TVM

TVM

INTRODUCTION

The TVM instruments are perfect for height measurements and scribing work and reliable in all kinds of workshop conditions. The result of an unique, compact design of the instrument is great mobility and extreme stability.

Because of its advanced measuring system, the self-contained working time of the TVM is one year. Therefore it can be used for multiple applications in the workshop area. The simplicity of manipulation allows constant change of the user without any time-consuming training.

The success of the TVM among competitive gauges is outstanding. More than 14'000 instruments are in use worldwide.

Three models are available : with application range from 300 to 1000 mm. A large range of accessories for all kinds of measuring applications is available.

ROBUST AND COMPACT CONSTRUCTION

PERFECT FOR USE IN PRODUCTION AREA

ACCURATE AND RELIABLE MEASUREMENTS
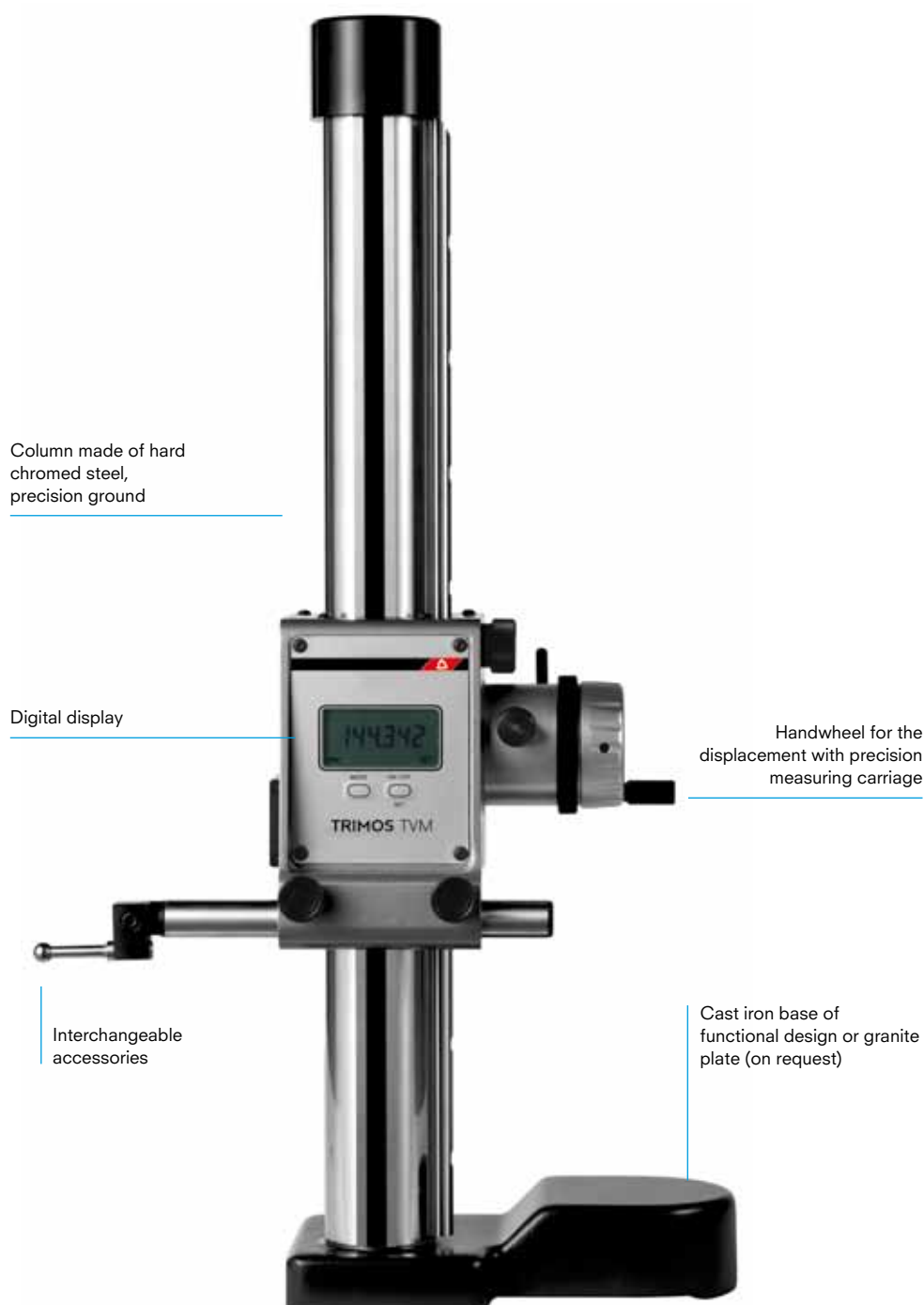
USER FRIENDLY

OPTO-RS232 DATA OUTPUT

RECHARGEABLE BATTERY PACK

TWO MODELS : CAST IRON BASE OR A GRANITE BASE

DESCRIPTION

▲▼ Surfaces

2 references

Internal / external diameters

Tolerances

Min/Max/Delta

Column made of hard chromed steel, precision ground

Digital display

Handwheel for the displacement with precision measuring carriage

TRIMOS TVM

Interchangeable accessories

Cast iron base of functional design or granite plate (on request)

TVM

DISPLAY / SOFTWARE

The clearly defined functions of the display unit allow to collect all height measuring values.
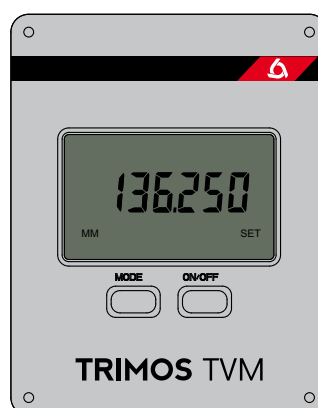
MIN / MAX FUNCTION INDICATOR
2 REFERENCES
END OF BATTERY LIFE WARNING INDICATION
PRESET SELECTION
MEASURING UNIT (MM / IN) INDICATOR
TOLERANCE MODE INDICATOR

## TECHNICAL SPECIFICATIONS

TVM		302	602	1002
Measuring range	mm (in)	320 (12)	620 (24)	1020 (40)
Max. permissible errors [1]	mm	0.02	0.03	0.04
Repeatability (2s) [1]	mm		0.005	
Frontal squareness deviation	mm	0.02	0.03	0.03
Resolutions	mm (in)		0.01 / 0.001 (.0005 / .00005)	
Measuring force	N		3	
Max. manual carriage displacement speed	mm / s		1500	
Autonomy	h		2000	
Data output			Opto RS232	
Operational temperature	°C		+10 ÷ +40	
Temperature of storage	°C		-10 ÷ +40	
Weight (cast iron base)	kg	6	10	24
Weight (granite base)	kg	14	18	

[1] Values valid with measuring insert and holder (TVM1 / 1.1 / 2) at temperature of 20 ± 0.5°C and relative humidity of 50 ± 5 %.

