TRIMOS

THV

THV

INTRODUCTION

The horizontal THV instrument has been designed for calibration and certification of gauging equipment of small dimension.

It allows easy and precise checking of plug gauges, ring gauges, thread plug gauges, test and dial indicators as well as measuring of high precision production parts.

The incorporated opto-electronic measuring system guarantees high accuracy. A separate display unit or a PC with Trimos WinDHI software can be used to display the measurement results.

The THV instruments can also be delivered without measuring system. An electronic probe or a dial indicator shall then be used as measuring system.

Due to its small size, The THV can be moved easily. It is therefore frequently used as mobile calibration station.

- IDEAL FOR THE USE IN A CLEAN ROOM AND IN THE WORKSHOP AREA
- THE INSTRUMENT MEETS THE REQUIREMENTS OF ALL EN ISO 9000
- VERY SIMPLE MANIPULATION
- LARGE RANGE OF ACCESSORIES
- CHECKING OF INTERNAL AND EXTERNAL DIMENSIONS USING A SINGLE MEASURING ELEMENT
- ACCORDING TO THE APPLICATION, THE INSTRUMENT CAN BE USED IN HORIZONTAL POSITION OR IT CAN BE INCLINED UPTO 90° USING THE ADDITIONAL STAND

DESCRIPTION

DISPLAY UNITS:

Heidenhain ND1100

PC with TRIMOS-WinDHI software

THV

DISPLAY / SOFTWARE

DISPLAY UNIT HEIDENHAIN ND1100

- LINEAR MEASURING SYSTEM, MIN./MAX. VALUE HOLD
- INVERSION OF MEASURING DIRECTION SIGN (+/-)
- ZERO SETTING OF THE DISPLAY AND PRESET INPUT
- PARAMETER SETTINGS AND CLASSIFICATION
- CONFIGURATION OF THE DISPLAY USING EXTERNAL CONTACT
- RS232 DATA OUTPUT

PC WITH TRIMOS WINDHI

TRIMOS-WinDHI Software allows the performance of all required measuring functions and the connection to a gauge inspection and management system.

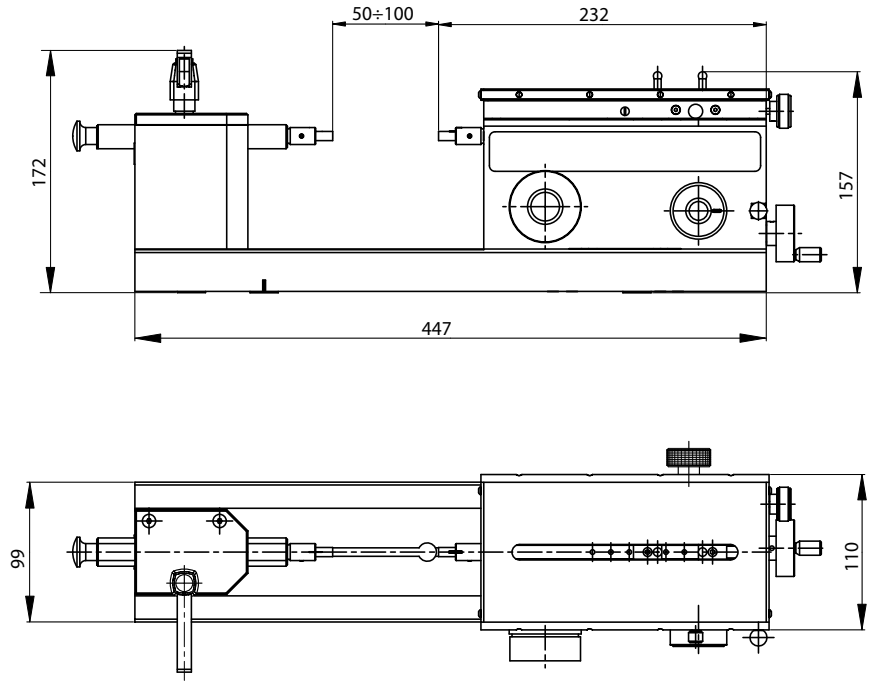
- INVERSION OF MEASURING DIRECTION SIGN (+/-)
- DDE-SERVER (FOR EXCEL, WORD, ETC.)
- GRAPHIC HELP FOR MEASURING FUNCTIONS
- DATA TRANSFER USING A FOOT PEDAL
- DIRECT DISPLAY OF ALL LENGTH MEASURING VALUES AND MIN. / MAX. VALUE HOLD
- MEASURING WITH 9 REFERENCES
- COMPATIBLE WITH MEASURING EQUIPMENT MANAGEMENT SYSTEMS

TECHNICAL SPECIFICATIONS

THV		
Absolute measuring range	mm (in)	50 (2)
Application range (external measurements)	mm (in)	100 (4)
Application range (internal measurements)	mm (in)	100 (4)
Max. permissible errors [1)]	µm	0.2+ L (mm)/250
Repeatability (2s) [1)]	µm	0.1
Resolutions (depending on display unit)	mm (in)	0.1 ÷ 0.00001 (.0001 ÷ .000001)
Measuring force (adjustable)	N	0 ÷ 4
Operational temperature	°C	+10 ÷ +40
Temperature of storage	°C	-10 ÷ +40
Weight	kg	22

[1)] Instruments with integrated measuring system. Values valid at temperature of 20±0.2 °C and relative humidity of 50±5%.

SCHEMA



STANDARD INSTRUMENT

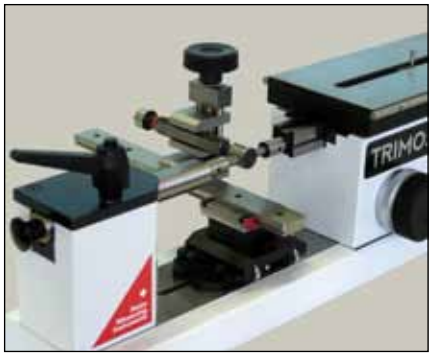
The THV instruments are supplied as follows:
Instrument according to specifications (without display)
Measuring inserts for external measurements (TELS50)
Measuring anvils for internal measurements (THV-10)
Protection cover (THV.HO.0-50)
User's manual (750 50 0006 03)
Test certificate

CODE NUMBERS

THV	Rigid table	Floating table
Instruments with measuring system	**THVR.0-50** 700 206 00 22	**THVR.0-50S** 700 206 00 24
Instruments without measuring system	**THV.0-50** 700 206 00 21	**THV.0-50S** 700 206 00 01

