

TESA-SCAN

The metrological solution for round parts



A complete range to answer all your needs



EXCLUSIVE
Slewing System by TESA

> TESA-REFLEX SCAN



make complex measurements simple

- Main dimensions measured without prior programming, with a simple click
- Intelligent automatic recognition of your parts/ programs
- Clear classified results in record time, typically less than 1 minute!

> PRO-MEASURE



the reference for the workshop or laboratory

- More than 150 measurable features to control the most demanding geometrical tolerances
- Unique slewing system to measure all types of thread or complex turned parts
- Classification and statistical management of results for optimal production follow up

> 2 software packages for an answer adapted to your needs

The TESA-SCAN range offers two complementary software packages allowing you to find the most suitable solution to your applications: **TESA-REFLEX Scan – Pro-Measure**

> TESA-REFLEX Scan

Equipped with this software, the TESA-SCAN 52 is robust and easy to use, allowing a perfect integration in workshops. Adjacent to operators, it advantageously replaces conventional measuring systems including multi-gauging thanks to unsurpassed flexibility and time saving.

The cutting edge **REFLEX-Click mode** measures your parts with a simple click:



Automatic measurement of the main dimensions without prior programming

Replace the use of conventional manual inspection equipment such as calipers, micrometers or profile projectors by simple push of the REFLEX-Click button:

- Significant time saving to start up the production of a series of parts thanks to measuring cycle times typically lower than one minute
- Improved accuracy of the measurements by reduction of potential errors due to human factors

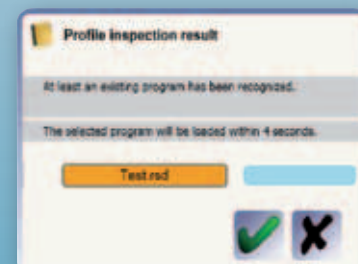


Intelligent automatic recognition of your existing parts/programs

In order to facilitate measurements for operators, the software will select automatically for you the right measuring program:

- 1 Place the part into the machine
- 2 Press the REFLEX-Click button
- 3 The machine will scan your part, recognize it and load the program
- 4 You get classified results that can be printed and/or to exported without any additional operation

Thanks to this unique functionality, mice or keyboards are superfluous!





Composer programming mode

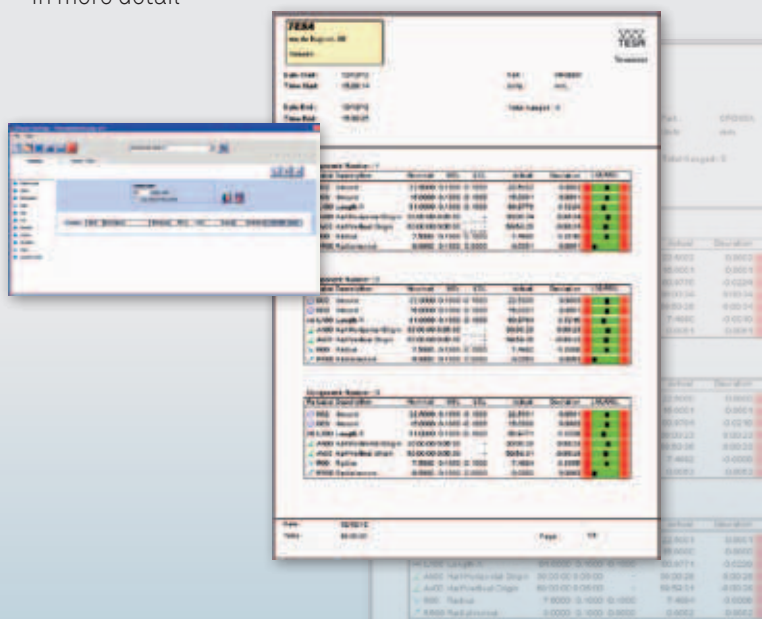
- Create programs in a couple of minutes only
- Automatic measuring zone management
- Integrated standard database to facilitate tolerance introduction

Replay measuring mode

- Re-execute your existing programs
- Clear color coded results
- Analysis window to examine specific features in more detail

Flexible report editor

A flexible report editor is also available, enabling you to customize the presentation of your measuring reports by adding information through a drag & drop method.



Data export and SPC

Although main statistical calculations are included as a standard feature in our software packages, you might want to use your own SPC (Statistical Process Control) software to control your part batches.

For this reason we offer you several export formats (e.g. CSV, QDAS...) that can be imported into your own system.

As an option, we can also provide you TESA STAT-Express SPC software for more advanced statistical analysis.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Start	Time	Q-Average	Q-Average	Q-Min	Q-Max	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev	Q-StdDev
2	28.12.2012	10:08:20	18.2000	33.0000	17.2480	50.0000	9.8890	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	28.12.2012	10:08:44	18.2000	33.0000	17.2480	50.0000	9.8890	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TESA STAT-Express

Some applications require additional measurements such as internal diameters that cannot be performed by a TESA-SCAN. TESA STAT-Express makes it possible by enabling you to add some measurements taken from complementary products (e.g. internal micrometers, calipers or dial gages) into the same report.

