

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

**Industrial Technique Service s.r.o.**  
ITS Calibration Laboratory  
Průmyslová 1428/10, 102 00 Praha 10

**Calibration laboratory locations:**

1. **Laboratory Průmyslová** Průmyslová 1428/10, 102 00 Praha 10, Česká republika
2. **Laboratory CSW** Różyniec 83C, 59-706 Gromadka, Polsko
3. **Laboratory Chodov** V Parku 2336/22, 140 00 Praha 4, Česká republika

**CMC for the field of measured quantity: Torque**

Ord. number <sup>1</sup>	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work-place
		min	unit	max	unit					
1	Rotary and static transducers and devices for measuring torque	0.05 Nm 1.5 Nm	to	12 Nm 2,000 Nm		0.04 % 0.02 %	Comparative measurement with standard torque device using weights and reaction arms	ITS-04-11-S, ITS-09-11-LSP, (EURAMET cg-14)	1	
2*	Rotary and static transducers and devices for measuring torque	0.05 Nm 1.5 Nm	to	1.5 Nm 500 Nm		0.50 % 0.20 %	Direct measurement with a portable torque standard (torque transducer)	ITS-04-11-S, ITS-09-11-LSP, (EURAMET cg-14)	1	
3*	Rotary and static transducers and devices for measuring torque	0.2 Nm	to	3,000 Nm		0.20 %	Direct measurement with a portable torque standard (torque transducer)	ITS-04-11-S, ITS-09-11-LSP, (EURAMET cg-14)	2, 3	
4*	Torque wrenches, tightening devices and tightening systems	0.05 Nm 0.4 Nm	to	0.4 Nm 2,000 Nm		0.60 % 0.50 %	Direct measurement with a portable torque standard (torque transducer)	ITS-01-11-U, ITS-02-11-V, ITS-03-11-VM, ITS-05-11-K, ITS-06-11-UC, ITS-07-11-VC, ITS-08-11-VMC (EN ISO 6789-2, ISO 5393)	1, 3	



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		min	unit	max	unit					
5	Torque wrenches, tightening devices and tightening systems	0.05 Nm	to	2 Nm				Direct measurement with a portable torque standard (torque transducer)	ITS-01-11-U, ITS-02-11-V, ITS-03-11-VM, ITS-05-11-K, ITS-06-11-UC, ITS-07-11-VC, ITS-08-11-VMC, (EN ISO 6789-2;, ISO 5393)	2
		2 Nm	to	2,000 Nm			0.75 % 0.50 %			

<sup>1</sup> Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

<sup>2</sup> The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 part of CMC, and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx.95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the value measured. If the calibration is carried out outside the laboratory premises, the measurement uncertainty may be affected.

<sup>3</sup> If the document identifying the calibration procedure is dated, only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).



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CMC for the field of measured quantity: Rotation angle

Ord. number <sup>1</sup>	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work-place
		min	unit	max	unit					
1*	Rotation angle of transducers, hand torque tools and angle gauges	0 °		to	n·360 °		0.55°	Direct measurement with a rotation / reference rotation angle standard (rotation angle transducer)	ITS-10-14-AV/C (VDI/VDE 2648 Part 1), ITS-12-14-AK (VDI/VDE 2648 Part 2)	1, 3
2	Rotation angle of transducers, hand torque tools and angle gauges	0 °		to	n·360 °		0.55°	Direct measurement with a reference rotation angle standard (rotation angle transducer)	ITS-11-14-AS (VDI/VDE 2648 part 1), ITS-13-14-LAK (VDI/VDE 2648 Part 2)	1
3	Rotation angle of transducers, hand torque tools and angle gauges	0 °		to	n·360 °		0.90°	Direct measurement with a reference rotation angle standard (rotation angle transducer)	ITS-13-14-LAK, ITS-12-14-AK (VDI/VDE 2648 Part 2)	2
4*	Rotation angle of transducers, hand torque tools and angle gauges	0 °		to	n·360 °		0.55°	Direct measurement with a reference rotation angle standard (rotation angle transducer)	ITS-10-14-AV/C, ITS-11-14-AS (VDI/VDE 2648 Part 1)	2

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