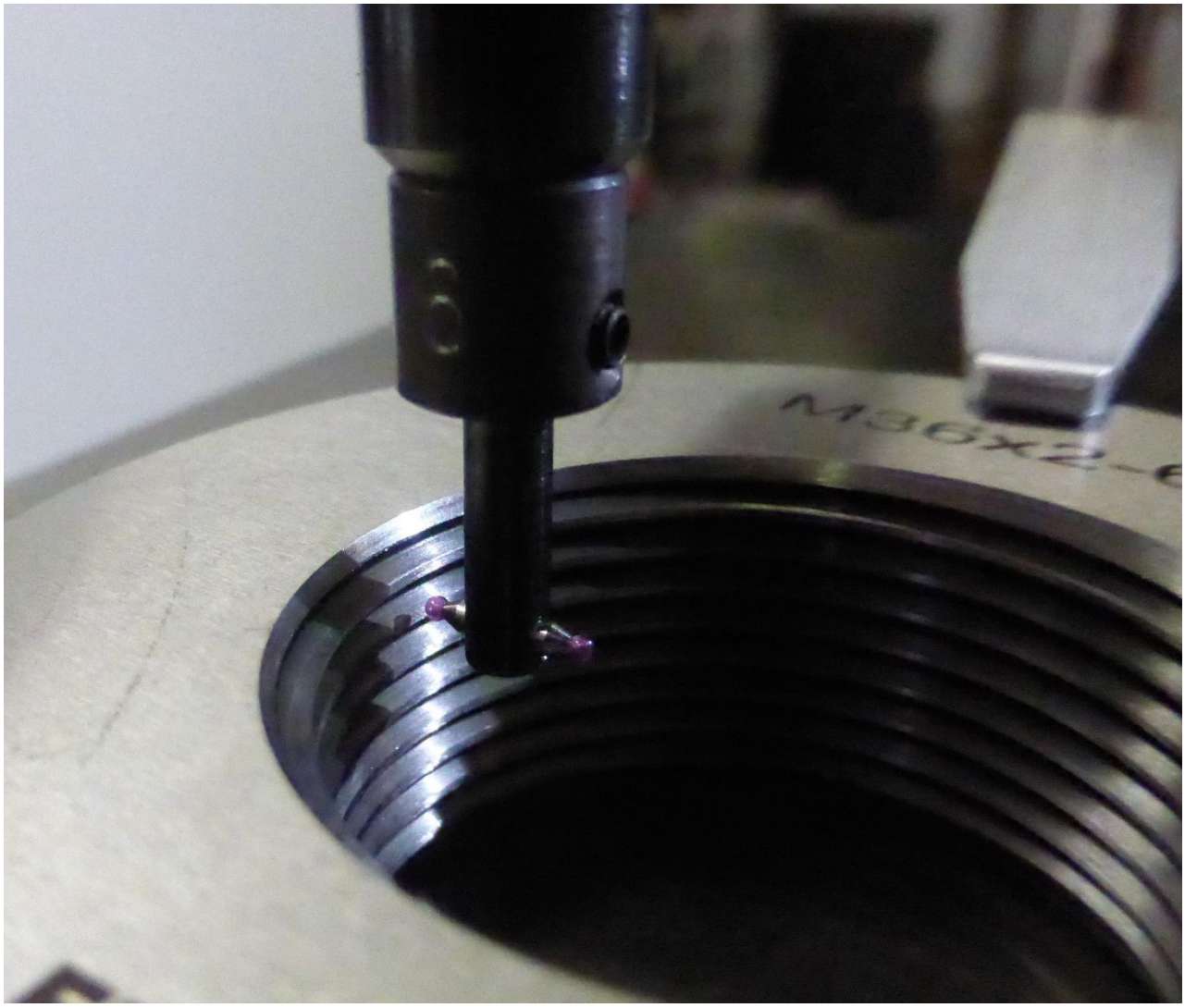
TRIMOS

Labconcept Nano

Automatic Thread Measurement



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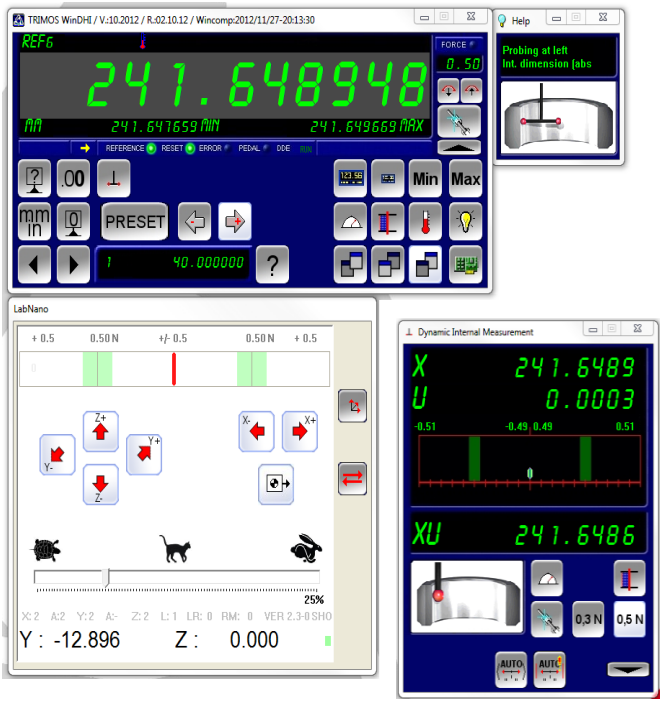
1.

INTRODUCTION

Trimos sets a new metrological benchmark, offering calibration laboratories a perfect combination of know-how and the latest available technology.
The Labconcept **NANO** unifies tradition, experience and continuous technological evolution.
It is the first calibration system with integrated control processes.
Its interconnectivity with different software applications enables complete monitoring pursuant to the test procedures in force.
The evolution towards automatic measurement processes enables automation of operations which were previously realised manually.
This permits rapid and total integration in the majority of laboratories.