DIAGRAM
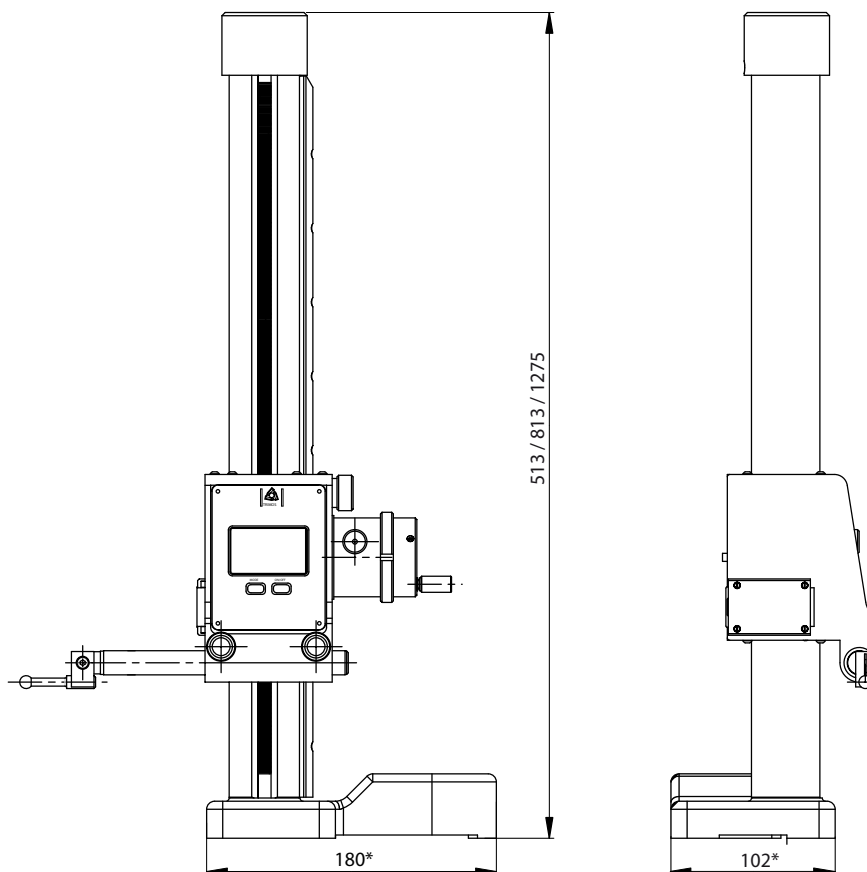
STANDARD INSTRUMENT

The TVM instruments are supplied as follows:	
TVM 300- 600	**TVM1000**
Instrument according to specifications	Instrument according to specifications
Measuring insert and holder (TVM1 / 1.1 / 2)	Measuring insert and holder (TVA1)
Lithium battery, 3 V (BAT-TVM.OPTO)	Lithium battery, 3 V (BAT-TVM.OPTO)
Protection cover (TVM.HO300 / 600)	User's manual (750 50 0018 03)
User's manual (750 50 0018 03)	Test certificate
Test certificate	

CODE NUMBERS

Cast iron base		Granit base		
TVM302	700 102 10 11	**TVM302G**	700 102 10 14	Measuring range 300 mm
TVM602	700 102 20 11	**TVM602G**	700 102 20 14	Measuring range 600 mm
TVM1002	700 102 30 11			Measuring range 1000 mm

* TVM 302 and 602 only

TVM

APPLICATIONS

Height and depth measurements (TVM1/1.1/2)

Diameter measurements (TVM4)

Measuring of centerline distances (TVM5)

Scribing (TVM1/TVM3)

Ease of handling

V/V Plus

V / V Plus

INTRODUCTION

Talking about the V and V Plus series means looking at a height measuring instrument of universal use.

The new ergonomic and compact design has been well accepted from the industry worldwide. Ease of use and quick performance of all measuring tasks are given by the clearly defined function keys.

The updated measuring system combined with a powerful display unit guarantees high precision and maintains an incomparable self-containment of use in any manufacturing conditions.

The adjustable measuring force of V Plus models between 0.7 N and 1.6 N (0.3 N on request) allows the performance of measurements on components of delicate material.

The result of a modular instrument concept is a complete series with application ranges from 300 mm to 1235 mm at very competitive prices.

A wide range of accessories makes it possible to solve all required measuring tasks.

PERFECT FOR USE IN THE WORKSHOP AREA

EXTREMELY EASY TO OPERATE

AUTONOMOUS USE WITH RECHARGEABLE
BATTERY PACK

AIR CUSHION STANDARD ON C VERSION (V PLUS)

CLEAR DEFINITION OF ALL MEASURING FUNCTIONS

EXTREMELY LARGE DISPLAY OF VALUES

ACCEPTANCE OF A MEASURED VALUE BY
ACOUSTIC SIGNAL

DIRECT RS232C DATA OUTPUT (BI-DIRECTIONAL)

ADJUSTABLE MEASURING FORCE

DESCRIPTION

▲▼ Surfaces

⬭ Internal / external diameters

⊕ Centerline distances

⤢ Min/Max/Delta

☒ 2 references

⊥ Squareness measurements

Σ Calculation mode

Interchangeable
measuring inserts

Integrated electronic
display unit

Handwheel for the
displacement of the
measuring carriage

V Plus: with locking
and fine adjustment

Operating handle
for displacement
of the instrument

Button to activate
the air cushion (option
only available on V Plus)

V / V Plus

DISPLA / SOFTWARE

The clearly defined functions of the display unit allow quick performance of all required height measurements.

SURFACE AND CENTERLINE DISTANCE MEASUREMENTS

ZERO SETTING OF THE DISPLAY OR PRESET
VALUE SETTING

DATA TRANSFER (RS 232)

SELECTION OF MEASURING UNIT MM OR INCH

SELECTOR KEY TO OBTAIN A MIN / MAX / DELTA VALUE

MEASURING USING TWO REFERENCES

ADJUSTMENT OF THE ACOUSTIC SIGNAL

TECHNICAL SPECIFICATIONS

V		300	600
Measuring range	mm (in)	300 (12)	600 (24)
Application range	mm (in)	535 (21)	835 (32)
Max. permissible errors [1]	µm	8	10
Repeatability (2s) [1]	µm	2 (Ø:4)	
Frontal squareness deviation	µm	10	15
Resolutions	mm (in)	0.01/0.001 (.0001/.00005)	
Measuring force	N	1	
Max. manual carriage displacement speed	mm/s	1500	
Autonomy	h	100	
Data output		RS232	
Operational temperature	°C	+10 ÷ +40	
Temperature of storage	°C	-10 ÷ +40	
Weight	kg	10	12

V Plus		300	600	1000
Measuring range	mm(in)	300 (12)	600 (24)	1000 (40)
Application range	mm(in)	535 (21)	835 (32)	1235 (48)
Max. permissible errors [1]	µm	2.5 + L (mm) / 300		
Repeatability (2s) [1]	µm	2		
Frontal squareness deviation	µm	5	8	12
Resolutions	mm(in)	0.01 / 0.001 (.0001/.00005)		
Measuring force (adjustable)	N	0.7 ÷ 1.6 (V305: 0.3 ÷ 1.2)		
Max. manual carriage displacement speed	mm / s	1500		
Autonomy (without/with air cushion)	h	100 / 30		
Data output		RS232		
Operational temperature	°C	+10 ÷ +40		
Temperature of storage	°C	-10 ÷ +40		
Weight	kg	10	12	15

[1] Values valid with standard ball probe (TA-MI-101) at temperature of 20 ± 0.5°C and relative humidity of 50 ± 5 %.

SCHEMA
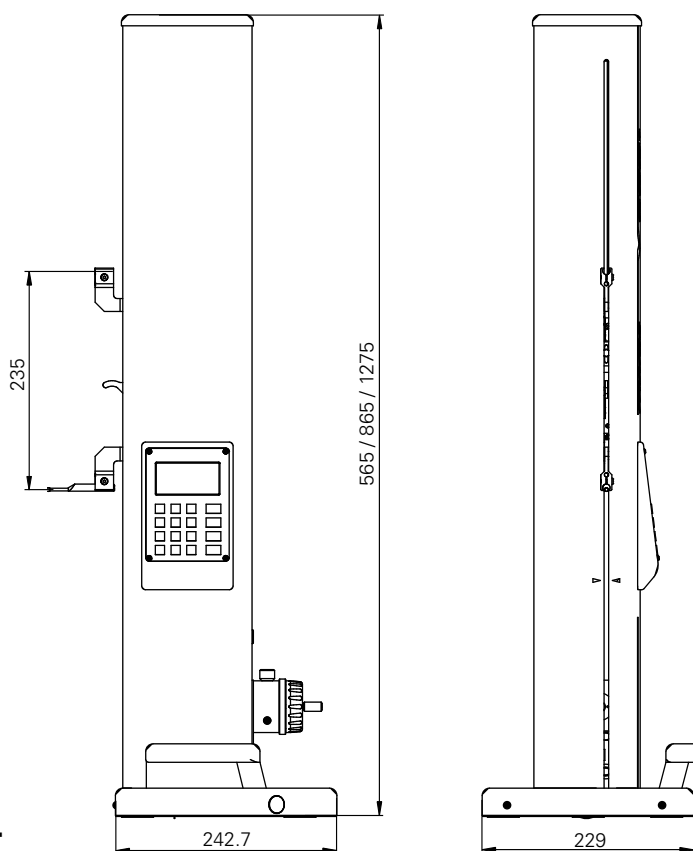
STANDARD INSTRUMENT

The V instruments are supplied as follows:	
Instrument according to specifications	User's manual (750 50 0004 00)
Charging unit (TA-EL-131)	Test certificate
Measuring insert with ruby ball Ø 4 mm (TA-MI-101)	Hex screw driver 2 mm (TA-TO-002)
Setting gauge (TA-MG-103)	Hex screw wrench 2.5 mm (V-50.15)