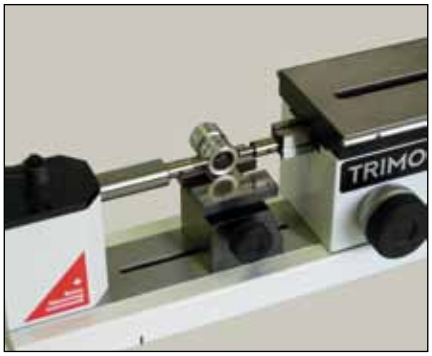
THV

APPLICATIONS

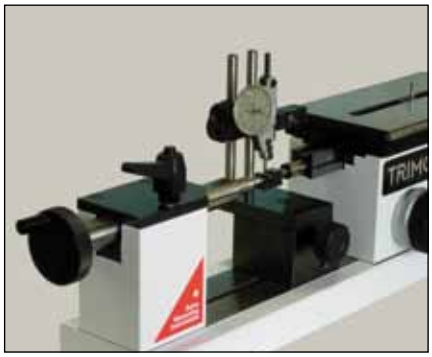


Calibration of plain and threaded plug gauges using the floating table (THV-115)

Calibration of plain rings gauges (THV-260)



Measuring of precision parts (THV-100 / THV-101)



Checking of test indicators (THV-100 / THV-150

Adjustable support for a constant measuring force (THV-200)

Floating table for more accurate internal measurements

TRIMOS

LABCONCEPT + Premium

LABCONCEPT + Premium

INTRODUCTION

The Labconcept and Labconcept Premium are high precision calibration systems that meet the most sophisticated requirements.

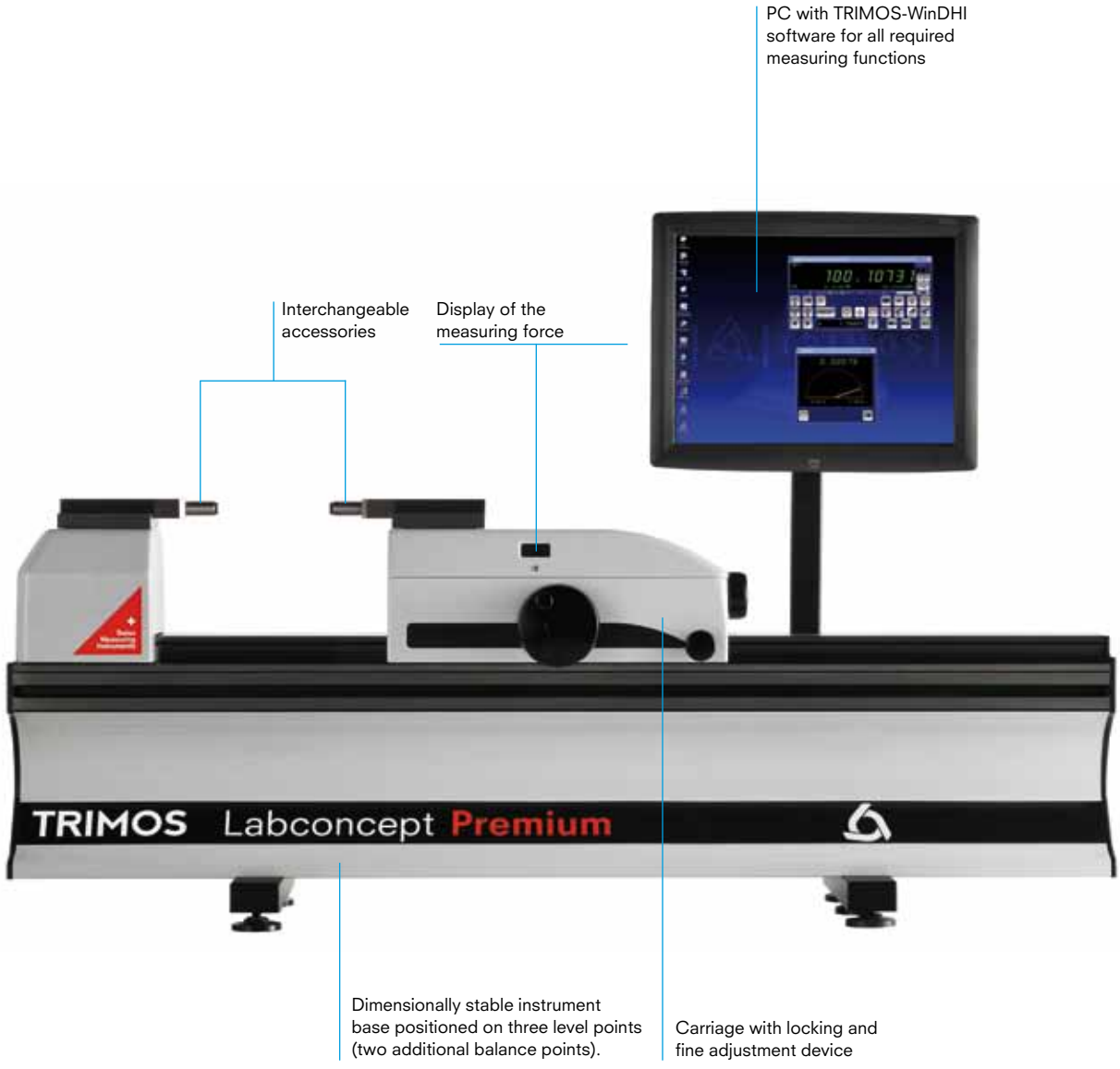
The up-to-date, well designed modular concept enables extremely secure functioning, facilitates the manipulation and therefore increases the productivity in the measuring laboratory. Simplicity and high accuracy have been associated.

This new concept, integrating a computer and a touch screen as well as the appropriate Trimos-WinDHI software with all necessary measuring functions guarantees the best results. A temperature compensation system as well as a gauge management system can be installed to enhance the system performance.

Instruments with a measuring range from 300 to 2000 mm are available, all made in one single piece. All measuring ranges being direct, it means that the whole measuring range is available without adjustment or intermediate re-calibration.

- MEETS THE REQUIREMENTS OF ALL EN ISO 9000
- PC WITH EXCLUSIVE SOFTWARE WINDHI
- HIGH PRECISION MEASURING SYSTEM
- DIMENSIONALLY STABLE INSTRUMENT BASE
- ADJUSTABLE MEASURING FORCE (FROM 0 TO 12 N)
- LARGE RANGE OF ACCESSORIES
- DIRECT MEASUREMENT OVER THE WHOLE MEASURING RANGE

DESCRIPTION



LABCONCEPT + Premium

DISPLAY / SOFTWARE

TRIMOS WINDHI

TRIMOS® WinDHI Software allows the performance of all required measuring functions. It can be connected to the temperature compensation software WinComp and to any gauge inspection and management program.

