



Member State of OIML
Japan



OIML Certificate No.
R60/2000-JP1-10.12
Revision 2

OIML CERTIFICATE OF CONFORMITY

Issuing authority

Name: National Metrology Institute of Japan / National Institute of
Advanced Industrial Science and Technology (NMIJ / AIST)
Address: AIST Tsukuba Central 3-9, Tsukuba Ibaraki 305-8563, Japan
Person responsible: Dr. Tamotsu Nomakuchi, President of AIST

Applicant

Name: KUBOTA Corporation
Address: 1-2-47, Shikitsu-higashi, Naniwa-ku, Osaka, 556-8601, Japan

Manufacturer of the certified pattern

Name: KUBOTA Corporation
Address: 1-2-47, Shikitsu-higashi, Naniwa-ku, Osaka, 556-8601, Japan

Identification of the certified pattern:

Beam (shear) load cell

Type: CC1-H-10T, CC1-H-20T, CC1-H-25T, CC1-H-30T, CC1-H-40T,
CC1-H-50T, CC1-H-10T-IS, CC1-H-20T-IS, CC1-H-25T-IS,
CC1-H-30T-IS, CC1-H-40T-IS, CC1-H-50T-IS, CC2-10T,
CC2-20T, CC2-25T

Fraction: $\pi=0.8$

Temperature range: $-10\text{ }^{\circ}\text{C} / 40\text{ }^{\circ}\text{C}$



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Characteristics:

Model designation			CC1-H-xxT, where xx equal to the E_{max}	CC1-H-xxT-IS, where xx equal to the E_{max}	CC2-xxT where xx equal to the E_{max}
Accuracy class	Class	-	C		C
Maximum number of load cell verification intervals	n_{max}	-	6000 5000 4000 3000		4000 3000
Humidity symbol			CH		CH
Minimum dead load	E_{min}	kg	0		0
Maximum capacity	E_{max}	t	10, 20, 25, 30, 40, 50		10, 20, 25
Safe load limit	E_{lim}	t	$1.5 * E_{max}$		$1.5 * E_{max}$
Minimum verification interval	v_{min}	kg	$1000 * E_{max} / 15000$ $1000 * E_{max} / 12500$ $1000 * E_{max} / 10000$ $1000 * E_{max} / 8000$		$1000 * E_{max} / 10000$ $1000 * E_{max} / 8000$
Apportionment factor	p_{LC}		0.8		0.8
Ratio of minimum LC Verification interval $Y = E_{max} / v_{min}$	Y	-	15000 12500 10000 8000		10000 8000
Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$	Z	-	6000 in the case of $n_{max} = 6000$		4000 in the case of $n_{max} = 4000$
Excitation voltage		V DC	6 ~ 8		6 ~ 8
Cable length (maximum)		m	20		20

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report(s) with the requirements of the following Recommendation of the International Organization of Legal Metrology - OIML):

R60, edition 2000 (E)
For accuracy class C

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

This certificate does not bestow any form of legal international approval.

The conformity was established by tests described in the associated test report no. 12-13/R60:2000, that includes 19 pages.



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OIML Certificate No.
R60/2000-JP1-10.12
Revision 2

The Issuing Authority
NMIJ/AIST



Dr. T. Nomakuchi
President of AIST
2012-10-17

The OIML member

Dr. Y. Miki
2012-10-17

Important note: Apart from the mention of certificate's reference number and the name of the OIML Member State in which the certificate is issued, partial quotation of the certificate and of the associated Test Report is not permitted, although either may be reproduced in full.



Evaluation Report

Load cells

Issuing Authority

Name : National Metrology Institute of Japan /National Institute
of Advanced Industrial Science and Technology (NMIJ/AIST)
Address : AIST Tsukuba Central 3, Tsukuba Ibaraki 305-8563, Japan

Applicant : KUBOTA Corporation

Manufacturer : KUBOTA Corporation

Applied Type : CC1-H-10T, CC1-H-20T, CC1-H-25T, CC1-H-30T, CC1-H-40T,
CC1-H-50T, CC1-H-10T-IS, CC1-H-20T-IS, CC1-H-25T-IS,
CC1-H-30T-IS, CC1-H-40T-IS, CC1-H-50T-IS, CC2-10T,
CC2-20T, CC2-25T

Evaluation Report Number : 24-011

This report ensures the conformity of the applied type with the requirements of the OIML R60 (edition 2000), on the basis of evaluation of the attached test report (N° 12-13/R60:2000).

Evaluator :

Wataru Kaminaga
Legal Metrology Division
NMIJ/AIST

Signature :

W. Kaminaga

Date: 2012.10.11

Supervisor :

Shigeki Yamaguchi
Head of Legal Metrology Division
NMIJ/AIST

Signature :

Shigeki Yamaguchi

Date: 2012.10.11

Description

Technical data

Model designation			CC1-H-xxT, where xx equal to the E_{max}	CC1-H-xxT-IS, where xx equal to the E_{max}	CC2-xxT where xx equal to the E_{max}
Accuracy class	Class	-	C		C
Maximum number of load cell verification intervals	n_{max}	-	6000 5000 4000 3000		4000 3000
Humidity symbol			CH		CH
Minimum dead load	E_{min}	kg	0		0
Maximum capacity	E_{max}	t	10, 20, 25, 30, 40, 50		10, 20, 25
Safe load limit	E_{lim}	t	$1.5 * E_{max}$		$1.5 * E_{max}$
Minimum verification interval	v_{min}	kg	$1000 * E_{max} / 15000$ $1000 * E_{max} / 12500$ $1000 * E_{max} / 10000$ $1000 * E_{max} / 8000$		$1000 * E_{max} / 10000$ $1000 * E_{max} / 8000$
Apportionment factor	p_{LC}		0.8		0.8
Ratio of minimum LC Verification interval $Y = E_{max} / v_{min}$	Y	-	15000 12500 10000 8000		10000 8000
Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$	Z	-	6000 in the case of $n_{max} = 6000$		4000 in the case of $n_{max} = 4000$
Excitation voltage		V DC	6 ~ 8		6 ~ 8
Cable length (maximum)		m	20		20

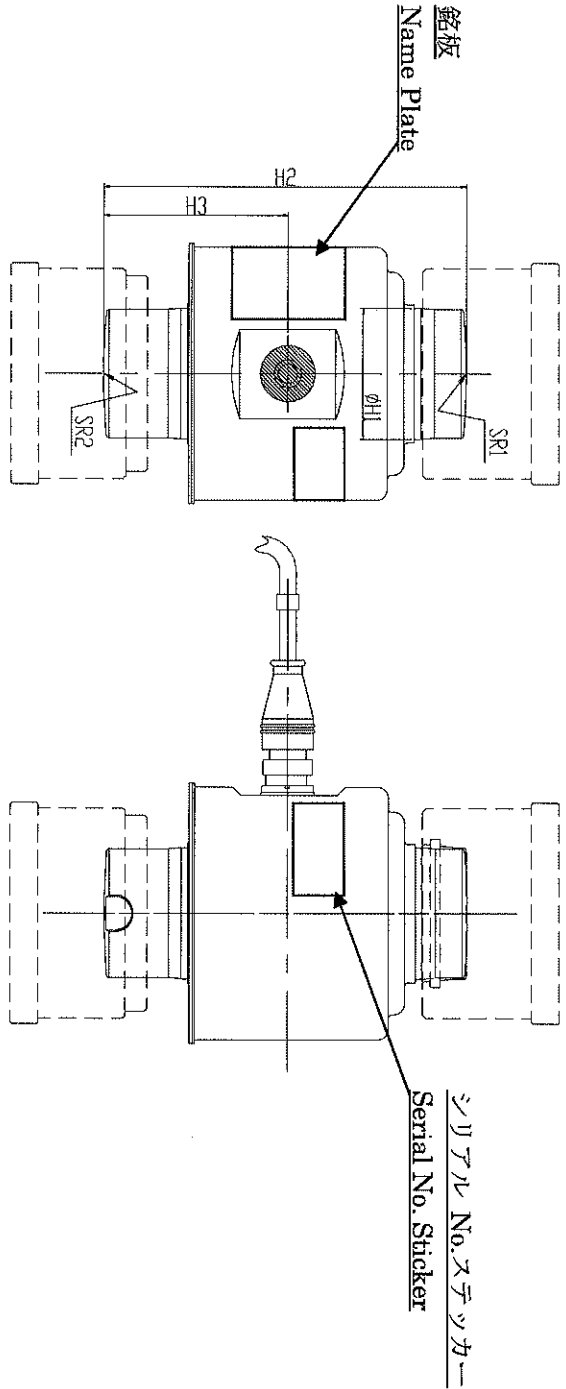


Fig. 1 $E_{max} = 10t, 20t, 25t, 30t, 40t, 50t$

E_{max}	$\phi H1$ (mm)	H2 (mm)	H3 (mm)	SR1 (mm)	SR2 (mm)	Mass ¹⁾ (kg)	Cable Length ²⁾
10t	46	132	67.5	160	250	2.0	15m
20t	46	132	67.5	250	250	2.5	15m
25t							
30t	46	132	67.5	360	360	2.8	15m
40t							
50t	46	180	91.5	360	360	3.4	15m

起歪体材質： 鉄
 Material of spring element : Steel

※寸法及び仕様は予告なく変更することがあります。
 Dimension and specification are subject to change without notice.