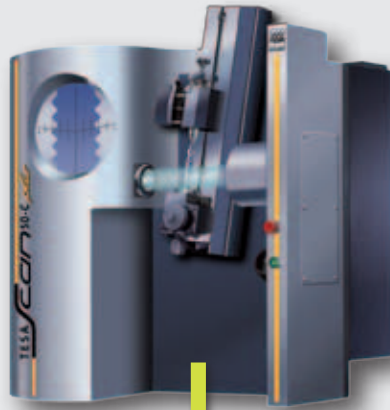
TESA STAT-Express key features:

- Graphics with limits
- Histograms
- Statistic parameters
- Control charts
- Protocols



> Pro-Measure

Featuring a user-friendly interface and a wide variety of measuring dimensions, Pro-Measure remains in line with the TESA-REFLEX Scan philosophy while offering extended capabilities to measure the most advanced applications.



Scanning or CAD import

To start a measuring program, you can either scan your part or import a CAD file (DXF). You will then use the comprehensive toolbox of features to create your programs.

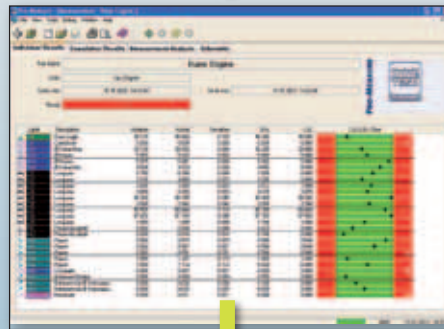
Off-line programming

Directly on the PC coupled with the machine, measuring programs can also be easily created remotely. Once your program is completed, import it into the machine and start measuring!

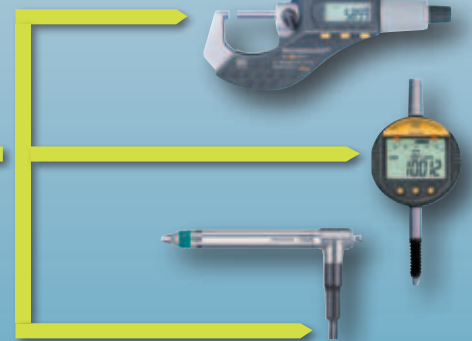
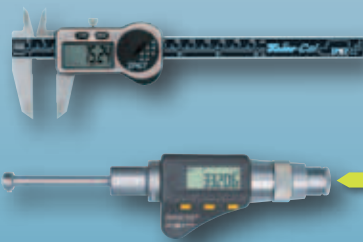
Access management

Up to four levels of security can be set to provide you with the highest security for your data, insuring perfect safety and traceability.

