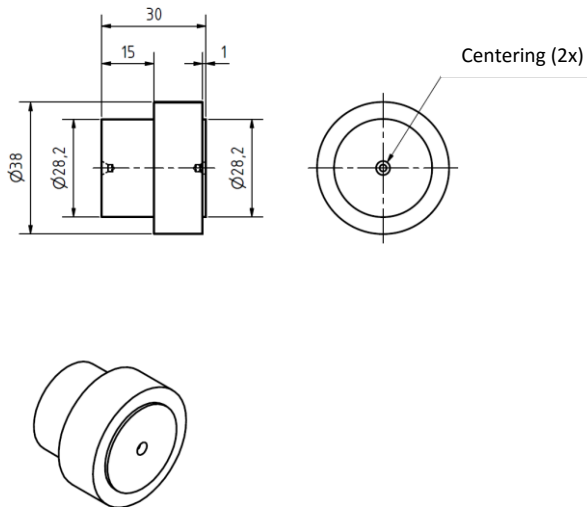


Lead Standard specimen N4

The proper functioning of a lead measurement tool can be checked using suitable standard pieces. In order to avoid aliasing effects one employs usually two lead standard pieces having turns of 10 and 30. It is important that the lead structure has a smaller order of magnitude than the statistical roughness in order to avoid that the surface roughness is determined by the lead structure.

The standard pieces can both be clamped between centers and in a jaw chuck. The standard pieces are made from stainless steel and are supplied in a wooden box accompanied by a calibration certificate. They serve to check the calibration status of a lead measurement tool according to MBN 31007-7.



TEVOB
 Englerstr. 24 D-76275 Ettlingen
 Tel. +49 7243-9398184 Fax +49 7243 9398184 E-mail info@tevob.de

Calibration Certificate No. 11/16

Calibration item:

Set of lead standard pieces, comprising of 2 pieces DN 05-10 and DN 05-30

Manufacturer: **TEVOB**, Ettlingen

Customer:

Carl Kunde GmbH
 Franz-List-Str. 6
 53860 Kassel

Calibration measurement tool:

BMT LMT Lead measurement system, Meas software TEVOB, evaluation software TEVOB using Daimler Kernel, stylus pick-up 5 µm

Implementation of the calibration

13.8.2016

Measured parameters (average values, vary a bit dependent on location) :

	DN 10	DN 30
No. of turns	10 right	30 right
Lead depth [µm]	0.16	0.41
Period length [mm]	0.1	0.1
Lead angle	28°	1°26'

Dipl.Phys. J. Weisser, Application

I.V. *Beiser*

Calibration method:

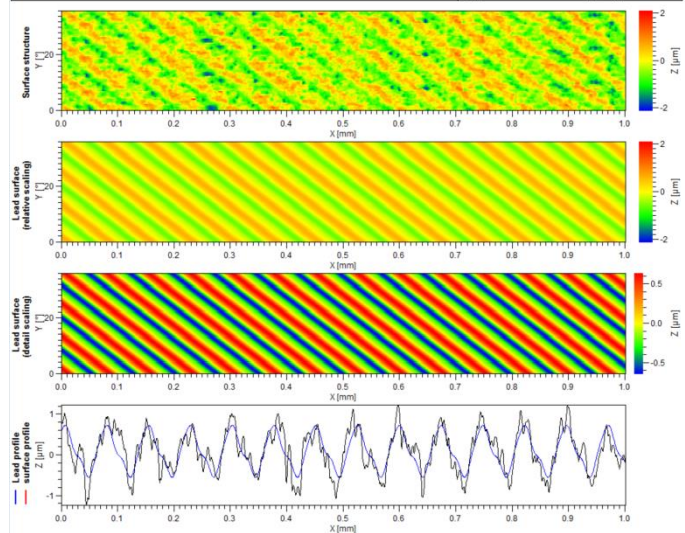
According to Daimler recommendation of 2009 and following ISO/DIS 25178-3. Other methods are currently unknown. The protocols for both calibration pieces are attached.

Ust-Id.-Nr.
 DE213351502

Manager
 Dr. Ulrich Breitmeier
 www.tevob.de

Sparkasse Ettlingen
 IBAN: DE 49 690501010108225970
 BIC: KASS2666

Workpiece		Calibr Meas	
Feature	Short name	Value	Unit
Date: 26.12.2015		Measurement length	1.00 mm
Order:		Max. evaluated period length	0.20 mm
Part no.: LS 30 - 9		Number of turns	31 right
Operator: Br		Lead depth	1.28 µm
Manufactured:		Lead period length	0.07 mm
Running time:		Feed cross section	47.3 µm ²
Functionality:		Feed cross section per revolution	1465.9 µm ² /R
Type:		Lead contact length	24.4 %
Drawing no.:		Lead angle	1°00'
Processing:		Axial structure type	round turned
Sealing mm:		Lt	2.00 mm
Rotation direction:		Lc	0.00 mm
Diameter: 38.0 mm		Rz	2.54 µm
Measurement system: LMT		Rmax	2.73 µm
		Rq	0.37 µm
		Rk	1.43 µm
		Rvk	0.52 µm

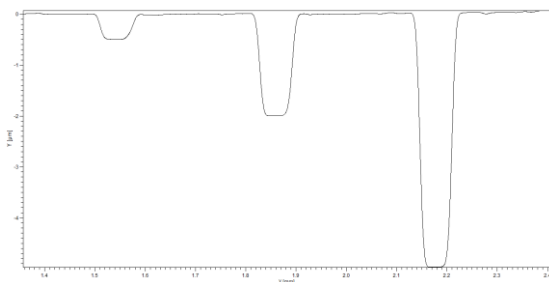


It is helpful to be able to check the pick-up calibration before the lead calibration check is done. Also the check of the stylus integrity is useful.

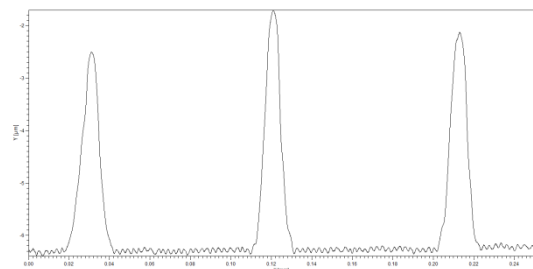
To this end we offer optionally a metal ring which can be slid onto the lead standard.



3 calibration grooves are put onto the outer circumference of the metal ring having target depths of 0.5; 1; 2 μm . Moreover there are 3 sharp profile edges which serve to check the stylus tip radius.



Calibration grooves



sharp profile edges