Thanks to its strong R&D team, Trimos is able to offer measuring processes tailored to meet your specific company needs.

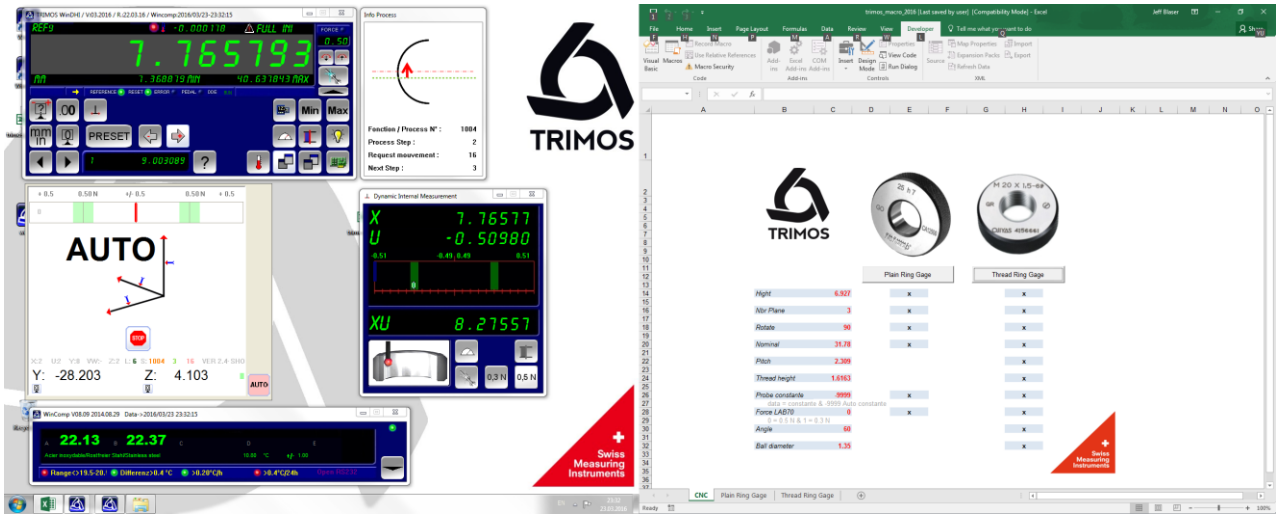
Trimos WinDHI Nano is our exclusive measurement software. Based on many years of metrological experience, it is extremely user-friendly and encompasses numerous functions.
The human-machine interface enables extremely simple and efficient use of the Labconcept Nano.
The development of plug-ins enables seamless integration in the most important software solutions used for calibration of measurement devices.
The VB gateway for Microsoft Office facilitates generation of monitoring reports with integration of the measurement processes.
Experienced users can define measurement ranges while integrating external functionalities and calculations.



