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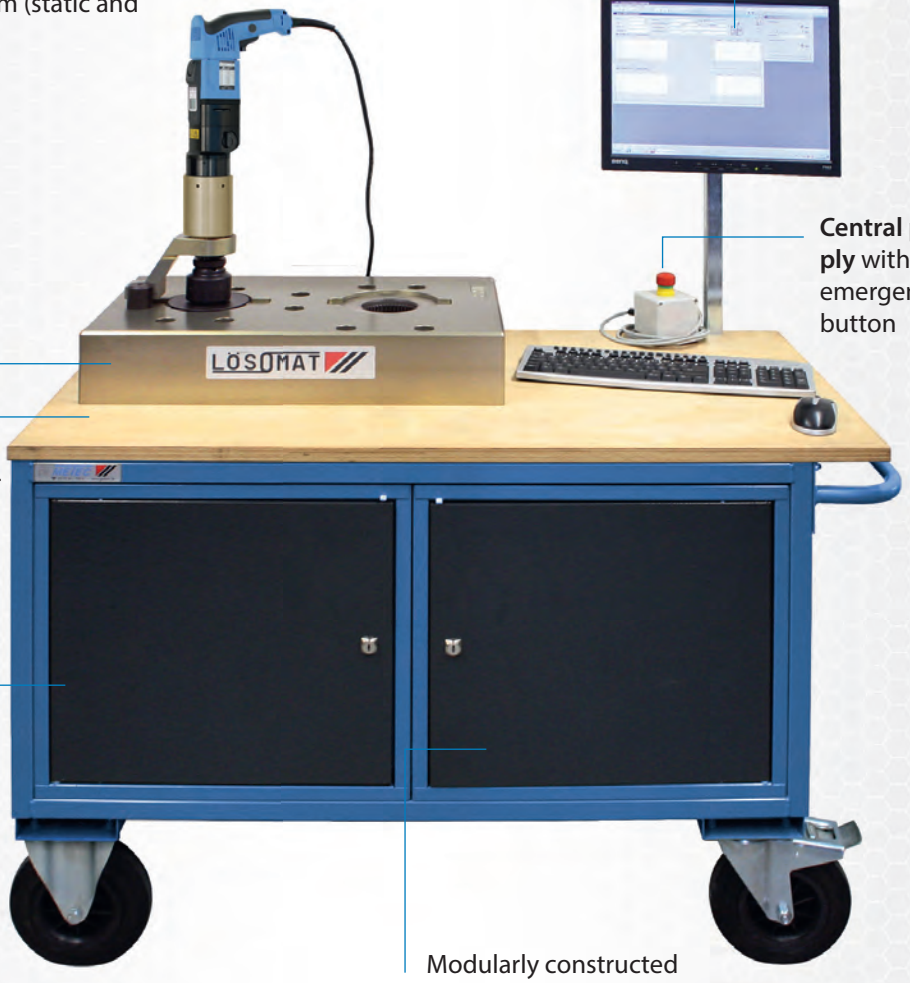
Torque Testing Bench Technology


GEDORE

The Torque Testing Bench Technology LDP series, 100-15,000 N·m

LDP series



Measurement block made of solid high-performance aluminium to hold up to two measurement shafts up to 15,000 N·m (static and dynamic)

Large 19" TFT flat screen

Central power supply with RCD and emergency stop button

Stable workbench for holding the measurement block and accessories

PC for measurement

Modularly constructed **torque sensor software**

Measure dynamic torques, but how?

If one looks at the influencing factors that arise during the production of a correct bolted connection, it is clear that the greatest influence is due to the bolt itself: Type and condition of the thread, quality class, diameter, length, bolting in speed, the list could be continued almost endlessly.

For this reason, there are still no recommended measurement regulations from any of the official bodies for the traceable determination of dynamic torques.

Torque measurements where the resistance of the bolted connection is simulated via mechanical braking systems or similar systems ignore significant influencing factors.

Static and dynamic torque measurements up to 15,000 N·m

Torque measurement with system

The LÖSOMAT torque testing bench system takes the actual aspects of your bolting applications in practice into account as much as is feasible.
Original bolts with all the influencing factors that act on them are measured to determine the dynamic torques.