Model : CCI-H.../CCI-H...-1S

Note) 1) この数字は、本体と標準ケーブルの質量のみ含まれます。
 These figures contain the weight of the main body and the standard cable only.
 2) この数字は、標準のケーブル長さです。
 These are standard length for each load cells.

作成日	Date	2012.10.09
図書名	Document Name	外観図 APPEARANCE DRAWING
図書番号	Document No.	CCI-H-B-001

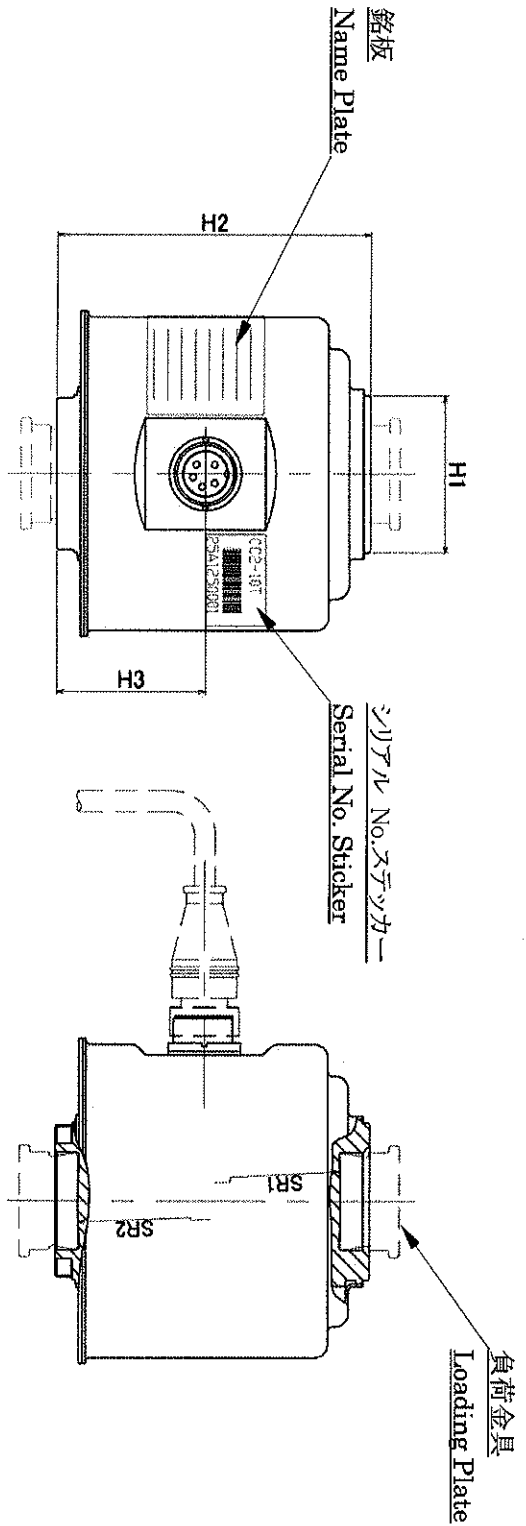


Fig. 1 $E_{max} = 10t, 20t, 25t$

起歪体材質：鉄
Material of spring element：Steel

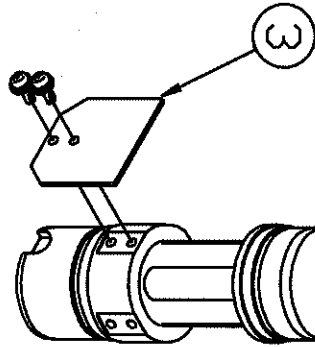
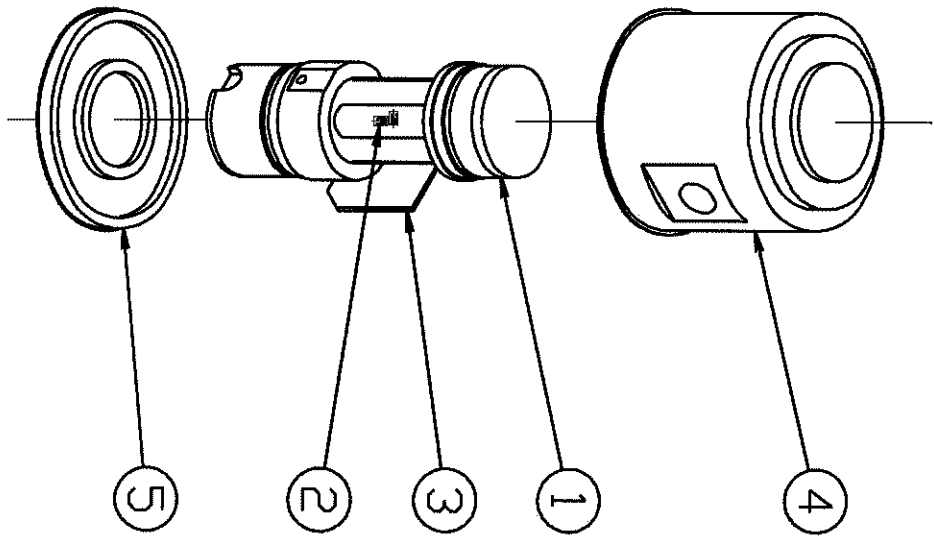
E_{max}	φH1 (mm)	H2 (mm)	H3 (mm)	SR1 (mm)	SR2 (mm)	Mass ¹⁾ (kg)	Cable Length ²⁾ (m)
10t	45	91	43	160	160	1.0	15
20t				250	250	1.2	15
25t							

※寸法及び仕様は予告なく変更することがあります。
Dimension and specification are subject to change without notice.

Note) 1) この数字は、本体と標準ケーブルの質量のみ含まれます。
These figures contain the weight of the main body and the standard cable only.
2) この数字は、標準のケーブル長さです。
These are standard length for each load cells.

Model : CC2

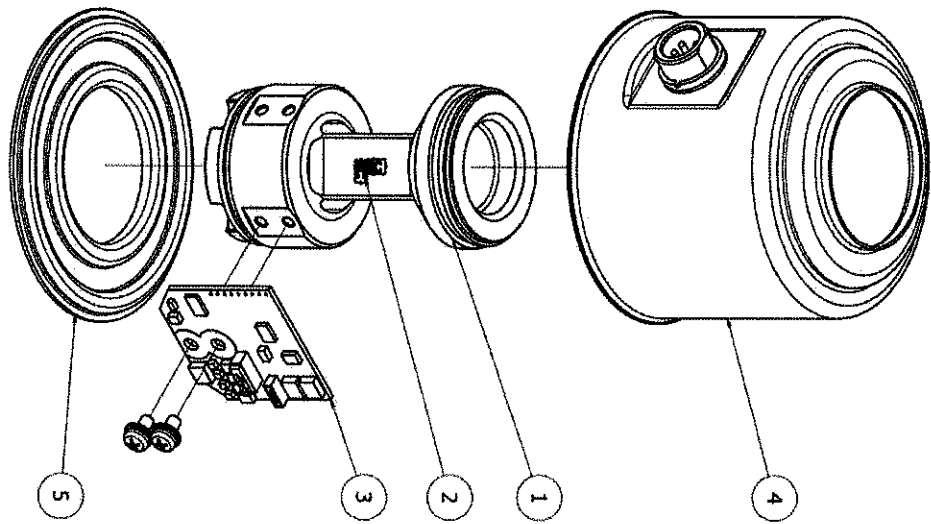
作成日	Date	2012.10.04
図書名	Document Name	外觀図 APPEARANCE DRAWING
図書番号	Document No.	CC2-B-001



番号 No.	部品名称 Part Name	CC1-H...	CC1-H...-IS
①	起歪体 Element	共通 Same	共通 Same
②	歪ゲージ Strain Gauge	共通 Same	共通 Same
③	D-LC基板 D-LC Board	KDC-DLC -SR4S	KDC-DLC -SR4S-IS
④	筐体(ケース) Housing (Case)	共通 Same	共通 Same
⑤	筐体(カバー) Housing (Cover)	共通 Same	共通 Same

