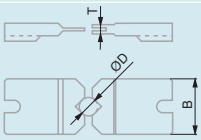
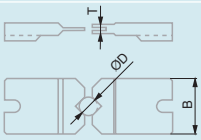
NO	
02430050	TESA-SCAN 80
02430060	TESA-SCAN 80+ with slew mechanism

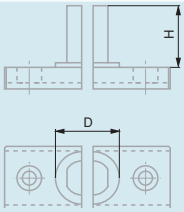
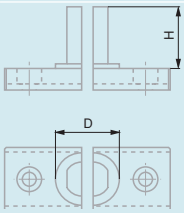
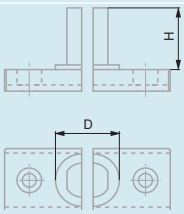
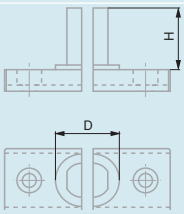
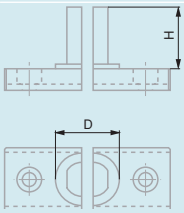
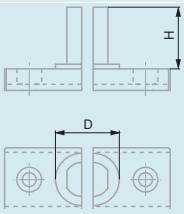
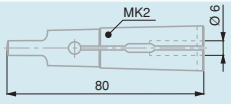
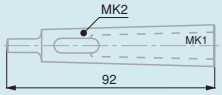
TESA-SCAN 80/ 80+		D	L	D	L
		0,5 ± 80 mm	500 mm	0.02 ÷ 3.15 in	19.7 in
	Tilting for thread measurement	Max. 10° (TESA-SCAN 80+)			
		0,0001 mm	0,001 mm	0.000004 in	0.00004 in
	Max. tolerated error Ø < 30 mm	(1,5 + D/100) µm (D = mm)	(7 + L/100) µm (L = mm)	(0.06 + D/100)/ 1000 in (D = in)	(0.28 + L/100)/ 1000 in (L = in)
	Ø > 30 mm (20°C ± 1°C)	(2 + D/100) µm (D = mm)	(8 + L/100) µm (L = mm)	(0.08 + D/100)/ 1000 in (D = in)	(0.35 + L/100)/ 1000 in (L = in)
	2σ	0,001 mm	0,003 mm	0.00004 in	0.00012 in

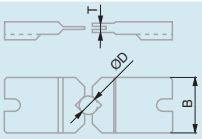
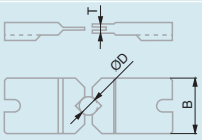
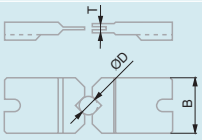
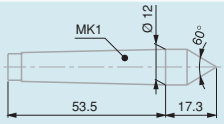
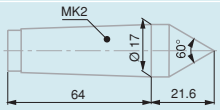
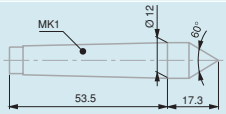
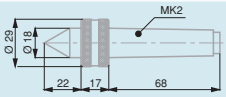
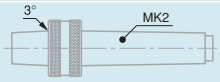
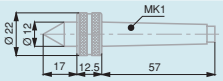
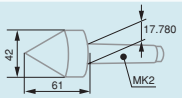
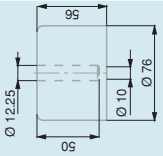
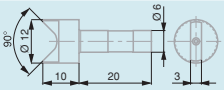
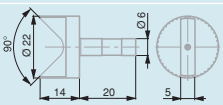
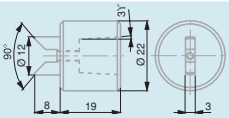
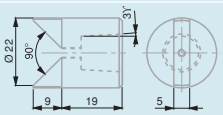
Performances are based on the results obtained from clean, ground components measured at 20°C. They may be affected by the component shape and surface finish.

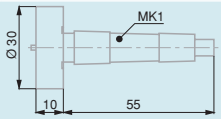
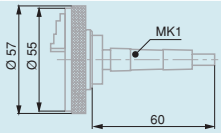
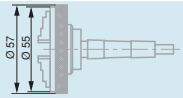
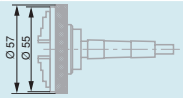
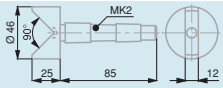
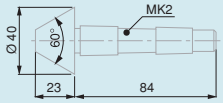
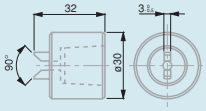
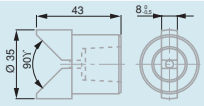
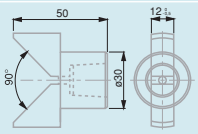
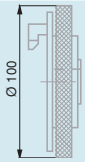
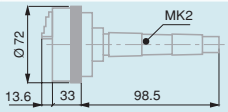
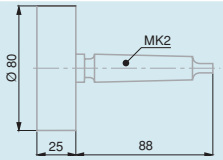
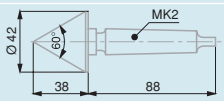
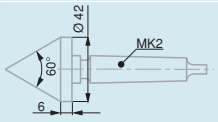
Fixturing Systems

Full range of standard fixturings, morse 1 (TESA-SCAN 25) and Morse 2 (TESA-SCAN 50, 52, 80).

NO			Morse taper 1	Morse taper 2	
TL01-0002	Center adapter wtih a Ø 6 mm coupling bore		●	–	–
TL01-0003	2-jaw gripper		●	● Requires TL01-0027	External clamping for manual use
TL01-0004	2-jaw gripper		●	● Requires TL01-0027	External clamping for use with air pressure
TL01-0005	Raising blocks, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	For external jaws H = 18
TL01-0006	Raising blocks, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	For external jaws H = 22
TL01-0007	2-jaw chuck		●	● Requires TL01-0027	Internal clamping for manual use
TL01-0008	2-jaw chuck		●	● Requires TL01-0027	Internal clamping for use with air pressure
TL01-0009	External jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	0 ÷ 6 mm, T = 1.5
TL01-0010	External jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	0 ÷ 6 mm, T = 3
TL01-0011	External jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	6 ÷ 12 mm, T = 3
TL01-0012	External jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	12 ÷ 18 mm, T = 6
TL01-0013	External jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	18 ÷ 24 mm, T = 9