- DDE-SERVER (FOR EXCEL, WORD, ETC.)
- GRAPHIC HELP FOR MEASURING FUNCTIONS
- DATA TRANSFER USING A FOOT PEDAL
- DIGITAL DISPLAY OF THE SELECTED MEASURING FORCE IN NEWTON (N)
- DIRECT DISPLAY OF ALL LENGTH MEASURING VALUES AND MINI/MAX VALUE HOLD
- INPUT OF 9 PRESET VALUES
- INVERSION OF MEASURING DIRECTION SIGN (+/-)
- COMPATIBLE WITH TEMPERATURE COMPENSATION SYSTEM TEMPCOMP

QMSOFT

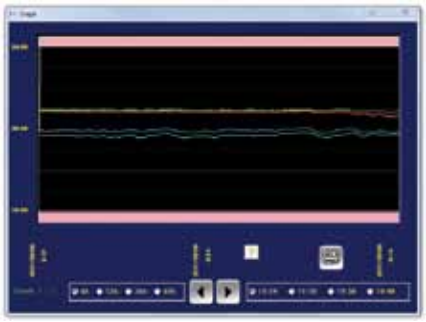
Trimos recommends the QMSOFT software package for inspection and management of all measuring tools available.

- INTEGRATED DRIVERS FOR TRIMOS INSTRUMENTS
- REQUIRED NOMINAL SIZES AND TOLERANCES AVAILABLE ACCORDING TO ALL STANDARDS
- CUSTOMIZED INSPECTION CERTIFICATES

DISPLAY / SOFTWARE

TEMPERATURE COMPENSATION SYSTEM TRIMOS TEMPCOMP

The Temperature Compensation System TempComp gives a solution to air conditioning problems in measuring laboratories.



- COMPATIBLE WITH HPD, LABCONCEPT, LABCONCEPT PREMIUM AND LABCONCEPT NANO INSTRUMENTS
- TRIMOS WINCOMP EXCLUSIVE SOFTWARE
- ACQUISITION AND MANAGEMENT OF TEMPERATURE DATA
- PERMANENT CONNECTION WITH WIN DHI
- REAL-TIME COMPENSATION OF THE MEASUREMENT
- TEMPERATURE EVOLUTION HISTORY OVER SEVERAL YEARS FOR A PERFECT TRACEABILITY
- GRAPHICAL DISPLAY OF TEMPERATURE EVOLUTION
- MATERIALS LIBRARY
- INDICATION OF THE MEASUREMENT RELIABILITY LEVEL

TEMPCOMP BASIC

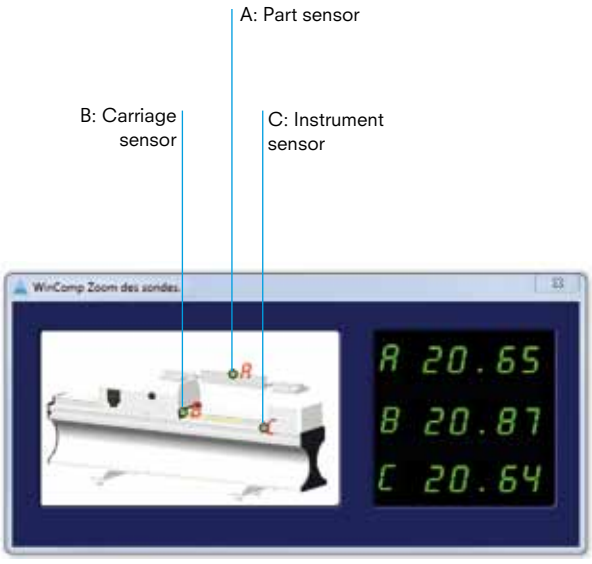
- BASIC TEMPERATURE COMPENSATION SYSTEM
- 2 TEMPERATURE SENSORS:

A PART TO BE MEASURED
B MEASURING CARRIAGE

TEMPCOMP PREMIUM

- PART TO BE MEASURED
- 3 TEMPERATURE SENSORS:

A PART TO BE MEASURED
B MEASURING CARRIAGE
C INSTRUMENT BASE



TempComp Basic & Premium		
Application range (temperature)	°C	+16 ÷ +24
Max. resolution (temperature)	°C	0.01
Max. permissible errors (temperature)	°C	0.05

LABCONCEPT + Premium

DISPLAY / SOFTWARE

TEMPCOMP ADVANCED

The environnement control system TempComp Advanced represents an evolution of the temperature compensation system TempComp.

Tempcomp is an exclusive temperature compensation system with environmental parameter verification of the laboratory. The temperature acquisition is managed by WinComp Advanced software. It offers, on top of WinComp functionalities, the possibility to check the laboratory in real time via Internet, Intranet, mobile phone, etc..

INTEGRATED TEMPERATURE COMPENSATION SYSTEM FOR LABORATORY

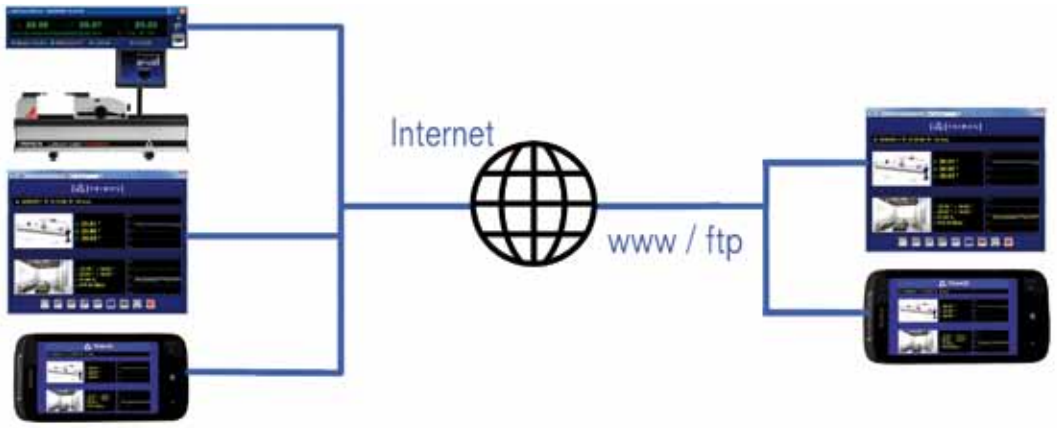
3 TEMPERATURE SENSORS ON THE INSTRUMENT:

- PART TO BE MEASURED
- MEASURING CARRIAGE
- INSTRUMENT BASE

4 TEMPERATURE SENSORS IN THE LABORATORY

1 RELATIVE HUMIDITY SENSOR

1 ATMOSPHERIC PRESSURE SENSOR



TempComp Advanced		
Application range (temperature)	°C	+16 ÷ +24
Max. resolution (temperature)	°C	0.01
Max. permissible errors (instrument temperature)	°C	0.05
Max. permissible errors (environmental temperature)	°C	0.16
Max. permissible errors (humidity)	%	± 2
Max. permissible errors (pressure)	mbar	± 0.5 %

TECHNICAL SPECIFICATIONS

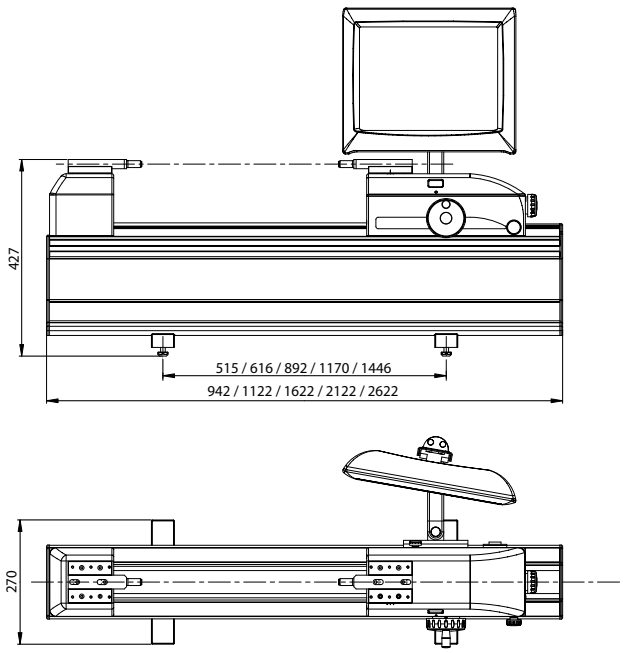
Labconcept		500	1000	1500	2000
Measuring range	mm (in)	550 (21)	1050 (41)	1550 (61)	2050 (80)
Max. permissible errors [1]	µm	0.3 + L (mm) / 1500			
Repeatability (2s) [1]	µm	0.1			
Resolutions	mm (in)	0.01 ÷ 0.00001(.0001 ÷ .000001)			
Max. displacement speed	mm / s	1500			
Measuring force	N	0 ÷ 12			
Operational temperature	°C	+10 ÷ +40			
Temperature of storage	°C	-10 ÷ +40			
Relative humidity	%	20 ÷ 80			
Weight	kg	94	123	152	181

[1] Values valid at temperature of 20 ± 0.2 °C and relative humidity of 50 ± 5%.

Labconcept Premium		300	500	1000
Measuring range	mm (in)	370 (14)	550 (21)	1050 (41)
Max. permissible errors [1]	µm	0.1 + L (mm) / 2000	0.15 + L (mm) / 2000	
Repeatability (2s) [1]	µm	0.05		
Resolutions	mm (in)	0.01 ÷ 0.00001 (.0001 ÷ .000001)		
Max. displacement speed	mm / s	400		
Measuring force	N	0 ÷ 12		
Operational temperature	°C	+10 ÷ +40		
Temperature of storage	°C	-10 ÷ +40		
Relative humidity	%	20 ÷ 80		
Weight	kg	78	95	125

[1] Values valid at temperature of 20 ± 0.2 °C and relative humidity of 50 ± 5%.

SCHEMA



LABCONCEPT + Premium

STANDARD INSTRUMENT

The Labconcept and Labconcept Premium instruments are supplied as follows:
Instrument according to specifications
Pair of anvils with tungsten carbide surface (HPA-1)
PC with interface, touch screen [1] with adjustable support [1] and touch screen pen [1]
Foot pedal for data transfer (TELMA31)
Opto-RS connection cable for measuring force (TVM.O-PC / AT.9P)
Lapping plate (TA-TO-302)
Protection cover (TEL.HO500 / 1000 / 1500 / 2000)
Allen key set (TA-TO-004)
User's manual (750 50 0015 03)
Test certificate

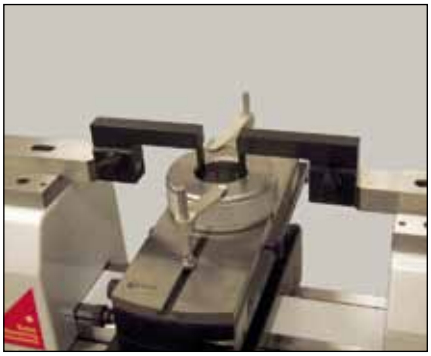
[1] Not included in versions LABC-B. Touch screen replaced by a regular TFT screen.

CODE NUMBER

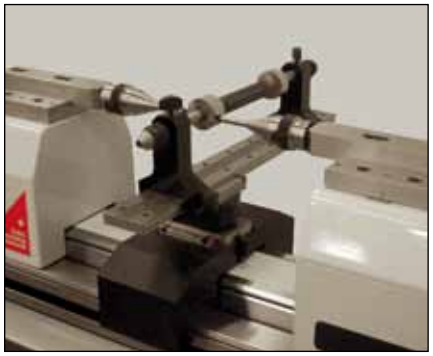
With touch screen	With TFTscreen	Labconcept
LABC500 700 203 10 01	**LABC500B** 700 203 10 02	Measuring range 500 mm
LABC1000 700 203 20 01	**LABC1000B** 700 203 20 02	Measuring range 1000 mm
LABC1500 700 203 30 01	**LABC1500B** 700 203 30 02	Measuring range 1500 mm
LABC2000 700 203 40 01	**LABC2000B** 700 203 40 02	Measuring range 2000 mm

With touch screen	With TFTscreen	Labconcept Premium
	LABCP300B 700 203 10 13	Measuring range 300 mm
LABCP500 700 203 10 11	**LABCP500B** 700 203 10 12	Measuring range 500 mm
LABCP1000 700 203 20 11	**LABCP1000B** 700 203 20 12	Measuring range 1000 mm