Model : CC1-H.../CC1-H...-IS

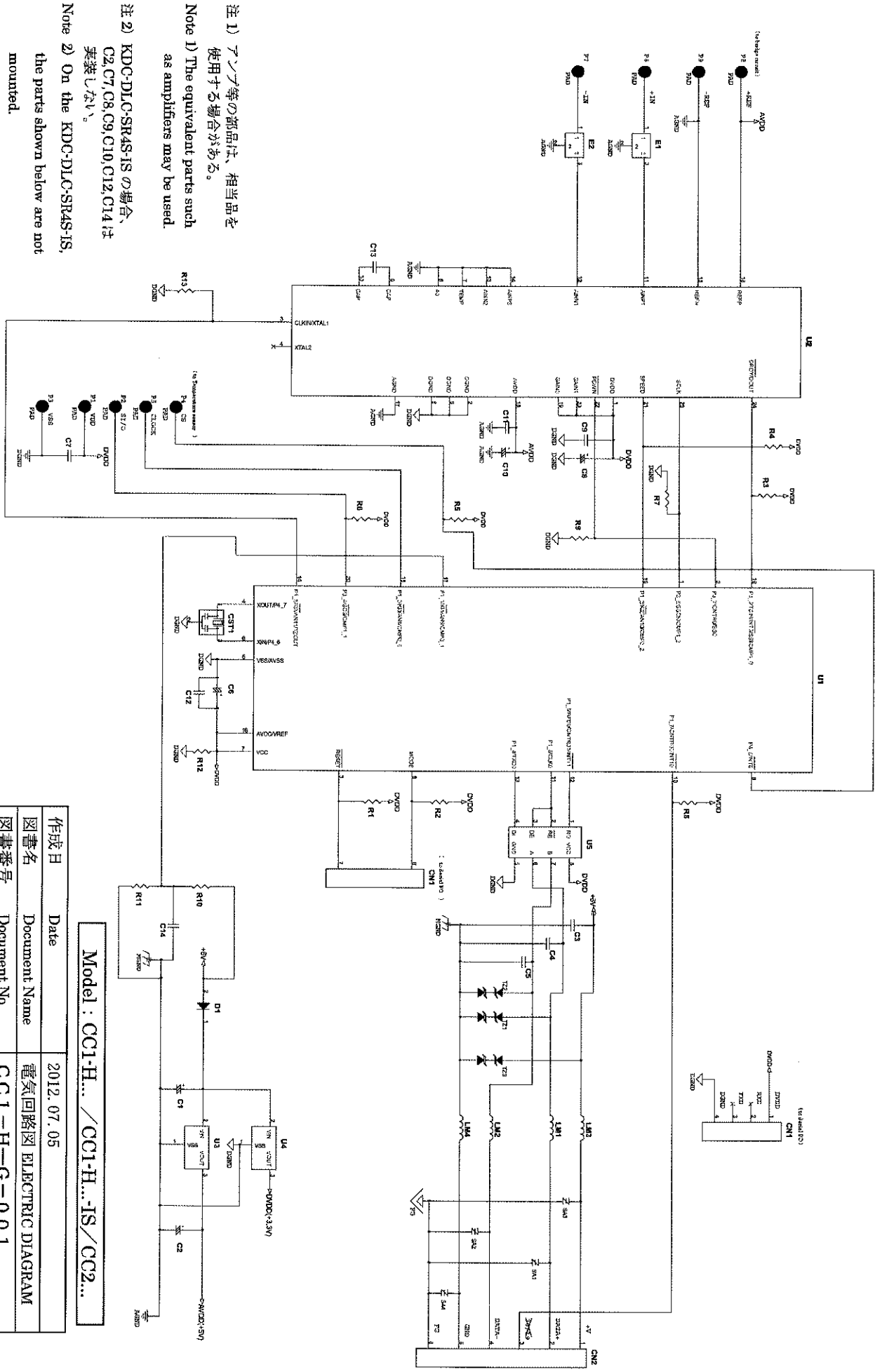
作成日 Date	2010.09.06
図書名 Document Name	構造図 STRUCTURAL DRAWING
図書番号 Document No.	CC1-H-C-001



番号 No.	部品名称 Part Name
①	起歪体 Element
②	歪ゲージ Strain Gauge
③	D-LC基板 D-LC Board
④	筐体 1(ケース) Housing (Case)
⑤	筐体 2(ケース) Housing (Case)

Model : CC2...

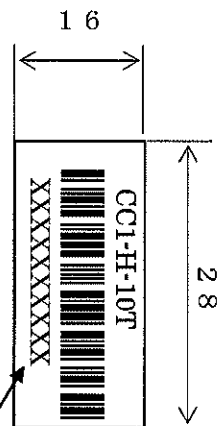
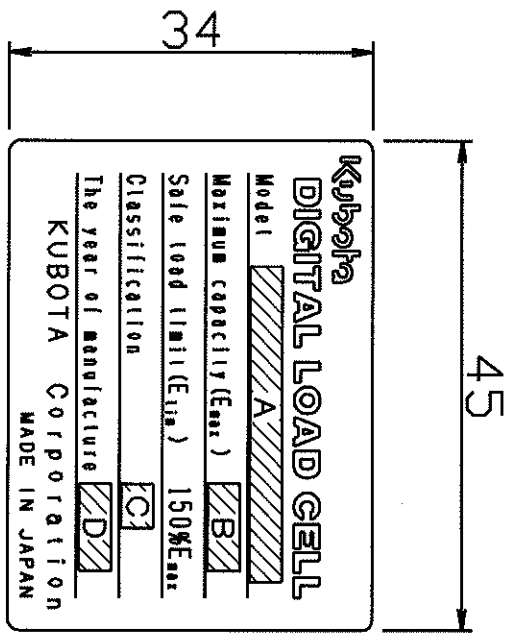
作成日 Date	2012.07.05
図書名 Document Name	構造図 STRUCTURAL DRAWING
図書番号 Document No.	CC2-C-001



注 1) アンペア等の部品は、相当品を使用する場合がある。
Note 1) The equivalent parts such as amplifiers may be used.

注 2) KDC-DLC-SRAS-IS の場合、C2, C7, C8, C9, C10, C12, C14 は実装しない。
Note 2) On the KDC-DLC-SRAS-IS, the parts shown below are not mounted.

C2, C7, C8, C9, C10, C12, C14

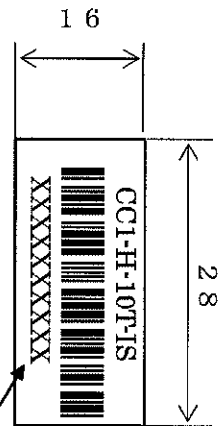
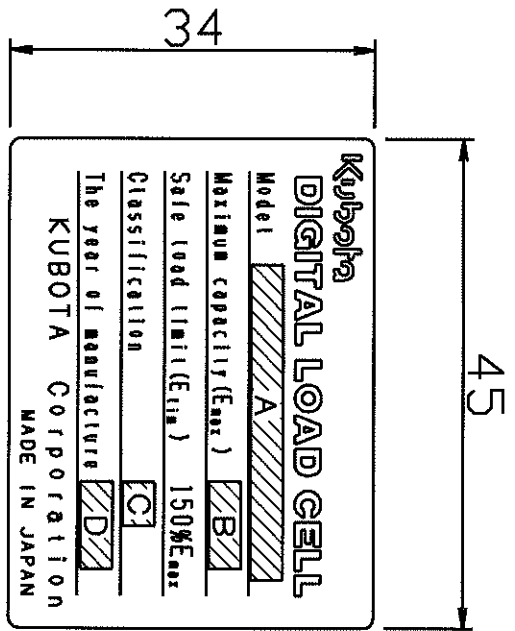


シリアル No. ステッカー
Serial No. Sticker

製造番号
Serial No.

A 型式名 Model designation	B 最大容量 Maximum capacity	C 精度等級 Accuracy class			D 製造年 Year of manufacture
CCI-H-10T	10t	C6	C5	C4	C3
CCI-H-20T	20t				
CCI-H-25T	25t				
CCI-H-30T	30t				
CCI-H-40T	40t				
CCI-H-50T	50t	※ 製造年を西暦で印字 ※ Print the year of manufacture by A.D.			

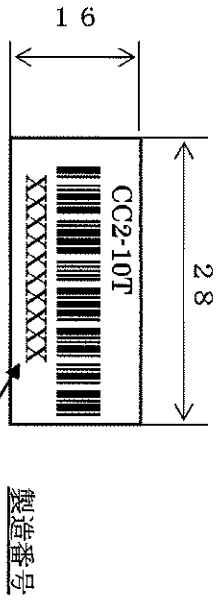
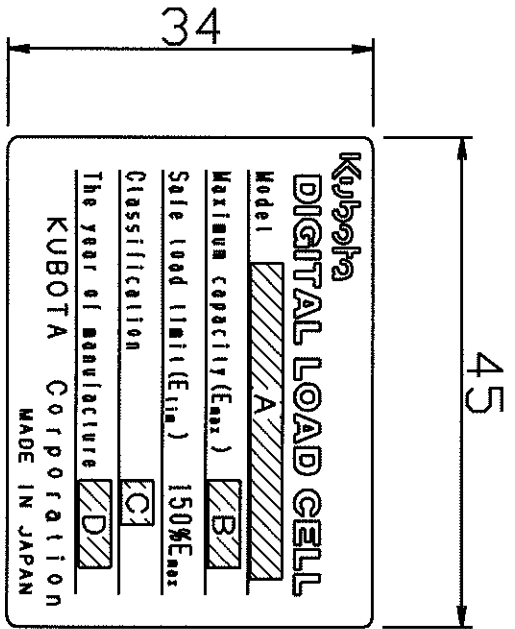
作成日 Date	2010.7.13
図書名 Document name	銘板図 Name Plate view
図書番号 Document number	CCI-H-K-001



シリアル No. ステッカー
Serial No. Sticker

A 型式名 Model designation	B 最大容量 Maximum capacity	C 精度等級 Accuracy class			D 製造年 Year of manufacture
CCI-H-10T-IS	10t	C6	C5	C4	C3
CCI-H-20T-IS	20t				
CCI-H-25T-IS	25t				
CCI-H-30T-IS	30t				
CCI-H-40T-IS	40t				
CCI-H-50T-IS	50t	※ 製造年を西暦で印字 ※ Print the year of manufacture by A.D.			