Pro-Measure >

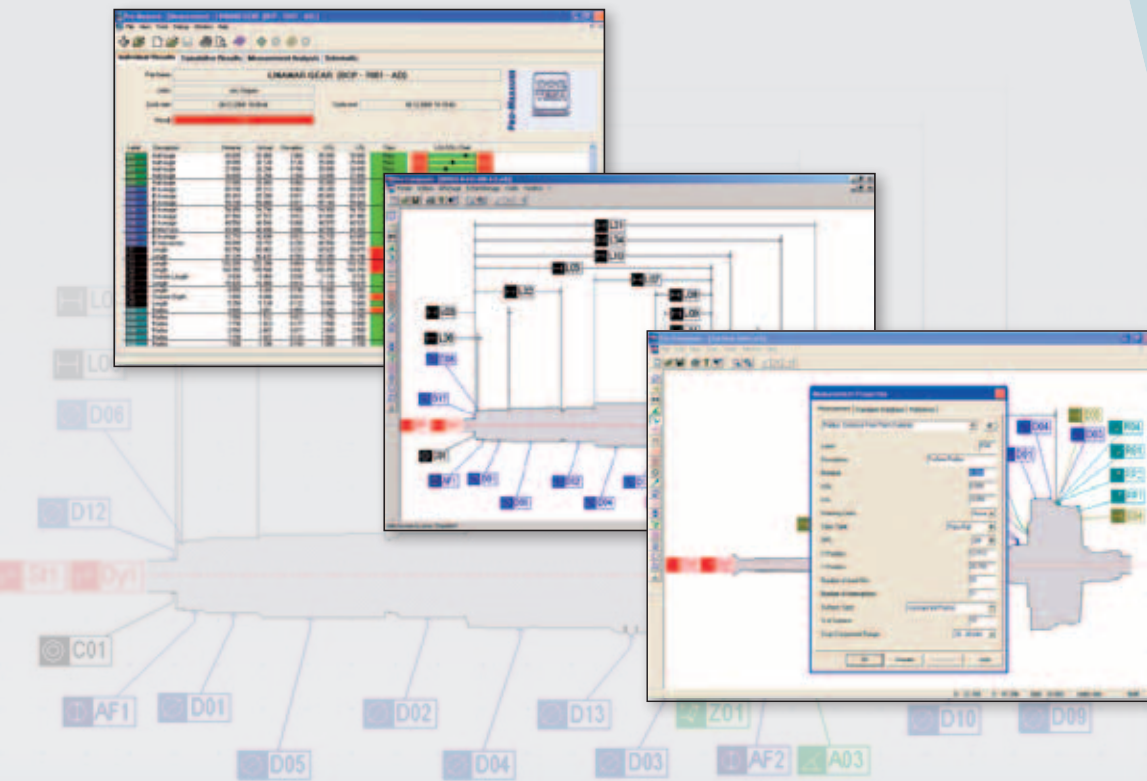


STAT-Express (SPC) >



Integrated results >





Capabilities	TESA-REFLEX Scan (TESA-SCAN 52, see p.7)	PRO-MEASURE (TESA-SCAN 25, 50, 80, see p.8)
Automatic measurement of the main features (diameters, lengths, angles, radii)	●	–
Automatic parts/programs recognition	●	–
Off-line programming	–	●
CAD import	–	●
Reports editor	●	●
Data export	●	●
SPC basic calculations	●	●
STAT-Express SPC software	Option	Option
Access management – Security level	1	4
Geometrical tolerancing – Features summary		
Diameters	●	●
Lengths, heights, distances	●	●
Angles, chamfers	●	●
Radii	●	●
Threads (parallel)	●	●
Threads (root detail, taper, multi-starts, ball screws, worm screws, special threads)	–	●
Perpendicularity	–	●
Form deviation	–	●
2 and 3D alignment of the parts (axis correction)	●	●
Rotational diameters	–	●
Run out	●	● (advanced)
Concentricity	●	● (advanced)
Roundness	●	●
Cylindricity	●	●
Across flats	●	● (advanced)
Straightness	–	●
Interrupted parts (splines, turbines)	–	●

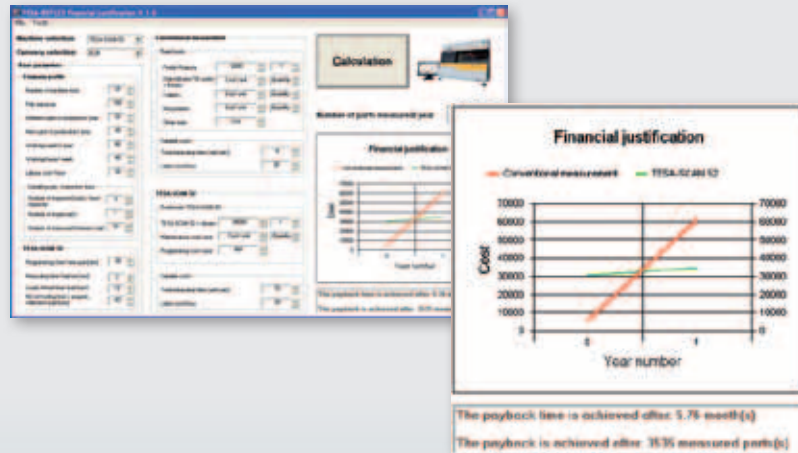


Quick Return on Investment

Because the return of investment is essential data to make sensible decisions, TESA has developed an interface enabling you to calculate your estimated payback time. It will directly depend on the profile of your company and the expected use of the machine.

You will therefore be able to validate yourself that your payback time will be no longer than 6 months in most cases. Moreover, the quality of your measurements will be improved!

Contact a
TESA representative
for a free calculation!



Tailor-made solutions

Some applications need more than one stand-alone machine. In order to fulfill specific requirements, we can evaluate various turnkey solutions such as:

Clamping solution

Apart from our standard range of fixtures, customized solutions can be developed to optimize your measuring process.

Software

Thanks to the Pro-Measure flexibility and its open Procal language, software adaptations to fit your needs are possible.

Enclosures

Giving extra protection on the the shop floor, enclosures are available on request

Auto-loading parts integration

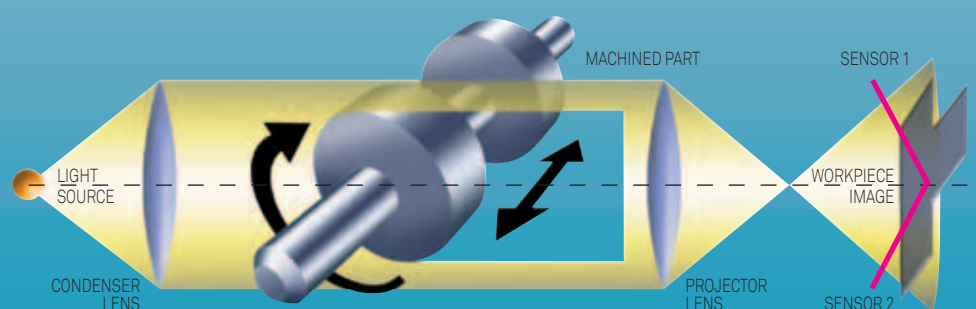
To offer maximum flexibility and increase production levels, the TESA-SCAN can be integrated into your workshop with various equipment.

> Measuring principle

This range of TESA's products are designed to measure round parts with diameters from 0,25 up to 80 mm and can be as long as 500 mm.

All TESA-SCAN incorporate high resolution CCD linear sensors that combine lines of thousands of pixels. As the part profile is projected, these sensors, which are capable of detecting the slightest changes at pixel level, act as a light sensitive ruler.

The part is scanned using a parallel green light. The part image is then projected onto the linear sensors, which gather all information needed for the analysis of the part geometry.



