Initial Verification of NAWI

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Sep. 2nd 2014

1. Information of Verification Form

Initial Verification

General Information
Concerning the type

ACS-JJ(Tiger) :
Max= 3 kg
Min= 20 g
e= 1 g
n=3000

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
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Type designation

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Manufacture、Applicant

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Complete instrument

Or Only a Indictor

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Initial Verification

Complete instrument

Or Only a Indictor

T.2.2.2 Indicator

Electronic device of an instrument that may perform:

1)analog-to-digital conversion of the output signal of the load cell

2)further processes the data

3)displays the weighing result in units of mass.

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Classification of instruments

3.1.1 Accuracy classes

The accuracy classes for instruments and their symbols are given in Table .

Name	Symbol marked on instrument
Special accuracy	(I)
High accuracy	(II)
Medium accuracy	(III)
Ordinary accuracy	(IIII)

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Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

d= 1 g n= 3000

d_1= n_1=
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d_3= n_3=

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Initial Verification

Exercise on Classification of instruments

Exercise 1 : Max = 6 kg , *e* = 2 g , *d* = 2 g , which classes of this NAWI belongs to?

Answer1 : Max = 6 kg , *e* = *d* = 2 g

n= Max/*e* = 6000 g / 2 g = 3 000

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Answer1 : Max = 6 kg , *e* = 2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

Initial Verification

Exercise on Classification of instruments

Exercise 1 : Max = 6 kg , *e* = 2 g , *d* = 2 g , which classes of this NAWI belongs to?

Answer1 : Max = 6 kg , *e* = 2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

Initial Verification

Exercise on Classification of instruments

Exercise 2 : Max = 6 kg , *e* = 2 g , *d* = 0. 2 g , which classes of this NAWI belongs to?

Answer2 : Max = 6 kg , *e* = 2 g , d = 0.2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Initial Verification

Exercise on Classification of instruments

Exercise 2 : Max = 6 kg , *e* = 2 g , *d* = 0. 2 g , which classes of this NAWI belongs to?

Answer2 : Max = 6 kg , *e* = 2 g , d = 0.2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

Initial Verification

Exercise on Classification of instruments

Exercise 2 : Max = 6 kg , *e* = 2 g , *d* = 0. 2 g , which classes of this NAWI belongs to?

Answer2 : Max = 6 kg , *e* = 2 g , d = 0.2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

Initial Verification

Exercise on Classification of instruments

Exercise 2 : Max = 6 kg , *e* = 2 g , *d* = 0. 2 g , which classes of this NAWI belongs to?

Answer2 : Max = 6 kg , *e* = 2 g , d = 0.2 g

n= Max/*e* = 6000 g / 2 g = 3 000

Quotient of the maximum capacity **Max** and the verification scale interval ***e***

Initial Verification

Exercise on Classification of instruments

Exercise 2 : Max = 6 kg , *e* = 2 g , *d* = 0. 2 g , which classes of this NAWI belongs to?

Answer2 : Max = 6 kg , *e* = 2 g , d = 0.2 g

n= Max/*e* = 6000 g / 2 g = 3 000

n= Max/*d* = 6000 g / 0.2 g = 3 0000

Initial Verification

Exercise on Classification of instruments

Exercise 3 : Max = 5 kg , *e* = 5 g , *d* = 5 g , which classes of this NAWI belongs to?

Answer2 : Max = 5 kg , *e* = 5 g , d = 5 g

n= Max/*e* = 5000 g / 5 g = 1 000

Initial Verification

Exercise on Classification of instruments

Exercise 3 : Max = 5 kg , *e* = 5 g , *d* = 5 g , which classes of this NAWI belongs to?

Answer3 : Max = 5 kg , *e* = 5 g , d = 5 g

n= Max/*e* = 5000 g / 5 g = 1 000

It depends on the manufacturer

	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min
		minimum	maximum	
I)	0.001 g ≤ *e**	50 000**	–	
h (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	0 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

Which accuracy class it belongs to ?

Initial Verification

T.1.2.3 Self-indicating instrument

Instrument in which the position of equilibrium is obtained **without** the intervention of an operator

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.1.2.4 Semi-self-indicating instrument

Instrument with a self-indicating weighing range, in which the operator intervenes to alter the limits of this range.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.1.2.5 Non-self-indicating instrument

Instrument in which the position of **equilibrium** is obtained entirely by the operator.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1=		Max_1=		d_1=		n_1=	
e_2=		Max_2=		d_2=		n_2=	
e_3=		Max_3=		d_3=		n_3=	

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ]	Nonautomatic	[×]	Tare balancing
[×]	Semi-automatic	[ ]	Tare weighing
[ ]	Automatic zero-setting	[ ]	Preset tare device
[×]	Initial zero-setting	[ ]	Subtractive tare
[×]	Zero-tracking	[ ]	Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.3.1.2 Minimum capacity (Min)

Value of the load below which the weighing results may be subject to an excessive relative error.

ACS-JJ(Tiger) :

Max= 3 kg

e = d = 1 g

n= Max/*e* =3 000

Min = 20 g

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ]	Nonautomatic	[×]	Tare balancing
[×]	Semi-automatic	[ ]	Tare weighing
[ ]	Automatic zero-setting	[ ]	Preset tare device
[×]	Initial zero-setting	[ ]	Subtractive tare
[×]	Zero-tracking	[ ]	Additive tare

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

3.4.3 Minimum capacity

The minimum capacity is determined in mpe TABLE

ACS-JJ(Tiger) :

Max= 3 kg

e = d = 1 g

n= Max/*e* =3 000

Min = 20 g

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=

e_2= Max_2= d_2= n_2=

e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:

[ ] Nonautomatic

[×] Semi-automatic

[ ] Automatic zero-setting

[×] Initial zero-setting

[×] Zero-tracking

Tare device:

[×] Tare balancing

[ ] Tare weighing

[ ] Preset tare device

[ ] Subtractive tare

[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg

d= 1 g n= 3000

d1= n1=
d2= n2=
d3= n3=

f=

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

The verification scale interval, ***e***, is replaced by the actual scale interval, ***d***.

[×] Zero-tracking [ ] Additive tare

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:

Interfaces (number, nature): /

Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:

Remarks:

ACS-JJ(Tiger) :

Max= 3 kg

e = d = 1 g

n= Max/*e* =3 000

Min = 20 *d* = 20 g

Initial Verification

Actual scale interval, *d*

The difference between the values corresponding to two consecutive scale marks, for **analog indication**

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:
- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

Actual scale interval, *d*

The difference between two consecutive indicated values, **for digital indication**.

Question : What's the actual scale of this weighing instrument?

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
er, nature):	/	Classification symbol:	
		Remarks:	
:			

Initial Verification

Actual scale interval, *d*

The difference between two consecutive indicated values, **for digital indication**.

d may be 1,2,5 or 10 g

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

Verification scale interval, *e*

Value, expressed in units of mass, used for the classification and verification of an instrument.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=

e_2= Max_2= d_2= n_2=

e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:

- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:

- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

Verification scale interval, *e*

2.2 Principles of the metrological requirements

Instruments are classified according to:

1) the verification scale interval, ***e*** representing absolute accuracy;

2) the number of verification scale intervals, ***n*** representing relative accuracy.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min=	20 g						
e=	1 g	Max=	3 kg	d=	1 g	n=	3000
e_1=		Max_1=		d_1=		n_1=	
e_2=		Max_2=		d_2=		n_2=	
e_3=		Max_3=		d_3=		n_3=	

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:	
[ ] Nonautomatic	[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic	[ ] Tare weighing	
[ ] Automatic zero-setting	[ ] Preset tare device	
[×] Initial zero-setting	[ ] Subtractive tare	
[×] Zero-tracking	[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

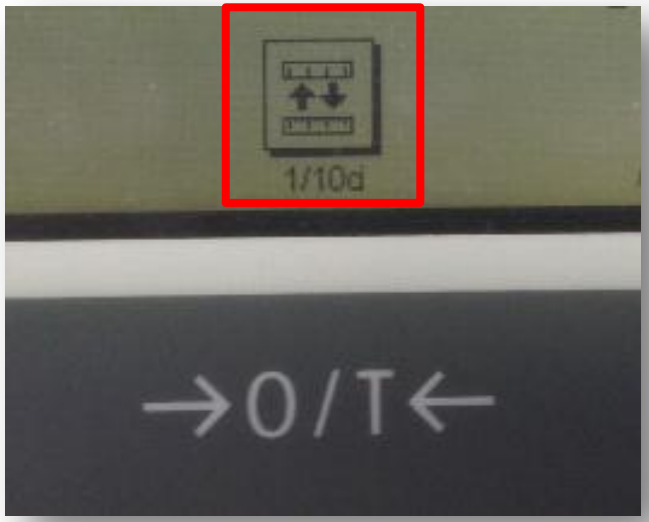
Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

3.4 Auxiliary indicating devices

An indicating device with a differentiated scale division .



NOTE: Only instruments of classes I and II may be fitted with an auxiliary indicating device

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=

e_2= Max_2= d_2= n_2=

e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

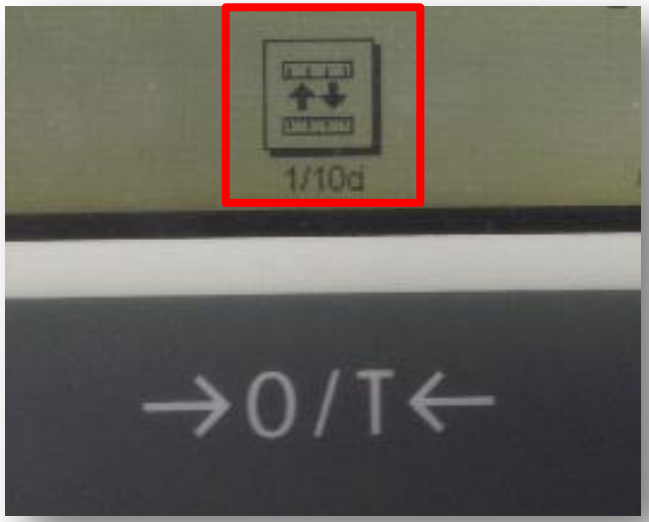
Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

3.4 Auxiliary indicating devices

An indicating device with a differentiated scale division



e = 0.1 g、d =0.01 g

100.2 g

100.21 g

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=

e_2= Max_2= d_2= n_2=

e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

4.4.3 Extended indicating devices

When an instrument is fitted with an extended indicating device, displaying the indication with a scale interval smaller than *e* shall be possible only:

1) During pressing a key;

2)A period not exceeding 5 seconds after a manual command.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g
e= 1 g Max= 3 kg d= 1 g n= 3000
e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

Number of verification scale intervals, *n*

Quotient of the maximum capacity and the verification scale interval:

n = Max / e

Max= 3 kg
e= 1 g
n= Max/*e* =3 000

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.2.7.4 Tare device
Device for setting the indication to zero when a load is on the load receptor:

Additive tare device (T+)
without altering the weighing range for net loads

Subtractive tare device (T-)
reducing the weighing range for net loads

NOTE: Don't change the range of weighing instrument

T.2.7.4.1 Tare-balancing device

Tare device without indication of the tare value when the instrument is loaded.

Application N°: B219924740

Initial Verification

T.2.7.4.2 Tare-weighing device

Tare device that **stores the tare value** and that is capable of **displaying** or **printing** it whether or not the instrument is loaded.

4.5.4 If an instrument has a zero-setting device and a tare-weighing device.

The control of the zero-setting device shall be **separate** from that of the tare-weighing device.
(NOT THE SAME KEY)

Evaluation period:
Date of report:
Observer:

Remarks:

Initial Verification

T.2.7.5 Preset tare device

Device for subtracting a preset tare value from a gross or net weight value and indicating the result of the calculation.
The weighing range for net loads is reduced accordingly.

Note: Tare value is inputted into the weighing instrument.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:
- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.2.7.2.1 Non-automatic zero-setting device

Device for setting the indication to zero by an operator.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ]	Nonautomatic	[×]	Tare balancing
[×]	Semi-automatic	[ ]	Tare weighing
[ ]	Automatic zero-setting	[ ]	Preset tare device
[×]	Initial zero-setting	[ ]	Subtractive tare
[×]	Zero-tracking	[ ]	Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.2.7.2.2 Semi-automatic zero-setting device

Device for setting the indication to zero automatically following a manual command.

4.5.1 NOTE： The effect of any zero-setting device shall not change the **maximum weighing capacity** of the instrument.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:

- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:

- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare
- [×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.2.7.2.4 Initial zero-setting device

Device for setting the indication to zero automatically at the time the instrument is **switched on** and before it is ready for use.

4.5.1 NOTE： Initial zero-setting device not more than **20 %**, of the maximum capacity

This does not affect an instrument of class IIII, except if it is used for commercial transactions.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ]	Nonautomatic	[×]	Tare balancing
[×]	Semi-automatic	[ ]	Tare weighing
[ ]	Automatic zero-setting	[ ]	Preset tare device
[×]	Initial zero-setting	[ ]	Subtractive tare
[×]	Zero-tracking	[ ]	Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.2.7.2.3 Automatic zero-setting device

Device for setting the indication to zero automatically without the intervention of an operator.

4.5.1 NOTE： The overall effect of zero-setting and zero-tracking devices shall be not more than **4 %**

zero-setting
zero-tracking
} 4 %

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:
- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare
- [×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.2.7.3 Zero-tracking device

Device for maintaining the zero indication within certain limits automatically.

A.4.1.5 Automatic zero-setting and zero-tracking

To avoid the effect of the automatic zero-setting device or the zero-tracking , a load equal to 10 *e* is used to make indication is brought out of the automatic range.

$e = 0.1$ g

$\Delta L = 10\,e = 1$ g

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1=		Max_1=		d_1=		n_1=	
e_2=		Max_2=		d_2=		n_2=	
e_3=		Max_3=		d_3=		n_3=	

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:

- [ ] Nonautomatic
- [×] Semi-automatic
- [ ] Automatic zero-setting
- [×] Initial zero-setting
- [×] Zero-tracking

Tare device:

- [×] Tare balancing
- [ ] Tare weighing
- [ ] Preset tare device
- [ ] Subtractive tare
- [ ] Additive tare
- [×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

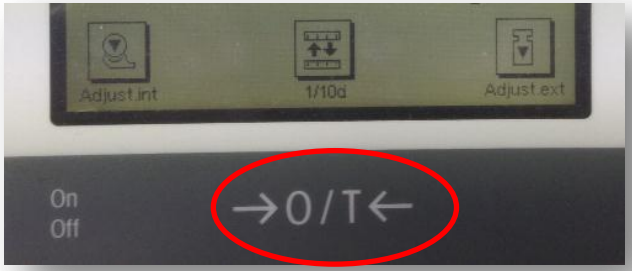
Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

4.5.4 Control of the zero-setting device

An instrument - except an instrument according to 4.13 and 4.14 - …… may have a **combined** semi-automatic zero-setting and semi-automatic **tare-balancing** device operated by the same key. **(THE SAME KEY)**

Tare-balancing ≠ Tare weighing



GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1=	Max_1=	d_1=	n_1=
e_2=	Max_2=	d_2=	n_2=
e_3=	Max_3=	d_3=	n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:
[ ] Nonautomatic	[×] Tare balancing
[×] Semi-automatic	[ ] Tare weighing
[ ] Automatic zero-setting	[ ] Preset tare device
[×] Initial zero-setting	[ ] Subtractive tare
[×] Zero-tracking	[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.2.3.5 Peripheral device

Additional device which repeats or further processes the weighing result and other primary indications.

Examples: Printer
Secondary display
Keyboard
Terminal
Data storage device
Personal computer

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.1.2.8 Price-computing instrument

Instrument that calculates the price to pay on the basis of the indicated weight value and the unit price.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

Initial Verification

T.1.2.8 Price-computing instrument

Instrument that calculates the price to pay on the basis of the indicated weight value and the unit price.

Weight value

Unit price

Price to pay

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.1.2.8 Price-computing instrument

Instrument that calculates the price to pay on the basis of the indicated weight value and the unit price.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

T.1.2.9 Price-labeling instrument

Price-computing instrument that prints the weight value, unit price and price to pay for prepackages.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:	
[ ] Nonautomatic	[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic	[ ] Tare weighing	
[ ] Automatic zero-setting	[ ] Preset tare device	
[×] Initial zero-setting	[ ] Subtractive tare	
[×] Zero-tracking	[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	/	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Initial Verification

The other information:

Instrument submitted:
Identification Nº
Software version

Evaluation (verification period)
Date of report
Observer

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ]	Nonautomatic	[×]	Tare balancing
[×]	Semi-automatic	[ ]	Tare weighing
[ ]	Automatic zero-setting	[ ]	Preset tare device
[×]	Initial zero-setting	[ ]	Subtractive tare
[×]	Zero-tracking	[ ]	Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present [×] No connection

Instrument submitted:	SCS-6	Load cell:	
Identification N°:	140308	Manufacturer:	Ningbo cacschina industrial science and technology CO. LTD.
Software version:	v 1.01	Type:	SB
Connected equipment:	/	Capacity:	3 t
		Number :	8I67827,8IA3472, 8IA3406,8IA3464
Interfaces (number, nature):	/	Classification symbol:	C3
		Remarks:	/
Evaluation period:	2014.6.25~2014.8.15		
Date of report:	2014.8.15		
Observer:	Hu Manhong		

Initial Verification

The other information:

Instrument submitted:
Identification N°
Software version

Evaluation (verification period)
Date of report
Observer

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:	
[ ] Nonautomatic	[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic	[ ] Tare weighing	
[ ] Automatic zero-setting	[ ] Preset tare device	
[×] Initial zero-setting	[ ] Subtractive tare	
[×] Zero-tracking	[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present [×] No connection

Instrument submitted:	SCS-6	Load cell:	
Identification N°:	140308	Manufacturer:	Ningbo cacschina industrial science and technology CO. LTD.
Software version:	v 1.01	Type:	SB
Connected equipment:	/	Capacity:	3 t
		Number :	8I67827,8IA3472, 8IA3406,8IA3464
Interfaces (number, nature):	/	Classification symbol:	C3
		Remarks:	/
Evaluation period:	2014.6.25~2014.8.15		
Date of report:	2014.8.15		
Observer:	Hu Manhong		

Initial Verification

The other information

Load cell
Manufacture
Type
Capacity
Number
Classification symbol

GENERAL INFORMATION CONCERNING THE TYPE

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Manufacturer:	梅特勒托利多（常州）测量技术有限公司
Applicant:	梅特勒托利多（常州）测量技术有限公司
Instrument category:	非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e_1= Max_1= d_1= n_1=
e_2= Max_2= d_2= n_2=
e_3= Max_3= d_3= n_3=

T= + 3 kg T= - 106 g

U_{nom}= 220 V U_{min}= / V U_{max}= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:		Tare device:	
[ ] Nonautomatic		[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic		[ ] Tare weighing	
[ ] Automatic zero-setting		[ ] Preset tare device	
[×] Initial zero-setting		[ ] Subtractive tare	
[×] Zero-tracking		[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present [×] No connection

Instrument submitted:	SCS-6	Load cell:	
Identification N°:	140308	Manufacturer:	Ningbo cacschina industrial science and technology CO. LTD.
Software version:	v 1.01	Type:	SB
Connected equipment:	/	Capacity:	3 t
		Number :	8I67827,8IA3472, 8IA3406,8IA3464
Interfaces (number, nature):	/	Classification symbol:	C3
		Remarks:	/
Evaluation period:	2014.6.25~2014.8.15		
Date of report:	2014.8.15		
Observer:	Hu Manhong		

2. Procedure of Verification

Initial Verification

Clause: OIML R 76-1 Clauses 8.3

Initial verification may be performed by authorized personnel according to national regulations.

Initial verification shall not be performed unless conformity of the instrument to the approved type and/or the requirements of this Recommendation is established.

Initial verification may be carried out at the manufacturer’s facility or at any other location

The instrument shall be tested at the time of installation and ready for use,

Initial Verification

Clause: OIML R 76-1 Clauses 8.3

Tests Procedure:

#0 Visual Inspection

#1 Evaluation of indication errors by the Changeover Method (Basic Method)

#2 Pre-load Test

#3 Accuracy of zero-setting and tare device

#4 Weighing Test

#5 Eccentricity

#6 Repeatability

#7 Checking of zero

#8 Discrimination (A.4.8); not applicable for instruments with digital indication

#9 Tilt in case of mobile instruments (refer to A.5.1.3)

#10 Sensitivity of non-self-indicating instruments (refer to A.4.9)

2.0 Visual Inspection

#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   Accuracy class
   Min
   Max
   e, *d*

2. Identification of software if applicable;

3. Identification of modules if applicable; and

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

× Complete instrument ☐ Module (*) with the error fraction pi = ☐

Accuracy class: ☐ I ☐ II × III ☐ IIII

× Self- ☐ Semi-self- ☐ Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= +3 kg T= -106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
☐ Nonautomatic
× Semi-automatic
☐ Automatic zero-setting
× Initial zero-setting
× Zero-tracking

Tare device:
× Tare balancing
☐ Tare weighing
☐ Preset tare device
☐ Subtractive tare
☐ Additive tare

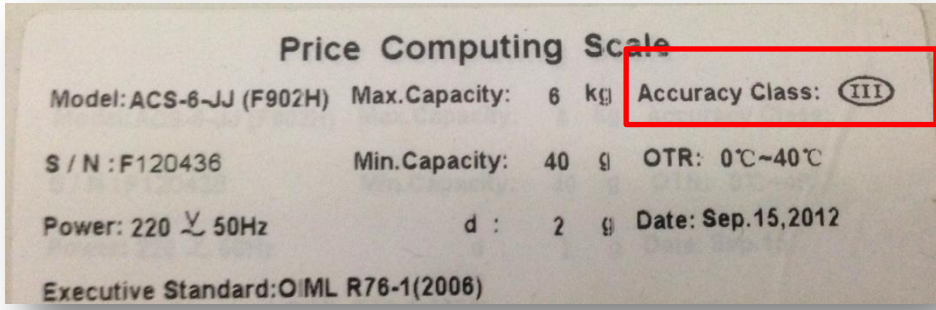
× Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: ☐ Built-in Connected ☐ Non present but connectable × No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): /
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:



#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, *d*

2. Identification of software if applicable;

3. Identification of modules if applicable; and

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

× Complete instrument ☐ Module (*) with the error fraction pi = ☐

Accuracy class: ☐ I ☐ II × III ☐ IIII

× Self- ☐ Semi-self- ☐ Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= +3 kg T= -106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
☐ Nonautomatic
× Semi-automatic
☐ Automatic zero-setting
× Initial zero-setting
× Zero-tracking

Tare device:
× Tare balancing
☐ Tare weighing
☐ Preset tare device
☐ Subtractive tare
☐ Additive tare

× Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

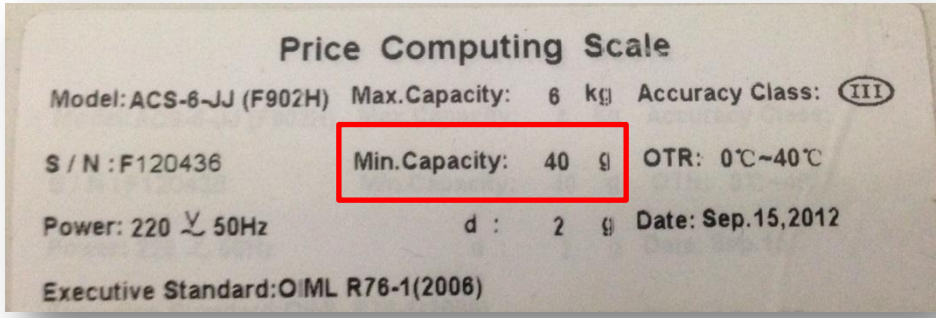
Printer: ☐ Built-in Connected ☐ Non present but connectable × No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1

Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:

Remarks:



#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, *d*

2. Identification of software if applicable;

3. Identification of modules if applicable; and

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

× Complete instrument ☐ Module (*) with the error fraction pi = ☐

Accuracy class: ☐ I ☐ II × III ☐ IIII

× Self- ☐ Semi-self- ☐ Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device: Tare device:

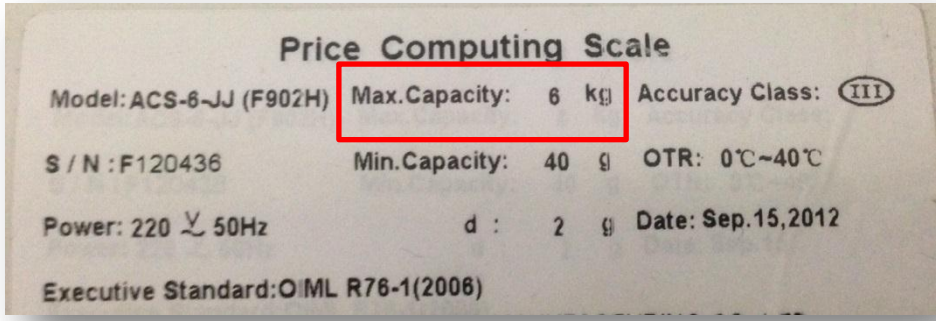
☐ Nonautomatic × Tare balancing × Combined zero/tare device
× Semi-automatic ☐ Tare weighing
☐ Automatic zero-setting ☐ Preset tare device
× Initial zero-setting ☐ Subtractive tare
× Zero-tracking ☐ Additive tare

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: ☐ Built-in Connected ☐ Non present but connectable × No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:



#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable; and

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g
e= 1 g Max= 3 kg d= 1 g n= 3000
e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=
T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

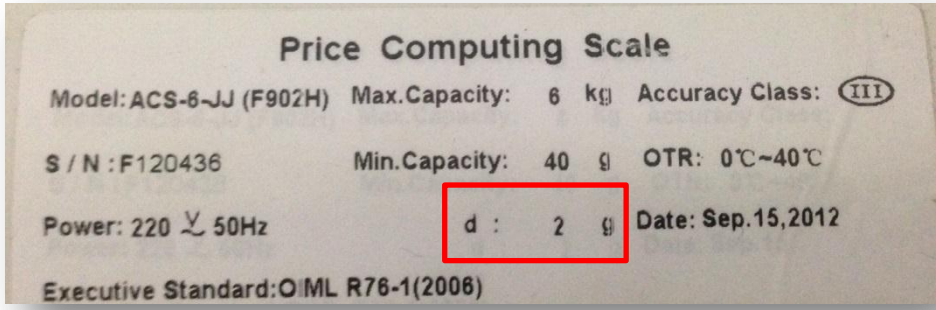
[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:



#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable; and

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g
e= 1 g Max= 3 kg d= 1 g n= 3000
e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare
[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable;

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g
e= 1 g Max= 3 kg d= 1 g n= 3000
e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=
T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:	
[ ] Nonautomatic	[×] Tare balancing	[×] Combined zero/tare device
[×] Semi-automatic	[ ] Tare weighing	
[ ] Automatic zero-setting	[ ] Preset tare device	
[×] Initial zero-setting	[ ] Subtractive tare	
[×] Zero-tracking	[ ] Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	1	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Seals are used to protect this instrument.