Correction factors are not necessary

The value determined during measurement is actually equivalent to the dynamic torque applied to the bolted connection.
Subsequent addition of correction factors for hard or soft bolting operations, etc. is not necessary.
This allows you to implement rational and error-free measurement in all application cases.

The modular kit

The interface between bolt and test bench is the so called bolt adapter.
Attachment of the bolt to the bolt adapter is simple and means that the bolted connection can be changed at any time, even during measurements.
Special adaptations are just as easy with the LÖSOMAT system as the direct use of standard female hexagon inserts for static torque measurement of hydraulic wrenches, torque multipliers and torque wrenches.

Module for graphical evaluation

The mean values of all measurement series are recorded graphically and shown on the factory calibration certificate. The torque curve is recorded up to the maximum value for hydraulic torque wrenches and manual torque multipliers.

Module for different languages

Certificates in various languages are increasingly required due to the international use of bolting systems. This is no longer a problem with the language module. The languages of all previously created factory calibration certificates can be changed both during measurement and afterwards. Over 15 European and Asiatic languages are currently available.

Module for measurement unit selection

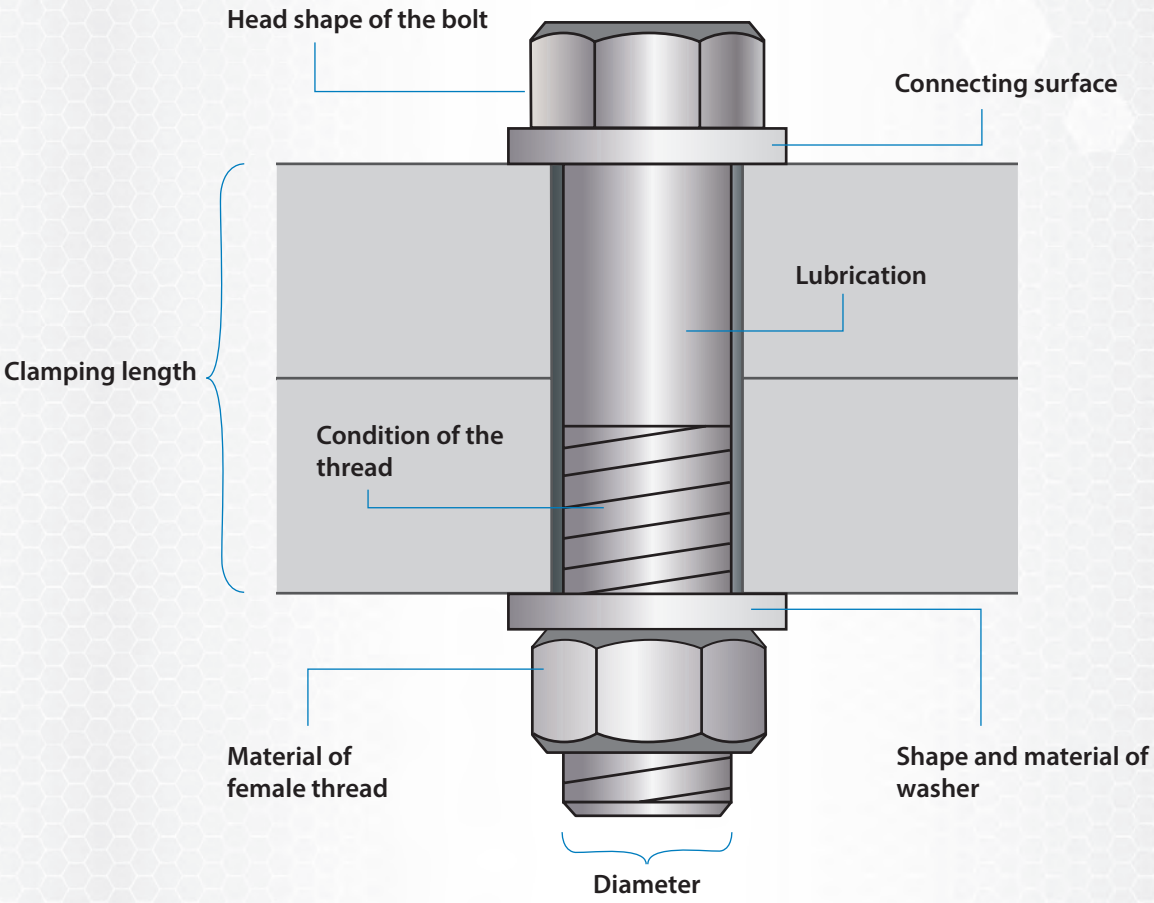
Torque data is frequently given with the imperial units system.
This software module allows you to switch the units in all previously created certificates before or after measurement between the metric and imperial units systems.

