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LABORATOIRES DE PARIS

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Commande : PO-21849 du 28/04/2016
Order

CERTIFICAT D'ETALONNAGE CALIBRATION CERTIFICATE

N°P156727/2

DÉLIVRÉ A : MAGTROL
Issued for : Route de Montena 77
CH-1728 ROSSENS
SUISSE

INSTRUMENT ÉTALONNÉ CALIBRATED INSTRUMENT

Désignation : Couplemètre
Designation

Constructeur : MAGTROL SA
Manufacturer

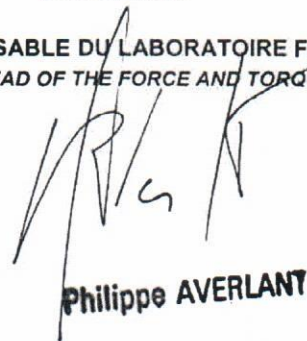
Type : 425-220-000S003 (100 kN.m)
Type

N° de série : 0006K
Serial number
N° d'identification : /
Identification number

Ce certificat comprend 11 pages et 4 pages d'annexe
This certificate includes 11 pages and 4 appendix pages

Date d'émission : 4 août 2016
Date of issue

LE RESPONSABLE DU LABORATOIRE FORCE ET COUPLE
THE HEAD OF THE FORCE AND TORQUE LABORATORY



Philippe AVERLANT

cofrac



ETALONNAGE
Accréditation
N° 2.04

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CALIBRATION RESULTS WITH RIGHT-HAND TORQUE

Calibration date : 02/08/2016

Calibration performed by : Dominique CESSAT

Temperature of the force-proving instrument : $21\text{ °C} \pm 2.0\text{ °C}$
no temperature correction are applied to the measurements.

Resolution of the torque measuring device : $r = 0.020\ 0\text{ kN.m}$
(no variation of the readings with the instrument unloaded)

Mean reading when $C = 0$: $0.000\ V$

Deflection and uncertainty of the torque measuring device.

Applied torque (kN.m)	X : Deflection torque measuring device in V			± U : Expanded uncertainty ⁽¹⁾ (k=2) (in kN.m)
	Serie of measurements - angular position		mean	
	S ₁ - 0°	S ₂ - 180°	\bar{X}	
0 begin	0.000	0.000	0.000 0	-
10.000	0.500	0.499	0.499 5	0.040
20.000	0.998	0.998	0.998 0	0.074
30.000	1.498	1.497	1.497 5	0.11
40.000	1.997	1.997	1.997 0	0.15
50.00	2.497	2.496	2.496 5	0.18
60.00	2.996	2.996	2.996	0.22
70.00	3.497	3.496	3.496	0.26
80.00	3.996	3.996	3.996	0.29
90.00	4.496	4.495	4.496	0.33
100.00	4.995	4.996	4.996	0.36
0 end	0.000	0.000	0.000 0	-

(1) : see appendix.

rest of the calibration certificate following page

CALIBRATION RESULTS WITH LEFT-HAND TORQUE

Calibration date : 02/08/2016

Calibration performed by : Dominique CESSAT

Temperature of the force-proving instrument : $21\text{ °C} \pm 2.0\text{ °C}$
no temperature correction are applied to the measurements.

Resolution of the torque measuring device : $r = 0.020\ 0\ \text{kN.m}$
(no variation of the readings with the instrument unloaded)

Mean reading when $C = 0$: $-0.001\ \text{V}$

Deflection and uncertainty of the torque measuring device.

Applied Torque (kN.m)	X : Deflection torque measuring device in V		mean \bar{X}	$\pm U$: Expanded uncertainty ⁽¹⁾ (k=2) (in kN.m)
	Serie of measurements - angular position			
	$S_1 - 0^\circ$	$S_2 - 180^\circ$		
0 begin	0,000	0.000	0.000 0	-
10.000	-0.499	-0.499	-0.499 0	0.040
20.000	-0.998	-0.998	-0.998 0	0.074
30.000	-1.498	-1.498	-1.498 0	0.11
40.000	-1.997	-1.998	-1.997 5	0.15
50.00	-2.498	-2.498	-2.498 0	0.18
60.00	-2.997	-2.999	-2.998	0.22
70.00	-3.498	-3.499	-3.498	0.26
80.00	-3.997	-3.998	-3.998	0.29
90.00	-4.497	-4.498	-4.498	0.33
100.00	-4.998	-4.998	-4.998	0.36
0 end	0.000	0.000	0.000 0	-

(1) : see appendix.

End of the calibration certificate