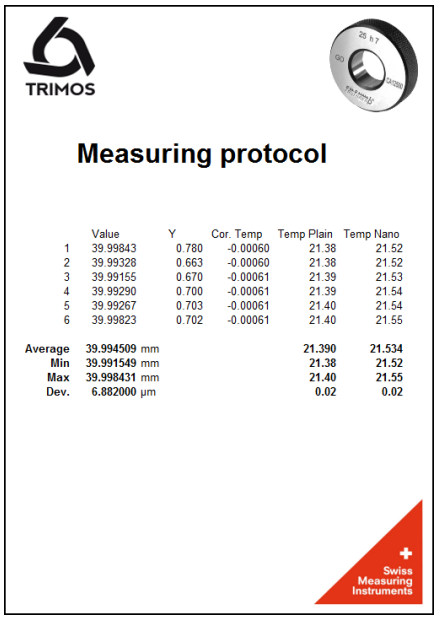
2.

CREATION OF SPECIFIC MACROS

Specific macros can be easily created for different measurements based on an Excel spreadsheet. This permits extreme simplification, and the user no longer needs to specify the measurement to be realised in the Trimos WinDHI Nano program.



Full documentation with specific calculation examples describes all the simplified functions for dialogue with the Trimos WinDHI Nano program.
More advanced users can therefore run specific company programs for macros or measurement reports. Trimos is the only manufacturer to offer this functionality with the Labconcept **NANO**



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Measuring protocol

	Value	Y	Cor. Temp	Temp Plain	Temp Nano
1	39.99843	0.780	-0.00060	21.38	21.52
2	39.99328	0.663	-0.00060	21.38	21.52
3	39.99155	0.670	-0.00061	21.39	21.53
4	39.99290	0.700	-0.00061	21.39	21.54
5	39.99267	0.703	-0.00061	21.40	21.54
6	39.99823	0.702	-0.00061	21.40	21.55
Average	39.994509 mm			21.390	21.534
Min	39.991549 mm			21.38	21.52
Max	39.998431 mm			21.40	21.55
Dev.	6.882000 µm			0.02	0.02