The V Plus instruments are supplied as follows:	
Instrument according to specifications	User's manual (750 50 0004 00)
Charging unit (TA-EL-131)	Test certificate
Measuring insert with ruby ball Ø 4 mm (TA-MI-101)	Hex screw driver 2 mm (TA-TO-002)
Setting gauge (TA-MG-103)	Hex screw wrench 2.5 mm (V-50.15)
Protection cover (V.HO300/V.HO600/V.HO1000)	

CODE NUMBERS

V		V Plus			
Without air cushion		**Without air cushion**		**With air cushion**	
VL300 700 105 10 41		**V304** 700 105 10 01		**V304C** 700 105 10 02	Measuring range 300 mm
		V305 700 105 10 10		**V305C** 700 105 10 11	Measuring range 300 mm [1]
VL600 700 105 20 41		**V604** 700 105 20 01		**V604C** 700 105 20 02	Measuring range 600 mm
				V1004C 700 105 30 02	Measuring range 1000 mm

[1] The instruments V305 and V305C are with low measuring force (0.3-1.2 N)

V / V Plus

APPLICATIONS
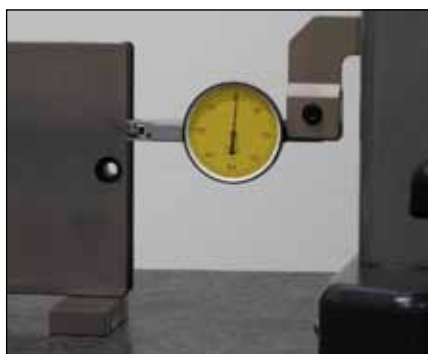
Checking of squareness deviation
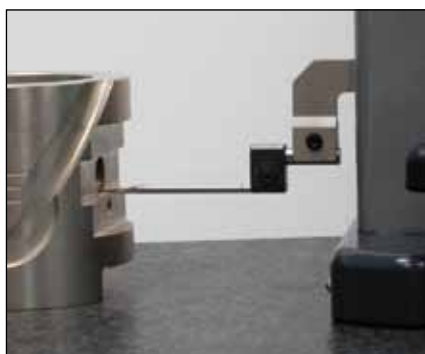
Tiny Surface, diameter and centerline distance measurements (V-5/V50.9)

Depth measurement (TA-IH-109/V-50.5/V-50.4)
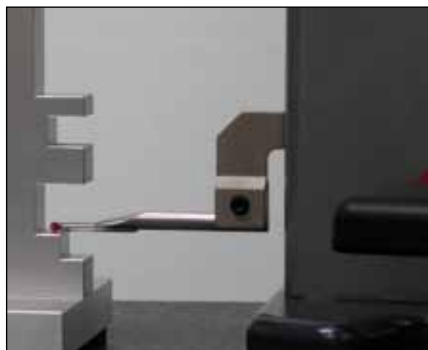
Checking of surface distances (TA-MI-101)

Thickness measurements (TA-MI-101)

Min/max measurements (TA-MI-101)

VECTRA-TOUCH

VECTRA-TOUCH

INTRODUCTION

The "Vectra-Touch" height measuring instruments are of universal use in any production field. They are the result of 40 years of experience in development and manufacturing. This experience makes it possible to introduce a product that combines ergonomic design with new technology. Its reliable concept is a reference for durability. Ease of use and quick performance of all required measuring tasks allow unlimited applications in any manufacturing area.

The distinctive design of the Vectra-Touch, as well as its exceptional functionalities, offer the user an ease of use unequalled on the market. The display unit is identical for all models and gathers all assets for a rational use in the workshop. A limited number of keys (19) makes the instrument accessible to any user, whatever his level of training. The robust colour touch screen offers great ease of use. Only essential information will be provided to the user. A graphic assistance guides the execution of all measurements.

Ease of use has been an absolute priority in the requirements, thus resulting in functions, usually considered as complex, such as 2D, programming, statistics, becoming child's play.

CLEAR DISPLAY WITH LARGE DIGITS

GRAPHIC HELP FOR MEASURING

PRINTING OF REPORTS ON USB PRINTER

BACKUP ON EXTERNAL SUPPORT (USB KEY)

MEASURING RANGE FROM 300 MM TO 2000 MM

AVAILABLE IN MANUAL OR MOTORIZED VERSION

WORKING ON ACCUMULATOR

LARGE RANGE OF ACCESSORIES

DESCRIPTION

▲▼ Surfaces

⃝ Internal / external diameters

⊕ Centerline distances

▽ Graphic help "EasyScan"

⋀ Min/Max/Delta

▣ 9 references

⊥ Sqareness measurements

◁ Angle measurements

Σ Calculation mode

⤒ Tolerances

2D 2D measuring mode

⟶⟶ Measurement sequences

📊 Statistical analysis

🌡 Temperature compensation

? Online help

USB USB ports

RS232 RS232 ports

((•)) Wireless communication

Automatic displacement

Interchangeable measuring inserts

Trigonal shaped base for optimum stability

Display unit with colour touch screen

201.2245

Handwheel for the displacement of the measuring carriage (manual or motorized)

Displacement operating handle of ergonomic design with 2 programmable function keys. Air cushion activation key

TRIMOS Vectra Touch

VECTRA-TOUCH

DISPLAY / SOFTWARE

The colour display facilitates the reading of all measuring parameters. The functions are easily and directly accessible. The display unit is identical for all models.

VERY SIMPLE GRAPHIC INTERFACE

DATE AND TIME DISPLAY

DISPLAY OF ENVIRONMENTAL TEMPERATURE

ACOUSTIC AND GRAPHIC PROBING INDICATOR

GRAPHIC DISPLAY OF SQUARENESS

COLOR TOUCH SCREEN

MEASURING IN 2D MODE
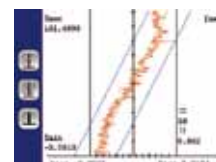
PROGRAMMING OF MEASURING SEQUENCES

STATISTICAL ANALYSIS

TEMPERATURE COMPENSATION FEATURE
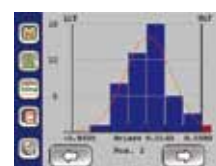
INTEGRATED ON LINE HELP

BUFFER WITH 999 VALUES

Touch-screen with intuitive interface

Graphic display of squareness

Statistical analysis of measurement results

Graphic help for each function

TECHNICAL SPECIFICATIONS

Vectra-Touch		300	600	1000	1500	2000
Measuring range	mm(in)	305 (12)	610 (24)	1016 (40)	1524 (60)	2034 (80)
With second probe holder	mm(in)	567 (22)	872 (34)	1278 (50)	1786 (70)	2296 (90)
Max. permissible errors [1]	µm	2+ L(mm)/400			2.5 + L(mm)/300	
Repeatability (2s) [1]	µm	1 (Ø:2)				
Resolutions	mm(in)	0.01/0.001/0.0001 (.001/.0001/.00001)				
Manual carriage displacement speed	mm/s	1000				
Motorized carriage displacement speed	mm/s	150				
Measuring force (adjustable)	N	0.5 ÷ 1.8				
Frontal squareness deviation	µm	4	6	10	15	25
Autonomy	h	> 8				
Data output		2 x RS232 C and 2 x USB (A et B)				
Operational temperature	°C	+10 ÷ +40				
Temperature of storage	°C	-10 ÷ +40				
Weight	kg	22	25	29	39	44

[1] Values valid with standard ball probe (TA-MI-101) at temperature of 20 ± 0.5°C and relative humidity of 50 ± 5 %.