> TESA-SCAN 52 REFLEX-Click



H 840 x
L 1000 x
P 435 mm
H 33 x L 39,5 x P 17 in

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

24 VDC

10 to 40 °C

< 80%



103 kg

Max. workpiece size :
Ø 100 x L 300 mm.
Max. workpiece weight:
4 kg

< 70 dB (A)

Shipping packaging
Inspection report with
a declaration
of conformity



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.

	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 in mm)	(0.08 + D/100) / 1000 in (D in in)	(0.2 + L/100) / 1000 in (L in in)
	2 σ	1 µm	0.00004 in	0.0001 in

02430090	TESA-SCAN 52 REFLEX-Click (Ø 52 x 300 mm). Measuring machine including 2 male centers TL02-0002. Supplied with PC, mouse, keyboard, Windows Multilingual operating system, screen.
02430091	TESA-SCAN 52 REFLEX-Click with rotary headstock

> TESA-SCAN 25



Technical Data

TESA-SCAN 25	D	L	D	L
	0,25 ÷ 25 mm	200 mm	0,01 ÷ 1.0 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 in mm)	(5 + L/100) μm (L in mm)	(0.06 + D/100)/ 1000 in (D in in)	(0.2 + D/100)/ 1000 in (L in in)
2 σ	1 μm	2,5 μm	0.00004 in	0.0001 in

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 in mm)	(5 + L/100) μm (L in mm)	(0.08 + D/100)/ 1000 in (D in in)	(0.2 + D/100)/ 1000 in (L in in)
2 σ	1 μm	2,5 μm	0.00004 in	0.0001 in

02430000	TESA-SCAN 25 (Ø 25 x 200 mm). Measuring machine with part rotation, including 1 rotary headstock, 1 tailstock, 2 male centers TL02-0001. Supplied with PC, mouse, Windows Multilingual operating system, screen, keyboard, Pro-Measure software with User's manual EN-FR-DE on a CD.
02430010	TESA-SCAN 50 (Ø 50 x 275 mm). Measuring machine with part rotation, main part including 1 rotary headstock, 1 tailstock, 2 male centers TL02-0002. Supplied with PC, mouse, Windows Multilingual operating system, screen, keyboard, Pro-Measure software with User's manual EN-FR-DE on a CD.

- TESA-SCAN 25:
H 800 x L 640 x P 500 mm,
H 32 x L 25 x P 20 in
TESA-SCAN 50:
H 1055 x L 800 x P 580 mm, H
41 x L 32 x P 23 in
- Diameter : 0,5 s
Length : 0,5 s
- 100/110-
220/240 VAC
50/60 Hz
- 10 to 40 °C
- < 80%
- ✓
- TESA-SCAN 25:
67 kg,
TESA-SCAN 50:
130 kg,
- Max. workpiece
size
TESA-SCAN 25/50
Ø 59 x L 270 mm /
Ø 100 x L 290 mm.
Max. workpiece weight:
2 kg / 4 kg
- < 70 dB (A)
- Shipping
packaging
- Inspection
report with
a declaration
of conformity

> TESA-SCAN 50 CE PLUS

> TESA-SCAN 50 PLUS



Scan 50 CE Plus
H 1055 x L 800 x P 580 mm
H 41 x L 32 x P 23 in
Scan 50 Plus
H 1455 x L 800 x P 580 mm
H 57 x L 32 x P 23 in

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

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

10 to 40°C

< 80%



Scan 50 CE Plus
140 kg,
Scan 50 Plus
180 kg,

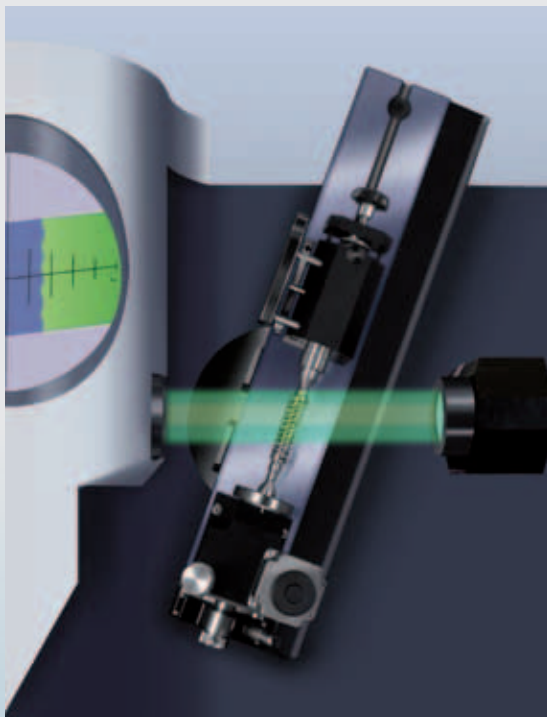
Max. workpiece size
50 CE Plus:
Ø 100 x L 290 mm.
Max. workpiece weight: 4 kg
50 Plus:
Ø 100 x L 515 mm / 6 kg.