作成日 Date	2010.9.1
図書名 Document name	銘板図 Name Plate view
図書番号 Document number	CCI-H-IS-K-001



シリアル No. ステッカー
Serial No. Sticker

A 型式名 Model designation	B 最大容量 Maximum capacity	C 精度等級 Accuracy class		D 製造年 Year of manufacture
CC2-10T	10t	C4	C3	2012 ※ 製造年を西暦で印字 ※ Print the year of manufacture by A.D.
CC2-20T	20t			
CC2-25T	25t			

作成日 Date	2012.09.18
図書名 Document name	銘板図 Name Plate view
図書番号 Document number	CC2-K-001



National Metrology Institute of Japan

**Metrological regulation for load cells :
Test report**

Project number : LC-OIML-12-013

Test report number : 12-13 / R60:2000

Issuing authority : National Metrology Institute of Japan /National Institute of
Advanced Industrial Science and Technology (NMIJ/AIST)

AIST Tsukuba Central 3, Tsukuba Ibaraki 305-8563, Japan

Applicant : KUBOTA Corporation

Manufacturer : KUBOTA Corporation

Date of application : 2012.9.19

End of evaluation : 2012.9.21

Date of issue : 2012.9.24

Signature : *Y. Koyano*

Yasuhiro Koyano

Chief of Legal Weighing Metrology Section
Mechanical Metrology Division

Testing authority

Name: National Metrology Institute of Japan
 Address: Central 3-1, 1-1-1 Umezono, Tsukuba, Ibaraki, 305-8563, Japan
 Contact information: Telephone: +81 29 861 4389 Fax: +81 29 861 4341

Applicant/Manufacturer information

Application no.: 24-011
 Application date: 2012.9.19
 Model designation: CC2-**T

Manufacturer: KUBOTA Corporation
 Address: 1-2-47 Shikitsu-higashi, Naniwa-ku, Osaka, Japan

Applicant: KUBOTA Corporation
 Address: 1-2-47 Shikitsu-higashi, Naniwa-ku, Osaka, Japan

Representative: Koichi Segawa
 (name, telephone) +81-72-993-7036

Instrument category: Load cell: Strain guage Documentation no.: _____

Information concerning the pattern

Accuracy class: A B C D

Maximum number of load cell verification intervals (n_{max}): 4000

Direction of loading: (for load cell characterization, see 4.6.3)

Tension Beam (shear) Compression
 Universal Beam (bending)

Safe load limit (Lim): 150% of E_{max} Apportionment factor, p_{LC} (see Note) 0.8

Limits of working temperature: (only if other than -10°C to +40°C, see 5.5.1.1)

Upper: _____ °C Lower: _____ °C

Power voltage: V_{min} 6 V V_{max} 8 V

or V: _____ V AC DC Recommended: AC DC

Humidity evaluation symbol: NH Yes No
 SH Yes No
 CH or no markings Yes No

Electronic load cell: Yes No

Note: This value of p_{LC} is assumed to be 0.7 unless otherwise declared by the manufacturer.

Information concerning the pattern (continued)

Application No: 24-011

Specify other conditions that must be observed to obtain the specified performance
(for example, electrical characteristics of the load cell):

Various designs within model range:

Maximum capacity E_{max} (t)	Minimum load cell verification interval V_{min} (kg)	Minimum dead load E_{min} (t)	Maximum number of load cell intervals n_{max}	Minimum dead load output return DR (t)
10 20 25	C4: $E_{max}/10000$ C3: $E_{max}/8000$	0	4000	-

All values in this table are taken from documentation pages _____.

DR information required only when applicable.

Load cell(s) submitted:

Model designation	Serial number	$E_{max}(t)$
CC2-10T	24T125083	10

Secondary equipment (specify load adapters, etc.):

Remarks:

General information concerning test conditions

Ref.:A3

Application no.: 24-011Load cell model: CC2-10T Serial no.: 24T125083 E_{\max} : 10 t n_{\max} : 4000 v_{\min} : $E_{\max}/10000$ kg DR (if applicable): —Force-generating system - description: Load cell performance testing device
(see Note)Minimum test load: 0 kgIndicating instrument - description: KS-C7200Environmental equipment - description: Walk-in type temperature & humidity chamber EBL-1Temperature: 20.0 ~ 20.2 °CRelative humidity: 43.2 ~ 43.4 %Barometric pressure: 100.77 ~ 100.96 kPaTest location: East 3B 01112Acceleration of gravity at test location: 9.79949 m/sec²Evaluator: Fukuda*Note* : Include information concerning accuracy (for example, accredited laboratory).

Summary of the test

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max} : 10 t
 v_{min} : $E_{max}/10000$ kg
 Force-generating system: Load cell performance testing device
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

n_{max} : 4000
 DR: —
 ρ_{LC} : 0.8

No.	Test description	Passed	Failed	Report page	Remarks
D.2	Load cell errors (E_L)	×		10	
D.3	Repeatability errors (E_R)	×		11	
D.4	Temperature effects on MDLO (C_M)	×		12	
D.5	Creep (C_C)	×		13-16	
D.5	DR(C_{DR})	×		13-16	(see Note 2) DR: 1.08 kg
D.6	Barometric pressure effects (C_p)	×		17	
D.7	Humidity effects (CH or no mark) (C_{Hmin})	×		18	
D.7	Humidity effects (CH or no mark) (C_{Hmax})	×		18	
D.8	Humidity effects (SH)				
D.9	Marking requirements	See Page 19, Check that marked values are correct.			
D.10	Load cells equipped with electronics				NA
D.11	Warm-up time				NA
D.12	Power voltage variations				NA
D.13	Short time power reductions				NA
D.14	Bursts (electrical fast transients)				NA
D.15	Electrostatic discharge				NA
D.16	Electromagnetic susceptibility				NA
D.17	Span stability				NA

The following table checks the required calculations as per the General notes provisions of C.4:

Paragraph No.	Description	n_{max}		$n_{max} \cdot 500$		$n_{max} \cdot 1000$	
		Pass	Fail	Pass	Fail	Pass	Fail
C.4.2, C.4.3, C.4.5	Check all calculations using values of n at n_{max} and at lower than n_{max}	×		×		×	
C.4.4	Check that $v_{min} \leq \frac{D_{max} - D_{min}}{n_{max}}$	Pass		Fail			
		×					

Worst case figure for minimum dead load output return error (in mass units) = DR = 1.08 kg see Note 3

- Notes:
- 1 Enter "NA" for "the test is not applicable".
 - 2 Record error to accommodate OIML R76.
 - 3 This DR value is used in association with OIML R 76.

Form D.1 (3 runs) Load test data (E_L)

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max}: 10 t
 n_{max}: 4000
 V_{min}: Emax/10000 kg
 PLC: 0.8 DR: -
 Force-generating system: Load cell performance testing device
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

	At start	At end	
Date:	2012/7/17	2012/7/17	
Temperature:	20.1	20.2	°C
Relative humidity:	43.4	43.2	%
Barometric pressure:	100.80	100.77	kPa
Indicator temperature:	27.2	27.4	°C

Electronics power voltage (when applicable): _____ V

Table D.1 (3 runs)