#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable;

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

× Complete instrument ☐ Module (*) with the error fraction pi = ☐

Accuracy class: ☐ I ☐ II × III ☐ IIII

× Self- ☐ Semi-self- ☐ Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:	Tare device:	
☐ Nonautomatic	× Tare balancing	× Combined zero/tare device
× Semi-automatic	☐ Tare weighing	
☐ Automatic zero-setting	☐ Preset tare device	
× Initial zero-setting	☐ Subtractive tare	
× Zero-tracking	☐ Additive tare	

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: ☐ Built-in Connected ☐ Non present but connectable × No connection

Instrument submitted:	ACS-JJ(Tiger)	Load cell:	
Identification N°:	B219924740	Manufacturer:	
Software version:		Type:	
Connected equipment:		Capacity:	
		Number :	
Interfaces (number, nature):	1	Classification symbol:	
		Remarks:	
Evaluation period:			
Date of report:			
Observer:			

Seals are used to protect this instrument.

#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable;

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check that the instrument is level.

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 单自动衡器

× Complete instrument ☐ Module (*) with the error fraction pi = ☐

Accuracy class: ☐ I ☐ II × III ☐ IIII

× Self- ☐ Semi-self- ☐ Non-self-indicating

Min= 20 g
e= 1 g Max= 3 kg d= 1 g n= 3000
e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=
T= + 3 kg T= - 106 g
Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
☐ Nonautomatic
× Semi-automatic
☐ Automatic zero-setting
× Initial zero-setting
× Zero-tracking

Tare device:
× Tare balancing
☐ Tare weighing
☐ Preset tare device
☐ Subtractive tare
☐ Additive tare

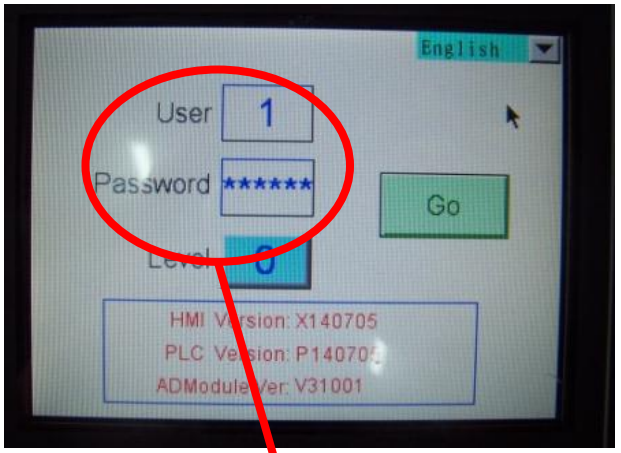
× Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: ☐ Built-in Connected ☐ Non present but connectable × No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:



Software and password is used.

#0 Visual inspection

Clause: OIML R 76-1 8.3.2

Document required: Information of Verification Form

Procedure:

1. Metrological characteristics, i.e.
   accuracy class
   Min
   Max
   e, d

2. Identification of software if applicable;

3. Identification of modules if applicable;

4. Prescribed inscriptions and positions for verification and control marks.

5. Where applicable, check wehter the instrument is level and clean

GENERAL INFORMATION CONCERNING THE TYPE

Application N°: B219924740
Type designation: ACS-JJ(Tiger)
Manufacturer: 梅特勒托利多（常州）测量技术有限公司
Applicant: 梅特勒托利多（常州）测量技术有限公司
Instrument category: 非自动衡器

[×] Complete instrument [ ] Module (*) with the error fraction pi = [ ]

Accuracy class: [ ] I [ ] II [×] III [ ] IIII

[×] Self- [ ] Semi-self- [ ] Non-self-indicating

Min= 20 g

e= 1 g Max= 3 kg d= 1 g n= 3000

e1= Max1= d1= n1=
e2= Max2= d2= n2=
e3= Max3= d3= n3=

T= + 3 kg T= - 106 g

Unom= 220 V Umin= / V Umax= / V f= 50 Hz Battery,Unom= / V

Zero-setting device:
[ ] Nonautomatic
[×] Semi-automatic
[ ] Automatic zero-setting
[×] Initial zero-setting
[×] Zero-tracking

Tare device:
[×] Tare balancing
[ ] Tare weighing
[ ] Preset tare device
[ ] Subtractive tare
[ ] Additive tare

[×] Combined zero/tare device

Initial zero-setting range = 20 % of Max Temperature range: -10~+40 ℃

Printer: [ ] Built-in Connected [ ] Non present but connectable [×] No connection

Instrument submitted: ACS-JJ(Tiger)
Identification N°: B219924740
Software version:
Connected equipment:
Interfaces (number, nature): 1
Evaluation period:
Date of report:
Observer:

Load cell:
Manufacturer:
Type:
Capacity:
Number :
Classification symbol:
Remarks:

#0 Visual inspection

Clause: OIML R 76-1 8.3.1

Document required: Information of Verification Form

Procedure:

6. Correct operation of all devices, e.g. zero-setting, tare, and calculating devices;
   Construction material and design, as far as they are of metrological relevance;

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases

1) Manufacturer's mark, or name written in full
2) Metrological markings

- Indication of accuracy class in the form of a Roman number in an oval (see footnote to 3.1.1):

  for special accuracy: 

  for high accuracy: 

  for medium accuracy: 

  for ordinary accuracy: 
- Maximum capacity in the form: Max …
- Minimum capacity in the form: Min …
- Verification scale interval in the form: e = ….

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases

1) Manufacturer's mark, or name written in full
2) Metrological markings

7.1.2 Compulsory if applicable

- Name or mark of manufacturer's agent for an imported instrument (C);
- Serial number (D);
- Identification mark on each unit of an instrument consisting of separate but associated units (E);
- Type approval mark (F);

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases

1) Manufacturer's mark, or name written in full
2) Metrological markings

7.1.2 Compulsory if applicable

- Name or mark of manufacturer's agent for an imported instrument (C);
- Serial number (D);
- Identification mark on each unit of an instrument consisting of separate but associated units (E);
- Type approval mark (F);

7.1.4 Presentation of descriptive markings

1) Either on a **plate** or **sticker** fixed permanently to the instrument;
Or on a non removable part of the instrument itself .

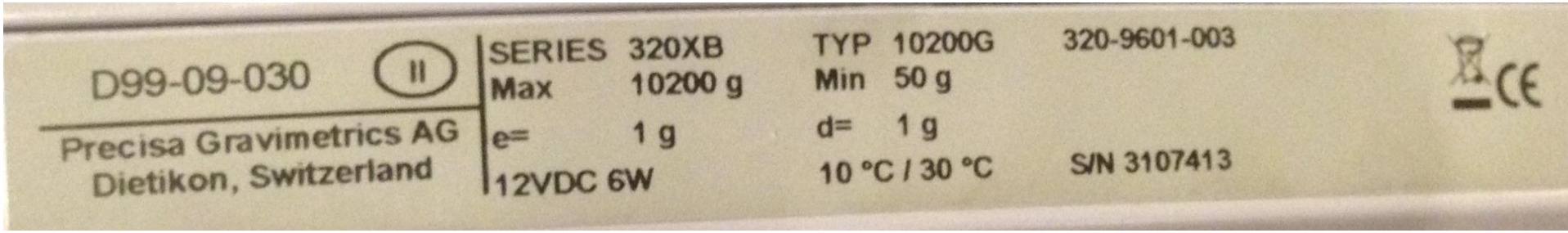
2) The markings shall be shown at least in one place and permanently either on the **display** or **near to the display**

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases

7.1.2 Compulsory if applicable



3.4 Auxiliary indicating devices

NOTE: Only instruments of classes I and II may be fitted with an auxiliary indicating device

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases
7.1.2 Compulsory if applicable

n = 12 kg/0.2 g = 60000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g	100	100 000	20 *e*
	0.1 g ≤ *e*	5 000	100 000	50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g	100	10 000	20 *e*
	5 g ≤ *e*	500	10 000	20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases
7.1.2 Compulsory if applicable

Max = 5100 g
d = 1 g
n = 5100 g/1 g = 5100

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases
7.1.2 Compulsory if applicable

Max = 15 kg
e = 5g
n = 15 kg/5 g = 3000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

#0 Visual inspection

Clause: OIML R 76-1 **7**

7 Marking of instruments and modules
7.1 Descriptive markings
7.1.1 Compulsory in all cases
7.1.2 Compulsory if applicable

Max = 10 kg
e = 0.005 kg
n = 10 kg/5 g = 2000

Accuracy class	Verification scale interval, *e*	Number of verification scale intervals, *n* = Max/*e*		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ *e**	50 000**	–	100 *e*
High (II)	0.001 g ≤ *e* ≤ 0.05 g 0.1 g ≤ *e*	100 5 000	100 000 100 000	20 *e* 50 *e*
Medium (III)	0.1 g ≤ *e* ≤ 2 g 5 g ≤ *e*	100 500	10 000 10 000	20 *e* 20 *e*
Ordinary (IIII)	5 g ≤ *e*	100	1 000	10 *e*

2.1 Evaluation of indication errors by the Changeover Method

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

A.4.1.6 Indication with a scale interval smaller than *e*

If an instrument with digital indication has a device for displaying the indication with a smaller scale interval (not greater than 1/5 *e*)

NOTE: 1. Digital indication

NTOE: 2. $d \leq 1/5\ e$ ⇨ $5\ d \leq e$ ⇨

$e = 10\ d$

$e = 5\ d$

No need to

$e = 2\ d$

$e = d$

Need use additional weight to determine the error

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Condition: For instruments with digital indication and without a device for displaying the indication with a smaller scale interval (≤ 1/5 *e*)

e= 1 g

ACS-JJ(Tiger) :
Max= 3 kg
Min= 20 g
e= 1 g
n=3000
Without smaller scale interval

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

1. At a certain load, *L*, observe the indication, *I*, and record.

L = 10 g

I = 10 g

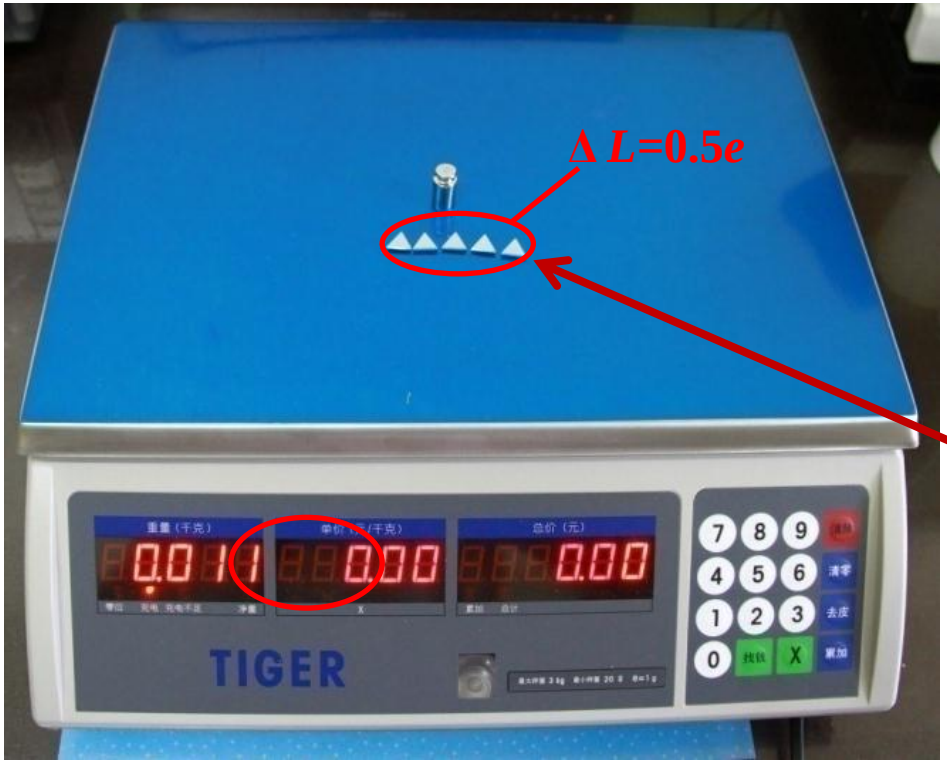
#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

2.Apply additional weights of say 0.1 *e* to the load receptor successively one at a time until the indication has changed unambiguously one scale interval (*I* + *e*).



Small Weight = 100 mg **0.1 *e***

Put one by one until the indication change to next scale interval

Here we add five 100 mg weights together, then it changes from 10 g to 11 g

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

3. Record the additional load as ΔL.

$$\Delta L = 0.5\ e = 0.5\ g$$

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

4. Use these values to calculate the error as per OIML R 76-1, Clause A.4.4.3.

$$e = 1\ g$$

$$E = I + 0.5e - \Delta L - L$$

$$E = 0.010 + 0.5 - 0.5 - 0.010 = 0\ \text{g}$$

If the changeover point at zero as calculated above was E_0 = **+** 0.1 g , the corrected error at 10 g is:

$$E_c = 0 - (+\ 0.1) = -\ 0.1\ \text{g}$$

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

5. Use E_c and mpe to calculate the error OIML R 76-1, Clause 3.5.1.

Values of maximum permissible errors on initial verification

$E_c = 0 - (+ 0.1) = - 0.1$ g

Maximum permissible errors on initial verification	For loads, m, expressed in verification scale intervals, e			
	Class I	Class II	Class III	Class IIII
± 0.5 e	$0 \le m \le 50\,000$	$0 \le m \le 5\,000$	$0 \le m \le 500$	$0 \le m \le 50$
± 1.0 e	$50\,000 < m \le 200\,000$	$5\,000 < m \le 20\,000$	$500 < m \le 2\,000$	$50 < m \le 200$
± 1.5 e	$200\,000 < m$	$20\,000 < m \le 100\,000$	$2\,000 < m \le 10\,000$	$200 < m \le 1\,000$

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

5. Use E_c and mpe to calculate the error OIML R 76-1, Clause 3.5.1.

Values of maximum permissible errors on initial verification

verification scale interval

Class III
$0 \le m \le 500$
$500 < m \le 2\,000$
$2\,000 < m \le 10\,000$

$0 \le m \le 500\ e$

$500\ e < m \le 2000\ e$

$2000\ e < m \le \text{Max}$

$e = 1\ g$

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

5. Use E_c and mpe to calculate the error OIML R 76-1, Clause 3.5.1.

Values of maximum permissible errors on initial verification

verification scale interval

Class III
$0 \le m \le 500$
$500 < m \le 2\,000$
$2\,000 < m \le 10\,000$

$0 \le m \le 500\ e$	$0 \le m \le 500$ g	mpe = ± 0.5 g
$500\ e < m \le 2000\ e$	500 g $< m \le 2000$ g	mpe = ± 1.0 g
2000 e $< m \le$ Max	2000 g $< m \le 3000$ g	mpe = ± 1.5 g

At the load of $L = 10\ g$, $E_c = 0 - (+\ 0.1) = -\ 0.1$ g

#1 Evaluation of indication errors by the Changeover Method

Clause: OIML R 76-1 Clauses A.4.4.3 and A.4.1.6

Equipment required: Equipment Under Test (EUT) ; Certified weights of 0.1 e to 10 e

Procedure:

5. Use E_c and mpe to calculate the error OIML R 76-1, Clause 3.5.1.

Values of maximum permissible errors on initial verification

verification scale interval

Class III
$0 \le m \le 500$
$500 < m \le 2\,000$
$2\,000 < m \le 10\,000$

$0 \le m \le 500\ e$	$0 \le m \le 500$ g	mpe = $\pm$0.5 g
$500\ e < m \le 2000\ e$	500 g < $m \le$ 2000 g	mpe = $\pm$1.0 g
2000 e < $m \le$ Max	2000 g < $m \le$ 3000 g	mpe = $\pm$1.5 g

At the load of L = 10 g, E_c = 0 – (+ 0.1) = - 0.1 g < mpe

It satisfies the requirement of mpe at 10 g.

2.2 Pre-load Test

2 Pre-load Test

Clause: OIML R 76-1 Clauses A.4.1.10

A.4.1.10 Preloading

Before each weighing test the instrument shall be pre-loaded once to Max or to Lim if this is defined

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure：

1. Apply a load equivalent to maximum capacity, Max.
2. Remove the weights in a similar manner.
3. Zero the instrument.

2.3 Accuracy of zero-setting

3 Accuracy of zero-setting and tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

4.5.2 Accuracy

After zero setting the effect of zero deviation on the result of the weighing shall be not more than ± 0.25 *e*.

4.6.3 Accuracy

A tare device shall permit setting the indication to zero with an accuracy better than:

- ± 0.25 *e* for electronic instruments and any instrument with analog indication; or

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

3 Accuracy of zero-setting

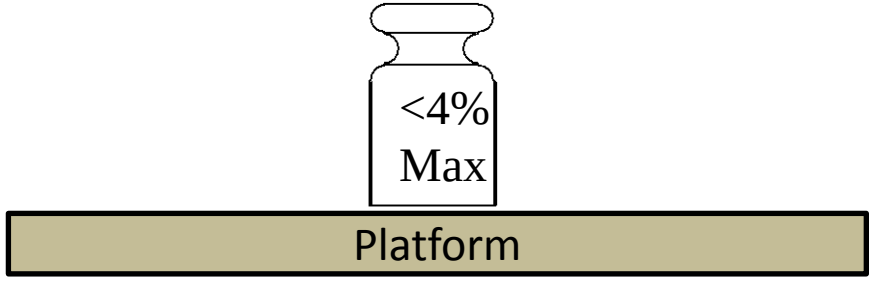
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Non-automatic and semi-automatic zero-setting**

1. Loading the instrument to an indication as close as possible to a changeover point

Place a zero-load less than 4% Max



3 Accuracy of zero-setting

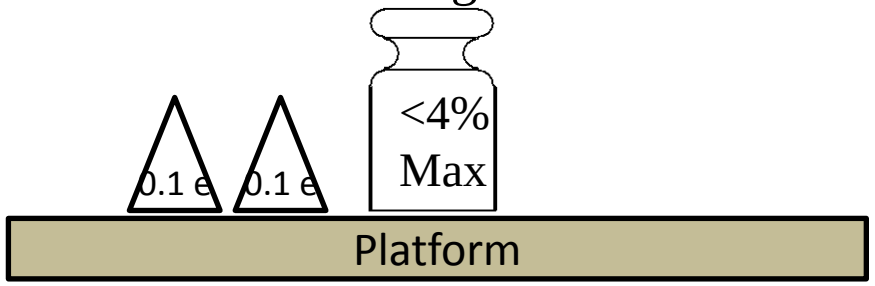
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure:

For **Non-automatic and semi-automatic zero-setting**

1. Loading the instrument to an indication as close as possible to a changeover point

   Add additional weights of 0.1 *e* until the indication changed from 0 to 1*e*



NOTE: As close as possible to changeover point (4% Max)

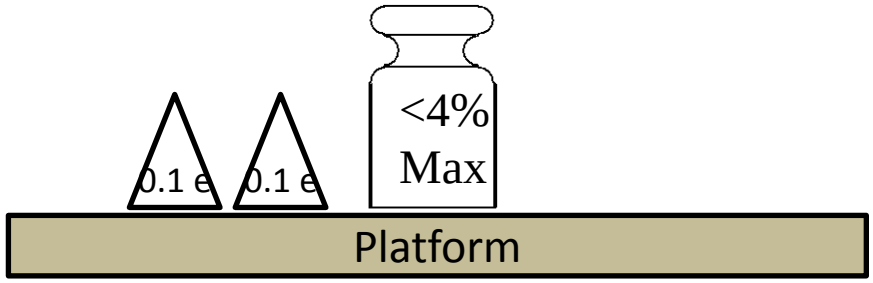
3 Accuracy of zero-setting

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Non-automatic and semi-automatic zero-setting**

2. Initiating the zero-setting device
(set the instrument to zero）



PRESS the zero-button

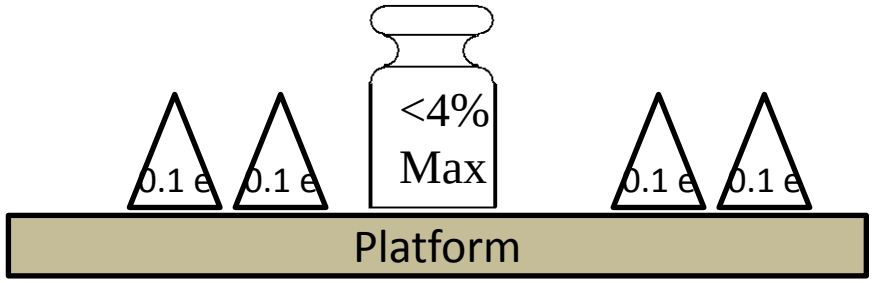
3 Accuracy of zero-setting

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Non-automatic and semi-automatic zero-setting**

3. Add additional load 0.1 *e* at which the indication changes from **zero** to **one** scale
4. The error at zero is calculated



4.5.2 Accuracy

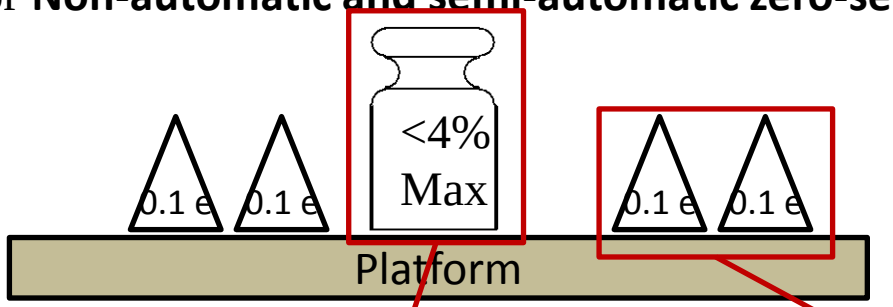
After zero setting the effect of zero deviation on the result of the weighing shall be not more than ± 0.25 *e*.