< 70 dB (A)

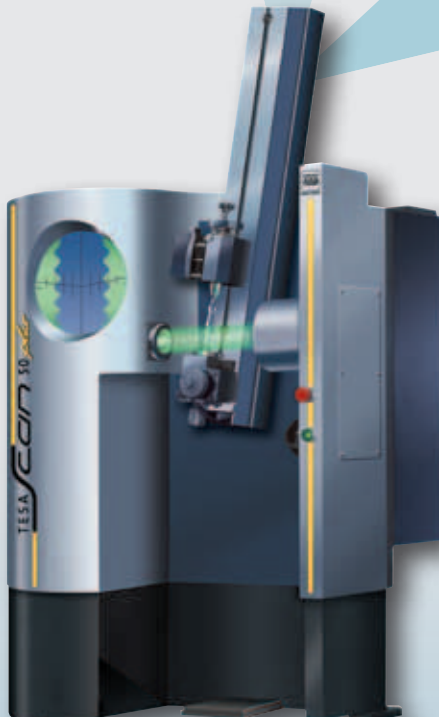
Shipping packaging

Inspection report with a declaration of conformity

Measuring volume: D = 50 mm, L = 275 mm
Equipped with slewing mechanism for thread measurement through advanced functions (slide tilted through 30°).



Measuring volume: D = 50 mm, L = 500 mm
Equipped with slewing mechanism for thread measurement through advanced functions (slide tilted through 15°).



Technical Data

	TESA-SCAN	D	L	D	L	
	50 CE Plus 50 Plus	0,5 ÷ 50 mm 0,5 ÷ 50 mm	275 mm 500 mm	0,02 ÷ 1,96 in 0,02 ÷ 1,96 in	10.8 in 19.7 in	
	Tilting for thread measurement	50 CE Plus 50 Plus	max. 30° max. 15°			
	50 CE Plus 50 Plus	0,0001 mm	0,001 mm	0.000004 in	0.00004 in	
	20°C ± 1°C	50 CE Plus 50 Plus	(2 + D/100) µm (D in mm)	(5 + L/100) µm (L in mm)	(0.08 + D/100)/1000 in (D in in)	(0.2 + D/100)/1000 in (L in in)
	2 σ	50 CE Plus 50 Plus	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.



02430030

TESA-SCAN 50 CE Plus (Ø 50 x 275 mm). Measuring machine with part rotation and slewing mechanism for thread measurement. Main part including 1 rotary headstock, 1 tailstock, 2 male centers TL02-0002. Supplied with PC, mouse, Windows Multilingual operating system, screen, keyboard, Pro-Measure software with User's manual EN-FR-DE on a CD.

02430040

TESA-SCAN 50 Plus (Ø 50 x 500 mm). Measuring machine with part rotation and slewing mechanism for thread measurement. Main part including 1 rotary headstock, 1 tailstock, 2 male centers TL02-0002. Supplied with PC, mouse, Windows Multilingual operating system, screen, keyboard, Pro-Measure software with User's manual EN-FR-DE on a CD.

> TESA-SCAN 80 / 80 Plus



- ✓
- H 1500 x L 750 x P 520 mm, H 60 x L 30 x P 20 in
- Diameter : 1 s
Length : 1 s
- 100/110-220/240 VAC
50/60 Hz
- 10 to 35°C
- 10 to 80%
- ✓
- 250 kg
260 kg
- Max. workpiece size
Ø 100 x L 515 mm
Max. workpiece weight:
6 kg
- Shipping packaging
- Inspection report with a declaration of conformity

Technical Data

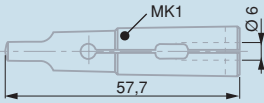
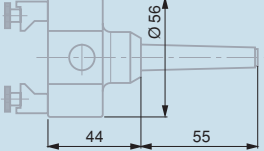
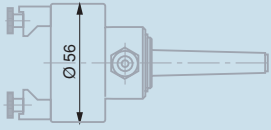
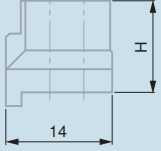
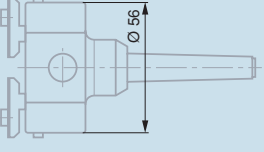
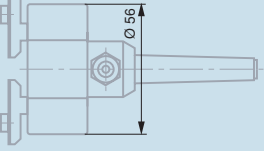
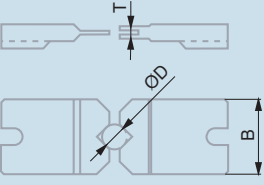
	D	L	D	L
	0,5 ÷ 50 mm	500 mm	0,02 ÷ 1.96 in	19.7 in
Tilting for thread measurement	(80 Plus) max.	10°		
	0,0002 mm	0,001 mm	0.00001 in	0.00004 in
Accuracy Ø <30 mm	(1,5 + D/100) µm (D In mm)	7 + (D/100) µm (L In mm)	(0.06 + 0.01 D)/ 1000 in (D In in)	(0.28 + D/100)/ 1000 in (D In in)
Ø >30 mm (20°C ± 1°C)	(2 + D/100) µm (D In mm)	8 + (D/100) µm (L In mm)	(0.08 + D/100)/ 1000 in (D In in)	(0.35 + D/100)/ 1000 in (D In in)
(±2s = 95%)	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.

02430050	TESA-SCAN 80 (Ø 80 x L 500 mm). Measuring Center with part rotation. Basis machine including 1 headstock, 1 tailstock plus 2 male centers TL02-0002. Supplied along with PC, mouse, installed Windows Multilingual operating system, screen, keyboard, Pro-Measure with Handbook EN-FR-DE on CD.
02430060	TESA-SCAN 80 Plus (Ø 80 x L 500 mm). Measuring Center with protective enclosure, part rotation and slewing mechanism for thread measurement. Basis machine including 1 headstock, 1 tailstock plus 2 male centers TL02-0002. Supplied along with PC, mouse, installed Windows Multilingual operating system, screen, keyboard, Pro-Measure with Handbook EN-FR-DE on CD.