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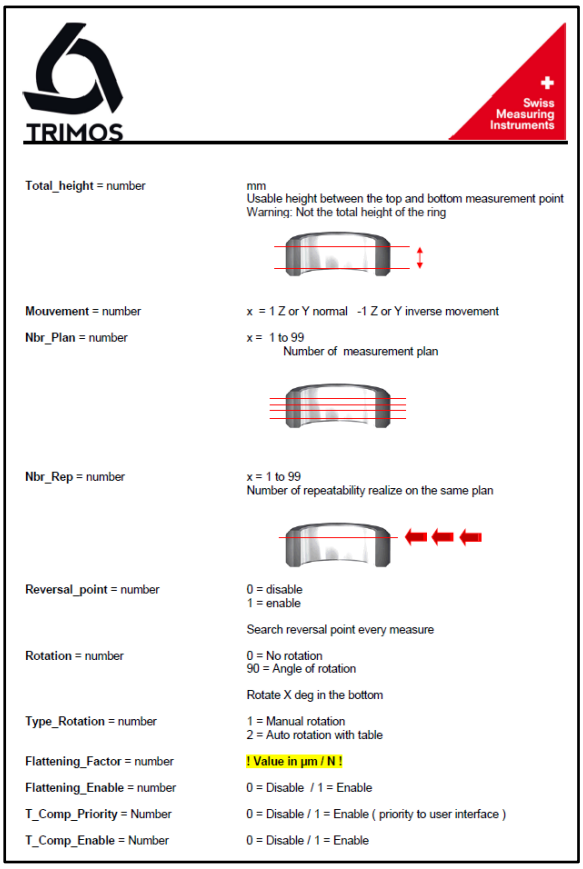

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Total_height = number
mm
Usable height between the top and bottom measurement point
Warning: Not the total height of the ring

Mouvement = number
x = 1 Z or Y normal -1 Z or Y inverse movement

Nbr_Plan = number
x = 1 to 99
Number of measurement plan

Nbr_Rep = number
x = 1 to 99
Number of repeatability realize on the same plan

Reversal_point = number
0 = disable
1 = enable
Search reversal point every measure

Rotation = number
0 = No rotation
90 = Angle of rotation
Rotate X deg in the bottom

Type_Rotation = number
1 = Manual rotation
2 = Auto rotation with table

Flattening_Factor = number
! Value in µm / N !

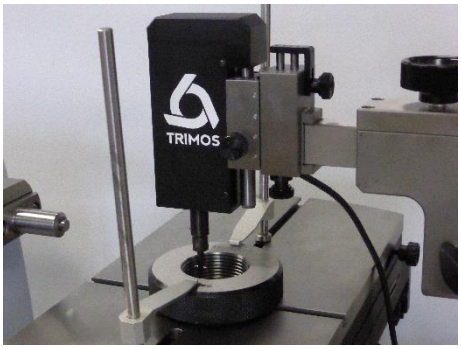
Flattening_Enable = number
0 = Disable / 1 = Enable

T_Comp_Priority = Number
0 = Disable / 1 = Enable (priority to user interface)

T_Comp_Enable = Number
0 = Disable / 1 = Enable

3.

THREAD MEASUREMENTS



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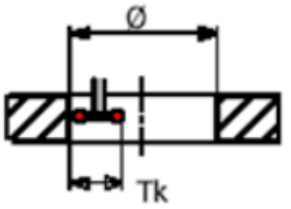
Measuring protocol

	MK	Y	Cor. Temp	Temp Plain	Temp Nano
1	35.27077	0.481	-0.00056	21.44	21.61
2	35.27077	0.430	-0.00056	21.45	21.62
3	35.26219	0.411	-0.00057	21.46	21.62
4	35.27223	-1.249	-0.00055	21.47	21.63
5	35.27892	-1.239	-0.00054	21.47	21.62
6	35.27492	-1.250	-0.00054	21.46	21.62

	Dia
1	**34.638717**
2	**34.638719**
3	**34.630140**
4	**34.640180**
5	**34.646867**
6	**34.642864**



Formule	Df = Mk - (P x K1) + (d x K2)	
Pitch	2.000000	= P
Ball	1.100000	= d
Angle	60.000000	= A
Pi	3.141593	
Cos Angle	0.664174	
Angle Radian	1.047198	
K1=	0.8660254	= 1/2 x (cot a / 2)
K2=	1	= 1 / (sin a / 2) - 1

Displayed value, carriage displacement

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Integration of the electronic TRIMOS TA-MS-370 floating sensor enables measurement of all kinds of thread gauge rings. The pitch diameter is automatically calculated with the Microsoft Office Excel files. The content of the file is provided with the Trimos WinDHI Nano program, and formulae are open-access and can be modified.

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