3 Accuracy of zero-setting

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Non-automatic and semi-automatic zero-setting**



$E = I + 0.5e - \Delta L - L$

$E = 0 + 0.5\,e - 0.2\,e - 0$

$= 0.3\,e$

In the case of zero-setting or tare balancing:

Zero-setting		$E_0 = I_0 + ½\,e - \Delta L - L_0$			
No.*	Zero-load (< 4 % of Max)	Load, L_0** (10 e)	Indication, I_0 after zero-setting	Add. load, ΔL	Error, E_0
1			**0**	**0. 2 *e***	**0. 3 *e***
2					
3					
4					
5					

3 Accuracy of zero-setting

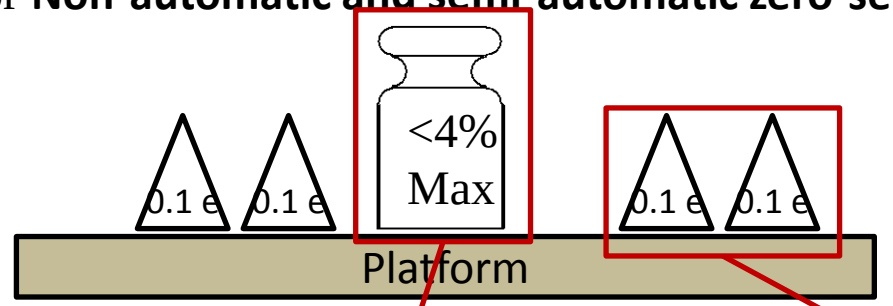
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure:

Question : Is this zero-setting Error satisfy the R76?

Answer: NO

For **Non-automatic and semi-automatic zero-setting**



$E = I + 0.5e - \Delta L - L$

$E = 0 + 0.5\,e - 0.2\,e - 0$

$= 0.3\,e$

In the case of zero-setting or tare balancing:

4.5.2 Accuracy

After zero setting the effect of zero deviation on the result of the weighing shall be not more than ± 0.25 *e*.

2					
3					
4					
5					

3 Accuracy of zero-setting

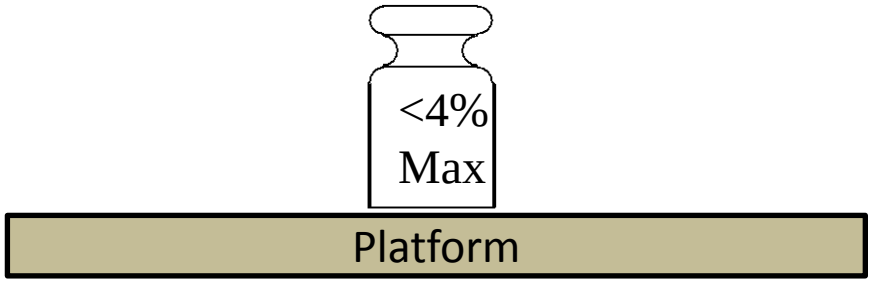
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

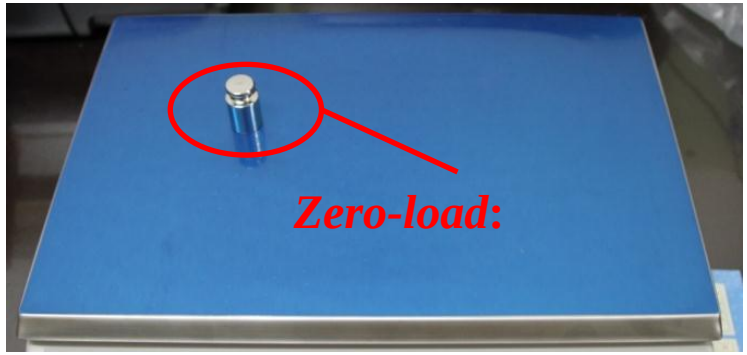
Procedure：

For **Automatic zero-setting or zero-tracking**

1. Loading the instrument to an indication as close as possible to a changeover point

Place a zero-load less than 4% Max





3 Accuracy of zero-setting

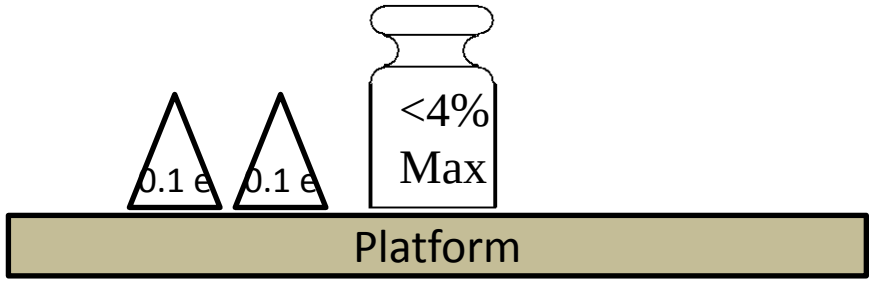
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Automatic zero-setting or zero-tracking**

1. Loading the instrument to an indication as close as possible to a changeover point

Add additional weights of 0.1 *e* one at a time until the indication has changed from 0 to 1e



NOTE: as close as possible to changeover point (4% Max)

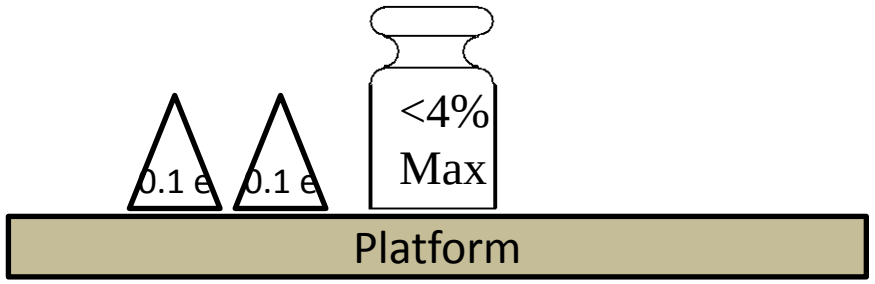
3 Accuracy of zero-setting

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Automatic zero-setting or zero-tracking**

2. Initiating the zero-setting device
   (set the instrument to zero）



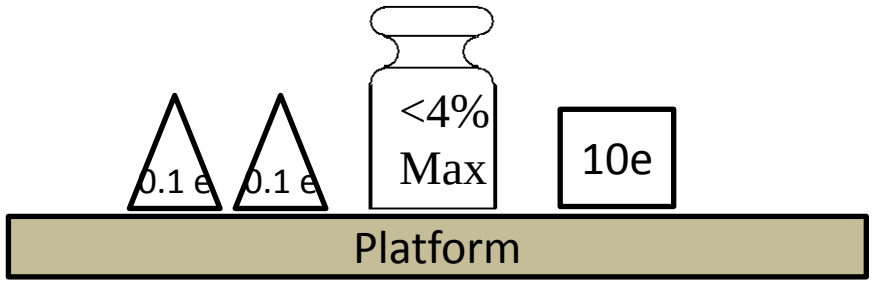
3 Accuracy of zero-setting

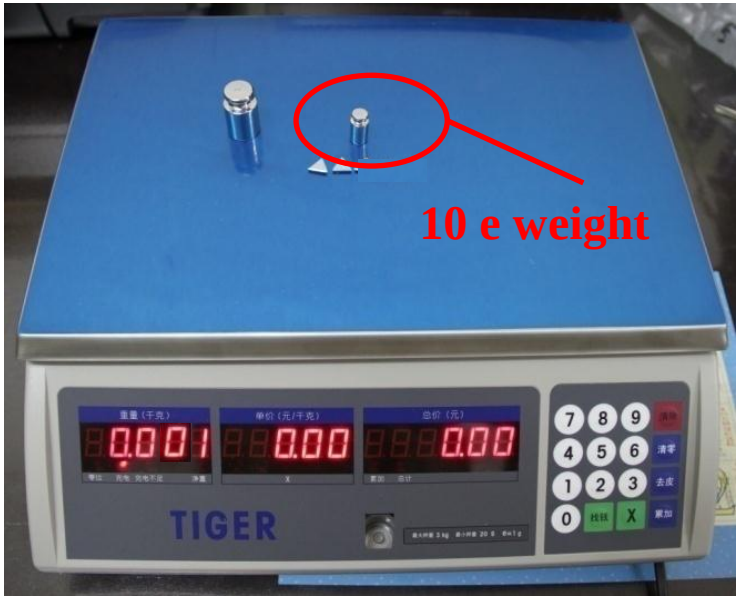
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Automatic zero-setting or zero-tracking**

3. Add 10 *e* weights





The indication is brought out of the automatic range

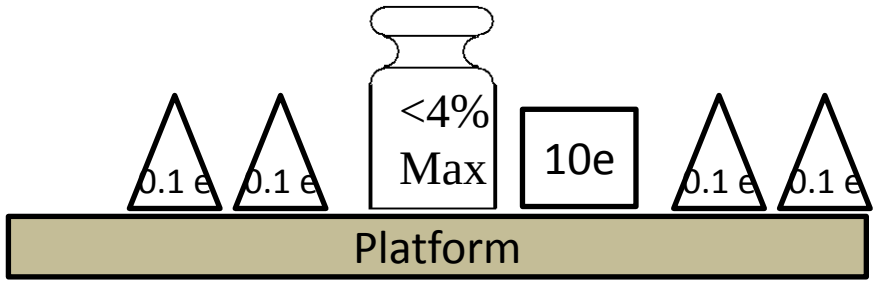
3 Accuracy of zero-setting

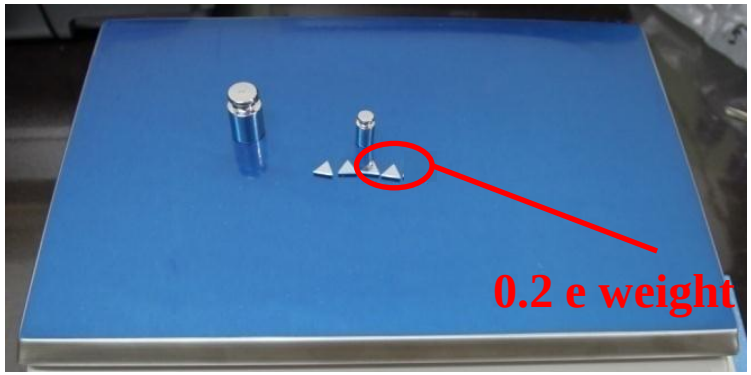
Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Automatic zero-setting or zero-tracking**

4. Add additional load 0.1 *e* at which the indication changes from **one** scale interval to the **next**.
5. The error is calculated





4.5.2 Accuracy

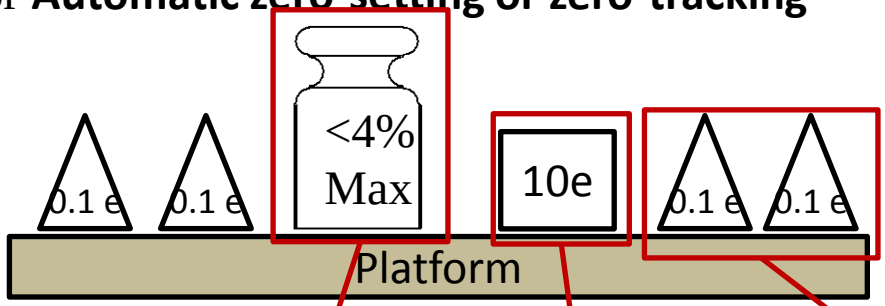
After zero setting the effect of zero deviation on the result of the weighing shall be not more than ± 0.25 *e*.

3 Accuracy of zero-setting

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

For **Automatic zero-setting or zero-tracking**



$E = I + 0.5e - \Delta L - L$

$E = 10e + 0.5\,e - 0.2\,e - 10e$
$= 0.3\,e$

In the case of zero-setting or tare balancing:

Zero-setting			$E_0 = I_0 + ½\,e - \Delta L - L_0$		
No.*	Zero-load (< 4 % of Max)	Load, L_0** (10 e)	Indication, I_0 after zero-setting	Add. load, ΔL	Error, E_0
1			**0**	**0. 2 *e***	**0. 3 *e***
2		**10 *e***			
3					
4					
5					

2.3 Accuracy of tare device

3 Accuracy of tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

1.Place a tare-load about 30% Max.

3 Accuracy of tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

2. Then set the instrument to zero.

3 Accuracy of tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

3. Take a zero reading at either zero or 10 *e*.

Equipped with automatic zero-setting or zero-tracking device

3 Accuracy of tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

4. Find the change-over point and record ΔL.

3 Accuracy of tare device

Clause: OIML R 76-1 Clauses 4.5.2, 4.6.3, A.4.2.3 and A4.6.2

Procedure：

1.Place a tare-load about 30% Max.

2. Then set the instrument to zero.

3. Take a zero reading at either zero or 10 *e*.

4. Find the change-over point and record ΔL.

***Tare load:* 30% Max**

$E = I + 0.5e - \Delta L - L$

$E = 10e + 0.5\,e - 0.5\,e - 10e$

$= 0\,e$

Tare-balancing		$E_0 = I_0 + ½\ e - \Delta L - L_0$			
N° (*)	Tare-load (g) (about 30% of Max) (0)	Load L_0 (**) (10 e) (g) (0)	Indication I_0 (kg) after tare balancing (0)	Add. load ΔL (g) (0)	Error E_0 (g) (0)
1	1 kg	10 *e*	10 *e*	0.5 *e*	0. 0 *e*
2					
3					
4					
5					

3 Accuracy of zero-setting and tare device

In the case of zero-setting or tare balancing

Zero-setting $E_0 = I_0 + ½\ e - \Delta L - L_0$

N° (*)	Zero-load (g) (< 4 % of Max)	Load L_0 (**) (10 e) (g)	Indication I_0 (kg) after zero-setting	Add. load ΔL (g)	Error E_0 (g)
1	50	10	0.010	0.5	0.0
2			0.010	0.6	-0.1
3			0.010	0.4	0.1
4			0.010	0.5	0.0
5			0.010	0.5	0.0

Tare-balancing $E_0 = I_0 + ½\ e - \Delta L - L_0$

N° (*)	Tare-load (g) (about 30% of Max)	Load L_0 (**) (10 e) (g)	Indication I_0 (kg) after tare balancing	Add. load ΔL (g)	Error E_0 (g)
1	1000	10	0.010	0.5	0.0
2			0.010	0.5	0.0
3			0.010	0.5	0.0
4			0.010	0.6	0.1
5			0.010	0.5	0.0

(*) Apply the zero or tare load, disturb the equilibrium and immediately release zero-setting or tare, apply L_0 if necessary and calculate the error acc. to A.4.2.3/A.4.6.2 of R76-1. Perform this 5 times.

(**) L_0 (10 e) shall be applied only if an automatic zero-setting or zero-tracking device is in operation. L_0 shall be applied after releasing tare or zero-setting, immediately after zero is displayed the first time.

Check if $E_0 \leqslant 0.25$ e

[×] Passed [ ] Failed

Remarks:

A.4.12 Test for the stability of equilibrium (4.4.2)

In the case of zero-setting or tare balancing, check the accuracy according to A.4.2.3/A.4.6.2. Perform the test **5** times.

2.4 Weighing Test

#4 Weighing Test

Clause: OIML R 76-1, Clause A.4.4

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；
Certified weights of 0.1 e to 10 e

Procedure：

1. Determine at least **five** test loads, *L*, to be used in this test:

Including Max and Min (Min only if Min ≥ 100 mg)

Values at or near those at which the maximum permissible error (mpe) changes.

Record these test loads in column *L* of the verificationsheet and the appropriate mpe in the last column.

#4 Weighing Test

Examples: ACS-JJ(Tiger) is a class  Non-automatic weighing instrument with digital indication.

Max= 3 kg , Min= 20 g , *e*= 1 g , *n*=3000

The test loads should be included as follows:

Load near the zero: 10 *e* =10 g

Min: 20 *e*=20 g

mpe change point: 500e= 500 g

2000e =2000 g

Max: 3000 *e*=3000 g

#4 Weighing Test

Examples: ACS-JJ(Tiger) is a class Ⅲ Non-automatic weighing instrument with digital indication.

Max= 3 kg , Min= 20 g , *e*= 1 g , *n*=3000

The test loads should be included as follows:

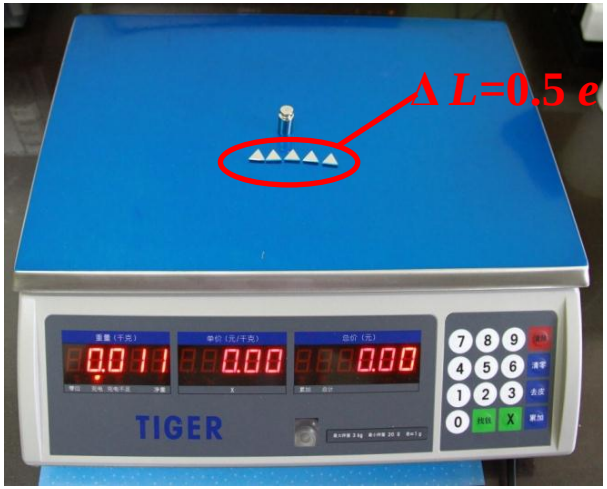
Load L (g)	Indication I (kg) ↓	Indication I (kg) ↑	Add. Load ΔL (g) ↓	Add. Load ΔL (g) ↑	Error E (g) ↓	Error E (g) ↑	Corrected error E_c (g) ↓	Corrected error E_c (g) ↑	mpe (± g)
10	(*) 0.010	0.010	0.5	0.5	(*) 0.0	0.0	/	0.0	0.5
20	0.020	0.020	0.5	0.5	0.0	0.0	0.0	0.0	0.5
100	0.100	0.100	0.5	0.5	0.0	0.0	0.0	0.0	0.5
200	0.200	0.200	0.4	0.5	0.1	0.0	0.1	0.0	0.5
500	0.500	0.500	0.5	0.6	0.0	-0.1	0.0	-0.1	0.5
1000	1.000	1.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
1500	1.500	1.500	0.6	0.5	-0.1	0.0	-0.1	0.0	1.0
2000	2.000	2.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
2500	2.500	2.500	0.5	0.5	0.0	0.0	0.0	0.0	1.5
3000	3.000	/	0.5	/	0.0	/	0.0	/	1.5

Load near the zero → 10
Min → 20
mpe change point → 500
mpe change point → 2000
Max → 3000

#4 Weighing Test

2. Find the error at zero or near zero.

Using 10 *e* load as the zero point to take the instrument out of zero tracking range.



Add additional load 0.1 *e* at which the indication changes from one scale interval to the next.

#4 Weighing Test

3. Apply the test loads, increasing from minimum to maximum.

Example: Test in the first mpe change point

#4 Weighing Test

4. At each test load record the load, *L*, the indication, *I*, find the changeover point and record Δ*L*.

1 WEIGHING PERFORMANCE (A.4.4) (A.5.3.1)
(Calculation of the error)

Record the time and ambient temperature.

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Date:	2011.02.15
Observer:	Zhong Ruilin
Verification scale interval e:	1 g
Resolution during test (smaller than e):	/

	At start	At max	At end	
Temp:	23.0		23.7	℃
Rel. h:	33.3			%
Time:	9:05	9:13	9:20	
Bar. press (only class I)	/		/	hPa

Record the time when the maximum load has been applied.

Automatic zero-setting and zero-tracking device is:
☐ Non-existent ☐ Not in operation ☒ Out of working range ☐ In operation

Initial zero-setting > 20% of Max: ☐ Yes ☒ No (see R 76-1, A.4.4.2)

E = I + ½ e - ΔL -L
$E_c = E - E_0$ with E_0 = error calculated at or near zero (*)

Load L (g)	Indication I (kg) ↓	Indication I (kg) ↑	Add. Load ΔL (g) ↓	Add. Load ΔL (g) ↑	Error E (g) ↓	Error E (g) ↑	Corrected error E_c (g) ↓	Corrected error E_c (g) ↑	mpe (± g)
10	(*) 0.010	0.010	0.5	0.5	(*) 0.0	0.0	/	0.0	0.5
20	0.020	0.020	0.5	0.5	0.0	0.0	0.0	0.0	0.5
100	0.100	0.100	0.5	0.5	0.0	0.0	0.0	0.0	0.5
200	0.200	0.200	0.4	0.5	0.1	0.0	0.1	0.0	0.5
500	0.500	0.500	0.5	0.6	0.0	-0.1	0.0	-0.1	0.5
1000	1.000	1.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
1500	1.500	1.500	0.6	0.5	-0.1	0.0	-0.1	0.0	1.0
2000	2.000	2.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
2500	2.500	2.500	0.5	0.5	0.0	0.0	0.0	0.0	1.5
3000	3.000	/	0.5	/	0.0	/	0.0	/	1.5

#4 Weighing Test

5. Remove the test loads, decreasing from maximum to zero load.

1 WEIGHING PERFORMANCE (A.4.4) (A.5.3.1)
(Calculation of the error)

Application N°:	**B219924740**
Type designation:	**ACS-JJ(Tiger)**
Date:	**2011.02.15**
Observer:	**Zhong Ruilin**
Verification scale interval e:	**1 g**
Resolution during test (smaller than e):	**/**

	At start	At max	At end	
Temp:	23.0		23.7	℃
Rel. h:	33.3			%
Time:	9:05	9:13	9:20	
Bar. press (only class I)	/		/	hPa

Automatic zero-setting and zero-tracking device is:

☐ Non-existent ☐ Not in operation ☒ Out of working range ☐ In operation

Initial zero-setting > 20% of Max: ☐ Yes ☒ No (see R 76-1, A.4.4.2)

E = I + ½ e - ΔL -L
$E_c = E - E_0$ with E_0 = error calculated at or near zero (*)

Load L (g)	Indication I (kg) ↓	Indication I (kg) ↑	Add. Load ΔL (g) ↓	Add. Load ΔL (g) ↑	Error E (g) ↓	Error E (g) ↑	Corrected error E_c (g) ↓	Corrected error E_c (g) ↑	mpe (± g)
10	(*) 0.010	0.010	0.5	0.5	(*) 0.0	0.0	/	0.0	0.5
20	0.020	0.020	0.5	0.5	0.0	0.0	0.0	0.0	0.5
100	0.100	0.100	0.5	0.5	0.0	0.0	0.0	0.0	0.5
200	0.200	0.200	0.4	0.5	0.1	0.0	0.1	0.0	0.5
500	0.500	0.500	0.5	0.6	0.0	-0.1	0.0	-0.1	0.5
1000	1.000	1.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
1500	1.500	1.500	0.6	0.5	-0.1	0.0	-0.1	0.0	1.0
2000	2.000	2.000	0.5	0.5	0.0	0.0	0.0	0.0	1.0
2500	2.500	2.500	0.5	0.5	0.0	0.0	0.0	0.0	1.5
3000	3.000	/	0.5	/	0.0	/	0.0	/	1.5

#4 Weighing Test

6. At each test load record the load, L, the indication, I, find the changeover point and record ΔL.

7. Calculate and record the error E where $E = I + 0.5\ e - \Delta L - L$ and the corrected error E_C where $E_C = E - E_0$.

