

## Calibration Services according to VK007 (Works calibration)

### Application

- Comparing a measuring device with a standard

### Special Features

- Works calibration up to 3MN / 300t
- Traceability to the national standard documented
- Service for Non-A.S.T. sensors and instrument

**Calibration** is the comparison of a measuring instrument with the national standard. The quality standard DIN EN ISO 9001:2015 requires the calibration of all quality relevant measuring instruments used in the production process. Only measuring instruments associated to the national-approved force standard may be used. The lab works independently and neutrally according to the criteria of the standard ISO/IEC 17025 "Allgemeine Anforderungen

an die Kompetenz von Prüf- und Kalibrierlaboratorien". The traceability to the national standard is also documented on works calibrations certificates. Force transducers can lose their measuring accuracy as a result of environmental impacts, e.g. overload, downfall or the like. A periodical calibration is advisable. Calibration intervals are determined by the user according to importance of the instrument and frequency of utilization.

### Works calibration

Rated Load of a Sensor		5N-50N	100N-200kN	>200kN-1MN	>1MN-2.5MN	>1MN-3MN
<b>Rated load calibration</b>						
- Testing of zero and rated load, one installation position	compression	XKE 221	XKE 221	XKE 241	-	XKE 251
- no statement on linearity und hysteresis	tension	XKE 222	XKE 222	XKE 242	XKE 252	-
- <u>Result:</u> Works calibration certificate calibration tag at the device	tension + compression	XKE 223	XKE 223	XKE 243	XKE 253	-
<b>Works calibration</b>						
- 5 force levels in one test series upward and one test series downward, one installation position.	compression	XKW 211	XKW 221	XKW 241	-	XKW 251
	tension	XKW 212	XKW 222	XKW 242	XKW 252	-
- <u>Result:</u> Works calibration certificate with linearity and hysteresis, calibration tag at the device	tension + compression	XKW 213	XKW 223	XKW 243	XKW 253	-
<u>Option to works calibration:</u> - 5 additional force levels per series of measurements	tension or compression	XKW 200 (ab10N)	XKW 200	XKW 200	XKW 200	XKW 200

## A. S. T. - Testing Machines for Works Calibration

Rating Range of the Machine	Tension/ Compression	Relative Measurement Uncertainty of Connection Referring to the Force
1 N up to 50N	Tension + Compression	$2,2 \cdot 10^{-4}$
200 N up to 2 kN	Tension + Compression	$5 \cdot 10^{-4}$
10 N up to 500 N	Tension + Compression	$1 \cdot 10^{-4}$
100 N up to 20 kN	Tension + Compression	$1 \cdot 10^{-4}$
1 kN up to 10 kN	Tension + Compression	$5 \cdot 10^{-4}$
2 kN up to 200 kN	Tension + Compression	$5 \cdot 10^{-4}$
3 kN up to 200 kN	Tension + Compression	$5 \cdot 10^{-4}$
10 kN up to 2,5 MN	Tension + Compression	$5 \cdot 10^{-4}$
2 kN up to 100kN	Compression	$5 \cdot 10^{-4}$
50 kN up to 600 kN	Compression	$5 \cdot 10^{-4}$
300 kN up to 3 MN	Compression	$1 \cdot 10^{-2}$
100 kN up to 1 MN	Tension	$5 \cdot 10^{-3}$

### Please note:

**Adjustment:** means re-adjustment or scaling of a display unit or amplifier connected to a sensor. If required it will be carried out for A.S.T.-devices during calibration for free. If you wish to have a non A.S.T.- devices adjusted, state this on your order and provide the manual.

**Force introduction elements:** should always be sent along by the customer, in order to ensure the accuracy of measurement. Especially for tensile calibration, force introduction elements may have to be supplied by the customer or manufactured at A.S.T. to ensure proper installation into the machine.

**Output signals:** Please note, that we can read an indication, we can process a mV/V-Signal, a current loop signal or a voltage signal. Any other output signals require prior consultation. For force transducers without display we necessarily require a pin assignment for the wires or the plug.