TESA-SCAN accessories




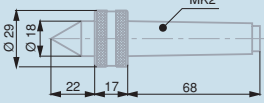
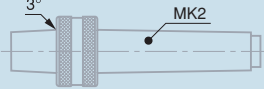
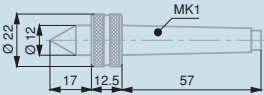
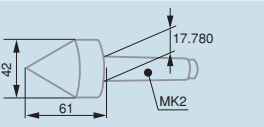
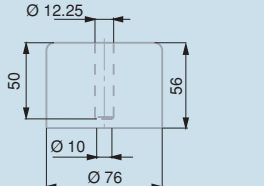
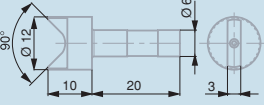
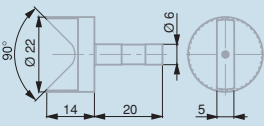
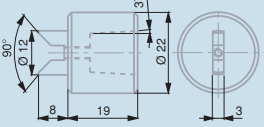
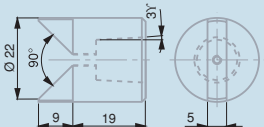
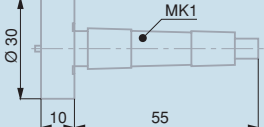
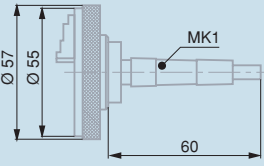
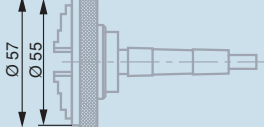
No		Morse 1 TESA-SCAN 25	Morse 2 TESA-SCAN 50 / 52 / 80	Notes	Description
TL01-0002		•	-	-	Center adapter with a 6 mm dia. coupling bore
TL01-0003		•	• Requires TL01-0027	Internal clamping for manual use	Two-jaw gripper
TL01-0004		•	• Requires TL01-0027	Internal clamping for use with air pressure	Two-jaw gripper
TL01-0005 H = 18 TL01-0006 H = 22		For TL01-0003 TL01-0004	-	-	Raising blocks for external jaws, in pairs
TL01-0007		•	• Requires TL01-0027	Internal clamping for manual use	Two-jaw gripper
TL01-0008		•	• Requires TL01-0027	Internal clamping for use with air pressure	Two-jaw gripper
TL01-0009 0 ÷ 6 mm T = 1,5 TL01-0010 0 ÷ 6 mm T = 3 TL01-0011 6 ÷ 12 mm T = 3 TL01-0012 12 ÷ 18 mm T = 6 TL01-0013 18 ÷ 24 mm T = 9 TL01-0038 0 ÷ 6 mm T = 6 TL01-0039 0 ÷ 6 mm T = 15 TL01-0040 6 ÷ 12 mm T = 15		For TL01-0003 TL01-0004	-	-	External jaws, in pairs
TL01-0021	Set of jaws including: TL01-0009 TL01-0010 TL01-0011 TL01-0012 TL01-0013	For TL01-0003 TL01-0004	-	-	External jaws, in pairs

> TESA-SCAN accessories


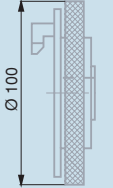
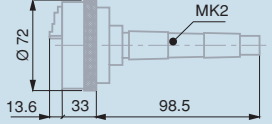
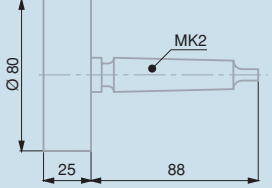
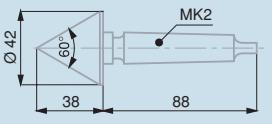
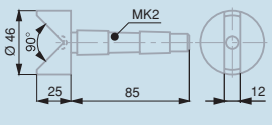
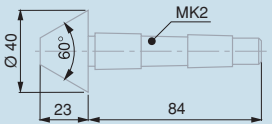
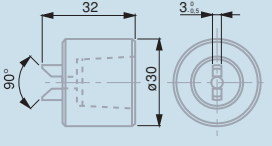
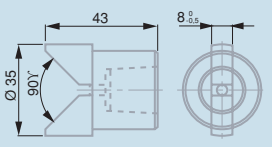
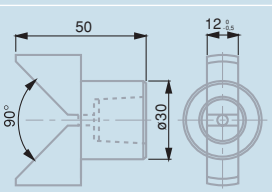
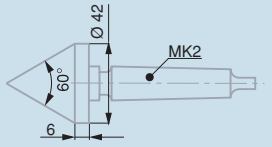
		Morse 1 TESA-SCAN 25	Morse 2 TESA-SCAN 50 / 52 / 80	Notes	Description
<p>TL01-0015 D = 4÷5 mm H = 6,6 mm</p> <p>TL01-0016 D = 5÷6 mm H = 8,6 mm</p> <p>TL01-0017 D = 6÷8 mm H = 11,5 mm</p> <p>TL01-0018 D = 8÷11 mm H = 17,5 mm</p> <p>TL01-0019 D = 11÷15 mm H = 20 mm</p> <p>TL01-0020 D = 15÷19 mm H = 20,2 mm</p>		<p>For TL01-0007 TL01-0008</p>	-	-	Internal jaws, in pairs
<p>TL01-0022</p>	<p>Set of jaws including: TL01-0015 TL01-0016 TL01-0017 TL01-0018 TL01-0019 TL01-0020</p>	<p>For TL01-0007</p>	-	-	Internal jaws, in pairs
<p>TL01-0026</p>		-	●	-	Center adapter with a 6 mm dia. coupling bore
<p>TL01-0027</p>		-	●	-	Reduction sleeve, Morse 2 to 1
<p>TL02-0001</p>		●	-	2 items provided with TESA-SCAN 25	Extra male center, 10 mm
<p>TL02-0002</p>		-	●	2 items provided with TESA-SCAN 50 / 80 and TESA-SCAN 52 Reflex-Click	Extra male center, 17 mm
<p>TL02-0003</p>		●	-	Diamond coated 10 mm	Drive center
<p>TL02-0016</p>		●	-	For added sleeves Z173- 0922/0923	Rotation center with a B12 male taper plus a Morse 1 taper shank