$E = 3000 + 0.5 - 0.5 - 3000 = 0$ g

#4 Weighing Test

Test load:

Load near the zero → 10*e* 10 g

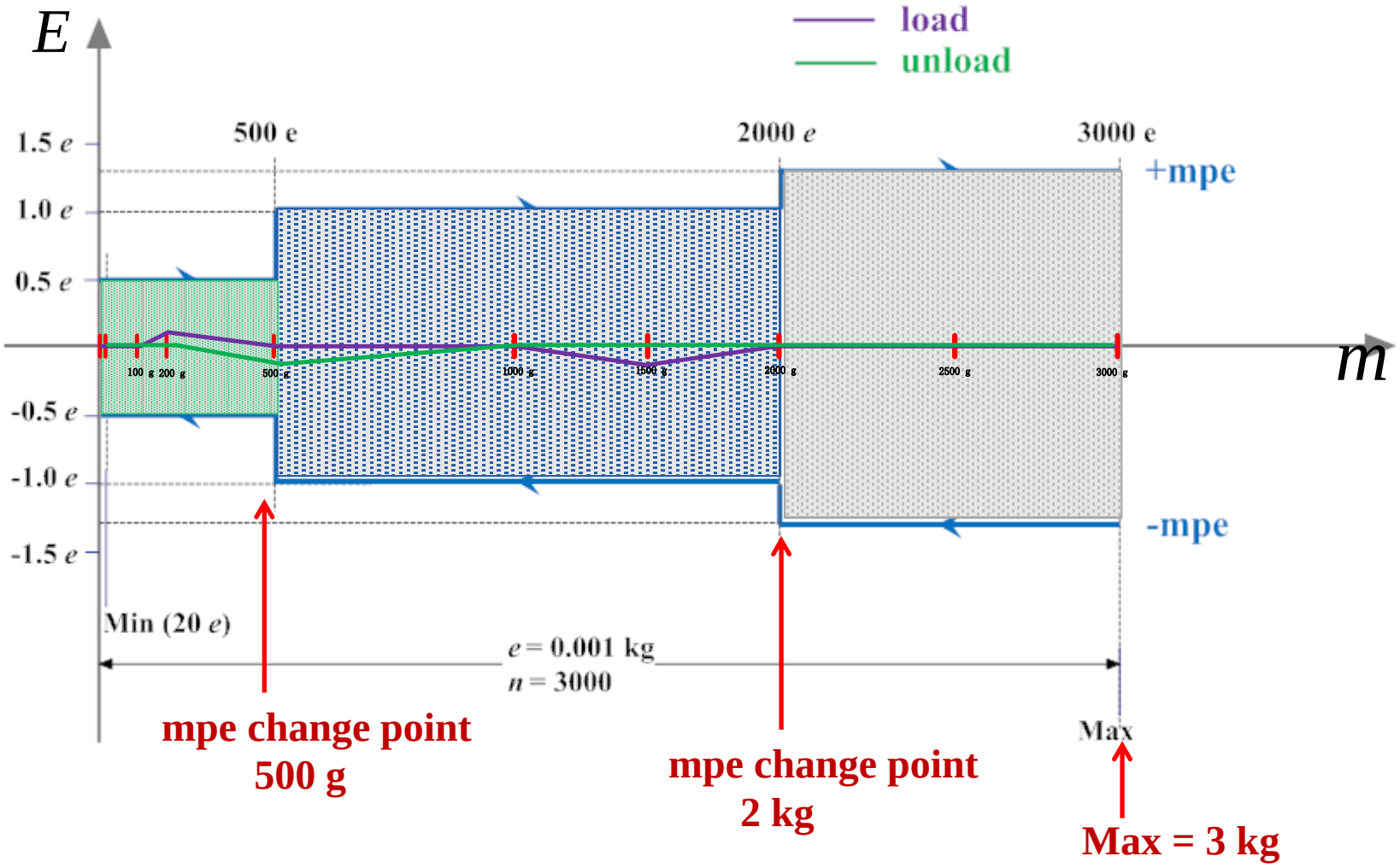
Min → 20*e* 20 g

mpe change point → 500*e* 500 g

mpe change point → 2000*e* 2000 g

Max → 3000*e* 3000 g

MPE for ACS-JJ



#4 Weighing Test

Note1:

A.4.4.2 Supplementary weighing test (4.5.1)

For instruments with an initial zero-setting device with a range greater than 20 % of Max, a supplementary weighing test shall be performed using the upper limit of the range as zero point.

If the instrument has an initial zero-setting range $>$ 20% a supplementary weighing test is required.

Note2:

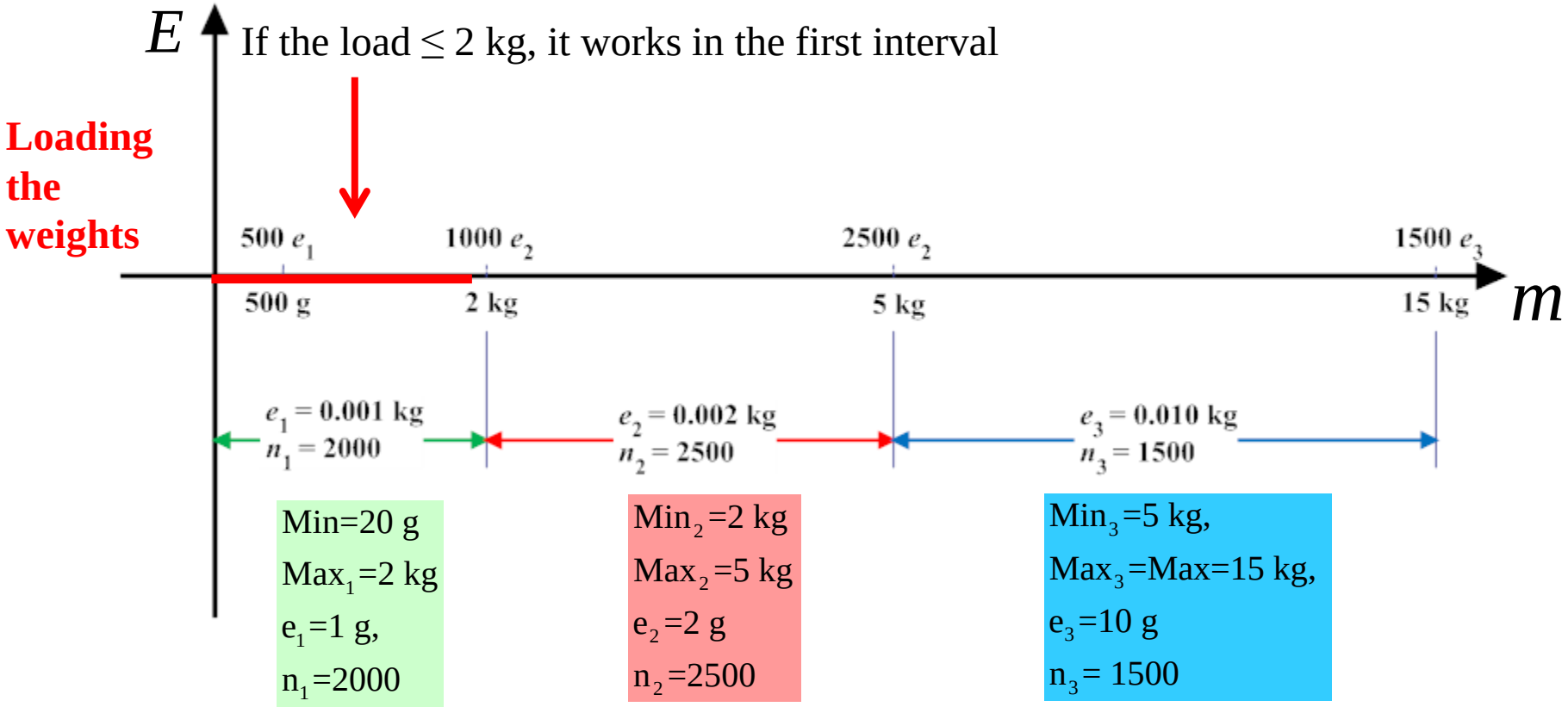
A.4.4.1 Weighing test

1) At least 5 loads shall be selected.
2) Test loads selected shall include Max and Min (**Min only if Min ≥ 100 mg**)
3) Values at or near those at which the maximum permissible error (mpe) changes.

2.4.1 Multi-interval instrument

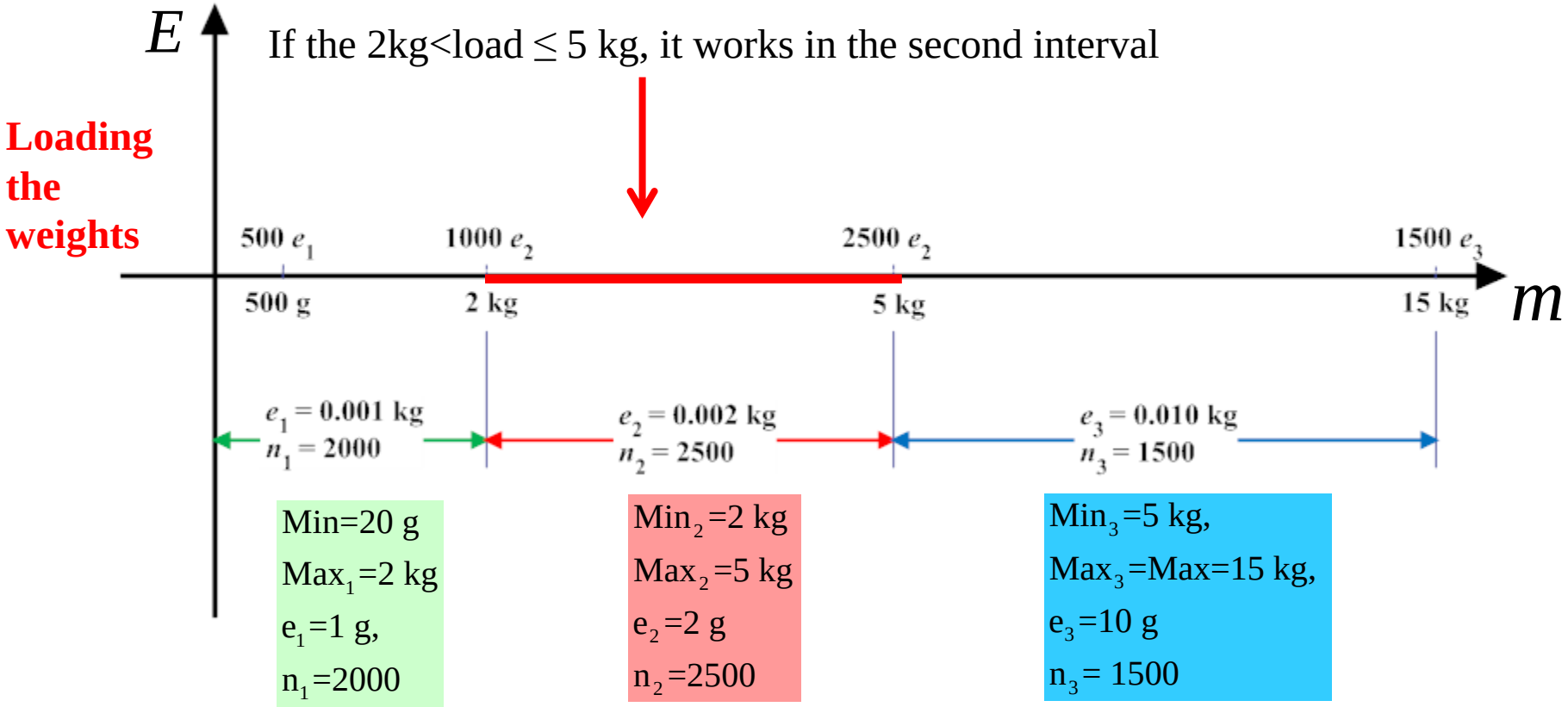
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



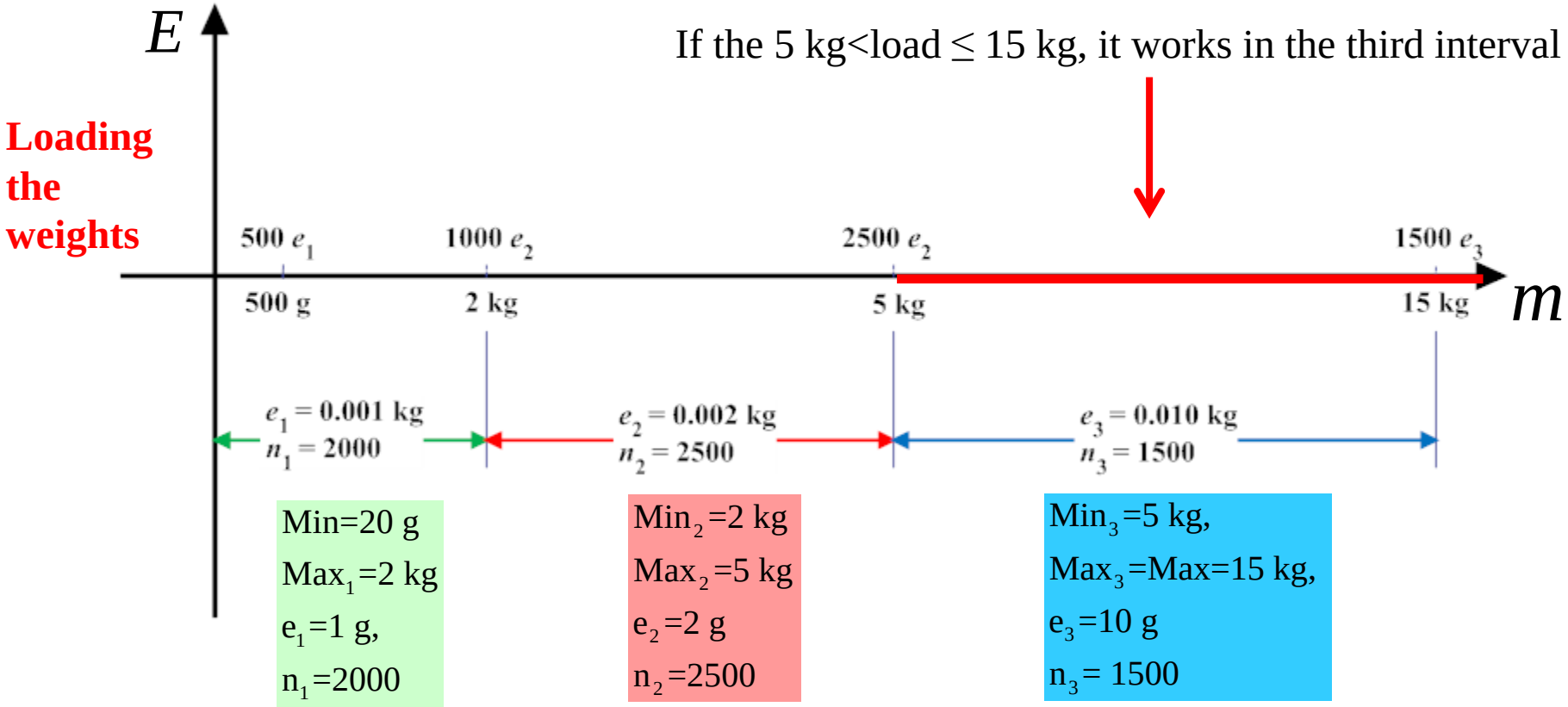
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



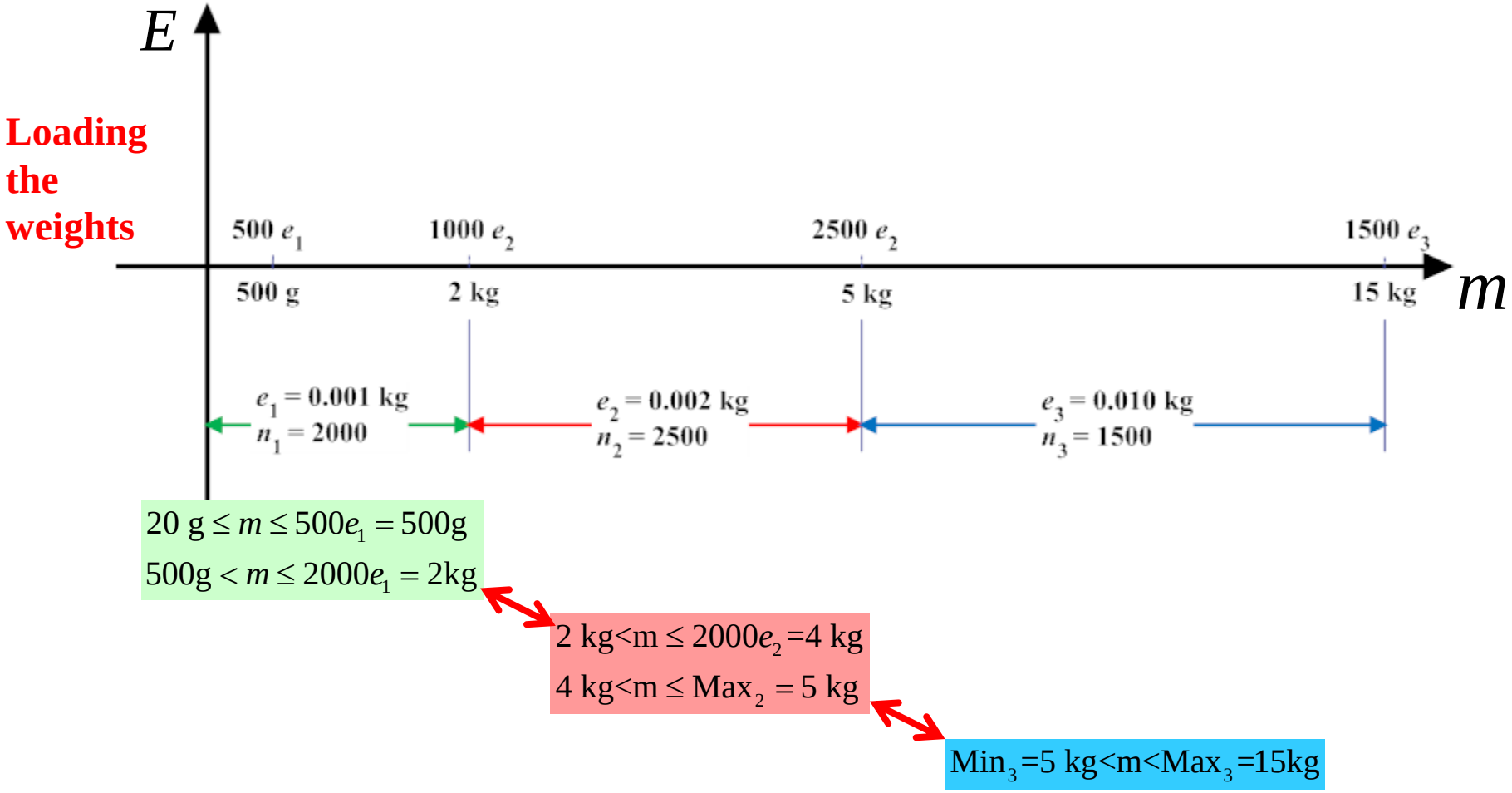
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



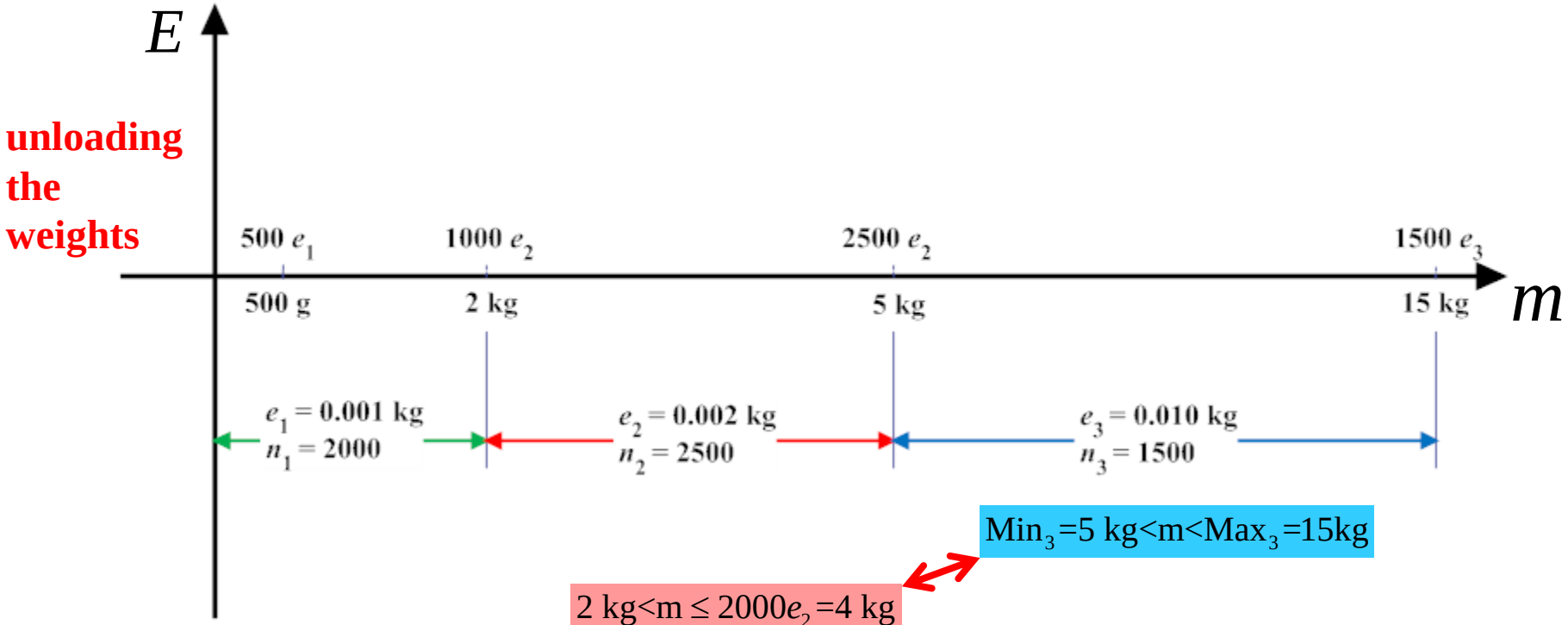
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



$\text{Min}_3 = 5\text{ kg} < m < \text{Max}_3 = 15\text{kg}$

$2\text{ kg} < m \le 2000e_2 = 4\text{ kg}$

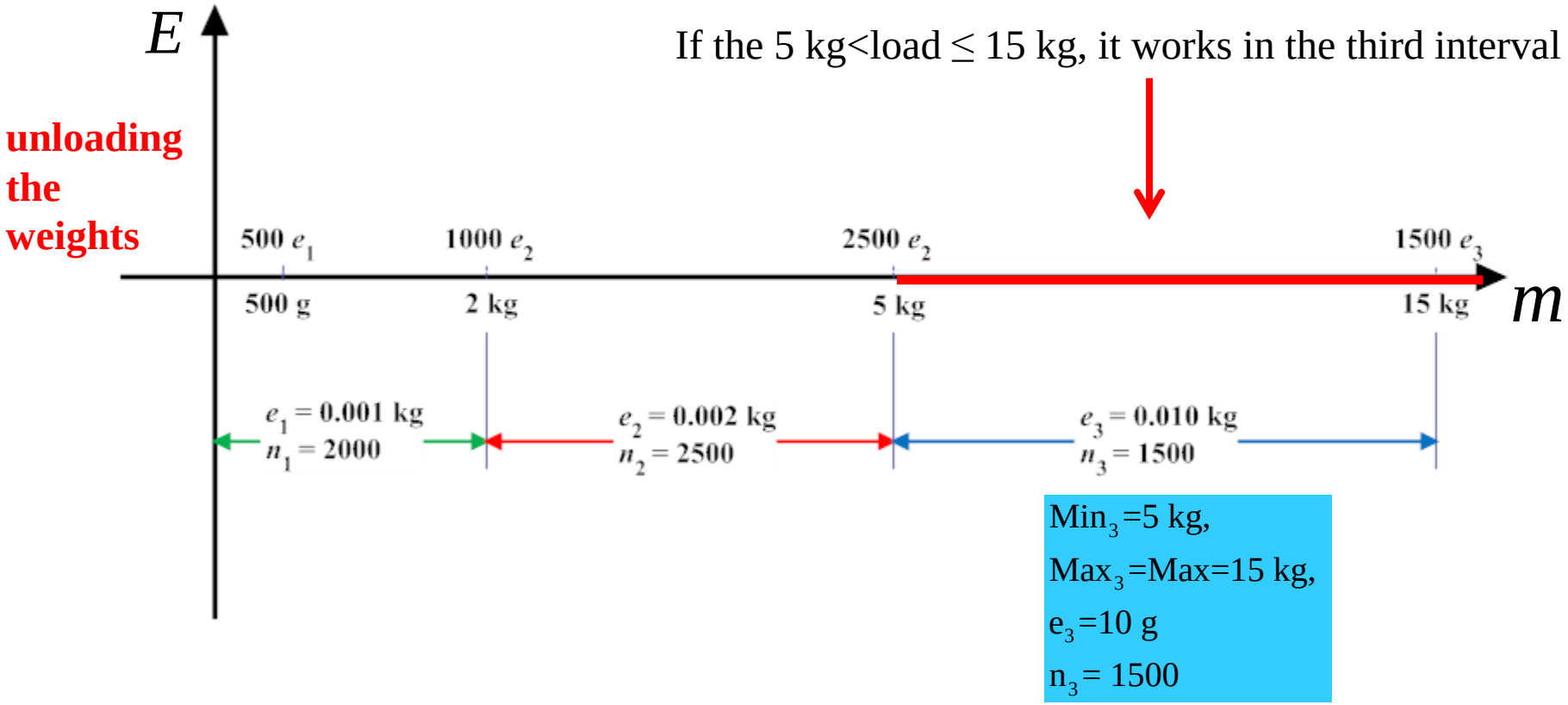
$4\text{ kg} < m \le \text{Max}_2 = 5\text{ kg}$

