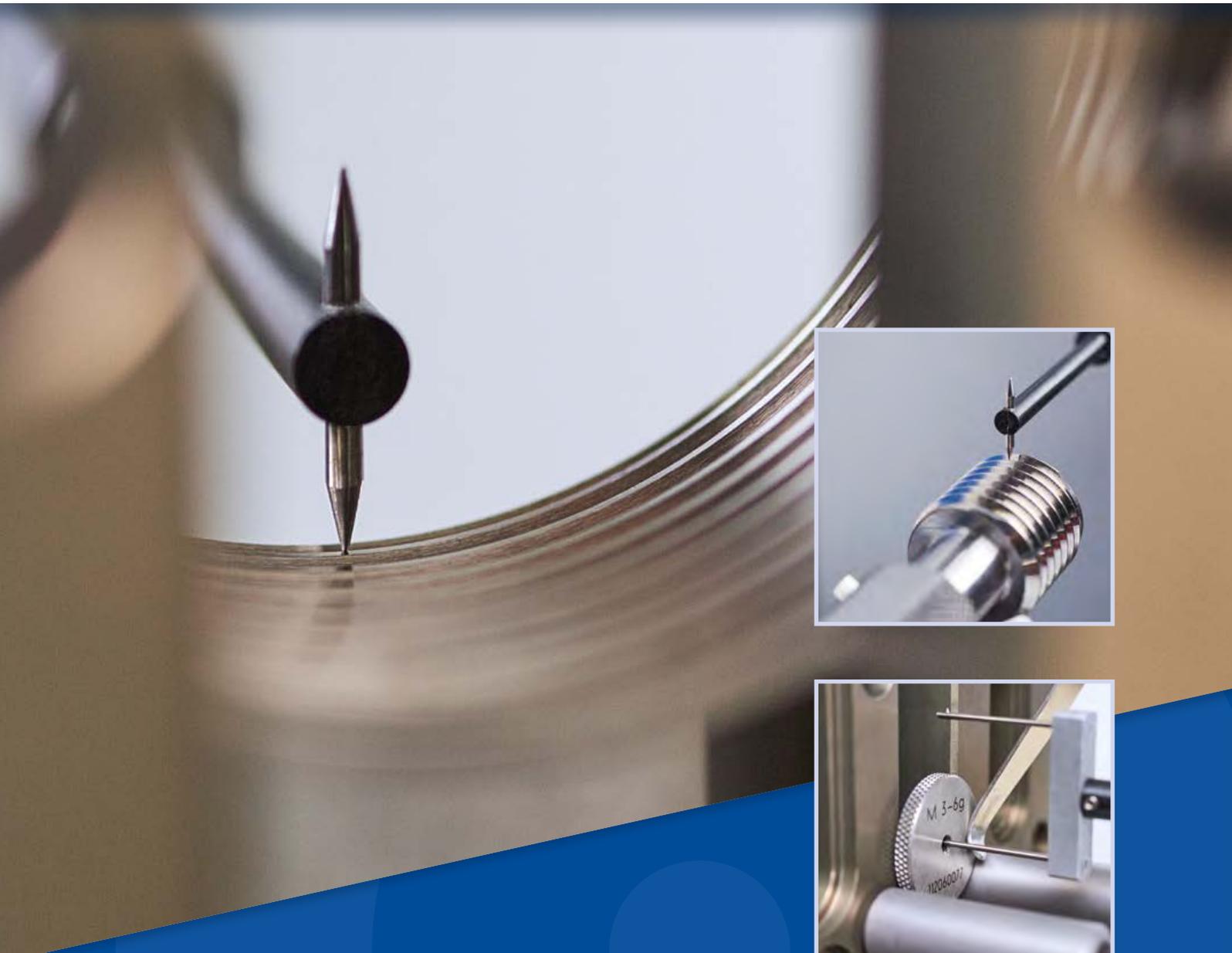


Next Level Thread Measurement

ConturoMatic GS/GM-X& QM-Soft®



- easy
- flexible
- optimized in time
- **DAkkS**-accreditable*

QPT
MESSTECHNIK

• made for precision

•
New: DAkkS-accreditable systems

•
New: Styli and methods for measurement of small inner threads from M1.8 available (Patent pending)

•
New: 3D Seeking algorithm for finding the cresting point of inner and outer thread gauges

•
New: Optimized data interface with QM-Soft

•
Can be used near production lines

•
Universally usable for:
Contour measurement – Roughness measurement – Thread measurement