Database module

You can administrate all your torque wrenches as well as static and dynamic bolting systems with this module. Over 500 test specimens can be recorded for 20 years with the basic module alone.
Identification is implemented with a bar code scanner.

More modules on request.

The influencing factors of a bolt



Influencing factors of the bolt connection

The aim of every bolt tightening operation is to achieve the required clamp force that is generated between two components being connected. The clamp force is influenced by numerous factors in the torque process.

This means that the expected clamp force may not be reached in the end because other influencing factors have reduced the force. Influencing factors can be the condition of the thread, lubrication, etc.

It is therefore very important to know the bolted connection and relevant influencing factors before any bolt tightening using torque.

But how can the required clamp force be achieved with reproducible accuracy? The answer is: System setting using original bolts.

Teach-in with original bolts

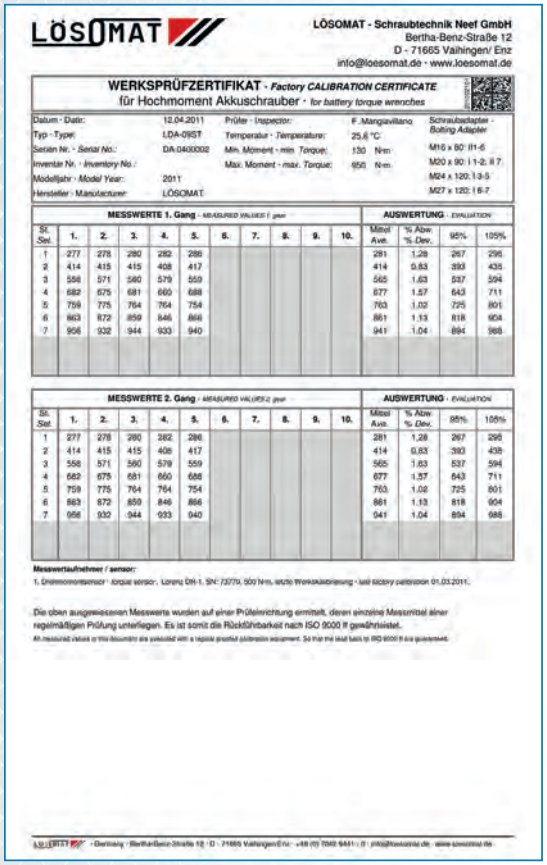
LÖSOMAT knows the influencing factors for bolt connections and takes them into consideration during the test procedure.

The LÖSOMAT philosophy is very close to practice. The bolt adapters in the torque testing benches are realised 1:1 with the real application case. All influencing factors are taken into account with this process.

Even exotic bolting operations can be individually simulated with the LÖSOMAT torque testing benches. The entire system reacts flexibly to hard and soft, static and dynamic bolting operations.

At the end of measurement, each device receives the individual factory calibration certificate.