$20\text{ g} \le m \le 500e_1 = 500\text{g}$

$500\text{g} < m \le 2000e_1 = 2\text{kg}$

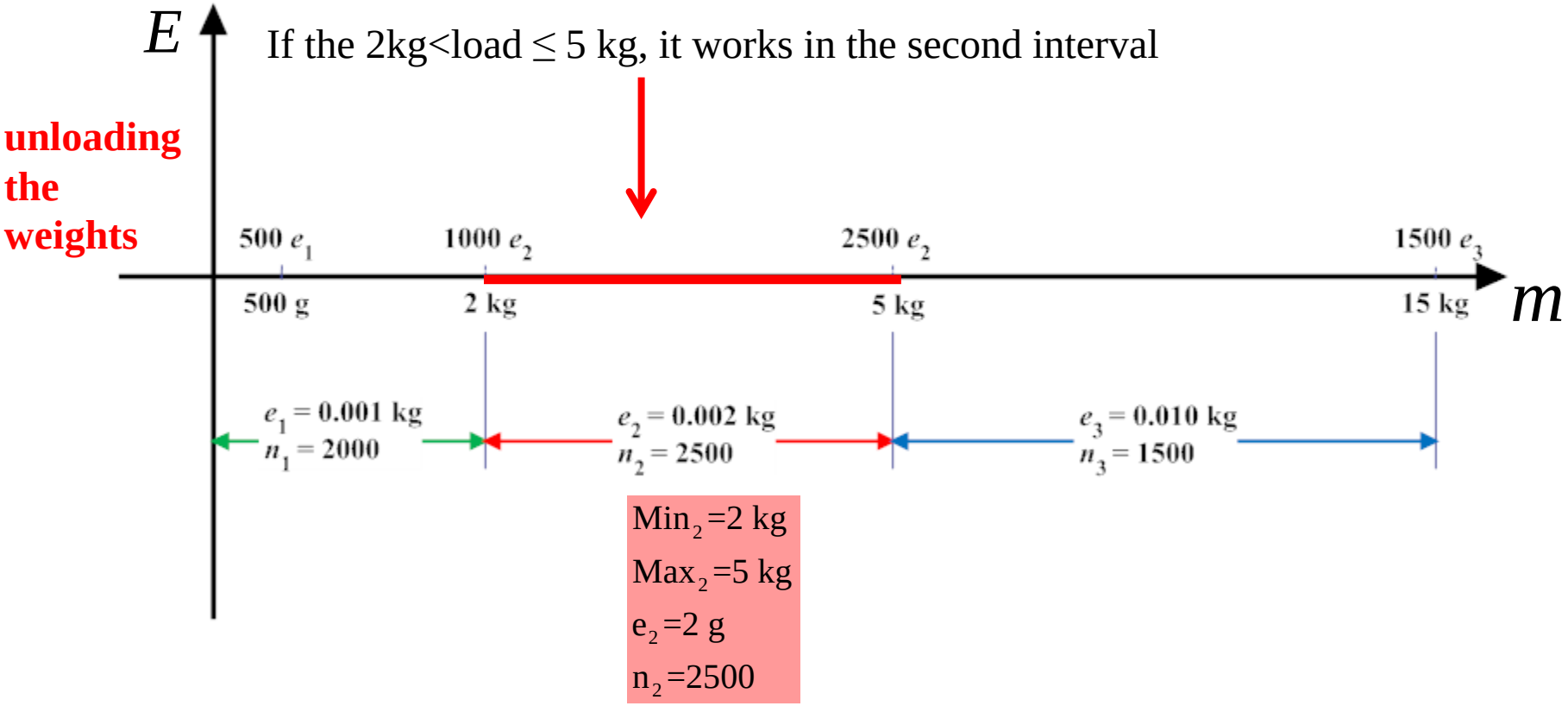
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



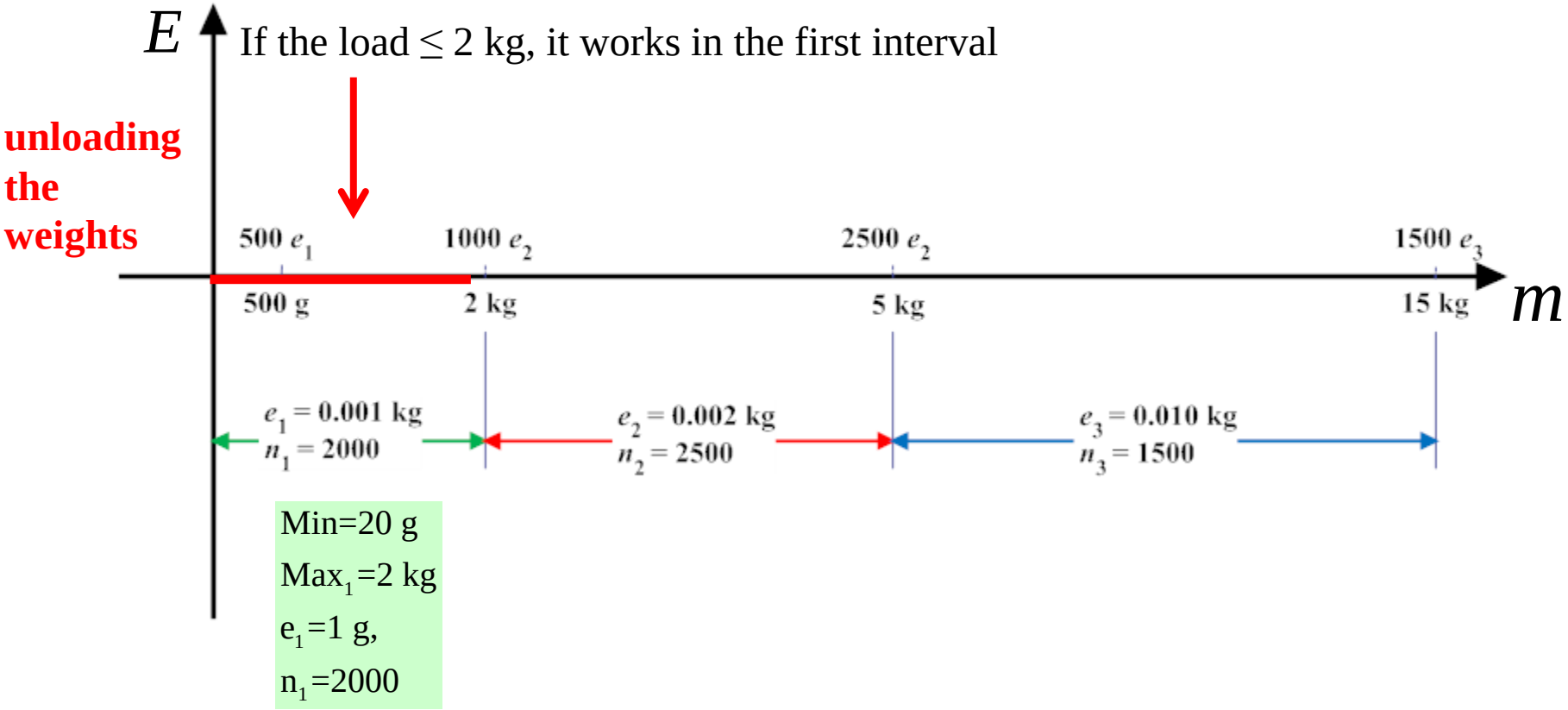
Multi-interval instrument

T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.

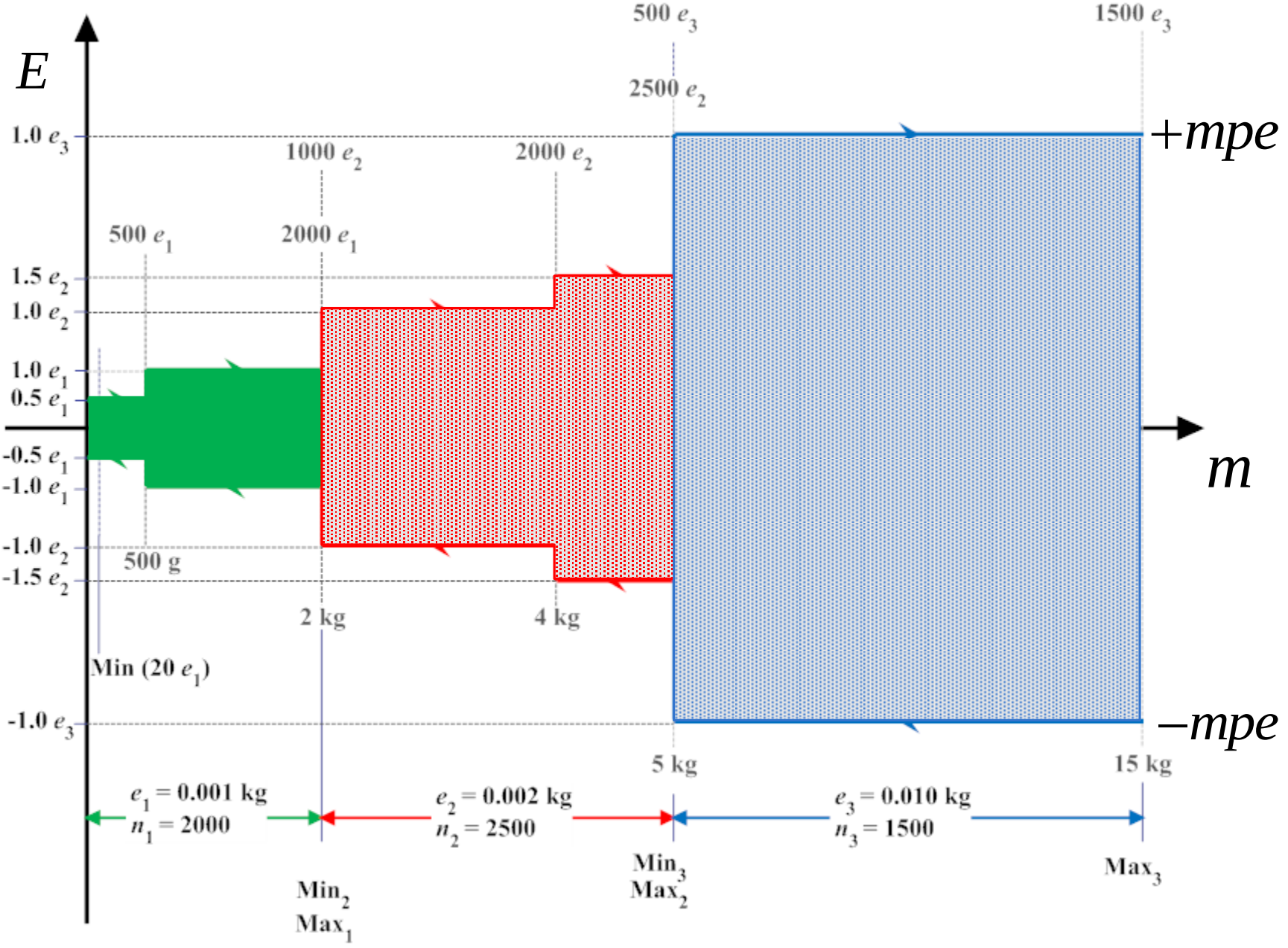


Multi-interval instrument

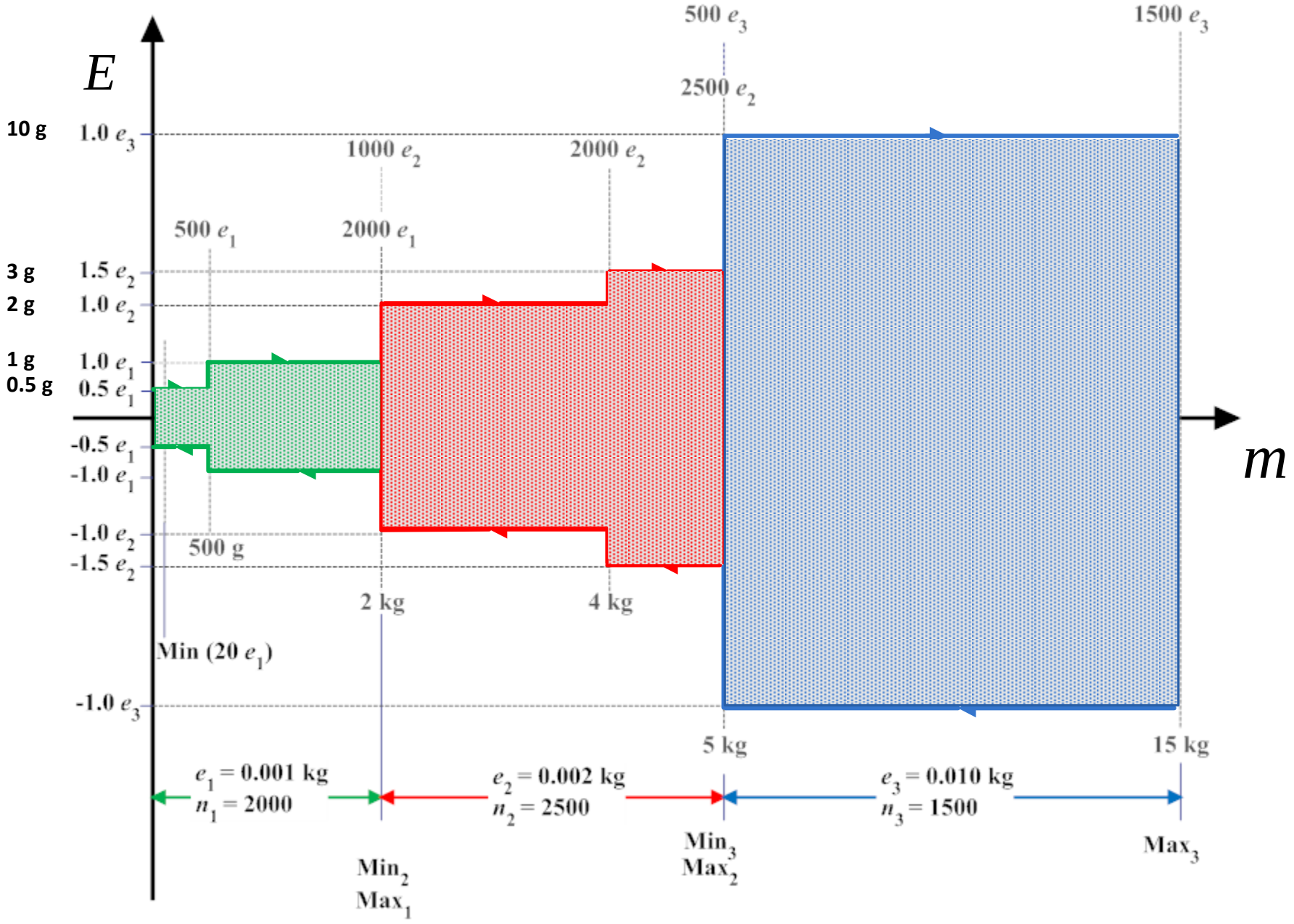
T.3.2.6 Instrument having one weighing range which is divided into partial weighing ranges each with different scale intervals, with the partial weighing range determined automatically according to the load applied, both on increasing and decreasing loads.



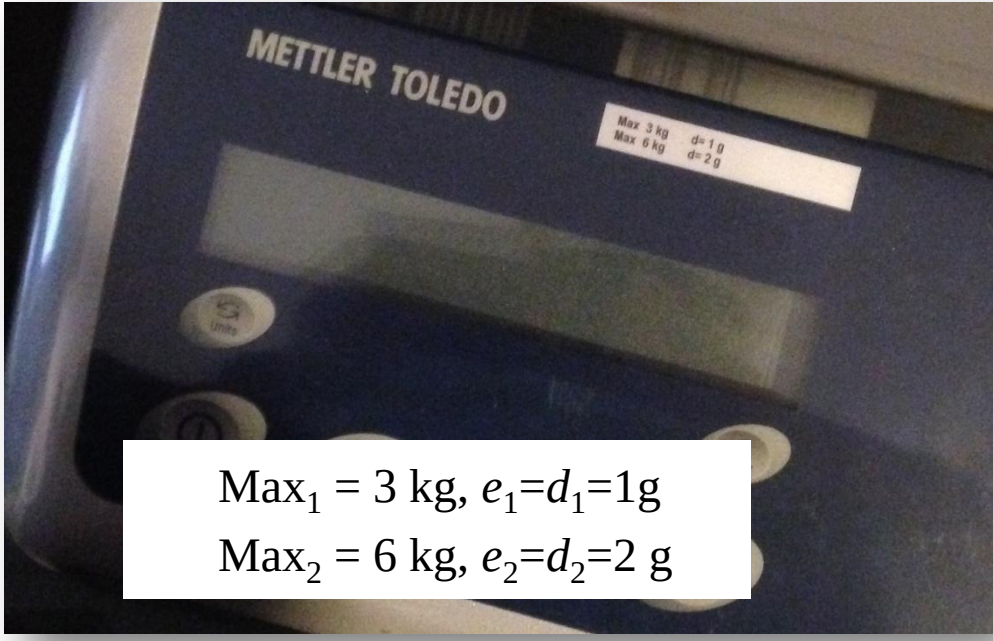
Multi-interval instrument



Multi-interval instrument



Example 1 :



Max_1 = 3 kg, e_1=d_1=1g

Max_2 = 6 kg, e_2=d_2=2 g

For the first interval:

n_1 = 3000 g / 1 g = 3000 Class III

Min_1 = 20 e_1 = 20 g

20 g $\leq m \leq$ 500 e_1 = 500 g mpe= $\pm$0.5 e_1

500 g < $m \leq$ 2000 e_1 = 2 kg mpe= $\pm$1.0 e_1

2000 g < $m \leq Max_1$ = 3 k g mpe= $\pm$1.5 e_1

For the second interval:

n_2 = 6000 g / 2 g = 3000 Class III

3 kg < $m \leq$ 2000 e_2 = 4 kg mpe= $\pm$1.0 e_2

4 kg < $m \leq Max_2$ = 6 k g mpe= $\pm$1.5 e_2

Example 1 :

For the first interval:

n_1 = 3000 g / 1 g = 3000 Class III

$\text{Min}_1 = 20\ e_1 = 20$ g

$20\text{ g} \le m \le 500\ e_1 = 500\text{ g}$ mpe= $\pm 0.5\ e_1$

$500\text{ g} < m \le 2000\ e_1 = 2\text{ kg}$ mpe= $\pm 1.0\ e_1$

$2000\text{ g} < m \le \text{Max}_1 = 3\text{ k g}$ mpe= $\pm 1.5\ e_1$

For the second interval:

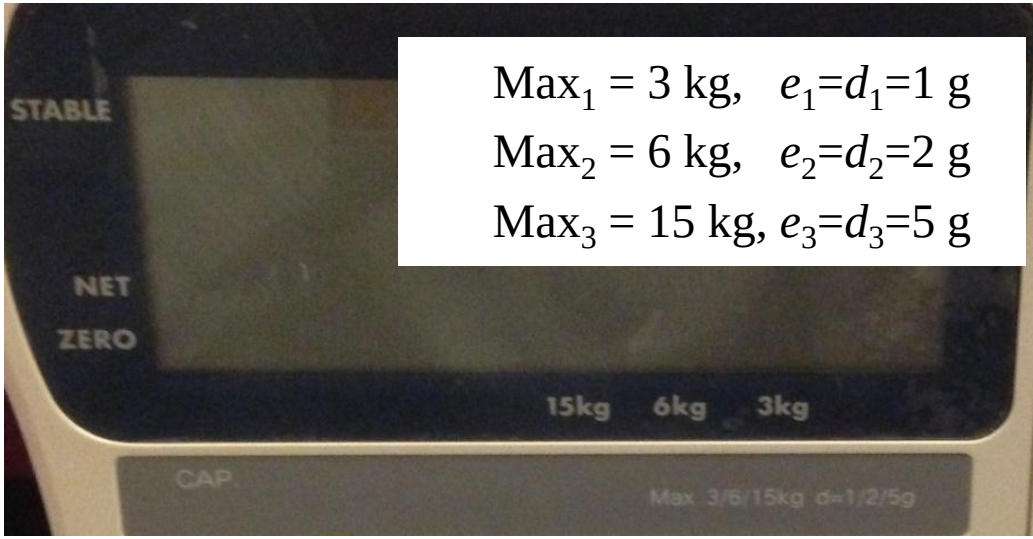
n_2 = 6000 g / 2 g = 3000 Class III

$\text{Min}_2 = \text{Max}_1 = 3$ kg

$3\text{ kg} < m \le 2000\ e_2 = 4\text{ kg}$ mpe= $\pm 1.0\ e_2$

$4\text{ kg} < m \le \text{Max}_2 = 6\text{ k g}$ mpe= $\pm 1.5\ e_2$

Example 2 :



Max_1 = 3 kg, e_1=d_1=1 g
Max_2 = 6 kg, e_2=d_2=2 g
Max_3 = 15 kg, e_3=d_3=5 g

For the first interval:

n_1 = 3000 g / 1 g = 3000 Class III

Min_1 = 20 e_1 = 20 g

20 g $\leq m \leq$ 500 e_1 = 500 g mpe= $\pm$0.5 e_1

500 g < $m \leq$ 2000 e_1 = 2 kg mpe= $\pm$1.0 e_1

2000 g < $m \leq Max_1$ = 3 kg mpe= $\pm$1.5 e_1

For the second interval:

n_2 = 6000 g / 2 g = 3000 Class III

$Min_2 = Max_1$ = 3 kg

3 kg < $m \leq$ 2000 e_2 = 4 kg mpe= $\pm$1.0 e_2

4 kg < $m \leq Max_2$ = 6 kg mpe= $\pm$1.5 e_2

For the third interval:

n_3 = 15000 g / 5 g = 3000 Class III

$Min_3 = Max_2$ = 6 kg

6 kg < $m \leq$ 2000 e_3 = 10 kg mpe= $\pm$1.0 e_3

10 kg < $m \leq Max_3$ = 15 kg mpe= $\pm$1.5 e_3

Example 2 :

For the first interval:

n_1 = 3000 g / 1 g = 3000 Class III

$\text{Min}_1 = 20\ e_1 = 20$ g

$20\text{ g} \le m \le 500\ e_1 = 500\text{ g}$ mpe= $\pm 0.5\ e_1$

$500\text{ g} < m \le 2000\ e_1 = 2\text{ kg}$ mpe= $\pm 1.0\ e_1$

$2000\text{ g} < m \le \text{Max}_1 = 3\text{ kg}$ mpe= $\pm 1.5\ e_1$

For the second interval:

n_2 = 6000 g / 2 g = 3000 Class III

$\text{Min}_2 = \text{Max}_1 = 3$ kg

$3\text{ kg} < m \le 2000\ e_2 = 4\text{ kg}$ mpe= $\pm 1.0\ e_2$

$4\text{ kg} < m \le \text{Max}_2 = 6\text{ kg}$ mpe= $\pm 1.5\ e_2$

For the third interval:

n_3 = 15000 g / 5 g = 3000 Class III

$\text{Min}_3 = \text{Max}_2 = 6$ kg

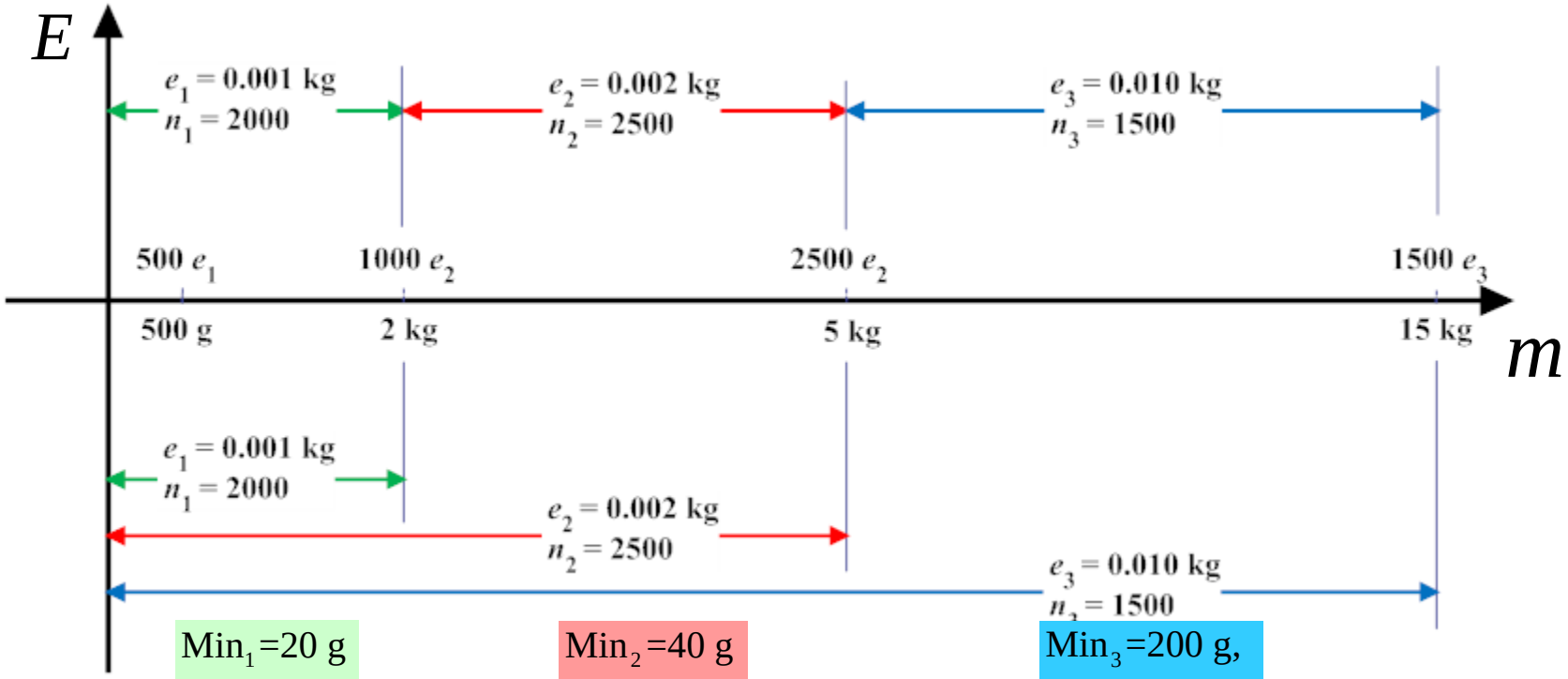
$6\text{ kg} < m \le 2000\ e_3 = 10\text{ kg}$ mpe= $\pm 1.0\ e_3$