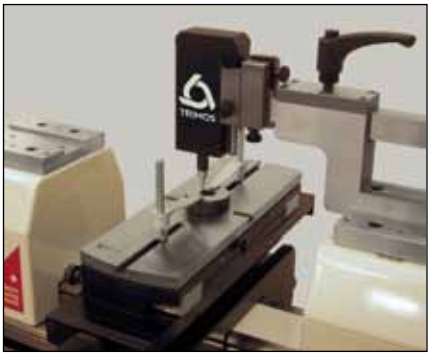
APPLICATIONS



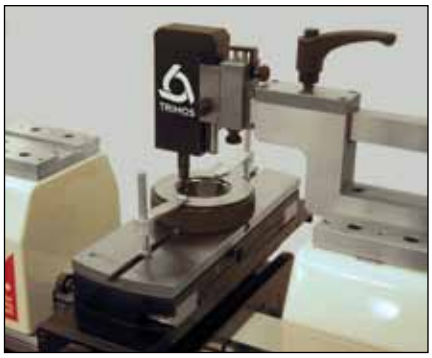
Calibration of ring gauges (TA-SU-313 / TEL16.1 / HPA-1)



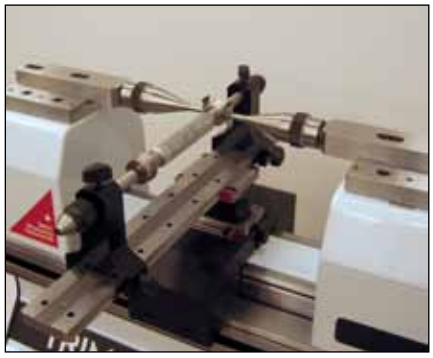
Calibration of plug gauges (HPA-1 / TULM6 / L05 / LABC-15)



Calibration of small ring gauges (TA-SU-313 / LABC-70 / TA-SU-354)

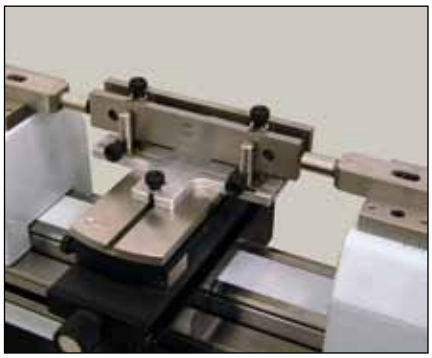


Calibration of thread ring gauges (TA-SU-313 / LABC-70 / TA-SU-354)

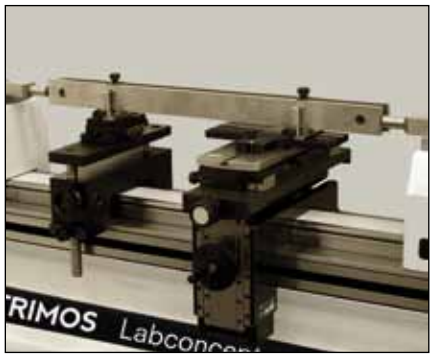


Calibration of thread plug gauges (HPA-1 / TEL6 / 3P / 0.17-3.2 / S6.5 / LABC-15)

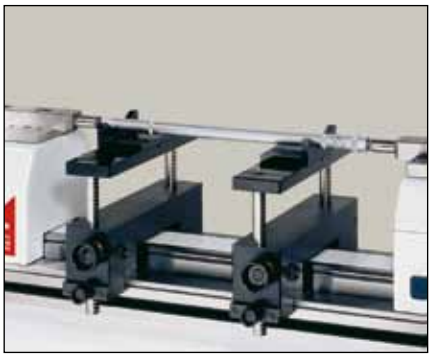
Calibration of external micrometers (HPA-1 / TULM14)



Comparative checking of gauge blocks < 250 mm (TA-SU-313 / TA-SU-305)



Comparative checking of gauge blocks > 250 mm (TA-SU-313 / TELMA7 / P / TA-SU-305 / TA-SU-306)

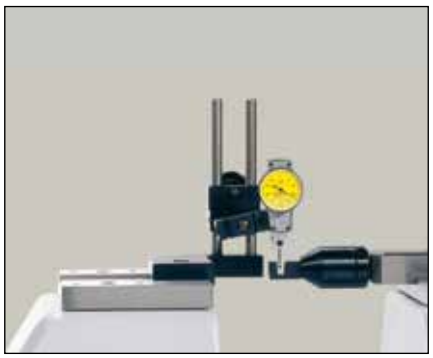


Setting of 2-point internal micrometers (HPA-1 / TELMA7 / TELMN7.2)

LABCONCEPT + Premium

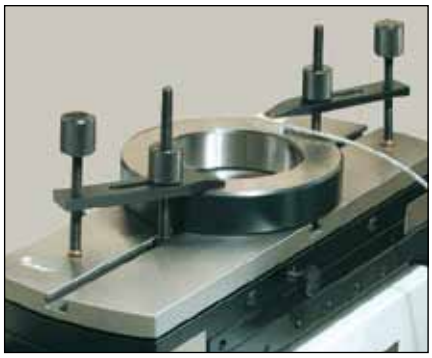
APPLICATIONS

Checking of dial indicators (TULM5C)

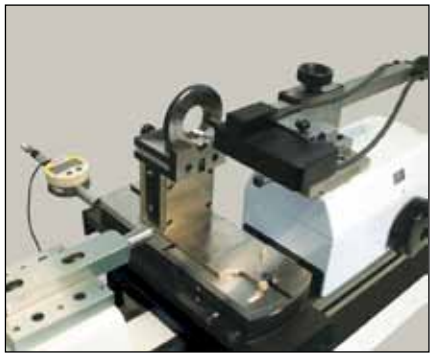


Checking of test indicators (TULM15)

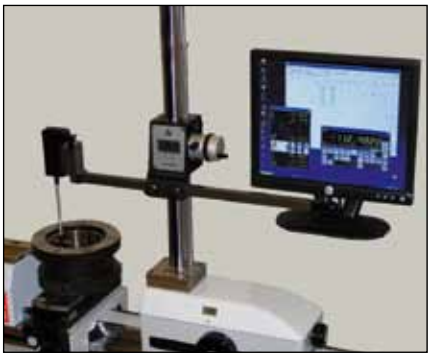
Checking of snap gauges (TA-SU-313 / TEL14N)



Temperatue compensation system TempComp



Checking of taper thread ring gauges (HPA-1 / LABC80)



Special design for measurement of large taper threaded gauges

Direct measurement over the whole measuring range.

TRIMOS

LABCONCEPT Nano

LABCONCEPT Nano

INTRODUCTION

No compromise on accuracy
The Labconcept Nano is a new reference in the field of dimensional metrology. It integrates 40 years of knowledge and continuous improvement. It is a remarkable instrument for all measuring tasks that require extremely high accuracy.

The uncompromising design of the Labconcept Nano offers an ideal and performing platform for checking and calibration of all kinds of gauges and measuring instruments. Checking of internal and external dimensions will be done as a fully automatic procedure by the three motorized axes XYZ and the legendary simplicity of use of Trimos WinDHI software.