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	339.7	13:23:20						
10000	601302.3	13:24:00						
0	347.5	13:24:40						
10000	601275.9	13:25:20						
0	350.8	13:26:00						
10000	601262.2	13:26:40						
0	350.8	13:27:20						
0	337.2	13:32:20	339.8	13:43:39	342.2	13:54:59	339.74 *	5.0
500	30385.3	13:32:50	30387.7	13:44:09	30390.2	13:55:29	30387.71	4.9
1000	60430.9	13:33:20	60434.9	13:44:39	60437.0	13:55:59	60434.27	6.1
2000	120525.1	13:33:50	120530.8	13:45:09	120531.7	13:56:29	120529.21	6.6
3000	180616.5	13:34:20	180619.8	13:45:39	180623.6	13:56:59	180619.98	7.1
4000	240713.3	13:34:50	240715.8	13:46:09	240720.8	13:57:29	240716.62	7.5
5000	300816.7	13:35:20	300818.3	13:46:39	300822.2	13:57:59	300819.07	5.5
6000	360921.2	13:35:50	360923.4	13:47:09	360927.9	13:58:29	360924.15	6.7
7000	421023.3	13:36:20	421024.5	13:47:39	421028.1	13:58:59	421025.30	4.8
8000	481122.8	13:36:50	481122.4	13:48:09	481130.8	13:59:29	481125.34	8.5
10000	601299.8	13:37:30	601297.0	13:48:49	601303.5	14:00:09	601300.12	6.5
8000	481105.3	13:38:10	481108.2	13:49:29	481114.1	14:00:49	481109.19	8.8
7000	421013.7	13:38:40	421016.4	13:49:59	421021.0	14:01:19	421017.04	7.4
6000	360922.3	13:39:10	360924.0	13:50:29	360929.6	14:01:49	360925.26	7.3
5000	300828.4	13:39:40	300831.8	13:50:59	300837.6	14:02:19	300832.61	9.2
4000	240732.7	13:40:10	240736.9	13:51:29	240742.8	14:02:49	240737.48	10.1
3000	180639.9	13:40:40	180643.8	13:51:59	180646.2	14:03:19	180643.30	6.4
2000	120545.1	13:41:10	120548.9	13:52:29	120551.5	14:03:49	120548.51	6.4
1000	60444.4	13:41:40	60447.9	13:52:59	60452.0	14:04:19	60448.06	7.6
500	30396.6	13:42:10	30399.6	13:53:29	30401.9	14:04:49	30399.36	5.4
0	341.4	13:42:40	343.6	13:53:59	347.0	14:05:19	344.00	5.6

Notes: 1 * = Average initial minimum test load indication.
 2 Absolute (not relative) time shall be recorded.

Form D.1 (3 runs) Load test data (E_L)

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-011

Load cell model: CC2-10T

Serial no.: 24T125083

E_{max}: 10 tn_{max}: 4000V_{min}: Emax/10000 kg

PLC: 0.8

DR: -

Force-generating system: Load cell performance testing device

Indicating instrument: KS-C7200

Evaluator: Fukuda

Date:

Temperature:

Relative humidity:

Barometric pressure:

Indicator temperature:

	At start	At end	
Date:	2012/7/18	2012/7/18	
Temperature:	40.0	40.0	°C
Relative humidity:	34.3	34.2	%
Barometric pressure:	101.15	101.12	kPa
Indicator temperature:	26.5	26.5	°C

Electronics power voltage

(when applicable): _____ V

Table D.1 (3 runs)

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	380.3	7:33:19						
10000	601306.3	7:33:59						
0	395.2	7:34:39						
10000	601279.6	7:35:19						
0	397.9	7:35:59						
10000	601262.6	7:36:39						
0	401.5	7:37:19						
0	383.1	7:42:19	389.573	7:53:39	395.7	8:04:59	389.46 *	12.6
500	30435.9	7:42:49	30441.8	7:54:09	30447.0	8:05:29	30441.55	11.1
1000	60483.5	7:43:19	60490.0	7:54:39	60494.1	8:05:59	60489.21	10.6
2000	120583.4	7:43:49	120590.0	7:55:09	120594.0	8:06:29	120589.14	10.6
3000	180676.1	7:44:19	180685.0	7:55:39	180689.4	8:06:59	180683.52	13.3
4000	240776.0	7:44:49	240785.1	7:56:09	240788.0	8:07:29	240783.03	12.0
5000	300878.7	7:45:19	300886.4	7:56:39	300889.0	8:07:59	300884.70	10.2
6000	360977.8	7:45:49	360985.8	7:57:09	360990.0	8:08:29	360984.56	12.2
7000	421072.3	7:46:19	421082.7	7:57:39	421083.5	8:08:59	421079.50	11.2
8000	481161.5	7:46:49	481173.2	7:58:09	481173.4	8:09:29	481169.36	12.0
10000	601314.3	7:47:29	601325.8	7:58:49	601328.6	8:10:09	601322.91	14.2
8000	481142.4	7:48:09	481153.3	7:59:29	481155.1	8:10:49	481150.27	12.7
7000	421058.9	7:48:39	421069.5	7:59:59	421070.7	8:11:19	421066.35	11.9
6000	360972.9	7:49:09	360983.1	8:00:29	360986.6	8:11:49	360980.84	13.7
5000	300886.1	7:49:39	300897.0	8:00:59	300899.6	8:12:19	300894.26	13.5
4000	240795.7	7:50:09	240803.1	8:01:29	240807.4	8:12:49	240802.07	11.8
3000	180701.6	7:50:39	180709.7	8:01:59	180713.9	8:13:19	180708.40	12.3
2000	120607.5	7:51:09	120614.2	8:02:29	120616.7	8:13:49	120612.81	9.2
1000	60505.1	7:51:39	60508.8	8:02:59	60512.4	8:14:19	60508.75	7.3
500	30449.6	7:52:09	30454.8	8:03:29	30459.4	8:14:49	30454.58	9.7
0	392.0	7:52:39	397.4	8:03:59	400.9	8:15:19	396.78	8.9

Notes: 1 * = Average initial minimum test load indication.
2 Absolute (not relative) time shall be recorded.

Form D.1 (3 runs) Load test data (E_L)

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max}: 10 t
 n_{max}: 4000
 V_{min}: Emax/10000 kg
 PLC: 0.8 DR: -
 Force-generating system: Load cell performance testing device
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

	At start	At end	
Date:	2012/7/19	2012/7/19	
Temperature:	-10.2	-10.2	°C
Relative humidity:	51.3	50.8	%
Barometric pressure:	100.59	100.61	kPa
Indicator temperature:	26.1	26.1	°C

Electronics power voltage (when applicable): _____ V

Table D.1 (3 runs)

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	434.0	6:53:46						
10000	601398.6	6:54:26						
0	453.6	6:55:06						
10000	601402.2	6:55:46						
0	450.7	6:56:26						
10000	601402.1	6:57:06						
0	447.8	6:57:46						
0	438.9	7:02:45	434.1	7:14:04	435.7	7:25:24	436.22	4.8
500	30486.1	7:03:15	30483.3	7:14:34	30484.4	7:25:54	30484.59	2.8
1000	60528.8	7:03:45	60526.6	7:15:04	60526.0	7:26:24	60527.14	2.8
2000	120620.2	7:04:15	120619.5	7:15:34	120619.1	7:26:54	120619.59	1.0
3000	180707.1	7:04:45	180708.2	7:16:04	180706.3	7:27:24	180707.17	1.9
4000	240801.6	7:05:15	240804.9	7:16:34	240800.5	7:27:54	240802.33	4.4
5000	300906.4	7:05:45	300906.9	7:17:04	300903.5	7:28:24	300905.61	3.3
6000	361014.3	7:06:15	361016.1	7:17:34	361010.6	7:28:54	361013.67	5.5
7000	421129.8	7:06:45	421128.3	7:18:04	421123.4	7:29:24	421127.16	6.4
8000	481245.0	7:07:15	481244.7	7:18:34	481239.1	7:29:54	481242.94	6.0
10000	601459.1	7:07:55	601462.7	7:19:14	601456.0	7:30:34	601459.24	6.7
8000	481242.2	7:08:35	481238.3	7:19:54	481233.5	7:31:14	481238.01	8.7
7000	421134.1	7:09:05	421132.0	7:20:24	421128.4	7:31:44	421131.50	5.8
6000	361031.3	7:09:35	361028.0	7:20:54	361026.9	7:32:14	361028.74	4.4
5000	300926.8	7:10:05	300924.7	7:21:24	300922.3	7:32:44	300924.61	4.6
4000	240827.6	7:10:35	240825.3	7:21:54	240824.7	7:33:14	240825.85	3.0
3000	180730.7	7:11:05	180731.2	7:22:24	180728.0	7:33:44	180729.95	3.2
2000	120636.4	7:11:35	120634.3	7:22:54	120634.6	7:34:14	120635.12	2.2
1000	60535.9	7:12:05	60536.9	7:23:24	60533.9	7:34:44	60535.55	3.0
500	30486.9	7:12:35	30490.3	7:23:54	30489.9	7:35:14	30489.06	3.4
0	431.9	7:13:05	434.8	7:24:24	436.6	7:35:44	434.40	4.7

Notes: 1 * = Average initial minimum test load indication.
 2 Absolute (not relative) time shall be recorded.