NO	=		Morse taper 1	Morse taper 2	
TL01-0015	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 4 ÷ 5 mm H = 6,6 mm
TL01-0016	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 5 ÷ 6 mm H = 8,6 mm
TL01-0017	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 6 ÷ 8 mm H = 11,5 mm
TL01-0018	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 8 ÷ 11 mm H = 17,5 mm
TL01-0019	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 11 ÷ 15 mm H = 20 mm
TL01-0020	Internal jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	D = 15 ÷ 19 mm H = 20,2 mm
TL01-0021	Set of external jaws, in pars		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	Set of jaws including: TL01-0009 TL01-0010 TL01-0011 TL01-0012 TL01-0013
TL01-0022	Set of internla jaws, in pairs		For TL01-0007 TL01-0008	For TL01-0007 TL01-0008	Set of jaws incuding: TL01-0015 TL01-0016 TL01-0017 TL01-0018 TL01-0019 TL01-0020
TL01-0026	Centre adapter with a 6 mm dia. coupling bore		–	●	–
TL01-0027	Reduction sleeve, Morese 2 to 1		–	●	–

			Morse taper 1	Morse taper 2	
TL01-0038	Exteranl jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	0 ÷ 6 mm, T = 6
TL01-0039	Exteranl jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	0 ÷ 6 mm, T = 15
TL01-0040	Exteranl jaws, in pairs		For TL01-0003 TL01-0004	For TL01-0003 TL01-0004	6 ÷ 12 mm, T = 15
TL02-0001	Extra male centre, 10 mm		●	–	2 items provided with TESA-SCAN 25 as standard
TL02-0002	Extra male centre, 17 mm		–	●	2 items provided ith TESA-SCAN 50, 52 and 80 as standard
TL02-0003	Drive centre		●	–	Diamond coated tip 10 mm
TL02-0016	Rotation centre with a B12 taper		●	–	Suitable for sleeves Z173-0922/0923
TL02-0017	Rotation centre, Morse 2		–	●	–
TL02-0018	Rotation centre with a B12 taper		–	●	–
TL02-0019	Rotation centre, Morse 1		●	–	–
TL02-0021	Rotation centre, Morse 2		–	●	–
Z173-0908	Vertical support		For TL01-0003 TL01-0004 TL01-0007 TL01-0008	For TL01-0003 TL01-0004 TL01-0007 TL01-0008	Ensures stable positioning for mounting jaws
Z173-0920	Female centre, Ø 10 mm		● Requires TL01-0002	● Requires TL01-0026	–
Z173-0921	Female centre, Ø 20 mm		● Requires TL01-0002	● Requires TL01-0026	–
Z173-0922	Female centre, Ø 10 mm		● For TL02-0016	–	B12 interior taper
Z173-0923	Female centre, Ø 20 mm		● For TL02-0016	–	B12 interior taper

NO	=		Morse taper 1	Morse taper 2	
Z173-0961	Platten, Ø 30 mm		●	–	–
Z173-2020	3-jaw chuck		●	● Requires TL01-0027	Clamping capacity: Outside 1 ÷ 15 mm, Inside 11 ÷ 26 mm
Z173-2024	6-jaw chuck		–	●	–
Z173-2025	6-jaw chuck		●	–	–
Z178-0607	Female centre		–	●	Ø 40 mm
Z178-0610	Male centre, Ø 15 ÷ 40 mm		–	●	–
Z178-0940	Female centre with a B12 internal taper		–	● Requires TL02-0018	Ø 10 mm
Z178-0941	Female centre with a B12 internal taper		–	● Requires TL02-0018	Ø 30 mm
Z178-0942	Female centre with a B12 internal taper		–	● Requires TL02-0018	Ø 45 mm
Z178-2009	Drive mechanism		–	●	Used to drive components between fixed centres. Directly fitted on the headstock
Z178-2020	3-jaw chuck. 2 ÷ 50 mm		–	●	Clamping capacity: Outside 2 ÷ 50 mm, Inside 23 ÷ 50 mm
Z178-2025	Platten, Ø 80 mm		–	●	–
Z178-2026	Drive centre		–	●	Diamond coated tip
Z178-3028	Drive centre, Ø 42 mm max.		–	●	–

SOFTWARE FOR PROFILE MEASURING MACHINES

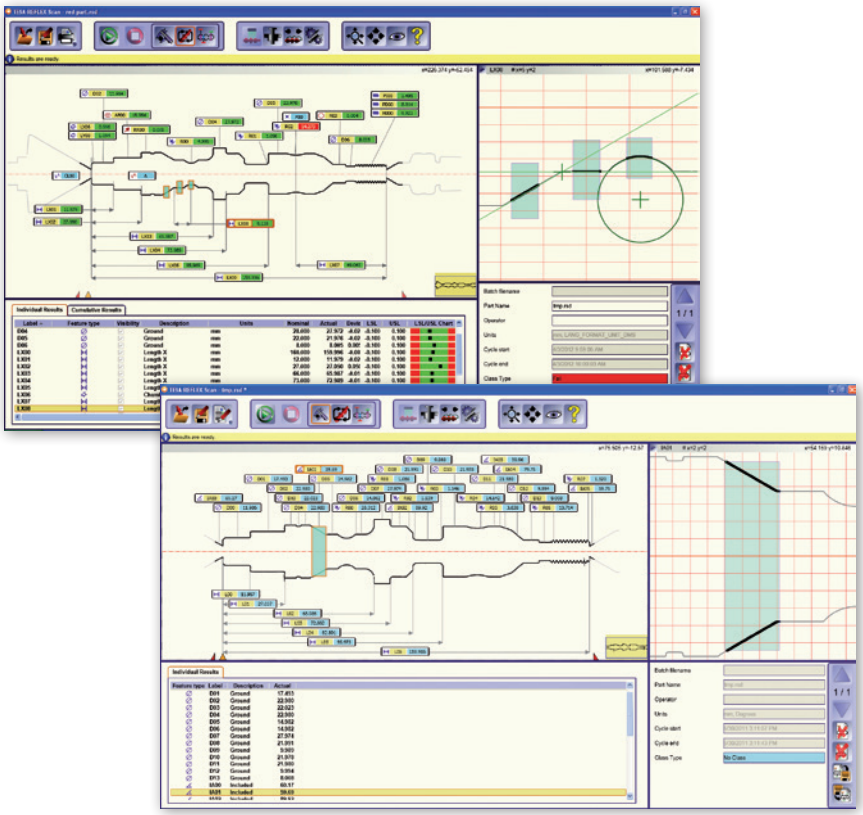
Equipped with TESA-REFLEX Scan software, the TESA-SCAN 52 is robust and easy to use, and therefore perfectl for use in workshops. Close at hand to operators, it replaces conventional measuring systems, including multigauging systems, offering unmatched flexibility and significant time savings.