The Labconcept Nano is completely designed and manufactured in Switzerland according to the highest quality standards. Robustness, reliability and longevity are our traditional values.

A New Technological Dimension
The Labconcept Nano combines tradition, experience and a strong technological lead. It integrates the latest measuring and motorisation technologies and can be considered as the first "full digital" calibration instrument. A regular PC controls all electronic components. This low-power solution avoids heating and keeps the energy, maintenance and repair costs at a reasonable level. The linear bearings used in all guideways have proven their superiority over all other technologies in terms of precision, wear, rigidity, temperature stability, reliability, dust protection and maintenance. They ensure exceptional repeatability and precision through time.

- UNEQUALLED HIGH LEVEL OF ACCURACY
- EXCEPTIONAL REPEATABILITY
- MOTORIZED MEASURING CARRIAGE, X AXIS, SELECTION OF SPEED BY SOFTWARE
- MOTORIZED UNIVERSAL MEASURING TABLE, CNC Y AND Z AXIS WITH INTEGRATED MEASURING SYSTEM
- MEASURING FORCE (0-12N) AND LOCKING OF MEASURING ANVIL PERFORMED BY SOFTWARE
- INTEGRATED TEMPERATURE COMPENSATION SYSTEM
- ABSOLUTE MEASURING RANGE ON ALL MODELS : 350 MM
- APPLICATION RANGES OF 350, 600 AND 1100 MM
- MEASURING OF PARTS UP TO 60 KG IN WEIGHT
- 2 SCREENS IN THE STANDARD PACKAGE
- CNC CONTROLLED MEASUREMENTS EVEN ON DIAMETERS AND THREADS

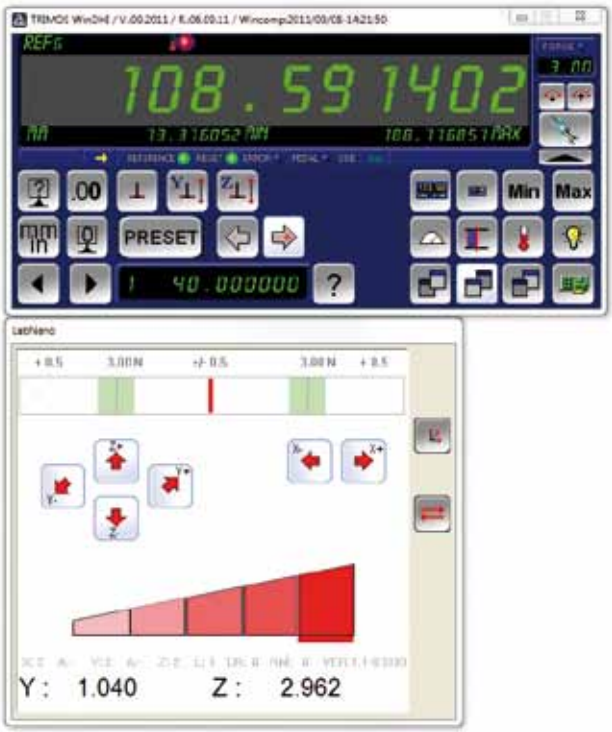
DESCRIPTION

LABCONCEPT Nano

DISPLAY / SOFTWARE

TRIMOS WINDHI NANO

Trimos Win DHI Nano is the exclusive measurement software of Trimos. It is part of the basic equipment of the Labconcept Nano and allows the performance of all measuring functions. It helps the user to perform all measurement tasks through a user-friendly interface.



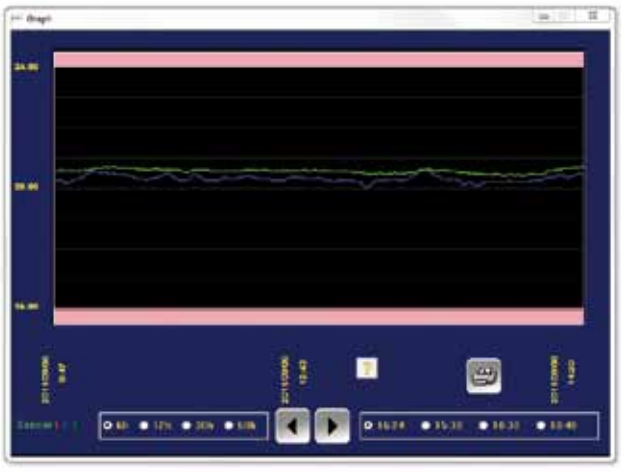
The motorization of the measuring carriage (X) and both vertical (Z) and horizontal (Y) axis of the universal measuring table allow an exceptional performance in terms of measuring speed, ease of use and accuracy.

Positioning can be done easily using the mouse and the keyboard or via the touch screen (optional) or a joystick (optional). Once positioned, measurements are entirely CNC controlled, including searching the reversal point. Plug and ring gauges, threaded ring and plug gauges etc. can be measured automatically in a few seconds. No risk of damage to the sensitive probes while moving or measuring, even with tiny parts and inserts.

- 100 % AUTOMATIC MEASUREMENTS
- MEASUREMENTS PERFORMED IN A FEW SECONDS
- USER FRIENDLY INTERFACE
- GRAPHIC HELP FOR MEASURING FUNCTIONS
- ELECTRONICALLY ADJUSTABLE MEASURING FORCE
- DATA TRANSFER USING A FOOT SWITCH
- DDE SERVER (FOR EXCEL, WORD, ETC.)

TRIMOS WINCOMP

The Labconcept Nano is equipped as standard with a temperature compensation system Trimos WinComp allowing the acquisition and management of temperature data.



- TRIMOS WINCOMP EXCLUSIVE SOFTWARE
- ACQUISITION AND MANAGEMENT OF TEMPERATURE DATA
- PERMANENT CONNECTION WITH WIN DHI
- REAL - TIME COMPENSATION OF THE MEASUREMENT
- TEMPERATURE EVOLUTION HISTORY OVER SEVERAL YEARS FOR A PERFECT TRACEABILITY
- GRAPHICAL DISPLAY OF TEMPERATURE EVOLUTION
- MATERIALS LIBRARY
- INDICATION OF THE MEASUREMENT RELIABILITY LEVEL

DISPLAY / SOFTWARE

QMSOFT

Trimos recommends the QMSOFT software package for inspection and management of all measuring tools available.