SCHEMA
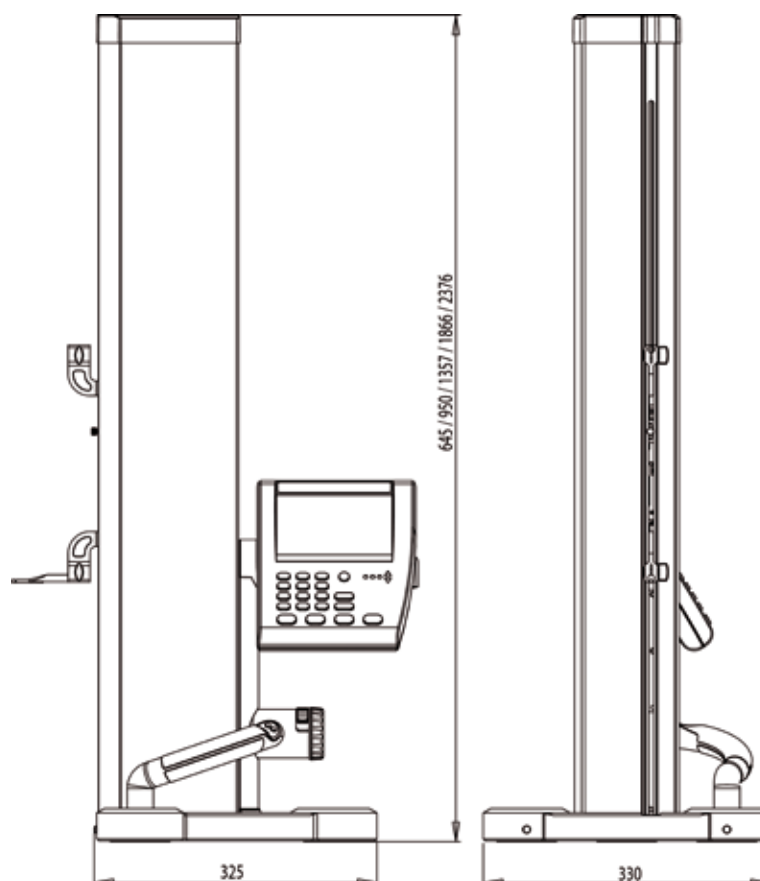
STANDARD INSTRUMENT

| The Vectra-Touch instruments are supplied as follows:	
Instrument according to specifications	User's manual (750 50 0002 03)
Charging unit (TA-EL-130)	Test certificate
Measuring insert with ruby ball Ø 4 mm (TA-MI-101)	Hex screw driver 2 mm (TA-TO-002)
Setting gauge (TA-MG-101)	Hex screw wrench 5 mm (TA-TO-001)
Protection cover (TA-TO-109 / 110 / 111 / 112 / 113)	Touch screen pen (LABC-30.3)

CODE NUMBERS

| Manual		Motorized		
VT300MA	700 107 10 01	VT300MO	700 107 10 02	Measuring range 300 mm
VT600MA	700 107 20 01	VT600MO	700 107 20 02	Measuring range 600 mm
VT1000MA	700 107 30 01	VT1000MO	700 107 30 02	Measuring range 1000 mm
VT1500MA	700 107 40 01			Measuring range 1500 mm
VT2000MA	700 107 50 01			Measuring range 2000 mm

VECTRA-TOUCH

APPLICATIONS
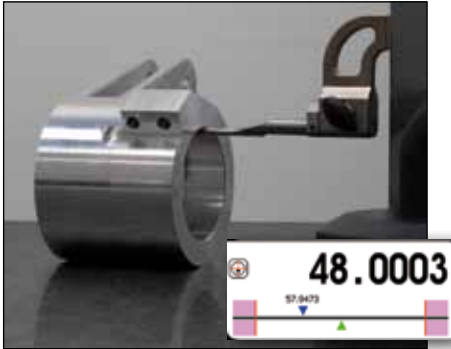
Diameter measurement with graphic help "EasyScan"
(TA-MI-101/TA-AD-101)
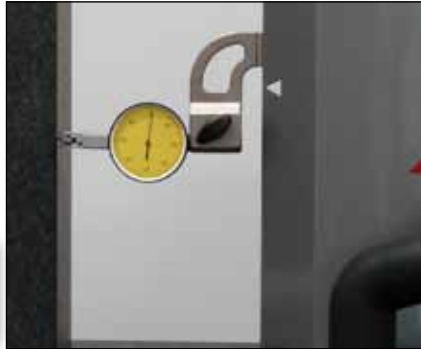
Squareness mechanically adjusted on all instruments
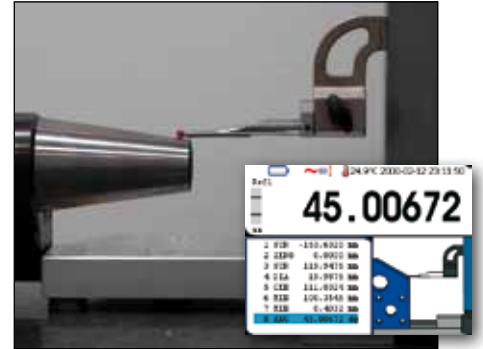
Measurement of angles and cones with graphic help display
(TA-MI-101/TA-AD-101)
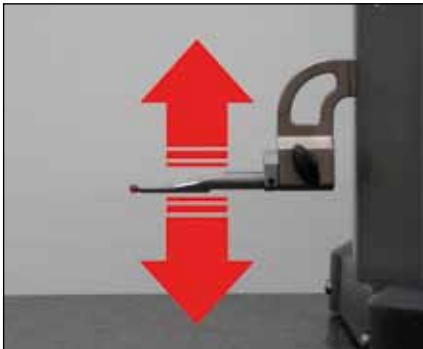
Measurement with automatic displacement in programming mode

Checking of squareness using an additional electronic probe and colour print-out of the curve (TA-MS-101)

Measurement using temperature compensation system with optional external sensor (TA-EL-120)

Storage of all data to an external memory, e.g. USB Memory Stick
(TA-EL-140)

Wireless communication by Bluetooth or Wi-Fi (optional) (TA-EL-123/4)

Standard probes up to 320 mm. (here optional 550 mm)

MESTRA +
TOUCH

MESTRA+TOUCH

INTRODUCTION

The "Mestra" height measuring instruments are classified among the most accurate ones worldwide. This new instrument line is the result of 40 years of experience, which makes it possible to offer a product having advanced technologies combined with ergonomic design.

The result of the well designed instrument concept incorporating an entire new measuring system is an optimum accuracy level. The extreme ease of use allows unrestricted application in production areas as well as in measuring laboratory environment.

Two specific models are available, "Mestra" and "Mestra-Touch". The difference between these two models is the layout of the display unit as well as the available measuring functions. The "Mestra" has a display unit incorporating all basic functions such as checking of heights, depths, diameters and centerline distances, squareness deviation, angles and tolerance limits indication. In addition the "Mestra-Touch" offers a colour touch screen and functions such as the 2-coordinate system, programming of measuring sequences, statistical analysis of memorized values and display of environmental temperature.

EXTREME ACCURACY LEVEL

GRAPHIC HELP FOR MEASURING

PRINTING OF REPORTS ON USB PRINTER

BACKUP ON EXTERNAL SUPPORT (USB KEY)

MEASURING RANGE FROM 300 MM TO 1000 MM

AVAILABLE IN MANUAL OR MOTORIZED VERSION

WORKING ON ACCUMULATOR

LARGE RANGE OF ACCESSORIES

DESCRIPTION

MESTRA + MESTRA-TOUCH

△▽ Surfaces

⌀ Internal / external diameters

⊕ Centerline distances

Graphic help "EasyScan"

Min/Max/Delta

9 references

⊥ Sqareness measurements

◁ Angle measurements

Σ Calculation mode

Tolerances

USB USB ports

RS232 RS232 ports

Wireless communication

Automatic displacement

MESTRA-TOUCH

2D 2D measuring mode

Measurement sequences

Statistical analysis

Temperature compensation

? Online help

Interchangeable measuring inserts

Display unit with colour screen (Touch screen for Mestra-Touch)

610.1980

TRIMOS Mestra Touch

Swiss Measuring Instruments

Handwheel for the displacement of the measuring carriage (manual or motorized)

Trigonal shaped base for optimum stability

Displacement operating handle of ergonomic design with 2 programmable function keys. Air cushion activation key

TRIMOS
ISSOKU

MESTRA +TOUCH

DISPLAY / SOFTWARE

The colour display facilitates the reading of all measuring parameters. The functions are easily and directly accessible.