Featuring an ergonomic interface and offering a large number of dimensions that can be measured, Pro-Measure retains the philosophy of TESA-REFLEX Scan software whilst providing greater capacity for the most advanced of measuring applications.

TESA-REFLEX Scan Software

Key Features :

- Automatic measurement of lengths and diameters using the REFLEX-Click function.
- Automatic recognition of the parts being measured or the programmes used.
- Intelligent detection of the relevant measurement zones.
- Management of the operator and programming modes.
- Value storage.
- Dynamic displaying of the measurement results.
- Flexible reporting.

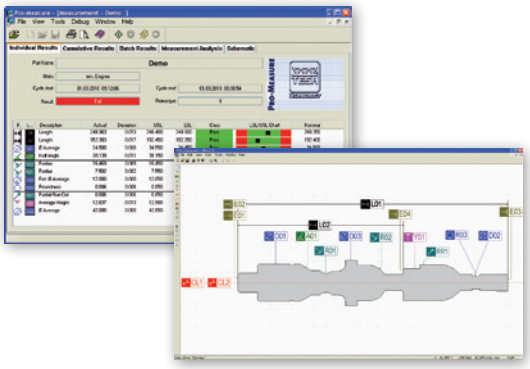


NO	
02460100	TESA-REFLEX Scan

Pro-Measure Software

Key Features:

- Rapid creation of programmes.
- Wide variety of measuring functions.
- Statistical follow up for optimum monitoring of the manufacturing process.
- Control of access for different user levels.
- Flexible reporting.



02460011	Pro-Measure
02460076	Option Pro-Measure for off-line programming

Static measurement

Diameters, lengths, intersection points, gauge diameters, radii, angles etc. 2D workpiece alignment – Creation of a workpiece axis based on two datum diameters.

Dynamic measurement

Concentricity – Parallel or interrupted diameters, tapers, parallel thread profiles or on maxi form.

Runout – Plain or interrupted diameters.

Diameters with rotation, ovality, max, min and average diameters of plain or interrupted diameters.

Hexagonal – Across-flats, symmetry of flats to axis, max. dimension across corners.

Section analysis with rotation – Longest and shortest section of radii, angular location.

3D workpiece alignment – Creation of a workpiece axis with reference to plain diameters or thread lengths.

Thread measurement – With no mechanical slewing

Main Features:

Parallel, vee-shaped threads

- Major diameter
- Flank diameter
- Flank angle
- Pitch

Taper threads

- Pitch
- Flank angle
- Included aper angle
- Gauge length
- Usable thread length
- Pitch diameter
- Major diameter

Conicity on diameter Thread and worm thread measurement With mechanical slewing

Main Features:

Parallel threads

- Major diameter
- Flank diameter
- Pitch
- Minor diameter
- Flank angle
- Root radius
- Crest radius
- Circularity
- Lead error

Taper threads

- Pitch diameter
- Major diameter
- Minor diameter
- Taper
- Crest diameter

Double-threads, parallel

- Major and minor diameters
- Half pitch
- Flank angle
- Crest radius
- Root radius

Worm threads (on request)

- Pitch
- Major and minor diameters
- Over Wire diameter
- Tooth thickness
- Pressure angle
- Addendum
- Dedendum
- Thread depth
- Runout

• *Ball screws (on request)*

- Pitch
- Lead error
- Over wire diameter

TESA-VISIO 200 GL

MPEX, Y* (EX, EY) = (2 + 10 L/1000) µm MPEXY* (EXY) = (2,9 + 10 L/1000) µm MPEZ*/** (EZ) = (2,9 + 10 L/1000) µm
* L in mm
** Mechanical precision with no displacement in X-Y

Opto-electronic measuring systems with incremental glass scales, resolution to 0,05 µm

Rigid granite structure

100 ÷ 240 VAC ± 10 %; 50 ÷ 60 Hz

Max. load capacity: 10 kg

10°C to 40°C

80 %, non-condensing

Shipping packaging (W x D x H) : 800 x 1200 x 1100 mm

Calibration certificate

Declaration of conformity

Manual

Measuring volume (X/Y/Z) : 200 x 100 x 150 mm

Table surface (X/Y): 400 x 280 mm

Delivered fully assembled

98 kg

Display resolution: 0,001 mm

20°C ± 1°C

Optics

Available with a manual indexable zoom or a motorised zoom for greater comfort. Also provided with a CCD colour camera.

Light illuminations

All light sources are fitted with LEDs producing a cold light, also long-lasting.

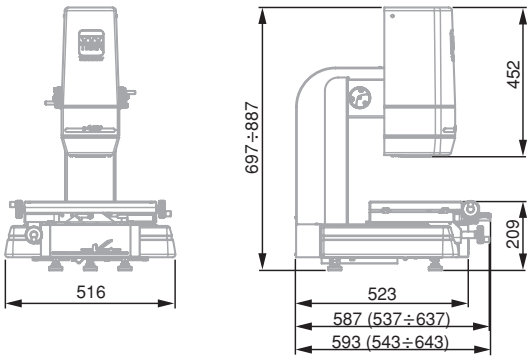
- Diascopic illumination for checking profiles as well as for transparency-based measurements.
- Ringlight (4 x 90°) for millings, bores, chamfers and round edges.
- Coaxial light for blind bores and cylindrical parts.
- Each light source can be set separately over the software.

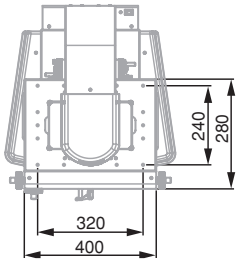
Swiss mechanics

Granite structure to ensure the rigidity and stability required for any high-precision measuring system.