- INTEGRATED DRIVERS FOR TRIMOS INSTRUMENTS
- REQUIRED NOMINAL SIZES AND TOLERANCES AVAILABLE ACCORDING TO ALL STANDARDS
- CUSTOMIZED INSPECTION CERTIFICATES

TECHNICAL SPECIFICATIONS

Labconcept Nano		**350**	**600**	**1100**
Application range	mm (in)	350 (13.2)	600 (23.6)	1100 (43.3)
Absolute measuring range	mm (in)	350 (13.2)		
Max. permissible errors [1]	µm	0.07+L(mm) / 2000		
Repeatability (2s) [1]	µm	0.03		
Max. resolution	mm (in)	0.000001 (0.0000001)		
Measuring force (adjustable by software)	N	0 ÷ 12		
Operational temperature	°C	+15 ÷ +35		
Temperature of storage	°C	-10 ÷ +40		
Relative humidity	%	20 ÷ 80		
Weight	kg	350	420	500

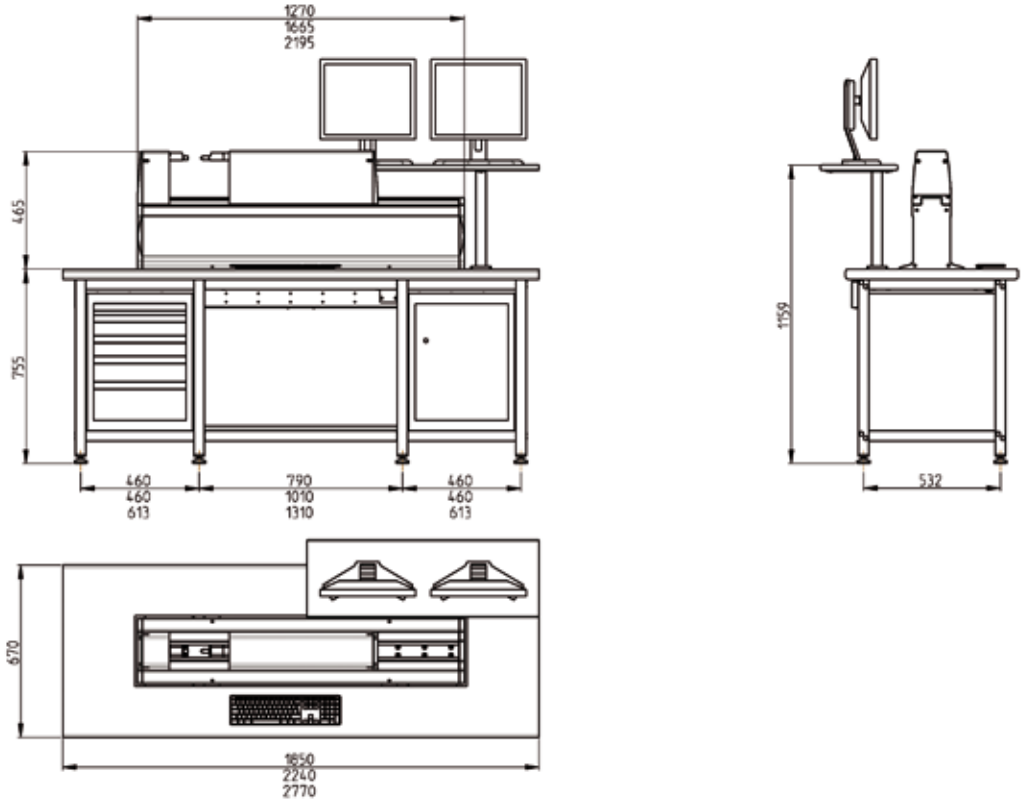
[1] Values valid at temperature of 20 ± 0.2 °C and relative humidity of 50 ± 5%.

Measuring table with motorized Y and Z axes		
Z axis, displacement range [2]	mm (in)	100 (4)
Y axis, displacement range [2]	mm (in)	50 (2)
X axis, floating movement	µm	± 10
Angle of inclination (Y)	°	± 1.5
Angle of rotation (Z)	°	± 4
Max. weight of parts	kg	60

[2] Both axes Y and Z have an integrated measuring system.

LABCONCEPT Nano

SCHEMA



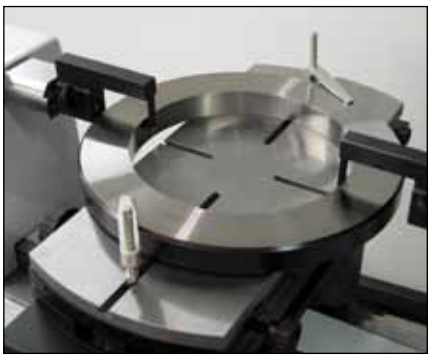
STANDARD INSTRUMENT

The Labconcept Nano are supplied as follows:
Instrument according to specifications with tungsten carbide surface anvils
Universal measuring table with motorized Y and Z axes (Nano-14)
PC with interface, 2 LCD TFT screens and 1 printer
Foot pedal for data transfer (TELMA31)
Specially designed workbench with 1 drawer cabinet and 1 door cabinet
Temperature compensation system (TEMPCOMP-B)
Lapping plate (TA-TO-302)
Protection cover (TEL.HO500 / 1000 / 1500)
Allen key set (TA-TO-004)
User's manual (750 50 0039 03)
Test certificate

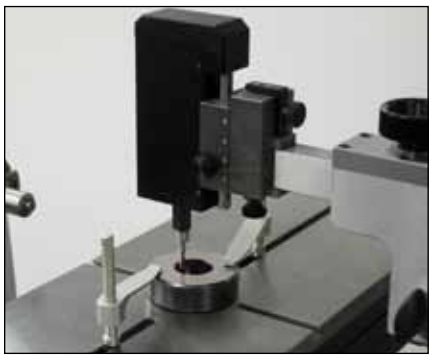
CODE NUMBERS

Labconcept Nano	Standard workbench	Anti-vibration workbench	
LABC-NANO 350 700 213 00 01	**TA-TO-306** 714 12 006	**TA-TO-310** 714 12 010	Measuring range 350 mm
LABC-NANO 600 700 213 10 01	**TA-TO-307** 714 12 007	**TA-TO-311** 714 12 011	Measuring range 600 mm
LABC-NANO 1100 700 213 20 01	**TA-TO-308** 714 12 008	**TA-TO-312** 714 12 012	Measuring range 1100 mm