$10\text{ kg} < m \le \text{Max}_3 = 15\text{ kg}$ mpe= $\pm 1.5\ e_3$

2.4.2 Multi-range instrument

Multi-range instrument

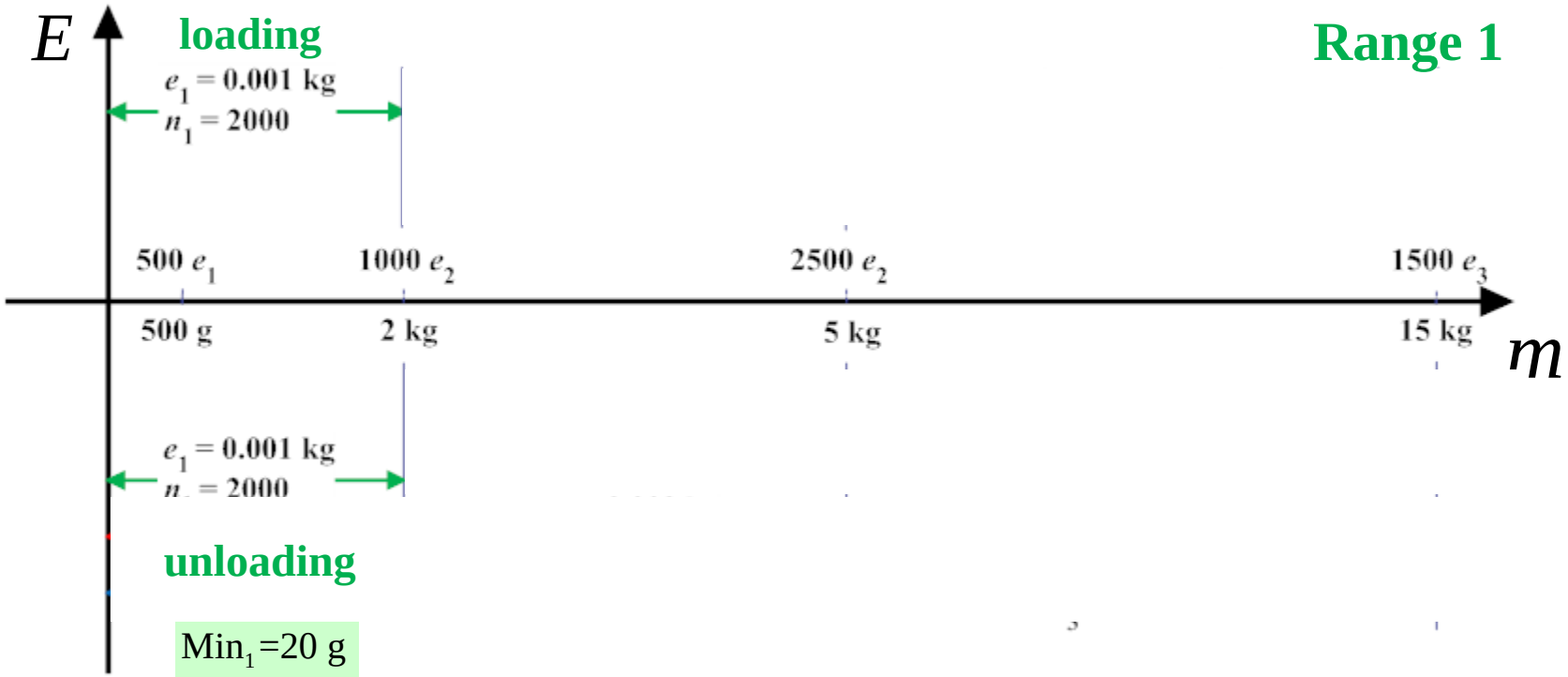
T.3.2.7 Instrument having two or more weighing ranges with different maximum capacities and different scale intervals for the same load receptor, each range extending from zero to its maximum capacity.



Min_1 =20 g	Min_2 =40 g	Min_3 =200 g,
Max_1 =2 kg	Max_2 =5 kg	Max_3 =15 kg,
e_1 =1 g,	e_2 =2 g	e_3 =10 g
n_1 =2000	n_2 =2500	n_3 = 1500

Multi-range instrument

T.3.2.7 Instrument having **two or more weighing ranges** with **different maximum capacities and different scale intervals for the same load receptor**, each range extending from zero to its maximum capacity.

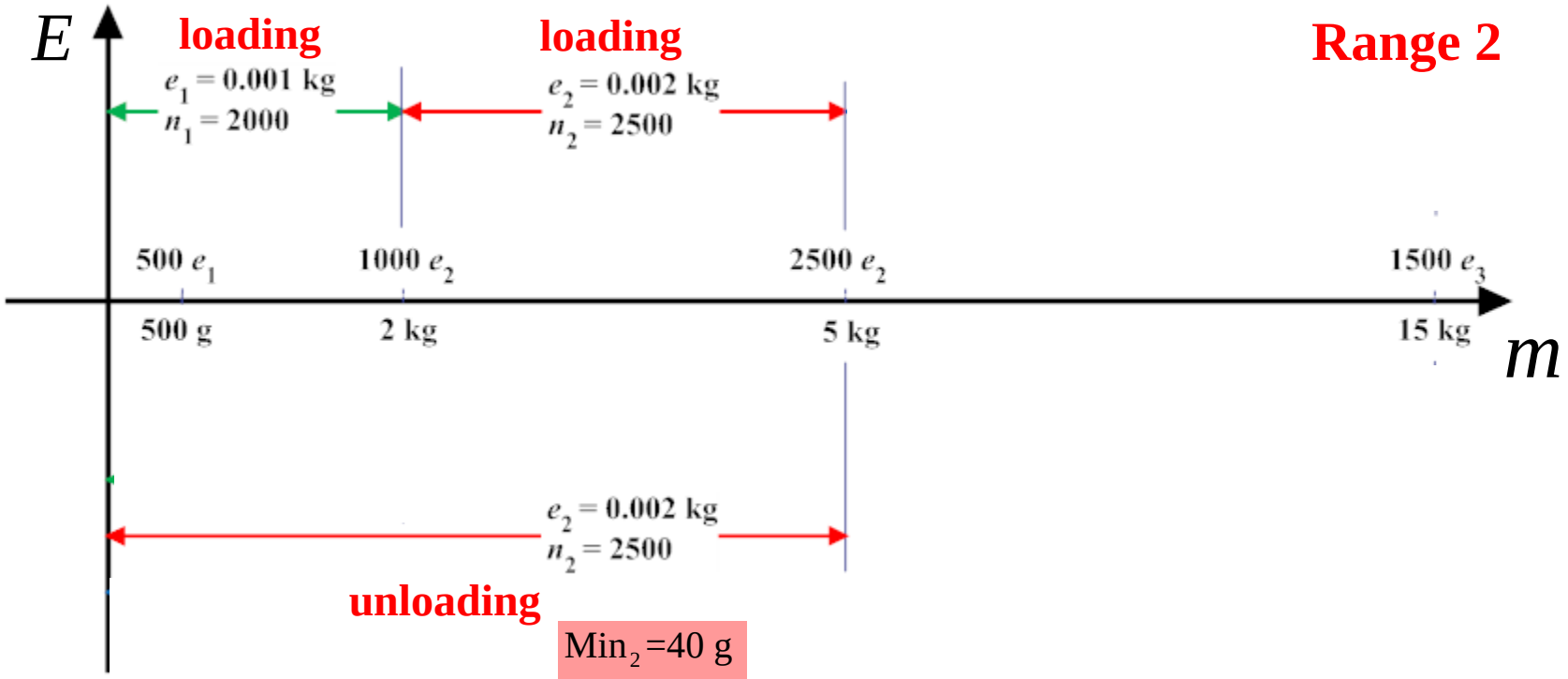


Min_1 =20 g
Max_1 =2 kg
e_1 =1 g,
n_1 =2000

When the first loading not exceed Than 2 kg, it works in mode Range1

Multi-range instrument

T.3.2.7 Instrument having **two or more weighing ranges** with **different maximum capacities and different scale intervals for the same load receptor**, each range extending from zero to its maximum capacity.



Min_2 =40 g

Max_2 =5 kg

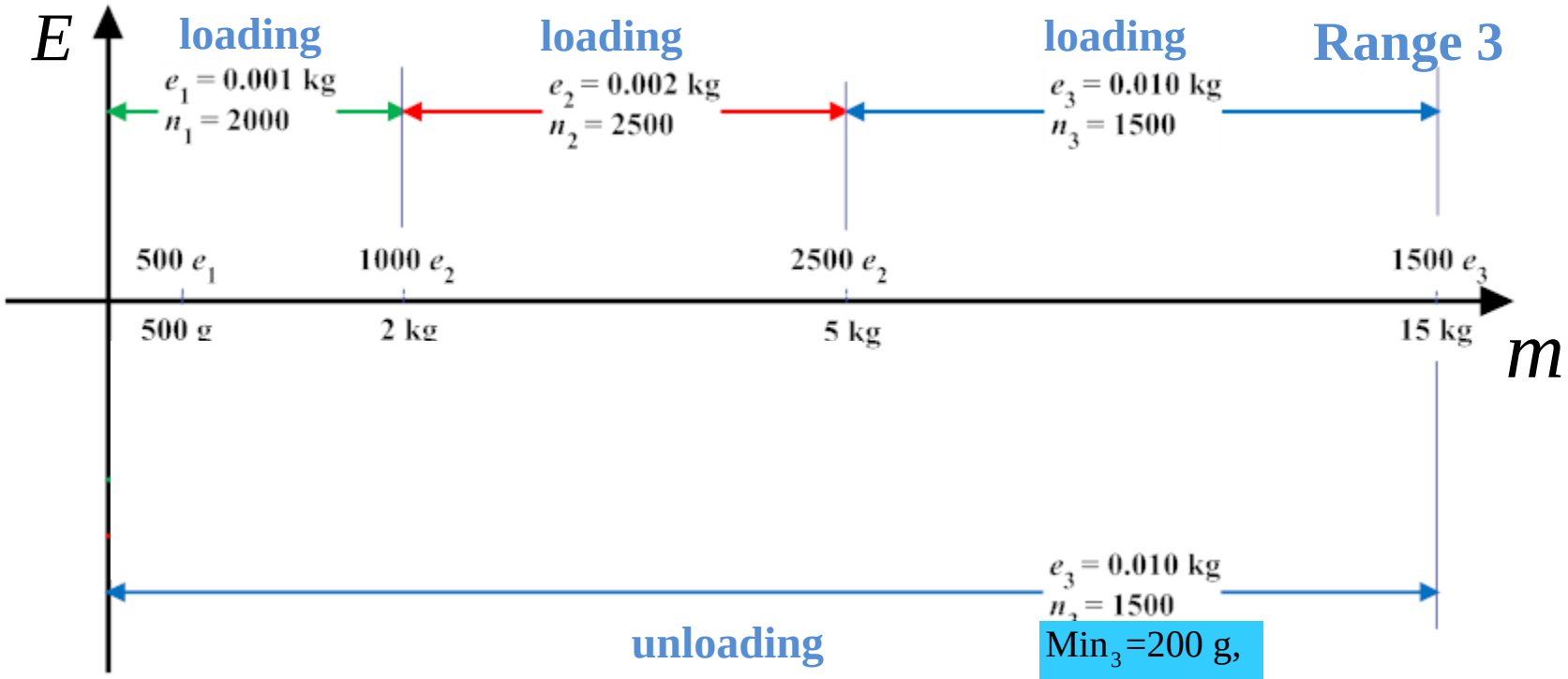
e_2 =2 g

n_2 =2500

Once the loading exceed than 2 kg and no exceed than 5 kg , it works in mode Range2, never change, even unloading.

Multi-range instrument

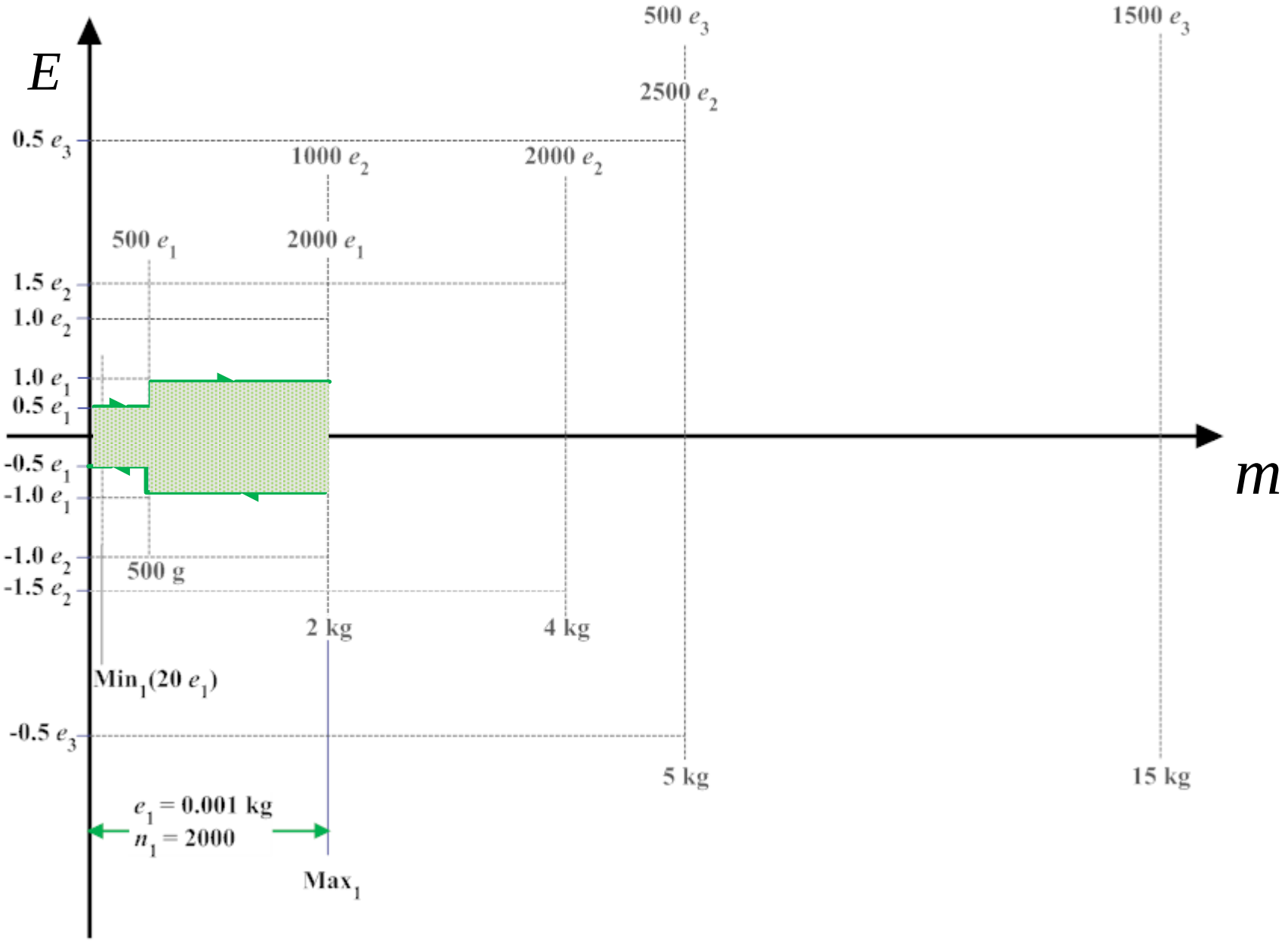
T.3.2.7 Instrument having **two or more weighing ranges with different maximum capacities and different scale intervals for the same load receptor**, each range extending from zero to its maximum capacity.



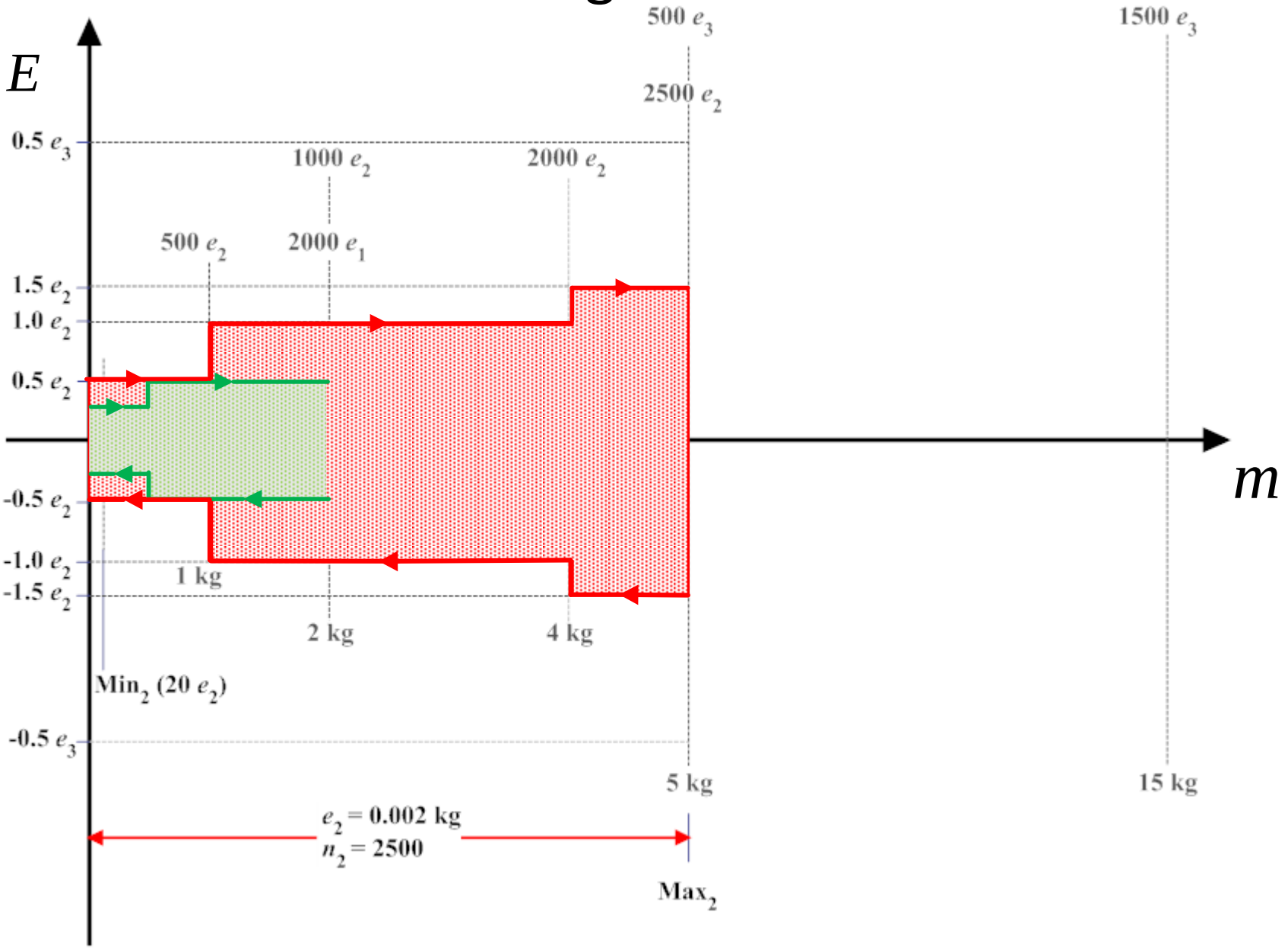
Min_3=200 g,
Max_3=15 kg,
e_3=10 g
n_3= 1500

Once the loading exceed than 5 kg Until Max_3,it works in mode Range3, never change, even unloading.

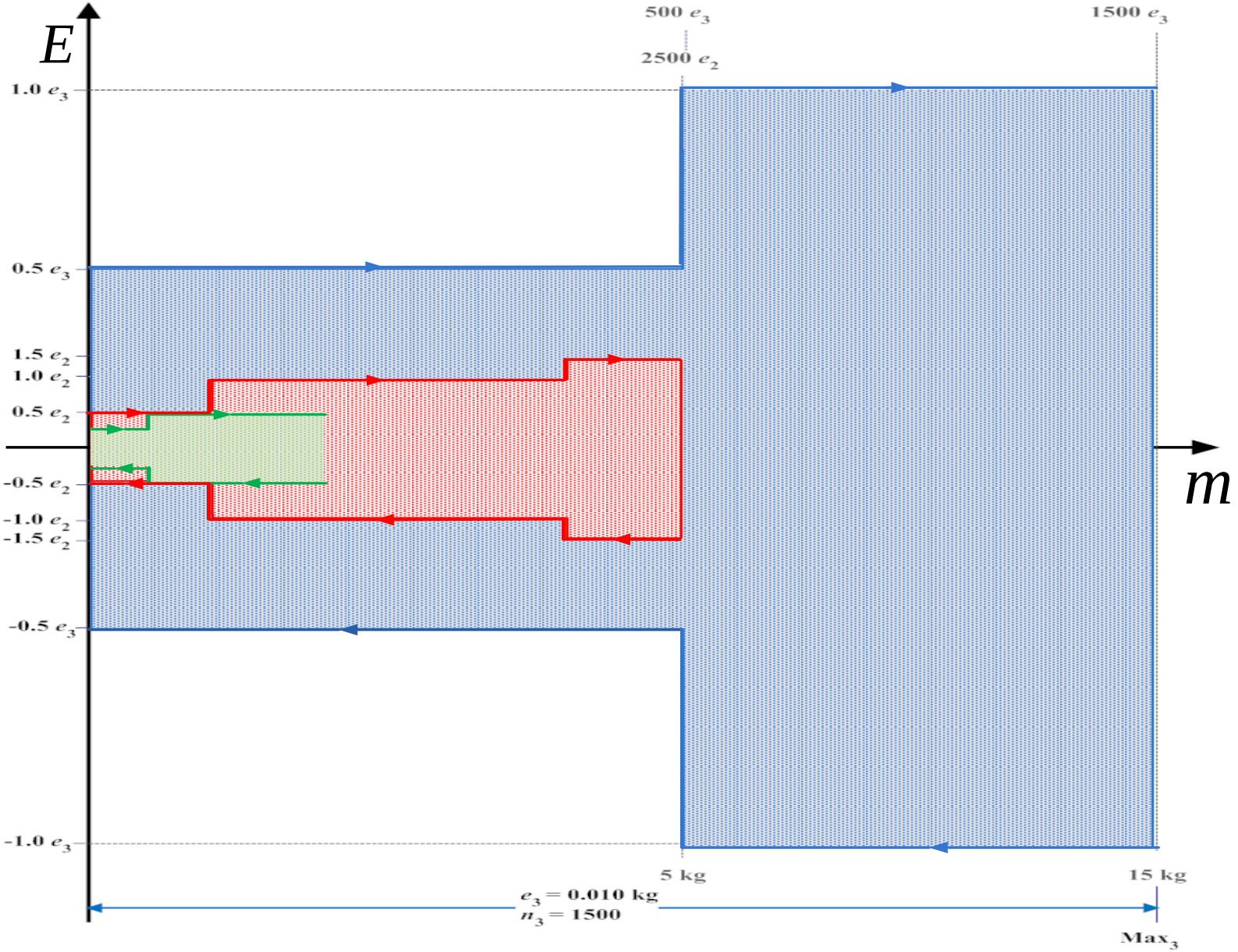
Multi-range instrument



Multi-range instrument



Multi-range instrument



Example 1 :

Pre-load Test Weight no more than 3 kg

For the first range:

n_1 = 3000 g / 1 g = 3000 Class III

$\text{Min}_1 = 20\ e_1 = 20$ g

$20\text{ g} \le m \le 500\ e_1 = 500\text{ g}$ mpe= $\pm 0.5\ e_1$

$500\text{ g} < m \le 2000\ e_1 = 2\text{ kg}$ mpe= $\pm 1.0\ e_1$

$2000\text{ g} < m \le \text{Max}_1 = 3\text{ k g}$ mpe= $\pm 1.5\ e_1$

2999 g

Example 1 :

Pre-load Test Weight 10 kg

For the second range:

n_2 = 10000 g / 5 g = 2000 Class III

Min = 20 e_2 = 100 g

100 g $\leq m \leq$ 500 e_2 = 2.5 kg mpe= $\pm$0.5 e_2

2.5 kg $< m \leq$ 2000 e_2 = 10 kg mpe= $\pm$1.0 e_2

b) Marking for multi-interval and multi range instruments:

In special cases, some of the markings should be in the form of a table. See examples in Figure 8.