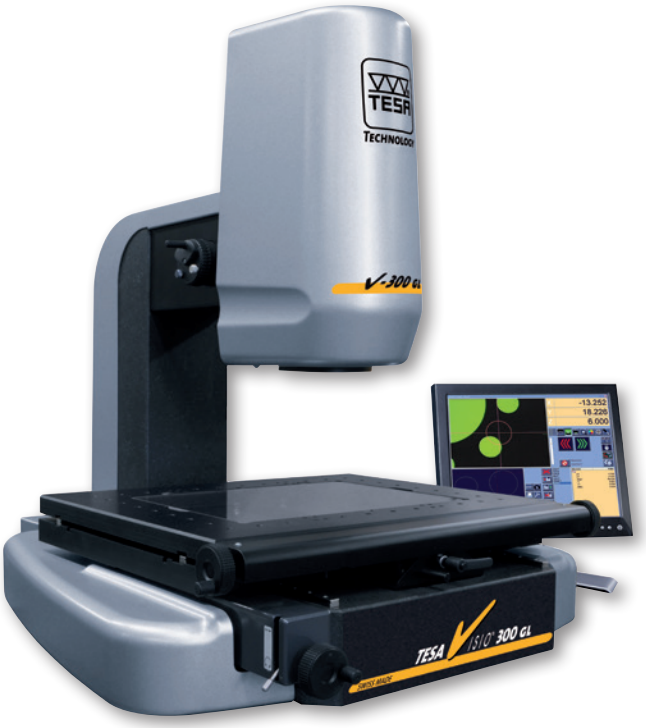
NO					
06830401	TESA-VISIO 200 manual zoom	200 x 100 x 150 mm (X/Y/Z	MPEx,y (Ex, Ey) = (2 + 10L*/1000) MPExy (Exy) = (2,9 + 10L*/1000) MPEz (Ez) = (3,9 + 10L*/1000) *L = mm	Manuals	4 x 90°
06830428	TESA-VISIO 200 motorised zoom	200 x 100 x 150 mm (X/Y/Z)	MPEx,y (Ex, Ey) = (2 + 10L*/1000) MPExy (Exy) = (2,9 + 10L*/1000) MPEz (Ez) = (3,9 + 10L*/1000) *L = mm	Manuals	4 x 90°

OPTIONAL ACCESSORIES:	
06860030	Lens 0,5x
06860031	Lens 0,75x
06860032	Lens 1,5x
06860033	Lens 2x
06860145	Collimated light
06860186	Foot pedal for TESA-VISIO manual
06860187	TESA-REFLEX Vista Compare
06860400	Base kit
06860401	Advanced kit
06869122	PLASTIFORM Full case





TESA-VISIO 300 GL MANUAL



Key features:

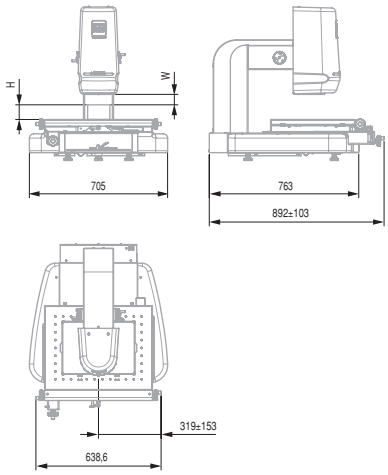
Optical All machines are equipped as standard with a motorized zoom and a color camera.

Lighting

- All machines are equipped with light sources light-emitting diodes (long life. Cold light).
- A lighting diascopic useful for profile pictures and measurement through.
- A light two annular segments (4 x 90 + 8° x 45°) useful for illuminating surface millings, holes, chamfers, rounded edges.
- A useful coaxial light for blind holes and cylindrical parts.
  Each light is independently adjustable via software.

Swiss Design Each machine consists of a granite structure ensuring rigidity and stability required by any system of measurement precision.

NO					
06830602	TESA-VISIO 300 GL man. 12X zoom	300 x 200 x 150 mm (X/Y/Z)	MPEx,y (Ex, Ey) = (2 + 4L*/1000) MPExy (Exy) = (2,5 + 4L*/1000) MPEz (Ez) = (3,9 + 5L*/1000) *L = mm	Manuals	4 x 90° + 8 x 45°
06830601	TESA-VISIO 300M GL man. 6,5 x zoom	300 x 200 x 150 mm (X/Y/Z)	MPEx,y (Ex, Ey) = (2 + 4L*/1000) MPExy (Exy) = (2,5 + 4L*/1000) MPEz (Ez) = (3,9 + 5L*/1000) *L = mm	Manuals	4 x 90° + 8 x 45°



OPTIONAL ACCESSORIES:	
06860030	Lens 0,5x
06860031	Lens 0,75x
06860032	Lens 1,5x
06860033	Lens 2x
06860145	Collimated light
06860186	Foot pedal for TESA-VISIO manual
06860187	TESA-REFLEX Vista Compare
06860287	0,5x lens
06860288	0,75x lens
06860289	1,5x lens
06860290	2x lens
06860400	Base kit
06860401	Advanced kit
06869122	PLASTIFORM Full case

- MPEX, Y* (EX, EY) = (2,0 + 4 L/1000) µm MPEXY* (EXY) = (2,5 + 4 L/1000) µm MPEZ* (EZ) = (3,9 + 5 L/1000) µm * L en mm
- Systems opto - electronic with incremental scales, resolution 0,05 µm
- Rigid granite strcuture
- 100 ÷ 240 VAC ± 10 %; 50 ÷ 60 Hz
- Load capacity 20 kg
- 10° C to 40°C
- 80 %, no condensation
- Transport Packaging (W x D x H): 1630 x 1140 x 1360 mm
- Calibration certificate
- Déclaration of conformity
- Measurement volume(X/Y/Z) : 300 x 200 x 150 mm
- Surface table (X/Y) : 550 x 430 mm
- Shipped assembled
- 170 kg
- Resolution: 0,001 mm
- 20°C ± 1°C

OPTICAL

Additional lenses for greater magnification range.

Additional Lenses for 6,5 Zoom

Mounts on TESA-VISIO 200 and 300 GL equipped with 6,5x lens.

NO	=
06860030	Lens 0,5x
06860031	Lens 0,75x
06860032	Lens 1,5x
06860033	Lens 2x

Indicative values for a 20-inch monitor with a 6,5x maginication (0,7x to 4,5x), also with additional lens

NO	06860030	06860031	–	06860032	06860033
Lenses	0,5x	0,75x	- (1x)	1,5x	2x
Magnifications	15 ÷ 85	22,5 ÷ 127,5	30 ÷ 170	45 ÷ 255	60 ÷ 340
Work distance (W) in mm	175	110	90	50	35
Max. height (H) in mm	0 ÷ 45	0 ÷ 110	0 ÷ 130	0 ÷ 170	0 ÷ 185
Max. field of view in mm	12,8 x 9,6	8,5 x 6,4	6,4 x 4,8	4,2 x 3,2	3,2 x 2,4
Min. field of view in mm	2,2 x 1,6	1,5 x 1,1	1,1 x 0,8	0,7 x 0,5	0,5 x 0,4

Additional Lenses for 12x Zoom

Mounts on TESA-VISIO 300 GL equipped with x12

NO	=
06860287	0,5x lens
06860288	0,75x lens
06860289	1,5x lens
06860290	2x lens

Indicative values for a 20-inch monitor with a 12x (0,58x to 7x), also with additional lens