| INTERACTIVE HELP |
| --- |
| DATE AND TIME DISPLAY |
| ACOUSTIC AND GRAPHIC PROBING INDICATOR |
| MEASURING OF VALUES WITH TOLERANCE INDICATION |
| GRAPHIC DISPLAY OF SQUARENESS |
| TOUCH SCREEN (MESTRA-TOUCH) |
| MEASURING IN 2D MODE (MESTRA-TOUCH) |
| MEASURING SEQUENCES (MESTRA-TOUCH) |
| STATISTICAL ANALYSIS (MESTRA-TOUCH) |
| TEMPERATURE COMPENSATION FEATURE (MESTRA-TOUCH) |
| INTEGRATED ON LINE HELP (MESTRA-TOUCH) |

Touch-screen with intuitive interface (Mestra-Touch)

Easy identification of each measuring function
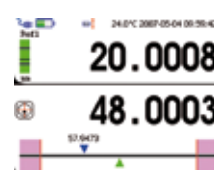

Graphical help for diameter measurements

Clear indication of part conformity

TECHNICAL SPECIFICATIONS

Mestra/Mestra-Touch		300	600	1000
Measuring range	mm (in)	305 (12)	610 (24)	1016 (40)
With second probe holder	mm (in)	567 (22)	872 (34)	1278 (50)
Max. permissible errors [1]	µm	1.2+ L(mm)/1000		
Repeatability (2s) [1]	µm	0.5 (Ø:1)		
Resolutions	mm (in)	0.01/0.001/0.0001 (.001/.0001/.00001)		
Manual carriage displacement speed	mm / s	1000		
Motorized carriage displacement speed	mm / s	150		
Measuring force (adjustable)	N	0.5 ÷ 1.8		
Frontal squareness deviation	µm	4	6	10
Autonomy	h	> 8		
Data output		2 x RS232 C and 2 x USB (A et B)		
Operational temperature	°C	+10 ÷ +40		
Temperature of storage	°C	-10 ÷ +40		
Weight	kg	22	25	29

[1] Values valid with ball probe TA-MI-119 at temperature of 20 ± 0.5°C and relative humidity of 50 ± 5 %.

SCHEMA
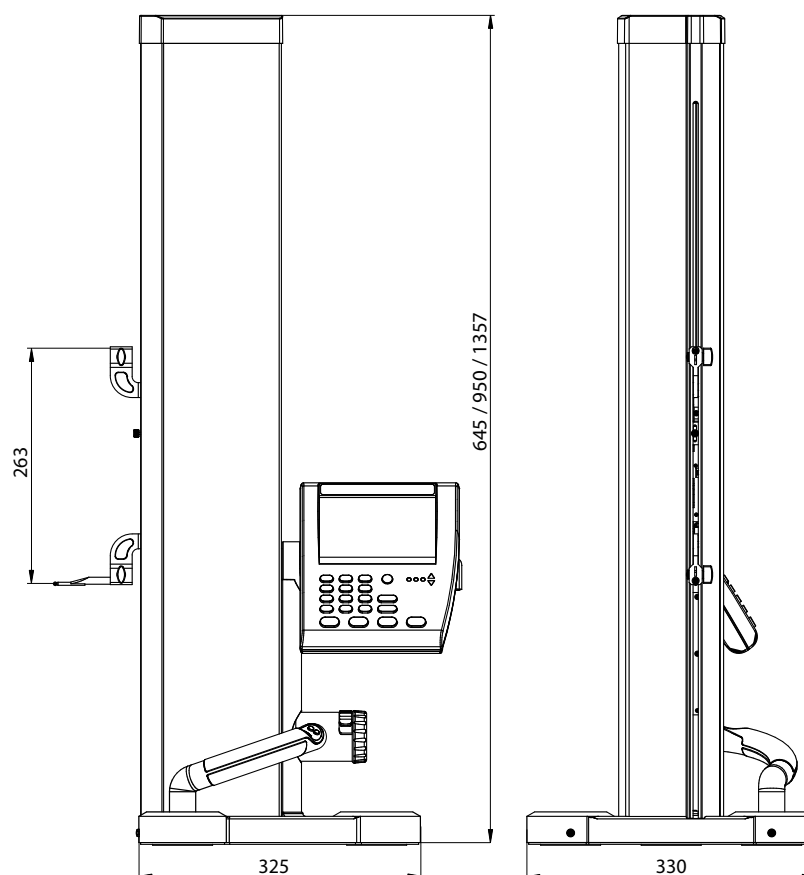
STANDARD INSTRUMENT

| The Maestra and Maestra-Touch instruments are supplied as follows:	
Instrument according to specifications	User's manual (750 50 0002 03)
Charging unit (TA-EL-130)	Test certificate
Measuring insert with ruby ball Ø 5 mm (TA-MI-119)	Hex screw driver 2 mm (TA-TO-002)
Setting gauge (TA-MG-101)	Hex screw wrench 5 mm (TA-TO-001)
Protection cover (TA-TO-109 / 110 / 111)	Touch screen pen (LABC-30.3)

CODE NUMBERS

| Mestra				Mestra-Touch					
Manual		Motorized		Manual		Motorized			
M300MA	700 107 10 03	M300MO	700 107 10 04	MT300MA	700 107 10 05	MT300MO	700 107 10 06	Measuring range	300 mm
M600MA	700 107 20 03	M600MO	700 107 20 04	MT600MA	700 107 20 05	MT600MO	700 107 20 06	Measuring range	600 mm
M1000MA	700 107 30 03	M1000MO	700 107 30 04	MT1000MA	700 107 30 05	MT1000MO	700 107 30 06	Measuring range	1000 mm

MESTRA + TOUCH
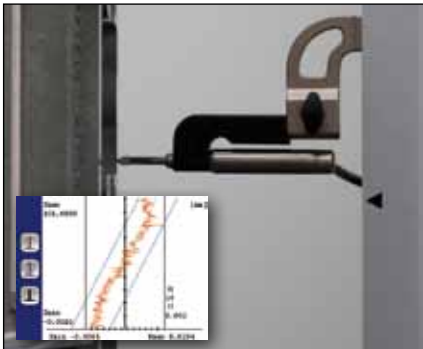
APPLICATIONS

Height measurement of a small board
(TA-IH-109/V-50.5/TA-MI-118)
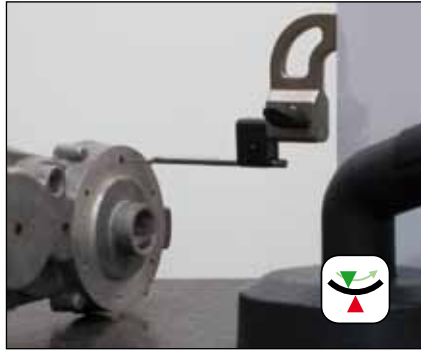
Checking of a small diameter using
the adequate measuring insert
(V-5/V-50.9)
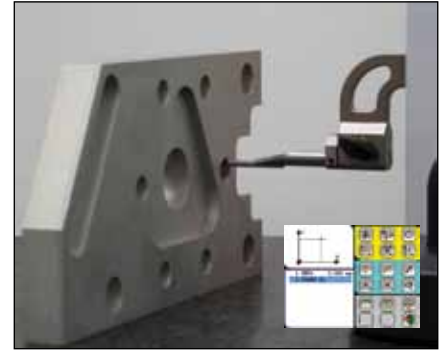
2-coordinate measurement with
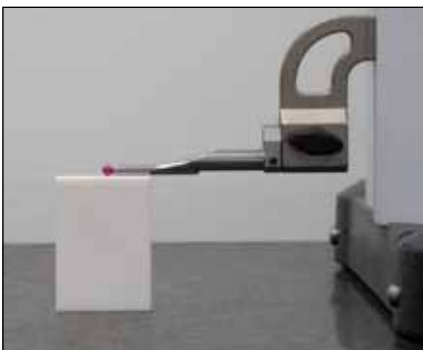standard graphic help
(TA-MI-101/TA-AD-101)

Checking of squareness deviation using
an additional electronic probe and co-
lour print-out of the curve (TA-MS-101)

Measurement of a groove using a 90°
angled measuring insert holder and an L-
shaped insert (TA-IH-105/V.50.5/V-50.3)

Automatic measurement of an external
diameter performed with "TRIMOS® NC
movement" (TA-MI-101/TA-AD-101)