Form D.1 (3 runs) Load test data (E_L)

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max}: 10 t
 n_{max}: 4000
 V_{min}: Emax/10000 kg
 PLC: 0.8 DR: -
 Force-generating system: Load cell performance testing device
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

	At start	At end	
Date:	2012/7/20	2012/7/20	
Temperature:	20.0	20.1	°C
Relative humidity:	43.4	43.2	%
Barometric pressure:	100.96	100.96	kPa
Indicator temperature:	26.1	26.1	°C

Electronics power voltage (when applicable): _____ V

Table D.1 (3 runs)

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	330.6	7:43:56						
10000	601286.9	7:44:36						
0	342.4	7:45:16						
10000	601261.8	7:45:56						
0	345.7	7:46:36						
10000	601231.7	7:47:16						
0	346.0	7:47:56						
0	332.1	7:52:57	334.4	8:04:16	335.9	8:15:36	334.10 *	3.8
500	30378.9	7:53:27	30382.5	8:04:46	30383.3	8:16:06	30381.57	4.4
1000	60422.7	7:53:57	60427.0	8:05:16	60428.0	8:16:36	60425.92	5.3
2000	120516.0	7:54:27	120520.4	8:05:46	120523.0	8:17:06	120519.82	7.0
3000	180604.4	7:54:57	180613.1	8:06:16	180613.0	8:17:36	180610.20	8.7
4000	240700.0	7:55:27	240708.6	8:06:46	240708.6	8:18:06	240705.73	8.7
5000	300801.0	7:55:57	300811.2	8:07:16	300809.7	8:18:36	300807.30	10.3
6000	360903.7	7:56:27	360913.5	8:07:46	360912.3	8:19:06	360909.84	9.8
7000	421002.4	7:56:57	421013.4	8:08:16	421013.8	8:19:36	421009.87	11.4
8000	481097.9	7:57:27	481114.9	8:08:46	481111.7	8:20:06	481108.15	17.0
10000	601263.1	7:58:07	601287.6	8:09:26	601287.5	8:20:46	601279.39	24.5
8000	481083.2	7:58:47	481096.6	8:10:06	481096.0	8:21:26	481091.95	13.4
7000	420993.0	7:59:17	421004.4	8:10:36	421003.5	8:21:56	421000.30	11.4
6000	360903.7	7:59:47	360913.3	8:11:06	360913.4	8:22:26	360910.15	9.7
5000	300811.9	8:00:17	300821.4	8:11:36	300821.0	8:22:56	300818.09	9.5
4000	240719.4	8:00:47	240726.3	8:12:06	240727.4	8:23:26	240724.38	8.0
3000	180627.6	8:01:17	180634.0	8:12:36	180635.6	8:23:56	180632.39	8.0
2000	120534.9	8:01:47	120541.5	8:13:06	120541.0	8:24:26	120539.14	6.5
1000	60436.4	8:02:17	60441.6	8:13:36	60443.0	8:24:56	60440.31	6.6
500	30389.0	8:02:47	30391.5	8:14:06	30395.1	8:25:26	30391.87	6.0
0	334.7	8:03:17	336.2	8:14:36	338.6	8:25:56	336.48	3.9

Notes: 1 * = Average initial minimum test load indication.
 2 Absolute (not relative) time shall be recorded.

Form D.2 Load cell errors (E_L) calculation

Ref.: 5.1.1; A.4.1.12 to A.4.1.14; C.2.2.

Application no.:	24-011								
Load cell model:	CC2-10T								
Serial no.:	24T125083								
E _{max} :	10 t								
n _{max} :	4000								
V _{min} :	E _{max} /10000 kg								
PLC:	0.8	DR:	—						
Force-generating system:	Load cell performance testing device	Conversion factor, f:	150.25						
Indicating instrument:	KS-C7200	75% test load:	7500 kg						
Evaluator:	Fukuda	Reference indication at 75% test load:	450720.3						

	At start	At end	
Date:	2012/7/17	2012/7/20	
Test temperature:	20.1	20.1	°C
Relative humidity:	43.4	43.2	%
Barometric pressure:	100.80	100.96	kPa
Indicator temperature:	27.2	26.1	°C

Table D.2

Test load (kg)	Reference indication (count)	20.2 °C (20°C)		40.0 °C (40°C)		-10.2 °C (-10°C)		20.0 °C (20°C)		mpe (V)
		Indication (count)	Error(E _L) (V)	Indication (count)	Error(E _L) (V)	Indication (count)	Error(E _L) (V)	Indication (count)	Error(E _L) (V)	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
500	30049.04	30047.97	-0.01	30052.09	0.02	30048.37	0.00	30047.46	-0.01	0.40
1000	60098.08	60094.53	-0.02	60099.75	0.01	60090.92	-0.05	60091.82	-0.04	0.80
2000	120196.16	120189.47	-0.04	120199.68	0.02	120183.37	-0.09	120185.72	-0.07	0.80
3000	180294.23	180280.24	-0.09	180294.06	0.00	180270.95	-0.15	180276.09	-0.12	0.80
4000	240392.31	240376.88	-0.10	240393.57	0.01	240366.10	-0.17	240371.62	-0.14	1.20
5000	300490.39	300479.33	-0.07	300495.25	0.03	300469.38	-0.14	300473.20	-0.11	1.20
6000	360588.47	360584.41	-0.03	360595.10	0.04	360577.45	-0.07	360575.73	-0.08	1.20
7000	420686.54	420685.56	-0.01	420690.04	0.02	420690.94	0.03	420675.77	-0.07	1.20
8000	480784.62	480785.60	0.01	480779.90	-0.03	480806.72	0.15	480774.04	-0.07	1.20
10000	600980.78	600960.38	-0.14	600933.45	-0.32	601023.02	0.28	600945.29	-0.24	1.20
8000	480784.62	480769.45	-0.10	480760.81	-0.16	480801.79	0.11	480757.85	-0.18	1.20
7000	420686.54	420677.30	-0.06	420676.90	-0.06	420695.28	0.06	420666.20	-0.14	1.20
6000	360588.47	360585.52	-0.02	360591.38	0.02	360592.52	0.03	360576.05	-0.08	1.20
5000	300490.39	300492.87	0.02	300504.80	0.10	300488.39	-0.01	300483.99	-0.04	1.20
4000	240392.31	240397.74	0.04	240412.61	0.14	240389.63	-0.02	240390.27	-0.01	1.20
3000	180294.23	180303.56	0.06	180318.94	0.16	180293.73	0.00	180298.29	0.03	0.80
2000	120196.16	120208.77	0.08	120223.35	0.18	120198.89	0.02	120205.03	0.06	0.80
1000	60098.08	60108.32	0.07	60119.29	0.14	60099.33	0.01	60106.21	0.05	0.80
500	30049.04	30059.62	0.07	30065.12	0.11	30052.84	0.03	30057.77	0.06	0.40
0	0.00	4.25	0.03	7.32	0.05	-1.83	-0.01	2.38	0.02	0.40

Minimum test load, D_{min}: 0 kgPASS: FAIL: **Notes:**

- 1 Load/reference indications: if a 75% load point was not obtained, a straight line interpolation between the adjacent higher and lower load point indications is used (see 5.2.2 and calculation procedures in C.2.2).
- 2 Error, E_L: the difference between the test indication and the reference indication divided by the conversion factor, f.
- 3 Test load values are values above minimum test load, D_{min}.

Form D.3 Repeatability errors (E_R) calculation

Ref.: 5.4; A.4.1.13; C.2.3.

Application no.: 24-011

Load cell model: CC2-10T

Serial no.: 24T125083

 E_{max} : 10 t n_{max} : 4000 V_{min} : $E_{max}/10000$ kg

PLC: 0.8 DR: —

Force-generating system: Load cell performance testing device

Conversion factor, f: 150.25

Indicating instrument: KS-C7200

Evaluator: Fukuda

Table D.3

Test load (kg)	20.2 °C (20°C)		40.0 °C (40°C)		-10.2 °C (-10°C)		20.0 °C (20°C)		mpe (V)
	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	
	0	5.0	0.03	12.6	0.08	4.8	0.03	3.8	
500	4.9	0.03	11.1	0.07	2.8	0.02	4.4	0.03	0.40
1000	6.1	0.04	10.6	0.07	2.8	0.02	5.3	0.04	0.80
2000	6.6	0.04	10.6	0.07	1.0	0.01	7.0	0.05	0.80
3000	7.1	0.05	13.3	0.09	1.9	0.01	8.7	0.06	0.80
4000	7.5	0.05	12.0	0.08	4.4	0.03	8.7	0.06	1.20
5000	5.5	0.04	10.2	0.07	3.3	0.02	10.3	0.07	1.20
6000	6.7	0.04	12.2	0.08	5.5	0.04	9.8	0.07	1.20
7000	4.8	0.03	11.2	0.07	6.4	0.04	11.4	0.08	1.20
8000	8.5	0.06	12.0	0.08	6.0	0.04	17.0	0.11	1.20
10000	6.5	0.04	14.2	0.09	6.7	0.04	24.5	0.16	1.20
8000	8.8	0.06	12.7	0.08	8.7	0.06	13.4	0.09	1.20
7000	7.4	0.05	11.9	0.08	5.8	0.04	11.4	0.08	1.20
6000	7.3	0.05	13.7	0.09	4.4	0.03	9.7	0.06	1.20
5000	9.2	0.06	13.5	0.09	4.6	0.03	9.5	0.06	1.20
4000	10.1	0.07	11.8	0.08	3.0	0.02	8.0	0.05	1.20
3000	6.4	0.04	12.3	0.08	3.2	0.02	8.0	0.05	0.80
2000	6.4	0.04	9.2	0.06	2.2	0.01	6.5	0.04	0.80
1000	7.6	0.05	7.3	0.05	3.0	0.02	6.6	0.04	0.80
500	5.4	0.04	9.7	0.06	3.4	0.02	6.0	0.04	0.40
0	5.6	0.04	8.9	0.06	4.7	0.03	3.9	0.03	0.40

PASS: FAIL:

Note: Error, E_R : the maximum difference between the three test indications divided by the conversion factor, f (classes C and D) or the maximum difference between the five test indications divided by the conversion factor, f (classes A and B).