NO	06860287	06860288	–	06860289	06860290
Lenses	0,5x	0,75x	- (1x)	1,5x	2x
Magnifications	13 ÷ 130	19,5 ÷ 181,5	26 ÷ 260	39 ÷ 390	52 ÷ 520
Workd distance (W) in mm	165	105	85	50	30
Max. height (H) in mm	0 ÷ 55	0 ÷ 115	0 ÷ 135	0 ÷ 170	0 ÷ 190
Max. field of view in mm	14,7 x 11	9,8 x 7,3	7,3 x 5,5	4,9 x 3,7	3,6 x 2,7
Min. field of view in mm	1,4 x 1,1	0,9 x 0,7	0,7 x 0,5	0,4 x 0,3	0,3 x 0,2

ILLUMINATION

To make parallel the diascopic light and avoid reflection phenomena when measuring parts cylindiques

Diascopic Parallel Light

N°	=
06860145	Collimated light

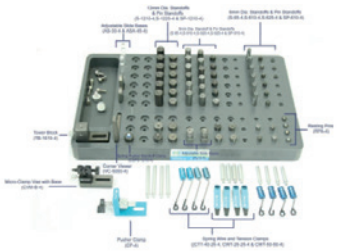
CLAMPING KITS

Two kits to choose from for attachment suitable for all room types:

- Basic
- Advanced

Fixing Kit for TESA VISIO

Workholding kits



N°	=
06860400	Base kit
06860401	Advanced kit

ADDITIONAL ACCESSORIES

Ground control for entering points for TESA-VISIO manual

Foot Swich for Data Capture

For manual TESA-VISIO

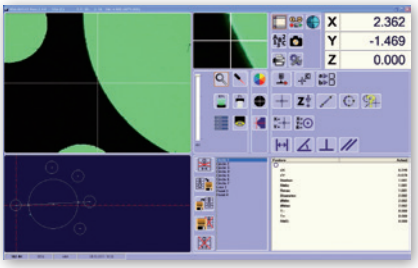
N°	=
06860186	Foot pedal for TESA-VISIO manual

SOFTWARE FOR VISION SYSTEMS

– TESA-REFLEX Vista for manual TESA-VISIO

TESA-REFLEX Vista Software

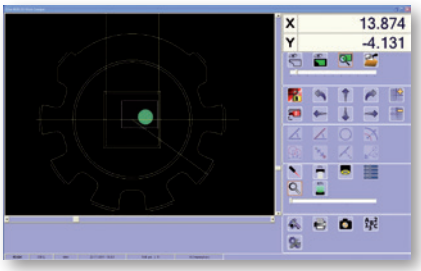
For manual vision machines



06860046	TESA-REFLEX Vista

TESA-REFLEX Vista Compare Option

Visual comparison of the component with its CAD model (option within the TESA-REFLEX) software)



06860187	TESA-REFLEX Vista Compare

TESA-SCOPE VERTICAL MODEL

TESA-SCOPE II 300V probes are available with a measurement range of 200 x 100 mm while the "Plus" version has a field measuring 300 x 150mm.

TESA-SCOPE II 300V and 300V Plus

Perfectly adapted to the control of parts and other planar surface of the micromechanical components .

- Profile projectors vertical light.
- 360° rotating screen frosted glass . Ø 300 mm. Etched reticles 30°, 60° and 90°, equipped with four fixed - diagrams .
- Rotate the screen with sexagesimal and decimal display resolution in minutes - Reset ABS / INC .
- Profile illumination with green filter included . Increases contrast , facilitates measurement and decreases the influence of the operator.
- Surface illumination with fiber optic adjustable for optimal projection of the image.
- "Save Lamp" system . Automatic stop lamp when the projector is not used for several minutes (life bulbs 5 times on average).
- Quick-change goals , bayonet .
- Coordinate Measuring Table, equipped with an optoelectronic rule, resolution 0,001 mm .
  Measuring range:
  • 200 x 100 mm
  • X axis with a clutch for a quick trip.
  • Move the X axis for right and left handed.
  • Maximum load of 10 kg.
- Lateral support for documents.

Field measuring 200 x 100 mm (X / Y)

Résolution 0,001 mm

Measuring system with incremental scales, opto-electronics, resolution 0,001 mm.

In a coordinate direction (4,5 + L/40) ≤ 8 µm (L = mm) big table (5 + L/20) µm (L = mm)

Optical precision ± 0,05 % in lighting profile, ± 0,10 % in surface lighting.

Surface 350 x 210 mm (X/Y)

Stable and rigid steel structure Table in anodized aluminum

Load capacity 10 kg
Lighting Profile: lamp 24V 150W with thermal
Lighting filter surface: adjustable fiber optic lamp 24V 200W with thermal filter

115 ÷ 230 VAC ± 10 %; 50 ÷ 60 Hz

20°C ± 1°C

10°C to 40°C

80 %, without condensation

IP40

IEC 61010
EN 60204
EN 61326-1

110 kg

Comes fully assembled, objectives to be ordered separately.

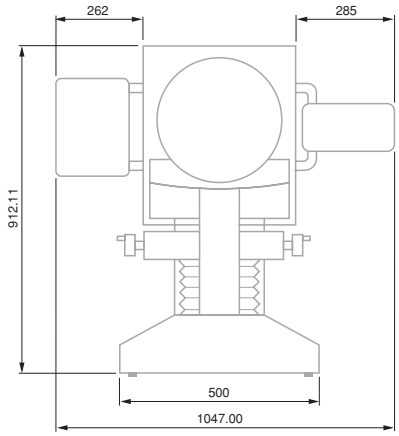
Shipping Packaging

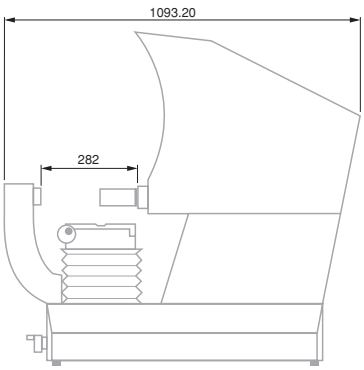
Serial number

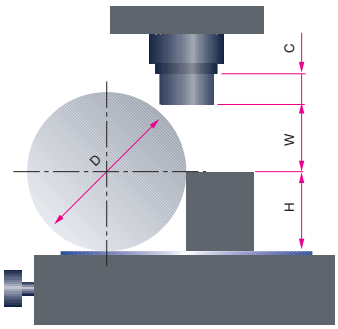
Declaration of conformity

TESA measuring report

		Base	Measuring Table		Digital Readout / Control Panel		
			X = 200 mm Y = 100 mm	X = 300 mm Y = 150 mm	TS100	TS300	TS300E
TESA-SCOPE II 300V	06830041	●	●	–	●	–	–
TESA-SCOPE II 300V	06830042	●	●	–	–	●	–
TESA-SCOPE II 300V	06830043	●	●	–	–	–	●
TESA-SCOPE II 300V Plus	06830044	●	–	●	●	–	–
TESA-SCOPE II 300V Plus	06830045	●	–	●	–	●	–
TESA-SCOPE II 300V Plus	06830046	●	–	●	–	–	●