For a multi-interval instrument

Max 2/5/15 kg
Min 20 g
e = 1/2/5 g

For an instrument with more than one weighing range (W_1, W_2)

	W_1	W_2
Max	20 kg	100 kg
Min	200 g	1 kg
e =	10 g	50 g

For an instrument with weighing ranges in different classes

	W_1 (II)	W_2 (III)
Max	1 000 g	5 000 g
Min	1 g	40 g
e =	0.1 g	2 g
d =	0.02 g	2 g

c) Fixing

If a plate is used it shall be secured e.g. by rivets or screws with one of the rivets of red copper or material having qualities recognized as similar or by using non removable control marks.

It should be possible to secure the head of one of the screws by appropriate means (e.g. by means of a cap of suitable material inserted in a device that cannot be dismantled or other appropriate technical solution).

3.3.3 Maximum capacity of partial weighing ranges

With the exception of the last partial weighing range, the requirements in Table 4 shall be complied with, according to the accuracy class of the instrument.

Table 4

Class	I	II	III	IIII
Max_i / e_{i+1}	≥ 50 000	≥ 5 000	≥ 500	≥ 50

2.5 Eccentricity

#5 Eccentricity

Clauses : OIML R76-1 3.6.2 and A.4.7

Equipment: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

- Determine the state of the automatic zero-setting device and zero-tracking device. Record by marking the appropriate box with an ×.
-

3 ECCENTRICITY (A.4.7)
3.1 Eccentricity using weights (A.4.7.1, 2 and 3)

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Date:	2011.02.25
Observer:	Ding Jing-an, Yao Hong
Verification scale interval e:	1 g
Resolution during test (smaller than e):	/

	At start	At max	At end	
Temp:	26.2			℃
Rel. h:	14.7			%
Time:	9:32		9:35	
Bar. Press (only class I)	/		/	hPa

Record the time and ambient temperature .

(1) Test(s) performed on a mobile instrument (A.4.7.5): ☐ Yes ☒ No
(2) In case of "Yes" (1): A.4.7 and A.4.7.1 to A.4.7.4 have been applied: ☐ Yes ☐ No
(3) In case of "No" (2): Description of eccentricity test(s) (see A.4.7.5) under "Remarks"

Location of test loads: mark on a sketch (see an example below) the successive locations of test loads, using numbers which shall be repeated in the table below.

1	2
4	3

Also indicate in the sketch the location of the display or of another perceptible part of the instrument.

Automatic zero-setting and zero-tracking device is:
☐ Non-existent ☐ Not in operation ☒ Out of working range ☐ In operation

Automatic zero-setting or zero-tracking in operation during the test.

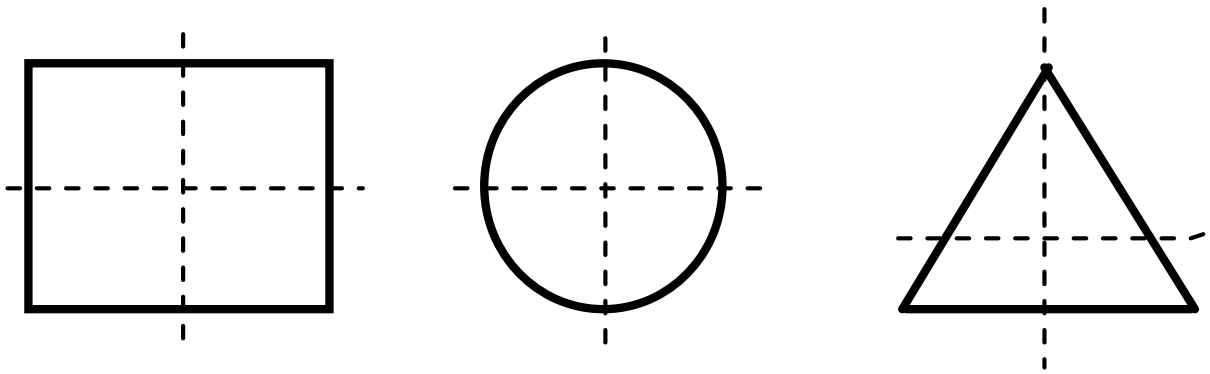
#5 Eccentricity

Clauses : OIML R76-1 3.6.2 and A.4.7

Equipment: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

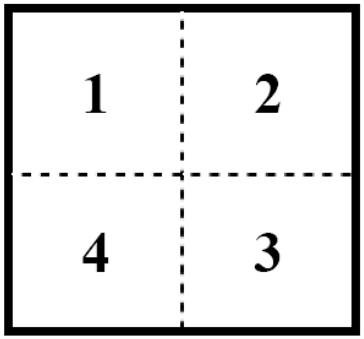
- The instrument has a load receptor having not more than four points of support.

- Divide the surface of the load receptor into four roughly equal quarter segments as outlined in diagrams below.



#5 Eccentricity

- Determine the individual surface areas of the load receptor where the loads are to be applied.



Location	Load L (g)	Indication I (kg)	Add. Load ΔL (g)	Error E (g)	Corrected error E_c (g)	mpe (± g)
	(*) 10	0.010	0.5	(*) 0.0	/	
1	1000	1.000	0.5	0.0	0.0	1
	(*) 10	/	/	(*) /	/	
2	1000	1.000	0.5	0.0	0.0	1
	(*) 10	/	/	(*) /	/	
3	1000	1.000	0.6	-0.1	-0.1	1
	(*) 10	/	/	(*) /	/	
4	1000	1.000	0.5	0.0	0.0	1

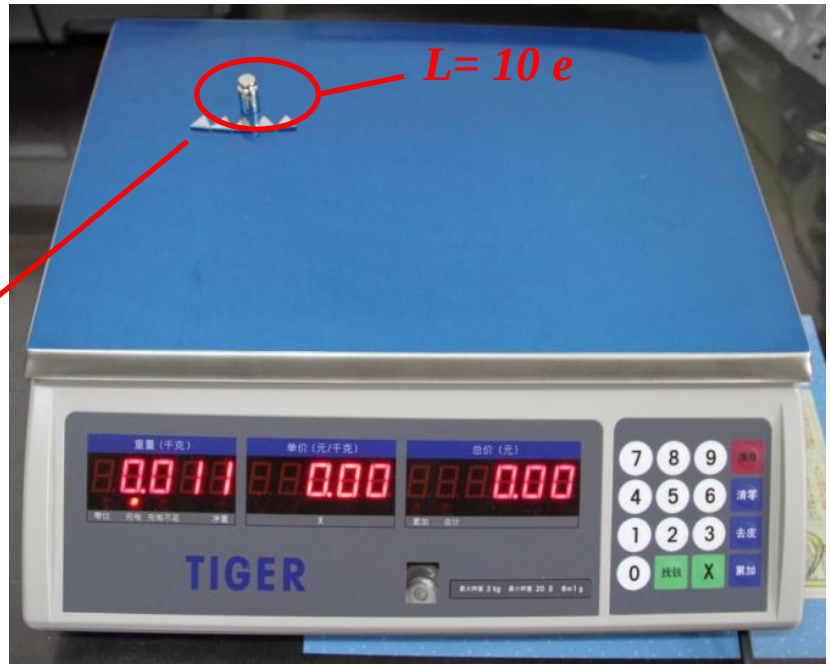
#5 Eccentricity

Procedure: A.4.7 Eccentricity tests (3.6.2)

1. Do a pre-load test (A.4.1.10)
2. Zero instrument

3. Take a zero reading at either zero or 10 *e* at each location.

4. Add additional load 0.1 *e* at which the indication changes from one scale interval to the next.



Location 1

$E_0 = I + 0.5\ e - \Delta L - L$
$= 10\ \text{g} + 0.5\ \text{g} - 0.5\ \text{g} - 10\ \text{g}$
$= 0\ \text{g}$

#5 Eccentricity

5. Apply one-third Max plus maximum additive tare (if applicable) at the same location, with 10 *e* still on the load receptor if used.

6. Remove the 10 *e* if you are using it.

#5 Eccentricity

7. Record the indication, *I*.
8. Find the changeover point and record ΔL.

$$E = I + 0.5\,e - \Delta L - L$$
$$= 1000\text{ g} + 0.5\text{ g} - 0.5\text{ g} - 1000\text{g}$$
$$= 0\text{ g}$$

9. Remove the load.
10. Repeat steps 6 to 11 at other locations in turn.
11. Calculate the error, *E*, where $E = I + 0.5\,e - \Delta L - L$ and record. Calculate E_C where $E_C = E - E_0$.

#5 Eccentricity

Note2:

A.4.7 *Normally it is sufficient to determine the zero error only at the beginning of the measurement*

On special instruments (accuracy class I, high capacity, etc.) it is recommended that the zero error be determined prior to each eccentricity loading.

Location	Load L (g)	Indication I (kg)	Add. Load ΔL (g)	Error E (g)	Corrected error E_c (g)	mpe (± g)
	(*) 10	0.010	0.5	(*) 0.0	/	
1	1000	1.000	0.5	0.0	0.0	1
	(*) 10	/	/	(*) /	/	
2	1000	1.000	0.5	0.0	0.0	1
	(*) 10	/	/	(*) /	/	
3	1000	1.000	0.6	-0.1	-0.1	1
	(*) 10	/	/	(*) /	/	
4	1000	1.000	0.5	0.0	0.0	1

3.6.2.2 On an instrument with a load receptor having *n* points of support, with ***n* > 4**, the fraction **1/(*n* – 1)** of the sum of the maximum capacity and the maximum additive tare effect shall be applied to each point of support.

3.6.2.3 On an instrument with a load receptor subject to minimal off-centre loading (e.g. tank, hopper, etc.) a test load corresponding to **1/10** of the sum of the maximum capacity and the maximum additive tare effect shall be applied to each point of support.

3.6.2.4 On an instrument used for weighing rolling loads (e.g. vehicle scale, rail suspension instrument) a test load corresponding to the usual rolling load, the heaviest and the most concentrated one which may be weighed, but not exceeding 0.8 times the sum of the maximum capacity and the maximum additive tare effect, shall be applied at different points on the load receptor.

2.6 Repeatability

#6 Repeatability

Clauses: OIML R 76-1, clauses 3.6.1 and A.4.10

1. For verification one series of weighings with about 0.8 Max is sufficient.
2. Three weighings on classes III and IIII or six weighings on classes I and II are necessary.
3. If the instrument is provided with automatic zero-setting or zero-tracking, it shall be in operation during the test. (A.4.10)

Procedure:

1. Determine the state of the automatic zero-setting device and zero-tracking device. Record by marking the appropriate box with an ×.

Automatic zero-setting or zero-tracking shall be in operation during the test.

5 REPEATABILITY (A.4.10)

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Date:	2011.02.25
Observer:	Ding Jing-an, Yao Hong
Verification scale interval e:	1 g
Resolution during test (smaller than e):	/

	At start	At max	At end	
Temp:	26.2		26.4	℃
Rel. h:				%
Time:	9:45			
Bar. press (only class I)	/			hPa

Automatic zero-setting and zero-tracking device is:

☐ Non-existent ☒ In operation

Load (weighing 1-10) 1500 g Load (weighing 11-20 3000 g

#6 Repeatability

Procedure:

2. Determine the test load for the first set of weighings. This should be approximately 80% of Max. It is recommended that for a multi-interval instrument this test load should be near Max in the lowest partial range.
3. Record the time and ambient temperature.
4. Conduct a pre-load test . (A.4.1.10)
5. Apply the test load and record the indication, *I*.

#6 Repeatability

Procedure:

6. Find the changeover point and record ΔL.

7. Calculate E using $E = I + 0.5\ e - \Delta L - L$ and record.

   ***E* = 3000 + 0.5 - 0.5 -3000 = 0 g**

8. Remove the test load.
   If the indication does not return to zero, reset instrument to zero.

#6 Repeatability

Procedure:

6. Repeat steps 5 to 8 as followings:
   3 times in all for class III , IIII
   6 times in all for class I , II.
   0.8 Max is sufficient

7. Calculate $E_{max} - E_{min}$ and record the result and the mpe for the test load.

3.6 Permissible differences between results

Single weighing result shall by itself not exceed the maximum permissible error for the given load.

5 REPEATABILITY (A.4.10)

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Date:	2011.02.25
Observer:	Ding Jing-an, Yao Hong
Verification scale interval e:	1 g
Resolution during test (smaller than e):	/

	At start	At max	At end	
Temp:	26.2		26.4	℃
Rel. h:				%
Time:	9:45			
Bar. press (only class Ⅰ)	/			hPa

Automatic zero-setting and zero-tracking device is:
☐ Non-existent ☒ In operation

Load (weighing 1-10) 1500 g Load (weighing 11-20 3000 g

E= I + 1/2 e - ΔL - L

	Indication of load I (kg)	Add. Load ΔL (g)	E (g)
1	1.500	0.5	0.0
2	1.500	0.5	0.0
3	1.500	0.5	0.0
4	1.500	0.5	0.0
5	1.500	0.5	0.0
6	1.500	0.6	-0.1
7	1.500	0.5	0.0
8	1.500	0.5	0.0
9	1.500	0.5	0.0
10	1.500	0.5	0.0

	Indication of load I (kg)	Add. Load ΔL (g)	E (g)
11	3.000	0.5	0.0
12	3.000	0.5	0.0
13	3.000	0.5	0.0
14	3.000	0.5	0.0
15	3.000	0.5	0.0
16	3.000	0.5	0.0
17	3.000	0.5	0.0
18	3.000	0.5	0.0
19	3.000	0.5	0.0
20	3.000	0.5	0.0

E_{max} - E_{min} (weighing 1 - 10) 0.1 g

mpe ± 1 g

E_{max} - E_{min}(weighing 11 - 20) 0.0 g

mpe ± 1.5 g

Check if a) E ⩽ mpe (3.6 of R76-1)
b) Emax - Emin ⩽ absolute value of mpe (3.6.1 of R76-1)

☒ Passed ☐ Failed

Remarks:

#6 Repeatability

Procedure:

6. Repeat steps 5 to 8 as followings:
   3 times in all for class III , IIII
   6 times in all for class I , II.
   0.8 Max is sufficient

7. Calculate $E_{max} - E_{min}$ and record the result and the mpe for the test load.

5 REPEATABILITY (A.4.10)

Application N°:	B219924740
Type designation:	ACS-JJ(Tiger)
Date:	2011.02.25
Observer:	Ding Jing-an, Yao Hong
Verification scale interval e:	1 g
Resolution during test (smaller than e):	/

	At start	At max	At end	
Temp:	26.2		26.4	℃
Rel. h:				%
Time:	9:45			
Bar. press (only class I)	/			hPa

Automatic zero-setting and zero-tracking device is:
☐ Non-existent ☒ In operation

Load (weighing 1-10) 1500 g Load (weighing 11-20 3000 g

E= I + 1/2 e - ΔL - L

	Indication of load I (kg)	Add. Load ΔL (g)	E (g)
1	1.500	0.5	0.0
2	1.500	0.5	0.0
3	1.500	0.5	0.0
4	1.500	0.5	0.0
5	1.500	0.5	0.0
6	1.500	0.6	-0.1
7	1.500	0.5	0.0
8	1.500	0.5	0.0
9	1.500	0.5	0.0
10	1.500	0.5	0.0

	Indication of load I (kg)	Add. Load ΔL (g)	E (g)
11	3.000	0.5	0.0
12	3.000	0.5	0.0
13	3.000	0.5	0.0
14	3.000	0.5	0.0
15	3.000	0.5	0.0
16	3.000	0.5	0.0
17	3.000	0.5	0.0
18	3.000	0.5	0.0
19	3.000	0.5	0.0
20	3.000	0.5	0.0

E_{max} - E_{min} (weighing 1 - 10) 0.1 g

mpe ± 1 g

E_{max} - E_{min}(weighing 11 - 20) 0.0 g

mpe ± 1.5 g

Check if a) E ⩽ mpe (3.6 of R76-1)
b) Emax - Emin ⩽ absolute value of mpe (3.6.1 of R76-1)

☒ Passed ☐ Failed

Remarks:

3.6.1 Repeatability
Max difference can't be greater than the absolute value of the maximum permissible error

2.7 Checking of zero

Checking of zero

Clause: OIML R 76-1 Clauses 4.5, A.4.2 and A.4.4.2

Range of Zero Setting

Including two parts:

1、the initial zero-setting range (A.4.2.1.1)

2、the zero-setting range (A.4.2.1.2)

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

Procedure：

1、the initial zero-setting range

1) **Determine the positive portion of the initial zero-setting range**
2) **Determine the negative portion of the initial zero-setting range**
3) **Calculate the initial zero-setting range as the sum of the positive and negative portions.**

2、the zero-setting range

1) **Determine the positive portion of the zero-setting range**
2) **Determine the negative portion of the initial zero-setting range**
3) **Calculate the zero-setting range as the sum of the positive and negative portions.**

2.7.1 Initial Zero-setting Range

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

1) Determine the positive portion of the initial zero-setting range :

1.Turn off the instrument.

Turn off the instrument

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

1) Determine the positive portion of the initial zero-setting range :

2. Place a load on the load receptor.
Switch the power supply to the instrument on, and check whether the instrument is re-zero or not.

Place the load on the receptor

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

1) Determine the positive portion of the initial zero-setting range :

3. Continue this process increasing the load by a small amount each time until it does not re-zero.

Turn on the instrument, the instrument does re-zero.

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

1) Determine the positive portion of the initial zero-setting range :

3. Continue this process increasing the load by a small amount each time until it does not re-zero.

Turn off the instrument, place the load on the load receptor

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

Procedure：

1) Determine the positive portion of the initial zero-setting range :

3. Continue this process increasing the load by a small amount each time until it does not re-zero.

Turn on the instrument, the instrument does not re-zero.

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

1) Determine the positive portion of the initial zero-setting range :

4. Record the maximum load that can be re-zeroed as the positive portion of the initial zero-setting range.

The positive portion of initial zero-setting range : 300 g

Turn on the instrument,
the instrument does not re-zero.

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

1、Remove any load from the load receptor and set the instrument to zero by switching the power supply off and then back on.

Turn off the instrument

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

2、Remove the load receptor (platform) from the instrument.

Remove the load receptor

Initial Zero-setting Range

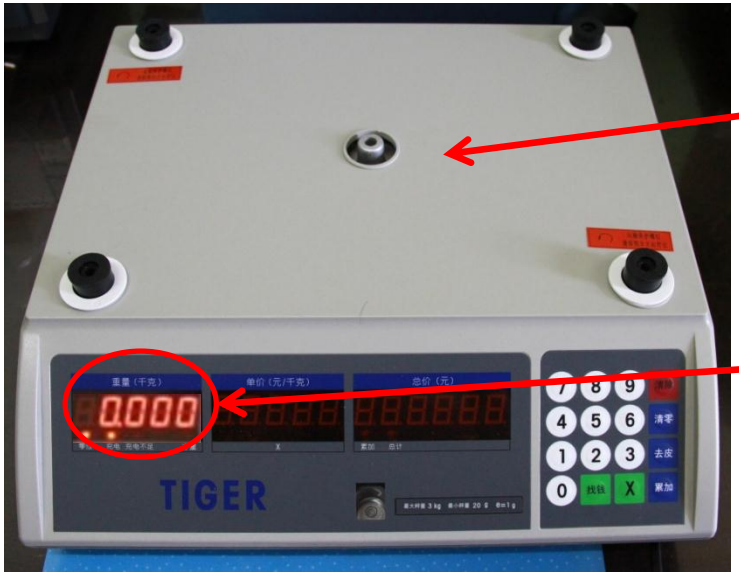
Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

3、If the instrument can be reset to zero by switching it off and then back on Record the weight of the load receptor as the negative portion of the initial zero-setting range.



Remove the load receptor, Then turn on the instrument

IF, The instrument can be reset to zero

Initial Zero-setting Range

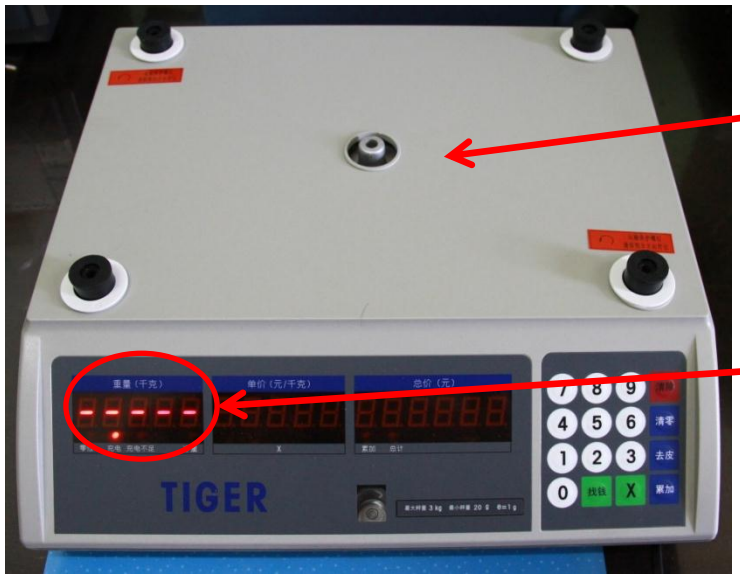
Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

4、If the instrument cannot be reset to zero with the load receptor removed:



Remove the load receptor, Then turn on the instrument

The instrument cannot be reset to zero

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

Procedure：

2) Determine the negative portion of the initial zero-setting range :

4.1 Add weights to any live part of the instrument (i.e. on the parts where the load receptor rests) until the instrument indicates zero again

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

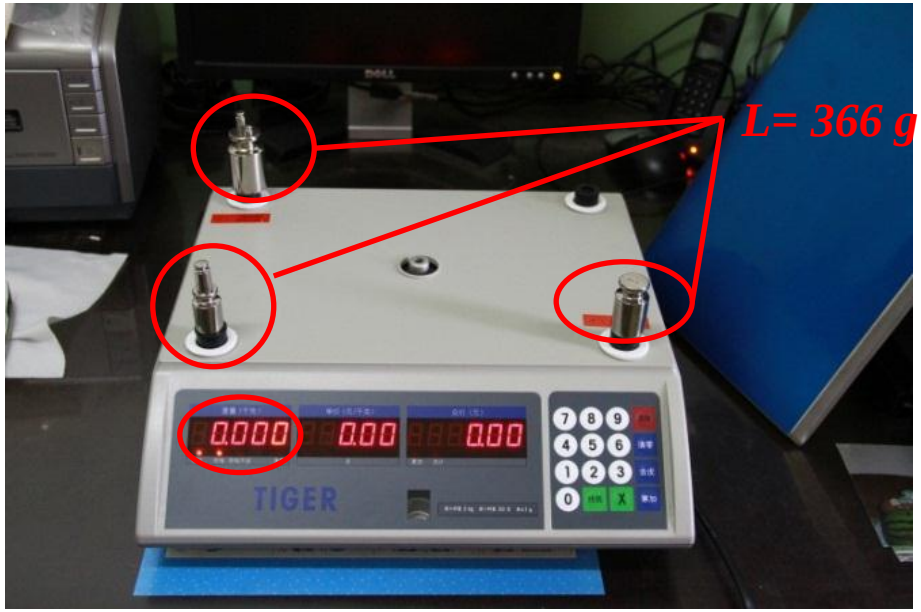
Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

4.2 Remove a load from the receptor in small amounts each time, switch the power supply to the instrument off and then back on.