The complete digital measuring system
offers an extremely high accuracy
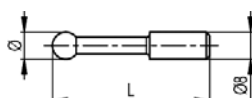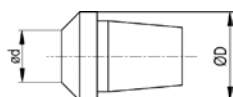(TA-MI-101/TA-AD-101)

An USB data output allows the storage
of all data on an USB Memory Stick
as well as the printing of protocols
(TA-EL-140)

Wireless communication by Bluetooth
or Wi-Fi (optional) (TA-EL-123/4)

ACCESSORIES

			TVM	V/V Plus	VT	M/MT
TV2S2 279 901007 010	Cone Ø 0-15 mm		●			
TV2S3 279 901007 003	Cone Ø 13-20.5 mm		●			
TV2S4 509 05 20 0001	Cone Ø 17-24.5 mm		●			
TV2S5 279 901007 005	Cone Ø 23-30.5 mm		●			
TV2S6 279 901007 006	Cone Ø 26-35.5 mm		●			
TV2S7 279 901007 007	Cone Ø 32-39 mm		●			
TV2S8 279 901007 008	Cone Ø 36-45 mm		●			
TV2S9 279 901007 009	Cone Ø 41-50 mm		●			
TV2S10 279 901007 010	Cone Ø 46-55 mm		●			
TV2S11 279 901007 011	Cone Ø 51-60 mm		●			
TVM2.9 509 05 20 0001	Ball insert Ø 0.5 mm		●			
TVM2.8 509 05 20 0003	Ball insert Ø 1 mm		●			
TVM2.4 509 05 20 0009	Ball insert Ø 2 mm		●			
TVM2.3 509 05 20 0014	Ball insert Ø 3 mm		●			
TVM2.2 509 05 20 0025	Ball insert Ø 4 mm		●			
TVM2.6 509 05 20 0031	Ball insert Ø 5 mm		●			
TVM2.1 509 05 20 0037	Ball insert Ø 6 mm		●			
TVM2.7 509 05 20 0045	Ball insert Ø 7 mm		●			
TVM2 509 05 20 0051	Ball insert Ø 8 mm		●			

	TVM	V / V Plus	VT	M/MT
TVM	V / V Plus	VT	M/MT	

ACCESSORIES

			TVM	V/V Plus	VT	M/MT
TVM2.5 509 05 20 0059	Disc shaped insert Ø 8 mm		●			
TVM3 609 12 003	Scriber		●			
TVM1003 609 12 002	Scriber for TVM1000		●			
TV7.1 609 05 023	Knife-edge insert			●		
TV7.2 609 05 022	Ball insert Ø 3 mm			●		
TV7.3 609 05 020	Pin chaped insert Ø 2 mm			●		
TV7.4 609 05 019	Disc shaped insert Ø 5 mm			●		
TVA9.1 509 05 20 0011	barrel-shaped insert M3-M16			●	●	●
TVA9.2 509 05 20 0029	barrel-shaped insert M6-M48			●	●	●
TVA9.3 509 05 20 0062	barrel-shaped insert M12-M150			●	●	●
TA-MI-111 509 05 20 0078	Measuring insert with tungst. carb. ball, Ø 1 mm			●	●	●
TA-MI-110 509 05 20 0077	Measuring insert with tungst. carb. ball Ø 2 mm			●	●	●
TA-MI-104 509 05 20 0080	Measuring insert with tungst. carb. ball Ø 2mm			●	●	●
TA-MI-103 509 05 20 0076	Measuring insert with ruby ball Ø 2 mm			●	●	●

ACCESSORIES
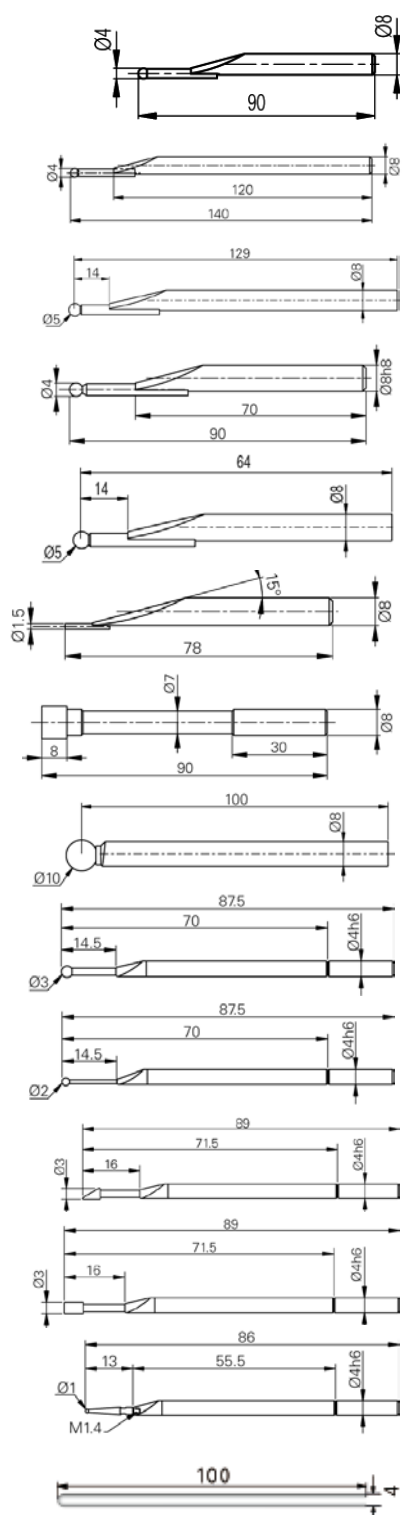
			TVM	V/V Plus	VT	M/MT
TA-MI-102 509 05 20 0075	Measuring insert with tungst. carb. ball Ø 4 mm			●	●	●
TA-MI-105 509 05 20 0079	Measuring insert with tungst. carb. ball Ø 4 mm			●	●	●
TA-MI-106 279 918011 004	Measuring insert with ruby ball Ø 5 mm			●	●	●
TA-MI-101 509 05 20 0074	Measuring insert with ruby ball Ø 4 mm			●	●	
TA-MI-119 SP279 918011 005	Measuring insert with ruby ball Ø 5 mm					●
TA-MI-107 509 05 20 0081	Measuring insert with pin Ø 1.5 mm			●	●	●
TA-MI-112 509 05 20 0082	Measuring insert with parallel faces			●	●	●
TA-MI-108 279 918011 002	Measuring insert with ruby ball Ø 10 mm			●	●	●
TA-MI-109 279 918011 003	Measuring insert with ruby ball Ø 3 mm			●	●	●
V-50.9 279 918011 001	Measuring insert with ruby ball Ø 2 mm			●	●	●
V-50.10 279 918007 001	Knife-edge insert			●	●	●
V-50.11 279 918013 001	barrel-shaped insert Ø 3 x 5 mm			●	●	●
V-50.12 279 918012 001	Measuring insert Ø 1 mm with holder			●	●	●
TA-MI-114 506 22 20 0063	Pin, 1 hemispheric and 1 plane face			●	●	●

TVM   V / V Plus   VT   M/MT
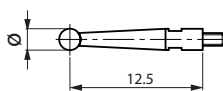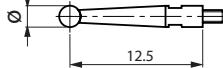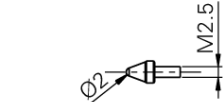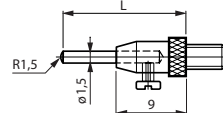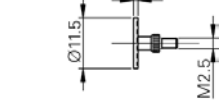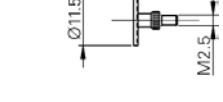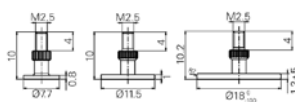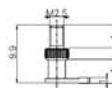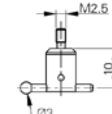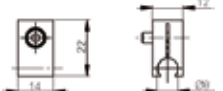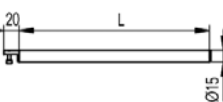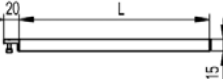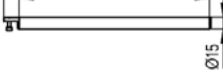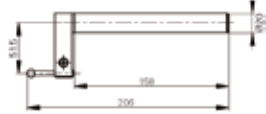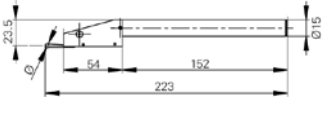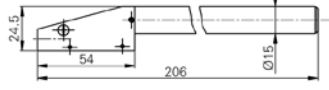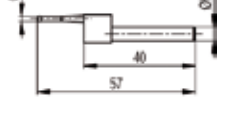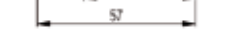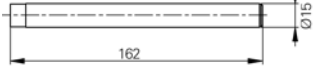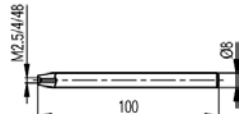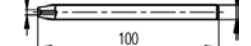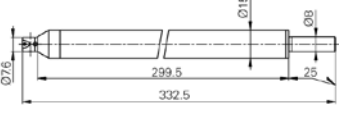
ACCESSORIES