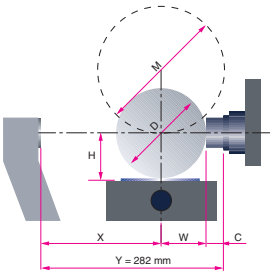






Telecentric Lenses for TESA-SCOPE 300V and 300V Plus

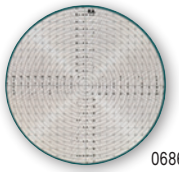
For TESA-SCOPE II 300V and 300V Plus



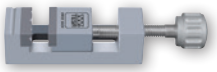
NO		Object-field, mm	Working distance (W), mm	Maximum height (H), mm	Masimum diameter (D), mm	Objective lenght (C), mm
06860001	Lens 300V - 10x	30	80	83	166	37
06860002	Lens 300V - 20x	15	82	83	166	35
06860003	Lens 300V - 25x	12	70	83	166	47
06860004	Lens 300V - 31, 25x	9,6	56	83	166	61
06860005	Lens 300V - 50x	6	53	83	166	64
06860006	Lens 300V - 100x	3	43	83	166	74

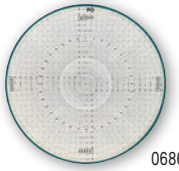
Accessories for TESA-SCOPE Vertical Model

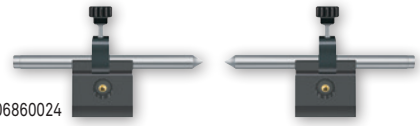
For TESA-SCOPE II 300V and 300V Plus


06869055

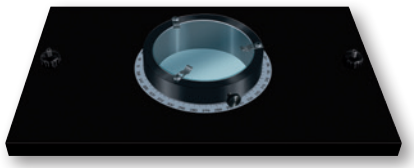

06869057


06860025

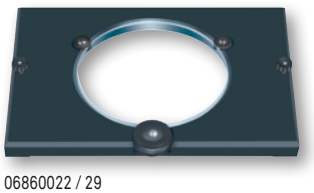

06869056


06860024

NO	
06860015	Glass window 200 X 100 mm
06860016	Glass window 150 mm x 300 mm
06860017	300 mm diameter viewing screen with 4 overlay chart clips
06860020	Profile lamp, 24 Volts -150 Watts
06860021	Surface lamp, 24 Volts - 200 Watts
06860060	Ø 90 mm rotary table, for table 200 x 100 mm
06860061	Ø 90 mm rotary table, for table 300 x 150 mm
06860022	Ø 150 mm rotary table, for table 200 x 100 mm
06860029	Ø 150 mm rotary table, for table 300 x 150 mm
06860024	V-blocks and centres
06860025	Vise stage
06860027	TESA practice piece
06869055	Measuring foil, type RA, for radius, circle, bending radius
06869056	Measuring foil, type PO, for radius and angle
06869057	Measuring foil, type M" ISO, for thread measurement
06769007	Set of prism


06860061


06860060


06860022 / 29

Field measuring 200 x 100 mm (X / Y)

Resolution 0,001 mm

Measuring system with incremental scales, opto-electronics, resolution 0,001 mm.

In a coordinate direction (4,5 + L/40) µm ≤ 8 (L in mm) µm large table (5 + L/20) µm (L in mm)

Optical precision ± 0.05 % lighting profile, ± 0.10 % in surface lighting.

Surface table 350 x 100 mm (X / Y)

Stable and rigid steel structure Table in anodized aluminum

Capacity Load 10 kg Lighting Profile: lamp 24 V, 150 W with thermal filter. Surface lighting: directional fiber optic lamp 24 V, 200 Watts with thermal filter.

Course focus 80 mm

115 ÷ 230 VAC ± 10 %, 50 ÷ 60 Hz

20°C ± 1°C

10°C to 40°C

80 % without condensing

IP40

CEI 61010
EN 60204
EN 61326-1

110 kg

Comes fully assembled, objectives to be ordered separately

Shipping packaging

Serial Number

Declaration of conformity

TESA Report

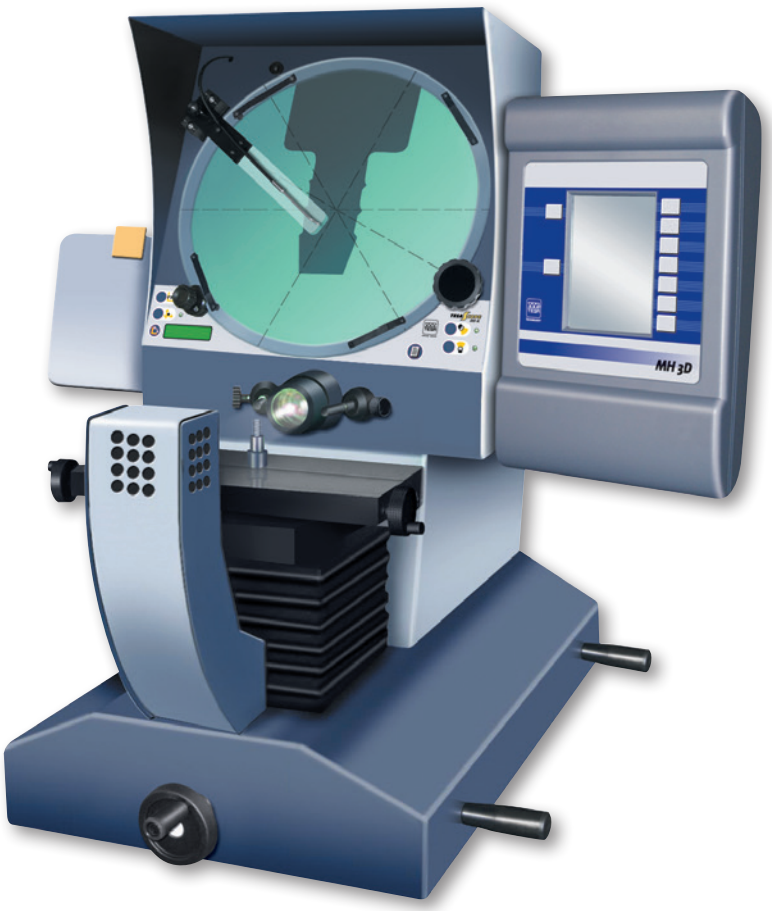
TESA-SCOPE HORIZONTAL MODEL

TESA-SCOPE II 355H are available with a measurement range of 200 x 100 mm while the "Plus" version has a field measuring 200 x 100mm.