D.4 Temperature effects on MDLO (C_M) calculation

Ref.: 5.5.1.3; A.4.1.14; C.2.4.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max}: 10 t
 n_{max}: 4000
 V_{min}: E_{max}/10000 kg
 P_{LC}: 0.8 DR: —

Force-generating system: Load cell performance testing device Conversion factor, f: 150.25

Indicating instrument: KS-C7200

Evaluator: Fukuda

Table D.4

Temperature °C	Indication (count)	Change (C _M) (V)	Change (V _{min} /5 °C)	mpc (V _{min} /5 °C)
20.2	339.74			
40.0	389.46	0.33	0.21	0.80
-10.2	436.22	0.31	-0.08	0.80
20.0	334.10	-0.68	-0.28	0.80

PASS: FAIL:

- Notes:
- 1 MDLO: minimum dead load output.
 - 2 Indication: the average initial minimum test load indication obtained from Table D.1.
 - 3 The maximum permissible change(mpc) allowed is: (V_{min}/5°C) for classesB, C, and D; (V_{min}/2°C) for class A.
 - 4 Change, CM(v): the difference between the observed indications, and the indications at the prior temperature, divided by the conversion factor, f.

Form D.5 Creep (Cc) and DR (CDR)

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: <u>24-011</u> Load cell model: <u>CC2-10T</u> Serial no.: <u>24T125083</u> E _{max} : <u>10 t</u> n _{max} : <u>4000</u> v _{min} : <u>E_{max}/10000 kg</u> p _{LC} : <u>0.8</u> DR: <u>—</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">At start</th> <th style="text-align: center;">At end</th> <th></th> </tr> </thead> <tbody> <tr> <td>Date:</td> <td style="text-align: center;">2012/7/17</td> <td style="text-align: center;">2012/7/17</td> <td></td> </tr> <tr> <td>Temperature:</td> <td style="text-align: center;">20.2</td> <td style="text-align: center;">20.2</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Relative humidity:</td> <td style="text-align: center;">43.2</td> <td style="text-align: center;">43.1</td> <td style="text-align: right;">%</td> </tr> <tr> <td>Barometric pressure:</td> <td style="text-align: center;">100.76</td> <td style="text-align: center;">100.80</td> <td style="text-align: right;">kPa</td> </tr> <tr> <td>Indicator temperature:</td> <td style="text-align: center;">27.7</td> <td style="text-align: center;">27.9</td> <td style="text-align: right;">°C</td> </tr> </tbody> </table>		At start	At end		Date:	2012/7/17	2012/7/17		Temperature:	20.2	20.2	°C	Relative humidity:	43.2	43.1	%	Barometric pressure:	100.76	100.80	kPa	Indicator temperature:	27.7	27.9	°C
	At start	At end																							
Date:	2012/7/17	2012/7/17																							
Temperature:	20.2	20.2	°C																						
Relative humidity:	43.2	43.1	%																						
Barometric pressure:	100.76	100.80	kPa																						
Indicator temperature:	27.7	27.9	°C																						
Force generating system: <u>Load cell performance testing device</u>	Conversion factor, f: <u>150.25</u>																								
Indicating instrument: <u>KS-C7200</u>																									
Evaluator: <u>Fukuda</u>																									

Table D.5

	Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
Exercise cells These rows may be omitted for a load sequence as shown in Figure A.1	0						
	0						
	0						
	0						
	0						
(*) →	0	339.7	100.76	15:05:08			←initial "no load" indicatio
Fill in time →	Record time of initial loading →			15:05:08			
(**) →	10000	601299.5	100.76	15:05:48	0.00	0.735	←initial "load" indication
Constant maximum test load, D _{max}	10000	601289.1	100.76	15:06:48	-0.07	0.735	
	10000	601282.9	100.76	15:07:48	-0.11	0.735	
	10000	601280.6	100.76	15:08:48	-0.13	0.735	
	10000	601278.4	100.77	15:09:48	-0.14	0.735	
	10000	601277.5	100.77	15:10:48	-0.15	0.735	
	10000	601276.8	100.77	15:11:48	-0.15	0.735	
	10000	601277.2	100.78	15:12:48	-0.15	0.735	
	10000	601276.8	100.78	15:13:48	-0.15	0.735	
	10000	601278.5	100.78	15:14:48	-0.14	0.735	
	10000	601281.3	100.78	15:19:49	-0.12	0.735	
	10000	601284.2	100.78	15:24:49	-0.10	0.735	
	10000	601285.5	100.77	15:29:49	-0.09	0.735	
10000	601289.2	100.77	15:34:49	-0.07	0.735		
Fill in time →	Record time of initial unloading →			15:34:49			
(***) →	0	383.5	100.77	15:35:30	0.29	0.500	←initial indication
These rows are for reference purposes only	0	372.8	100.77	15:35:51	0.22	0.500	
	0	368.4	100.77	15:36:11	0.19	0.500	
	0	366.0	100.77	15:36:31	0.17	0.500	
	0	365.3	100.77	15:36:51	0.17	0.500	
	0	363.7	100.77	15:37:11	0.16	0.500	
	30-20 minute creep difference in units:					0.03	0.1575

DR (v):	0.29	30 minute creep:	PASS:	x	FAIL:	
actual time (s):	41	30-20 minute creep difference:	PASS:	x	FAIL:	
specified time (s):	40	DR ≤ 0.5v:	PASS:	x	FAIL:	
mpc for DR (v):	0.49	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (**) divided by the conversion factor, f.
 - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
 - 3 Change (v) for DR: the initial indication (***) minus the initial "no load" indication (*) divided by the conversion factor, f.
 - 4 Absolute (not relative) time shall be recorded.

Form D.5 Creep (Cc) and DR (CDR)

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max} : 10 t
 n_{max} : 4000
 v_{min} : $E_{max}/10000$ kg
 p_{LC} : 0.8 DR: —

	At start	At end	
Date:	2012/7/18	2012/7/18	
Temperature:	40.0	40.0	°C
Relative humidity:	34.2	34.2	%
Barometric pressure:	101.09	100.80	kPa
Indicator temperature:	26.2	26.2	°C

Force generating system: Load cell performance testing device Conversion factor, f: 150.25
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

Table D.5

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	386.2	101.09	9:15:10		←initial "no load" indication
Fill in time →	Record time of initial loading →			9:15:10		
(**) →	10000	601293.2	101.09	9:15:50	0.00	←initial "load" indication
	10000	601288.2	101.09	9:16:50	-0.03	
	10000	601285.7	101.09	9:17:50	-0.05	
	10000	601286.7	101.09	9:18:50	-0.04	
	10000	601286.4	101.09	9:19:50	-0.05	
	10000	601287.9	101.09	9:20:50	-0.04	
	10000	601289.3	101.09	9:21:50	-0.03	
	10000	601291.3	101.09	9:22:50	-0.01	
	10000	601292.5	101.09	9:23:50	-0.01	
	10000	601293.8	101.09	9:24:50	0.00	
	10000	601306.0	101.09	9:29:51	0.09	
	10000	601309.2	101.09	9:34:51	0.11	
	10000	601313.8	101.10	9:39:51	0.14	
	10000	601314.2	101.09	9:44:51	0.14	
Fill in time →	Record time of initial unloading →			9:44:51		
(***) →	0	451.0	101.09	9:45:33	0.43	←initial indication
	0	439.8	101.09	9:45:53	0.36	
	0	432.9	101.09	9:46:13	0.31	
	0	430.1	101.09	9:46:33	0.29	
	0	428.7	101.09	9:46:53	0.28	
	0	426.5	101.09	9:47:13	0.27	
30-20 minute creep difference in units:					0.03	0.1575

DR (v):	0.43	30 minute creep:	PASS:	×	FAIL:	
actual time (s):	42	30-20 minute creep difference:	PASS:	×	FAIL:	
specified time (s):	40	DR ≤ 0.5v:	PASS:	×	FAIL:	
mpc for DR (v):	0.48	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (**) divided by the conversion factor, f.
 - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
 - 3 Change (v) for DR: the initial indication (***) minus the initial "no load" indication (*) divided by the conversion factor, f.
 - 4 Absolute (not relative) time shall be recorded.