			TVM	V/V Plus	VT	M/MT
TA-MI-115 279 901001 001	Measuring insert M1.4 with ball Ø 1 mm			●	●	●
TA-MI-116 279 901001 002	Measuring insert M1.4 with ball Ø 2 mm			●	●	●
TA-MI-117 279 901001 003	Measuring insert M1.4 with ball Ø 3 mm			●	●	●
V-50.4 279 918010 001	Measuring insert M2,5 with ball contact			●	●	●
TA-MI-118 279 901003 001	Measuring insert M2.5 with 4 interchangeable pins L=16/26/36/46 mm			●	●	●
V-50.2.1 279 918005 002	Disc-shaped inserts M2.5, Ø 7.7 mm			●	●	●
V-50.2.2 279 918005 003	Disc-shaped inserts M2.5, Ø 11.5 mm			●	●	●
V-50.2.3 279 918005 004	Disc-shaped inserts M2.5, Ø 18 mm			●	●	●
V-50.2 279 918005 001	Set of 3 disc-shaped inserts M2.5			●	●	●
V-50.3 279 918008 001	Corner insert M2.5			●	●	●
V-50.1 279 918009 001	Measuring insert M2.5 with ruby ball Ø 3 mm			●	●	●
TVM1.1 502 02 10 0015	Clamping device Ø 8 mm		●			
TVM1 612 11 007	Standard insert holder for TVM, L=154 mm		●			
TVM1/L250 612 11 061	Insert holder, L=250 mm		●			
TVM1/L300 612 11 062	Insert holder, L=300 mm		●			
TVM1/L350 612 11 063	Insert holder, L=350 mm		●			

ACCESSORIES

			TVM	V / V Plus	VT	M/MT
	TVM1/1.1/2 609 05 061	Measuring insert + holder (TVM1 + 1.1 + 2)	●			
	TVA1 612 11 028	Measuring insert + holder for TVM1000	●			
	TVM4 609 05 074	Bi-directional probe Ø4 mm	●			
	TVM4.1/4.2 609 05 075	Bi-directional probe Ø2 mm	●			
	TVM4.1 612 11 030	Support pour touche bidirectionnelle	●			
	TVM4.2 609 05 021	Measuring insert Ø2 mm for bi-directional probe	●			
	TVM4.3 609 05 024	Measuring insert Ø4 mm for bi-directional probe	●			
	TVM5.1 609 05 054	Cone holder	●			
	TVM5 709 05 054	Set of cones with holder (TV2S2/3/4/5 + TVMS2)	●			
	TVM6 512 11 20 0018	Holder Ø8 mm for measuring inserts M2.5	●			
	TVM6E 512 11 20 0019	Holder Ø8 mm for measuring inserts 4-48	●			
	TA-IH-101 612 11 045	Measuring insert holder M2.5		●	●	●
	TA-IH-103 612 11 047	Measuring insert holder 4-48		●	●	●
	TA-IH-102 612 11 046	Measuring insert holder M2.5		●	●	●
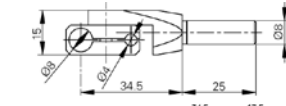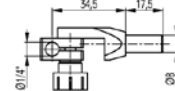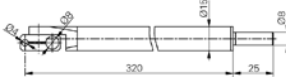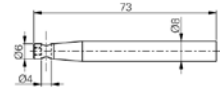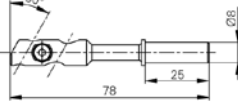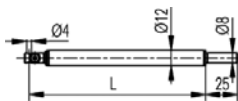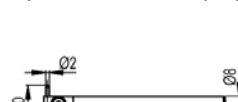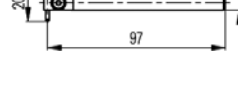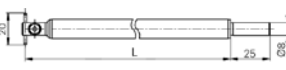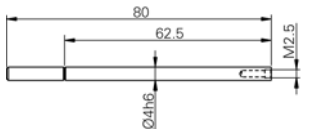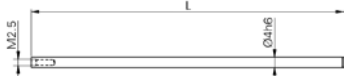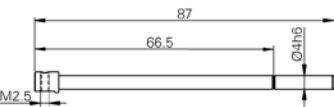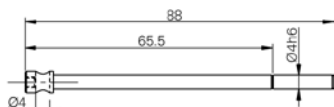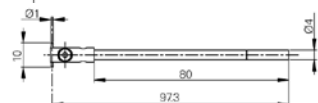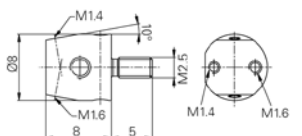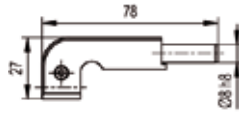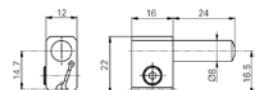
		TVM	V / V Plus	VT	M/MT
TA-IH-104 612 11 053	Swivel holder Ø 4 and 8 mm		●	●	●
V-2E 612 11 023	Swivel holder Ø 1/4 "		●		
TA-IH-105 612 11 051	Swivel holder Ø 4 and 8 mm		●	●	●
V-2E/D1/4/L150 612 11 013	Swivel holder Ø 1/4"		●	●	●
TA-IH-106 612 11 039	Swivel holder Ø 4 and 8 mm		●	●	●
TA-IH-107 612 11 055	Insert holder 90°, Ø 8 mm		●	●	●
TA-IH-108 612 11 052	Insert holder 90°, Ø 8 mm		●	●	●
TA-IH-109 612 11 054	Insert holder 90°, Ø 4 mm		●	●	●
TA-IH-110 279 918103 001	Insert holder 90°, Ø 4 mm		●	●	●
V-4 612 11 011	Insert holder 30°, Ø 4 mm		●	●	●
TA-IH-111 612 11 041	Insert holder 90°, Ø 4 mm, L=150 mm		●	●	●
TA-IH-112 612 11 042	Insert holder 90°, Ø 4 mm, L=300 mm		●	●	●
TVA4 609 05 007	Insert holder with pin Ø 2 x 20 mm		●	●	●
TA-IH-113 612 11 043	Insert holder with pin Ø 2 x 20 mm, L=200 mm		●	●	●
TA-IH-114 612 11 044	Insert holder with pin Ø 2 x 20 mm, L=300 mm		●	●	●

ACCESSORIES

TVM / V / V Plus / VT / M/MT

ACCESSORIES

			TVM	V/V Plus	VT	M/MT
V-50.6 279 918002 002	Measuring insert holder M2.5			●	●	●
V-50.5 279 918002 001	Measuring insert holder M2.5, L=124 mm			●	●	●
TA-IH-115 279 918002 003	Measuring insert holder M2.5, L=200 mm			●	●	●
V-50.7 279 918001 002	Insert holder 90°, M2.5			●	●	●
V-50.8 279 918001 001	Insert holder 90°, Ø 4 mm			●	●	●
TA-IH-116 279 918001 003	Measuring insert holder Ø 1 x 10 mm			●	●	●
TA-IH-117 512 11 20 0012	Holder for measuring inserts M2.5, M1.6, M1.4			●	●	●
TA-IH-118 512 11 20 0013	Holder for measuring inserts 4-48, M1.6, M1.4			●	●	●
TA-IH-126 612 07 006	Holder for squareness probe				●	●
TA-MS-101 276 940001 001	Squareness probe for VT/M/MT 300/600				●	●
TA-MS-102 276 940001 002	Squareness probe for VT/M/MT 1000				●	●
TA-MS-103 609 02 020	Squareness probe for VT1500				●	
TA-MS-104 609 02 021	Squareness probe for VT2000				●	
TVM1010 603 12 005	Reduction sleeve Ø 20 / 15 mm (TVM1000)		●			
V-5 612 11 012	Reduction Ø 8 / 4 mm			●	●	●