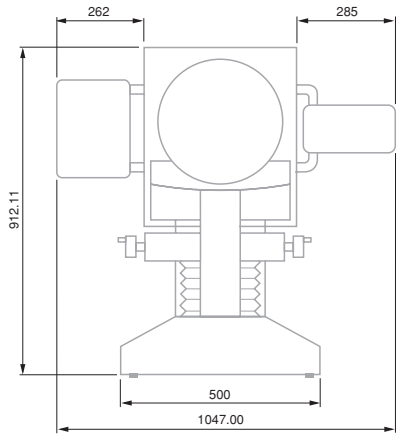
TESA-SCOPE II 355H and 355H Plus

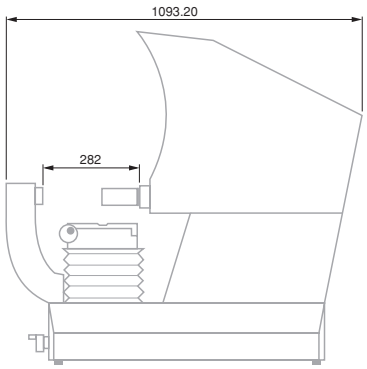
Are ideally suited for control rooms Revolution

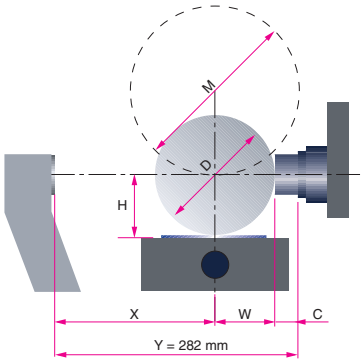
- Profile projectors horizontal light.
- 360° rotating screen frosted glass , Ø 355 mm. Etched reticles 30°, 60° and 90°, equipped with four fixed - diagrams .
- Rotate the screen with sexagesimal and decimal display resolution in minutes - Reset ABS / INC
- Profile illumination with green filter included . Increases contrast , facilitates measurement and decreases the influence of the operator.
- Surface illumination with fiber optic adjustable for optimal projection of the image.
- Save Lamp System. Automatic shutdown of lamps after several minutes of non- use of the projector (life bulbs multiplied by 5 average)
- Quick-change goals , bayonet .
- Coordinate Table equipped with opto -electronics rule, resolution 0,001 mm. Measuring range:
  • 200 x 100 mm.
  • X axis with a clutch system for a quick trip.
  • Moving in the direction of X coordinate for right and left handed .
  • Maximum load of 10 kg , without affecting accuracy.
- Lateral support for documents.



		Base	Measuring table		Digital Readout / Control Panel		
			X = 200 mm Y = 100 mm	X = 300 mm Y = 100 mm	TS 100	TS 300	TS 300 E
=	NO						
TESA-SCOPE II 355H	06830051	●	●	–	●	–	–
TESA-SCOPE II 355H	06830052	●	●	–	–	●	–
TESA-SCOPE II 355H	06830053	●	●	–	–	–	●
=	NO						
TESA-SCOPE II 355H Plus	06830054	●	–	●	●	–	–
TESA-SCOPE II 355H Plus	06830055	●	–	●	–	●	–
TESA-SCOPE II 355H Plus	06830056	●	–	●	–	–	●

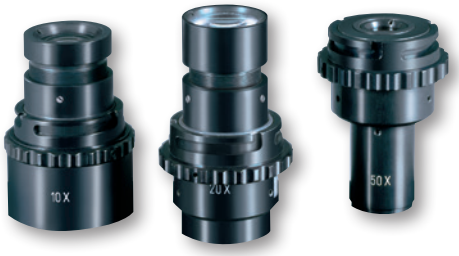


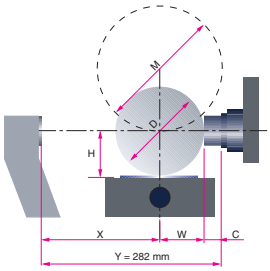




Telecentric Lenses for TESA-SCOPE 355H and 355H Plus

For TESA-SCOPE II 355H and 355H





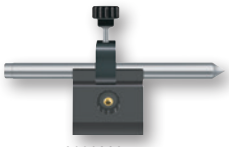
NO	=	Objecti-field mm	Working distance (W) mm	Max. Height (H) mm	Max. diameter (D) mm	Objective length (C) mm	Max. width of component X = Y - (W+C)
06860001	Lens 355H - 10x	35	80	100	200	37	165
06860002	Lens 355V - 20x	17,5	82	100	200	35	165
06860003	Lens 355H - 25x	14	70	100	200	47	165
06860004	Lens 355H - 31,5x	11.2	56	100	200	61	165
06860005	Lens 355H - 50x	7	53	100	200	64	165
06860006	Lens 355H - 100x	3.5	43	100	200	74	165

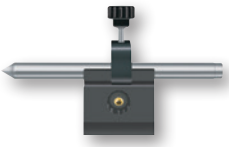
Accessories for TESA-SCOPE Horizontal Model

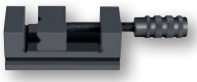
For TESA-SCOPE II 355H and 355H Plus

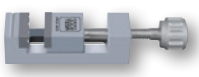
NO	=
06860018	355 mm dia. viewing screen with 4 overlay chart clips
06860020	Profile lamp, 24 Volts – 150 Watts
06860021	Surface lamp, 24 Volts – 200 Watts
06860056	Rotary table for model 355H
06860024	V-blocks and centres
06860025	Vise stage
06860026	Vise stage with base
06860058	Vise for rotary table N° 06860056
06860057	Prise for rotary table N° 06860056
06769007	Set of prism