› TESA-SCAN accessories



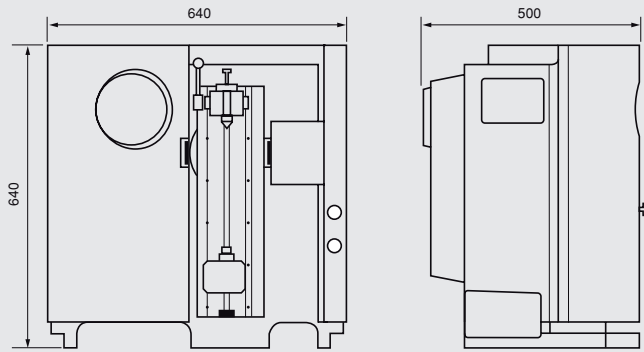
		Morse 1 TESA-SCAN 25	Morse 2 TESA-SCAN 50 / 52 / 80	Notes	Description
TL02-0017		-	●	-	Rotation center, Morse 2
TL02-0018		-	●	-	Rotation center with a B12 male taper plus a Morse 1 shank
TL02-0019		●	-	-	Rotation center, Morse 1
TL02-0021		●	-	-	Rotation center, Morse 2
Z173-0908		For TL01-0003 TL01-0004 TL01-0007 TL01-0008	-	Ensures stable positioning for mounting jaws	Vertical support
Z173-0920		● Requires TL01-0002	● Requires TL01-0026	-	Female center, 10 mm dia.
Z173-0921		● Requires TL01-0002	● Requires TL01-0026	-	Female center, 20 mm dia.
Z173-0922		● For TL02-0016	-	-	Female center, 10 mm dia. Also with internal B12 taper
Z173-0923		● For TL02-0016	-	-	Female center, 10 mm dia. Also with internal B12 taper
Z173-0961		●	-	-	Platten, 30 mm dia.
Z173-2020		●	● Requires TL01-0027	Clamping capacity: outside 1÷15 mm inside 11÷26 mm	3-jaw chuck, clamping range 1÷15 mm
Z173-2024 Z173-2025		- ●	● -		6-jaw chuck, clamping range 0,7÷15 mm

> TESA-SCAN accessories

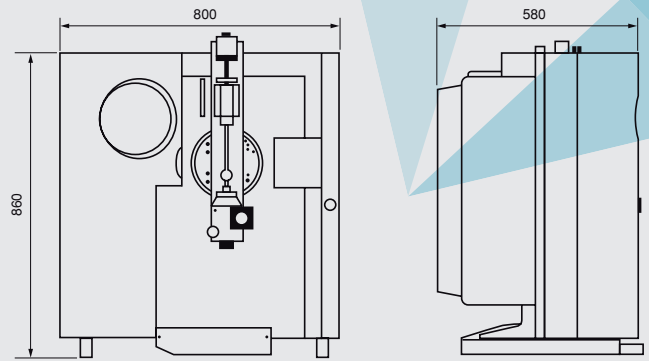
		Morse 1 TESA-SCAN 25	Morse 2 TESA-SCAN 50 / 52 / 80	Notes	Description
Z178-2009		-	●	Used to drive components between fixed centers. Directly fitted on the headstock.	Drive mechanism
Z178-2020		-	●	Clamping capacity: outside 2÷50 mm inside 23÷50 mm	3-jaw chuck with Morse 2 taper shank, clamping range 2÷50 mm
Z178-2025		-	●	-	Platten, 80 mm dia. Also with a Morse 2 taper shank
Z178-2026		-	●	Diamond coated	Drive center, Ø 40 mm. Also with a Morse 2 taper shank
Z178-0607		-	●	-	Female center, 40 mm dia. Also with a Morse 2 taper shank
Z178-0610		-	●	-	Male center, 15÷40 mm dia. Also with a Morse 2 taper shank
Z178-0940		-	● Requires TL02-0018	-	Female center, 10 mm dia., Also with a B12 internal taper
Z178-0941		-	● Requires TL02-0018	-	Female center, 30 mm dia., Also with a B12 internal taper
Z178-0942		-	● Requires TL02-0018	-	Female center, 45 mm dia., Also with a B12 internal taper
Z178-3028		-	●	-	Drive center, 42 mm dia. max.
02460076	Pro-Measure off-line programming				
04981004	TESA STAT-Express machine				