Form D.5 Creep (Cc) and DR (CDR)

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max}: 10 t
 n_{max}: 4000
 v_{min}: E_{max}/10000 kg
 P_{LC}: 0.8 DR: —

	At start	At end	
Date:	2012/7/19	2012/7/19	
Temperature:	-10.2	-10.2	°C
Relative humidity:	51.0	51.0	%
Barometric pressure:	100.6	100.8	kPa
Indicator temperature:	26.1	26.1	°C

Force generating system: Load cell performance testing device Conversion factor, f: 150.25
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

Table D.5

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	443.8	100.59	8:35:33		←initial "no load" indication
Fill in time →	Record time of initial loading →			8:35:33		
(**) →	10000	601398.6	100.59	8:36:13	0.00	←initial "load" indication
Constant maximum test load, D _{max}	10000	601400.5	100.59	8:37:13	0.01	0.735
	10000	601401.8	100.60	8:38:13	0.02	0.735
	10000	601402.0	100.59	8:39:13	0.02	0.735
	10000	601403.4	100.59	8:40:13	0.03	0.735
	10000	601403.5	100.59	8:41:13	0.03	0.735
	10000	601404.7	100.59	8:42:13	0.04	0.735
	10000	601403.1	100.59	8:43:13	0.03	0.735
	10000	601403.8	100.59	8:44:13	0.03	0.735
	10000	601404.2	100.59	8:45:13	0.04	0.735
	10000	601400.8	100.60	8:50:14	0.01	0.735
	10000	601396.5	100.60	8:55:14	-0.01	0.735
	10000	601392.6	100.60	9:00:14	-0.04	0.735
10000	601392.6	100.60	9:05:14	-0.04	0.735	
Fill in time →	Record time of initial unloading →			9:05:14		
(***) →	0	453.4	100.60	9:05:55	0.06	←initial indication
These rows are for reference purposes only	0	444.8	100.61	9:06:15	0.01	0.500
	0	440.8	100.61	9:06:35	-0.02	0.500
	0	438.9	100.60	9:06:55	-0.03	0.500
	0	438.2	100.60	9:07:15	-0.04	0.500
	0	439.7	100.60	9:07:35	-0.03	0.500
	30-20 minute creep difference in units:				-0.03	0.1575

DR (v):	0.06	30 minute creep:	PASS:	x	FAIL:	
actual time (s):	41	30-20 minute creep difference:	PASS:	x	FAIL:	
specified time (s):	40	DR ≤ 0.5v:	PASS:	x	FAIL:	
mpc for DR (v):	0.49	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (**) divided by the conversion factor, f.
 - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
 - 3 Change (v) for DR: the initial indication (***) minus the initial "no load" indication (*) divided by the conversion factor, f.
 - 4 Absolute (not relative) time shall be recorded.

Form D.5 Creep (Cc) and DR (CDR)

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max} : 10 t
 n_{max} : 4000
 v_{min} : $E_{max}/10000$ kg
 p_{LC} : 0.8 DR: —

	At start	At end	
Date:	2012/7/20	2012/7/20	
Temperature:	20.0	20.1	°C
Relative humidity:	43.2	43.2	%
Barometric pressure:	100.98	100.80	kPa
Indicator temperature:	26.1	26.1	°C

Force generating system: Load cell performance testing device Conversion factor, f: 150.25
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

Table D.5

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	336.3	9:25:45			←initial "no load" indicatio
Fill in time →	Record time of initial loading →		9:25:45			
(**) →	10000	601286.3	9:26:25	0.00	0.735	←initial "load" indication
	10000	601275.1	9:27:25	-0.07	0.735	
	10000	601268.9	9:28:25	-0.12	0.735	
	10000	601266.0	9:29:25	-0.14	0.735	
	10000	601263.2	9:30:25	-0.15	0.735	
	10000	601261.9	9:31:25	-0.16	0.735	
	10000	601260.6	9:32:25	-0.17	0.735	
	10000	601260.4	9:33:25	-0.17	0.735	
	10000	601260.0	9:34:25	-0.18	0.735	
	10000	601261.6	9:35:25	-0.16	0.735	
	10000	601263.1	9:40:26	-0.15	0.735	
	10000	601267.6	9:45:26	-0.12	0.735	
	10000	601268.2	9:50:26	-0.12	0.735	
	10000	601269.6	9:55:26	-0.11	0.735	
Fill in time →	Record time of initial unloading →		9:55:26			
(***) →	0	371.9	9:56:07	0.24	0.500	←initial indication
	0	362.2	9:56:27	0.17	0.500	
	0	357.7	9:56:47	0.14	0.500	
	0	354.6	9:57:07	0.12	0.500	
	0	353.6	9:57:27	0.12	0.500	
	0	353.5	9:57:47	0.11	0.500	
30-20 minute creep difference in units:				0.01	0.1575	

DR (v):	0.24	30 minute creep:	PASS:	x	FAIL:	
actual time (s):	41	30-20 minute creep difference:	PASS:	x	FAIL:	
specified time (s):	40	DR ≤ 0.5v:	PASS:	x	FAIL:	
mpc for DR (v):	0.49	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (**) divided by the conversion factor, f.
 - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
 - 3 Change (v) for DR: the initial indication (***) minus the initial "no load" indication (*) divided by the conversion factor, f.
 - 4 Absolute (not relative) time shall be recorded.

Form D.6 Barometric pressure effects (Cp)

Ref.: 5.5.2; A.4.4.

Application no.:	<u>24-011</u>				
Load cell model:	<u>CC2-10T</u>	Date:	<u>2012/7/20</u>	<u>2012/7/20</u>	
Serial no.:	<u>24T125083</u>	Test temperature:	<u>27.3</u>	<u>27.5</u>	°C
E _{max} :	<u>10 t</u>	Relative humidity:	<u>39.2</u>	<u>38.6</u>	%
n _{max} :	<u>4000</u>	Barometric pressure:	<u>100.93</u>	<u>100.92</u>	kPa
V _{min} :	<u>Emax/10000 kg</u>	Indicator temperature:	<u>26.5</u>	<u>26.5</u>	°C
P _{LC} :	<u>0.8</u>	DR:	<u>—</u>		
Force-generating system:	<u>—</u>	Conversion factor, f:	<u>150.25</u>		
Indicating instrument:	<u>KS-C7200</u>				
Evaluator:	<u>Fukuda</u>				

Table D.6

Pressure (kPa)	Indication (count)	Time	Change (V)	Change (v _{min} /kPa)	mpc (v _{min} /kPa)
100.93	325	16:02	0.00	0.00	0
101.93	347	16:03	0.15	0.36	1
100.93	325	16:03	-0.15	0.37	1
99.92	303	16:04	-0.15	0.36	1
100.92	326	16:04	0.15	0.38	1

PASS: FAIL:

Remarks:

- Notes:
- 1 Change (v): the difference between the observed indication and the initial indication divided by the conversion factor, f.
 - 2 Although A.4.4 specifies a change of only 1 kPa for this test, additional measurements may be taken.
 - 3 Absolute (not relative) time shall be recorded.

Form D.9 Marking requirements

Ref.: 4.6, 4.7.

Application no.: 24-011
 Load cell model: CC2-10T
 Serial no.: 24T125083
 E_{max} : 10 t
 n_{max} : 4000
 v_{min} : $E_{max}/10000$ kg
 p_{LC} : 0.8 DR: —
 Force-generating system: —
 Indicating instrument: KS-C7200
 Evaluator: Fukuda

Table D.9.1

R 60 reference	Mandatory information	On load cell	In document
4.6.1	Accuracy class designation	-	+
4.6.2	Maximum number of load cell verification intervals, n_{max}	-	+
4.6.3	Loading designation (if necessary)	-	+
4.6.4	Working temperature designation	/	/
4.6.5.1	Humidity symbol "NH"	/	/
4.6.5.3	Humidity symbol "SH"	/	/
4.6.6.1, 4.7.1	Name or trademark of manufacturer (see Note 1)	+	+
4.6.6.1, 4.7.1	Manufacturer's own designation or load cell model (see Note 1)	+	+
4.6.6.1, 4.7.1	Serial number (see Note 1)	+	+
4.6.6.1	Year of manufacture	+	-
4.6.6.1	Minimum dead load, E_{min}	-	+
4.6.6.1, 4.7.1	Maximum capacity, E_{max} (see Note 1)	+	+
4.6.6.1	Safe load limit, E_{lim}	-	+
4.6.6.1	Minimum load cell verification interval (v_{min})	-	+
4.6.6.1	Other pertinent conditions	-	-
4.6.6.1	Apportionment factor, P_{LC} (if not equal to 0.7)	-	+
4.6.7	Standard classification	-	+
4.6.8	Multiple classifications	-	-

Table D.9.2

R 60 reference	Non-mandatory additional information	On load cell	In document
4.6.5.2	Humidity symbol "CH"	-	-
4.6.6.2	Relative v_{min} , Y	-	-
4.6.6.2	Relative DR, Z	-	-

Include references to the following:

Documents supplied with load cells: _____

Diagrams showing markings on load cells: _____

- Notes:
- 1 Required both on load cell and in document.
 - 2 Indicate that the marking is present with a "+".
 - 3 Indicate that the marking is not present with a "-".
 - 4 Indicate that the marking is not applicable with a "/".