•
Intuitive and easy to use

•
Outstanding price-performance ratio

•
System expansion made possible via modules

•
Multiple measurements can be automated using Teach-In files

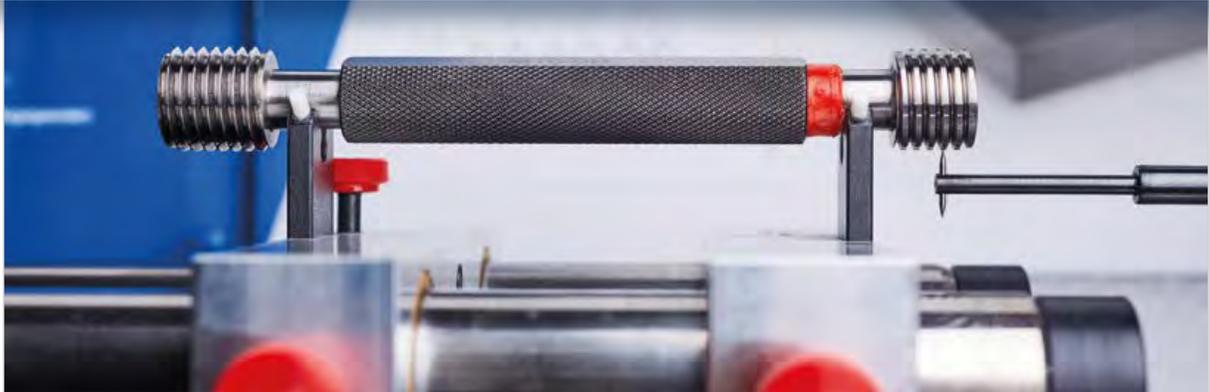
•
Some models feature Aerostatic air bearings along measurement axes (GM-X)



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Evaluable Thread Standards:

- ISO metric screw threads according to ISO 1502:1996 (DIN ISO 965:1998)
- Gauges for Metric M Screw Threads according to ANSI/ASME B1.16M-1984
- ISO metric trapezoidal screw threads according to DIN 103:1997
- Unified threads and thread gauges according to ANSI/ASME B1.1-1983/ B1.2-1983
- Gauges for unified threads (ANSI/ASME B1.1-1982) according to BS 919-1:2007
- Pipe threads and gauges according to ISO 228:2000 (also the older DIN 259:1979)
- Pipe threads and gauges according to ISO 228:2000 (also the older DIN 259:1979)
- Steel conduit threads according to DIN 40431:1972
- Knuckle threads according to DIN 405:1997
- Parallel screw threads of Whitworth form according to BS 84:2007 / BS 919-2:2007
- NPSM pipe threads according to ANSI/ASME B1.20.1-1983
- Buttress threads according to DIN 513:1985 (factory standard for gauge values)
- MJ threads DIN ISO 5855:1989
- Metrical thread inserts according to DIN 8140:1999 (EG threads)
- HELICOIL threads according to Boellhoff factory standard
- Threads for valves according to DIN 7756:1979 and ETRTO V.7
- ACME Threads according to ASME / ANSI B 1.5 – 1988
- Stub ACME Threads according to ASME / ANSI B 1.8 – 1988
- Screw threads for bicycles and mopeds DIN 79012:2011-04
- Geometrical product specifications (GPS) - DIN 2241:2018-07

Optional: Software for evaluation of tapered threads:

- According to DIN 2999
- ANSI/ASME B1.20.1 (NPT)
- BS 21, ISO 7-2
- ASME B1.20.5-1991 (NPTF)

Excerpt – Technical Data:

ConturoMatic		TS-UD/GS	TS-X/GM-X
ConturoMatic system data			
Measuring range-X	↔	250 mm	280 mm
Measuring range-Z	↑↓	320 mm	350 mm
Scanning from below	↓	✓	✓
Scanning from above	↑	•	✓
Measuring direction	↔	✓	✓
X-scanning	↔	-	✓
Roughness measurement		•	✓

• = Option - = not available

Information without warranty as of 01.01.2019

ConturoMatic GS/GM-X

The Most Effective Method to Measure Threads

The increasing requirements for precision, the necessity to ensure the function and safety of screw fittings, and also the specifications of the current IATF 16949 regarding the monitoring of measuring equipment demand modern thread measuring methods. Furthermore, product safety and lightweight construction require the compliance with ever narrowing tolerances. The comprehensive testing and documentation of all relevant thread parameters is often essential.