LÖSOMAT factory calibration certificate classification



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WERKSPRÜFZERTIFIKAT · *Factory CALIBRATION CERTIFICATE*
für Hochmoment Akkuschrauber · *for battery torque wrenches*

Datum · Date:	12.04.2011	Prüfer · Inspector:	F. Mangiavillano
Typ · Type:	LDA-09ST	Temperatur · Temperature:	25,6 °C
Serien Nr. · Serial No.:	DA.0400002	Min. Moment · min. Torque:	130 Nm
Inventar Nr. · Inventory No.:		Max. Moment · max. Torque:	950 Nm
Modelljahr · Model Year:	2011		
Hersteller · Manufacturer	LÖSOMAT		

Schraubadapter · Bolting Adapter
M16 x 80: II1-6
M20 x 90: I 1-2; II 7
M24 x 120: I 3-5
M27 x 120: I 6-7

MESSWERTE 1. Gang · MEASURED VALUES 1. gear — **AUSWERTUNG** · EVALUATION

St. Sel.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	Mittel Ave.	% Abw. % Dev.	95%	105%
1	277	278	280	282	286						281	1,28	267	295
2	414	415	415	408	417						414	0,83	393	435
3	558	571	560	579	559						565	1,63	537	594
4	682	675	681	660	688						677	1,57	643	711
5	759	775	764	764	754						763	1,02	725	801
6	863	872	859	846	866						861	1,13	818	904
7	956	932	944	933	940						941	1,04	894	988

MESSWERTE 2. Gang · MEASURED VALUES 2. gear — **AUSWERTUNG** · EVALUATION

St. Sel.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	Mittel Ave.	% Abw. % Dev.	95%	105%
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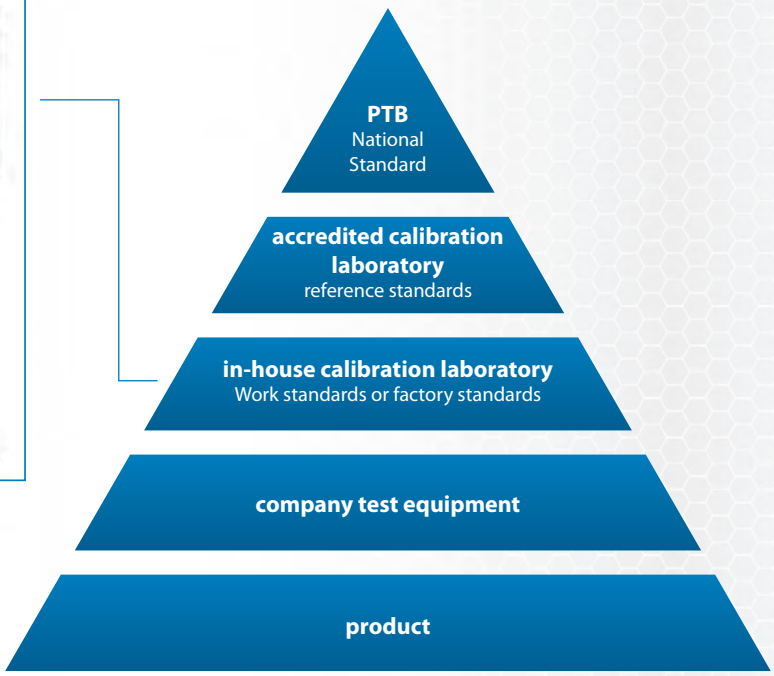
6	863	872	859	846	866						861	1,13	818	904
7	956	932	944	933	940						941	1,04	894	988

Messwertaufnehmer / sensor:
1. Drehmomentsensor · torque sensor, Lorenz DR-1, SN: 73770, 500 N·m, letzte Werkskalibrierung · last factory calibration 01.03.2011.