› TESA-SCAN dimensions

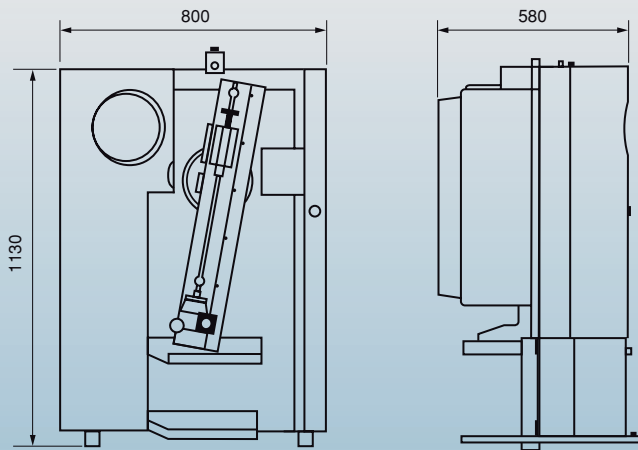
TESA-SCAN 25



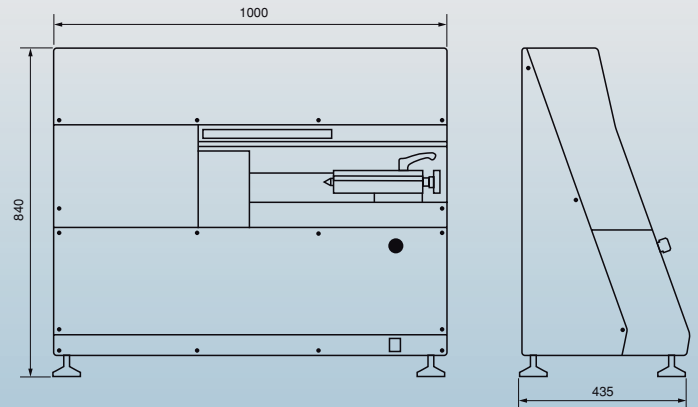
TESA-SCAN 50 / 50 CE Plus



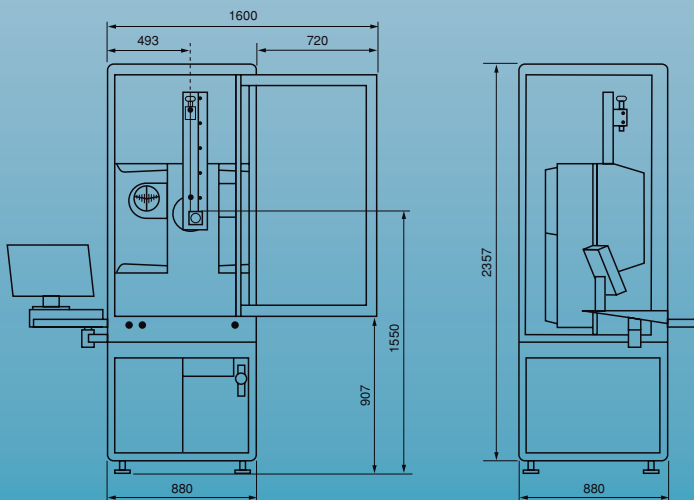
TESA-SCAN 50 Plus



TESA-SCAN 52



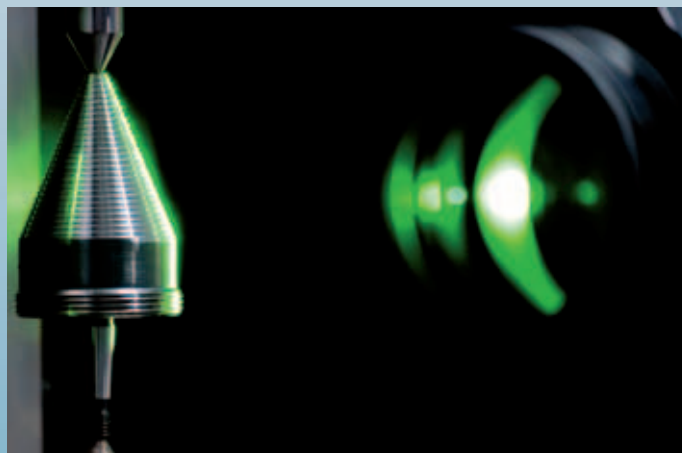
TESA-SCAN 80 / 80 Plus





> Lexicon of pictograms

TESA Design SWISS MADE	Diameter	Electromagnetic compatibility
Order number	Maximum displacement speed	Mass
Measuring range Measuring span	Special features	Packaging
Numerical interval	Notes	Declaration of conformity
Maximum permissible errors Limit deviations	Power supply	Inspection report with a declaration of conformity
Repeatability limit	Working temperature range	Product designation
Dimensions	Maximum relative humidity	Slewing System



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