These requirements inevitably lead to the fact that previously applied test and measurement methods need to be updated. The testing of thread gauges using the 3-wire-method to ascertain pitch diameter and the classic methods to determine pitch values on Abbe length measurement systems provide only a limited assumption of the actual thread geometry.



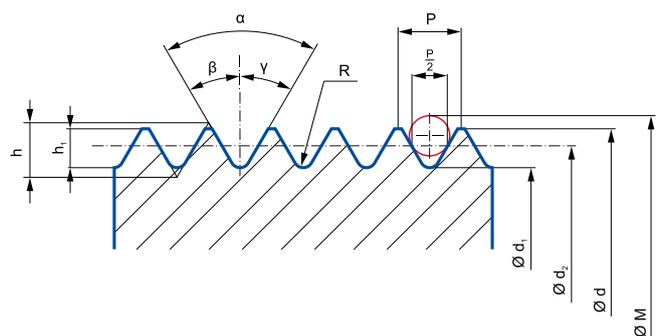
Older quality control methods on the production line, e.g. physical thread gauges, are being replaced more and more by actual measurement methods. Parameters whose evaluability was limited when using such gauges can now be quickly and easily documented.

Recording parameters such as flank angles, flank form error, minor diameter, radius in the core, and roughness of the thread flanks is only feasible with modern, scanning measurement methods.

Based on our approved *ConturoMatic T-Systems*, we have developed solutions that guarantee an efficient and economical inspection of thread gauges and component-threads with excellent quality and precision. In conjunction with the market's most effective software for calculating thread parameters, *QM-Soft*, we provide an efficient and flexible tool for testing and recording your thread measurement tasks.

Our systems are ideally suited for the use in certified calibration laboratories in accordance with DIN EN ISO/IEC 17025: 2018-03.

* The measurement procedures DAkkS-DKD-R 4-3 sheet 4.8:2010 Option 1 to 5, as well as sheet 4.9:2010 Option 1 to 5 are applicable without taking any limitations.



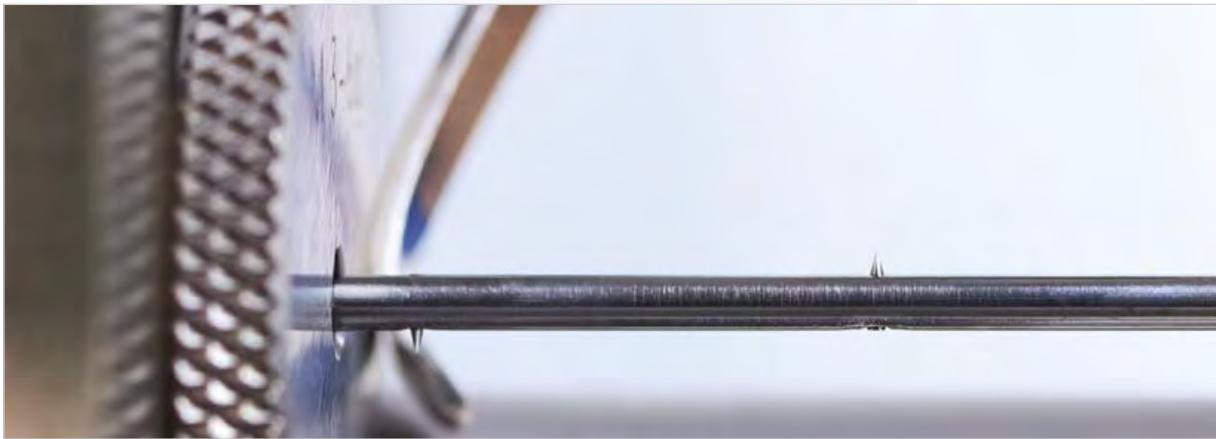
• made for precision

ConturoMatic & QM-Soft

By detecting the upper and lower thread form, a check of all the relevant parameters is feasible. The actual measured values are used for this analysis. An interpolation of measurement values for the evaluation of the threads is therefore not necessary. Furthermore, we have developed an efficient 3D-seeking algorithm for an automatic scanning of the cresting point of thread ring and plug gauges.

Operational area

Moreover an usage of the *ConturoMatic GS/GM-X thread scanner systems* in the batch production is feasible also. Area of application for thread ring gauges: M1,8 – M300.



Specific attribute of our GS/GM-X systems

Part of our *“ConturoMatic GS” thread scanner* and *“GM-X” thread master* is an adjusted mechanic and software to achieve the specific requirements of an advanced thread measurement. All necessary elements for a common thread scanning are included. The enclosed universal device allows the secure clamping of thread ring gauges from M2 up to M70 and thread plug gauges from M1 up to M100.