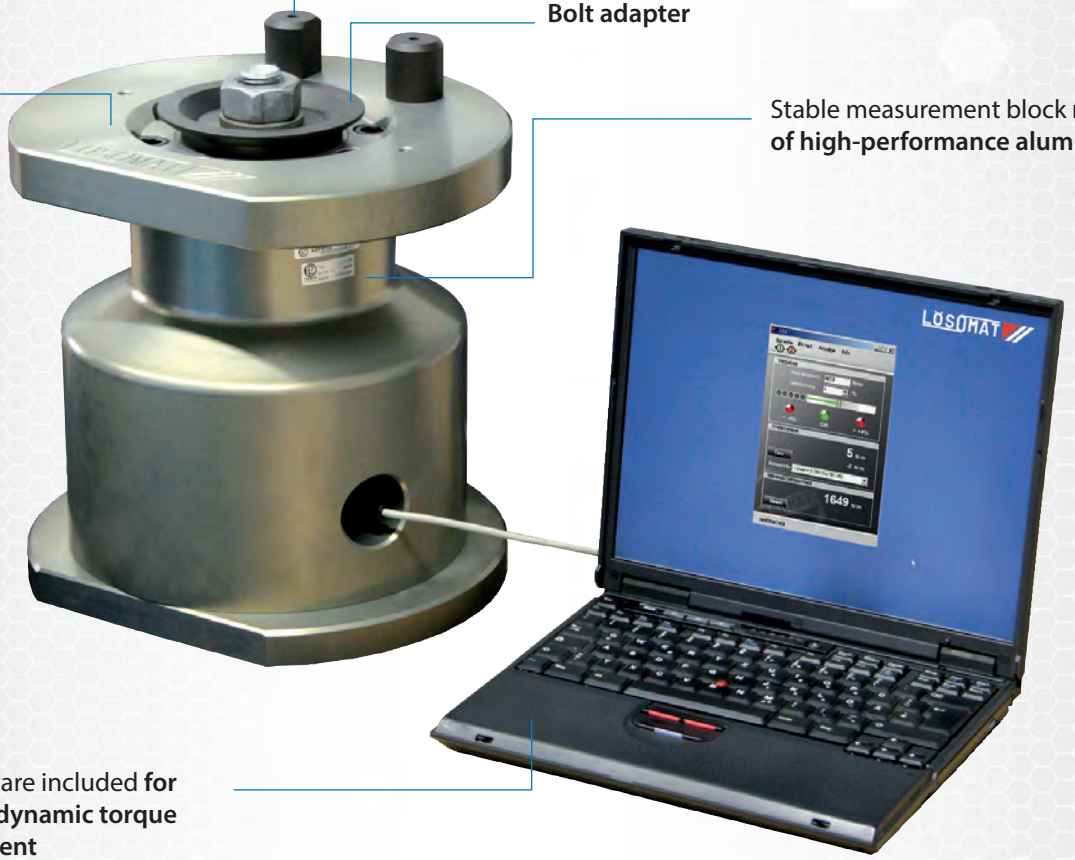
Die oben ausgewiesenen Messwerte wurden auf einer Prüfeinrichtung ermittelt, deren einzelne Messmittel einer regelmäßigen Prüfung unterliegen. Es ist somit die Rückführbarkeit nach ISO 9000 ff gewährleistet.



In-house calibration laboratory

The LÖSOMAT factory test certificate is classified in the „in-house calibration laboratory“ category.

The Torque Testing Bench Technology LTC series, 100-5,000 N·m



Static and dynamic torque measurements up to 5,000 N·m

Static and dynamic bolting systems must be regularly checked for their torque accuracy.

The LÖSOMAT Torque Check (LTC) system was developed for simple, mobile and professional dynamic torque measurement.

The weekly check of all torque tools used on a construction site is explicitly specified in the new steel construction standard (EN1090, Eurocode 3) which has recently replaced DIN 18800.

Torque measurement with the LÖSOMAT system

You do not need to omit proven, close to practice measurement of your bolting operation with this model.
As in the larger LDP series LÖSOMAT torque testing bench systems, the dynamic torque is determined using an original bolt. The supplied bolt adapter can be exchanged and replaced.

Basic software with comprehensive utility

The basic software included with the system has comprehensive utilities for rapid static and dynamic torque measurement in metric and imperial units.
Both German and English are available as the operating languages.

At the end of each measurement, the system signals the operator immediately as to whether the determined value lies within the specified tolerances or not.

The operator is constantly informed visually and numerically about the torque progress. This is particularly helpful when testing torque wrenches.

The basic software can be upgraded modularly to a complete test bench environment. So that the test bench grows from the entry model to a fully professional system together with your requirements.

The LÖSOMAT Torque Check is available for the following measuring ranges:

- LTC-10 100 – 1.000 N·m
- LTC-30 300 – 3.000 N·m
- LTC-50 500 – 5.000 N·m