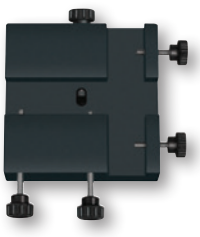

06860057

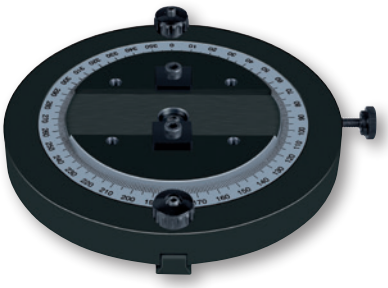

06860024




06860058


06860025


06860026


06860056


06860059

CONTROL PANELS

3 panels are available with TESA-SCOPE:

- Box TS100
- Control panel TS300 with 2D software TESA REFLEX
- Control panel TS300E with 2D TESA REFLEX software and edge detector

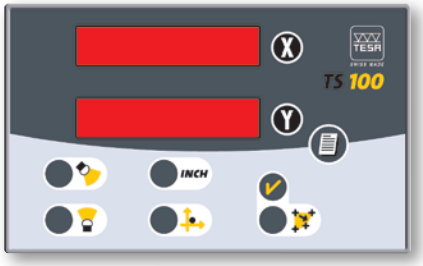
Shipping packaging

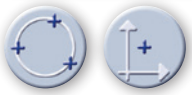
RS232

Model 300V: integrated into the unit. Models 355H : single unit

TS100 Digital Readout

- Numerical display (X/Y axes)
- Resolution to 0,001 mm
- Inch/metric conversion
- Separate zeroing of display in both X/Y-axes
- ABS/INC measuring mode
- Linear correction of scaling errors (X/Y-axes)
- Control option for both profile and surface illumination
- RS232 digital output (SPC Printer)





Measuring functions

- Diameter 3 to 10 data points
- Radius 3 to 10 data points
- Centre Centre-to-centre distance of the last distance measured feature (radius or diameter)
- Auto Enter Automatic value acquisition

NO	=
06830031	Readout TS100

TS300 or TS300E Control Panel

Each unit is able to run TESA-REFLEX 2D – The Reference in terms of simplicity and reliability.

Geometric form elements

- Point
- Line
- Circle

Measuring functions

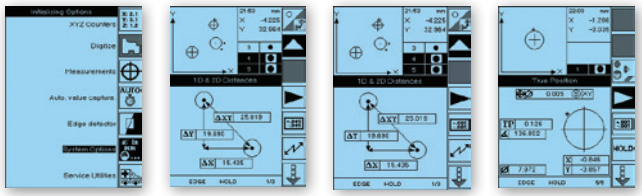
- Alignment
- Input of reference values
- Translation – Rotation

Construction features

- Intersection
- Bolt hole circle
- Line

Result output

- Data transfer through the RS232 output
- Possible conversion into DXF format
- Statistical data processing etc.



Icon-based User's guidance

Shipping packaging

89 x 118 mm display field with illuminated back-ground

RS232

7-decade digit display plus sign for all measured values.

NO	=
06830034	Panel TS300
06830035	Panel TS300E

Shrinking: less than 1 µm/mm after removal of the mould Stability: physical properties allow to produce prints which do not deteriorate with time. They will neither be affected by surroundings – hence usable as master standards.

Components with additives free from chlorine, fluorine or sulfur. Being non-toxic and on-polluting can be used with no special restriction

Temperature 20°C

< 10°C: no more polymerization

PLASTIFORM

PLASTIFORM moulding pastes allow print molding of complex internal machined parts, which can then be viewed and checked using optical, non-contact measuring equipment. PLASTIFORM mixing pastess» consist of two components, which have to be mixed in equal proportion to ensure proper polymerization. The test object to be reproduced by print molding must be perfectly clean and grease-free before applying Plastiform.

BAD

Fluid consistency best suited for moulding internal and full prints of small and medium sizes. Medium elasticity (10 % of the core) allows prints to be removed in most cases. Reproduces the finest details and can be used for indirect inspection of the surface finish by sight comparison with use of master roughness specimens. Easily cut with the special cutter.

DAV

DAV of fluid consistency best suited for moulding internal and full prints of small and medium sizes. High elasticity (20 % of the core) allows hard prints to be removed such as large re-entrant angle, groove, complex internal shape. Reproduces fine details. Difficult to cut with the special cutter. Print will be preferably checked as a whole.

RGX80

RGX80 is the hardest product of the cartridge range. Pasty consistency best suited for moulding whole internal prints having varying sizes. Weak stretching property and elasticity make it appropriate for easily removable moulding prints.

LKAD

Malleable consistency best suited for moulding internal, external and sectorial prints of small and medium sizes. Applied by hand. Low elasticity (from 1 to 2% of the core) makes it convenient for moulding prints that are removed with ease. Also appropriate for prints held mechanically if desired. Easily cut with the cutter.

PLASTIFORM Set

PLASTIFORM full case Consisting of:

- 1 DS50 injection handle
- 1 Cutter, special with two parallel blades
- 1 PLASTIN (200 g)
- 50 Mixer-Injectors
- 10 Injector end pieces
- 1 DN1 spot remover, 400 ml 21 Rings for mould removal
- 3 PLASTIFORM BAD 50 ml
- 3 PLASTIFORM DAV 50 ml
- 2 PLASTIFORM RGX80 50 ml

06869122	PLASTIFORM Full case

Properties

	BAD	DAV	RGX80	LKAD
Consistency (max 15)	Fluid (2)	Fluid (4,5)	Pasty	Malleable
Hardness (shore A)	50	20	80	70
Cut using the dual-blade cutter	Easy	Uneasy	Easy	Easy
Check – With contact	●	–	●	●
– Without contact	●	●	●	●
– Roughness	–	–	●	–
Elasticity	Flexible	Highly flexible	Rigid	Rigid

Accessories for PLASTIFORM

- BAD, DAV, RGX80, LKAD Cartridges
- Plastin
- Tests kits
- Mixers-injectors
- Cutter, special with two parallel blades
- Injector nozzles DS50
- DN1 spot remover, aerosol can, 400 ml

NO	=
06869101	PLASTIFORM BAD 8 x 50 ml
06869106	Mixing injectors, box of 50 pcs
06869107	Mixing injectors, box of 100 pcs
06869108	Mixing injectors, box of 200 pcs
06869109	Fine nozzles box of 20 pcs
06869110	Plastincine, 200 gr
06869111	Special cutter with two parallel blades
06869112	Plastiform pistol DS50
06869113	Degreasing DN1, aerosol 400 ml
06869102	PLASTIFORM DAV 8 X 50 ml
06869119	PLASTIFORM Lite KIT BAD
06869120	PLASTIFORM Lite KIT DAV
06869118	PLASTIFORM RGX8 50 ml
06869121	PLASTIFORM LK-AD