Due to our portfolio of different stylus arms and stylus tips the measurement of most thread types and thread gauges is also feasible. We provide special styli and methods for measuring small inner threads from M1,8 (patent pending), or form-optimized styli for scanning tapered threads.

Contour and roughness measurement

The flexibility of our systems in the range of contour and roughness measurement is unrestricted usable for different types of measurement tasks. Furthermore, already purchased *ConturoMatic T1, T3, TS-UD and TS-X systems* can be upgraded to a *thread scanner*.

Our optimized data interface with the L&W “QM-Soft” provides the following advantages:

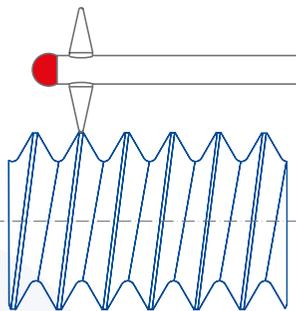
- Management of automatic thread measuring procedures
- Suitable stylus arms are recommended for the specific thread type
- Software check of the qualification of the chosen stylus arm
- Mismeasurement through wrong parameters are detected
- Automatic recording of the measurements
- Time saving through optimized procedure
- Integrated mechanism for reduction of maloperation



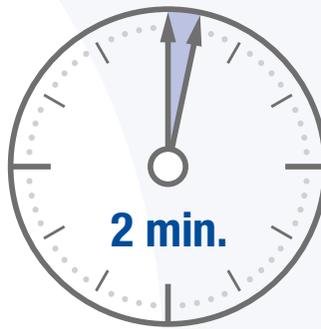
Measurement process with Thread scanners ConturoMatic GS/GM-X

Based on the close conjunction of our *ConturoMatic software* with the *thread modules of the QM-Soft®* from L&W, an exact, fast and simple evaluation can be carried out within a few steps. The integrated and permanently updated thread database allows access to almost all common, but also exotic thread standards.

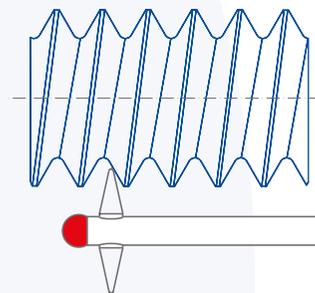
Time-optimized measurement process:



Seeking cresting point
and Top thread-measurement



Only two minutes required
for measurement and evaluation

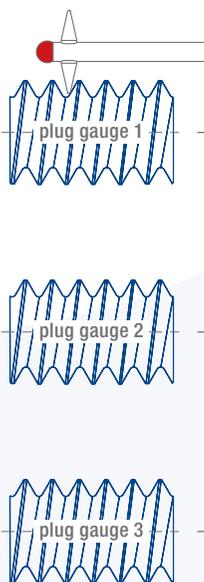


Down
thread-measurement

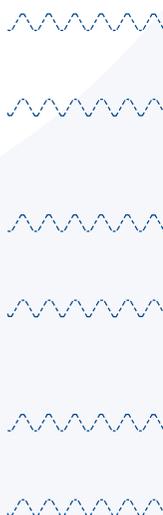
Example of an „automatic serial measurement“:

For the serial measurement of thread gauges, several thread profiles can be scanned in one measurement process. The creation of that kind of measurement processes is carried out by our approved and simple *“Teach-In”* function. Acknowledge of special software functions is not required.

The digital data are transferred automatically to the *QM-Soft*, after the automatic measurement process has ended.



Measurement



Raw data



Evaluation

Value no.		Mean val.	100.000%	100.000%	100.000%	100.000%	100.000%
1	1	0.000	0.000	0.000	0.000	0.000	0.000
1	2	0.000	0.000	0.000	0.000	0.000	0.000
1	3	0.000	0.000	0.000	0.000	0.000	0.000

Value no.	Mean val.	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
1	1	0.000	0.000	0.000	0.000	0.000	0.000
1	2	0.000	0.000	0.000	0.000	0.000	0.000
1	3	0.000	0.000	0.000	0.000	0.000	0.000

Value no.	Mean val.	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
1	1	0.000	0.000	0.000	0.000	0.000	0.000
1	2	0.000	0.000	0.000	0.000	0.000	0.000
1	3	0.000	0.000	0.000	0.000	0.000	0.000

Protocol