TVM

V / V Plus

VT

M/MT

ACCESSORIES

			TVM	V/V Plus	VT	M/MT
	TA-AD-101 603 11 001	Positioning holder for measuring insert VT/MT			●	●
	TA-AD-102 603 11 002	Positioning holder for measuring insert V+		●		
	TA-AD-104 SP612 05 014 01	Mobile support for diplay VT/MT			●	●
	V-7/H100 612 11 025	Extension for probe holder 100 mm		●		
	V-20 606 00 029	Quick clamp for insert holder		●		
	V-32 612 06 001	Printer holder for V+		●		
	V-32/SP SP612 06 001 01	Printer holder for VT/MT (factory mounted only)			●	●
	TA-SE-101 605 01 007	Set of accessories "Macro" (16 pcs)		●	●	●
	TA-SE-102 605 01 008	Set of accessories "Micro" (20 pcs)		●	●	●
	TA-MG-103 609 01 026	Setting gauge		●		
	TA-MG-101 609 01 024	Setting gauge25 mm			●	●
	TA-MG-102 609 01 025	Setting gauge 1"			●	●
	V-60 612 12 045	Wooden accessories support		●	●	●
	V-50.13 290 918001 001	Wrench for measuring inserts		●	●	●

ACCESSORIES

			TVM	V / V Plus	VT	M/MT
V-50.15 290 000911 005	Allen key 2.5 mm			●		
TA-TO-001 290 000911 009	Allen key 5 mm				●	●
TA-TO-002 290 920001 001	Hex Screwdriver 2 mm			●	●	●
LABC-30.3 3708 0002	Touch screen pen				●	●
TVM.HO300 505 05 10 0009	Protection cover for TVM301, TC401		●			
TVM.HO600 505 05 10 0011	Protection cover for TVM601, TC601		●			
TVM.HO1000 505 05 10 0013	Protection cover for TVM1000		●			
V.HO300 505 05 10 0020	Protection cover for V300			●		
V.HO600 505 05 10 0021	Protection cover for V600			●		
V.HO1000 505 05 10 0022	Protection cover for V1000			●		
TA-TO-109 505 05 10 0005	Protection cover for VT/M/MT 300				●	●
TA-TO-110 505 05 10 0006	Protection cover for VT/M/MT 600				●	●
TA-TO-111 505 05 10 0007	Protection cover for VT/M/MT 1000				●	●
TA-TO-112 505 05 10 0008	Protection cover for VT 1500				●	
TA-TO-113 505 05 10 0037	Protection cover for VT 2000				●	

TVM V / V Plus VT M/MT

ACCESSORIES

			TVM	V / V Plus	VT	M/MT
	BAT-TVM.OPTO 3705 0002	Battery	●			
	TELMA31 3706 0002	Foot pedal		●		
	TA-EL-101 3706 0006	Foot pedal (VT/MT)			●	●
	LABC-40 356 0010	Laser printer (USB)			●	●
	TA-EL-030 356 0016	Inkjet printer (USB)			●	●
	V-30 356 0007	Printer (RS232)		●	●	●
	TVM.O-PC/AT.9P 333 9 0003	Cable Opto-PC / AT 9 P/F 2 m	●			
	V-31 333 0 0003	Cable for RS232 printer		●		
	CABL.RS.1/1-9P 332 01 0001	Cable RS232 m/f, 1.8 m (VT/M/MT: Printer & V / V Plus / H: PC)		●	●	●
	TA-EL-110 332 01 0012	Cable RS232 f/f, 1.8 m (PC)			●	●
	TA-EL-013 332 02 0001	USB A-B connection cable, L=1.8 m			●	●
	TA-EL-011 358 0006	USB-RS232 Converter	●	●	●	●
	TA-EL-131 334 0020	Universal AC adapter, 9 V (without cable)		●		

ACCESSORIES

			TVM	V/V Plus	VT	M/MT
TA-EL-130 357 0100	Universal AC adapter, 28 V (without cable)				●	●
TA-EL-001 332 10 0011	Power cable, 2 poles, Europe			●	●	●
TA-EL-002 332 10 0013	Power cable, 2 poles, USA/Japan			●	●	●
TA-EL-003 332 10 0016	Power cable, 2 poles, Australia			●	●	●
TA-EL-004 332 10 0014	Power cable, 2 poles, UK			●	●	●
TA-EL-005 616 20 003	Power cable, 2 poles, Korea			●	●	●
V-30.7 788 000001 001	Paper rolls (5 pces)			●		
TA-EL-120 609 50 005	Temperature compensation system				●	
TA-EL-121 616 70 001	Wireless communication system "Wi-Fi"				●	●
TA-EL-122 616 70 002	Wireless communication system "Bluetooth"				●	●
TA-EL-123 609 50 006	Temperature compensation system "Wi-Fi"				●	
TA-EL-124 609 50 007	Temperature compensation system "Bluetooth"				●	
TA-EL-140 358 0008	USB memory stick				●	●
TA-SW-001 394 1 0050	Software for data transfer WinDDE		●	●	●	●

TVM	V / V Plus	VT	M/MT	

ACCESSORIES

		TVM	V / V Plus	VT	M/MT
TA-SE-101 605 01 007	**Set of accessories Macro (16 pieces):** **TA-MI-105** Measuring insert with tungst. carb. ball Ø4 mm, L=140 mm **TA-MI-110** Measuring insert with tungst. carb. ball Ø2 mm, L=80 mm **TA-MI-107** Measuring insert with pin Ø1.5 mm, L=78 mm **TA-IH-105** Swivel holder Ø4 and Ø8 mm, L=150 mm **TA-IH-109** Insert holder 90°, Ø4 mm **TVA4** Insert holder with pin Ø2 x 20 mm **TA-IH-101** Measuring insert holder M2.5, L=103 mm **V-50.5** Measuring insert holder M2.5, L=124 mm **TA-IH-115** Measuring insert holder M2.5, L=200 mm **V-50.4** Measuring insert M2,5 with ball contact **V-50.2.3** Disc-shaped inserts M2.5, Ø18 mm **TA-MI-115** Measuring insert M1.4 with ball Ø1 mm, L=12.5 mm **TA-MI-116** Measuring insert M1.4 with ball Ø2 mm, L=12.5 mm **TA-MI-117** Measuring insert M1.4 with ball Ø3 mm, L=12.5 mm **V-50.13** Wrench for measuring inserts **V-50.15** Allen key 2.5 mm		●	●	●
TA-SE-102 605 01 008	**Set of accessories Micro (20 pieces):** **V-50.4** Measuring insert M2,5 with ball contact **TA-MI-118** Measuring insert M2.5 with 4 interchangeable pins **V-50.2.1** Disc-shaped inserts M2.5, Ø7.7 mm **V-50.2.2** Disc-shaped insert M2.5, Ø11.5 mm **V-50.3** Corner insert M2.5 **TA-MI-115** Measuring insert M1.4 with ball Ø1 mm, L=12.5 mm **TA-MI-116** Measuring insert M1.4 with ball Ø2 mm, L=12.5 mm **TA-MI-117** Measuring insert M1.4 with ball Ø3 mm, L=12.5 mm **TA-IH-117** Holder for measuring inserts M2.5, M1.6, M1.4 **V-50.6** Measuring insert holder M2.5 **V-50.8** Insert holder 90°, Ø4 mm **TA-IH-116** Measuring insert holder, Ø1 x 10 mm, L=80 mm **V-50.9** Measuring insert with ruby ball Ø2 mm, L=88 mm **V-50.12** Measuring insert Ø1 mm with holder, L=86 mm **V-50.10** Knife-edge insert **V-5** Reduction Ø 8 / 4 mm **TA-IH-104** Swivel holder Ø4 and Ø8 mm **V-50.13** Wrench for measuring inserts **TA-TO-003** Allen key 1.5 mm **V-50.15** Allen key 2.5 mm		●	●	●