Continue this process until the instrument does not re-zero;



In case of adding too much weight on the live part (more than 366 g)

Initial Zero-setting Range

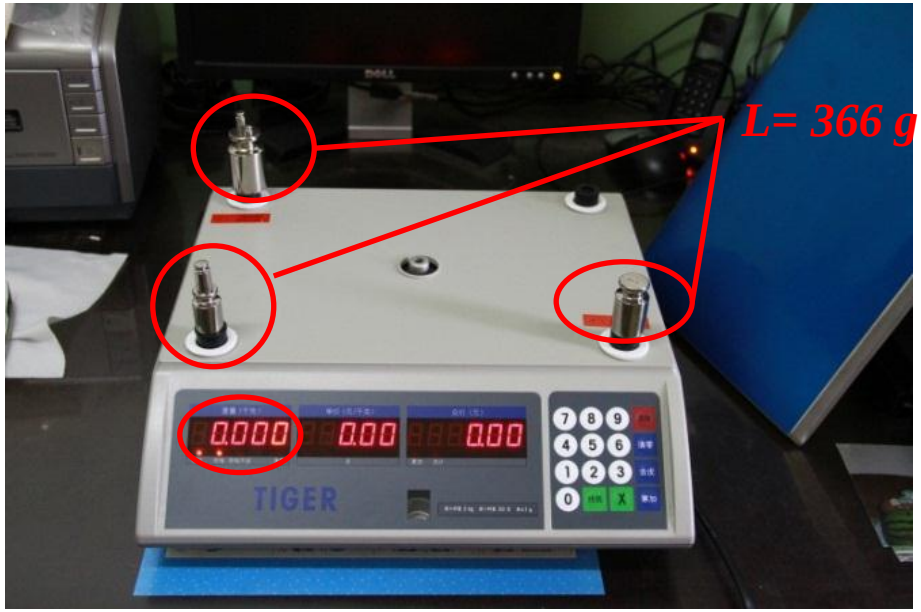
Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

4.3 Then add a load to the receptor in very small amounts, switching the power supply to the instrument off and then back on after each addition until it resets to zero



Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument;

Procedure:

2) Determine the negative portion of the initial zero-setting range :

4.4 Record the weight difference between load receptor and the weights on the live part of instruments as the negative portion of the initial zero-setting range.

The negative portion of initial zero-setting range :

666 g-366 g=300 g

Initial Zero-setting Range

Clause: OIML R 76-1 Clauses A.4.2.1.1

Equipment required: Equipment Under Test (EUT) ;
Certified weights to the maximum load capacity of the instrument；

Procedure：

3) Calculate the initial zero-setting range as the sum of the positive and negative portions.

The initial zero-setting range : 300 g + 300 g=600 g

Equals : 20%×Max

2.7.2 Supplementary weighing Test

Supplementary weighing Test

Clause: OIML R 76-1 Clauses 4.5.1, A.4.4.2
Required when the initial zero-setting range is > 20%.

A.4.4.2 Supplementary weighing test (4.5.1)

For instruments with an initial zero-setting device with a range greater than 20 % of Max, a supplementary weighing test shall be performed using the upper limit of the range as zero point.

Procedure:

1. Apply a load equal to the positive limit of the initial zero-setting range, using the upper limit of the range as zero point.
2. Record this load on a new evaluation report in the remarks column.
3. Switch the power supply to the instrument off and then on.
4. Repeat the appropriate weighing procedure and record the results on the new evaluation report.
5. Determine whether the instrument has passed or failed in accordance with the appropriate requirements as set out in OIML R 76-1.

2.7.3 The zero-setting range

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

Equipment required: Equipment Under Test (EUT) ;

Certified weights to the maximum load capacity of the instrument;

Procedure:

- **1) Determine the positive portion of the zero-setting range**

  1. Turn on the instrument.
  2. Place a load on the load receptor.

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

Equipment required: Equipment Under Test (EUT) ;

Certified weights to the maximum load capacity of the instrument;

Procedure:

- **1) Determine the positive portion of the zero-setting range**

3. Turn on the instrument and press the zero-setting button , check whether the instrument is re-zero or not.

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

Equipment required: Equipment Under Test (EUT) ;

Certified weights to the maximum load capacity of the instrument;

Procedure:

- **2) Determine the negative portion of the zero-setting range**

  1、Remove the load receptor (platform) from the instrument.

Remove the load receptor

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

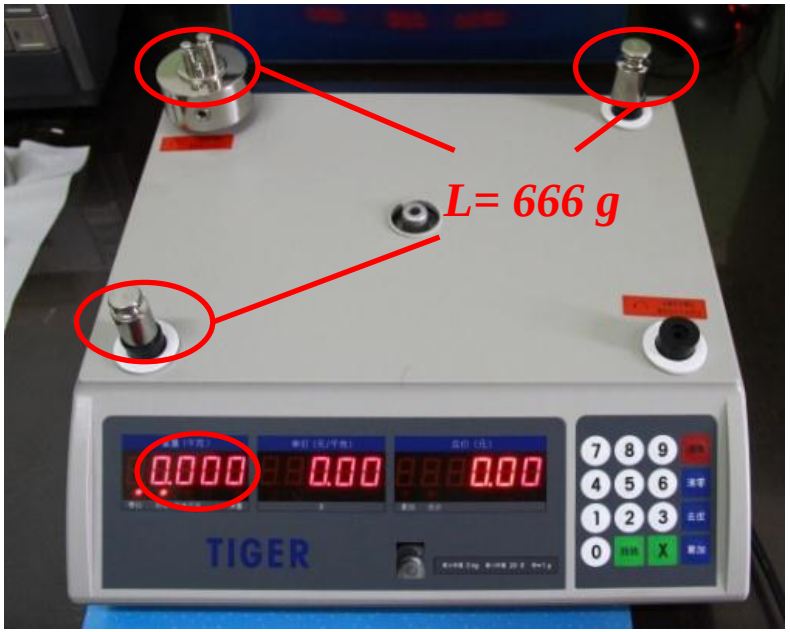
Equipment required: Equipment Under Test (EUT) ;

Certified weights to the maximum load capacity of the instrument;

Procedure:

- **2) Determine the negative portion of the zero-setting range**

2、Add the same weight as load receptor



The same weight as load receptor

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

Equipment required: Equipment Under Test (EUT) ;

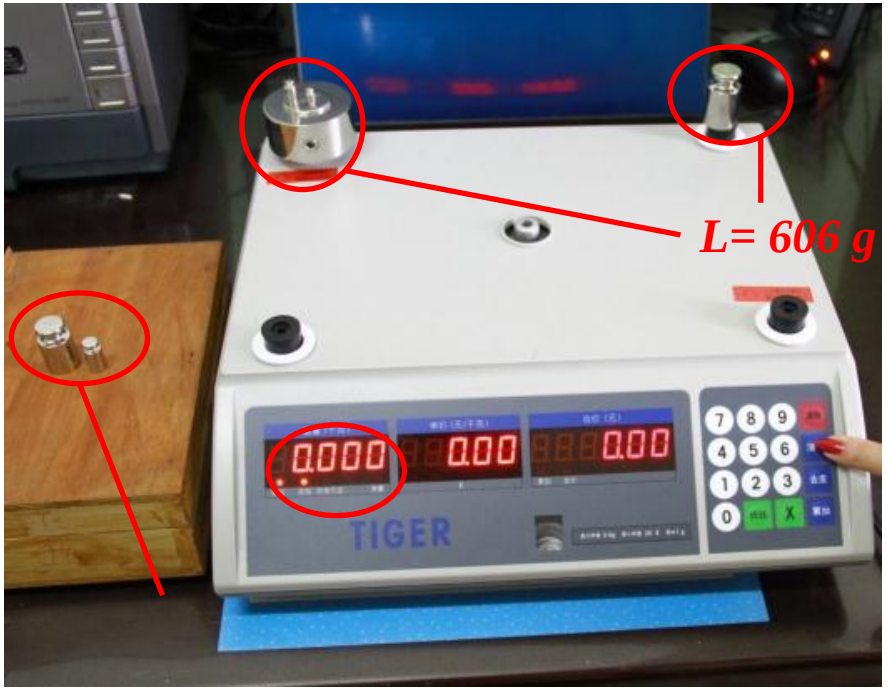
Certified weights to the maximum load capacity of the instrument;

Procedure:

- **2) Determine the negative portion of the zero-setting range**

3、Remove a load from the live part in small amounts each time.

Continue this process until the instrument can be zero.



Removed load: 60 g

Non-automatic and semi-automatic zero-setting

Clause: OIML R 76-1 Clauses A.4.2.1.2

Equipment required: Equipment Under Test (EUT) ;

Certified weights to the maximum load capacity of the instrument;

Procedure:

- **2) Determine the negative portion of the zero-setting range**

4、Calculate the zero-setting range as the sum of the positive and negative portions.

The zero-setting range : 60 g + 60 g= 120 g ; equals 4%×Max

Note:

This test is performed in the same manner as determining the initial zero-setting range, except that the zero-setting means is used rather than switching the instrument off and on.

3 Substitution of standard weights at verification

Substitution of standard weights at verification

Clause: OIML R 76-1 Clauses 3.7.3

1) Any other constant load may be used to instead of weights

2) Standard weights of **at least 1/2 Max** are used.

Procedure：

- If the repeatability error is not greater than 0.3 *e*, the portion of standard weights may be reduced to 1/3 Max.
- If the repeatability error is not greater than 0.2 *e*, this portion may be reduced to 1/5 Max.
- Check the repeatability error at a load of about the value where the substitution is made, by placing it three times on the load receptor. The results of the repeatability test (A.4.10) may be used if the test loads have a comparable mass.
- Repeatability error is determined by placing loads 3 times on the load receptor.

Weighing test using substitution material

Clause: OIML R 76-1 Clauses A.4.4.5

1) Check the repeatability error, by placing it three times on the load receptor.

2) The results of the repeatability test (A.4.10) may be used

Procedure：

- Apply test loads from zero up to and including the maximum quantity of standard weights(**at least 1/2 Max**).
- Determine the error (A.4.4.3) and then remove the weights so that the no-load indication

Weighing test using substitution material

Clause: OIML R 76-1 Clauses A.4.4.5

1) Check the repeatability error, by placing it three times on the load receptor.

2) The results of the repeatability test (A.4.10) may be used

Procedure：

- Substitute the previous weights with substitution material until the same changeover point.
- Repeat the above procedure until Max of the instrument is reached.

Weighing test using substitution material

Clause: OIML R 76-1 Clauses A.4.4.5

1) Check the repeatability error, by placing it three times on the load receptor.

2) The results of the repeatability test (A.4.10) may be used

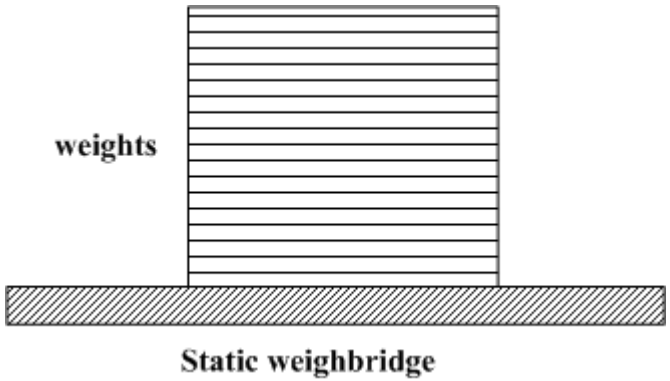
Procedure：

- Unload in reverse order to zero, i.e. unload the weights and determine the changeover point.
- Place the weights back and remove the substitution material until the same changeover point is reached

Test procedure with substitution

1) checking weighbridge

2) repeatability test



Test procedure with substitution

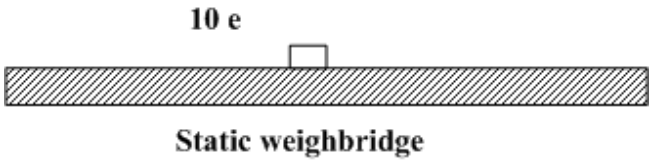
3) Calculation of minimum potion of standard weights

If the repeatability error:

- **no restriction, 1/2 Max**
- **≤0.3 e, 1/3 Max**
- **≤0.2 e, 1/5 Max**

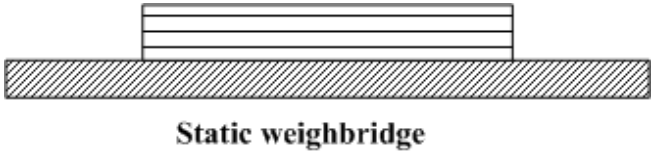
4)Weighting test

4a) begin with 0 or 10 e

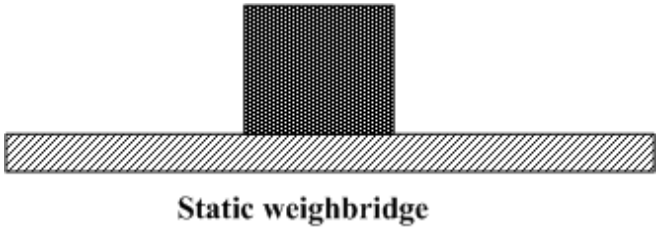


Test procedure with substitution

4b) load standard weights to first load, calculating error

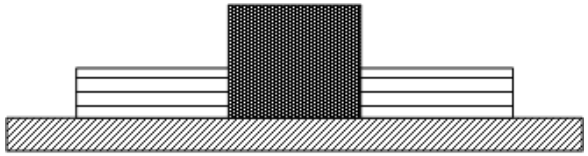


4c) unload standard weights, load the substitution material

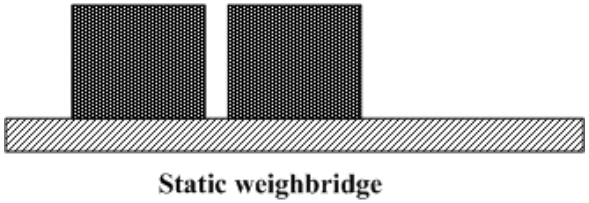


Test procedure with substitution

4d) load standard weights to next load

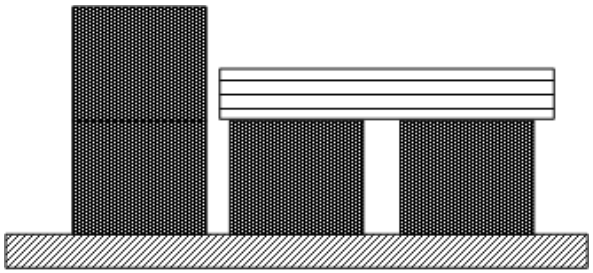


4e) unload standard weights, load the substitution material



Test procedure with substitution

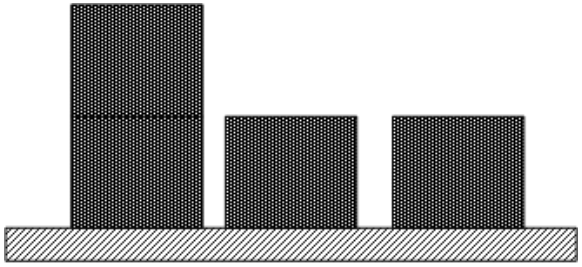
4f) continue step 4d) and 4e), until to the Max of weighbridge



Static weighbridge

5) unload process

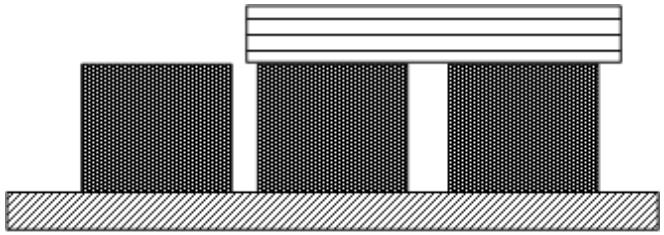
5a) unload standard weights



Static weighbridge

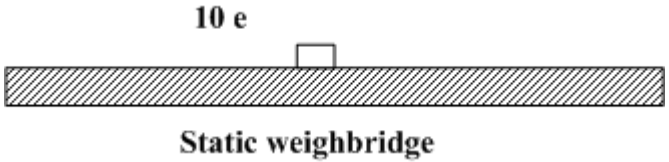
Test procedure with substitution

5b) put weights back, unload material to the same changeover point



Static weighbridge

5c) continue step 5a) and 5b), until return to 0 or 10 e



Static weighbridge

Example1:

Max = 6 kg, e = d = 2 g , n =3000, min = 40 g

Standard Weights: 3 kg

Substitution Materials

zero point: 20 g

40 g ≤ *m* ≤ 500 *e* = 1 kg mpe= ±0.5 *e*

1 kg < *m* ≤ 2000 *e* = 4 kg mpe= ±1.0 *e*

4 kg < *m* ≤ Max = 6 kg mpe= ±1.5 *e*

If the repeatability error:
1) no restriction, 1/2 Max
2) ≤0.3 *e*, 1/3 Max
3) ≤0.2 *e*, 1/5 Max

20 g weights

40 g weights

1 kg weights

3 kg weights

4 kg Unloading 3 kg weights, with 10 *e* weights on the platform
Loading materials until indicator=1 kg, then put the 3 kg standard weights on

6 kg Keep the 3 kg standard weights on, Loading materials until indicator = 3 kg

Example1:

Max = 6 kg, e = d = 2 g , n =3000, min = 40 g

Standard Weights: 3 kg

Substitution Materials

zero point: 20 g

40 g $\leq m \leq$ 500 e = 1 kg mpe= $\pm$0.5 e

1 kg $< m \leq$ 2000 e = 4 kg mpe= $\pm$1.0 e

4 kg $< m \leq$ Max = 6 kg mpe= $\pm$1.5 e

20 g weights

40 g weights

1 kg weights

3 kg Unloading materials, Keep 3 kg mass standard on

4 kg Unloading 2 kg materials, keep 1 kg materials and 3 kg mass standards on

Test standards

3.7.1 Weights

In principle, the standard weights or standard masses used for the type examination or verification of an instrument shall meet the metrological requirements of OIML R 111.

They shall not have an error greater than 1/3 of the ***mpe*** of the instrument for the applied load.

If they belong to class E_2 or better, their uncertainty (rather than their error) is allowed to be not greater than 1/3 of the ***mpe*** of the instrument for the applied load, provided that the actual conventional mass and the estimated long-term stability is taken into account.

Initial Verification

Clause: OIML R 76-1 Clauses 8.3

Tests Procedure:

- **#0 Visual Inspection**
- **#1 Evaluation of indication errors by the Changeover Method (Basic Method)**
- **#2 Pre-load Test**
- **#3 Accuracy of zero-setting and tare device**
- **#4 Weighing Test**
- **#5 Eccentricity**
- **#6 Repeatability**
- **#7 Checking of zero**
- **#8 Discrimination (A.4.8); not applicable for instruments with digital indication**

Self-Indicating Analogue Instrument

Pre-Load

Zero-Setting and Zero-Tracking

The accuracy of the zero-setting device of an instrument with analogue indication , can be checked at any stage during the testing of the instrument

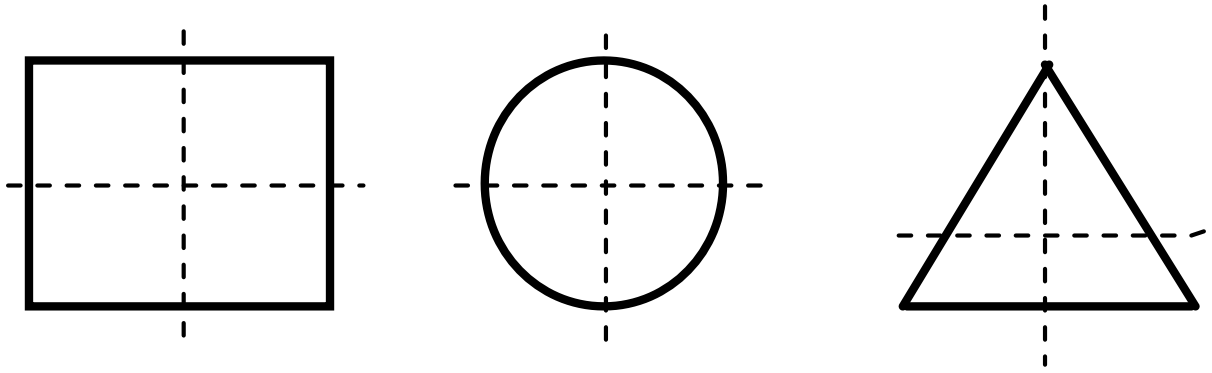
At the completion of one of the test sequences, **visually** check that the instrument has returned to within 0.25e of zero.

Repeatability

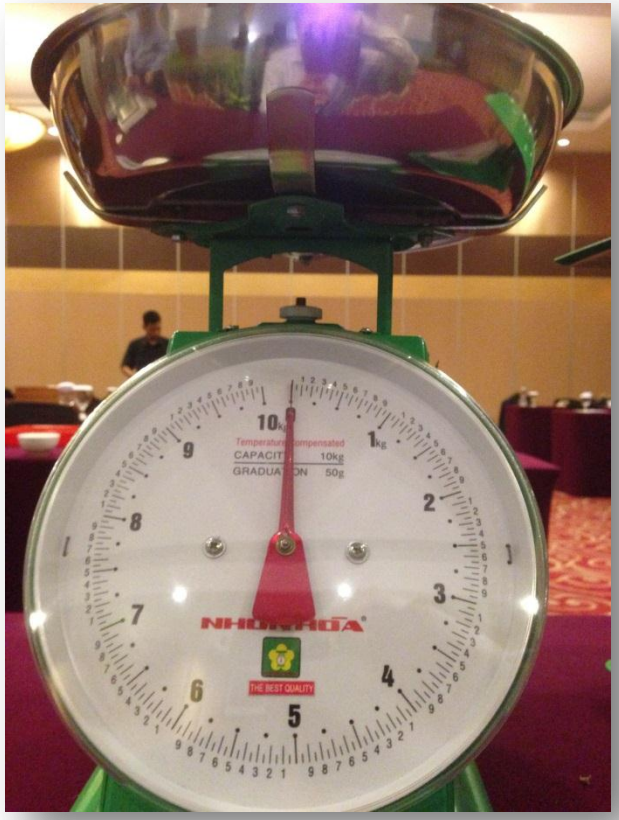
1. Set the instrument to zero.
2. Apply the **80% Max** load and record the indication.
3. Remove the load.
4. Reset instrument to zero if the indication is not showing zero.
5. Repeat steps 2 to 4 **three** times.

Eccentricity

Apply one-third Max on the load receptor



Max = 10 kg
d = 50 g
n =200
Class IIII
Min = 500 g
0 ≤ m ≤ 2.5 kg *mpe* = ± 25 g
2.5 kg < m ≤ 10 kg *mpe* = ± 50 g



Max = 20 kg
d = 100 g
n =200
Class IIII
Min = 1 kg
0 ≤ m ≤ 5 kg *mpe* = ± 50 g
5 kg < m ≤ 20 kg *mpe* = ± 100 g

Accuracy class	Verification scale interval, e	Number of verification scale intervals, n = Max/e		Minimum capacity, Min (Lower limit)
		minimum	maximum	
Special (I)	0.001 g ≤ e*	50 000**	–	100 e
High (II)	0.001 g ≤ e ≤ 0.05 g 0.1 g ≤ e	100 5 000	100 000 100 000	20 e 50 e
Medium (III)	0.1 g ≤ e ≤ 2 g 5 g ≤ e	100 500	10 000 10 000	20 e 20 e
Ordinary (IIII)	5 g ≤ e	100	1 000	10 e

Min capacity

Discrimination

A.4.8 Discrimination test (3.8)

The following tests shall be performed with three different loads, e.g.

Min

½ Max

Max.

3.8.2.1 Analog indication

An extra load equivalent to the *absolute value of the MPE* for the applied load when gently placed on or withdrawn from the instrument at equilibrium shall cause a permanent displacement of the indicating element corresponding to *not less than* **0.7 times** the extra load.

Discrimination Procedure

1. Zero the instrument.

2. Apply a load to the load receptor and, bring the indication to a mark by applying a small amount of extra material to the load receptor.

3. Record the initial indication (I*1*).

4. Gently apply **an extra load** equal to the **absolute value of the MPE** for the applied load on the load receptor.

5. Record the new indication (I*2*).

6. Calculate the difference in the two indications (I*2* – I*1*).

7. Ensure that the change in indication determined in step 6 is greater than or equal to **0.7 times** the extra load added in step 4.

8. Determine whether the instrument has passed or failed.

9. Record results on the test report.

4.1.2 Analog indication (A.4.8.1)

Application no.: .....
Type designation: .....
Date: ..... Temp.:
Observer: ..... Rel. h.:
Verification scale interval, *e*: ..... Time:
Scale interval, *d*: ..... Bar. pres.:

	At start	At max	At end	
Temp.:				°C
Rel. h.:				%
Time:				
Bar. pres.:				hPa

Load, L	Indication, I_1	Extra load = |mpe|	Indication, I_2	$I_2 - I_1$

Check if $I_2 - I_1 \geq 0.7$ mpe

☐ Passed ☐ Failed

Remarks:

Thank you ！

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