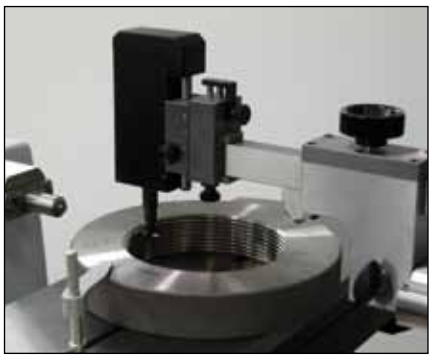
APPLICATIONS



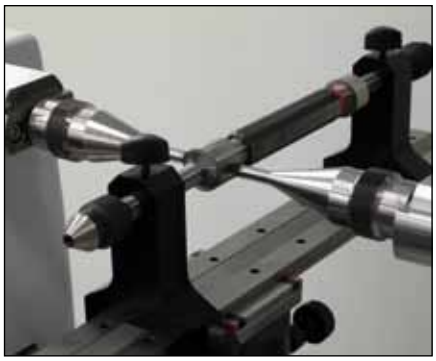
Calibration of plain ring gauges
(TEL16.1 / TA-SU-354)



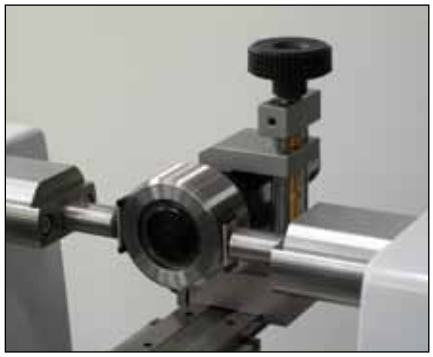
Calibration of small plain ring gauges
(TA-MS-370 / TEL76 / TA-SU-354)



Calibration of thread ring gauges
(TA-MS-370 / TEL75 / TA-SU-354)



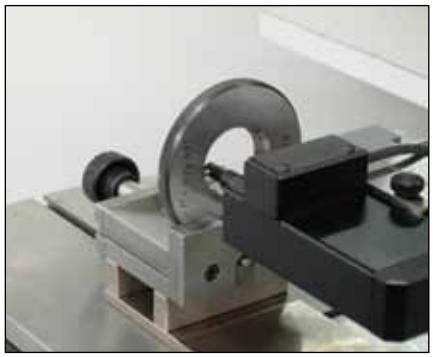
Calibration of plug gauges
(TULM6 / L05 / TA-SU-315)



Calibration of thread plug gauges
(3P / 0.17-3.2 / S6.5 / TA-SU-315)

Comparative checking of gauge blocks
> 250 mm (TA-SU-307 / TEL7 / TELMA7)

Calibration of gauge bars
(TELMA7 / TELMN7.2)

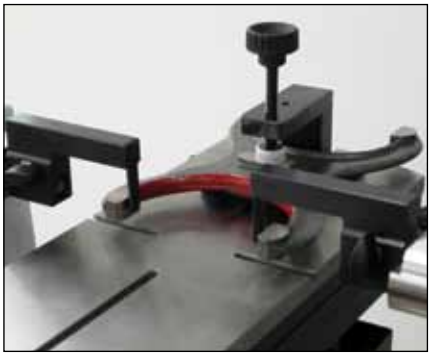


Checking of taper thread ring gauges
(TA-MS-381 / TEL75)

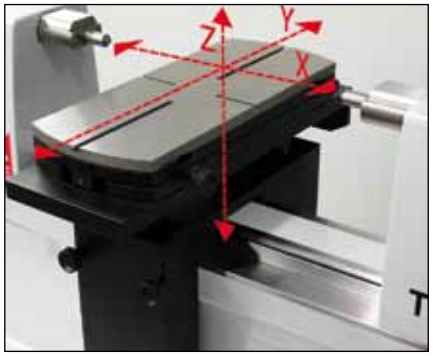
Checking of taper thread plug gauges
(TA-MS-381 / TEL75)

LABCONCEPT Nano

APPLICATIONS

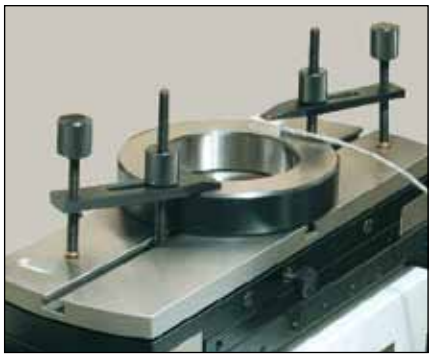


Calibration of snap gauges (TEL16.1 / TEL14N)

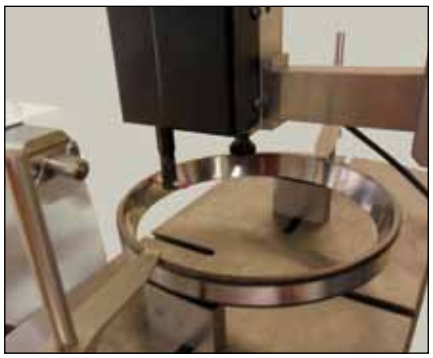


CNC-controlled measurement with automatic reversal point search.

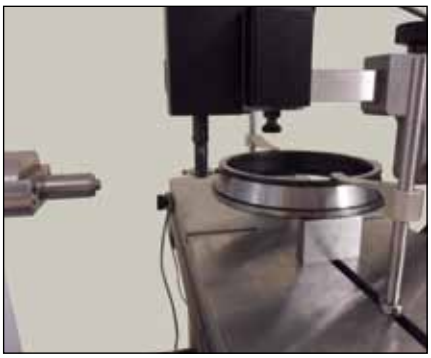
Anti-vibration table (optional)



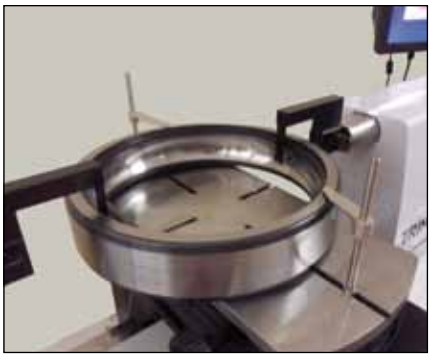
Integrated temperature compensation system TempComp



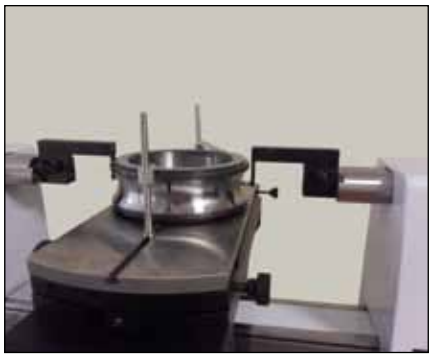
CNC controlled internal taper ring measurement



CNC controlled external taper ring measurement



CNC controlled internal measurement of a bearing ring



CNC controlled external measurement of a bearing ring

Calibration of a specific gauge